

Mammalia Room

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PROCEEDINGS

OF THE

ZOOLOGICAL SOCIETY

OF LONDON.



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PART XXI.

1853.

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CONTRIBUTORS,

*With References to the several Articles contributed by each.*

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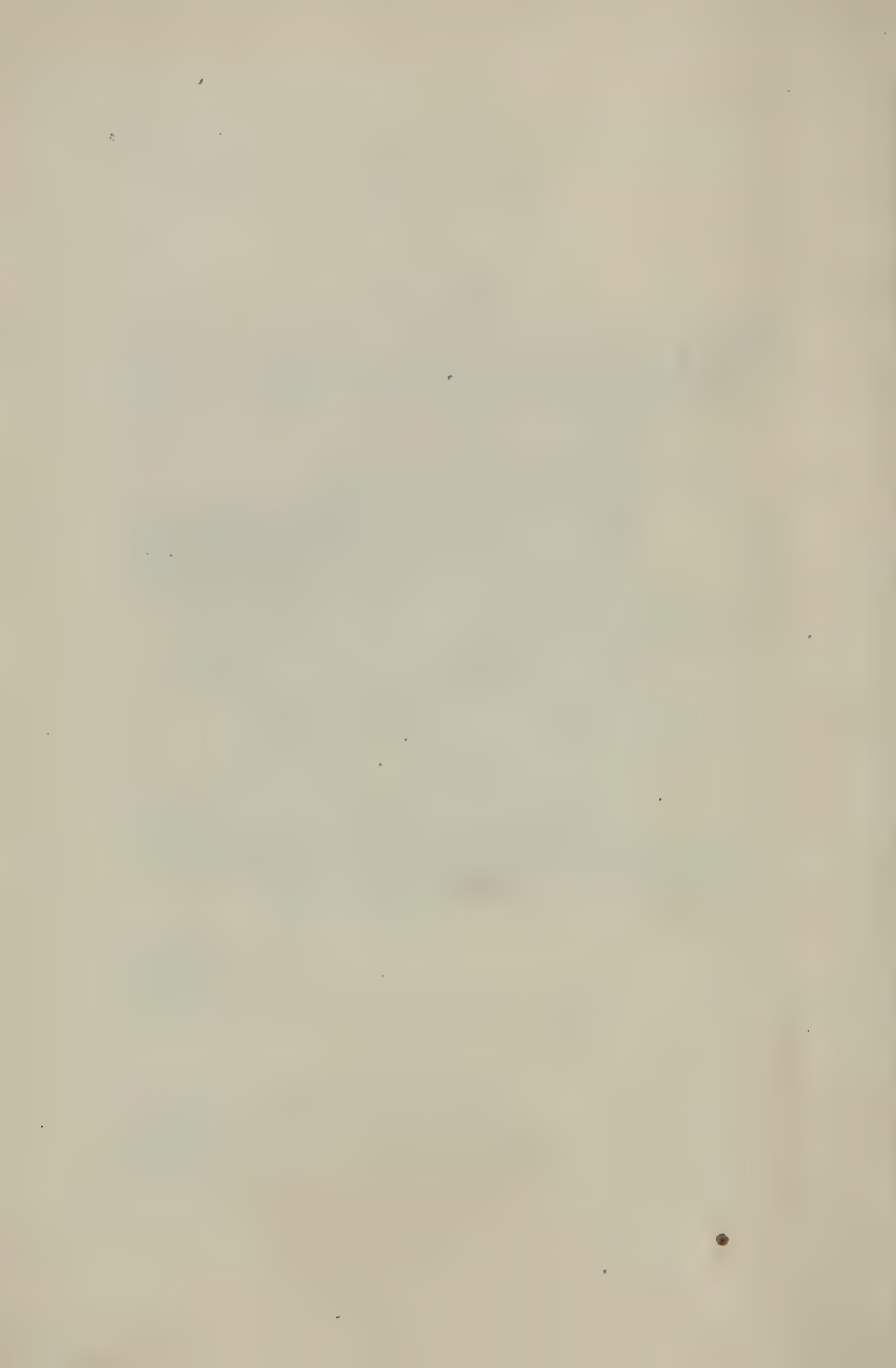
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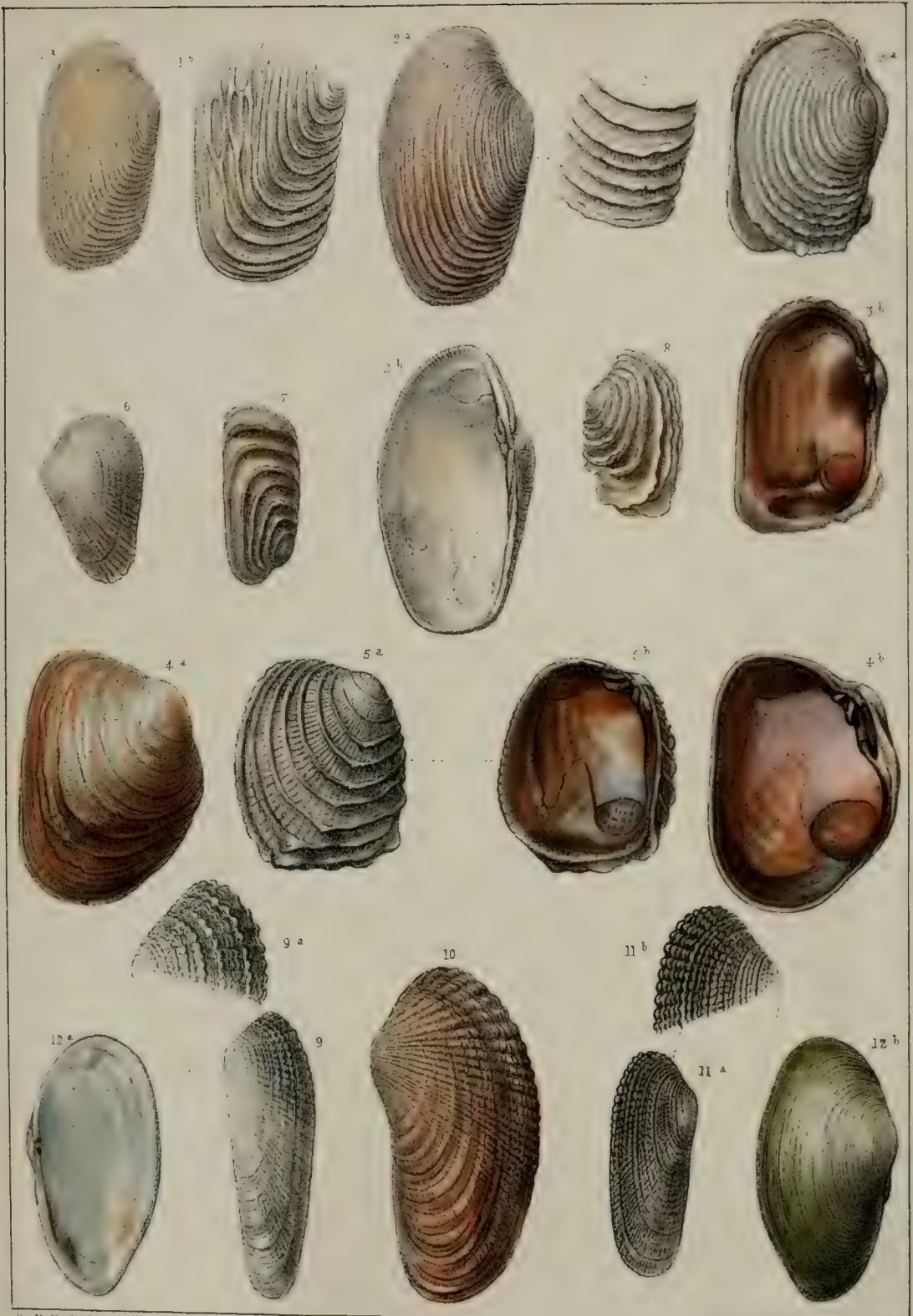
## ERRATA.

- Page 68, 7th line from bottom—read *Aves*, Pl. LII. for Pl. LVII.  
76, 9th line from bottom—read *constaté* for *reconnus*.  
78, 11th line from top—read *rejeté* for *balloté*.  
79, 2nd line from top—after *scientifique* add *ainsi que nous l'avons déjà démontré*.  
,, 17th line from top, read *reconnue* for *reconnu*.  
81, after 16th line from top, add—  
6 a. ANCYLUS CHITTYI, Adams, Cont. to Conch. No. 10. p. 204. no. 384, 1851. *Ancylus obliquus*, Adams, Descriptions of new species of Shells, Jamaica, in Ann. of the Lyc. of Nat. Hist. of New York, p. 48, 1850. [Non *Ancylus obliquus* de Broderip et H. Müller, qui est une espèce différente.] *Ancylus Petitianus*, Bourguignat, Cat. des esp. du g. *Anc.* in Journ. de Conch. No. 2. p. 172. pl. 6. f. 10, 1853.  
*Hab.* La Jamaïque.  
84, 7th line from bottom—read *Ancylus Chittyi* for *A. Petitianus*.  
85, 6th line from top, dele 31. *Ancylus Petitianus*, etc. Synonyms of *Ancylus Chittyi*, 6 a, following *Ancylus Carpenterianus*, p. 81.  
,, 15th line from top—after *Méditerranée* add *et la Morée*.  
87, 12th line from bottom—read *Ancylus montanus, monticola*, for *Ancylorum montani*.  
88, after the 13th line from top, add—  
42. a. ANCYLUS VERREAUXII, Bourguignat, Amén. Malac. in Rev. et Mag. de Zool. p. 351. 1853, et pl. 1. f. 1-8. 1854.  
*Hab.* Le Cap de Bonne Espérance.  
89, 4th line from bottom—after *Ancylus radiolatus* add *Ancylus tenuis*, Kurr.; *Ancylus Mattiacus*, Braun.  
93, 14th line from top—read *Chittyi* for *Petitianus*.  
,, 21st line from top—read *Chittyi* for *Petitianus*.









Pl. 4. P. N. 2d

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1	VENEPUPIS	163.	Fig 7	VENEPUPIS	PULCHERRIMA	Desh.
2	FUGIENSIS				MACROPHYLLA	
3	NEBULAE			9	PETRICOLA	CF FACILIS
4	LEUCIS			10	CULPELLUS	
5	CONVEXA			11	SEPPATUS	
6	CONVEXA			12	LAUCOME	ROSTRALIS





W.H. Bailey, del.

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Fig. 1 VENUS TUBEROSA Desh. Fig. 4 TAPES TURGIDULA  
 " 2. V. JUKESI. " 5. T. BIRADIATA  
 " 3. TAPES INFLATA. " 6. T. QUADRIFRONS

PROCEEDINGS  
OF THE  
ZOOLOGICAL SOCIETY OF LONDON.

January 11, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF NEW SPECIES OF SHELLS IN THE  
COLLECTION OF MR. CUMING. BY G. P. DESHAYES.

(Mollusca, Pl. XVIII. XIX.)

1. GLAUCONOME ROSTRALIS, Desh. (Pl. XVIII. fig. 12.) *G. testá elongato-angustá, depressá, subæquilaterali, tenui, viridi, antice obtusá, in medio dilatátá, postice attenuatá, angulatá, subrostratá; latere antico transversim irregulariter striato, postico sulcato; valvis rubris intus albis, ad marginem fusco-rubente pallide pictis, postice zonulá unicá obliquá notatis; sinu pallii angusto, profundissimo, leviter arcuato, lateribus suis parallelis, apice obtuso.*

*Hab.* Borneo. Coll. Cuming.

2. GLAUCONOME PSAMMOTELLA, Desh. *G. testá ovato-transversá, latá, lateraliter depressá, inæquilaterali, antice brevi, obtectá, postice attenuatá, obtuse subangulatá, transversim tenue et irregulariter striatá, epidermide squalide fuscá indutá, apicibus erosá; margine dorsali postice leviter arcuato et declivi; valvis intus albis; sinu pallii angusto, profundo, apice obtuso, marginibus suis fere parallelis.*

*Hab.* —? Coll. Cuming.

3. CUNEUS TRUNCATUS. *C. testá ovato-transversá, inæquilaterali, lateraliter compressá, lævigatá, nitidá, albá, lineis tenuibus rufis approximatis, zigzag-formibus, inter se parallelis; latere*

*antico longiore, obtuso, postico oblique subangulato, extremitate truncato; valvâ angustâ lanceolatâ, margine acuto circumscriptâ; lunulâ lividâ angustissimâ, non impressâ, vix distinctâ; valvis intus violaceis ad margines pallidioribus.*

*Hab.* Philippines. Coll. Cuming.

4. *DIONE RUFESCENS*, Desh. *D. testâ ovato-trigonâ, transversâ, tumidâ, inæquilaterali, lævigatâ, transversim irregulariter striatâ, rufescente pallide castaneâ, postice angulo obliquo obsoleto inflexâ, antice angustiore obtusâ, postice declivi, convexiusculâ, margine inferiore convexo, antice ascendente; umbonibus brevibus, tumidulis, obliquis; lunulâ magnâ, ovato-cordatâ, in longitudinem convexâ, ad apicem atro-violaceâ, fuscâ, et lineis fuscis fulguratâ; areâ elongato-acuminatâ, fuscâ; valvis intus pallide croceis; margine cardinali postice rubro maculato; sinu pallii profundo, satis lato, apice obtuso, basi latiore.*

*Hab.* Philippines. Coll. Cuming.

5. *DIONE CROCEA*, Desh. *D. testâ ovato-trigonâ, turgidâ, cordiformi, inæquilaterali, lævigatâ, politâ, tenui, intus extusque pallide aurantiâ, ad marginem inferiorem saturatiore; umbonibus tumidis, parum obliquis, acutis, roseis; lunulâ vix distinctâ, magnâ, ovato-cordatâ, lineâ tenuissimâ circumdatâ; ligamento immerso; areâ posticali indistinctâ, intensiore coloratâ; valvis tenuibus; sinu pallii parum profundo, trigono, apice obtuso.*

*Hab.* Philippines. Coll. Cuming.

6. *DIONE PHASIANELLA*. *D. testâ minimâ, transversim sulcatâ, ovato-transversâ, inæquilaterali, antice rotundatâ, postice angustiore, obtuse angulatâ, lateraliter compressiusculâ, violaceo-castaneâ, punctulis lineolisve angulosis notatâ, biradiatâ, radiis albo et fusco articulatis; umbonibus minimis, albis; lunulâ minimâ, saturate castaneâ, in medio convexiusculâ; latere postico lineis fuscis eleganter liturato, sulcis regularibus, depressis, posterius latioribus; valvis intus albo-violaceis.*

*Hab.* —? Coll. Cuming.

7. *VENUS SOWERBYI*, Desh. *V. testâ ovato-subquadratâ, inæquilaterali, turgidâ, cordiformi, crassissimâ, ponderosâ, albâ, rufo pallido quadriradiatâ, antice obtusâ, brevi, postice latiore, oblique et late truncatâ, longitudinaliter tenue et regulariter sulcatâ, lunulis brevibus, crassis, erectis, irregulariter dispositis, crenulatis, postice latioribus tenuioribusque, decussatâ; umbonibus magnis, cordatis; lunulâ magnâ, planâ, impressâ, rufo-purpurascente; areâ dorsali elongato-lanceolatâ in valvâ sinistrâ, maculis magnis castaneis notatâ; valvis intus pallide flavicantibus.*

*Hab.* Philippines. Coll. Cuming.

8. *VENUS CRISPATA*, Desh. *V. testâ ovato-transversâ, turgidâ, inæquilaterali, antice brevi, postice latiore, subtruncatâ, albâ, rufo irregulariter maculatâ, transversim multi-lamellosâ; lamellis*

*ad umbones tenuibus, in medio et ad margines crassioribus, inflexis, sulcis longitudinalibus decussatis et crenulatis, antice posticeque eminentioribus et dentatis; umbonibus tumidis, depressiusculis; lunulá fuscescente, elongato-cordatá; valvis intus in fornice croceis; sinu pallii latissimo, profundo; marginibus tenuissime et regulariter crenatis; ligamento profunde immerso.*  
*Venus Listeri*, var. Sow. Jun., Thes. Conch. p. 705. pl. 152. f. 7.  
*Hab.* —? Coll. Gray & Cuming.

9. *VENUS CLATHRATA*, Desh. *V. testá magná, ponderosá, solidá, ovato-transversá, inæquilaterali, crassá, cordiformi, albá, rufo pallido irregulariter maculatá et subradiatá, postice rufá, transversim sulcato-laminosá, longitudinaliter multi-sulcatá, decussatá, costis transversis numerosis, longitudinales decussantibus; latere antico obtuso, postico latiore truncato, superiore fere recto, inferiore arcuato; valvis intus albis vel pallide flavis, marginibus obsolete crenulatis; sinu pallii lato, profundo, apice obtusissimo; lunulá ovatá, pallide rufescente, in medio prominulá, subcarinatá.*  
*Venus Listeri*, var. Sow. Jun., Thes. Conch. p. 705.  
*Hab.* —? Coll. Cuming.

10. *VENUS CONSOBRINA*, Desh. *V. testá ovato-subquadratá, valde inæquilaterali, lateraliter compressá, rufo flavá, aliquantisper fusco biradiatá, antice rotundato-obtusá, postice truncatá, superne inferneque convexá, transversim profunde et late sulcatá; sulcis antice brevioribus, sensim in medio elatioribus, postice laminatis et prominentibus, sulco minore majoribus intersecto; lunulá ovato-cordiformi, in medio elatiore, subcarinatá; areá elongato-angustá, valvæ dextræ lamellosá, sinistræ lævigatá; cardine lato, crasso; sinu pallii minimo, brevi, angusto, acute triangulari.*  
*Venus casina*, Chemn. Conch. pl. 29. f. 301, 302.  
*Hab.* —? Coll. Cuming.

11. *VENUS SCULPTA*, Desh. *V. testá orbiculari, globosá, subæquilaterali, turgidá, solidá, crassá, albá, transversim regulariter plicato-sulcatá; sulcis antice posticeque attenuatis, granuloso-crenulatis, granulis antice irregularibus, postice majoribus, in medio costis crenulatis; umbonibus tumidis; lunulá cordiformi, puululum excavatá; areá angustá, elongato-lanceolatá, uno latere fuscá; cardine lato; sinu pallii brevi, angusto, acuminato.*  
*Hab.* —? Coll. Cuming.

12. *VENERUPIS DIGONA*, Desh. *V. testá ovato-quadratá, transversá, inæquilaterali, compressá, tenui, fragili, candide hyaliná, antice obtusá, postice late et perpendiculariter truncatá, marginibus dorsali et ventrali parallelis, longitudinaliter obsolete striatá, transversim regulariter lamellosá, lamellis tenuissimis erectis, postice latioribus, angulum rectum formanti-*

*bus, angulis squamulá eminentiore porrectis; areá ligamenti planá, angustá; sinu pallii triangulari, apice acuto, inæquilaterali, horizontali.*

*Hab.* Ceylon. Coll. Cuming.

13. *VENERUPIS CUMINGII*, Desh. (Pl. XVIII. fig. 3.) *V. testá elongato-ovatá, transversá, inæquilaterali, compressá, inæquivalvi, albo-griseá, corneo-translucidá, ad apices squalide violaceá, antice obtusá, postice latiore, truncatá; lamellis numerosis erectis, acutis, postice crispis, imbricatis cinctá, interstitiis lævigatis; umbonibus minimis, minutissime longitudinaliter striatis; valvis inæqualibus, dextrá majore, profundiore, intus violaceis, postice saturatiore violaceo maculatis; cardine tridentato, altero bidentato; sinu pallii angusto, acuto, elongato, horizontali.*

*Hab.* —? Coll. Cuming.

14. *VENERUPIS CHINENSIS*, Desh. *V. testá elongato-transversá, subtrigoná, valde inæquilaterali, candidissimá, antice obtusá, declivi, postice angulatá, subrostratá, longitudinaliter ad umbones tenue et obsolete striatá, lamellis distantibus erectis, postice eminentioribus, angulum rectum formantibus, cinctá; valvis in longitudinem flexuosis; nymphis intus extremitate violaceis; sinu pallii angusto, brevi, acuto, horizontali.*

*Hab.* Chinese Seas. Coll. Cuming.

15. *VENERUPIS PULCHERRIMA*, Desh. (Pl. XVIII. fig. 7.) *V. testá elongatá, transversá, angustá, cylindraceutá, inæquilaterali, antice brevi, obruncatá, postice truncatá, margine superiore inferiori parallelo, longitudinaliter striatá, striis postice evanidis, lamellis erectis, brevissimis, antice brevibus, postice albis elevatioribus cinctá, albo lutescente; umbonibus parvis; areá ligamenti angustá, sub-lævigatá; valvis intus albis; sinu pallii angusto, acuto, horizontali, trigono.*

Var.  $\beta$ . *Testá striis longitudinalibus nullis.*

*Hab.* Philippines. Coll. Cuming.

16. *VENERUPIS PLANICOSTA*, Desh. *V. testá ovato-transversá, valde inæquilaterali, lateraliter compressá, antice brevissimá, obtusá, albo-flavá, postice squalide violascente, obtusá, tenuissime et dense striatá, striis planis, incisís, lamellis brevibus, irregularibus cinctá; margine inferiore recto, superiore postice arcuato; valvis intus albis, postice violaceis; sinu pallii minimo, submarginali, triangulari, angulis acutis.*

*Hab.* Swan River. Coll. Cuming.

17. *VENERUPIS DERELICTA*, Desh. *V. testá ovatá, transversá, plus minusve angustá, irregulari, inæquilaterali, depressiusculá, intus extusque roseo-purpureá vel albescente, longitudinaliter tenue striatá, striis incisís, transversim lamellosá; lamellis brevibus, postice eminentioribus, erectis; umbonibus minimis,*



*postice angulatis; latere antico brevi, obtuso, postico truncato; cardine angusto, tridentato, altero bidentato; sinu pallii parvo, angusto, brevi, obtuso, submarginali.*

*Hab.* Looy. Coll. Cuming.

18. *VENERUPIS ELEGANS*, Desh. (Pl. XVIII. fig. 2.) *V. testá elongatá, transversá, angustá, inæquilaterali, inflato-cylindraceá, antice attenuatá, brevior, postice latiore, obtuse truncatá, latere postico obtuse angulatá, longitudinaliter tenuissime et eleganter striato-granulosá, transversim multi-lamellosá; lamellis inæqualibus, antice obtusis, crenulatis, postice tenuibus latioribus, minute crispis; lunulá ovato-elongatá, in medio prominente, rimosá; areá angustá, profundá, canaliculatá; valvis intus albis, marginibus tenue crenulatis; impressione pallii submarginali, sinu brevi, angulato, basi lato.*

*Hab.* New Zealand. Coll. Cuming.

19. *VENERUPIS SILIQUA*, Desh. (Pl. XVIII. fig. 1.) *V. testá elongato-transversá, turgidulá, inæquilaterali, albo-flavidá, antèrius obtusá, posterius obtuse angulatá, truncatá, transversim inæqualiter striato-sulcatá, sulcis striisque irregularibus, numerosis, appressis, nonnullis sensim posterius eminentioribus et in laminas breves, regulares, erectas, sese transformantibus; umbonibus minimis, turgidulis; lunulá vix distinctá, in medio prominente; sinu pallii angusto, elongato, apice obtuso.*

*Hab.* New Zealand. Coll. Cuming.

20. *VENERUPIS MITIS*, Desh. *V. testá ovato-transversá convexiusculá, tenui, inæquilaterali, antice declivi, angustiore, obtusá, postice obscure subangulatá, vix oblique truncatá, intus extusque albá, longitudinaliter dense striatá, striis planis, sæpius duplicatis, lamellis brevibus, angustis, simplicibus, postice paulo eminentioribus cinctá; margine lunulari prominente, lunulá indistinctá; cardine angusto dentibus tribus minimis instructo; nymphis intus violaceis, sinu pallii angusto, apice acuto, breviusculo.*

*Hab.* —? Coll. Cuming.

21. *VENERUPIS PAUPERCUA*, Desh. *V. testá ovatá, compressá, transversá, inæquilaterali, irregulariter contortá, antice obtusá, posterius perpendiculariter truncatá, squalide albo-rufescente, transversim irregulariter rugosá et striatá, intus albá, postice violaceo-maculatá; sinu pallii lato, profundo, apice obtusissimo, horizontali.*

*Hab.* New Zealand. Coll. Cuming.

22. *VENERUPIS OBESA*, Desh. *V. testá ovatá, transversá, brevi, inæquilaterali, inflatá, turgidá, antice declivi, acuminatá, postice obtusá, antice albá, postice squalide violaceá, longitudinaliter tenue striatá, transversim irregulariter rugosá; striis convexis, sæpius undulosis; umbonibus magnis, inflatis, prominentibus, lævigatis, oppositis, violaceis; lunulá areáque nullis;*

*valvis intus antice albo-flavis, postice violaceis; sinu pallii angustissimo, profundissimo, oblique ad umbones ascendente.*  
*Hab.* Port Phillip. Coll. Cuming.

23. *VENERUPIS INSIGNIS*, Desh. (Pl. XVIII. fig. 4.) *V. testá ovato-transversá, subquadrátá, valde inæquilaterali, plus minusve inflatá et irregulari, flavá, ad margines rufá, longitudinaliter creberrime et tenuissime liratá, liris in latere postico profundissime angulatis seu divaricatis et inter se conjunctis; latere antico brevissimo, postico paulo latiore, oblique truncato; margine superiore inferiori parallelo; umbonibus obliquis, tumidis, approximatis; valvis intus in medio croceo-rubris, ad peripheriam violaceis; sinu pallii angusto, profundo, apice acuminato, ascendente.*

*Hab.* New Zealand. Coll. Cuming.

24. *CIRCE PERSONATA*, Desh. *C. testá suborbiculato-trigoná, depressá, lenticulari, inæquilaterali, ad umbones compressá, transversim tenuè striatá, striis in latere postico evanescentibus, albo-griseá, in medio fusco maculatá, ad margines sæpius lineolatá; maculis in medio sæpius duabus personatis; lunulá aredq̄ue minimis, angustis, lanceolatis, atro-castaneis; valvis intus in fornice violaceis, in margine albis; impressione musculari anticá ovato-oblongá; fossulá laterali valvæ dextræ usque ad dentem cardinalem prolongatá; impressione pallii ad marginem descendente.*

*Venus scripta*, Chemn.; *Cytherea scripta*, Lamk. non Linn.

*Hab.* Indian Ocean; Philippines. Coll. Cuming.

25. *CIRCE PULCHRA*, Desh. *C. testá ovato-transversá, subæquilaterali, antice obtusá, postice angustiore, tumidá, solidá, irregulariter transversim striatá, striis inæqualibus distantibus, plicæformibus, striis longitudinalibus tenuissimis, obsoletis, decussantibus, albo-griseá, maculis duabus, castaneis, radiantibus, in medio separatibus; valvis intus albo-griseis, marginibus brunneis; impressione pallii brevissimá, in medio valvarum positá, simplice.*

*Cytherea elegans*, Sow. (non Koch) Thes. Conch. p. 645. pl. 135. f. 163.

*Hab.* Red Sea. Coll. Cuming.

26. *CIRCE TRANSVERSARIA*, Desh. *C. testá ovato-transversá, subæquilaterali, depressá, antice rotundatá, postice subtruncatá, fuscá, sæpius ad umbones albo angulatim maculatá, antice posticeque divaricatim rugosá, in medio transversim sulcatá, sulcis rugisque granosis; umbonibus minimis brevibus, oppositis; lunulá elongato-lanceolatá, lineá impressá circumscriptá, atratá; vulvá subpland, lævigatá, intus albá, in medio violaceo-maculatá.*

Var.  $\beta$ . *Testá minore, sulcis transversis majoribus.*

*Hab.* Philippines. Coll. Cuming.

27. CIRCE LENTICULARIS, Desh. *C. testá ovato-subtrigoná, in medio turgidá, ad peripheriam acutá, inæquilaterali, antice posticeque obtusá, transversim sulcato-plicatá, albá, lineolis castaneis, angulatis, vel undulatis, interruptis, ornatá; sulcis in latere postico evanidis; umbonibus depressis, plicis obsoletis, divaricatis, notatis; lunulá angustá, atro-fuscá, lanceolatá; vulvá profunde excavatá, atratá, lineis atris, irradiantibus ornatá; valvis intus pallide croceis; impressione pallii brevissimá, in medio valvarum positá.*

*Hab.* — ? Coll. Cuming.

28. CIRCE METCALFEI, Desh. *C. testá orbiculato-subtrigoná, tumidulá, subæquilaterali, candidá, fusco rare maculatá, maculis in medio serialibus, transversim tenue sulcatá, sulcis inæqualibus, numerosis, convexis, antice posticeque striis tenuissimis, divergentibus, intersectis; lunulá ovato-lanceolatá areáque fusco maculatis seu candidis; valvis intus flavo-rufis, ad margines albis; cardine angusto, dente antico valde separato.*

*Hab.* — ? Coll. Metcalfe.

29. MERETRIX GRATA, Desh. *M. testá minimá, ovato-trigoná, depressiusculá, inæquilaterali, nitidissimá, late profundeque transversim sulcatá; sulcis regularibus, rotundatis, interstitiis subæqualibus separatis, simplicibus, rubescentibus, interstitiis pallide luteis; umbonibus acutis, parvis, angustis, elatis; lunulá planá, ovato-angustá, elongatá, lividá; areá planulatá, lævigatá; valvis intus albis, maculá angustá castaneá in margine postico; sinu pallii latissimo, semicirculari.*

*Hab.* Chinese Seas. Coll. Cuming.

30. CHIONE GIBBOSULA, Desh. *C. testá rotundato-trigoná, obliquá, inæquilaterali, convexiusculá, antice brevi, obtusá, inferne convexá, superne arcuato-gibbosá, postice subangulatá; albá, postice fusco cærulescente vel radiatá vel pallide violaceá; lateribus et apicibus longitudinaliter costatis, rugis transversalibus, undulosis, decussatis, et crenulatis; in latere postico costis pluribus majoribus, alteris tenue granulosis; lunulá nullá; valvis intus albis, impressionibus muscularibus violaceis; sinu pallii horizontali, trigono, acuto, subæquilaterali.*

*Hab.* — ? Coll. Cuming.

31. CHIONE REGULARIS, Desh. *C. testá ovato-trigoná, transversá, turgidá, inæquilaterali, antice obtusá, postice declivi, subangulatá, subrostratá, margine ventrali valde arcuato, flavo-griseá, postice nigro-violascente, transversim regulariter et eleganter sulcatá; sulcis convexis, æquidistantibus; lunulá elongato-ovatá, perplaná, lævigatá, nitente, superne violaceo maculatá; areá parvâ, elongatá, lanceolatá, planá; valvis intus albis; cardine antice posticeque violaceo maculato; sinu pallii lato, obliquo, brevi, semiovali.*

*Hab.* Philippines. Coll. Cuming.

32. *CHIONE SPHERICULA*, Desh. *C. testá orbiculari, subæqui-laterali, turgidá, subsphæroidali, candidissimá, transversim sulcatá, sulcis antice posticeque evanidis, in medio convexiusculis, latioribus; umbonibus magnis, elevatis, recurvis, cordatis; lunulá brevi, impressá, cordiformi, in medio purpureo-maculatá; valvis incrassatis, intus albis, ad marginem posticum purpureo-maculatis; sinu pallii brevi, triangulari, æquilaterali, acuto.*

*Hab.* —? Coll. Cuming.

33. *CHIONE USTULATA*, Desh. *C. testá ovato-transversá, sub-trigoná, turgidá, crassá, solidá, inæquilaterali, antice obtusá, postice obtusissime angulatá, flavá, lineis maculisve rufis diverso modo variegatá et subradiatá, transversim irregulariter sulcatá, sulcis triangularibus, in medio obsolete, ad umbones tenuissimis; lunulá ovato-elongatá, fuscá; areá ligamenti brevi, parum profundá, fuscescente; valvis intus pallide flavis; margine cardinali violaceo.*

*Hab.* Philippines (Port of Manilla). Coll. Cuming.

34. *TAPES INFLATA*, Desh. (Pl. XIX. fig. 3.) *T. testá ovato-transversá, subæquilaterali, inflatá, turgidá, subcordiformi, transversim regulariter sulcatá, nitente, rufo-flavescente, punctulis lineisve fuscis, raris aspersá, obscure quadriradiatá; umbonibus tumidis, recurvis, approximatis; lunulá magná, oratá, lævigatá, depressiusculá, concavá; areá ligamenti excavatá, ovato-lanceolatá; sulcis latis convexis; valvis intus pallide aurantiis; sinu pallii brevi, apice obtuso, oblique ascendente, marginibus subparallelis; sinuositate in margine posteriore sicut in Tellinis.*

*Hab.* Ceylon. Coll. Cuming.

35. *TAPES TURGIDULA*, Desh. (Pl. XIX. fig. 4.) *T. testá ovatá, transversá, inæquilaterali, turgidulá, antice attenuatá, brevior, angustior, postice superneque rotundatá; umbonibus parvis maculá albá notatis; valvis rufis, maculis punctisque fuscis subquadriradiatis, tenue transversim sulcatis, sulcis antice tenuioribus, sensim in medio et in latere postico majoribus, et posterius lamellosioribus; lunulá elongato-lanceolatá, fuscá, in longitudinem concavá et striatá; areá ligamenti angustá, brevi, utroque latere canaliculatá, lateraliter maculá fuscá notatá; valvis intus croceis; sinu pallii lato, parum profundo, apice obtuso; valvæ sinistrae dente mediano profundissime bipartito.*

*Hab.* Philippines. Coll. Cuming.

36. *TAPES SIMILIS*, Desh. *T. testá ovatá, transversá, depressá, inæquilaterali, extremitatibus obtusá, transversim tenue sulcatá, rufá, apicibus rubrá, lævigatá, maculis raris castaneis tri-radiatá, lineis angulosis, distantibus, obsolete notatá; umbonibus minimis, oppositis; lunulá elongato-lanceolatá, lævigatá, rubro-lineolatá; areá angustá, depressá, lanceolatá, lividá; valvis intus in fornice rufis.*

*Hab.* —? Coll. Cuming.

37. TAPES ALBA, Desh. *T. testá ovatá, transversá, inæquilaterali, turgidulá, antice obtusá, postice latiore, oblique truncatá, crassá, solidá, intus extusque candidá; umbonibus brevibus, depressis, vix obliquis, oppositis; lunulá elongato-angustá, vix perspicuá, irregulariter striatá; areá angustissimá, vix depressá; valvis extus irregulariter sulcatis, sulcis in medio depressis; sinu pallii brevi, angusto, apice attenuato, semielliptico.*

*Hab.* Western Australia (Swan River). Coll. Cuming.

38. TAPES OBSCURATA, Desh. *T. testá ovato-transversá, oblongá, inæquilaterali, tumidulá, squalide rufescente, maculis minimis, unidentatis, fuscis obscurá, radiis quatuor fuscis, subarticulatis notatá, transversim tenue et regulariter sulcatá; sulcis antice angustioribus, in medio et ad latus posticum sensim latioribus; latere antico brevi, angustato, subangulatá, postico latiore, obtuso; valvis tenuibus, intus pallide croceis; sinu pallii profundo, oblique ascendente, apice obtuso, marginibus parallelis.*

*Hab.* —? Coll. Cuming.

39. TAPES BIRADIATA, Desh. (Pl. XIX. fig. 5.) *T. testá ovato-transversá, tumidulá, inæquilaterali, extremitatibus obtusá, flavescente, antice posticeque maculis minimis, pallide fuscis griseá, radiis duobus castaneis, latis, interruptis ornatá, transversim et regulariter tenue sulcatá; sulcis antice minoribus, in medio latioribus eminentioribusque, postice angustioribus et leviter undulatis; lunulá lividá, concavá, lævigatá, vix distinctá; areá elongato-laciniatá, planá, lævigatá, lividá, lineis violaceis lituratá; valvis intus albis; margine cardinali antice et postice violaceo maculato; sinu pallii angusto, obtuso, marginibus parallelis.*

*Var. β.* *Testá minore, turgidiores, radiis evanescentibus; valvis maculis minimis et lineis angulosis irregularibus ornatis.*

*Hab.* Philippines (Puteao). Coll. Cuming.

40. TAPES QUADRIRADIATA, Desh. (Pl. XIX. fig. 6.) *T. testá transversá, ellipticá, turgidulá, inæquilaterali, utroque latere obtectá, antice angustiusculá, albo-luteá, lineis fuscis, angulatis, numerosis densissime pictá et quadriradiatá, radiis maculis quadratis fuscis et albis subarticulatis; striis transversis regularibus numerosis, depressiusculis, postice planis et latioribus; lunulá fusco-violascente, elongato-angustá, politá, fusco dense lineolatá; areá angustá, excavatá, in medio maculá violaceo-lividá notatá; valvis intus pallide luteis; sinu pallii lato, semielliptico.*

*Hab.* Philippines. Coll. Cuming.

41. TAPES GRATA, Desh. *T. testá ovatá, transversá, inæquilaterali, compressá, antice angustiore et brevior, postice latiore, obtusá, transversim eleganter tenue sulcatá, albo-flavescente eleganter lineis fuscis tenuibus reticulatá et obsolete radiatá,*

*inferne maculis majoribus albo-flavescentibus trigonis delineatis; umbonibus minimis; lunulá lanceolatá, lævigatá, fuscescente litoratá; areá posticali elongato-angustá, maculis transversalibus notatá; valvis tenuibus, intus pallide croceis; pallii sinu horizontali, profundo, elliptico.*

*Hab.* Philippines. Coll. Cuming.

42. TAPES PUNICEA, Desh. *T. testá ovato-transversá, inæquilaterali, convexiusculá, antice brevior, obtusá, attamen attenuatá, latere postico latiore, obscure subtruncato, fulvo vel fusco punctatá, irregulariter saturatiore radiatá, maculis albis minimis irregulariter irroratá, longitudinaliter tenue sulcatá, sulcis inæqualibus, posticis latioribus, aliquando duplicatis, sulcis transversis decussatis, in medio simplicibus; lunulá vix perspicuá, elongato-lanceolatá, per longitudinem striatá; valvis intus vivide roseo-purpureis; margine cardinali postice violaceo maculato; sinu pallii lato, parum profundo.*

*Tapes variegata*, ex parte, Sowerby, jun., *Thes. Conch.* p. 696. pl. 151. f. 134, 135.

*Hab.* Philippines. Coll. Cuming.

43. TAPES VIOLASCENS, Desh. *T. testá ovato-angustá, transversá, valde inæquilaterali, subrhombéa, depressá, marginibus superiore et inferiore parallelis, latere antico brevi, oblique declivi, postico oblique truncato, extus longitudinaliter striatá, striis transversalibus antice et postice decussatá; striis longitudinalibus posticalibus latioribus, granoso-asperatis, medianis simplicibus; lunulá elongato-lanceolatá, planá, vix distinctá, lævigatá; cardine angusto, postice violaceo, dentibus tribus subæqualibus; valvis extus pallide violaceo-griseis, albo triradiatis, intus rufo-violaceis; sinu pallii lato.*

*Hab.* —? Coll. Cuming.

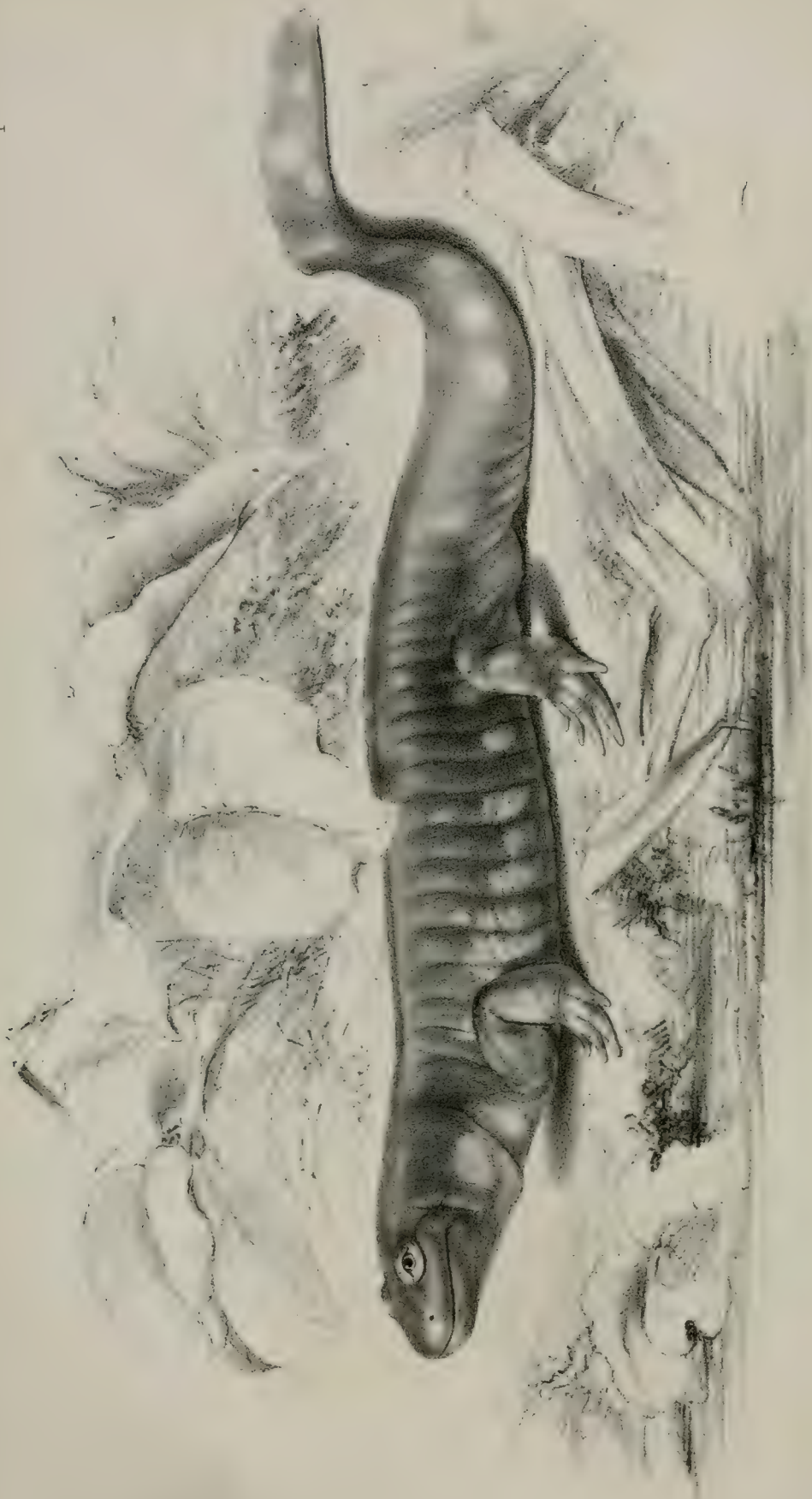
44. TAPES JAPONICA, Desh. *T. testá ovato-transversá, angustá, turgidulá, inæquilaterali, antice angustá, obtusá, postice subtruncatá, longitudinaliter tenue striatá, striis inæqualibus, posticis et anticis latioribus, striis transversis decussatis et granulosis; lunulá vix perspicuá, ovato-lanceolatá; areá minimá, planá, lævigatá; valvis albo-griseis, maculis magnis, irregularibus, rufis in latere postico marmoratis, intus pallide flavidis; sinu pallii brevi, obtuso, basi dilatato.*

*Hab.* Sea of Japan. Coll. Cuming.

45. TAPES FABAGELLA, Desh. *T. testá elongato-transversá, inæquilaterali, compressiusculá, intus extusque candidá, tenui, fragili, antice brevior, obtusá, postice latiore, oblique truncatá, margine superiore recto, inferiore arcuato, exilissime striatá, striis transversis regularibus, in latere postico multo rarioribus, lamellosis; umbonibus parvis lævigatis; lunulá ovato-lanceolatá vix perspicuá; sinu pallii magno, profundo, basi lato, trigono.*

*Hab.* New Zealand. Coll. Cuming.





CH Ford Lith.

AMBYOSTOMA CALIFORNIENSE Gray



46. TAPES CINEREA, Desh. *T. testá ovato-transversá, inæqui-laterali, depressá, extremitatibus obtusá, griseá, maculis fuscis, albo subarticulatis, in latere postico radium unicum formantibus, longitudinaliter et inæqualiter striatá; striis in medio depressis, simplicibus, antice posticeque crassioribus, striis transversis, brevibus, decussatis; umbonibus minimis obliquis, postice granulosis, acutis, approximatis; lunulá angustá, lanceolatá, in medio concaviusculá; valvis intus squalide lutescentibus; sinu pallii lato, brevi, obtusissimo.*  
*Hab.* —? Coll. Cuming.

2. ON A NEW SPECIES OF SALAMANDER FROM CALIFORNIA.  
 BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S.

(Reptilia, Pl. VII.)

Mr. Henry Gurney most kindly sent to the Zoological Society for exhibition some Reptiles, from Monterey in California, with the desire that the specimens should afterwards be placed in the British Museum. Among the rest was a very fine and large specimen of a Triton, which has much the external appearance of the large white-spotted *Ambystoma Carolinæ* of the eastern part of the United States of America. On more minute examination and comparison, it proved to be quite distinct; and as I do not find any description of it in any of the American papers on these animals, I have sent a comparative description of the two species.

1. AMBYOSTOMA CAROLINÆ, Gray, Cat. Amph. B. M. 35.

Brown; small spot over orbit, large spot on each side the occiput, on each leg near the joint, and a series down each side of the back and tail, white; palatine teeth in a short, nearly straight line, between and not reaching to the internal nostrils, and with a separate small group of teeth behind each internal nostril.

2. AMBYOSTOMA CALIFORNIENSE.

Black; sides of lips, lower part of neck, body and tail, and limbs, with large white spots; palatine teeth in an elongated angular transverse line, bent forwards in the middle and extending to the outer edge of the hinder part of the internal nostril.

*Hab.* California, Monterey, in a well (*Gurney*).

A smaller white spot on each side of the back, not symmetrical; the one on the right side being much in front of the other.

*Ambystoma punctulatum*, Gray, Cat. Amph. B. M. 37, has the tongue free on the side, and is nearly allied to the genus *Plethodon*: the palatine teeth are very indistinct, not forming a regular ridge.

3. DESCRIPTION OF A NEW SPECIES OF TORTOISE (*TESTUDO PLANICEPS*), FROM THE GALAPAGOS ISLANDS.  
 BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S., P.B.S. ETC.

After the examination of the specimens of the large Black Tortoise (*Testudo Indica*) in the various English and continental collections, including the specimens which had served Schweiger, Schlegel, Fitzinger, Dumeril and Bibron, and others, as the types of species, I placed them all in the 'Catalogue of the Tortoises, Crocodiles and Amphisbænians in the Collection of the British Museum,' as varieties of a single, very variable species, which had been scattered by man in different tropical parts of the globe. I see no cause to change my opinion with respect to the head now about to be described, even should it prove to be that of a black species, which is possible, as the black species is the only one known which has any affinity to it in point of size. The skull now described was sent to Haslar Hospital, and said to have been taken from a specimen brought from the Galapagos Islands. The Black Tortoise of those islands has been described by Dr. Harlan under the name of *Testudo elephantopus*; but his figure and description so exactly agree with the adult *Testudo Indica*, and the specimen in the Gardens of the Zoological Society brought from the Galapagos Islands, is so exactly similar to the specimen of *Testudo Indica* from the Mauritius, that I cannot think that the usual Galapagos Tortoise is different from that species, or like the skull here noticed. I therefore propose to designate this species by the provisional name of *Testudo planiceps*. The following comparative statement of the characters presented by this skull and that of *T. Indica*, will show the differences which exist between them.

TESTUDO INDICA.	TESTUDO PLANICEPS.
Skull high, convex.	Skull much-depressed, flat.
Forehead convex, rounded to the nose-cavity; broad between the eyes.	Forehead flat, with a rapid declivity towards the nose-cavity; narrow between the eyes.
Temples flat behind.	Temples produced, bent in behind.
Cheeks small, four-sided.	Cheeks large, subtrigonal.
Edge of the jaw between the nose-cavity and the mouth narrow and rounded.	Edge of the jaw between the nose-cavity and the mouth high and erect.
Nose-cavity oblong, nearly twice as high as broad, contracted on each side above.	Nose-cavity nearly square, scarcely higher than broad, and very little contracted above.
Palate broad, oblong, very deeply concave, and with concave converging sides in front.	Palate narrow, nearly lozenge-shaped, truncated behind, rather deeply concave, with straight converging sides in front.

## TESTUDO INDICA.

Sphenoid bone deeply concave beneath, under the condyle.  
Lower jaw narrowed and rounded in front, not more than half as high as behind.

## TESTUDO PLANICEPS.

Sphenoid bone flat beneath, under the condyle.  
Lower jaw convex and erect in front, and as high as behind.

These descriptions are taken from skulls of nearly the same size, as proved by the following measurements:—

	<i>Testudo Indica.</i>	<i>Testudo planiceps.</i>
Length from condyle to front of lip . . . . .	$5\frac{3}{8}$	$5\frac{1}{8}$
——— from occipital crest to nose-cavity . . . . .	$5\frac{2}{8}$	$5\frac{6}{8}$
——— of palate concavity . . . . .	$3\frac{3}{8}$	$2\frac{6}{8}$
Width at condyles . . . . .	4	$4\frac{1}{2}$
——— at ends of temporal bones . . . . .	$4\frac{1}{8}$	$3\frac{7}{8}$
——— of palate concavity in middle . . . . .	$1\frac{3}{8}$	1
——— between orbits . . . . .	2	$1\frac{2}{8}$
Height from back of upper lip to top of head . . . . .	$2\frac{5}{8}$	$1\frac{6}{8}$
——— of front of lower jaw . . . . .	$\frac{5}{8}$	1
Length of nasal opening . . . . .	2	$1\frac{1}{16}$

January 25, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

A portion of a letter from Mr. Louis Fraser, H.M. Consul at Whidah, was read, in which the writer mentioned that he had received accounts of the occurrence of a large Ape in the vicinity of Fernando Po. He says it has only been brought down to the colony on two or three occasions. The natives call it *Tap-par-po-har*, and suppose it to be a Chimpanzee; but from the description they give of it, he thinks it must be a *Cynocephalus*. The people say it is as large as a man, that it has a long head and a *very* short tail, and that it barks like a dog. He adds that there are curious tales current about the animal, which he will endeavour to collect.

The following papers were also read:—

1. DESCRIPTIONS OF TWO NEW BIRDS, FROM FERNANDO PO.  
BY LOUIS FRASER.

BUBO POENSIS, Fraser.

Brownish yellow, each feather barred with brown, the brown predominating on the crown, shoulders and middle of the back; tail

above barred with brown and greyish brown alternately; twelve bars of each colour.

Total length 16 inches; gape,  $1\frac{3}{8}$ ; wing, 12; tail, 7; tarsi,  $1\frac{3}{4}$ .

*Hab.* Fernando Po.

Killed in June. The specimen from which the above description was taken is the only one that has been seen by the town's-people; consequently I presume it is very scarce, at least in this part (Clarence) of the island. The natives say it destroys fowls, which here roost in the trees.

Native name 'Okó.' This is evidently a generic term, as the same name is applied to my *Strix Poensis*.

#### BUCEROS POENSIS, Fraser.

Female by dissection. Head and neck maroon, the feathers of the head standing out in apparent disorder, as in *Buceros comatus*; the rest of the plumage black, the back and tail having bronze reflections; the four outer tail-feathers terminated with white.

Cere cærulean-blue; upper part of throat-sac French-white, middle a blending of French-white and blue, terminated with cærulean-blue; these fleshy parts are much wrinkled; legs and feet deep blue.

Total length 30 inches; gape, 6; wing,  $14\frac{1}{2}$ ; tail, 13; tarsi,  $1\frac{3}{4}$ .

*Hab.* Fernando Po.

Killed in the month of July, in deep moult.

Native name, 'Oon-cot-to.' The natives say it cries, as it flies, 'How-oo-ar, how-oo-ar, how-oo-ar.' Very shy. Makes its nest in holes of very large trees, in the dry season; lays two eggs. These birds used to be common in the neighbourhood of Clarence, but since the introduction of guns they have been much shot, and have retired to the mountain.

Palm oil nuts, only, were found in the gizzard, which was soft, almost like a stomach; skin very thin and difficult to prepare. Between the skin and body appeared to be air-cells.

The male is said to differ materially, but I have not been fortunate enough to procure a specimen.

## 2. DESCRIPTIONS OF FOURTEEN NEW SPECIES OF MACTRA, IN THE COLLECTION OF MR. CUMING. BY G. P. DESHAYES.

1. *MACTRA COMPLANATA*, Desh. *M. testa transversim trigona, depressa, æquilaterali, securiformi, lævigata, alba, utroque latere æqualiter obtusa; latere antico posticali aquante; margine inferiore acuto, regulariter arcuato; lunula magna, elongato-lanceolata, sulco impresso circumdata, in medio prominente; area elongata, ovato-lanceolata, impressa, plana, angulo duplici circumscripta; umbonibus parvis, recurvis, acuminatis; valvis tenuibus, intus candidissimis; lamina cardinali lata, tenui; dentibus lateralibus brevibus, lamellosis, triangularibus, abrupte truncatis; sinu pallii brevi, semielliptico, descendente.*

*Hab.* Indian Ocean. Coll. Cuming and Deshayes.

2. **MACTRA SULCATARIA**, Desh. *M. testa ovato-transversa, subæquilaterali, turgidula, utraque extremitate æqualiter obtusa, transversim sulcata, ad apices lævigata, flava; umbonibus depressis, violaceis, albo triradiatis, lunula areaque magnis, eleganter plicatis; valvis intus albo-flavescentibus; cardine angusto; foveola ligamenti obliqua; dentibus lateralibus compressis, brevibus.*

*Hab.* —? Coll. Cuming.

3. **MACTRA REEVEI**, Desh. *M. testa rotundato-trigona, inflata, solida, subæquilaterali, transversim obsolete striata, epidermide tenui, straminea, tenue striato-lamellosa, vestita, albo-rufescente, maculis sparsis, inæqualibus, fuscis ornata, postice castaneo maculata; latere antico paulo brevior late rotundato; postico attenuato declivi, brevi, truncato; umbonibus prominulis, approximatis, cordiformibus; lunula cordiformi, plana, lævigata; area magna, plunulata, angulis duobus distantibus circumscripta; cardine crasso; fossula basi producta; sinu pallii brevissimo, semicirculari; valvis intus albis, in latere postico fusco maculatis.*

*Hab.* New Caledonia. Coll. Cuming.

4. **MACTRA PURA**, Desh. *M. testa ovato-trigona, depressiuscula, crassa, solida, æquilaterali, in medio gibbosiore, transversim inæqualiter et obsolete striata, candidissima, sub epidermide tenui flavescente; umbonibus brevibus, depressis; latere antico obtuso, postico subangulato; lunula obsolete circumscripta, ovato-elongata, eleganter plicata; area magna, angulo obtuso circumdata, linea impressa, marginata, plicata; sinu pallii brevissimo, angusto, subsemicirculari.*

*Hab.* Australia. Coll. Cuming.

5. **MACTRA QUADRANGULARIS**, Desh. *M. testa ovato-subquadrangulari, tenui, tumida, cordiformi, subæquilaterali, superne inferneque æqualiter convexa, squalide albo-grisea, epidermide flavescente, tenuissima, vestita, transversim striata, ad umbones lævigata; latere antico subtruncato, lato, posticali subæquante; umbonibus tumidis, oblique cordatis, approximatis; lunula non circumscripta, eleganter plicata; area ovata, zonula lævigata, circumdata, in medio plicata; valvis tenuibus, intus squalide albis, postice rubro-violascente maculatis; cardine angusto, dentibus lateralibus lamellosis; sinu pallii brevi, subtrigono, apice obtuso.*

*Hab.* Chinese Seas. Coll. Cuming.

6. **MACTRA VENERIFORMIS**, Desh. *M. testa orbiculato-subtrigona, inflata, convexissima, cordiformi, subæquilaterali, antice obtusa, postice longiore, angulata, transversim regulariter striata, ad umbones lævigata, squalide alba vel grisea, postice intus extusque violaceo maculata; latere antico lato, obtuso, postico declivi, plano, angulo obtuso inferne terminato; umbonibus tumidis, prominentibus, oblique cordatis; lunula areaque latis, ovatis, regulariter plicatis; valvis intus albis, cardine angusto, dentibus lateralibus brevibus, crassis, prominentibus, æqualibus; sinu pallii brevi, lato, subsemicirculari.*

*Hab.* Seas of China and Japan. Coll. Cuming and Deshayes.

7. **MACTRA CORNEA**, Desh. *M. testa magna, ovato-trigona, turgida, tenui, inæquilaterali, transversim tenue et irregulariter striata, squalide corneo-flavida, intus alba pallide violascente, zonulis saturatoribus interrupta; latere antico breviori, late obtuso; subsemicirculari, latere postico attenuato, superne longe declivi, recto, inferne obtuse angulato; margine inferiore regulariter convexo; lunula plana, indistincta, tenue striata; area elongato-lanceolata, excavata, angulo obtuso circumdata; umbonibus angustis, acutissimis, prominentibus, oblique incurvatis, violaceo-lividis; cardine lato, tenui; dentibus lateralibus lamellosis, latis, postico longiore, cardine proximo; sinu pallii brevissimo, lato, obtuso, basi dilatato.*

*Hab.* Chinese Sea. Coll. Cuming.

8. **MACTRA EXIMIA**, Desh. *M. testa ovato-transversa, æquilaterali, utroque latere æqualiter obtusa, lævigata, polita, epidermide decidua, flavescente vestita, pallide rufescente, eleganter albo multiradiata, radiis inæqualibus, inæqualiter distantibus; lunula magna, ovata, in medio carinata, areaque eleganter plicatis; umbonibus tumidulis, acutis, oppositis; valvis tenuibus, intus albis; cardine angusto; dentibus lateralibus magnis, lamellosis, inæqualibus, antico majore; sinu pallii brevissimo, lato, regulariter arcuato.*

*Hab.* Australia (Moreton Bay). Coll. Cuming.

9. **MACTRA MERA**, Desh. *M. testa ovato-trigona, turgidula, lævigata, nitida, inæquilaterali, corneo-flavicante, ad umbones rubescente, zonulis transversalibus saturatoribus, distanter interruptis, intus corneo-rufescente; latere antico paulo brevior, obtuso, superne declivi et convexiusculo; latere postico attenuato, valde declivi, umbones versus convexiusculo; umbonibus depressis, parum obliquis, approximatis, acutis; lunula areaque ovatis, tumidulis, regulariter plicatis; linea ventrali pallii latissima; sinu postico brevi, obtuso, ad apicem parum dilatato; dentibus lateralibus magnis, compressis, lamellosis, in valva dextra duplicatis.*

*Hab.* Chinese Sea. Coll. Cuming.

10. **MACTRA OBESA**, Desh. *M. testa ovato-trigona, inæquilaterali, crassa, tumida, cordiformi, antice obtusa, postice angulata, lævigata, alba, sub epidermide tenuissima griseo-flavescente, tenue et regulariter striata; umbonibus tumidulis, oblique cordatis; area lunulaque ovatis, regulariter striato-plicatis, planis; valvis crassis, intus albis; sinu pallii brevi, lato, semielliptico; dentibus lateralibus compressis, antico brevior, eminentiore.*

*Hab.* Torres Straits. Coll. Cuming and Deshayes.

11. **MACTRA MERETRICIFORMIS**, Desh. *M. testa ovato-trigona, inflata, turgida, cordiformi, inæquilaterali, lævigata, albo-grisea, apicibus atro-violacea, epidermide fusciscente, transversim striata, vestita, antice obtusa, postice angustiore, angulata; latere antico lato, plano, regulariter sulcato; area elongato-ovata, angulo obtuso circumdata, eleganter sulcata; umbonibus tumidis, prominentibus, oblique cordatis; valvis crassis, intus lilacinis; cardine*

*angusto, in medio prominentiore; dentibus lateralibus lamellosis, antico brevior et eminentiore; sinu pallii brevi, lato, vix inflexo.*  
*Hab.* Port Essington. Coll. Cuming.

12. *MACTRA CUVIERI*, Desh. *M. testa ovato-trigona, tenui, fragili, tumidissima, cordiformi, inæquilaterali, transversim irregulariter et obsolete striata, cuticula tenuissima, pellucida, flavescente vestita, alba, radiis rubescentibus, roseo maculatis picta; umbonibus tumidis, cordatis, involutis, oppositis, separatis; latere antico longiore, tumido, dilatato, obtuso; lunula magna, ovata, concaviuscula, tenue et regulariter striata; latere postico brevi, declivi, sensim attenuato, subrostrato, cuneiformi; area angustissima, elongata, impressa, duplici, sulco marginata; valvis tenuibus intus albis, in latere postico rufo-castaneo maculatis; cardine angusto, dentibus lateralibus lamellosis, brevibus, prominentibus; sinu pallii lato, brevissimo.*

*Hab.* Molluccas. Coll. Cuming.

13. *MACTRA ÆQUILATERALIS*, Desh. *M. testa triangulari, æquilaterali, tumida, lævigata, antice striata, albo-grisea, cuticula flavescente vestita, antice posticeque angulata, latere antico posticali subæquante, latere postico plano, lato, angulo acuto circumscripto; lunula permagna, depressa, areaque lævigatis; valvis crassis, intus nitidis, albo-griseis; cardine angusto, crasso, brevi; dente cardinali parvo, dentibus lateralibus crassis, brevibus, antico longiore; sinu pallii lato, profundo, semielliptico.*

*Hab.* New Zealand. Coll. Cuming.

14. *MACTRA SYMMETRICA*, Desh. *M. testa trigona, æquilaterali, turgidula, lævigata, nitida, ad marginem inferiorem transversim sulcata, pallide flavicante, lateribus æqualiter declivibus et attenuatis, superne convexiusculis, margine inferiore regulariter arcuato; lunula areaque æqualibus, eleganter striato-plicatis, plicis ad peripheriam abrupte terminatis; umbonibus minimis, acutis, oppositis, antice macula violacea notatis; cardine angusto, fossula brevi, lata, dentibus lateralibus subæqualibus, parum prominentibus; sinu pallii brevi, angusto, obtuso, horizontali.*

*Hab.* New Caledonia. Coll. Cuming.

### 3. DESCRIPTIONS OF TWO NEW SPECIES OF CLEMENTIA, IN THE COLLECTION OF HUGH CUMING, ESQ.

By G. P. DESHAYES.

1. *CLEMENTIA STRANGEI*, Desh. *C. testa ovato-subtrigona, oblique inæquilaterali, tenui, papyracea, candida, translucida, transversim regulariter intus extusque plicata et obsolete striata, antice brevi, lata, obtusissima, postice angustiore, obtusa; umbonibus prominulis, parum obliquis; lunula vix distincta, depressa; area angusta, sublævigata; sinu pallii elongato, triangulari, ad apicem convexiusculo, oblique ascendente.*

*Hab.* Australia (Moreton Bay). Coll. Cuming.

2. *CLEMENTIA MORETONENSIS*, Desh. *C. testa ovato-subtri-gona, turgidula, inæquilaterali, candida, opaca, calcarea, trans-versim irregulariter rugoso-striata, punctis confusis, irregulari-bus, dense aspersa; latere antico brevi, lato, obtuso, postico de-clivi, obtuso; umbonibus acutis, prominulis, obliquis; lunula de-pressa, ovato-oblonga, vix distincta; area profunda, levigata, angulo obtuso circumdata; valvis tenuibus, fragilibus, intus can-didissimis; sinu pallii maximo, trigono, basi late aperto, lateribus angulum fere rectum formantibus.*

*Hab.* Australia (Moreton Bay). Coll. Cuming.

February 8, 1853.

John Gould, Esq., F.R.S., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF SOME NEW SPECIES OF ENTOZOA FROM  
THE COLLECTION OF THE BRITISH MUSEUM.

BY W. BAIRD, M.D., F.L.S.

(Annulosa, Pl. XXX. XXXI.)

Class ENTOZOA.

Order NEMATOIDEA.

Family ASCARIDÆ.

Genus ASCARIS.

1. *ASCARIS SIMILIS*.

*Ascaris similis*, Baird, Cat. Entoz. Brit. Mus. 19. t. 1. f. 1.

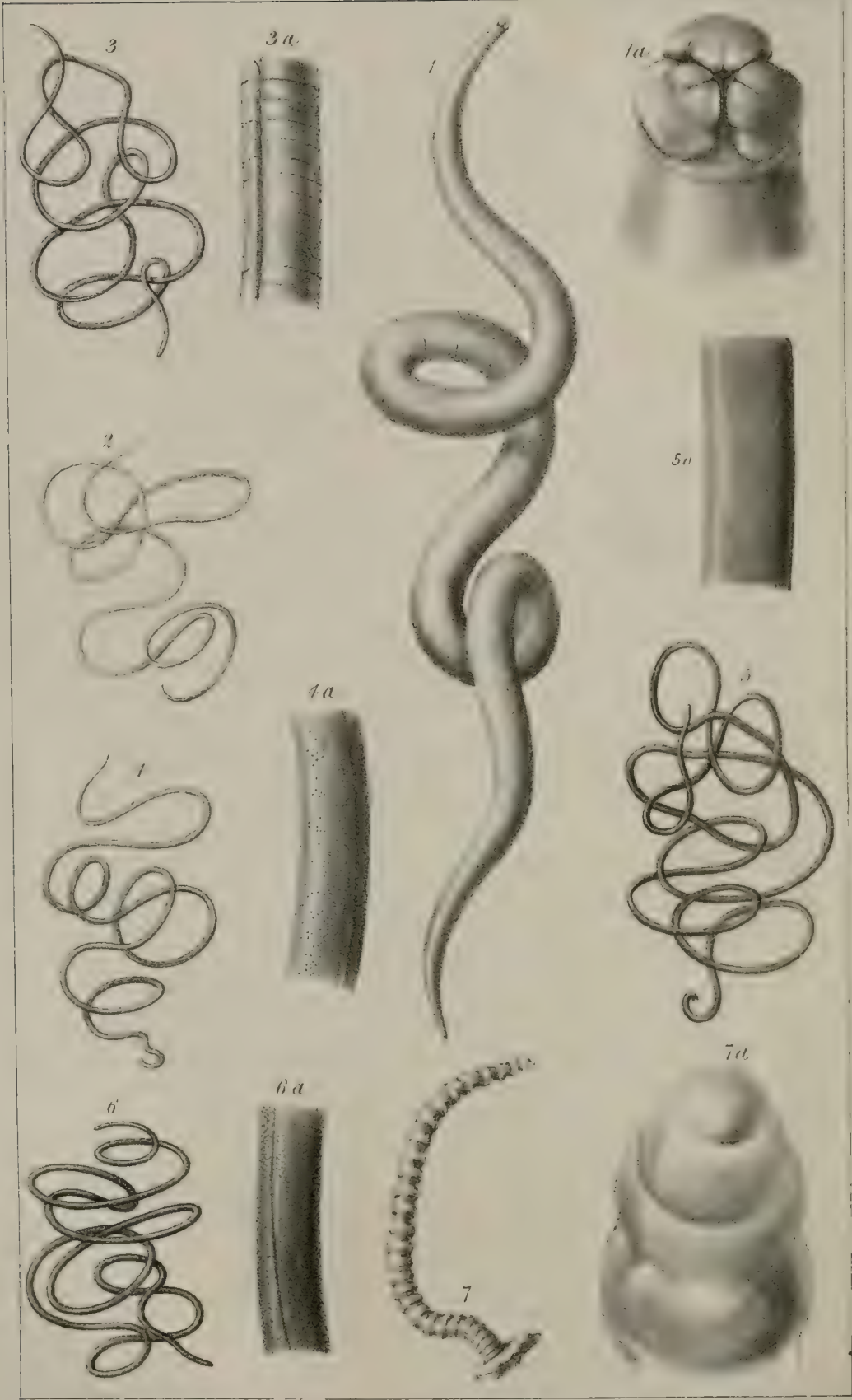
Head small; mouth with three small valves slightly projecting beyond the margin. Anterior portion of body much narrower than posterior. Tail rounded, thick, obtuse. Females spirally twisted in many convolutions; of a dark olive colour. Males straight to within a short distance of tail, which is inflected; of a whitish colour. Skin of body minutely and finely striated across. Wing extending along the whole length and becoming thicker and stronger at inferior extremity. Length of male 2 inches, breadth 1 line. Length of female  $1\frac{1}{2}$  inch, breadth  $\frac{3}{4}$  of a line.

This species resembles the *A. osculata* from the *Phoca vitulina*, but differs in having the wing stronger and thicker at inferior extremity, in having the head and mouth smaller, and in the skin of the body being finely striated across.

*Hab.* Stomach of a Seal from Antarctic Seas; collected during the late Antarctic expedition. Brit. Mus.







G.H. Ford, del.

Ford & West, Imp.

1. *Paranereis acuta* Baird. 2. *Mermis rigida* B. 3. *Cordius violaceus* B. 4. *C. pustulosus* B.  
 5. *C. sphaerura* B. 6. *C. fasciatus* B. 7. *Pentastema annulatum* B.

## 2. ASCARIS LÆVISSIMA. (Annulosa, Pl. XXX. fig. 1.)

*Ascaris lævissima*, Baird, Cat. Entoz. Brit. Mus. 25.

Head small, in form of a narrow circular rim; valves of mouth large and distinct, of a triangular shape, divided at the tip into two lobes, each of which again is broadly emarginate. Between each of the valves, at their base, is a small smooth tubercle or prominence. Body round, very smooth, of a rather dark olive colour, marked with numerous very fine smooth longitudinal lines, and occasional very distinct red circular lines at irregular distances; tapering at both extremities, narrower at posterior extremity. On each side of the body is a smooth narrow band of a lighter colour, which runs the whole length, and has the appearance at first sight of a wing, but is not raised. Length 10 inches; greatest breadth 4 lines.

*Hab.* —? India; from the Collection of General Hardwicke. Brit. Mus.

## 3. ASCARIS BIFARIA.

*Ascaris bifaria*, Baird, Cat. Entoz. Brit. Mus. 26. t. 1. f. 2.

Head rather small; valves rounded, wrinkled transversely and slightly bifid at the upper margin. Body round, much narrower at anterior than posterior extremity. Anterior third of body surrounded with numerous very close-set, circular, raised striæ. Remainder of body smooth, with the striæ not raised and about one-fourth of a line apart from each other, till within about half an inch of inferior extremity, which is large and obtuse, when it again becomes surrounded with numerous raised circular lines or striæ which give it a wrinkled appearance. The tail terminates in a papilla, and the anus is lunar-shaped and situate at the base of the papilla about half a line from the extremity. The whole surface, in addition to the raised lines or striæ, is covered with exceedingly fine and immensely numerous striæ. A line runs down each side of the body throughout its whole length. Length 9 inches, breadth 5 lines.

*Hab.* —? From Korea. Collected by Capt. Sir E. Belcher, C.B. Brit. Mus.

## Family GORDIIDÆ.

## Genus MERMIS.

## 1. MERMIS SPIRALIS.

*Mermis spiralis*, Baird, Cat. Entoz. Brit. Mus. 35. t. 1. f. 3.

About 7 inches in length and  $\frac{1}{2}$  mill. in breadth; of a red colour, rigid and twisted into many spiral convolutions. Anterior and posterior extremities obtuse. Body of equal size throughout and quite smooth.

*Hab.* Abdomen of a species of Grasshopper from Rio Janeiro. Brit. Mus.

## 2. MERMIS RIGIDUS. (Annulosa, Pl. XXX. fig. 2.)

*Mermis rigidus*, Baird, Cat. Entoz. Brit. Mus. 35.

Body of a light amber colour, smooth and very shining, narrow at upper extremity, very soon becoming thicker and terminating at

inferior extremity in an obtusely conical point. The animal is very rigid and stiff throughout its whole length. Length  $10\frac{1}{4}$  inches, breadth about  $\frac{1}{2}$  a line.

*Hab.* —? Coll. Brit. Mus.

## Genus GORDIUS.

### A. Body smooth.

#### 1. GORDIUS PLATYURA.

*Gordius platyura*, Baird, Cat. Entoz. Brit. Mus. 36. t. 1. f. 4.

Body of a uniform dull white colour, quite smooth, with a depressed line on one side throughout its whole length, obscurely ringed at unequal distances, narrower at anterior extremity and terminating in a broad flattish tail, which is slightly bifid. Length of animal 32 inches, breadth of middle portion of body about  $\frac{1}{2}$  a line; tail 1 line broad.

*Hab.* Jamaica? From the Collection of Sir Hans Sloane. Brit. Mus.

### B. Epidermis granulated.

#### 2. GORDIUS VERRUCOSUS.

*Gordius verrucosus*, Baird, Cat. Entoz. Brit. Mus. 36. t. 1. f. 5.

Body black, covered all over with innumerable small, raised warty papillæ, round and very stiff like a piece of wire. An impressed line runs on each side through the whole length. Head small. Anterior extremity narrower than posterior. Length 6 inches, breadth about  $\frac{1}{2}$  a line.

*Hab.* S. Africa? (Male). From the Collection of Dr. A. Smith. Brit. Mus.

#### 3. GORDIUS VIOLACEUS. (Annulosa, Pl. XXX. fig. 3.)

*Gordius violaceus*, Baird, Cat. Entoz. Brit. Mus. 36.

Body of a dark brown colour; apparently smooth, but under a high magnifying power completely covered with small flattish-looking papillæ, and ringed transversely with very slightly raised circular lines, about one-half or one-third of a millimetre apart from each other; tapering slightly at upper extremity, and gradually becoming thicker at inferior. Along the whole length of the body, on each side, runs a pretty deep sulcus or groove, interrupting the circular lines. Length 11 inches 3 lines, breadth about  $\frac{1}{2}$  a line.

*Hab.* Abdomen of *Carabus violaceus* from Berwickshire. Brit. Mus.

#### 4. GORDIUS PUSTULOSUS. (Annulosa, Pl. XXX. fig. 4.)

*Gordius pustulosus*, Baird, Cat. Entoz. Brit. Mus. 37.

Body of a light brown colour, not ringed across, completely covered with minute flattish-looking papillæ, and numerous larger raised dots or small warty protuberances intermixed, tapering considerably at superior extremity, and becoming gradually thicker towards the tail, which is obtuse and marked across with a deep indentation.

Along the whole length of the body runs a deep groove on one side only. Length  $8\frac{1}{4}$  inches, breadth  $\frac{1}{2}$  mill.

*Hab.* Abdomen of *Blaps obtusa*, from the neighbourhood of London. Brit. Mus.

When brought to the Museum it had just emerged from the *Blaps*, and was then 4 inches long and about the diameter of a horse-hair. It was placed in water and kept alive for a day or two, at the end of which time it had grown to double its original size, in both length and diameter.

5. *GORDIUS SPHÆRURA.* (Annulosa, Pl. XXX. fig. 5.)

*Gordius sphaerura*, Baird, Cat. Entoz. Brit. Mus. 112.

Male: nearly black, quite smooth, flattened throughout its whole length, and nearly of equal size throughout. Length 16 inches, breadth  $\frac{1}{2}$  a line.

Female: of a dark brown, smooth, but rather deeply notched across, the notched lines occurring now on one side, now on another, but never going quite round the body, and at times presenting an appearance as if it were divided into numerous segments. The body is of nearly equal size throughout its length till it reaches the tail, which is somewhat swollen and club-shaped. Length 14 inches, breadth about  $\frac{1}{2}$  line.

*Hab.* Khasyan Hills, India. Collected by Dr. Joseph Hooker. Brit. Mus.

6. *GORDIUS FASCIATUS.* (Annulosa, Pl. XXX. fig. 6.)

Body smooth, skin prettily shagreened with very fine lines crossing each other in opposite directions, of a light colour banded with broad patches of dark brown. Anterior extremity smaller than posterior, and roughened with raised circular ridges, which extend for about three lines, and as well as posterior extremity of a very dark colour, almost black. Length  $11\frac{1}{2}$  inches, breadth about 1 millimetre.

Only one specimen ♀.

*Hab.* N. America. Brit. Mus.

Order ACANTHOTHECA.

Genus PENTASTOMA.

1. *PENTASTOMA MEGACEPHALUM.*

*Pentastoma megacephalum*, Baird, Cat. Entoz. Brit. Mus. 39. t. 2. f. 1.

Female: body yellowish white, somewhat depressed and terminating anteriorly in a large, thick, club-shaped head. The dorsal surface is depressed at the edges, rounded and very prominent in the centre and transversely ridged. The ventral surface is more flattened, ridged and wrinkled; with the mouth in a hollow depression, surrounded by four strong, brown, simple hooks. The part of the body immediately beneath the head is very strongly ridged

transversely, each of the first six ridges being wavyly wrinkled. The length of the whole body is about 11 lines. The head is 5 lines broad, and the middle portion of the body about  $3\frac{1}{2}$  lines, diminishing in size towards the tail. The oviduct is very long, the portion outside the body being 2 inches in length.

Male? Longer than female, about 14 lines long; covered with a smooth skin which is slightly ridged across, and has at its inferior extremity a small sharp papilla, about  $\frac{3}{4}$  of a line in length and brown at the tip (the penis?). The inferior extremity is rounder than in the female, but otherwise the form of the animal is nearly the same.

*Hab.* Imbedded in the flesh of the head of a Soonderbund Crocodile, *Crocodilus palustris*, from India. Brit. Mus.

## 2. PENTASTOMA ANNULATUM. (Annulosa, Pl. XXX. fig. 7.)

*Pentastoma annulatum*, Baird, Cat. Entoz. Brit. Mus. 113.

Body white, elongate-cylindrical, nearly of the same size at each extremity, strongly ringed; rings raised, about twenty-eight in number, one line distant from each other. A dark blue line runs through the whole length of body on one side. Circumference of body 5 lines, length of body  $2\frac{1}{4}$  inches.

*Hab.* In the lungs of the Egyptian Cobra, *Naja Haje*. Collection of Dr. Crisp.

## Order TREMATODA.

### Genus DISTOMA.

#### 1. DISTOMA MICROCEPHALUM.

*Distoma microcephalum*, Baird, Cat. Entoz. Brit. Mus. 58. t. 2. f. 2.

Body of an elongated oval or lanceolate shape, of a slightly yellowish white colour, plicated transversely, the folds being very fine; head narrow, obtuse, separated from the body by a contraction; posterior extremity obtusely lanceolate; dorsal surface slightly convex; ventral surface nearly flat or somewhat concave; anterior sucker small, terminal; ventral sucker larger, round, prominent, surrounded by an elevated thickened edge, and situated within 3 millimetres of the former; organs of generation placed half-way between the two suckers in the form of an elevated papilla. Length from 6 to 8 lines, greatest breadth  $1\frac{1}{2}$  line.

*Hab.* Stomach of the spinous Shark, *Acanthias vulgaris*, from Falmouth Harbour. Brit. Mus.

## Order CESTOIDEA.

### Genus TETRARHYNCHUS.

#### 1. TETRARHYNCHUS RUGOSUS.

*Tetrarhynchus rugosus*, Baird, Cat. Entoz. Brit. Mus. 69, t. 2. f. 3.

Body flattish, thick, exceedingly rugose, almost tuberculated, the rugæ extending right across the body, which is of a white colour.

Head conical, thicker than the body and about one-fifth the length of it. Bothria inversely heart-shaped (the broader part being at the lower margin), deep, divided at the bottom by a narrow septum; edges thick and raised. Proboscides round and club-shaped at their tips. Inferior extremity of body, as it were, truncate. Total length (in spirits)  $10\frac{1}{2}$  lines, breadth of head  $2\frac{1}{2}$  lines, of lower part of body 3 lines, bothria 2 lines in length.

In one specimen the head is much broader than the inferior extremity of the body, being about 3 lines broad, while the inferior extremity is only 2 lines and is terminated by a heart-shaped appendage of about  $1\frac{1}{2}$  line long and of a light-rose colour (the male?).

*Hab.* Taken alive from the lower intestine of a salmon. Brit. Mus.

## 2. TETRARHYNCHUS STRANGULATUS.

*Tetrarhynchus strangulatus*, Baird, Cat. Entoz. Brit. Mus. 69, tab. 2. f. 4.

Body flat, of a light yellowish colour, thickish, elegantly and minutely striated across and marked with slight longitudinal sulci, which run the whole length of the body. The head is narrower than the portion of the body which immediately succeeds it, is about 4 lines in length, longitudinally sulcated on the sides, smooth on the two faces, and distinctly separated from the body by a contraction which gives the appearance, as it were, of a shoulder to the commencement of the body. The bothria are shallow, oval-shaped and divided at the bottom by a septum, which, at about the half of its length, divides into two portions; the edges are raised and thickened. Proboscides short and stout; the inferior part of the body terminates in a blunt conical papilla. Length from  $1\frac{1}{2}$  to  $2\frac{3}{4}$  inches; breadth from 2 to  $3\frac{1}{2}$  lines.

*Hab.* ———? From Chusan. Brit. Mus.

## Genus TÆNIA.

### 1. TÆNIA BREMSERI.

*Tænia Bremseri*, Baird, Cat. Entoz. Brit. Mus. 73, t. 2. f. 5.

Head of a moderate size, surrounded with a double crown composed of upwards of twenty small hooks; neck very short. Articulations of body numerous, at first very small and nearly oblong, gradually enlarging in size as they descend, and becoming campanulate. They are marked with numerous fine transverse lines, which again are crossed by several strong longitudinal lines or grooves. The inferior angles of each joint are slightly prolonged into a point, and the margin is somewhat thickened (especially in the lower joints of body) and undulately waved or slightly scalloped. Orifices of ovaries irregularly alternate. Length of specimens about 7 inches; greatest breadth about  $2\frac{1}{2}$  lines.

*Hab.* In the Crocodile of the Soonderbund, *Crocodylus palustris*, from Bengal. Brit. Mus.

2. *TÆNIA CALVA*. (Annulosa, Pl. XXXI. fig. 1.)

*Tænia calva*, Baird, Cat. Entoz. Brit. Mus. 83.

Head small, rounded and smooth, white and shining. Mouth unarmed. Neck constricted. Articulations of body at first very small, gradually enlarging in breadth as they descend till they reach about the middle of the body, where they are still narrow, linear-shaped and about seven times broader than long. After this they begin to increase in length and diminish in breadth, becoming at first nearly square, and at last, near the extremity, nearly twice as long as broad. All the articulations are strongly striated across, and the upper and lower margins, where they join with each other, are considerably thickened. Length  $5\frac{1}{2}$  inches, greatest breadth  $3\frac{1}{2}$  lines, breadth of lower extremity 1 millimetre, of head  $\frac{1}{8}$ th of a mill.

*Hab.* Intestines of the common Grouse, *Lagopus Scoticus*. Brit. Mus.

3. *TÆNIA GOEZII*.

*Tænia Goezii*, Baird, Cat. Entoz. Brit. Mus. 78.

Articulations of body very short and numerous. Inferior margins straight. Genital orifices opposite, situated on or near the lower edge of each joint; the lemniscus projected out in form of an elevated papilla which curves downwards. Unfortunately the head is wanting. Greatest breadth of body 6 lines, length of articulations about  $\frac{1}{2}$  a line.

This species differs from *T. expansa* and *denticulata* (to which species it approaches) in having the posterior or inferior border or edge of each articulation smooth and rounded, instead of being crenulated or undulated; and in having the genital orifices situated on the lower edge of the articulation, instead of in the middle.

*Hab.* —? Brit. Mus.

4. *TÆNIA ZEDERI*. (Annulosa, Pl. XXXI. fig. 2.)

*Tænia Zederi*, Baird, Cat. Entoz. Brit. Mus. 85.

Articulations of body of moderate size, campanulate-shaped, lower margins of each more or less crenated and thickened; at first they are short, they then become longer and narrower as they descend. The greatest breadth is about 2 lines. The whole body is of a yellowish-white colour. Unfortunately the specimens are imperfect at the upper extremity and want the head. The orifices of the genital organs are irregularly alternate.

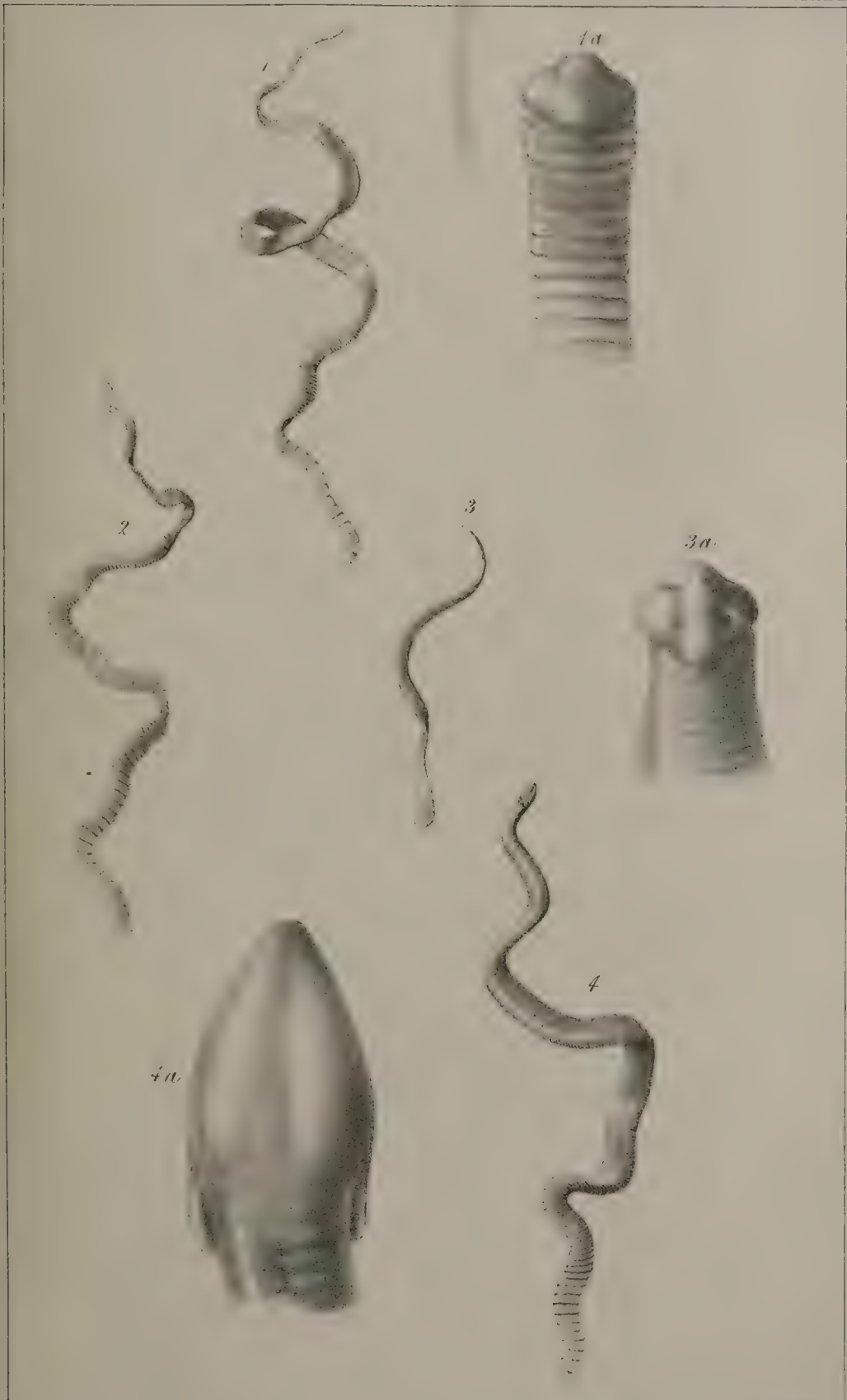
*Hab.* Stomach of a Penguin from the Antarctic Seas. Collected during the late Antarctic expedition. Brit. Mus.

5. *TÆNIA FALCIFORMIS*. (Annulosa, Pl. XXXI. fig. 3.)

*Tænia falciformis*, Baird, Cat. Entoz. Brit. Mus. 116.

Head conical; proboscis unarmed?; suckers large, oval-shaped; no neck; body at anterior extremity very narrow, almost linear, gradually enlarging as it descends; articulations very numerous, extremely narrow. The body is flat and is curved like a sickle.





1 *Taenia calva* Baird 2 *T. Zederi* B. 3 *T. falciformis* B. 4 *Bothrioccephalus antarcticus* B.



Genital orifices —? Length about  $2\frac{1}{4}$  inches, breadth at broadest part 1 line.

*Hab.* —? Collected during the Euphrates expedition. Brit. Mus.

#### Genus BOTHRIOCEPHALUS.

#### 1. BOTHRIOCEPHALUS ANTARCTICUS. (Annulosa, Pl. XXXI. fig. 4.)

*Bothriocephalus antarcticus*, Baird, Cat. Entoz. Brit. Mus. 90.

Head conical, elongated, smooth, with two lateral opposite fossettes. At the lower margin of each fossette there are two small rounded projecting lobes. Body rounded; from the neck someway downwards it is quite round or cylindrical, and the articulations are very numerous and very small, appearing like mere ridges across. Lower down, the body becomes flatter and the joints larger and more developed; lower margin thin. An impressed line runs along the centre of the body through its whole length. Length about 9 inches, greatest breadth of body about 3 lines.

*Hab.* In the stomach and intestines of a Seal caught about and within the Antarctic Circle. Collected during the late Antarctic Expedition. Brit. Mus.

#### EXPLANATION OF THE PLATES.

##### PL. XXX.

- Fig. 1. *Ascaris lævissima*, Baird:—nat. size. 1 a. Head:—magnified.  
 Fig. 2. *Mermis rigidus*, Baird:—nat. size.  
 Fig. 3. *Gordius violaceus*, Baird:—nat. size. 3 a. Portion of body:—magnified.  
 Fig. 4. *Gordius pustulosus*, Baird:—nat. size. 4 a. Portion of body:—magnified.  
 Fig. 5. *Gordius sphaerura*, Baird:—nat. size. 5 a. Portion of body:—magnified.  
 Fig. 6. *Gordius fasciatus*, Baird:—nat. size. 6 a. Portion of body:—magnified.  
 Fig. 7. *Pentastoma annulatum*, Baird:—nat. size. 7 a. Head:—magnified.

##### PL. XXXI.

- Fig. 1. *Tænia calva*, Baird:—nat. size. 1 a. Head:—magnified.  
 Fig. 2. *Tænia Zederi*, Baird:—nat. size.  
 Fig. 3. *Tænia falciformis*, Baird:—nat. size. 3 a. Head:—magnified.  
 Fig. 4. *Bothriocephalus antarcticus*, Baird:—nat. size. 4 a. Head:—magnified.

#### 2. DESCRIPTION OF THE ANIMAL OF CYCLINA SINENSIS.

BY DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S.

The description of this animal was written some ten or twelve years ago, from a specimen kindly given to me by Mr. John Reeves, to whom we are indebted for the knowledge of the greater part of the animals of China and Japan now known to zoologists.

The animal in most particulars agrees with that of the genus *Dosinia*, next to which I proposed to place it, in my paper on the arrangement of the genera of *Veneridæ*, published in the 'Annals and Magazine of Natural History' for January 1853.

M. Deshayes regards *Venus Chinensis* as the type of the genus

*Cyclina*. In his late monograph he has united to this genus the *Lucinopsis* of Messrs. Forbes and Hanley; but the description of the animal here given will show that *Lucinopsis* is a very distinct genus, for it has separate siphons, whilst the type of the genus has the siphons united as in the other *Dosiniana*. It differs from *Dosiniana* in the absence of the anterior lateral tooth.

CYCLINA SINENSIS.

Mantle lobes free the whole length of the lower margin, the lobes then with a series of radiating muscular bands, a little within the edge; united together behind and extended into a compressed, rather slender, elongated siphon, grooved along the centre of each side and ending with two apertures; the retractor muscles of the siphons angular; the foot (in spirits) rhombic, very much compressed, inferior, subcentral, the lower angle rather produced in front; the lips equal, very long, slender, triangular, more than half the length of the foot; the gills large, oblong, elongate, equal.

The crenated margins of the valves of the shell are covered with the inflexed edge of the hard periostraca; the siphonal inflection is angular.

3. MONOGRAPH OF THE GENUS *ÆGOSOMA*, SERVILLE, WITH THE DESCRIPTION OF A NEW GENUS AND SPECIES ALLIED TO IT.

By ADAM WHITE, F.L.S.

The genus *Ægosoma* was formed by M. Serville for the reception of a longicorn beetle, first described by Scopoli under the name of *Cerambyx scabricornis*. In this genus the head is produced behind the eyes into a kind of neck, unlike its congeners, which have the head retracted into the thorax as far as the eyes. The prothorax is trapezoidal and contracted in front; the ovipositor of the female is long and prominent; the antennæ in the males are rough, in the females smooth.

The larva of the European species is found in the trunks of various kinds of trees; the perfect insect, according to M. Mulsant, appears at Lyons in the month of July, and is active at night. M. Serville alludes to a second species, which he had seen in the collection of M. Dejean, where it bore the name *Æg. affine*; in the following little monograph will be found descriptions of five new species, all contained in the collection of the British Museum.

ÆGOSOMA.

*Ægosoma*, Serv. Ann. Soc. Ent. Fr. i. 162.—*Cerambyx*, p. Scop.—*Prionus*, p. Fabr.

1. *ÆGOSOMA SCABRICORNE*.

*Cerambyx scabricornis*, Scop. Ent. Carn. 54.

*Prionus scabricornis*, Fabr. Syst. El. ii. 258; Oliv. Col. iv. t. 11. f. 42. ♀; Latr. R. A. v. p. 108.

*Ægosoma scabricorne*, Serv. Ann. Soc. Ent. Fr. i. 163; Mulsant, Col. de France, i. p. 24.

*Hab.* Europe. Coll. Brit. Mus.

2. *ÆGOSOMA SINICUM*, White. *Æg. nigro-brunneum*, *thorace medio postice recto, scutello apice subelongato*.—Long. lin. 18.

*Hab.* Shanghai, N. China (*Mr. Fortune*). Coll. Brit. Mus.

There is a female of this species in the Museum; it comes from Shanghai, and differs but little from the corresponding sex of the *Ægosoma scabricorne*; it is of a darker brown, the posterior margin of the thorax over the scutellum is straight, and not slightly notched as in that species; the scutellum also is more pointed.

3. *ÆGOSOMA ORNATICOLLE*, White. *Æg. capite et thorace nigris, verrucis minutis scabriusculis; thorace plagis quatuor pilis aureis tectis; elytris obscure ferrugineo-brunneis, sutura (apice spinigera) margineque nigris; antennarum articulis tertio quarto et quinto basi asperis*.—Long. lin. 25.

*Hab.* E. Indies. Coll. Brit. Mus.

Head black, covered with small warts, with a smooth line down the middle, ending in a small smooth depression in the space between the antennæ. Mandibles strongly punctured, tips and inner edge smooth: antennæ with the basal joint thickly covered with small warts; the third, fourth and fifth scabrous, the projections more distant from each other than they are on the basal joint; sixth and following joints short and smooth. Thorax thickly covered with small warts, with four small spots covered with golden yellow hairs; two of these spots on the fore-margin, two on the posterior margin, somewhat more distant from each other than the two fore ones; the hairs are all more or less directed towards the centre of the spot. Elytra smooth, dull ferruginous brown, the suture and margins black, the suture spined at the apex.

4. *ÆGOSOMA MARGINALE*.

*Cerambyx marginalis*, Fabr. Syst. El. ii. 280.

*Hab.* China, Hong Kong (*J. C. Bowring, Esq.*); Cape of Good Hope (*Fabr.*). Coll. Brit. Mus.

5. *ÆGOSOMA CINGALENSE*, White. *Æg. antennarum articulis tertio et quarto scabriusculis et breviter pilosis; thorace spina brevi laterali, dorso excavato; elytris costatis pilisque flavescenscentibus tectis, sutura apice mutica*.—Long. lin. 17–20½.

*Hab.* Ceylon. Coll. Brit. Mus. and Capt. Parry.

Head between and behind the eyes more or less covered with decumbent yellowish hairs; antennæ with the basal joint scabrous and punctured; third joint very long, slightly curved, somewhat rough, and rather thickly covered with short yellowish hairs; fourth joint as long as the fifth and sixth joints taken together, somewhat bent, rather rough, and covered with short yellowish hairs, except at the tip, which is smooth: the fifth and following joints without hairs. Thorax with the sides angled, the angle terminating in a

small sharpish spine; the posterior edge margined; middle of the back hollowed out, sides somewhat nodulose; surface punctured and more or less thickly covered with yellowish adpressed hairs. Scutellum with yellowish adpressed hairs. Elytra very long, rather flat, with two or three not very prominent costæ, and rendered less distinct by the yellowish adpressed hairs which more or less thickly cover the surface; end of the elytra gradually rounded off; suture without a spine. Abdomen beneath smooth, shining. Legs compressed, somewhat scabrous, brown, with shortish yellow hairs.

6. *ÆGOSOMA SULCIPENNE*, White. *Æg. thoracis lateribus subparallelis; elytris tricostatis, apice spina suturali, costis duabus interioribus post medium confluentibus, ad apicem intus curvatis; antennis lævibus, cinnamomeis.*—Long. lin. 10–11½.

*Hab.* E. Indies, Tenasserim (*J. D. C. Packman, Esq.*). Coll. Brit. Mus.

Head smooth, not grooved down the middle, chestnut-brown, with some scattered short yellowish hairs; antennæ smooth, cinnamon-brown; first joint strongly punctured. Thorax straight in front, the sides nearly parallel, the posterior angle somewhat projecting; the surface slightly scabrous, and rather closely covered with short golden yellow hairs. Elytra with three prominent keels, the two inner confluent beyond the middle of the elytra and continued in a single keel, which is bent inwards near the tip; the outer keel somewhat waved and slightly curved at the end; in the space between it and the other there is a shorter and less distinct keel, which about the middle of the elytra passes into small tubercles; the shoulders and sides of the keels and the spaces between them at the base are more or less covered with small tubercles; the spaces between the keels have many short golden yellow adpressed hairs. The spine at the end of the suture is sharp, as is the outer margin of the elytra. Legs compressed, brown.

7. *ÆGOSOMA TIBIALE*, White. *Æg. thoracis lateribus unispinosis, angulis posticis acutis, fere spinosis; elytris lævibus, costa media distincta, alteraque ad suturam abbreviata; suturæ apice spinoso; tibiis crassis, tarsis angustis.*—Long. lin. 18½.

*Hab.* N. India. Coll. Brit. Mus.

Head short, slightly grooved between the eyes, under side of head rough. Antennæ with the first, second, third and fourth joints thickly covered with small warts. Thorax with a spine on the lateral edge about the middle, separated from the produced, somewhat reflected posterior angle by a rounded sinus; surface covered with small warts and outstanding inconspicuous hairs. Scutellum punctured, with a raised line in the middle of the base. Elytra smooth, dark brown, with a distinct costa running nearly to the tip, and another between that and the suture, vanishing about the middle of the suture; elytra rounded at the tip, the suture with a short spine. Legs with the femora and tibiæ thick, the tarsi narrow.

## CYRTONOPS, White, n. g.

Head with largish eyes, which are hardly if at all emarginated. Palpi long, with the terminal joint nearly twice the length of the preceding, obliquely truncated at the tip and covered on each side with shortish hairs\*. Antennæ cylindrical, covered with small hairs, third joint not much longer than the fourth. Thorax rather wider than long, the sides angulated. Elytra with the sides nearly parallel. Legs simple; tibiæ compressed, and more or less thickly covered with short hairs.

CYRTONOPS PUNCTIPENNIS, White. *C. brunneo-cinnamomeus, pilis brevibus erectis flavis tectus; thorace punctato; scutello pilis adpressis tecto. Elytris obscure tricostatis profunde punctatis, punctis longitudinaliter ordinatis.*—Long. lin. 9–11.  
*Hab.* India. Coll. Brit. Mus.

Of a rich cinnamon-brown, closely covered with short erect yellowish hairs. Thorax irregularly punctured, the punctures running into each other and sometimes leaving small smooth spaces. Scutellum rounded at the end, covered with short hairs, which lie close to the surface. Elytra with three rather indistinct longitudinal costæ; surface, except at the tip, with many deep punctures, more or less regularly arranged in lines; between these are smaller punctures, from which proceed the hairs.

#### 4. NOTES ON THE BOVINE ANIMALS OF THE MALAY PENINSULA. BY GEORGE WINDSOR EARL.

1. The Sapi, or Wild Ox of the Malay Peninsula, was scarcely known to exist until 1850, when Dr. Oxley, and a hunting-party from Singapore, killed a young cow on the banks of the Muah River. He described it as 6 feet 2 inches high at the shoulder, from hoof to dorsal vertebræ; back curved, highest about the centre. Horns small, curved inwards, white, tipped with black. Forehead flat, with tuft of long hair, large in the bulls. Hair smooth and silky. Colour brown, with white about the feet. Mane 2 inches long, running along the entire back. No dewlap. The bulls are from 7 to 7½ feet high. The flesh is described as delicious. Calves could be obtained with a little trouble, but I suspect it would be difficult to get a full-grown animal; but he would be worth something if caught.

2. The Saladang, another species of wild cattle, is even less known than the Sapi, as no specimen has yet been shot by Europeans. It seems to me to be a sort of Bison, or *Bos Gaurus*. The males are 10 feet high at the shoulder, and they are altogether fiercer and more formidable than the Sapi, but not so graceful. In my opinion it would be worth while for the Zoological Society to send a man out expressly for the purpose of bringing home specimens of these two

\* In one of the specimens there is a curious malformation of the palpi; from the third joint proceed two longish hairy joints, one of them bent.

beasts. The Muah River, where both varieties abound, would be the best spot to seek them; and Inchi Basow, a Malay chief who takes great delight in hunting, would soon procure live specimens of each at a small expense.

3. The Water Buffalo does not seem to be known in England, although it is common all over the Archipelago. The larger specimens stand 7 feet at the shoulder, sometimes more. Barrel very large. Legs short and strong. Skin black and wrinkled, and almost hairless, like that of the Elephant. It is amphibious, and has been known to swim across straits as wide as the Channel at Dover; in fact, the way the head is set on the body, with the nose up, and the horns lying along the back, shows that it is more adapted for the water than the land, although it is an excellent draught animal, and at Singapore supplies the place of the Elephant.

4. The Domestic Ox of Bali and Lombok, a large, sleek, thin-skinned species, as graceful as the Antelope. This would be very much admired in the Gardens. Specimens can be obtained at Singapore, but it would be better to get them from Lombok, whence ships now come direct to England with cargoes of rice. Mr. Lange of Bali Badong (merchant) would, I have no doubt, forward specimens at a trifling cost.

5. EXTRACTS FROM A LETTER BY MR. H. CHURTON, RESPECTING COLLECTIONS IN NEW ZEALAND. COMMUNICATED BY MR. J. STEVENS.

Wanganui, July 24, 1851.

You can form no idea of the great trouble and expense attending a journey such as you recommend in search of the Notornis. In the first place, the nature of the country is such, that it is almost impossible to penetrate in search of anything; they can only be obtained by the merest chance, or from the natives. In most of the places where birds are to be obtained you cannot proceed without cutting your way, and the fern and shrubs are so thick and high, that if a bird rises close to you you cannot see it. This is the case with the Pakeko. I have been frequently in places abounding with them and not got a shot, though they were flying all about me; the Notornis being of similar habit will be equally difficult to obtain. In the next place, I should have to charter a small vessel for two months at least, to take tents, provisions, &c. for myself and men, to be away from home for perhaps three months, and all for the very slight chance of meeting with a very rare bird: perhaps ten years ago, when I did not mind moving, I might have gone, but now I am snug and comfortable here there is no chance of it; so for me the Notornis must remain.

There are *no positively authentic* accounts of living Moas. I have paid some attention to the subject, and have heard nothing yet *that can be relied on*. I think it possible that one species (not the largest) may yet be discovered in the Middle Island, but it will probably be some time first, as even the discovery of that bird will hardly pay a



man for undergoing such fatigue and danger as would be necessary if a person went in search for it. See Mr. Brunner's journal, who was eighteen months exploring about 150 miles, and who, had it not been for his native companions, must have been starved if he had twenty lives.

The Kakapo is now pretty well known; it appears to be tolerably abundant on the Middle Island, though probably quite or nearly extinct on this. I have seen several specimens, and the Acheron steamer on her late expedition I believe obtained a great many, as well as Kiwis, so that, on her return to England, I suppose there will be plenty.

I have had *good accounts* from the natives of a very large Kiwi existing within their memory, but now supposed to be extinct on this island; it is represented as being at least four feet high. Perhaps that may be still found on the other island. There are also names for five or six other good-sized ground birds, such as large rails, &c., lately existing here, but since the introduction of so many dogs and cats, supposed to be extinct. One was shot the other day near the town, of a species of which I had seen but one specimen previously; it may be *Rallus assimilis*, but I have not the skins to compare. There is also, about thirty miles from here, a very pretty little duck or teal, which is not described. These are the only novelties I have seen since my return. I have had several Kiwis brought me, and also a few eggs; I had one for breakfast, which was very good and quite enough for one. I sent one last year to the British Museum.

I have made many inquiries about the extinct native rat, but there are certainly none now to be obtained, though formerly they were so numerous as to form a principal article in feasts, and were considered a very great delicacy; they lived on berries, &c., and were like lumps of fat; it is possible they were a kind of opossum rather than a rat. The last were seen here about ten years ago; but the cats and rats, of which the woods are now full everywhere, have destroyed them all. I think there are two kinds of native mice here; one, a sort of shrew, which my dog formerly often caught in the swamps, but which I have not seen lately; another, a little blackish one, found about fields and gardens; this one I have only seen since my return. The natives do not know it, and confound it with the common house mouse, but I do not think it can be an introduced species, as in that case it would scarcely so quickly be found in thousands over so large a tract of country as that in which it was observed last year (I have seen none lately), but rather believe it to be an indigenous species, which from some unknown cause appeared for a short time in astonishing numbers, and then as strangely disappeared.

Insects are so very few, that they are really not worth the great trouble of looking after. I have seen no new species since my return. I know of only five or six butterflies. The largest land shell *here* is a flat snail, about a quarter of an inch in diameter.

6. ON THE DIVISION OF CTENOBranCHOUS GASTEROPODOUS MOLLUSCA INTO LARGER GROUPS AND FAMILIES.  
 BY DR. J. E. GRAY, F.R.S., V.P.Z.S. ETC.

Cuvier, Dumeril, and Lamarck separated the Gasteropodous Mollusca with pectinated or comb-like gills, into two divisions, according as they possessed or were without a siphon to facilitate the admission of water to their gills, probably being influenced by preceding conchologists, who had in a similar manner divided the spiral shells into those which had an entire, or an emarginated, or a channelled mouth. Lamarck called those with a siphon *Zoophaga*, and those without it *Phytophaga*, believing the food of the molluscs to be indicated by the form of the mantle. As we have become more acquainted with the habits of the Mollusca, it has been observed that many of the animals without any siphon to the mantle, as *Natica*, *Scalaria*, *Ianthina*, &c., are quite as carnivorous as those which have the siphon most perfectly developed; on the other hand, Lamarck found it requisite to arrange many genera, as *Cerithium*, *Melanopsis*, *Planaxis*, &c., with the *Phytophaga* with entire mouths, though the animals have as well-developed siphons, and the shells as distinct a canal or siphonal notch, as any of the genera of Zoophagous Mollusca. These divisions, however, have been almost universally adopted. Dr. Lovén, in his paper on the Scandinavian Mollusca and on the Tongues of these animals, divided the Gasteropoda into natural families independent of these divisions, and Dr. Troschel in his arrangement of Mollusca has followed the same course, separating the families into groups according to the structure of their tongues. The observations which Dr. Troschel made on the arrangement which I published in Mrs. Gray's work, 'Figures of Molluscous Animals,' have induced me to reconsider the subject, consult again all the authorities, and examine the tongues of the molluscous animals which have been lately received at the Museum collections.

Being impressed with the importance which Dr. Lovén attached to the form of the mouth, I was induced to pay attention to this character, and I believe that it affords a much more natural means of separating the families into two great groups, than the presence or absence of the siphon of the mantle, and one which appears to be more consistent with the habits of the animal and much less liable to exceptions. I may observe in passing, that some of the French zoologists do not appear to have been impressed with its importance, for MM. Quoy and Gaimard in some few instances erroneously represent some of the species of a genus, a *Murex* and *Terebra* for example, as having a rostrum, while the greater part of the species are properly represented without it, and as having a proboscis; and the same may be remarked of some of the more modern figures of these animals.

I fully expect that many naturalists, especially those who have chiefly confined their studies to the external form of the shell or to the fossil species, will consider that the system here proposed is very artificial, as it separates from one another many genera and families which they have regarded as being very nearly allied, or as belonging

to the same family or even genus. But it must be recollected that this was the case when first the study of the animal was undertaken, yet no one now objects to the terrestrial *Helices* and *Bulimi* being separated from the sea shells which were formerly arranged with them, or the *Bullæ* from the other marine families, and we must expect that the more the structure of the animal becomes known, the more the genera founded only on the shells will become separated and dispersed.

In drawing up the characters of the suborders and families, I have attempted to select those which appeared most permanent, or least subject to variation. In all animals, as a general rule, those organs by which they obtain their food belong to the first class; hence the characters of the suborder and its divisions have been taken from the form of the mouth and the disposition and form of the teeth on the lingual membrane, as I have no doubt these parts have a most important bearing on the œconomy of the animal; while the characters of the families have been taken from modifications of the mantle and differences in the structure and form of the operculum and shell; for though I consider that the characters of the order, suborder, and families should be chiefly taken from modifications of the animal, I always consider that the shell and operculum are quite as important as regards the genus, as the animal which forms them.

**Suborder I. PROBOSCIDIFERA.** Head small, with an elongated, retractile, more or less exsertile proboscis, when retracted hidden within the body; tentacles close together at the base or united by a veil over or around the base of the proboscis; eyes sessile, on the outer base of the tentacles; operculum annular (except in *Natica*). Carnivorous, eating living mollusca and other animals.

The trunk or proboscis is of a very complicated structure, and furnished with a number of muscles, well described by Cuvier in his anatomy of *Buccinum*, which enable it to be withdrawn into itself like the tentacles of a snail. These animals are said to form the round holes so commonly found in other shells, and the lingual membrane is placed near the apex of the exerted trunk.

In *Cassidulus* the head is conical, produced, annulated like a proboscis, with tentacles at the tip, close together at the base; the proboscis is completely retractile.

**Suborder II. ROSTRIFERA.** Head moderate, with a more or less elongated, produced, contractile, transversely annulated rostrum; tentacles subulate, far apart on the side of the rostrum. Essentially phytophagous; the rostrum is only furnished with contractile muscles, and varies in length and shape; in *Struthiolaria* it is very long and conical subulate, but it is not retractile like those of the former suborder; the rostrum of the *Strombi* is also elongated, while in some other families it is short and truncated, but it is always easily known from the retractile proboscis of the former group; the lingual membrane is often very long, extending far into the body of the animal.

The families are the same as those characterized in the 'Figures of Molluscous Animals,' vol. iv. 1850, only placed in different order,

to show the characters afforded by the teeth; some new ones, rendered necessary by the examination of the teeth of some genera, which had not before been described, are added.

### Suborder I. PROBOSCIDIFERA.

*A. Hamiglossa.* Teeth on lingual membrane in three series (1·1·1), the central broad, the lateral versatile (figs. 1-4).

Fam. 1. MURICIDÆ. Head truncated; tentacula moderate; lateral teeth flat, with a bent-up process at the end more or less at right angles with the base; siphon of mantle and canal of shell straight; foot simple in front; mantle enclosed; pillar lip smooth (fig. 1).

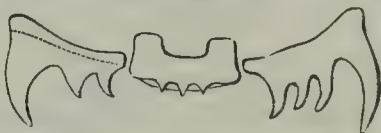


Fig. 1.—*Chrysodomus antiquus*.

a. *Muricina*. Operculum ovate; nucleus subapical within the apex; varices of shell developed. *Murex*, *Trophon*.

b. *Fusina*. Operculum ovate, acute; nucleus apical; varices of shell rudimentary or none. *Pisania*, *Colus*, ?*Latirus*, *Chrysodomus*, *Clavella* (*Cyrtulus*).

?c. *Pusionellina*. Operculum semiovate; nucleus in middle of the straight inner edge. Teeth —? *Pusionella*.

d. *Rapananina*. Operculum ovate, blunt; nucleus elongate, forming the outer or hinder edge. *Rapana*, *Rhinochilus*, *Chorus*, *Cuma*.

Fam. 2. BUCCINIDÆ. Head truncated; tentacula moderate; lateral teeth flat, with a bent-up process at the end more or less at right angles with the base; siphon of mantle and canal of shell recurved; foot simple; mantle enclosed; pillar lip smooth.

a. *Buccinina*. Operculum ovate; nucleus small, near outer front edge. *Buccinum*, *Pseudoliva*.

b. *Nassina*. Operculum ovate, acute, nucleus apical.

\* Operculum entire. *Latrunculus*, *Cominella*, *Phos*, ?*Cyllene*, *Columbella*.

\*\* Operculum serrated. *Bullia*, *Nassa*, *Desmoulia*, ?*Mingeria*, ?*Northia*.

*Ringicula* probably belongs to *Auriculadæ*, as it is said to have the teeth of that family.

c. *Purpurina*. Operculum oblong, nucleus elongate, forming the long outer edge. *Purpura*, *Concholepas*, *Sistrum*, ?*Magillus*.

It is to be observed that the operculum of these two families offers exactly the same modifications.

*Planaxina*, which have been arranged in this family, have a distinct rostrum and operculum like *Littorina*.

Fam. 3. **CASSIDULIDÆ**. Head produced, conical; tentacles very small, at the end of the head; lateral teeth flat, bent up at the end; siphon of mantle and canal of shell straight, bent up at the end; mantle enclosed; foot simple (fig. 2).

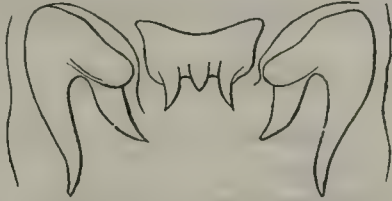


Fig. 2.—*Cassidulus morio*.

- a. Operculum annular. *Cassidulus, Fulgur*.  
 b. Operculum none. *Cochlidium*.

Fam. 4. **OLIVIDÆ**. Siphon of mantle recurved; foot with a cross groove on each side in front, often enclosing part of the shell; mantle enclosed; operculum small or none (fig. 3).



Fig. 3.—*Ancillaria candida*.

- a. *Olivina*. Pillar of shell plaited in front.  
 \* Lateral teeth broad ovate. *Strephona, Olivella, Scaphula, Agaronia*.  
 \*\* Lateral teeth hook-like, narrow. *Ancillaria, Eburna*.  
 ?b. *Harpina*. Pillar of shell smooth. Teeth —? *Harpa*.

Fam. 5. **LAMELLARIADÆ**. Lateral teeth simple, curved; mantle very large, covering the shell, with a notch in place of the siphon in front; operculum none (fig. 4). *Lamellaria, Coriocella*. The genus *Marsenina (prodita)* appears more allied to *Velutinidæ*.



Fig. 4.—*Coriocella perspicua*.

B. *Odontoglossa*. Teeth on lingual membrane in three series (1 · 1 · 1), the central recurved, toothed at the tip, the lateral not versatile (figs. 5, 6).

Fam. 6. **FASCIOLARIADÆ**. Head truncated; tentacles moderate; mantle enclosed; siphon and canal of shell straight; shell with plaits

on the front of the pillar; central tooth narrow, small; lateral teeth very broad, linear, with many equal teeth (fig. 5).



Fig. 5.—*Fasciolaria*.

a. *Fasciolariana*. Operculum ovate; nucleus apical; canal elongate. *Fasciolaria*, *Lagena*.

b. *Mitrina*. Operculum none; canal short. *Mitra*. *M. episcopalis*. Central tooth broad, toothed. *M. adusta*. Central tooth simple, hooked.

Fam. 7. TURBINELLIDÆ. Head truncated; tentacles moderate; mantle enclosed; siphon and canal of shell straight; shell with plaits on the middle of the pillar; central teeth broad, few-toothed; lateral teeth narrowed, strong, with a single large tooth (fig. 6). *Turbinellus*, *Cynodonta*.



Fig. 6.—*Turbinellus*.

C. *Rachiglossa*. Teeth on lingual membrane in a single central series, often toothed (figs. 7, 8).

Fam. 8. VOLUTIDÆ. Shell with plaits on columella; siphon recurved, and canal very short.

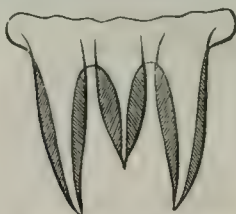


Fig. 7.—*Yetus olla*.

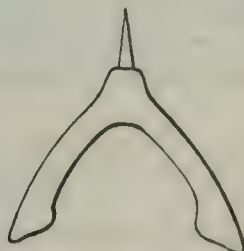


Fig. 8.—*Cymbiola Turneri*.

a. *Volutina*. Siphon with auricles on side of base; tentacles far apart, united by a broad veil over the head.

\* Teeth lunate, apex 3-toothed (fig. 7).  $\alpha$ . Operculum none. *Yetus*, *Cymbium*, *Scapha (vespertilio)*.  $\beta$ . Operculum distinct. *Voluta*.

\*\* Teeth linear, base angularly diverging, with a single conical apex (fig. 8). Operculum none. *Cymbiola (Turneri)*.

b. *Volutomitrina*. Siphon simple at the base; tentacles close together at the base; mantle enclosed; operculum none; teeth with

a single acute apex and divergent base, very small at the tip of the proboscis. *Volutomitra*.

c. *Porcellanina*. Siphon simple at the base; tentacles close together at the base; mantle lobes expanded, covering the shell; operculum none; teeth in a single series, broad, transverse, band-like, toothed in front, like Quoy's figure of *Mitra*. *Porcellana*, *Persicula*, ?*Hyalina*.

A specimen of *P. glabella* in spirits showed no appearance of the dilatation of the mantle.

D. *Toxoglossa*. Teeth sunk into the proboscis in two lateral series (1·0·1), elongate, subulate (fig. 9).

Fam. 9. PLEUROTOMIDÆ. Siphon of mantle and canal of shell straight; mantle and shell often with a slit in hinder part of right side.

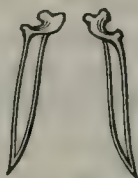


Fig. 9.—*Mangelia*.

a. *Pleurotomina*. Operculum ovate, acute; nucleus apical. *Pleurotoma*, *Drillia*.

b. *Clavatulina*. Operculum semiovate; nucleus in the centre of the straight front edge. *Clavatula*, *Tomella*.

c. *Defrancianina*. Operculum none. *Mangelia*, *Defrancia*.

E. *Tænioglossa*. Teeth on lingual membrane in seven rows (3·1·3), central generally toothed, lateral in three series, converging, the inner often broad, two outer subulate, versatile (figs. 10, 11).

Fam. 10. DOLIIDÆ. Head truncated; tentacles moderate; proboscis-sheath large, funnel-shaped, free on the edge; foot small; siphon of mantle recurved; mantle enclosed; operculum none. Tongue —? *Dolium*, ?*Malea*.

Fam. 11. TRITONIADÆ. Head truncated; tentacles moderate; proboscis-sheath small; foot small; siphon of mantle and canal of shell straight; shell variced; mantle enclosed; operculum ovate, annular; nucleus lateral or apical.

a. *Ranellina*. Operculum half ovate; nucleus central, lateral or internal; varices acute. *Ranella*.

b. *Tritonina*. Operculum ovate; nucleus apical; varices rounded. *Apollon*, *Triton*.

c. *Personina*. Operculum small, triangular, broad; nucleus apical; varices acute, foliaceous. *Persona*.

d. *Neptunellina*. Operculum ovate; nucleus central. *Neptunella* (*cutaceum*).

The teeth of this family have been verified in a dozen species.

Fam. 12. SCYTOTYPIDÆ. Head produced, conical; tentacles very small; foot small; siphon of mantle produced; operculum none. *Scytotypus*\*.

Fam. 13. VELUTINIDÆ. Head truncated; tentacles and foot moderate, rounded; mantle edge inflated, folded on the edge into two canals; eyes on outer side of tentacles; operculum none (fig. 10). *Velutina*, *Marsenina*.



Fig. 10.—*Velutina haliotideae*.

Fam. 14. NATICIDÆ. Head truncated; tentacles moderate; foot very large, much-produced; shell sunk into the foot; eyes none; operculum distinct, spiral, few-whorled (fig. 11).



Fig. 11.—*Natica pulchella*.

a. Operculum, outer layer shelly. *Natica*.

b. Operculum simple, horny. *Neverita*, *Polinices*, *Mammilla*, *Stomatia*.

From Dr. Lovén's description of the animal of *Trichotropis borealis*, it should be referred to this suborder, and equally so by Messrs. Forbes and Hanley's figures, t. II. f. 1; but in examining the animal of *Trichotropis bicarinatus*, the original type of the genus, I find that it has a rostrum and no proboscis. I should have been inclined to have regarded the animals of these two species as probably forming two genera, but Messrs. Forbes and Hanley's description of the animal (Brit. Moll. 361) agrees pretty well with the animal of *T. bicarinatus*.

F. Ctenoglossa. Teeth on lingual membrane in many series, numerous, similar (fig. 12).

Fam. 15. CASSIDIDÆ. Mantle enclosed, with a recurved siphon; shell ventricose, subglobose, with a recurved canal, often variced, outer lip thickened; lingual membrane short, broad, triangular, with many rows of similar lancet-shaped teeth, and a single small dentated tooth in the central series; operculum annular; nucleus in the middle

\* In Ann. and Mag. Nat. Hist. x. 415, 1852, by a slip of the pen, I erroneously stated that this animal had no proboscis.



of the straight inner side. *Bezoardica*, ?*Cassis*, ?*Levenia*, ?*Morio*. The teeth bear no resemblance to those figured by Quoy and Gaimard as those of *Bezoardica*.

Fam. 16. SCALARIADÆ. Foot moderate; mantle enclosed; shell turritid, variced, without any canal; eyes on outer side of the subulate tentacles; operculum horny, spiral (fig. 12). *Scalaria*.

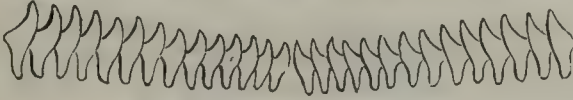


Fig. 12.—*Scalaria Turtoni*.

Fam. 17. ACTÆONIDÆ. Foot moderate; mantle enclosed; eyes on the inner side of the base of the expanded tentacles; operculum horny, subspiral. *Actæon*.

*G. Gymnoglossa*. Teeth and lingual membrane rudimentary or none.

Fam. 18. ACUSIDÆ. Foot small; mantle enclosed, with an elongated siphon; shell turritid, lip thin, not variced; eyes on tip of tentacles or wanting; tentacles very small or wanting; operculum annular, nucleus apical. *Acus* (tentacles small). *Subula* (tentacles and eyes none). *Leiodomus* (suture callous; operculum ovate; tentacles small; has been confounded with *Bullia*). ?*Dorsanum*.

Fam. 19. PYRAMIDELLIDÆ. Foot moderate; mantle enclosed; eyes on the inner side of the broad folded tentacles; operculum horny, spiral; shell spiral, pillar-plaited.

a. *Pyramidellina*. Shell turritid. *Obeliscus*, *Odostomia*, *Eulima*, *Aclis*, ?*Stylina*, *Alvania*.

b. *Tylodinina*. Shell subspiral. *Tylodina*.

*Cerithiopsis* of Forbes and Hanley, tab. OO, if accurately described, must form a new family in this section.

Fam. 20. ARCHITECTOMIDÆ. Tentacles folded, with the suture below; eyes sessile on upper surface of their base (*Eydoux*). Gill-cavities divided by a longitudinal fold; foot moderate, truncated and double-edged in front, rounded behind (*Quoy*); proboscis very long, completely retractile; teeth none.

a. Operculum ovate. *Architectoma*.

b. Operculum circular. *Torinia*, *Bifrontia*.

## Suborder II. ROSTRIFERA.

*A. Gymnoglossa*. Lingual membrane and teeth none; operculum none.

Fam. 21. CANCELLARIADÆ. Mantle enclosed; pillar of shell folded; operculum none. *Admete*, ?*Cancellaria*.

*B. Toxoglossa.* Lingual membrane with two series of subulate, elongate, often barbed, lateral teeth (fig. 13).

Fam. 22. CONIDÆ. Teeth barbed; mantle enclosed; operculum ovate, nucleus apical (fig. 13). *Conus*.

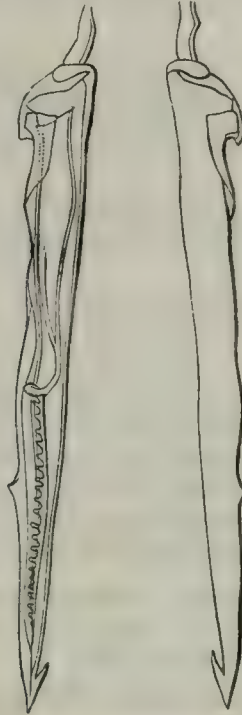


Fig. 13.—*Conus*.

*C. Dactyloglossa.* Teeth on lingual membrane in seven rows, 3 · 1 · 3, the central teeth triangular, recurved, 3-toothed; lateral teeth converging, inner conical, recurved, outer large, broad, ovate, with numerous long, linear, equal, curved digitations on the upper edge (fig. 14).

Fam. 23. AMPHIPERASIDÆ. Operculum none; mantle lobes expanded, covering the shell, bearded externally; shell, edge of outer lip inflexed (fig. 14). *Amphiperas*.

The black colour on *A. ovum* washes off when in spirits.

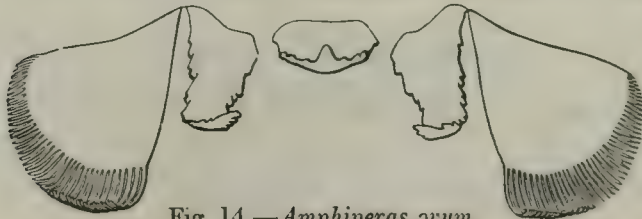


Fig. 14.—*Amphiperas ovum*.

*D. Tænioglossa.* Lingual membrane with seven series of teeth (3 · 1 · 3), the central broad, the lateral converging, the inner often broader; outer lateral conical, except in *Viviparidæ* (figs. 15–26).

A. Operculum subannular or none; mantle furnished with a siphon, and shell with a canal in front.

\* *Eyes sessile, on the outer side of the base of the tentacles.*

Fam. 24. *CYPRÆADÆ.* Operculum none; mantle lobes expanded, covering the shell; outer lateral teeth conical, entire or toothed (fig. 15). *Cypræa, Trivia, ?Cyprovula, Luponia, Naria, Aricia, Erato.*



Fig. 15.—*Cypræa helvola.*

Fam. 25. *PEDICULARIADÆ.* Operculum none; mantle enclosed (fig. 16). *Pedicularia.*

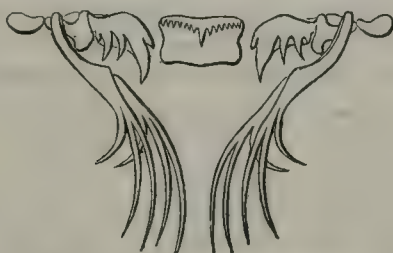


Fig. 16.—*Pedicularia sicula.*

Fam. 26. *APORRHAIIDÆ.* Operculum annular, ovate, nucleus apical, small; mantle, outer edge expanded, lobed, or rarely reflexed; siphon and canal of shell bent to the right (figs. 17, 18). *Aporrhais; Trichotropis* (lingual membrane short, broad); *Separatista, Struthiolaria.*

(See observations on *Trichotropis* at p. 38.)



Fig. 17.—*Aporrhais pes-pellicani.*



Fig. 18.—*Trichotropis borealis.*

\*\* *Eyes on elongated peduncles.*

Fam. 27. *STROMBIDÆ.* Foot compressed, used for jumping, not walking; mantle, outer side generally expanded and often lobed; muzzle longly conical.

a. *Strombina.* Tentacles on middle of eye-pedicel; operculum claw-like. *Strombus, Pterocera, Fusus.*

b. *Seraphina.* Tentacles none?, operculum horny, claw-like, with three claws; teeth — ? *Seraphys.*

B. *Operculum subannular*; mantle and shell simple in front; eyes sessile.

Fam. 28. PHORIDÆ. Foot compressed, used for jumping, not walking; eyes sessile, on the outer side of the subulate tentacles; operculum large, horny, subannular; muzzle conical, produced; tongue —?; teeth —? *Phorus*, *Onustus*.

C. *Operculum annular, regular*; mantle with a siphon in front; shell simple in front; eyes pedicelled, near the outer side of the base of the subulate tentacles.

Fam. 29. AMPULLARIADÆ. Gill with air-bag; central teeth acute; lateral subulate.

a. *Operculum horny*; canal exposed. *Marissa*, *Pomus*, *Pomella*, *Lanistes*.

b. *Operculum shelly*; canal not exposed. *Asolene*, *Ampullaria*.

D. *Operculum annular, regular*; mantle and shell simple in front; eyes sessile, on the outer side of the base of the subulate tentacles.

Fam. 30. VIVIPARIDÆ. Teeth abnormal, laminar, longitudinal, ovate, apex recurved, toothed on each side the tip; inner lateral tooth broad (fig. 19). *Viviparus*, *Paludomus*, *Bithinia*.

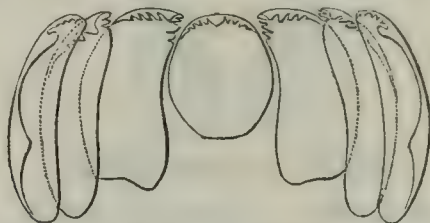


Fig. 19.—*Viviparus*.

E. *Operculum annular, regular, with an internal process*; mantle and shell simple in front; eyes sessile, far back behind the tentacles.

Fam. 31. RISSOELLIDÆ. Rostrum divided into two tentacular lobes in front; teeth 3 · 1 · 3 (*Alder MSS.*). *Rissoella* = *Jeffreysia*, *Alder*; *Rissoina*.

F. *Operculum spiral (rarely wanting)*; mantle and shell generally simple, sometimes with a rudimentary siphon and a canal in front of shell; eyes sessile; outer lateral teeth conical, curved.

a. *Eyes sessile, on outer side of tentacles.*

\* *Gills indistinct, in the form of series of vessels on the inner surface of the mantle.*

Fam. 32. CYCLOPHORIDÆ. *Operculum spiral*; mouth of shell circular. *Cyclophorus*, *Cyclotus*, *Pomatias*, &c.

Fam. 33. OLIGYRADÆ. *Operculum annular*; mouth of shell half ovate. *Oligyra*, *Alcadia*.

\*\* *Gills enclosed, in one or three comb-like lines on inner side of mantle-cavity.*

Fam. 34. LITTORINIDÆ. Mantle edge simple or with only a slight fold in front; gills in two series; shell free; foot flat (figs. 20, 21). *Assiminia*, *Littorina*, *Risella*, *Pagodus*, *Modulus*, &c.

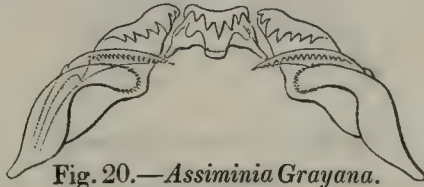


Fig. 20.—*Assiminia Grayana*.



Fig. 21.—*Littorina littorea*.

Fam. 35. PLANAXIDÆ. Mantle edge with a siphon and shell with a notch in front; teeth 3 · 1 · 3, inner broad, two outer linear. *Planaxis*, *Quoyia*, ?*Litiopa*.

Fam. 36. MELANIADÆ. Mantle edge torn, with a more or less distinct siphon in front; gill of a single series of plates (figs. 22, 23). *Rissoa*, *Skenea*, *Melania*, *Melanopsis*, *Vibex*, *Faunus*, *Melanatria*, *Rhinoclavis*, *Cerithium*, *Telescopium*, *Triphoris*, *Terebellum*.



Fig. 22.—*Rissoa membranacea*.



Fig. 23.—*Melanopsis buccinoides*.

Fam. 37. VERMETIDÆ. Shell attached, irregular; foot scarcely fit for walking, dilated, clavate at the end. *Vermetus*, *Serpuloides*, *Siliquaria*, &c.

Fam. 38. ?VANICOROIDÆ. Shell free; foot small, circular, produced in front, with a dilated membranous expansion on each side; operculum horny, ovate; teeth —? *Vanicoro*.

\*\*\* *Gills plumose, exposed, laminæ pinnate, spirally twisted.*

Fam. 39. VALVATIDÆ. Operculum orbicular, spiral, many-whorled (fig. 24). *Valvata*.

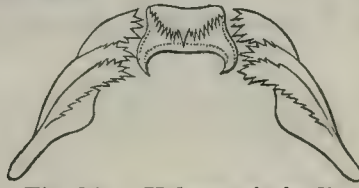


Fig. 24.—*Valvata piscinalis*.

b. *Eyes sessile, on the head between or rather behind the base of the tentacles.*

Fam. 40. CÆCIDÆ. Shell subcylindrical, arched; apex deciduous, subspiral; operculum circular, horny; foot short; teeth 3 · 1 · 3; jaws distinct. *Cæcum*.

Fam. 41. TRUNCATELLIDÆ. Body and shell spiral; foot very short, roundish; muzzle broadly 2-lobed; walks with its foot and lips; teeth 3 · 1 · 3; gill —?; operculum horny, spiral. *Truncatella*.

Fam. 42. ACICULADÆ. Body and shell spiral; foot short, divided; gills —?; operculum horny, spiral. *Acicula, Geometania*.

G. *Operculum none; mantle and shell simple in front; gills in an oblique line across the mantle-cavity; laminæ elongate, linear, partly exposed; eyes small, on the outer side of the base of the tentacles.*

Fam. 43. CAPULIDÆ. Foot folded on itself (fig. 25). *Capulus, Hipponyx, Amalthia, Amathina*.

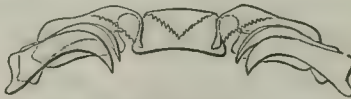


Fig. 25.—*Capulus hungaricus*.

Fam. 44. CALYPTREIDÆ. Foot expanded (fig. 26). *Crypta, Galerus, Crucibulum, Calyptrea, Trochita*.



Fig. 26.—*Calyptrea sinensis*.





FIGURE 1



NAT. SIZE

W. J. L.

M. & W. Bennett Imp.

*MYIOPHAPS ALBERTI* *Gull.*



February 22, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following paper was read:—

DESCRIPTION OF A NEW SPECIES OF AULACORHAMPHUS.

By JOHN GOULD, F.R.S.

Mr. Gould exhibited a new species of Groove-billed Toucan, which had been killed in Veragua, together with other ornithological rarities, by Berthold Seemann, Esq., Naturalist to H.M.S. Herald. He proposed, from the blue colouring of its throat, to call it

AULACORHAMPHUS CÆRULEOGULARIS.

Upper surface dark green, with an olive tint on the head and nape, and of a brighter green on the rump and upper tail-coverts; primaries blackish brown, margined externally at the base with dark green; tail deep green, passing into blue towards the extremity, and tipped with rich chestnut; throat and fore part of the cheeks cærulean blue; under surface green, washed with yellow on the flanks and abdomen; under tail-coverts rich chestnut; bill black, with the exception of the upper part of the sides of the upper mandible and the apical portion of the culmen, which are greenish yellow, passing into purer yellow at the tip; on the sides of both mandibles at the base a broad band, which on the upper one is yellow, and on the lower white; orbits red; legs and feet greenish lead-colour.

Total length,  $12\frac{1}{4}$  inches; bill,  $2\frac{7}{8}$ ; wing,  $4\frac{1}{2}$ ; tail,  $4\frac{3}{4}$ ; tarsi,  $1\frac{1}{4}$ .

*Hab.* Veragua.

*Remark.*—Nearly allied to *Aulacorhamphus albivitta*; but distinguished from that species by its rich blue throat, by the band at the base of the bill being much broader and yellow on the upper mandible, instead of white, and by the under surface being washed with yellow, while in the other it is pure green.

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March 8, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. ON THE NEST AND EGGS OF MENURA ALBERTI.

By JOHN GOULD, F.R.S.

(Aves, Pl. LIII.)

Mr. Gould exhibited a nest and two eggs of *Menura Alberti*, which had been obligingly lent to him for the purpose by Mr. Turner of

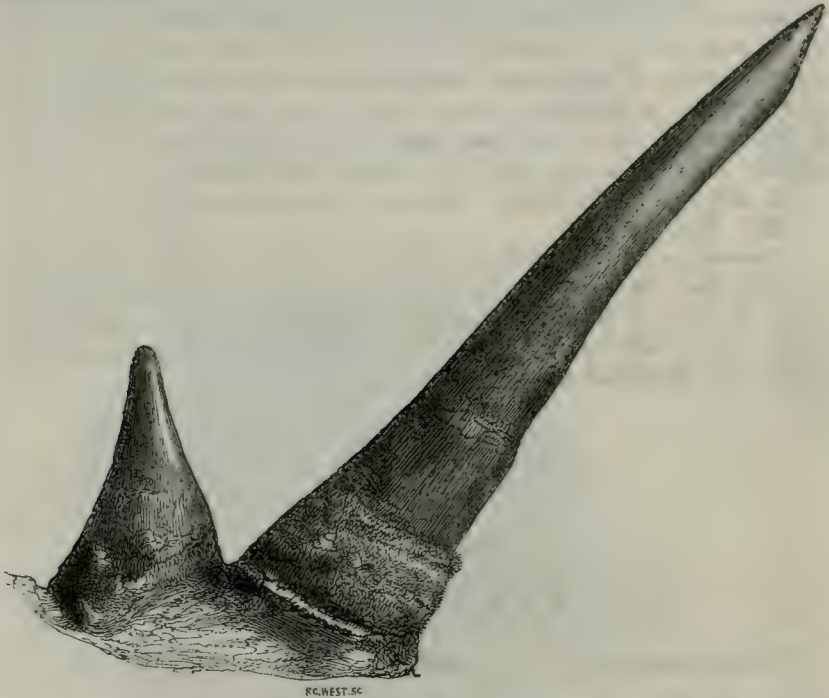
Sydney. The nest was oven-shaped in form ; outwardly constructed of roots, tendrils and leaves of palms, and lined with green mosses. It was about 2 feet in length by 16 inches in breadth, domed over except at one end. The eggs, barely  $2\frac{1}{4}$  inches long by  $1\frac{3}{4}$  broad, are of a deep purplish chocolate, irregularly blotched and freckled with a darker colour.

The nest and eggs are deposited in the national collection at the British Museum.

## 2. NOTICE OF A PRESUMED NEW SPECIES OF RHINOCEROS, FROM SOUTH AFRICA.

BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S., P.B.S. ETC.

Colonel Thomas Steele having most kindly presented to the British Museum a pair of horns of a two-horned Rhinoceros, which was discovered in the interior of South Africa by his friend Mr. Oswell, Dr. Gray exhibited the horns ; and having pointed out the peculiarity of their form, proposed that they should be provisionally described as belonging to a new species, under the name of *Rhinoceros Oswellii*.



The front horn is elongated and thick ; but instead of being bent back, as is the general character of *R. bicornis*, or erect, as in *R. simus*, is bent forwards, so that the upper surface is worn flat by being rubbed against the ground. The front horn in the pair exhibited was 31 inches long, flat, square, rough and fibrous in front, rounded

and smooth behind. The hinder horn was short, conical and sub-quadrangular; it was 11 inches in length.

Dr. Gray stated that the British Museum possesses a second specimen of a front horn, of a similar curve and form, with a similarly worn front top, of a rather larger size. This formerly belonged to Sir Hans Sloane's Collection; so that this species, like *R. simus*, must have been known to the older travellers.

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March 22, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTION OF A NEW SPECIES OF TETRAOGALLUS.  
BY JOHN GOULD, F.R.S.

Mr. Gould laid upon the table a complete series of all the known species of the genus *Tetraogallus*, viz. the

*Tetraogallus Caspius*, inhabiting Astrabad, Ghilan, and other parts of Persia;

*Tetraogallus Himalayensis*, inhabiting the Himalaya mountains;

*Tetraogallus Altaicus*, inhabiting the Altai mountains;

and a fine new species, lately sent to the Honourable East India Company, from Thibet, by Captain Strachey, which he described under the name of

TETRAOGALLUS TIBETANUS.

Crown of the head, cheeks, back and sides of the neck dark slate-grey, washed with buff on the orbits; ear-coverts buffy white; chin, front of the throat and chest white; upper surface, wings and tail-coverts freckled buff, grey and black, the feathers of the middle of the back and the wing-coverts broadly edged with pale buff; rump and upper tail-coverts washed with rufous; primaries greyish brown; secondaries broadly edged and tipped with white; breast crossed by a narrow band of grey, freckled with buff and blotched with black; under surface white; the feathers of the flanks and lower part of the abdomen narrowly but conspicuously margined with jet-black, forming stripes along those parts of the body; under tail-coverts black, with a broad stripe of white down the centre; tail very dark brown, inclining to rufous at the tip; bill and feet orange-red.

Total length about 15 inches; bill,  $1\frac{1}{4}$ ; wing,  $9\frac{1}{2}$ ; tail, 5; tarsi,  $2\frac{1}{2}$ .

In the collection of the Honourable East India Company.

2. DESCRIPTIONS OF TWO NEW SPECIES OF PTILONOPUS.  
BY GEORGE ROBERT GRAY, F.L.S. & F.Z.S.

(Aves, Pl. LIV. LV.)

PTILONOPUS CHRYSOGASTER, G. R. Gray. (Pl. LIV.)

Crown purplish white, margined posteriorly with yellow; sides of the head, neck and breast greyish white, with the base of the feathers of the latter yellow; throat and cheeks pale yellow; abdomen and under tail-coverts bright yellow; sides of the former greyish white, tinged with yellow; back bronzy green; greater wing-coverts, tertiaries and secondaries bluish green, narrowly margined with yellow; quills dull black, with the outer web tinged with green; tail bronzy green, with a very broad apical margin of white, each feather margined with yellow.—Total length,  $8\frac{3}{4}$  inches.

*Hab.* —? Probably from Otaheite.

This species is closely allied to the *Pt. purpuratus* (*Columba purpurata*, Gmel., *C. oopa*, Wagl., *Pt. furcatus*, Peale), but it is easily distinguished by the yellow on the abdomen, &c.

PTILONOPUS PURPUREOCINCTUS. (Pl. LV.)

Crown and base of lower mandible deep rosy purple, surrounded posteriorly with yellow; throat white; sides and behind the neck greenish grey; feathers of the upper part of the breast deep greyish green, with the end of each bifurcation white; lower part of the breast green, with a broad mark of deep purple; middle of the abdomen yellowish green, with the sides orange; vent pale yellow, with the sides green; under tail-coverts orange; back and lesser wing-coverts bronzy green; greater wing-coverts, secondaries and tertiaries bluish green, margined with yellow; quills green, narrowly margined with yellow; tail green tinged with yellow, with the apical portion broadly margined with white; tail-feathers tinged on the outer web with green, and all margined with yellow.—Total length, 9 inches.

It is unknown from whence this fine species was brought.

3. DESCRIPTIONS OF TWENTY-THREE NEW SPECIES OF LAND SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. *HELIX MAXIMA*, Pfr. *H. testa perforata, subturbinato-depressa, solida, ponderosa, oblique irregulariter striata, superne fulva, fasciis variis luteis ornata; spira subturbinata, apice obtusula; sutura profunda; anfr. 6½ lente accrescentibus, superis planis, sequentibus regulariter convexis, ultimo medio carinato, basi modice convexo, nitido, castaneo; apertura parum obliqua, lunari, intus lactea; perist. simplice, recto, obtuso, marginibus distantibus, basali intus subincrassato, superne breviter dilatato, perforationem fere tegente.*

Diam. maj. 90, min. 77, alt. 42, mill.

*Hab.* Philippine Islands.



Wolff lith.

M. & N. Hanhart Imp<sup>r</sup>

PTILONOPUS CHRYSOGASTER. *G.R. Gray*  
2/3 NAT. SIZE





J. S. G. & Co. Impf

*PHYLONOTUS PURPUREOCINCTUS. G. R. Gray.*

2/3 NAT SIZE





2. *HELIX OWENIANA*, Pfr. *H. testa perforata, turbinato-depressa, tenui, superne radiato-striata, lineis confertissimis spiralibus decussata, hand nitente, fulva; spira breviter conoidea, obtusa; sutura marginata; anfr. 4½ sensim accrescentibus, convexis, ultimo non descendente, peripheria pallide carinato et infra carinam fascia rufa notato, subtus corneo-virente, nitido, lineis impressis, spiralibus irregulariter insculpto; apertura fere diagonali, subrhombico-lunari, intus margaritacea; perist. simplice, recto, marginibus remotis, columellari declivi, calloso, superne sinuato, ad perforationem breviter dilatato, reflexo.*

Diam. maj. 32, min. 26½, alt. 17 mill.

*Hab.* Philippine Islands.

3. *HELIX BRIDWILLI*, Pfr. *H. testa imperforata, trochiformi, tenuiuscula, confertim striatula, nitidula, albida, maculis castaneis subseriatis ornata; spira regulariter conica, acutiuscula; sutura impressa; anfr. 6 planiusculis, ultimo vix descendente, ad basin planulatam, maculis majoribus subconfluentibus ornatam, carinato, antice tumido et subconstricto; apertura perobliqua, angusta, subtriangulari; perist. nigro, marginibus distantibus, dextro recto, basali inde a carina arcuato, tum substricto, dilatato, adnato.*

Diam. maj. 18½, min. 16, alt. 17 mill.

*Hab.* North Australia (Mr. Strange), Wide Bay (F. C. Bridwill).

4. *HELIX CIRCE*, Pfr. *H. testa imperforata, globoso-depressa, solidula, levissime striatula, non nitente, fusca, zonis 3 latis, albis, hydrophanis, fusco irregulariter maculatis, cineta; spira brevissima, convexa, apice obtuso, lilaceo; anfr. 4 convexis, rapide accrescentibus, ultimo vix descendente, basi distinctius striato; columella declivi, dilatata, plana, alba; apertura ampla, fere diagonali, lunato-rotundata, intus pallide livida; perist. pallide carneo, undique expanso et reflexiusculo.*

Diam. maj. 47, min. 38, alt. 28 mill.

*Hab.* Philippine Islands.

5. *HELIX LAIS*, Pfr. *H. testa imperforata, sublenticulari, tenui, sub lente vix striatula, parum nitida, virenti-alba; spira brevi, convexa; sutura lineari, albo-marginata; anfr. 4½ vix convexiusculis, sensim accrescentibus, ultimo non descendente, peripheria subacute carinato et fascia unica, saturate castanea ornato, basi convexiore; columella brevi, declivi, dilatata, plana, alba; apertura parum obliqua, subquadrangulari-lunari; perist. anguste expanso, albo-limbato, marginibus subparallelis, basali leviter arcuato, cum columella angulum obtusissimum formante.*

Diam. maj. 33, min. 29, alt. 18 mill.

*Hab.* Philippine Islands.

6. *HELIX CERES*, Pfr. *H. testa umbilicata, semigloboso-subcampanuliformi, solida, leviter striatula, parum nitente, sordide lutea, fasciis nonnullis rubellis ornata; spira convexa, vertice subtili, obtuso; sutura vix impressa; anfr. 6½ vix convexiusculis, lente*

*accrescentibus, ultimo non descendente, periphæria subcarinato, basi convexiore; apertura diagonali, oblique lunari, intus carneo-albida; perist. fusco-carneo, marginibus remotis, dextro expanso, basuli breviter reflexo, columellari dilatato, intus plica obliqua munito, extus fornicato, umbilicum angustum semitegente.*

Diam. maj. 23, min. 20, alt. 14 mill.

*Hab.* Philippine Islands.

7. **BULIMUS PERVIUS**, Pfr. *B. testa umbilicata, oblique ovato-conica, solidula, ruguloso-striata, opaca, alba; spira conica, acutiuscula; sutura profunda; anfr. 6½ convexis, ultimo spiram vix superante, basi suboblique producto, circa umbilicum angustum, sed pervium subcompresso; columella leviter arcuata; apertura obliqua, ovali, basi rotundata; perist. simplice, marginibus approximatis, dextro expansiusculo, columellari per dilatato, vix reflexo.*

Long. 24, diam. 12 mill.

*Hab.* — ?

8. **BULIMUS FLEXILABRIS**, Pfr. *B. testa breviter rimato-subperforata, oblique ovato-turrita, solidiuscula, sublævigata, nitidula, alba, fasciis 3 spadiceis, albo-punctulatis ornata; spira elevato-conica, apice obtusula, nigra; anfr. 7 convexiusculis, ultimo spira brevior, oblique producto, basi antice subangulato; columella brevi, torta, recedente; apertura parum obliqua, irregulariter subquadrangulari; perist. simplice, undique expanso, margine dextro medio rectilineari, superne curvato, basi subimpresso et angulatim extrorsum dilatato, sinistro declivi, cum columella angulum formante, superne per dilatato, patente.*

Long. 28, diam. 12½ mill.

*Hab.* Brazils.

9. **BULIMUS FILARIS**, Pfr. *B. testa imperforata, ovato-conica, tenui, irregulariter plicato-striata, diaphana, sordide alba, strigis latis, angulatis, nigricantibus, in anfr. ultimo fascias obsoletas formantibus, ornata; spira conica, acutiuscula; sutura crenulata; anfr. 5½ vix convexiusculis, ultimo spiram subæquante, deorsum dilatato; columella valde recedente, filari; apertura obliqua, ovali, intus submargaritacea; perist. simplice, recto, basi subeffuso.*

Long. 26, diam. 12 mill.

*Hab.* — ?

10. **BULIMUS KEPPELLI**, Pfr. *B. testa anguste umbilicata, ovato-oblonga, tenuiuscula, sublævigata (irregulariter striolata), nitidula; spira elongato-conica, apice acutiuscula, alba; anfr. 7 convexiusculis, superis albis, spadiceo-bifasciatis; ultimo 2/5 longitudinis æquante, ad suturam subplicato, basi subattenuato, fumoso-fusco, fasciis spadiceis pallide marginatis 3-4 cincto, guttis pallidis irregulariter consperso; columella substricta; apertura parum obliqua, angusta, oblonga; perist. simplice, margine dextro leviter arcuato, recto, columellari in laminam latam, triangularem, patentem dilatato.*

Long. 34½, diam. 14 mill.

*Hab.* Andes of Peru (*Capt. Keppell*).

11. *CYCLOSTOMA RECLUZIANUM* (CYCLOTUS), Pfr. *C. testa umbilicata, depressa, solidula, obsolete spiraliter lirata, sub epidermide pallide virente albida; spira vix elevata, submucronata; sutura profunda, carina submarginata; anfr.  $4\frac{1}{2}$  convexis, rapide accrescentibus, ultimo terete, peripheria carina acuta, antrorsum evanescente munita; umbilico perspectivo,  $\frac{1}{3}$  diametri æquante; apertura parum obliqua, subcirculari; perist. simplice, recto, continuo, breviter adnato.—Operc. Cycloti.*

Diam. maj. 11, min. 9, alt. 5 mill.

*Hab.* Salomon's Islands.

12. *CYCLOSTOMA TUBULIFERUM* (CYCLOTUS), Pfr. *C. testa late umbilicata, striatula, opaca, albida, flammis angulosis fuscis picta; spira vix elevata, fusco-violacea, vertice subacute prominente; sutura subprofunda; anfr.  $4\frac{1}{2}$  convexiusculis, ultimo terete, antice breviter soluto, vix descendente, 2 mill. pone aperturam tubulo brevi a sutura retrorsum subascendente munito; apertura diagonali, circulari; perist. duplicato: interno continuo, porrecto, externo marginibus supero et dextro breviter patente, sinistro obsolete.*

Diam. maj.  $16\frac{1}{2}$ , min. 13, alt.  $6\frac{2}{3}$  mill.

*Hab.* — ?

13. *CYCLOSTOMA LABIOSUM* (CYCLOPHORUS), Pfr. *C. testa umbilicata, depresso-turbinata, solida, oblique striatula et lineis spiralibus, confertissimis, vix elevatis sculpta, nitidula, saturate castanea, lituris albidis præsertim ad suturam variegata; spira brevi, vertice acutiusculo, sordide fusco; anfr. 5 convexis, celeriter accrescentibus, ultimo peripheria subcarinato et pallide articulo, infra carinam fascia lata, nigricante cincto, circa umbilicum album, mediocrem, extus infundibuliformem subangulato; apertura obliqua, subcirculari, intus pallida; perist. crasso, lutescenti-albido, breviter adnato, cæterum fornicatim et anguste reflexo, margine columellari subrecedente.*

Diam. maj. 43, min. 34, alt. 22 mill.

*Hab.* — ?

14. *CYCLOSTOMA PIRRIEANUM* (CYCLOPHORUS), Pfr. *C. testa umbilicata, turbinato-depressa, solida, spiraliter crebrilirata, sub epidermide nigricante obsolete pallide marmorata et ad suturam articulata; spira breviter turbinata, apice cornea, obtuse mucronulata; anfr.  $5\frac{1}{2}$  rapide accrescentibus, ultimo magno, ad peripheriam carina subacuta, funiformi munito, superne turgido et subcarinato, prope suturam planulato, basi convexo, circa umbilicum late infundibuliformem angulato; apertura diagonali, subcirculari, intus nitidissime aurantiaco-livida; perist. continuo, breviter adnato, superne angulatim producto, undique valde incrassato et breviter reflexo, lucide fusco-igneo.*

Diam. maj. 54, min. 42, alt. 27 mill.

*Hab.* Walaghat, Koondah Mountains, near Calicut (F. Pirrie).

15. *CYCLOSTOMA GRISEUM*, Pfr. *C. testa vix perforata, turriconica, solidula, spiraliter confertim sulcata, vix nitidula,*

*liliaceo-grisea; spira elevato-conica, apice acutiuscula, flavida; sutura mediocri; anfr. 6 modice convexis, ultimo  $\frac{2}{3}$  longitudinis æquante, infra medium fascia pallida alteraque fuscata ornato; apertura obliqua, rotundato-ovali, intus fuscata, fasciata; perist. interrupto, marginibus approximatis, dextro recto, columellari subdilatato, fornicatim patente.—Operc. ?*

Long. 17, diam. 10 mill.

Hab. Madagascar.

16. CYCLOSTOMA VENEZUELENSE (CHONDROPOMA?), Pfr. *C. testa subperforata, turrata, truncata, tenui, longitudinaliter capillaceo-striata, haud nitente, diaphana, fulvida, fasciis circa 6 angustis, rufis, interdum obsoletis ornata; sutura subdentikulata; anfr. superst.  $5\frac{1}{2}$  convexis, ultimo antice brevissime soluto, basi liris nonnullis spiralibus circa perforationem punctiformem munito; apertura verticali, subirregulariter ovali, intus concolore; perist. simplice, superne in auriculam angulatam producto, marginibus dextro et basali breviter expansis, sinistro angusto, adnato.*

Long.  $17\frac{1}{2}$ , diam. 7 mill.

Hab. Venezuela.

17. CATAULUS MARGINATUS, Pfr. *C. testa vix perforata, subfusiformi-turrata, solida, subarcuatim costulato-striata, opaca, fusco-lilacea, strigis angulosis albidis marmorata; spira subcurvilineariter, turrata, apice obtusa; sutura levi, filomarginata; anfr. 8 planiusculis, ultimo vix attenuato, carina basali alba, compressa, antrorsum subdilatata; apertura verticali, subovali; perist. albo, duplice, interno basi profunde inciso, externo patente, ad canalem mediocrem retracto.*

Long. 16, diam.  $5\frac{1}{2}$  mill.

Hab. Ceylon.

18. PUPINA CUMINGIANA (PREGISTOMA), Pfr. *P. testa imperforata, oblonga, utrinque attenuata, solidula, glabra, nitida, rubello-succinea; spira elongata, apice acutiuscula, sutura levissima; anfr. 6 vix convexiusculis, 2 ultimis latis, ultimo oblique descendente; apertura verticali, circulari; perist. calloso, expansiusculo, margine columellari brevi, non dilatato, incisura mediocri a basali separato.*

Long. 8, diam.  $3\frac{2}{3}$  mill.

Hab. Salomon's Islands.

19. HELICINA MODESTA, Pfr. *H. testa subgloboso-conica, solidula, oblique striatula vel sublævigata, nitidula, unicolore straminea; spira conica, acutiuscula; anfr.  $4\frac{1}{2}$  modice convexis, ultimo turgido, basi planiusculo; columella brevi, incrassata, alba, callum emittente nitidum, circumscriptum; apertura obliqua, subtriangulari-semiovali; perist. simplice, recto, margine dextro antrorsum subdilatato, basali ad columellam subsinuato.*

Diam. maj. 6, min. 5, alt. 4 mill.

Hab. Tanna, New Hebrides.

20. *HELICINA ARTICULATA*, Pfr. *H. testa sublenticulari, carinata, tenui, striatula, nitida, rubello-fusca, pallidius strigata, fasciis 2, castaneo et albo articulatis ad suturam et carinam ornata; spira convexiusculo-conoidea, acuminata; anfr. 4½ subplanis, sensim accrescentibus, ultimo infra carinam sub-acutam convexo; columella breviter recedente, callum emittente tenuem, albidum, sulco levi circumscriptum; apertura diagonali, subtriangulari; perist. simplice, recto, acuto, marginibus vix arcuatis.*

Diam. maj. 5, min.  $4\frac{1}{2}$ , alt. 3 mill.

*Hab.* Tanna, New Hebrides.

21. *HELICINA RIPARIA*, Pfr. *H. testa conica, tenuiuscula, oblique striatula, alba; spira conoidea, acutiuscula; anfr. 5½ convexiusculis, sensim accrescentibus, ultimo spira brevior, basi subconvexo; columella a basi rectangule descendente, breviter recedente, callum emittente tenuem, circumscriptum; apertura vix obliqua, fere semicirculari; perist. simplice, undique breviter expanso.*

Diam. maj. 7, min.  $6\frac{1}{4}$ , alt. 5 mill.

*Hab.* Calamar, on the banks of Magdalena River, New Granada.

22. *HELICINA FOVEATA*, Pfr. *H. testa orbiculato-conoidea, tenuiuscula, sublævigata, nitidula, flava vel fusco-rubella, plerumque fasciis saturatoribus et pallidis ornata; spira convexa, submucronata; anfr. 5½ convexiusculis, sensim accrescentibus, ultimo non descendente, basi convexiore, fovea profunda juxta columellam brevem, subdenticulatam notato; apertura parum obliqua, semiovali; perist. tenui, undique vix expansiusculo.*

Diam. maj.  $7\frac{2}{3}$ , min. 7, alt.  $4\frac{2}{3}$  mill.

*Hab.* St. Thomas, West Indies.

23. *HELICINA CONOIDEA*, Pfr. *H. testa conoidea, tenuiuscula, subscabre striata, vix nitidula, pallide corneo-grisea; spira regulariter conoidea, acutiuscula; sutura leviter impressa; anfr. 4½ subplanulatis; sensim accrescentibus, ultimo utrinque convexiore, periphæria subcarinato; columella brevi, deorsum attenuata, callum basalem emittente tenuem, circumscriptum; apertura diagonali, integra, subtriangulari; perist. simplice, margine supero vix expanso, basali subincrassato, reflexiusculo.*

Diam. maj.  $5\frac{1}{2}$ , min.  $4\frac{3}{4}$ , alt.  $3\frac{1}{2}$  mill.

*Hab.* Barbadoes, West Indies.

#### 4. LIMNÆACEA NOVA COLLECTIONIS CUMINGIANÆ.

DESCRIPSIT DR. GUIL. DUNKER.

1. *PHYSA SALLEANA*, Dkr. *Ph. testa ovato-acuta, fusco-cornea, mucronem versus obscuriore, nitidissima, subdiaphana, tenerime striata, fere lævigata; spira conica, apice paulum obtusa; anfractibus convexiusculis, sutura albida, perparum impressa*

*divisis; apertura ovato-acuta; columella lactea, basi subemarginata.*

Altit. 6 lin.

*Hab.* St. Domingo (Sallé).

Species varietatibus certis *Physæ heterostrophæ* similis, sed habitu graciliore, anfractibus minus convexis, colore fusco-corneo et labro tenui satis diversa est.

2. **PLANORBIS REFULGENS**, Dkr. *P. testa solidiuscula, nitidissima, tenerrime striata, fere glabrata, fusco-cornea, supra late umbilicata, infra plano-concava; anfractibus subtumidis, rotundatis, modice crescentibus; apertura oblique ovata, subauriculata.*

Altit. testæ  $2\frac{1}{3}$  lin. ; lat. max.  $7\frac{1}{3}$  lin.

*Hab.* St. Domingo (Sallé).

Species pulcherrimarum una sui generis. Anfractus fere sex rotundati, supra fusco-cornei, infra pallidiores, striis tenuissimis incrementi instructi sunt; sub microscopio anfractus priores strias spirales minutissimas ostendunt. Spira embryonalis in latere superiore, ut solet, infundibuliformis. Margo aperturalis superior acutissimus, parum productus. Hæc species habitu *Planorbi Guadaloupensi*, Sow. haud dissimilis est.

3. **PLANORBIS SALLEANUS**, Dkr. *P. testa tenui, parvula, cornea haud nitente, tenuiter striata spiraliterque subhirsuta, supra plana, infra satis profunde umbilicata; anfractibus quatuor rotundatis, haud involutis, modice crescentibus; apertura subrotunda, obliqua, paullo dilatata.*

Altit.  $\frac{2}{3}$  lin. ; lat. max. 2 lin.

*Hab.* St. Domingo (Sallé).

Species parvula, *Planorbi albo* similis.

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April 12, 1853.

John Gould, Esq., F.R.S., in the Chair.

The following papers were read:—

1. NOTICE OF AN ORIGINAL PAINTING, INCLUDING A FIGURE OF THE DODO, IN THE COLLECTION OF HIS GRACE THE DUKE OF NORTHUMBERLAND, AT SION HOUSE. BY W. J. BROWDERIP, V.P.Z.S., F.R.S. ETC.

Professor Owen, at whose disposal the Duke of Northumberland placed the following additional pictorial evidence of the existence of the Dodo in the seventeenth century, has requested me to draw the attention of this Society to the highly interesting picture which the

Duke has been so good as to send for the inspection of the Fellows. The size of the picture, which is in the finest preservation, is thirty-two inches by nineteen. It is executed in oil, and bears the following monogram and date. Mr. William Russell, with his usual discernment, detected in this monogram the signatures of Jean Goeimare and Jean David de Heem, and proved the correctness of his judgment by a reference to Brulliot\*. Jean Goeimare, who is not noticed by Descamps, Bryan, Sandrart, or Houbraken, is described by Brulliot as a Flemish artist who flourished at the commencement of the seventeenth century, and painted landscapes with many animals, executed with great care, but in rather a dry manner †. Of De Heem, the celebrated painter of still life, it would be superfluous to say anything. We may conclude, then, that in this joint production the landscape and animals were painted by Goeimare, and the shells by De Heem.

G. D. H. A.  
1627



\* Dict. des Monogrammes, 1 partie, pp. 274, 201.

† I am indebted to Mr. Russell for this information.

In this picture, which seems to have been intended as a record of rarities, the foreground represents a sea-shore from which the tide has retired, leaving empty shells of the following genera:—*Nautilus*, *Pteroceras*, *Strombus*, *Triton*, *Pyrula*, *Cassis*, *Cypræa*, *Conus*, *Mitra*, *Turbo*, *Nerita*, *Mytilus*, *Ostrea*, &c. Behind, on elevated ground, are two ostriches, and below, to the right of the spectator, the Dodo is represented as in the act of picking up something from the strand. The head and body of the bird, covering an area as large as the palm of a man's hand, are seen, but the legs are hidden. The painter of the Dodo in *my* picture, has given the only complete foreshortened back view of the bird known to me. In the Duke's picture the head and body are presented to the spectator on a larger scale, and I have nowhere seen the hood or ridge at the base of the bill, from which the bird obtained the name of *Cygnus cucullatus*, so clearly represented. Near the Dodo are a smew and other aquatic birds, and further off hoopoes and terns. In the distance is the ocean, with a sea-monster awaiting the attack of Perseus, who descends on a winged steed to the rescue of Andromeda chained to a rock. Those who have had occasion to describe and figure new species of Testacea, know how difficult it is to find a draughtsman who can give a correct design of the shell to be represented. Unless the artist, like Mr. G. B. Sowerby, jun., is aware of the internal structure of the shell, and acquainted with its organization, a lamentable failure is generally the result. In the picture before us, with one exception—and even in that the specimen may have been distorted—so accurate was the eye of the painter, that if he had been aware of the organization of each shell—knowledge which he probably had not—he could not have represented the objects more correctly. The *Nautili*\*, *Strombus gigas*, *Triton*, and *Pyrula*, are painted with great breadth and power, and all are drawn and coloured with wonderful truth; indeed a conchologist may name every species. One of the *Nautili* is partially uncoated, to show the nacre, and the other dissected, to display the concamerations. None of the shells have the epidermis, and all are of the natural size. The artificial condition of these subjects, and especially of the *Nautili*, is, it must be allowed, rather out of place in an assemblage of testaceans left on the sands by the retired tide, unless we are to suppose that the sea-nymphs had been amusing themselves by polishing the specimens and displaying the internal structure of one of them; but this very treatment shows that the designs were accurately made from real objects then considered as rarities. With the exception of the Dodo, none of the natural objects represented are now rare. The shells, especially those whose *habitats* are the seas of the Antilles, are at present very common; but at the date of the picture—the second year of the reign of our first Charles—the natural productions of the West Indies were not well known, and were, comparatively, very scarce. With the shells on the shore is the cranium of a carnivorous quadruped, apparently of the family *Canidæ*. The monster-cetacean in the distance has

\* *Nautilus pompilius*.



evidently no chance with the avenger who is coming down upon him mounted on a winged steed. But Pegasus, who, with other prodigies, sprang from the blood that dropped from Medusa's head, as the conqueror who had cut it off with his harpe traversed the air with his gory trophy, immediately winged its flight to Helicon, there to become the pet of the Muses. The best version of this mythological story relates that when Perseus afterwards killed the sea-monster and delivered Andromeda on the coast of Ethiopia, he effected his purpose by raising himself in the air through the aid of the wings and talaria given to him by Mercury, and not with the help of the winged horse on which most of the painters mount him. Professor Owen informs me that Roland Savery's picture containing the Dodo, in the Berlin collection, bears the date of 1626; and that the colour of the Dodo in the Duke of Northumberland's picture resembles that of the portrait of the bird, of life size, by the same painter, now at Oxford. L'Estrange describes the hue of the back of the living Dodo which he saw exhibited in London "about 1638," as of "dunn or deare colour."

2. DESCRIPTIONS OF EIGHTEEN NEW SPECIES OF LAND SHELLS,  
FROM THE COLLECTIONS OF MR. DENNISON AND H. CUMING,  
ESQ. BY DR. L. PFEIFFER.

1. ANOSTOMA CARINATUM, Pfr. *A. testa longe rimata, conoideo-lenticulari, solidula, acute carinata, pallida, supra carinam et ad suturam anguste castaneo-fasciata; spira breviter conoidea; anfr. 5 planiusculis, superis striatulis, ultimo irregulariter et undulatum costulato-striato, basi convexo, castaneo maculato, antice scrobiculato; apertura peripheriam spiræ continuante, semicirculari, lamellis 6 validis, flexuosis coarctata; perist. albo, late expanso et reflexo, margine dextro ad insertionem foramine magno, oblongo munito.*

Diam. maj.  $24\frac{1}{2}$ , min. 19, alt. 13 mill.

*Hab.* Brazils.

2. HELIX DENNISONI, Pfr. *H. testa imperforata, subglobosa, solida, striatula, non nitente, opaca, alba, strigis crebris, angustis, nigricantibus et fulvis, subflexuosis radiata; spira conoideo-semiglobosa, obtusula; anfr. 5 convexis, ultimo rotundato, antice subito deflexo, constricto; apertura parvula, perobliqua, lunari, intus nitide livida; perist. intus fusco-labiato, marginibus callo intrante, saturate castaneo junctis, dextro perarcuato, vix expanso, basali dilatato, plano, adnato, castaneo.*

Diam. maj. 20, min. 18, alt. 15 mill.

*Hab.* Cuba (Powis).

3. HELIX MACANDREWIANA, Pfr. *H. testa imperforata, conoideo-globosa, solidula, striis incrementi et confertissimis spiralibus sub lente decussata, pallide rosea, lineis nigro-spadiceis confertis cincta; spira conoidea, apice rubra, obtusa; sutura mediocri;*

*anfr. 4, superis convexiusculis, ultimo inflato, antice vix descendente, basi unicolore roseo; apertura parum obliqua, rotundato-lunari, intus sordide vinosa; perist. simplice, marginibus distantibus, dextro acuto, columellari purpurascente, sursum dilatato, reflexo, adnato.*

Diam. maj. 17, min. 14, alt. 13 mill.

*Hab.* Great Salvages Island (*MacAndrew*).

4. **HELIX GUTTULA**, Pfr. *H. testa imperforata, convexo-depressa, tenui, lævigatissima, nitida, pellucida, fusco-cornea; spira fornicata; sutura levi, submarginata; anfr. 5, convexiusculis, lente accrescentibus, ultimo periphæria rotundato, basi medio impresso, calloso; apertura parum obliqua, lunari; perist. simplice, recto, acuto, margine basali leviter arcuato, ad columellam subincrassato.*

Diam. maj. 5, min.  $4\frac{3}{4}$ , alt.  $2\frac{3}{4}$  mill.

*Hab.* New Zealand.

5. **HELIX CEROIDES**, Pfr. *H. testa mediocriter umbilicata, convexo-depressa, tenui, minutissime striatula, griseo-cerea; spira parum elevata; sutura subprofunda; anfr. 4, convexiusculis, sensim accrescentibus, ultimo non descendente, rotundato; apertura subverticali, rotundato-lunari; perist. simplice, recto, acuto, marginibus convergentibus, columellari superne patente.*

Diam. maj. 5, min. 4, alt.  $2\frac{1}{2}$  mill.

*Hab.* Juan Fernandez.

6. **HELIX ARMIDA**, Pfr. *H. testa subperforata, subturbinata, tenuiuscula, minute striatula, diaphana, nitidula, fulvo-cornea; spira convexo-conoidea, vertice subtili obtusulo, sutura impressa, albo-marginata; anfr. 6, convexiusculis, lente accrescentibus, ultimo non descendente, periphæria carina brevi, acuta, alba munito, basi convexiore; apertura fere verticali, subangulato-lunari; perist. simplice, recto, marginibus distantibus, columellari declivi, superne subincrassato.*

Diam. maj. 16, min. 14, alt. 8 mill.

*Hab.* Philippines, Mount Isarog, isle of Luzon.

7. **HELIX VERONICA**, Pfr. *H. testa umbilicata, depressa, discoidea, radiatim minutissime striatula, ad suturam obsolete spiraliter striata, pellucida, nitida, virenti-cornea; spira plana, levissime immersa; sutura vix impressa; anfr.  $3\frac{1}{2}$ , subplanis, rapide accrescentibus, ultimo non descendente, depresso, periphæria rotundato; umbilico mediocri, parum profundo, medio contracto; apertura parum obliqua, rotundato-lunata; perist. simplice, recto, acuto, marginibus convergentibus, superne et inferne æqualibus.*

Diam. maj. 12, min. 10, alt.  $4\frac{2}{3}$  mill.

*Hab.* Salomon's Islands.

8. **HELIX RAPIDA**, Pfr. *H. testa umbilicata, depressa, discoidea, tenui, sub lente spiraliter striolata, nitida, pellucida, castanea, strigis et punctis luteis variegata; spira plana, subimmersa; sutura subcanaliculata; anfr.  $3\frac{1}{2}$ , convexiusculis, rapide accrescen-*

*tibus, ultimo lato, depresso, periphæria rotundato, antice non descendente, basi parum convexo, sensim in umbilicum mediocrem ascendente; apertura parum obliqua, lunato-rotundata; perist. simplice, recto, acuto, marginibus subconniventibus.*

Diam. maj.  $7\frac{2}{3}$ , min.  $6\frac{2}{3}$ , alt. 3 mill.

*Hab.* New Zealand and Salomon's Islands.

9. *HELIX CONOMPHALA*, Pfr. *H. testa umbilicata, perdepressa, discoidea, tenui, vix striatula, acutissime carinata, pallide fulva, superne et inferne fasciis singulis, angustis, rufis ornata; spira vix elevata; sutura initio profunda, tandem lineari; anfr. 4, rapide accrescentibus, primis convexiusculis, ultimo non descendente, carina brevi acutissima, utrinque marginata munito, basi vix convexiore; umbilico  $\frac{1}{6}$  diametri subæquante, regulariter conico; apertura perobliqua, depresso securiformi; perist. simplice, recto, margine supero antrorsum arcuato, basali ad umbilicum arcuatim ascendente, superne subincrassato.*

Diam. maj. 26, min.  $22\frac{1}{2}$ , alt. 7 mill.

*Hab.* Philippine Islands.

10. *HELIX HUAHEINENSIS*, Pfr. *H. testa late umbilicata, convexo-depressa, tenuiuscula, striata, opaca, pallide cornea, rufo strigata et maculata; spira convexa, minutissime mucronata; sutura lineari; anfr. 6, planiusculis, lentissime accrescentibus, ultimo carinato, non descendente, basi circa umbilicum subcompresso; apertura obliqua, subtetragona, lamella intrante parietali coarctata; perist. simplice recto, marginibus vix convergentibus.*

Diam. maj. 6, min.  $5\frac{1}{2}$ , alt.  $2\frac{2}{3}$  mill.

*Hab.* Huaheine, Society Islands.

11. *HELIX FUCATA*, Pfr. *H. testa imperforata, conica, solidiuscula, sub lente spiraliter striata, nitidula, alba, fasciis subinterruptis luteis et 3 angustis, nigricantibus ornata; spira conica, acutiuscula; sutura levi; anfr. 5, vix convexiusculis, ultimo non descendente, superne punctis corneis pellucidis irregulariter adperso, periphæria obsolete angulato, basi planiusculo, macula columellari nigra picto; apertura diagonali, rotundato-lunari, intus late spadiceo-fasciata; perist. simplice, margine dextro recto, acuto, basali subreflexo, columellari superne dilatato, violaceo.*

Diam. maj. 17, min. 15, alt.  $14\frac{1}{2}$  mill.

*Hab.* Wide Bay, east coast of Australia (*Strange*).

12. *HELIX SHANGHIENSIS*, Pfr. *H. testa mediocriter umbilicata, trochiformi, tenui, oblique submembranaceo-striata, lardeo-micante, rufo-cornea; spira regulariter conica, acutiuscula; sutura impressa; anfr. 7, convexiusculis, lente accrescentibus, ultimo non descendente, periphæria carinato, basi convexo, granulato, subhispido; apertura fere diagonali, lunato-rotundata; perist. simplice, marginibus subconniventibus, supero recto, basali subreflexo, columellari patente.*

Diam. maj. 13, min.  $11\frac{1}{2}$ , alt.  $8\frac{1}{2}$  mill.

*Hab.* Shanghi, China (*Fortune*).

13. VITRINA KEPPELLI, Pfr. *V. testa depressa, ambitu oblonga, tenui, arcuatim præsertim ad suturam striatula, nitidissima, pellucida, albido-virente; spira plana, vertice subtili vix prominulo; sutura impressa, submarginata; anfr. vix 3, rapide accrescentibus, ultimo basi convexo, angusto; apertura ampla, obliqua, ovali; perist. simplice, recto, margine dextro antrorsum dilatato, columellari perarcuato, membranaceo-submarginato.*

Diam. 14, alt. 6 mill.

*Hab.* New Caledonia (Keppell).

14. VITRINA PLANOSPIRA, Pfr. *V. testa ambitu ovali, tenui, striatula, pellucida, nitida, corneo-virente; spira parvula, plana; sutura vix impressa; anfr. 3, rapidissime accrescentibus, ultimo superne depresso, basi convexiore, angusto, membranaceo-submarginato; apertura ampla, perobliqua, lunato-rotundata, intus submargaritacea; perist. tenui, margine dextro arcuatim introrsum dilatato, expansiusculo, columellari perarcuato.*

Diam. 13, alt. 7 mill.

*Hab.* Salomon's Islands.

15. VITRINA SALOMONIA, Pfr. *V. testa globosa conica, tenuissima, confertim oblique plicata, pellucida, nitida, fusco-olivaceu; spira conica, obtusiuscula; sutura impressa; anfr. 4, convexis, ultimo  $\frac{3}{5}$  longitudinis subæquante; apertura obliqua, ovali; perist. simplice, recto, marginibus regulariter arcuatis.*

Diam. 9, alt. 11 mill.

*Hab.* Salomon's Islands.

16. SUCCINEA MARGARITA, Pfr. *S. testa ovato-conica, tenuissima, striatula, nitida, pellucida, pallidissime luteo-cornea; spira brevi, obtusula; anfr. 3, penultimo convexo, ultimo  $\frac{2}{3}$  longitudinis formante, dilatato; columella simplice, vix callosa, leviter arcuata; apertura obliqua, subregulariter ovali, ubique incumbente; perist. simplice, recto, margine dextro regulariter arcuato.*

Long. 7, diam. 5 mill.

*Hab.* St. Domingo (Sallé).

17. HELICINA BARBADENSIS, Pfr. *H. testa sublenticulari, tenui, sub lente irregulariter rugulosa, haud nitida, diaphana, lutescenti-albida; spira breviter conoidea, acuminatuscula; sutura vix impressa; anfr.  $4\frac{1}{2}$ , subplanulatis, celeriter accrescentibus, ultimo utrinque convexiusculo, periphæria acute carinato, carina antice obsoletiore; columella brevissima, callum emittente parvulum, circumscriptum; apertura diagonali, triangulari-semiovali; perist. simplice, undique reflexiusculo.*

Diam. maj. 6, min. 5, alt. 3 mill.

*Hab.* Barbadoes.

18. HELICINA (ALCADIA) RUBELLA, Pfr. *H. testa conoideo-depressa, tenui, oblique striatula, breviter pilosa (detrita oleoso-micante, diaphana), rubello-cornea; spira convexa, vertice macronulato; anfr  $5\frac{1}{2}$ , angustis, vix convexiusculis, ultimo ad periphæ-*

*riam obsolete subangulato, basi convexiore; apertura fere diagonali, semilunari; columella brevi, in denticulum sulco a callo basali tenuissimo separatum desinente; perist. tenui, undique breviter expanso, margine basali subrectilineari, incisura levi a columella separato.—Operc. membranaceum, concolor.*

Diam. maj.  $6\frac{1}{3}$ , min.  $5\frac{1}{2}$ , alt. 4 mill.

*Hab.* St. Thomas, West Indies.

### 3. DESCRIPTIONS OF FIVE NEW SPECIES OF HUMMING BIRDS. BY JOHN GOULD, F.R.S.

Mr. Gould exhibited five new species of Humming Birds; four collected on the eastern slope of the Andes by M. Warzewicz, remarkable for their size and their great beauty, and one lately received by M. Linden of Brussels, from the Sierra Nevada of Santa Martha, at an elevation of 5000 feet. They were described and named as follows:—

#### 1. HELIANTHEA IRIS.

Forehead magnificent green, succeeded on the sides by rich orange and in the centre by blue, all with a highly metallic lustre; throat, neck and chest glittering green, with a small gorget of purplish feathers in the centre of the former; posterior part of the body and tail chestnut-red.

Total length,  $5\frac{1}{2}$  inches; bill,  $1\frac{1}{8}$ ; wing,  $3\frac{1}{2}$ ; tail,  $2\frac{1}{2}$ .

*Hab.* Eastern slope of the Andes.

#### 2. HELIANTHEA AURORA.

The whole of the crown rich metallic green; throat and back of the neck also metallic green, but not so lustrous as on the crown; body and tail chestnut-red, as in the preceding species, but not of so deep a hue.

Total length,  $5\frac{1}{8}$  inches; bill,  $1\frac{5}{16}$ ; wing, 3; tail, 2.

*Hab.* Eastern slope of the Andes.

#### 3. HELIANGELUS VIOLA.

Throat and upper part of the chest of the most beautiful violet colour; spot on the forehead brilliant verditer-green; neck, back and abdomen green; tail black.

Total length, 5 inches; bill,  $\frac{3}{4}$ ; wing,  $2\frac{7}{8}$ ; tail,  $2\frac{1}{2}$ .

*Hab.* Eastern slope of the Andes.

*Remark.*—Somewhat allied to *Heliangelus Parzudaki*.

#### 4. TROCHILUS (—?) CYANOCOLLIS.

Crown of the head and sides of the neck greenish blue; upper surface bronzy green; under surface snow-white; tail bronzy green, obscurely crossed near the tip with a dusky band, except the two middle feathers.

Total length,  $3\frac{3}{4}$  inches; bill,  $\frac{7}{8}$ ; wing,  $2\frac{3}{8}$ ; tail,  $1\frac{1}{2}$ .

*Hab.* Eastern slope of the Andes.

*Remark.*—Nearly allied to *Trochilus Franciæ*.

## 5. TROCHILUS (—?) FLORICEPS.

Forehead buffy white, passing into a beautiful deep peach-blossom hue on the crown; throat grey, passing into the rufous of the abdomen; middle tail-feathers bronzy; lateral tail-feathers largely tipped with buff.

Total length,  $3\frac{1}{4}$  inches; bill,  $\frac{7}{16}$ ; wing,  $1\frac{7}{8}$ ; tail,  $1\frac{5}{16}$ .

*Hab.* Sierra Nevada of Santa Martha, at an elevation of 5000 feet.

May 10, 1853.

W. Yarrell, Esq., in the Chair.

The following paper was read:—

ON A NEW SPECIES OF THALASSIDROMA.  
BY GEORGE ROBERT GRAY, F.L.S. & F.Z.S.

A specimen of a Stormy Petrel, from the north-west coast of America, has lately been kindly presented to the British Museum by Miss Hornby; as it differs from all those that I am acquainted with, I am induced to bring it before the meeting.

In form it agrees best with *Thalassidroma furcata*, but the coloration differs much in several particulars.—Front, cheeks, throat, collar round the hind part of the neck, breast and abdomen pure white; crown, hind head, a broad band in front of neck, bend of wing and lesser wing-coverts sooty grey; upper part of back grey; lower part of back and tail ashy grey; greater wing-coverts brownish grey; tertiaries and quills deep black.

Total length,  $8\frac{1}{4}$ ''; bill from gape,  $10\frac{1}{2}$ ''; from front,  $8\frac{1}{2}$ ''; tail (outer feather),  $3\frac{3}{4}$ ''; tarsus, 1''; middle toe, 1''.

I propose to give this species the appellation of *Thalassidroma Hornbyi*, after Admiral Hornby, who obtained it during his command on the Pacific station, where he collected many interesting animals for his brother-in-law, the late President of this Society.

May 24, 1853.

Dr. Gray, Vice-President, in the Chair.

The following paper was read:—

NOTES ON A CETACEOUS ANIMAL STRANDED ON THE NORTH-EAST COAST OF IRELAND. BY GEORGE GULLIVER, F.R.S.

On Saturday, May 14, 1853, a herd of cetaceous animals appeared at Dundrum Bay, many of which got away, and others were stranded. I saw on the following days about twenty-five of them lying dead there on the sand. The largest was nearly nineteen feet, and the smallest between nine and ten feet long. They were all furnished with perfect teeth. The greater number were females; in a group of nine large ones, lying near together, six were females and three males.

I was told that their death-throes were dreadful; they rose on their tails, bellowed like bulls, floundered about, and spouted bloody sand and water, as they were attacked with different destructive instruments by the peasantry. From one of the animals, between sixteen and seventeen feet long, a perfect fœtus, presently to be described, was taken, so that the breeding time of this species may be considered as now determined. One of them had the iron head of a harpoon imbedded in its back, and the wound completely healed over. In the second large compartment of the stomach were numerous fish-bones, completely denuded of all soft parts by digestion. The following measurements may be useful for future reference:—

*Measurements of a Male.*

	ft.	in.
Length from the snout to the end of the middle of the tail . . . . .	18	6
Greatest girth, excluding back fin . . . . .	12	6
Length of pectoral fin . . . . .	5	0
Breadth of base of pectoral fin . . . . .	1	0
Breadth of pectoral fin at one foot from its point . . . . .	0	4
Length of base of back fin . . . . .	3	0
Height of back fin . . . . .	1	2
Breadth of tail from point to point . . . . .	3	10

*Measurements of a Female.*

	ft.	in.
Length from snout to end of middle of tail . . . . .	16	0
Greatest girth, excluding back fin . . . . .	9	0
Girth one inch behind eyes . . . . .	5	3
Length of each side of mouth . . . . .	1	0
From snout to eye . . . . .	1	6
From eye to blowhole . . . . .	1	2
From snout to base of pectoral fin . . . . .	2	10
The blowhole behind a line intersecting the eyes . . . . .	0	1

	ft.	in.
From the snout to beginning of dorsal fin . . . .	4	11
From the end of the base of the dorsal fin to the end of the middle of the tail . . . . .	8	6
From snout to vent . . . . .	10	4
From snout to the orifice of the vagina . . . . .	10	0
From snout to the mammary slits . . . . .	10	0
From point of lower jaw to the navel . . . . .	6	0
From the eye to the angle of the mouth . . . . .	0	4 $\frac{3}{4}$
The eye above a line drawn from the base of the upper jaw along centre of the sides of the body	0	3
From the knob of the snout to the upper lip . .	0	10
Length of the mammary slit . . . . .	0	3 $\frac{1}{2}$
Transverse distance from mammary slit to ori- fice of the vagina . . . . .	0	4
Dorsal fin at its base . . . . .	2	6
Dorsal fin over its convexity . . . . .	3	0
Height of dorsal fin . . . . .	1	2
Length of pectoral fin . . . . .	3	5
Breadth of base of pectoral fin . . . . .	0	10
Length of opening of eyelid . . . . .	0	1 $\frac{1}{4}$
Diameter of eyeball . . . . .	0	1 $\frac{3}{4}$
Diameter of cornea . . . . .	0	1 $\frac{1}{8}$
Length of crown of tooth . . . . .	0	$\frac{1}{8}$ $\frac{5}{8}$

*Measurements of a Fœtus.*

	ft.	in.
Length from snout to the end of the middle of the tail . . . . .	4	8
Girth, excluding back fin . . . . .	2	5 $\frac{1}{2}$
From centre of snout to opposite the base of the pectoral fin . . . . .	1	0
Snout to beginning of the back fin . . . . .	2	0
From the upper lip to the blowhole . . . . .	0	9
From point of lower jaw to navel . . . . .	2	1
From point of lower jaw to vagina . . . . .	2	10
From the eye to the centre of the snout . . . . .	0	7
Length of base of back fin . . . . .	0	8
Height of back fin . . . . .	0	3
Length of pectoral fin . . . . .	0	11 $\frac{1}{2}$
Breadth of base of pectoral fin . . . . .	0	3 $\frac{1}{2}$
Length of intestines . . . . .	30	0

*Anatomy.*—Through the kindness of Mr. Brabazon, the excellent surgeon of Downpatrick, I had an opportunity of examining the fœtus of which the measurements have just been given. As the dissection was suddenly stopped, the details are imperfect, though accurate as far as they go. The skin was of a dark leaden colour, and the blubber on the sides of the body about half an inch thick. There were soft fringes or processes of the gums, corresponding in situation and number to the coming teeth.



The thymus of moderate size, at the usual situation in the chest, and sending no process to the neck. The spleen and a spleniculus together scarcely so big as a walnut. A flat rounded gland, about three-fourths of an inch in diameter, situated above the renal vessels on each side, and at a distance of upwards of an inch from the kidney, had more the appearance of a lymphatic gland than of the suprarenal body.

On opening the chest, each lung was seen to be covered with lymphatic vessels, running to a gland at the sterno-ventral aspect of the free edge of the lung. The gland was very juicy, had every appearance of a lymphatic gland, and measured one inch and a quarter long and five-eighths broad. This pulmonary gland in the adult is harder, more fibrous, and less juicy, and measures four and a half inches long by two broad.

The stomach with two chief compartments; the first continuing backwards on a line with the gullet, and lined, like it, with a white thick smooth membrane and epithelium; the second, or true digesting stomach, lined with a mucous membrane in folds, and somewhat smaller than the first, of a more rounded form, and extending from its middle to the duodenum. In the first was a quantity of thick, opaque, whitish fluid, and in the second a little mucus.

There was no gall-bladder. The bile-duct, close to the duodenum, was as thick as a goose quill. The last portion of the intestine was full of meconium, like that of the human fetus.

There was no cæcum; the intestines were nearly uniform in size throughout, their surface smooth and not at all cellulated. Length of the whole intestinal canal, from stomach to vent, thirty feet.

The kidneys large and lobulated throughout; the lobules from a quarter to half an inch in diameter, and having each a very delicate capsule of connecting tissue. The blood-vessels enter the kidney, not near its middle, but at its fore and inner or atlanto-mesial end.

The mesenteric glands moderate in size and number, of uniform consistency, and without any cavity or hollow in them, unlike those of the whale described by Mr. Abernethy.

The womb with two horns, and the ovaries in the usual situation; mammary slits on a level with and near to the orifice of the vagina. Urinary bladder empty, and the urethra opening just behind the clitoris.

*Descriptive Characters.*—Teeth conical and slightly curved inwards, from eight to twelve on each side of the jaws, making from thirty-two to forty-eight teeth altogether; but eleven on either side of each jaw is a common number, and there is sometimes one more in the upper than in the under jaw on each side. Dorsal fin large, convex above and extending behind into a hooked or curved point. Pectoral fins long, narrow, and tapering to a point. Tail crescent-shaped. Mouth sloping downwards and forwards. Eyes above and behind the angles of the mouth. Top of the head round, and not prominent, though the snout is remarkably so. No nipples yet protruding, but merely a longitudinal mammary slit on each side of the orifice of the vagina

in the female; a large penis in the male. Skin smooth, shining, and black throughout, save two whitish brown patches at the throat and near the vent and genitals; in a few males and females this light colour extends in a narrow strip from these points along the under part of the body, but never behind the eye, or elsewhere.

The blubber was  $1\frac{5}{8}$ ths inch thick on the sides, much thicker on the back, and composing the whole thickness of the snout. The cuticle, which on its outer surface was like oil skin, when stripped off, exhibited on its under side a jet-black velvet-like rete mucosum, furnished with a very great abundance of black pigment. Around the eyeball was a firm bony plate in the sclerotic coat; and a white funnel-shaped ligament, extremely thick, tough and strong, was attached by its base to the eyeball, and surrounded the optic nerve.

As there is no opportunity here of consulting the published descriptions and figures of the Cetacea, I am uncertain at present of the species of this one. It does not correspond with any description in the Rev. Leonard Jenyns's 'Manual of the Vertebrata,' a copy of which is my travelling companion. The present animal approaches nearest to his Grampus (*Delphinus orca*) and Ca'ing Whale (*D. melas* of Traill and *D. deductor* of Scoresby). But it is smaller than either of them, though I suspect it will prove to be Traill's *D. melas*, and has not the white spot behind the eye, nor the broad pectoral fins of the Grampus, nor the very convex top to the head, the small average number of teeth (which he makes only twenty-four in all), nor the colour of the skin of his Ca'ing Whale. The animals which I examined had a convex rounded snout, its thickness made up of gristly blubber, which it is possible may have been erroneously described as the "top of the head." The Rev. Charles Archibald, whom I had the pleasure of meeting among the carcasses, directed my attention to the difference between the pectoral fins of this species and those of the Grampus.

The relative position of the back fin, so much more forward in the adult than in the fœtus, is remarkable; and, indeed, the comparative measurements exhibit some interesting facts as to development.

Dundrum, co. Down, May 20, 1853.

*Postscript.*—The animal is undoubtedly the same as that described under the name of the Uyea Sound or Ca'ing Whale by Mr. Patrick Neill in 1806, and afterwards figured by Dr. Traill from a drawing by Mr. James Watson; by Cuvier; by Captain Scoresby, Mr. Bell, and Mr. Couch.

But though these figures are sufficient to identify the species, they all represent the pectoral fin as narrower at the base than it really is; and most of them show a twist of the tail, which was observed in none of the specimens at Dundrum Bay. Cuvier's plate is the only one that gives an idea of the pointed end of the dorsal fin; all the others represent this posterior termination of the fin too blunt, rounded, or short, though Mr. Couch correctly describes it as falcate.

No doubt, the fœtus, 4 feet 8 inches long, from Dundrum Bay,

was nearly ready for birth in the middle of May. Dr. Traill mentioned sucklings five feet long in December 1806, at Scapay Bay, one of the Orkneys; Mr. Neill says that most of the adult females at Uyea Sound, Unst, were either pregnant, or giving suck to their toothless young, in February and March 1805; and in January 1812, in the neighbourhood of Paimpol, near the northern extremity of Bretagne, M. Lamaout found the young seven or eight feet long, and with cuttle-fish, cod, and milk in their stomachs.

M. F. Cuvier states that this species is remarkable for the spherical form of the anterior part of the head, and that his brother had named it "*globiceps*, à cause de la forme arrondie de sa tête." But the "very rounded top of the head," or "remarkably convex and prominent forehead," included by systematic writers in the specific characters of the Ca'ing Whale, and even among the otherwise judicious observations of Mr. Couch, does not properly belong to it; for the forehead of the skull is flat, as in other porpoises, though the prominent upper muzzle or snout-knob is sufficiently remarkable, and not badly represented in the plates already mentioned.

But, as I have caused a young skull to be sent to the British Museum, and Mr. Brabazon has presented a complete skeleton of the adult male animal to the same national collection, Dr. Gray has examined them, and that eminent zoologist has favoured me with the following note of the result:—"I have compared the skeleton with the species which have been usually described under the name of *D. globiceps*, and it would appear that the shape of the head of the animal scarcely justified that name; I can find no difference between the Irish and the other specimens."

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June 14, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

Dr. Crisp exhibited the alimentary canal and ova of a Cuckoo (*C. canorus*), dissected on the 30th of May last. Some facts were observed that were thought of sufficient interest to place before the Society. A perfect egg was found in the oviduct, ready for expulsion, and about fifty in the ovary; two of the size of large peas, the others much smaller; a circumstance which tends to confirm the opinion that the eggs of this bird are deposited at intervals of seven or eight days.

The gizzard was lined with a hair-like substance, which, under the microscope, proved to be the spines from the legs of beetles. The gizzard contained a large quantity of the remains of the Cockchafer, and one of the Click-beetles, but no trace of a Caterpillar was discovered. In 1834 Mr. Thompson exhibited the gizzard of a Cuckoo at the Society (Proceedings, p. 29), and at first the hairy lining was

supposed to be a natural structure, but Prof. Owen, on microscopic examination, believed that the hairs were from the larva of the Tiger-moth (*Arctia caja*).

Dr. Crisp thought the subject worthy of future inquiry, and that it would be important to ascertain whether this hairy lining is present in the *Caprimulgidæ* and other insectivorous birds. As regards the spines of the beetles and the hairs of the larva of the Tiger-moth, the microscope shows this important difference,—the *hairs* are all furnished with alternate lateral aciculæ; the spines of the beetles are smooth, with sharp points.

Explanatory drawings of the parts were exhibited.

Dr. Crisp also showed two new species of worms which he had recently obtained; one from the lung of the Egyptian Cobra (*Naja Hajé*) which had been in the Society's collection. It is 3 inches long, and its chief peculiarity consists in its annular protuberances, twenty-eight in number.

Dr. Baird has described this worm as a new species, in the British Museum Catalogue, under the name of *Pentastoma annulatum*\*.

The other specimens were two nematoid worms, which Dr. Crisp obtained from the knee-joint of the common Coot (*Fulica atra*). They are of a cylindrical form, highly elastic, and coiled in a spiral manner round each other; the larger of the two, when extended, is about two inches in length, the smaller about an inch and a half; the extremities are tapering; the tail pointed; the head more orbicular. Under a power of 50 diameters, the alimentary canal can be distinctly seen.

Dr. Crisp believed that this worm had not been before described; it most resembled the *Spiroptera Falconis* of Rudolphi, or the *Spiroptera serpentulus* of Diesing. In the Museum of the London College of Surgeons (prep. 170) there are two *Filaria*, one about six inches long, from the knee-joint of the Kangaroo (*Macropus major*): and Diesing, in his 'Systema Helminthum,' 1850, mentions the *Filaria subspiralis*, from the tendons of the foot of a Crane; and the *Spiroptera serpentulus*, from the leg and foot tendons of several species of Falcon.

The following paper was read:—

ON A NEW SPECIES OF DENDROCOLAPTES.  
BY PHILIP LUTLEY SCLATER.

(Aves, Pl. LVII.)

The fine species of *Dendrocolaptes* which I now bring before the notice of the Society, was discovered by Mr. Wallace in the neighbourhood of Para. My specimen is from the Capin river, where it was collected in June 1849. A second, in Mr. Wallace's own collection, marked 'Para,' is the only other I have seen. Had I not the authority of Mr. Eyton and the Baron de la Fresnaye for considering

\* Dr. Baird has also given a description and figure of this worm, in the Proceedings for the present year, page 22. Annulosa, Pl. XXX. fig. 7.



Wolf, lith.

M. & N. Hanhart, Imp<sup>t</sup>

DENDROCOLAPTES EYTONI. *Sclater*.



the present bird as hitherto undescribed, I should hardly have ventured to characterize a species of this family, which is one of those most perplexing to ornithologists, by reason of the great similarity of colouring that pervades the group. The Baron de la Fresnaye, who has lately written a most complete monograph of these birds in the 'Revue de Zoologie,' has mentioned this species in a recent number of that periodical, under the MS. name I had proposed for it when on a visit to him eighteen months ago. This makes it desirable, I think, to give it specific characters at once, in order to avoid the evils of leaving a published name without a published description attached.

The specific name is in honour of Mr. Eyton, who has worked a great deal at the *Dendrocolaptinæ*, and published the results of his labours in the shape of descriptions of several new species, and a general list of the whole subfamily, in the 'Contributions to Ornithology' for last year.

DENDROCOLAPTES EYTONI, Sclater. *D. supra cinnamomeo-brunneus; caudæ colore intensiore, primariis intus ad apices obscurioribus; capitis collique superi plumis nigrescentibus, linea lata mediali fulvo-albida; subtus, mento et gula albis; pectore toto et ventre summo albido flammulatis, singulis plumis plaga mediali albida utrinque brunneo marginata; ventre imo et lateribus fulvis; tetricibus subalaribus pallide brunneis; rostro paululum incurvo; mandibula superiore nigrescente, inferiore corneo; pedibus nigris.*

Long. tota, 9-5; alæ, 4-0; rostri a rictu, 1-9; a fronte, 1-5.

*Hab.* in vicinitate Paræ, imp. Brasiliensis.

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June 28, 1853.

W. Yarrell, Esq., in the Chair.

The following paper was read:—

DESCRIPTIONS OF NEW SHELLS FROM THE COLLECTION OF  
H. CUMING, ESQ. BY ARTHUR ADAMS, F.L.S. ETC.

1. GAFRARIUM (CORBIS) CÆLATUM, A. Adams. *G. testa æquivalvi, subcompressa, æquilaterali, alba, transversim ovali, utrinque rotundata, costellis transversis, concentricis, crenatis et tuberculis triangularibus, squamiformibus in interstitiis pulcherrime cælata; tuberculis antice et postice validioribus et imbri catis; margine ventrali arcuato, crenulato.*

*Hab.* Sorsogon, Island of Luzon, coarse sand, 6 fathoms (H. C.).  
Mus. Cuming.

2. *GAFRARIUM (CORBIS) SCITULUM*, A. Adams. *G. testa æquivalvi, subæquilaterali, alba, opaca, compressiuscula, lamellis concentricis, æquidistantibus ornata, interstitiis lineis elevatis, longitudinalibus concinne clathratis; latere antico rotundato, postico subangulato, flexuoso, pulcherrime fimbriato; margine ventrali arcuato, vix denticulato, intus lineis impressis, radiatim dispositis instructo; sinu pallii impressionis mediocri.*

*Hab.* Puerto Gallaro, 10 fathoms, coarse sand. Mus. Cuming.

3. *RANELLA JUCUNDA*, A. Adams. *R. testa fusiformi, albida, fascia fusca ad suturas ornata; anfractibus septem, rotundatis, liris elevatis, longitudinalibus et transversis, concinne clathratis; sutura valde profunda; varicibus duabus, lateralibus, dilatatis, radiatim costellatis, marginibus dentatis; apertura orbiculari, postice integra, antice canaliculata; canali aperta, producta, postice subrecurvata.*

*Hab.* North Australia. Mus. Cuming.

4. *TYPHIS FIMBRIATUS*, A. Adams. *T. testa muriciformi, albida, rufo variegata; spira producta; anfractibus 5-6, gradatis, planulatis, superne angulatis, transversim liratis; varicibus tribus, fimbriatis, interstitiis tubulis brevibus, truncatis, instructis; anfractu ultimo antice producto, fascia fusca, transversa ornato; apertura ovali, postice integra, antice canaliculata; canali producta, vix clausa; labro extus valde fimbriato, fimbria antrorsum curvata.*

*Hab.* Gulf of California. Mus. Cuming.

5. *MUREX DIADEMA*, A. Adams. *M. testa ovato-fusiformi, umbilicata, carneo-fulvescenti; spira producta, anfractibus octo, in medio angulatis, spinis incurvatis, subfoliatis, eleganter coronatis, liris transversis, squamulosis, confertis ornatis; anfractu ultimo subventricoso, spinis foliatis, laciniatis instructo, antice porcis tribus, transversis, squamosis ornato; apertura ovali; labio simplice, recto; labro acuto, intus lirato; canali aperta, brevi, postice subcurvata; regione umbilicali squamis imbricatis circumdata.*

*Hab.* Philippine Islands. Mus. Cuming.

6. *MUREX PUMILUS*, A. Adams. *M. testa parva, carneola, ovato-fusiformi; spira elevata; anfractibus sex, convexiusculis; anfractu ultimo varicibus quinque marginibus denticulatis, liris majoribus cum minoribus alternantibus; liris squamoso-asperis; apertura ovali, labio antice tuberculifero, labro interne valde lirato; canali brevi, vix aperta, retrorsum curvata.*

*Hab.* China Seas. Mus. Cuming.

7. *MUREX SALLEANUS*, A. Adams. *M. testa ovato-fusiformi, sordide alba, fusco variegata; anfractibus convexis, costellis transversis, elevatis, nodulosis, interstitiis elevatim liratis, ornatis; varicibus tribus, transversim costato-spinosis, inter-*



*stittiis nodosis; apertura rotundato-ovali, intus alba, postice canaliculata; canali producta, vix clausa, antice subreflexa.*

*Hab.* Saint Domingo, West Indies. Mus. Cuming.

8. MUREX PAUXILLUS, A. Adams. *M. testa ovato-fusiforimi, rimata, nigro-fusca, fasciis albis ornata; spira producta, aper- turam æquante; anfractibus septem; varicibus parvis, sub- confertis; liris duabus, ad varices nodatis; interstitiis squa- mulis instructis; anfractu ultimo fasciis tribus, albis, trans- versis ornato, varicibus septem et costis asperis, ad varices no- datis, instructo; apertura ovali; labio simplice; labro intus albido et nodoso-lirato, extus fimbriato; canali brevi, aperta, vix reflexa.*

*Hab.* Gulf of California. Mus. Cuming.

9. MUREX TRIVIALIS, A. Adams. *M. testa ovato-fusiforimi, rufescente, lineis transversis, fuscis ornata; spira producta; anfractibus septem, convexis; varicibus tribus, squamigeris, interstitiis nodulis, sæpe duplicatis, ornatis; apertura ovali, postice sulcata; labro intus lirato; canali aperta, recta, sub- producta.*

*Hab.* —? Mus. Cuming.

10. MUREX FIMBRIATUS, A. Adams. *M. testa solida, pyriformi, albida, rufo sparsim variegata; spira brevi; anfractibus qua- tuor, superne excavatis; varicibus septem, reflexis, fimbriatis, radiatim costatis, concinne squamulosis, marginibus laciniatis; anfractu ultimo producto, acuminato; apertura rotundata, postice integra, antice canaliculata, recta, canali clausa, antice subrecurvata.*

*Hab.* Gulf of California. Mus. Cuming.

11. MUREX SCALARIS, A. Adams. *M. testa scalariformi, umbi- licata, sordide alba, rufo-fusco variegata; anfractibus convex- iusculis, ad suturas planulatis; anfractu ultimo varicibus costiformibus novem, liris transversis, elevatis, squamosis, spi- nulosis, ad costas instructo; apertura ovali, postice integra, antice canaliculata; canali subproducta; labro intus lirato.*

*Hab.* Australia, Moreton Bay (*Strange*). Mus. Cuming.

12. MUREX CASTUS, A. Adams. *M. testa ovata, crassa, alba; spira brevi, apice acuto; anfractibus quinque, convexiusculis; ultimo varicibus septem, rotundatis, laminis transversis, subdi- stantibus, marginibus liberis, squamulosis, imbricatis, in serie unica dispositis, ornato; apertura ovali, postice integra, antice canaliculata; canali vix producta, recurvata, aperta; labro crenulato, intus lirato.*

*Hab.* China Seas. Mus. Cuming.

13. MUREX ARMATUS, A. Adams. *M. testa ovato-fusiforimi, umbilicata, alba, spira producta; anfractibus septem in medio angulatis; anfractu ultimo varicibus octo, spinis acutis, promi-*

*nentibus, majoribus cum minoribus alternantibus, armato, interstitiis costis elevatis, eleganter squamulosis, ornatis; apertura ovali; labio postice subexpanso, antice tuberculis duobus instructo; canali producta, vix recurvata.*

*Hab.* Gulf of California. Mus. Cuming.

14. MUREX NITENS, A. Adams. *M. testa ovato-fusifor-  
m, rimata, alba, nitida, maculis fuscis sparsim ornata; spira  
acuta; anfractibus planiusculis, longitudinaliter costatis, liris  
transversis, elevatis, ad costas subspinosis; apertura ovali,  
intus lutescente; labio antice obsolete plicato; labro margine  
acuto, intus valde lirato; canali brevi, aperta, recurvata.*

*Hab.* Philippines. Mus. Cuming.

15. MUREX COREANICUS, A. Adams. *M. testa ovato-fusifor-  
m, triquetra, pallide fusca, maculis castaneis sparsim notata;  
anfractibus sublævibus, obsolete liratis; varicibus tribus, foli-  
atis, marginibus crenatis, reflexis, dente valido instructis; inter-  
stitiis nodo unico ornatis; apertura ovali, labio antice producto,  
subreflexo; labro intus tuberculato, antice dente valido in-  
structo; canali subrecta, clausa.*

*Hab.* Corean Archipelago. Mus. Cuming.

16. MUREX AUSTRALIENSIS, A. Adams. *M. testa fusiformi,  
spira producta, albida, rufo-fusco tincta; anfractibus sex  
convexis, transversim valde liratis, liris subasperis, varicibus  
prominentibus, spinoso-laciniatis, in seriebus tribus dispositis;  
interstitiis nodo unico instructis; apertura ovali, intus rubra;  
canali producta, recta, aperta, extus fimbriato-spinosa.*

*Hab.* Australia. Mus. Cuming.

17. MUREX COCCINEUS, A. Adams. *M. testa parva, ovato-fu-  
siformi, coccinea; spira acuminata, producta; anfractibus  
quinque, transversim valde porcata, porcis ad suturas nodosis;  
varicibus æqualibus, mediocribus, in anfractu ultimo sex, superne  
subangulato-spinosis; apertura ovali, intus coccinea; labro intus  
valde lirato; canali brevi, subreflexa, aperta.*

*Hab.* St. Thomas, West Indies. Mus. Cuming.

18. MUREX DESPECTUS, A. Adams. *M. testa fusiformi, sordide  
alba, nigro-fusco variegata; anfractibus convexis, transversim  
liratis, liris rugosis, inæqualibus; varicibus tribus, foliato-spi-  
nosis, laciniatis, interstitiis nodo unico instructis; apertura  
ovalis, intus alba, postice canaliculata; canali producta, recta,  
vix aperta.*

*Hab.* West Indies. Mus. Cuming.

19. MUREX SUBSPINOSUS, A. Adams. *M. testa ovato-fusifor-  
m, serotina, nigro-fusco punctata; anfractibus sex, convexusculis,  
transversim valde liratis, liris ad costas nodosis; nodulis  
fuscis; varicibus costiformibus, (in anfractu ultimo septem)  
obliquis, nodoso-spinosis; apertura ovali, intus aurantiaca,*

*labio antice triplicato; labro intus valde dentato; canali brevi, aperta, subreflexa.*

*Hab.* —? Mus. Cuming.

20. PUSIONELLA GRANDIS, A. Adams. *P. testa ovato-fusiformi, alba, lævi, spira producta, acuminata; anfractibus novem, planiusculis, ultimo superne subangulato, antice lineis elevatis, transversis instructo; apertura angusta, ovali; labio lævigato, postice calloso, antice carina spirali instructo; canali postice subreflexa; labro simplice, acuto.*

*Hab.* Ichaboe, W. Africa. Mus. Cuming.

A large species entirely of a white colour, and with the surface of the whorls nearly smooth; the outline of the spire is convex, and the shell is of a solid growth.

21. PUSIONELLA LIRATA, A. Adams. *P. testa fusiformi, fuscata, spira producta, acuta; anfractibus decem, planulatis, transversim liratis, liris elevatis, subgranulosis; apertura elongato-ovalis, antice producta; canali postice subreflexa; labio simplice, subflexuoso; labro acuto, intus lævigato.*

*Hab.* Senegal. Mus. Cuming.

A brown aciculate species, with close-set, transverse, somewhat granulated liræ.

22. VEXILLA LINEATA, A. Adams. *V. testa ovali, fusca, lineis albis, transversis ornata; spira brevi, obtusa; anfractu ultimo magno, superne rotundato, transversim striato; apertura elongato-ovata, postice canaliculata, antice emarginata, intus cinerea; labio explanato; columella arcuata, simplice; labro planulato, intus dentato-lirato, margine crenulato.*

*Hab.* Philippines; Isle of Capul. Mus. Cuming.

23. TRIGONIA NOBILIS, A. Adams. *T. testa ovata, æquivalvi, inæquilaterali, alba, transversim striata; latere antico lævi, latiore, rotundato, obsolete anguloso, superne vix alato, producto; latere postico brevior, producto, truncato, angustato, aperto, radiatim sulcato; foramine ovali, marginibus incrassatis, subreflexis; margine ventrali arcuato, regulari, simplice.*

*Hab.* —? Mus. Cuming.

24. STYLINA FULVESCENS, A. Adams. *S. testa ovato-acuminata, vix rimata, obliqua, pellucida, fulvescente, apice attenuata, stylifera; suturis impressis; anfractu ultimo rotundato; apertura ovata, antice subproducta; labro arcuato, margine vix incrassato, antice subreflexo.*

*Hab.* Island of Labuan; found in a Star-fish. Mus. Gruner and Cuming.

25. STOMATELLA BACONI, A. Adams. *S. testa ovali-orbiculata, subturbinata, spira producta, apice acuto; anfractibus superne concavis; sordide alba, rufo-fusco variegata, transversim spiraliter sulcata, interstitiis longitudinaliter striatis; apertura*

*aperta, intus sulcata; labio subincrassato, albo, reflexo, concentricè striato.*

*Hab.* Swan River. Mus. Cuming.

In form this species somewhat resembles *S. papyracea*, but it is smaller, of a more solid texture, and with colouring and sculpture entirely of a different character.

26. STOMATELLA CUMINGII, A. Adams. *S. testa auriformi, imperforata; spira depressa, lutescenti-albida, transversim spirally costata, costis elevatis, subæqualibus, asperis, rufo-fusco articulatis; interstitiis lamellis subimbricatis, tenuibus, longitudinalibus ornatis; apertura patula, intus sulcosa; labio subreflexo.*

*Hab.* —? Mus. Cuming.

This is a large and elegant species, with a peculiar yellow, glistening tinge in the intervals between the spiral rugose ribs; the aperture is very transverse, and the inner lip is reflexed on the columella.

27. STOMATELLA ARABICA, A. Adams. *S. testa ovato-globosa, subturbinata, umbilicata, alba, rubro concinne variegata; spira producta; anfractibus liratis, ultimo ventricosò, convexo, transversim striato; apertura aperta, subovali; columella obliqua, regione umbilicali impressa; labio albo, tenui, reflexo, umbilicum partim obtegente.*

*Hab.* Red Sea. Mus. Cuming.

This is a small species with the whorls rounded and simply striated. The colour and markings vary; the ground, however, is usually white with large irregular reddish blotches.

28. STOMATELLA CALLIOSTOMA, A. Adams. *S. testa ovato-subturbinata, rimata, spira depressa, rufescente, fusco variegata, transversim lirata, liris elevatis, inæqualibus; apertura transversim ovali, intus rosea, iridescente; labio tenui, acuto, arcuato.*

*Hab.* Ceylon. Mus. Cuming.

The interior of the aperture in this species is of a beautiful iridescent reddish or violet tint; externally, the whorls are spirally lirate, and of a reddish brown, variegated with markings of a darker colour.

29. STOMATIA BICARINATA, A. Adams. *S. testa turbinata, umbilicata; spira producta, lutescente, maculis viridibus radiatim dispositis, ornata; anfractibus planiusculis, superne angulatis, ultimo carinis duabus elevatis, instructo, transversim spirally striato; apertura mediocri, subtetragonali; columella recta, antice vix callosa.*

*Hab.* Moreton Bay, Australia. Mus. Cuming.

This is a very pretty species with a deep umbilicus, and straight columella; the whorls are furnished with prominent keels, of which there are two on the last whorl; the shell is ornamented with green blotches.

July 12, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. ON SOME FISHES ALLIED TO GYMNOTUS.  
BY ALFRED R. WALLACE.

My object is to call the attention of the Society to some curious fishes allied to the Electrical Eel, which are abundant in the fresh waters of South America. They present many modifications of form, and will probably constitute a distinct family or subfamily. They may be characterized as fishes of an elongate form, very slender posteriorly, without dorsal or ventral fins, but with a very long anal fin. The intestines are situated immediately behind the head, and occupy a very small portion of the entire length of the fish. The teeth are very small, or altogether wanting. The air-bladder is in some species very long, in others almost obsolete; and the scales are very minute, ovate, concentrically striate, and often so imbedded in mucus as to be invisible till scraped off. The gill-opening is generally very small, and the eyes and nostrils minute.

There seems to be sufficient variety of form and structure to justify the establishment of *five genera*.

1. The true *Gymnotus* (of which the *Gymnotus electricus* appears to be the only well-known species), characterized by the anal fin reaching the extremity of the tail, which is flattened; by the air-bladder extending almost the entire length, in a cavity beneath the vertebræ; and by having a single row of short acute teeth in each jaw.

2. The genus *Carapus*, to which five of my species belong. These have the tail cylindrical and pointed, extending beyond the anal fin; a band of minute teeth in each jaw; and a double air-bladder, generally of very small size. One of my species appears to be identical with *Carapus brachyurus* of Bloch.

3. A form, of which I have but one representative, which has a deep body, a rather large mouth, but *no teeth*, and a small round single air-bladder.

4. Two long-jawed species, which have a very small mouth, *no teeth*, and *no air-bladder*. The larger of these is probably the *Gymnotus rostratus* of Schneider.

5. The genus *Apteronotus*, which differs from all the preceding in having a small, but perfectly-formed and rayed caudal fin, a rather large mouth, with the lower jaw shutting within the upper, and the teeth rather acute and prominent in a row on the *sides* of the jaws only. My representative of this genus appears to be quite distinct from *Apteronotus albifrons* of Lacépède.

These fishes were all found near the sources of the Rio Negro and

Orinoco, one of the most central positions in South America. They are most abundant in the smaller streams, and feed on minute aquatic insects. None of them, except the common *Gymnotus*, have any electrical properties. They are all eaten, though, owing to the number of forked or branched bones in every part of their bodies, they are not much esteemed.

The situation of the vent in these fishes is very peculiar, the intestine passing forwards from the stomach, instead of backwards, as is usually the case, so that they have the anus situated under the throat; in one of the long-snouted species it is actually considerably in front of the eyes, a peculiarity which I believe does not occur in any other vertebrated animal.

This fish, too, is remarkable for the very singular manner in which it is said to feed. It is asserted that it lives principally on ants and white ants, which it obtains by laying its tail out upon land. The ants, attracted by its mucous covering, crawl thickly upon it, when the fish dives down and leaves the ants struggling upon the surface of the water, where it is enabled to eat them at its leisure. The Indians assert that, when fishing at night, they often see this take place.

To give some idea of the distribution of fishes in the rivers of South America, I may mention, that of 205 species which I found in the Rio Negro,—

- 43 were spinous-finned fishes, principally *Percidæ* and *Labridæ* ;
- 54 were *Siluridæ* ;
- 80 were *Salmonidæ* ;
- 24 were other soft-finned fishes, of the families *Esocidæ*, *Anguillidæ* and *Cyprinidæ* ; and
- 4 were Ray fish (cartilaginous fishes).

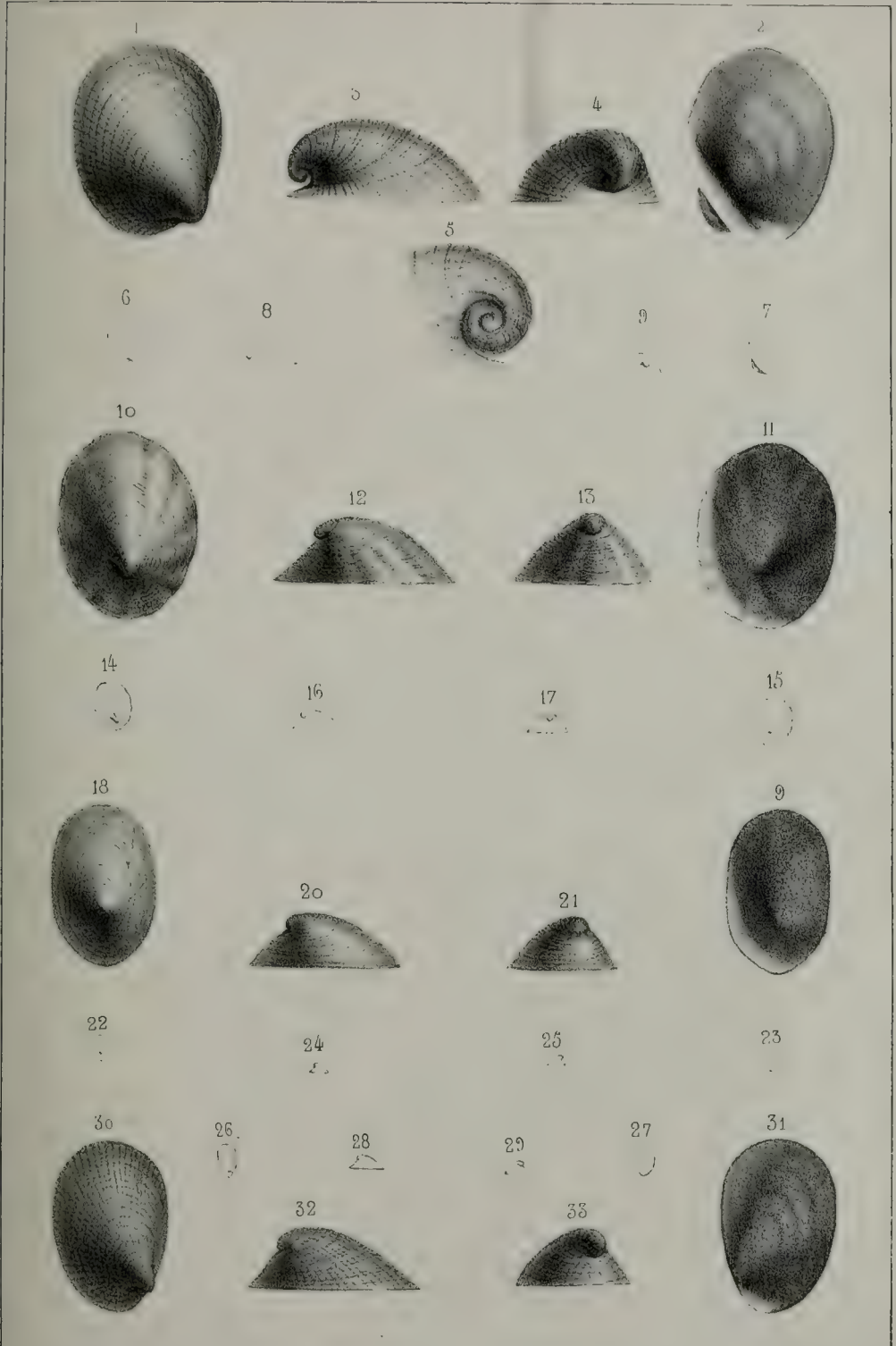
2. DESCRIPTIONS D'ANCYLES NOUVEAUX, DE LA COLLECTION DE M. CUMING, PRÉCÉDÉE D'UNE COURTE NOTICE SUR LE GENRE ANCYLUS, ET D'UN CATALOGUE COMPLET DES ESPÈCES QUI LE COMPOSENT. PAR M. J. R. BOURGUIGNAT.

(Mollusca, Pl. XXV.)

M. Cuming, sur la recommandation du savant conchyliologue français, M. Deshayes, ayant bien voulu nous communiquer sa collection d'*Ancyles*, nous nous sommes empressés de l'examiner; et comme nous y avons reconnus plusieurs espèces inconnues jusqu'à ce jour, nous croyons devoir en donner les descriptions.

Nous les ferons précéder de quelques courtes notes sur le genre même auquel ces coquilles nouvelles appartiennent, et d'une liste de toutes les espèces jusqu'ici connues.

Mais tout d'abord, n'oublions pas de remercier M. Cuming de la communication si bienveillante qu'il a bien voulu nous faire; l'extrême bonne grace qu'il y a mis ne nous a point surpris; nous n'attendions pas moins de lui, tous les conchyliologues savent qu'il joint



E. Levasseur del. et lith.

Imp. Lemercier, Paris

1 - 9	Ancylus	Cummingianus.
10 - 17	id.	Drouëtianus.
18 - 25	id.	Baconii
26 - 33	id.	Saulcyanus.





aux connaissances du savant, le caractère distingué du véritable "gentleman."

§ 1. *Historique du genre Ancylus.*

Le genre *Ancylus* a été créé par Étienne Louis Geoffroy en 1767, dans son petit traité des coquilles de Paris ; et adopté presque immédiatement, en 1774, par Othon Frédéric Müller, dans son excellent travail, 'Vermium terr. et fluv. Historia,' vol. ii. p. 199.

Le mot *Ancylus* est tiré du grec, ἀγκύλος, UNCUS, *crochu*, et ne vient point, ainsi que plusieurs naturalistes le pensent, du vocable latin, *Ancila*, bouclier.

Cependant, c'est Martin Lister qui, le premier (en 1678), fit connaître sous le nom de *Patella fluviatilis*, une espèce de ce genre ; espèce qu'il reproduisit en 1685 sous la même désignation dans les descriptions de son 'Historia sive Synopsis Meth. Conch.,' no. 39. p. 56.

Depuis cet auteur jusqu'à nos jours les diverses espèces d'*Ancylus* ont été rangées tantôt dans un genre, tantôt dans un autre.

Ainsi : Gualtieri, 1742 ; Linnæus, 1746, 1758, 1761 et 1767, dans les principales éditions de ses ouvrages ; Ginanni, 1757 ; Pennant, 1777 ; Da Costa, 1778 ; Schröter, 1779 ; Gmelin, 1788 ; Bruguière, 1789 ; Poiret, 1801 ; Montagu, 1803 ; Schlotheim, 1818 ; Turton, 1819 ; Dillwyn, 1823 ; Wood, 1828, &c., ont placés les *Ancyles* dans le genre *Patella*.

Klein, 1753, dans le genre *Calyptra*.

Des Alliers d'Argenville, 1742 ; Buc'hoz, 1771, dans le genre *Lepas*.

Denis de Montfort, 1810, dans le genre *Helcion*.

Oken, 1816, dans celui des *Bulimus*.

Fleming, 1828, dans les *Crepidula*.

Gray, 1840, dans les genres *Ancylus* et *Velletia*.

Mais le genre *Ancylus*, créé par Geoffroy en 1767, adopté par Müller en 1774, a été successivement employé par Draparnaud, 1801 et 1805 ; Férussac, 1807 ; Millet, 1813 ; Desmarest, 1814 ; Brard, 1815 ; C. Pfeiffer, 1821 ; Lamarck, Nilsson et Férussac, 1822 ; Deshayes, 1824 ; De la Pylaie, Risso, Sowerby, 1826 ; Lyell, 1827 ; Sander-Rang, 1829 ; Menke, Zieten, 1830 ; Michaud, 1831, &c. &c., enfin par tous les conchyliologues de nos jours.

Le genre *Ancylus* a été également balloté de famille en famille :—

De Roissy, 1805, place ce genre dans la famille des *Patelles*.

Duméril, 1806, dans celle des *Dermobranches*.

Lamarck, 1822, dans celle des *Calyptraciens*.

Férussac, 1819 et 1822 ; Menke, 1828 ; Deshayes, 1830, dans celle des *Lymnéens*.

Hartmann, 1821, dans celle des *Pneumonés Linnophiles*.

De Blainville, 1825, dans celles des *Otidés* et des *Subaplysiens*.

Latreille, 1825, dans celle des *Linnocochlides*.

Risso, 1826, dans celle des *Auricules*.

Fleming, 1828, dans celle des *Pulmonifères aquatiques*.

Sander-Rang, 1829, dans celle des *Semiphyllidiens*.

Turton, 1801, dans celle des *Patellides*.

Gray, 1840, dans celle des *Linnæadæ*.

Enfin, M. Moquin-Tandon, 1852, dans celle des *Lymnéens*.

Trois conchyliologues ont même créé pour ce genre une famille spéciale :—

Menke, 1830, la famille des *Ancylæa*;

Fitzinger, 1833, celle des *Ancyloidæa*;

Mauduyt, 1839, celle des *Ancyliens*;

Familles qui ont été successivement adoptées par M. l'abbé Dupuy, 1847, 1851, dans son grand ouvrage sur les Mollusques de la France.

Quant à l'ordre dans lequel les *Ancyles* ont été rangés par les conchyliologues, ce genre a encore été balloté de l'ordre des *Inférobanches*, *Hypobanches*, *Dermobanches*, *Pectinibanches*, *Scutibanches*, *Pleurobranches*, *Cyclobanches*, *Monopleurobranches*, *Pneumonobanches*, *Tectibanches*, *Pulmobanches*, &c., dans ceux des *Adelopneumonés*, *Pulmonés*, *Pulmonifères aquatiques*, &c. &c.

Enfin, M. Moquin-Tandon, 1852, a créé pour ce genre l'ordre des *Gastéropodes Amphibies*.

Tel est aussi succinctement que possible l'historique du genre *Ancylus*.

### § 2. Description du Genre.

*Animal* gastéropode amphibie, plus ou moins conique en dessus, aplati en dessous, marchant sur un pied large, de forme ovalaire, profondément séparé de l'enveloppe palléale qui est ordinairement mince, de couleur uniforme ou maculée, et qui recouvre tout l'animal, comme une immense calotte, excepté en avant. Tête grosse et courte, subquadrangulaire, portant latéralement deux tentacules courts, contractiles, tronqués au sommet, et offrant au côté externe à la partie inférieure une sorte de dilatation mince et arrondie. Yeux sessiles, médiocres et arrondis, placés à la base interne et antérieure des tentacules. Bouche ordinairement étroite, située en dessous, au milieu du mufle, et possédant trois machoires ; une transversale et deux verticales. Poche pulmobranchiale, ainsi que l'orifice anal et génital, située soit à gauche (*Ancylastrum*), soit à droite (*Velletia*).

*Coquille* recouvrant entièrement l'animal, épidermée, muscoso-cornée ou crétacée, transparente ou opaque, lisse ou striée, de forme Patelloïde ou Pyléoside, plus ou moins spirale, présentant un sommet mousse, obtus ou aigu, &c., plus ou moins postérieur, et plus ou moins incliné à droite (*Ancylastrum*), ou à gauche (*Velletia*). Impressions musculaires très-peu visibles, étroites, linéaires, situées un peu au dessus du péristome.

### § 3. Division du genre *Ancylus* en deux sections, *Ancylastrum* et *Velletia*.

Il existe plusieurs systèmes pour le sectionnement des espèces du genre *Ancylus*.

Beck notamment a séparé les *Ancyles* en deux groupes ; le premier auquel il conserve le nom d'*Ancylus*, le second qu'il nomme *Acroloxus*.

Nous ne pouvons adopter le système de Beck, car il n'a aucune valeur scientifique.

Gray a été plus loin, au lieu de deux sections, il divise les espèces du genre *Ancylus* en deux genres distincts. D'abord le genre *Ancylus*, ensuite le genre *Velletia*.

L'espèce type pour laquelle cet auteur a créé ce genre nouveau, est l'*Ancylus lacustris* de Müller.

Cette division a quelque chose de bon, puisqu'elle se fonde sur un caractère réel : la position de la cavité pulmobranchiale. Mais nous ne pensons pas qu'il faille adopter le nouveau genre d'une manière tout-à-fait absolue, car il faut remarquer que le caractère sur lequel Gray l'a appuyé, est isolé, et que sauf cette différence, il n'y en a pas d'autres suffisantes pour autoriser la séparation complète du *lacustris*, d'avec les autres espèces d'*Ancyles*.

Nous ne conserverons donc l'appellation *Velletia*, que comme une simple indication d'une subdivision du genre *Ancylus*.

Pour nous, nous fondant sur cette loi que nous avons reconnu constante, et qui a pour base la conformation de l'animal et celle de son test ; loi que voici :—*La direction du sommet correspond toujours, mais en sens inverse, avec la position dextre ou sénestre de la poche pulmobranchiale*—nous établissons deux groupes d'*Ancyles* dont voici les caractères :—

Groupe 1. ANCYLASTRUM. Animal *sénestre* ; coquille ayant toujours le sommet plus ou moins *incliné à droite*.

Groupe 2. VELLETTIA. Animal *dextre* ; coquille ayant toujours le sommet plus ou moins *incliné à gauche*.

#### § 4. Caractères distinctifs des Espèces.

Après avoir établi les caractères généraux des groupes, disons maintenant un mot sur ceux des espèces.

Voici, selon nous, les caractères essentiels sur lesquelles il faut se baser pour créer une bonne espèce dans le genre *Ancylus*.

Le premier et le plus essentiel, parce qu'il correspond toujours à la conformation anatomique de l'animal, est *la position dextre ou sénestre du sommet*. Maintenant, ce sommet, quelque soit sa position, peut présenter des formes différentes de *contour*, de *courbure*, d'*obliquité*, &c.

Un second caractère très-important, mais cependant inférieur, est *le mode d'après lequel le test prend sa croissance* ;—caractère au moyen duquel on peut établir pour les *Ancyles* les groupes suivants :—

1. Les espèces à *accroissement rectiligne*, c'est-à-dire les *Ancyles* dont les parties de la coquille, placées entre la pointe du sommet et le contour antérieur du péristome, vont en s'évasant sans prendre une apparence concave ou convexe.

2. Les espèces à *accroissement convexe*.

3. Les espèces à *accroissement complexe*, c'est-à-dire, celles dont la croissance suit deux marches différentes et successives, soit qu'elle apparaisse : 1. *convexe et ensuite rectiligne* ; 2. *convexe et enfin concave*.

Nous allons indiquer maintenant un troisième caractère, qui paraît avoir échappé jusqu'à ce jour à la sagacité des auteurs : il consiste dans une dépression souvent très-apparente, que l'on trouve constamment au sommet du test des *Ancyles*, et que nous appellerons *dépression apicale*.

La dépression dont il s'agit se présente, selon les espèces, sous deux formes, *la forme elliptique* et *la forme arrondie* ; elle peut occuper en outre une des quatre positions suivantes :—

1. Elle peut se trouver à *l'extrémité du sommet*, et regarder *la base du bord postérieur du péristome* ; alors, et en raison même de cette position, elle se rapproche toujours de la forme *arrondie*.

2. Elle peut être placée *un peu au-dessus de la pointe du sommet*, et regarder plus ou moins obliquement le ciel, suivant que le sommet offre une spire plus ou moins prononcée.

3. Placée dans la position qui précède, la dépression apicale peut se rencontrer sur *le côté droit du sommet*.

4. Ou bien elle peut se trouver sur *le côté gauche du sommet*.

Dans ces trois dernières positions la dépression apicale se présente ordinairement sous la forme *elliptique*.

N'oublions pas, enfin, un indice caractéristique non moins excellent qu'on aurait tort de laisser de côté ; il s'agit *des mœurs* et *du mode d'habitation des individus* ; s'il n'est pas fondamental, il est du moins grave et important.

Ce n'est qu'après un examen sérieux de ces caractères de premier ordre, que l'observateur pourra s'occuper des formes d'ouverture, de stries, de l'épaisseur, de la couleur du test, &c.—accidents variables, et, selon nous, secondaires.

### § 5. *Distribution géographique des Ancyles.*

Les *Ancyles* se trouvent répandus en Amérique, en Asie, en Afrique, en Europe, et en Océanie.

Les espèces d'*Ancyles* de la section des *Ancylastrum*, habitent dans ces cinq parties du monde que nous venons de citer.

Celles de la section des *Velletia* n'ont été recueillies jusqu'à présent que dans notre continent Européen.

Nous allons donner un simple catalogue des espèces du genre *Ancyle* par ordre alphabétique, tout en les divisant en *Ancylastrum* et en *Velletia*.

À chacune de ces espèces que nous allons énumérer, nous n'indiquerons que les synonymies les plus indispensables, et les localités précises où chacune d'elles a été rencontrée jusqu'à ce jour.

Ensuite, nous terminerons cette notice par des descriptions détaillées des espèces nouvelles provenant de la collection de M. Cuming.

### § 6. *Catalogue des Espèces du genre Ancylus.*

#### Groupe 1. ANCYLASTRUM.

1. ANCYLUS ADUNCUS, Gould, Proc. Bost. Soc. Nat. Hist. ii. p. 210, 1847.

*Hab.* l'île de Madère.

2. *ANCYLUS BARILENSIS*, Stef. Moricand, troisième Supplém. au Mém. sur les Coq. terr. et fluv. de la prov. de Bahia, p. 65. tab. 5. fig. 30-32, 1845.

*Hab.* le lac Baril, près de Bahia (Brésil).

3. *ANCYLUS BEANI*, Bourguignat, Cat. des espèces du genre *Ancylus*, in Journ. de Conch. no. 2. p. 176, 1853.

*Hab.* les mares de la Guadeloupe.

4. *ANCYLUS CAFFER*, Krauss, Die Sudafrik. Moll., p. 70. tab. 4. fig. 13, 1848.

*Hab.* la terre de Natal, aux environs de Piéter Mauritzburg (Afrique).

5. *ANCYLUS CALCARIUS*, De Kay, Zool. of New York, &c. part 5. Mollusca, p. 13. pl. 5. fig. 99. A. B, 1843.

*Hab.* le Passaic, près de Patterson, dans les États-Unis.

6. *ANCYLUS CHARPENTIERIANUS*, Bourguignat, Cat. des esp. du genre *Anc.*, in Journ. de Conch. no. 2. p. 173. pl. 6. fig. 12, 1853.

*Hab.* les environs de Valparaiso (Amérique du Sud).

7. *ANCYLUS COMPRESSUS*\*, Nyst, Descript. des Coq. et des Polyptères foss. des terrains tertiaires de la Belgique, p. 460. no. 396. pl. 38. fig. 16. A. B. C, 1843.

Espèce fossile des sables noirs des environs d'Anvers, en Belgique.

8. *ANCYLUS CONCENTRICUS*, Alc. d'Orbigny, Syn. terr. et fluv. Moll. in Mag. de Zool., Classe 5. no. 61. p. 24. no. 3, 1835, et Voy. dans l'Amér. mérid., Moll. tom. v. 3 partie, p. 354. pl. 42. fig. 18, 19, 1836.

*Ancile concentrique*, Chenu, Lec. élém. sur l'hist. nat., Conch. p. 145. fig. 845, 1847.

*Hab.* les environs de Montevideo, dans la république de l'Uruguay (Amérique du Sud).

9. *ANCYLUS COSTULATUS*, Küster in litt. Bourguignat, Cat. des espèces du genre *Ancylus*, in Journ. de Conch. no. 2. p. 191, 1853.

*Hab.* en Europe, les îles de Corse, de Sicile, de Sardaigne, les Baléares; en Afrique, l'Algérie.

10. *ANCYLUS CRASSUS*, Haldeman, Monogr. Freshwater Univ. Moll. &c. no. 7. p. 14. pl. 1. fig. 8, 1844.

*Hab.* l'Orégon, dans les États-Unis.

11. *ANCYLUS CULICOÏDES* †, Alc. d'Orbigny, Syn. terr. et fluv. Moll. &c. in Mag. de Zool. Classe 5, no. 61. p. 23. no. 1, 1835, et Voy. dans l'Amér. mérid., Moll. tom. v. 3 partie, p. 355. pl. 42. fig. 9-12, 1836.

*Hab.* les marais qui communiquent avec la rivière de Guayaquil, non loin de la ville du même nom, dans la république de l'Équateur (Amérique du Sud).

\* Non *Ancylus compressus*, Parreyss, qui est une espèce différente.

† Non *Ancylus culicoides*, Moricand, qui est une espèce différente.

12. *ANCYLUS CYCLOSTOMA*, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 193, 1853.

*Hab.* le département de l'Aube (France).

13. *ANCYLUS DEPERDITUS*\*, Desmarest, Note sur les *Ancyles*, ou Patelles d'eau-douce, in Bull. des Sc. par la Soc. Phil. de Paris, tom. iv. no. 76. p. 19. no. 5. pl. 1. fig. 14, 1814.

*Ancylus depressus* †, Keferstein, Die Naturg. des Erdkorp. &c. p. 418. no. 2, 1834.

Espèce fossile du calcaire lacustre d'Ulm, en Bavière.

14. *ANCYLUS DESHAYESIANUS*, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 183, 1853.

Localité inconnue; probablement du continent européen.

15. *ANCYLUS DIAPHANUS*, Haldeman, New Species of Shells, &c., in Monogr. Freshwater Univ. Moll. &c. 1841; Monogr. Freshwater Univ. Moll. &c. p. 8. pl. 1. fig. 4, Jan. 1844.

*Hab.* l'Ohio, dans les États-Unis.

16. *ANCYLUS FILOSUS*, Conrad, New Freshwater Shells of the United States, &c. p. 57, 1834. Hald., Monogr. Freshwater Univ. Moll. &c. p. 10, 1844.

*Velletia filiosus*, Hald., *loc. sup. cit.* pl. 1. fig. 9, 1844.

*Hab.* la rivière de Black Warrior, au sud des sources de Blount, en Alabama (Amérique du Nord).

17. *ANCYLUS FUSCUS*, C. B. Adams, Descr. of Thirteen New Species of New-England Shells, in Bost. Journ. Nat. Hist. vol. iii. p. 329. pl. 3. fig. 17, 1841. Gould, Report on the Invert. of Massach. &c. p. 224. fig. 152, 1841. Hald., Monogr. Freshwater Univ. Moll. &c. p. 12. pl. 1. fig. 7, 1844.

Cet *Ancyle* a été découvert pour la première fois dans un petit ruisseau, près d'Andover, ville de l'État de Massachusetts. Depuis on l'a encore recueilli dans un étang près de Harvard, ainsi qu'aux environs de Mansfield, de Stratford, de Norwich, &c., dans les États-Unis.

18. *ANCYLUS GIBBOSUS*, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 186, 1853.

*Ancylus deperditus* ‡, Ziegler; Parreyss; Küster, in litt. et sched.

*Ancylus spina-rosæ* §, Schmidt, in litt. et sched. (teste Villa, Disp. Syst. Conch. &c. p. 39, 1841).

\* Non *Ancylus deperditus* de Ziegler, Parreyss, Küster et Dupuy, qui est l'*Ancylus gibbosus*; ni *Ancylus deperditus* de Keferstein, Alc. d'Orbigny, qui est l'*Ancylus Orbignyanus*.

† Non *Ancylus depressus* de Haldeman, qui est l'*Ancylus Haldemanni*; ni *Ancylus depressus* de Deshayes, qui est une espèce différente.

‡ Non *Ancylus deperditus* de Desmarest, Lommel, qui est une espèce différente; ni *Ancylus deperditus* de Ray et Drouët, qui est une espèce à rapporter à l'*Ancylus simplex*; ni *Ancylus deperditus* de Zieten, Keferstein, qui est l'*Ancylus Orbignyanus*.

§ Non *Ancylus spina-rosæ* de Draparnaud, Férussac, &c., qui est une espèce de Crustacé du genre *Cypris*.

*Ancylus deperditus*, Dupuy, Hist. nat. des Moll. &c. de la France, fasc. 5. p. 494. no. 4. tab. 26. no. 4, 1851.

*Ancylus recurvus*, Parreyss (teste Dupuy, *loc. sup. cit.*).

*Ancylus oblongus*\*, De Charpentier, in litt. et sched.

*Ancylus fluviatilis*, Auctorum pler.

*Hab.* en Allemagne, la Carniole ; en France, les Pyrenées, les départements de l'Aube, de l'Oise, de la Meuse, &c. ; en Afrique, l'Algérie.

19. ANCYLUS HALDEMANII, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 180, 1853.

*Ancylus depressus*†, Hald., Monogr. Freshwater Univ. Moll. &c. p. 6. pl. 1. fig. 2, 1844.

*Hab.* la rivière de Holston, aux environs de Washington, dans les États-Unis.

20. ANCYLUS HAVANENSIS, Pfeiffer, Uebersicht der auf Cuba gesammelten Moll. in Archiv für Naturg. &c. fünfter Jahrgang, p. 350. no. 2, 1839.

*Hab.* les îles de Cuba et de Haïti, dans les Antilles.

21. ANCYLUS IRRORATUS, Guilding, Observ. on the Zool. of the Caribæan islands, in Zool. Journ. vol. iii. p. 535. no. 1, 1828 ; et tab. suppl. pl. 26. fig. 1-6, 1834.

*Hab.* l'île de Saint-Vincent, dans les Antilles.

22. ANCYLUS JANII, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 185, 1853.

*Ancylus capuloïdes*‡, Jan. in sched. et Porro, Malacol. Comasca, &c. p. 87. no. 1. tab. 1. fig. 7, 1838.

*Ancylus fluviatilis*, var. *B. capuloïdea*, Gassies, Quelq. faits d'emb. des *Ancyles*, &c. in Act. de la Soc. Linn. de Bordeaux, tom. vii. 2 série, p. 370. fig. 14, 15, 1852.

*Hab.* en Italie, les eaux de la Lombardie, de la Sicile, &c. ; en France, les Pyrenées, les environs d'Agen ; en Espagne, le Rio del Norte.

23. ANCYLUS MARGINATUS, Eichwald, Naturhist. Skizze von Lithauen, &c. p. 214. no. 3, 1830 ; Paleontologia Rossica, &c. p. 140. n. 233. tab. 11. fig. 6. A. B, 1850.

Espèce fossile des environs de Stavnitza, en Russie.

24. ANCYLUS MORELETII, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 192, 1853.

*Hab.* le Portugal.

\* Non *Ancylus oblongus* (*Crepidula*) de Fleming, ni *Patella oblonga* de Lightfoot, et *Ancylus oblongus* de Parreyss, qui sont des espèces qu'il faut rapporter à l'*Ancylus lacustris*.

† Non *Ancylus depressus* de Deshayes, qui est une espèce fossile de France ; ni *Ancylus depressus* de Keferstein, qui est l'*Ancylus deperditus* de Desmarest.

‡ Nomen pessime formatum, nec adoptandum.

## 25. ANCYLUS MORICANDI, Alc. d'Orbigny.

*Ancylus Bahiensis*, Stef. Moricand, olim in litt. et in sched.

*Ancylus culicoides*\*, Moric., Notes sur quelq. esp. nouv. de Coq. &c. in Mém. de la Soc. de Phys. et d'Hist. nat. de Genève, tom. viii. p. 28. no. 46, 1836.

*Ancylus Moricandi*, Alc. d'Orb., Voy. dans l'Amér. mérid. &c. Moll. tom. v. 3 partie, p. 355, 1836.

*Ancylus navicula*, Spix (teste Beck, Ind. Moll. &c. p. 124. no. 2, 1837).

*Hab.* le lac Baril, près de Bahia (Brésil), dans les ruisseaux qui rejoignent le Paraña, au-dessus de Corrientes, dans la confédération Argentine.

26. ANCYLUS OBLIQUUS †, Broderip, Charact. of New Spec. of Moll. &c., by Broderip and Sowerby, in Proc. Zool. Soc. Lond. part 2. p. 202, 1832.

*Ancylus radiatus* ‡, Alc. d'Orb., Syn. terr. et fluv. Moll. &c. in Mag. de Zool. Classe 5. no. 61. p. 24. no. 2, 1835.

*Ancylus Gayanus*, Alc. d'Orb., Voy. dans l'Amér. mérid. &c. Moll. tom. v. 3 partie, p. 356, 1836.

*Ancylus radiatus*, Alc. d'Orb., Voy. dans l'Amér. mérid., Atlas, Moll. pl. 42. fig. 18-21, 1847.

*Hab.* le Chili, le Pérou.

27. ANCYLUS OBSCURUS, Haldeman, Monogr. Freshwater Univ. Moll. &c. p. 9. pl. 1. fig. 5, Jan. 1844.

*Hab.* le Nolachuchy, au-dessus de Greenville; le Tennessee, dans les États-Unis; enfin, l'île de la Jamaïque, d'après Adams.

28. ANCYLUS OBTUSUS §, Arth. Morelet, Descript. des Moll. terr. et fluv. du Portugal, p. 88. no. 5. pl. 8. fig. 5, 1845.

*Hab.* le Portugal.

29. ANCYLUS ORBIGNYANUS, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 194, 1853.

*Ancylus deperditus* || et *deperdites*, Zieten, Pét. du Wurtemb. liv. 7. p. 49. pl. 37. fig. 4. A. B. C. et 5. A. B. C, 1830; et même ouvrage, in Index alphab. p. 98, 1830.

30. ANCYLUS PARALLELUS, Haldeman, Monogr. Freshwater Univ. Moll. &c. 1841.

\* Non *Ancylus culicoides* de d'Orbigny, qui est une espèce différente.

† Non *Ancylus obliquus* d'Adams, qui est l'*Ancylus Petitianus*.

‡ Non *Ancylus radiatus* de Guilding, Deshayes, &c., qui est une espèce différente.

§ Non *Ancylus obtusus* e Charpentier, qui est une espèce qu'il faut rapporter à l'*Ancylus simplex*.

|| Non *Ancylus deperditus* de Ziegler, Parreyss, Küster, Dupuy, &c., qui est l'*Ancylus gibbosus*; ni *Ancylus deperditus* de Desnaarest, qui est une espèce différente; ni *Ancylus deperditus* de Ray et Dronët, qui est l'*Ancylus simplex*.



*Ancylus rivularis*\*, Gould, Report on the Invert. of Massach. &c. p. 224. fig. 153, 1841.

*Ancylus parallelus*, Hald., Monogr. Freshwater Univ. Moll. no. 7. p. 2. pl. 1. fig. 6, 1844.

*Hab.* les États-Unis, dans les États de Vermont et de Massachusetts.

31. ANCYLUS PETITIANUS, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 172. pl. 6. fig. 10, 1853.

*Ancylus obliquus*†, C. B. Adams, Descript. of New Species of Shells which inhabit Jamaica, in Ann. of the Lyceum of Nat. Hist. of New York, p. 48, 1850.

*Hab.* la Jamaïque.

32. ANCYLUS PILEOLUS ‡, Férussac, Art. *Ancyle*, in Dict. Class. d'Hist. nat. dirigé par M. Bory Saint-Vincent, tom. i. p. 346. no. 6, 1822.

*Hab.* l'île de Scio, dans la Méditerranée.

33. ANCYLUS RADIATILIS, Arth. Morelet, Test. nov. ins. Cubanæ, pars 2. p. 17. no. 120, 1851.

*Hab.* les marais de l'île de Pinos, l'île de Cuba, et celle de Haïti, dans les Antilles.

34. ANCYLUS RADIATUS §, Guilding, Observ. on the Zool. of the Carib. islands, in Zool. Journ. vol. iii. p. 536. no. 2, 1828.

#### Variété B.

*Ancylus excentricus*, Arth. Morelet, Test. nov. ins. Cubanæ, pars 2. p. 17. no. 121, 1851.

*Hab.* les îles de Saint-Vincent et de Cuba.

La variété B. habite le pays de Peten, au sud du Yucatan, dans le Guatémala.

35. ANCYLUS RAYMONDII, Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. no. 2. p. 182, 1853.

*Hab.* l'Algérie.

36. ANCYLUS RIPARIUS, Desmarest, Note sur les *Ancyles*, in Bull. des Sc. par la Soc. Phil. de Paris, p. 19. pl. 1. fig. 2, 1814.

*Ancylus fluviatilis*, var. *radiatus*, Auctorum pler.

*Hab.* la France, la Suisse.

37. ANCYLUS RIVULARIS ||, Say, Nicholson's Encycl., Art. *Conch.*, in Journ. Acad. Nat. Sc. vol. i. p. 125. De Kay, Zool. of New York, part 5. Moll. p. 12. pl. 4. fig. 98. A. B, 1843.

*Hab.* dans presque toutes les contrées des États-Unis, dans l'Amérique du Nord.

\* Non, *Ancylus rivularis* de Say, Férussac, Jay, De Kay, &c., qui est une espèce différente.

† Non *Ancylus obliquus* de Broderip, H. Müller, qui est une espèce différente.

‡ Non *Ancylus pileolus* de Beck, qui est une espèce différente.

§ Non *Ancylus radiatus* d'Alcide d'Orbigny, qui est l'*Ancylus obliquus* de Broderip.

|| Non *Ancylus rivularis* de Gould, qui est l'*Ancylus parallelus*.

## 38. ANCYLUS SIMPLEX (LEPAS), Buc'hoz.

*Patella fluviatilis, fusca, vertice mucronato, inflexoque*, Lister, Hist. Anim. Angliæ, p. 151. t. 2. pl. 3. no. 32, 1678.

*Patella fluviatilis exigua, subflava, vertice mucronato, inflexoque*, Lister, Hist. sive Syn. Meth. Conch. no. 39. p. 56, 1685.

*Lepas rostrata*, d'Argenville, Hist. Nat. Conch. p. 325, 329. pl. 27 (les deux premières coquilles), 1742.

*Lepas simplex*, d'Argenville, *loc. cit.* p. 325, 329. pl. 27 (la troisième coq.), 1742. Buc'hoz, Aldrov. Lotharingiæ, &c. p. 236. no. 1130, 1771.

*Ancylus fluviatilis* (pars), Draparnaud, Tabl. des Moll. p. 47. no. 2, 1801.

*Patella cornea* (pars), Poiret, Coq. fluv. de Paris, p. 101. no. 2, 1801.

*Patella fluviatilis*, Montagu, Test. Brit. part 2. p. 484. no. 6, 1803.

*Ancylus meridionalis*, Beck, Mus. Paris. in specim.

*Ancylus Pileolus* \*, Beck, Ind. Moll. &c. p. 123. no. 2, 1837.

*Ancylus fluviatilis* (pars), Phil. Enum. Moll. Siciliae, tom. i. p. 120, 1836, tom. ii. p. 93, 1844; et Auctorum Galliae pler.

*Ancylus obtusus* †, de Charpentier, in specim. ab illo missis.

*Ancylus deperditus* (pars), Ray et Drouët, Cat. des Moll. de la champ. mérid. p. 27. no. 116, 1851.

## Variété B.

*Ancylus costatus*, Férussac, Art. *Ancyle*, in Dict. Class. d'Hist. nat. tom. i. p. 346. no. 5, 1822. Villa, Disp. Syst. Conch. &c. p. 39, 61. no. 30, 1841.

*Ancylus striatus* (altera pars), Arth. Morelet, Descript. des Moll. &c. du Portugal, p. 86. no. 2, 1845.

*Ancylus fluviatilis* (pars), Philippi, et Auct. Galliae pler. in specim. ab illis missis.

## Sous-variété B.

*Ancylus tinei*, Andrea Bivona, Nuovi Moll. &c. Palermo, p. 4, 1839.

*Ancylus Fabræi*, Dupuy, Cat. extram. Galliae Test. p. 1. no. 7. et p. 3, 1849.

*Ancylus compressus* ‡, Parreyss, in litt. et in J. Jay, Cat. of Shells, p. 272. no. 6376, 1850.

## Sous-variété C.

*Ancylus luteolus*, Parreyss, in litt., et in J. Jay, Cat. of Shells, &c. p. 272. no. 6382, 1850.

*Ancylus striatus* §, Dupuy, Hist. nat. des Moll. &c. fasc. 5. p. 495. no. 5. tab. 26. fig. 5, 1851.

\* Non *Ancylus pileolus* de Férussac, qui est une espèce différente.

† Non *Ancylus obtusus* de Morelet, qui est une espèce différente.

‡ Non *Ancylus compressus* de Nyst, qui est une espèce différente.

§ Non *Ancylus striatus* de Webb et Berthelot, qui est une espèce différente.

## Sous-variété D.

*Ancylus sinuosus*, Brard, Hist. des Coq. &c. de Paris, p. 201. no. 2. pl. 7. fig. 4, 1815.

*Ancylus fluviatilis*, var. C, Beck, Ind. Moll. &c. p. 123. no. 1, 1837.

*Ancylus sinuatus*, Dupuy, Cat. extram. Galliæ Test. &c. p. 1. no. 9, 1849.

## Variété C.

*Ancylus albus*, Hentz, in specim. ab illo missis.

*Ancylus fluviatilis*, Auct. Germanicorum pler.

## Variété D.

*Calyptra patella fluviatilis*, Klein, Tentamen Meth. Ostrac. &c. p. 118. § 290, 292. no. 3, 1753.

*L'Ancyle*, Geoffroy, Traité sommaire des Coq. de Paris, p. 124, 125. no. 1, 1767.

*Ancylus fluviatilis*, Müller, Verm. Hist. ii. p. 201. no. 386, 1774.

*Patella fluviatilis*, Da Costa, Hist. nat. Test. Brit. p. 1. no. 1. tab. 11. fig. 8. 8, 1778.

*Ancylus fluviatilis* (altera pars), Draparnaud, Tabl. des Moll. p. 47. no. 2, 1801.

*Patella cornea* (altera pars), Poiret, Coq. fluv. &c. de Paris, p. 101. no. 2, 1801.

*Patella lacustris*\*, Donovan, Brit. Shells, tab. 147. fig. 2, 1802.

*Ancylus fluviatilis* (altera pars), Draparnaud, Hist. des Moll. p. 48. no. 2. pl. 11. fig. 23, 24, 1805.

*Crepidula lacustris*, Fleming, Art. Conch., in Edinb. Enc. (in Gray, Man. p. 249, 1840).

## Variété E.

*Ancylus Frayssianus*, Dupuy, Hist. nat. des Moll. &c. fasc. 5. p. 496. no. 6. tab. 26. fig. 6, 1851.

## Variété F.

*Ancylus fluviatilis rupicola*, Boubée, Bull. d'Hist. nat. de France, année 2. livr. 6. p. 7. no. 10, 1833.

*Ancylus thermalis*, Boubée, in litt., et Beck, Ind. Moll. &c. p. 124. no. 3, 1837.

*Ancylus rubicola*, Puton, Essai sur les Moll. &c. des Vosges, p. 62, 1847.

*Ancylorum montani et fluviatilis*, varietas, Auctor. pler.

*L'Ancylus simplex* varie à l'infini de couleurs, de grosseur, de stries, d'opacité, &c., selon qu'il habite les grands fleuves (*Anc. fluviatilis* de Müller), les petits ruisseaux (*Anc. simplex, costatus, Fabræi*, &c.), ou enfin les torrents des montagnes (*Anc. rupicola, montanus*, &c.).

Cette espèce se rencontre dans toute l'Europe, ainsi que dans les régions septentrionales de l'Afrique.

À l'état fossile, on connaît cet *Ancyle* de diverses localités de France et d'Angleterre.

\* Non *Ancylus lacustris* (*Patella*) de Linnæus, Müller, ni *Velletia lacustris* de Gray, qui sont des espèces différentes.

39. *ANCYLUS STRIATUS*\*, Webb et Berthelot, Syn. Moll. terr. et fluv. p. 19. no. 1, 1833. Quoy et Gaimard, Voy. de l'Astrolabe, Zool. tom. iii. partie 1. p. 207. pl. 58. fig. 35-38, 1834.

*Hab.* les îles Canaries, le Portugal et l'Espagne.

40. *ANCYLUS STRICTUS*, Morelet, Descript. des Moll. du Portugal, p. 88. no. 4. pl. 8. fig. 4, 1845.

*Hab.* le Portugal et la France.

41. *ANCYLUS STRIGATUS*, Parreyss, in litt., et Bourguignat, Cat. des esp. du genre *Ancylus*, in Journ. de Conch. p. 193, 1853.

*Hab.* les marais de la Sicile.

42. *ANCYLUS TARDUS*, Say, Disseminator. Mrs. Say's reprint, p. 26, 1830.

*Hab.* les États-Unis, dans l'Amérique du Nord.

43. *ANCYLUS VITRACEUS*, Morelet, Desc. des Moll. du Portugal, &c. p. 87. no. 3. pl. 8. fig. 3, 1845.

*Hab.* l'Espagne et le Portugal.

#### Groupe 2. VELLETTIA.

44. *ANCYLUS DECUSSATUS*, Reuss, Beschreibung der foss. Ostracoden und Moll. &c., in Palæontog. Beiträge zur Naturg. des Vorkwelt, tom. ii. p. 17. no. 1. pl. 1. fig. 1, 1849.

Espèce fossile du calcaire d'eau douce de Kolosoruk et de Tuchor'zic, en Bohême.

45. *ANCYLUS DEPRESSUS* †, Deshayes, Desc. des Coq. foss. &c. de Paris, tom. ii. p. 101. no. 1. pl. 10. fig. 13 (pessima), 1824.

Espèce fossile dans les silex meuliers coquilliers de la deuxième formation de Jouy, en France.

46. *ANCYLUS ELEGANS*, Sowerby, Min. Conch. vol. vi. p. 64. tab. 533, 1826.

Espèce fossile dans les terrains lacustres de l'île de Wight, en Angleterre; et dans ceux de l'Auvergne, en France.

47. *ANCYLUS LACUSTRIS* ‡ (*PATELLA*), Linnæus.

*Patella*, Linnæus, Fauna Suecica, p. 369. no. 1292, 1746.

*Patella picolissima*, Ginanni, Opere Posth. &c. tom. ii. p. 50. tab. 2. fig. 11, 1757.

*Patella lacustris*, Linnæus, Syst. Nat. ed. 10. tom. i. p. 783. no. 672, 1758; ed. 12. vol. i. partie 2. p. 1260. no. 769, 1767; Fauna Suecica, p. 534. no. 2200, 1761.

*Ancylus lacustris*, Müller, Verm. Hist. ii. p. 199. no. 385, 1774.

\* Non *Ancylus striatus* de Dupuy, qui n'est qu'une simple variété de l'*Ancylus simplex*.

† Non *Ancylus depressus* de Haldeman, qui est l'*Ancylus Haldemanni*; ni *Ancylus depressus* de Keferstein, qui est l'*Ancylus deperditus* de Desmarest.

‡ Non *Ancylus lacustris* (*Patella*) de Donovan, ni *Ancylus lacustris* (*Crepidula*) de Fleming, qui ne sont que des variétés de l'*Ancylus simplex*.

*Patella oblonga*\*, Lightfoot, in Phil. Trans. lxxvi. p. 168. tab. 2. f. 1-5, 1786.

*Velletia lacustris*, Gray, Manual of Land and Freshwater Shells, p. 250. no. 97. tab. 10. fig. 126, 1840.

*Crepidula oblonga*, Fleming, Art. Conch., in Edinb. Enc. (teste Gray, loc. sup. cit.).

*Ancylus oblongus*, Parreyss, in spec. (teste Dupuy, Hist. nat. des Moll. &c. fasc. 5. p. 497. no. 7. tab. 26. no. 7, 1851).

Cet *Ancyle* habite les lacs, les marais, les fossés, enfin tous les cours d'eaux tranquilles de presque toute l'Europe. On le rencontre également dans les petits ruisseaux de l'île de Madère.

À l'état fossile, Schlotheim, en Allemagne, John Morris, en Angleterre, l'ont indiqué dans plusieurs dépôts de terrains lacustres.

Nous l'avons également recueilli dans les couches d'eau douce des environs de Paris.

48. ANCYLUS MATHERONI, Boissy, Bull. de la Société Géol. de France, tom. iv. série 2. p. 178, 1846.

Fossile dans le calcaire lacustre de Rilly-la-Montagne, près de Reims (département de la Marne, en France).

49. ANCYLUS MOQUINIANUS, Bourguignat, Cat. des espèces du genre *Ancylus*, in Journ. de Conch. p. 197. no. 52. pl. 6. fig. 9, 1853.

*Hab.* les petits ruisseaux des environs de Dijon et de Toulon, en France.

Tel est la liste † des espèces qui composent le genre *Ancylus*. Si, à toutes ces espèces, on ajoute celles que nous allons maintenant décrire et qui proviennent de la riche collection de M. Cuming, on aura en ce travail, non-seulement un résumé historique sur le genre, mais encore un catalogue complet de tous les *Ancyles* connus jusqu'à ce jour.

ANCYLUS BACONII, Bourguignat. (Pl. XXV. figs. 18-25.) *Anc. testa antice recta vel paululum convexa, postice recta vel paululum concava; apice postico, obtusissimo, paululum dextrorsum dejecto; depressione apicali vix conspicua, in extremitate verticis sita. Testa parva, fragili, diaphana, levissima, vel concentricè striatula; epidermide albido-virescente; apertura ovata.*

Long. 3 mill., lat. 2, alt. 1.

Cette espèce a été recueillie par le Docteur Bacon dans le Bengale. Collection Cuming.

L'*Ancylus Baconii* présente antérieurement et postérieurement

\* Non *Ancylus oblongus* de Charpentier, qui est l'*Ancylus gibbosus*.

† À tous ces noms d'*Ancyles* il faut ajouter les suivants, que nous n'avons pu adopter, vu l'ignorance où nous sommes de la valeur de ces espèces:—*Ancylus rotundatus*, Férussac; *Ancylus stagnalis*, Férussac; *Ancylus Hermannii*, Férussac; *Ancylus radiolatus*, Küster; et *Ancylus Nuttallii*, Haldeman. En outre, il faut retrancher du genre *Ancylus* les espèces suivantes:—*Lepas d'eau douce*, D'Avila; *Ancylus acutus*, Bronn; *Ancylus Gussonii*, Costa; et enfin, *Ancylus spina-rose* de Draparnaud.

une croissance rectiligne ; mais quelquefois l'accroissement antérieure prend une forme un peu convexe, tandis que celle postérieure devient un peu concave. Le sommet de cet *Ancyle* est très-obtus, généralement émoussé et placé un peu sur le côté droit par rapport à la ligne médiane. La dépression apicale, qui est presque invisible, vu son extrême petitesse, se trouve placée à la partie postérieure du sommet. Le test de cette petite coquille est fragile, diaphane, ordinairement lisse, mais quelquefois il offre quelques lignes concentriques, qui ne sont que des stries d'accroissement. Sa couleur est d'un blanc-verdâtre ; son ouverture est ovale.

Cette espèce possède un facies analogue à celui que présente plusieurs espèces de l'Amérique, parmi lesquelles nous citerons les *Anc. Havanensis, rivularis, filosus, radiatilis, fuscus, crassus, tardus, obscurus, calcarius, Haldemani, parallelus*, et enfin *diaphanus*.

1. On distinguera l'*Ancylus Havanensis* de notre *Ancylus Baconii*, en ce que l'espèce de Pfeiffer offre une coquille plus grande, plus épaisse, toujours radiée, avec un sommet bien plus aigu, &c.

2. L'*Ancylus rivularis* est distinct de notre espèce, par son ouverture plus arrondie, par sa forme plus surbaissée, et surtout par son sommet qui est comme écrasé et dont la pointe est rejetée sur le côté droit.

3. L'*Ancylus filosus* s'en sépare, par son test plus élevé, et surtout par les nombreuses côtes qui rayonnent en tous sens du sommet au péristome de cette coquille, &c.

4. L'*Ancylus radiatilis*, par son ouverture plus arrondie, et ses nombreuses radiations qui ornent son test, &c.

5. L'*Ancylus fuscus*, par sa plus grande taille, par sa couleur, par son épiderme qui dépasse son péristome, enfin par son sommet qui est plus central, &c.

6. L'*Ancylus crassus*, par son test plus élevé, par son sommet parfaitement dans le plan de la ligne médiane, et non placé sur le côté droit, comme dans le *Baconii*, &c.

7. L'*Ancylus tardus*, par son accroissement antérieur qui est bien plus convexe, par son sommet plus postérieur, et qui, de plus, est situé dans le plan de la ligne médiane, &c.

8. L'*Ancylus obscurus*, par sa taille plus grande, par sa couleur, par sa forme plus arrondie, surtout par son sommet plus aigu et non situé sur le côté droit de la ligne médiane, mais bien dans le plan de cette ligne, &c.

9. L'*Ancylus calcarius*, par son test plus grand, par sa croissance rectiligne, et surtout par son sommet bien plus postérieur, &c.

10. L'*Ancylus Haldemani*, par sa coquille moins conique, plus grande, par sa couleur plus foncée, &c.

11. L'*Ancylus parallelus*, par son test bien plus allongé, par sa taille plus considérable, par son sommet moins placé à droite, &c.

12. L'*Ancylus diaphanus*, par son ouverture arrondie, par son sommet presque central, &c.

L'on pourrait encore comparer notre *Ancylus Baconii* à l'*Ancylus compressus* de Nyst ; mais cette dernière espèce est une coquille fossile de Belgique.

ANCYLUS CUMINGIANUS, Bourguignat. (Pl. XXV. figs. 1-9.)

*Anc. testa antice gibboso-convexa, postice concava; apice recurvo, contorto, ad marginem aperturæ lateralem dextrorsus dejecto, ac duos anfractus præbente; anfractibus depressionem apicalem convexitate penultimi obtegentibus. Testa parum diaphana, lævi vel striata, præsertim ad aperturam; anfractibus apicis sæpissime rugoso-radiatis; epidermide supra cornea vel virescente, intus albida; apertura subangulato-rotundata.*

Long. 6-7 mill., lat.  $5-5\frac{1}{4}$ , alt.  $2\frac{1}{2}-3$ .

Cette magnifique espèce, type des *Ancyles* de notre section des *Ancylastrum*, habite la terre de Van-Diemen. Nous nous empressons de la dédier au savant Mr. Cuming, en le priant de considérer cette dédicace comme une faible marque de notre reconnaissance.

L'*Ancylus Cumingianus* présente antérieurement un accroissement convexe, tandisque postérieurement cet accroissement est concave. Son sommet est tout-à-fait rejeté à droite à la partie postérieure du bord marginal de l'ouverture, dont il est séparé par un sillon assez profond, occasionné par l'évasement, en cette partie, du péristome; ce sommet possède un tour et demie à deux tours de spire gyrocolle; aussi cette disposition spirale du sommet empêche-t-elle de voir la dépression apicale.

Cette coquille peu épaisse, est un peu diaphane et d'une couleur cornée, tandisqu'intérieurement elle offre une teinte blanchâtre uniforme.

Les deux premiers tours de spire de cet *Ancyle* sont le plus souvent ornés de rugosités longitudinales, qui finissent ordinairement par disparaître sur le dos de la coquille pour reparaitre d'une manière plus sensible vers les bords marginaux de l'ouverture. Celle-ci est arrondie antérieurement, tandisque postérieurement elle présente un contour un peu rétréci, ce qui lui donne un aspect un peu anguleux.

L'*Ancylus Cumingianus* ne peut être confondu avec aucune autre espèce de ce genre. L'excessive déviation de son sommet, ses tours de spire gyrocolle, enfin le facies tout particulier que possède son mode de croissance et la forme de son ouverture, le sépare complètement de toutes les espèces d'*Ancyles* connus jusqu'à ce jour.

L'*Ancyle de Cuming* peut cependant, par la forme générale de son test, par son sommet, surtout par la dilatation horizontale du bord postérieur de son péristome, être facilement comparée au *Latia neritoides* de la Nouvelle Zélande, et servir d'espèce intermédiaire entre les genres *Latia* et *Ancylus*.

De même, par ses tours de spire gyrocolle, ce mollusque peut être aisément rapproché de certaines espèces du genre *Lymnæa*, surtout, si on le compare à quelques *Lymnées* fossiles des terrains lacustres de Crimée, qui, par la brièveté de leur spire, l'évasement considérable de leur ouverture, la fragilité de leur test, offrent un facies analogue à celui que l'on remarque chez cette espèce.

Cet *Ancyle* est donc une preuve de plus pour montrer les rapports intimes que doivent avoir entr'eux ces deux genres de mollusques fluviatiles, et si les profondes études anatomiques auxquelles s'est livré l'illustre professeur, M. Moquin-Tandon, sur l'anatomie des espèces

de ces deux genres, lui a démontré que sous le rapport de l'organisation intérieure de ces animaux, il y avait entr'eux de nombreuses identités ; la constatation des caractères de cet *Ancyle* nouveau vient confirmer l'opinion de ce célèbre naturaliste, en montrant que sous le rapport de la coquille, les mollusques des genres *Ancylus* et *Lymnæa* se tiennent de bien près.

ANCYLUS DROUETIANUS, Bourguignat. (Pl. XXV. figs. 10-17.)

*Anc. testa antice paululum convexa, postice recta ; apice minutissimo, acutissimo, coarctato, recurvo, adpresso, mediano, postico, sæpissime decollato ; depressione apicali inconspicuo. Testa depressa, lævissima, nitente, diaphana, paululum radiato-undulata, præsertim ad aperturam ; epidermide cornea ; apertura ovato-rotundata ; peristomate undulato.*

Long. 6 mill., lat. 5, alt. 2-2½.

Nous ne connaissons pas l'habitat exact de ce mollusque ; mais, d'après la forme, l'apparence de cette espèce, cet *Ancyle* doit provenir de quelques provinces de l'Amérique du Nord. Nous le dédions à notre ami, Henri Drouët, de Troyes.

Coquille antérieurement un peu convexe, postérieurement rectiligne. Son sommet est très-petit, aigu, rétrencis sur ses côtés, recourbé sur lui-même et accolé à la paroi postérieure du test ; sans cette position toute particulière il ne pourrait résister au moindre choc. Malgré tout, il est très-souvent fracturé. La dépression apicale est invisible, vu le repli du sommet sur lui-même.

Cette coquille est très-lisse, très-brillante, transparente, et de couleur cornée, elle présente une surface qui du sommet aux bords marginaux de l'ouverture se divise en une quinzaine de plans ou méplats triangulaires assez grands, qui vont en s'agrandissant au fur et à mesure qu'ils s'approchent du péristome. Lorsque l'arête, qui sépare deux de ces plans ou méplats, vient aboutir au péristome, celui-ci éprouve une petite dépression, ce qui lui donne une apparence un peu ondulée.

Cette singulière espèce appartient par l'ensemble de ses caractères au groupe des *Ancylus crassus, radiatilis, rivularis, &c.* Mais on la distinguera toujours à son test divisé en une foule de plans triangulaires, et surtout à son péristome ondulé.

On séparera également l'*Ancyle de Drouët* des *Ancylus riparius* et *vitaceus*, dont le test est aussi composé d'une multitude de méplats trigonaux, en ce que ces espèces offrent un sommet et un mode d'accroissement tout différent.

Chez ces deux espèces, la dépression apicale est très-visible, tandis que chez notre *Ancyle* elle est presque imperceptible.

ANCYLUS SAULCYANUS, Bourguignat. (Pl. XXV. fig. 26-33.)

*Anc. testa antice convexa, postice paululum concava ; apice parvulo, postico, sat obtuso, dextrorsus dejecto, sæpe decorticato ; depressione apicali rotundata, in verticis extremitate sita. Testa parva, fragili, cornea, concentricè striatula, ac argutissime radiatula, præsertim ad aperturam ; apertura ovata.*

Long. 4-4¼ mill., lat. 3, alt. 2.



Cet *Ancyle* habite les petits ruisseaux des environs de Portocabello, dans le Vénézuëla (collection Cuming). Nous le dédions à notre ami Félicien de Sauley.

Cette espèce offre antérieurement une croissance convexe, tandis que postérieurement cette croissance prend une forme un peu concave. Son sommet est petit, assez obtus, et fortement rejeté sur le côté droit. La dépression apicale est arrondie et placée à l'extrémité de la pointe du sommet.

Le test de l'*Ancylus Sauleyanus* est d'une taille petite, fragile, d'une couleur cornée, et présente des stries d'accroissement assez bien marquées. Lorsqu'on l'examine au microscope, il paraît, de plus, radié avec la plus grande délicatesse. Son ouverture est ovale.

L'*Ancyle de Sauley* ne peut être confondu qu'avec les espèces suivantes : *Ancylus Raymondii*, *Petitianus*, *obliquus*, *Charpentierianus*, *irroratus*.

On distinguera—1. l'*Ancylus Raymondii*, de notre *Ancylus Sauleyanus*, par sa taille plus considérable, par son sommet plus aigu, moins rejeté sur le côté droit, enfin par sa dépression apicale qui au lieu d'être placée à l'extrémité du sommet comme dans le *Sauleyanus*, se trouve au-contre-située un peu au dessus et du côté gauche.

2. l'*Ancylus Petitianus*, par son test bien plus grand, par sa taille plus élevée, surtout par son sommet qui est tellement rejeté à droite, que la pointe dépasse le plan du bord marginal du péristome, caractère que l'on ne retrouve point dans le *Sauleyanus*.

3. l'*Ancylus obliquus*, par sa coquille plus grande, par son sommet plus aigu, plus élevé, moins rejeté à droite, par sa croissance antérieure bien plus convexe, &c.

4. l'*Ancylus Charpentierianus*, par sa forme plus déprimée, par son sommet plus aigu, par sa dépression apicale placée toute différemment, par son ouverture qui présente postérieurement un angle assez prononcé, surtout par son mode de croissance qui est tout autre que celui du *Sauleyanus*.

5. l'*Ancylus irroratus*, par son sommet plus obtus, moins rejeté à droite, enfin par son test constamment maculé de petits points noirs.

#### EXPLICATION DE LA PLANCHE.

##### PL. XXV.

- Fig. 1, 2, 3, 4. *Ancylus Cumingianus* :—gros.  
 Fig. 5. Sommet de cet *Ancyle* :—considérablement gros.  
 Fig. 6, 7, 8, 9. *Ancylus Cumingianus* :—de grandeur naturelle.  
 Fig. 10, 11, 12, 13. *Ancylus Drouëtianus* :—gros.  
 Fig. 14, 15, 16, 17. Id. :—de grandeur naturelle.  
 Fig. 18, 19, 20, 21. *Ancylus Baconii* :—gros.  
 Fig. 22, 23, 24, 25. Id. :—de grandeur naturelle.  
 Fig. 26, 27, 28, 29. *Ancylus Sauleyanus* :—de grandeur naturelle.  
 Fig. 30, 31, 32, 33. Id. :—gros.

3. ON THE SYNONYMS OF *JOHNSTONELLA CATHARINA*, GOSSE.  
 BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S.

Mr. Gosse, in his amusing and interesting work on the coast of Devonshire, describes as new to science an animal under the above name. I am sorry,—as I should much wish for the above name to have been permanent,—to have to observe that it appears to belong to the same genus as the animal described by Eschscholtz in the ‘*Isis*’ (1825), p. 736. t. 5. f. 5, under the name of *Tomopteris onisciformis* from the South Seas; and by MM. Quoy and Gaimard in the ‘*Voyage of the Astrolabe*,’ ii. p. 284. t. 21. f. 21, 24, under the name of *Briaræa Scolopendra* from the coast of Spain. Hermannsen has proposed to change the latter name to *Briarea*: Harry Goodsir calls it *Briareus*: and Mr. R. Ball writes it *Bryarea*. Eschscholtz and Quoy and Gaimard regard it as a mollusk; the former author referring it to the order *Heteropoda*, and the latter to the *Nudibranchiata*.

Mr. Harry Goodsir, who found the animal abundant in the North Sea (Ann. and Mag. Nat. Hist. 1845, xvi. 163), observing the presence of “*cilia fringing the bifurcated posteriors of the lateral extremity of its body,*” decided that it could not be a mollusk.

Menke (Zeitsch. für Malac. 1844, 21) proposes to remove the genus to the Annelides; more recent authors have considered it as a Crustacean.

Mr. Gosse at first sight thought it might be a Branchiopod Crustacean, but thinks it has more affinity to the Annelides (p. 348), and refers it to that class in the Systematic Index.

According to Eschscholtz and Quoy and Gaimard, the South Sea specimens are very much smaller than those found in the Mediterranean: thus, *Tomopteris onisciformis* and *T. Scolopendra* are most probably distinct species. Mr. Gosse’s *Johnstonella Catharina* is, no doubt, a synonym of the latter, since Mr. R. Ball records that *Bryaræa Scolopendra* has been taken in Dublin Bay by Dr. Corrigan (Proc. Brit. Assoc. 1849, p. 72).

The genus *Johnstonella* of Gosse, is therefore synonymous with *Tomopteris*, Eschsch. *Isis*, 1825.

*Tomopteris*, Menke, 1844.

*Briaræa*, Quoy & Gaim. 1829.

*Briarea*, Herm.

*Briareus*, Goodsir, Ann. & Mag. Nat. Hist. 1845.

4. DESCRIPTIONS OF NEW SPECIES OF SEMELE, RHIZOCHILUS,  
 PLOTIA AND TIARA IN THE CUMINGIAN COLLECTION.  
 BY ARTHUR ADAMS, F.L.S., ETC., ETC.

1. SEMELE JOVIS, A. Adams. *S. testa ovato-oblonga, subventricosa, rosea, umbonibus rubris, albo radiatis, concentricè lamellata, lamellis striatis, æqualibus, æquidistantibus, interstitiis longitudinaliter striatis; latere antico longiore, rotundato, postico breviorè, flexuoso, subtruncato; intus rosea.*

*Hab.* —? Mus. Cuming.

2. SEMELE GRUNERI, A. Adams. *S. testa ovato-oblonga, crassa, convexiuscula, albida, roseo radiata et maculis roseis varie picta; latere antico longiore, rotundato, postico brevior rotundato ad marginem ventralem flexuoso; concentrice plicata, plicis crassis, sulcosis, interstitiis lineis elevatis, longitudinalibus concinne ornatis; intus alba.*

*Hab.* —? Mus. Gruner.

3. SEMELE JUKESI, A. Adams. *S. testa orbiculari, compressiuscula, albida, concentrice lamellosa, lamellis incrassatis, eleganterque crenulatis, ad latera productis, interstitiis elevatim striatis; latere antico rotundato, postico angulato, ad marginem ventralem flexuoso; intus lutea.*

*Hab.* Torres Straits (Mr. Jukes). Mus. Cuming.

4. SEMELE SPONSA, A. Adams. *S. testa orbiculari, subventricosa, solida, alba, æquilaterali, concentrice lamellata, lamellis transversis, æqualibus, æquidistantibus, tenuibus, marginibus exquisite crenulatis, interstitiis creberrime striatis; latere antico rotundato, postico subangulato, ad marginem ventralem flexuoso; intus alba.*

*Hab.* Boljoon Philippines. Mus. Cuming.

5. SEMELE SINENSIS, A. Adams. *S. testa orbiculari, æquilaterali, compressiuscula, albida, epidermide subfusca obtecta, longitudinaliter radiatim costellata, costellis longitudinaliter sulcatis, lineis transversis, concentricis, filiformibus decussata; umbonibus rosaceis, lævissimis; latere antico rotundato, postico nudo, nec costellato, vix truncato, ad marginem ventralem subflexuoso; intus albida.*

*Hab.* China.

6. SEMELE AMÆNA, A. Adams. *S. testa oblonga, ovali, subventricosa, tenella, albida, concentrice corrugatim striata, radiatim tenue striata, striis confertis; latere antico rotundato, postico brevior, subflexuoso; intus alba.*

*Hab.* —?

7. SEMELE LUTEOLA, A. Adams. *S. testa suborbiculari, subæquilaterali, ventricosa, lutescente, tenuissime concentrice corrugatim striata, striis elevatis subinterruptis; interstitiis lineis elevatis longitudinalibus ornatis; radiatim striata, striis postice evanidis; latere antico rotundato, postico ad marginem ventralem vix flexuoso; intus lutea.*

*Hab.* —?

8. SEMELE MODESTA, A. Adams. *S. testa orbiculato-trigonalis, compressa, crassa, æquilaterali, sordide alba, roseo obsolete radiatim fasciata, umbonibus luteolis; antice rotundata, postice vix flexuosa, concentrice plicata, plicis crassis, subdistantibus, æqualibus, interstitiis elevatim striatis; intus albo-lutescente, margine roseo radiato.*

*Hab.* China Seas. Mus. Cuming.

9. SEMELE JUCUNDA, A. Adams. *S. testa oblongo-ovali, subæquilaterali, sordide alba, rufo purpureoque sparsim maculata, concentricè lamellosa, lamellis crassis, æquidistantibus, valde striatis, interstitiis lineis elevatis longitudinalibus ornatis; latere antico longiore, rotundato, postico breviorè, ad marginem ventralem vix flexuoso; intus albida, rufo purpureoque maculata.*

*Hab.* Singapore. Mus. Cuming.

10. SEMELE VESTALIS, A. Adams. *S. testa suborbiculari, subæquilaterali, subventricosa, alba, lamellis transversis subconfertis eleganterque plicatis, marginibus crenulatis, interstitiis lineis elevatis, longitudinalibus ornatis; latere antico rotundato vix longiore, postico subtruncato, ad marginem ventralem valde flexuoso; intus alba.*

*Hab.* China Seas. Mus. Cuming.

11. SEMELE VENUSTA, A. Adams. *S. testa oblonga, transversa, ventricosa, nitidiuscula, concentricè sulcata, sordide carnicolore, roseo obscure radiata; umbonibus rubiginosis; latere antico longiore, rotundato, postico breviorè, truncato, ad marginem ventralem flexuoso; intus purpurascente, albo limbata.*

*Hab.* West Columbia. Mus. Cuming.

12. SEMELE LÆTA, A. Adams. *S. testa transversa, oblongo-ovali, compressiuscula, nitida, sublevi, albida, purpureo nebulosa et punctata, umbonibus lævibus albis; transversim sulcata, lineis transversis obliquis decussata, radiatim striata; latere antico longiore, rotundato, postico breviorè rotundato, vix flexuoso; intus purpureo-variegata.*

*Hab.* —? Mus. Cuming.

13. SEMELE VIRGINEA, A. Adams. *S. testa oblongo-ovali, transversa, subventricosa, alba, tenella, subpellucida, concentricè plicata, plicis tenuissimis, vix elevatis, interstitiis longitudinaliter creberrime striatis; latere antico sublongiore, rotundato, postico vix breviorè, angulato, subflexuoso.*

*Hab.* Basay, Isle of Samaar. (H.C.). Mus. Cuming.

14. SEMELE CALIFORNICA, A. Adams. *S. testa oblongo-ovali, subæquilaterali, sordide pallide fusca, radiatim striata; transversim sulcata, liris elevatis, subcorrugatis, ornata, interstitiis creberrime longitudinaliter striatis; latere antico rotundato, postico subtruncato, valde flexuoso; intus lutescente, margine luteo.*

*Hab.* Gulf of California. Mus. Cuming.

15. SEMELE CASTA, A. Adams. *S. testa oblongo-ovali, transversa, inæquilaterali, alba, apicibus luteis, radiatim striata, concentricè transversim lamellosa, lamellis tenuibus, plicatis, marginibus pulcherrime crenulatis, ad latera prominentioribus; latere antico longiore, postico breviorè, rotundato; intus alba, in medio lutescente.*

*Hab.* Moreton Bay, Australia (Mr. Strange).

16. SEMELE COMPTA, A. Adams. *S. testa orbiculari, compressa, æquilaterali, albida, luteo-fusco obscure radiata, sublævi, lineis transversis et longitudinalibus decussata; latere antico rotundato, postico subangulato; intus alba, medio lutescente.*

*Hab.* —? Mus. Cuming.

17. SEMELE AMABILIS, A. Adams. *S. testa ovato-oblonga, compressa, alba, transversim concentricè lamellosa, lamellis elevatis, tenuibus, plicatis, marginibusque crenulatis, ad latera productis, interstitiis corrugatim striolatis; latere antico vix longiore, rotundato, postico rotundato flexuoso; intus alba.*

*Hab.* Port Curtis, Australia. Mus. Cuming.

18. SEMELE MARTINI, A. Adams. *S. testa ovato-trigonalis, crassa, convexiuscula, pallida, carnicolori radiatim picta; plicis concentricis, crassis, irregularibus, sæpe dichotomis aut confluentibus, ornata, plicis postice validioribus et flexuosis; latere antico longiore, rotundato, postico breviorè, valde flexuoso et subtruncato; intus albo-lutescente.*

*Hab.* Rio.

This species is named after Captain Adolphe Martin, an assiduous collector and conchologist, who dredged it off Rio, in rather deep water.

19. SEMELE DECORA, A. Adams. *S. testa orbiculari, subæquilaterali, compressiuscula, crassa, alba, costellis radiantibus et liris transversis concentricis reticulata; latere antico longiore, rotundato, postico subtruncato, valde flexuoso; intus alba.*

*Hab.* —?

20. SEMELE PULCHELLA, A. Adams. *S. testa orbiculari, compressiuscula, albida, umbonibus roseis, albo radiatis; liris vix elevatis, transversis, concentricis, striisque longitudinalibus, radiantibus ornata; latere antico rotundato, postico rotundato, flexuoso; intus rosea, margine ventrali intus albo.*

*Hab.* —?

21. MACGILLIVRAYIA STRAMINEA, A. Adams. *M. testa turbinata, semipellucida, cornea, straminea, imperforata, nitidiuscula; anfractibus quatuor, planiusculis, ultimo rotundato; apertura ovali, antice subangulata; labio callo tenui, expanso oblecto; columella antice subflexuosa, non spinosa; labro acuto, simplice.*

*Hab.* Western Ocean. Mus. Cuming.

22. COMINELLA CROCEA, A. Adams. *C. testa bucciniformi, subperforata, crocea, spira producta, anfractibus quinque, superne concavis, cingulis transversis, elevatis, subnodosis, æqualibus, rotundatis ornatis; interstitiis longitudinaliter striatis; apertura ovali, antice subcanaliculata; labio subplanulato, exarato.*

*Hab.* Philippines. Mus. Cuming.

23. RAPANA (RHIZOCHILUS) CLATHRATA, A. Adams. *R. testa ventricosa, imperforata, subpellucida, alba, anfractibus  $3\frac{1}{2}$ , con-*

*vexis, superne subplanulatis, costellis transversis et longitudinalibus valde clathratis; apertura ampla, ovali, antice in canali brevi, obliquo desinente; columella laevi, subplanulata; labro margine crenulato.*

*Hab.* Philippines (H. C.). Mus. Cuming.

24. RAPANA (RHIZOCHILUS) CORALLIOPHILA, A. Adams. *R. testa turbinata, subtrigonalis, alba, umbilicata, anfractibus superne planulatis, in medio nodoso-plicatis, ad suturas corrugatis, transversim liratis, liris in anfractuum medio prominentioribus, squamulosis, asperrimis; apertura ovato-trigonalis, antice producta, acuminata, canaliculata; regione umbilicali callo scabro circumcincta.*

*Hab.* Isle of Ticao, on the reefs at low water (H. C.).

25. RAPANA (RHIZOCHILUS) PULCHELLA, A. Adams. *R. testa turbinato-pyriformi, umbilicata, roseo-tincta; spira brevi, apice albido; anfractibus quinque, ultimo ventricosus, suturis impressis, longitudinaliter corrugato-plicatis, transversim liratis, lira unica in medio anfractuum prominentiore; apertura ovato-trigonalis, antice canaliculata, canali sinistrorsum verso.*

*Hab.* Philippines (H. C.). Mus. Cuming.

26. RAPANA (RHIZOCHILUS) SUTURALIS, A. Adams. *R. testa turbinato-ovalis, umbilicata, alba; anfractibus sex, subplanulatis, in medio subangulatis, longitudinaliter nodoso-plicatis, transversim liris elevatis, rugosis, squamulosis ornatis; suturis valde impressis; apertura trigonalis-ovata, antice subcanaliculata; labio acuto; labro margine irregulari.*

*Hab.* Bulusan, province of Albay, island of Luzon (H. C.).

27. RAPANA (RHIZOCHILUS) SCALA, A. Adams. *R. testa scalariformi, vix perforata, alba; spira elevata, anfractibus sex, superne planulatis, in medio (supremis) nodoso-plicatis, transversim liratis, liris elevatis, acutis, inæqualibus; interstitiis subclathratis; apertura ovato-trigonalis, antice canaliculata; columella plana, exarata.*

*Hab.* Juan Fernandez (H. C.). Mus. Cuming.

28. RAPANA (RHIZOCHILUS) FRAGILIS, A. Adams. *R. testa turbinato-fusififormi, umbilicata, alba, tenui, semipellucida, spira aperturam vix æquante; anfractibus quatuor, convexiusculis, longitudinaliter subplicatis, transversim liratis, liris squamuligeris, in anfractu ultimo validioribus; apertura ovalis, antice angulata, subcanaliculata; labio acuto; labro producto, irregulari.*

*Hab.* Philippines (H. C.). Mus. Cuming.

29. RAPANA (LATIAXIS) NODOSA, A. Adams. *R. testa subpyriformi, umbilicata, crocea, spira acuminata, aperturam æquante; anfractibus sex, longitudinaliter nodoso-plicatis, liris transversis, squamigeris, subæqualibus ornatis; apertura ovalis, antice cana-*

*liculata, canali retrorsum curvato, regione umbilicali carina squamulosa circumcincta.*

*Hab.* Philippines. Mus. Cuming.

30. *RAPANA (LATIAXIS) FORTUNI*, A. Adams. *R. testa pyriformi, spira aperturam æquante, late umbilicata, carneola; anfractibus sex, subimbricatis, superne planulatis, in medio subangulatis, costellis transversis, æqualibus, rotundatis, concinne imbricatim squamulosis ornatis, interstitiis lutescentibus, nitidis; apertura semiovali; labro intus sulcato; canali producto, dextrorsum curvato; regione umbilicali carina squamosa circumcincta.*

*Hab.* China (*Mr. Fortune*). Mus. Cuming.

31. *MELANIA (PLOTIA) MIRIFICA*, A. Adams. *M. testa turrata, crassa, olivacea, transversim striata, fasciis fuscis, transversis, interruptis ornata, spira acuminata; anfractibus octo, planulatis, supremis longitudinaliter costatis, costis postice angulato-spinosis, ultimo et penultimo simplicibus; apertura oblongo-ovata, antice vix effusa; labro postice sinuato.*

*Hab.* New Ireland. Mus. Cuming.

32. *MELANIA (PLOTIA) ORIENTALIS*, A. Adams. *M. testa oblongo-turrata, epidermide nigerrima oblecta; spira acuminata; anfractibus septem, superne angulatis et valde plicato-spinosis; apertura oblongo-ovata, dimidium spiræ vix æquante; columella antice plana, subreflexa.*

*Hab.* Eastern Archipelago. Mus. Cuming.

33. *MELANIA (TIARA) SPECIOSA*, A. Adams. *M. testa ovato-oblonga, transversim striata, epidermide fusca, villosa oblecta, spira plana truncata; anfractibus planulatis, ad angulum spinis coronatis; apertura ovato-oblonga; columella antice subreflexa; labro antice subproducto.*

*Hab.* New Caledonia. Mus. Cuming.

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July 26, 1853.

Dr. Gray, F.R.S., Vice-President, in the Chair.

Dr. Crisp exhibited the splenic vein of the Giraffe (which died last year at the Gardens), for the purpose of showing the valves. These, Dr. Crisp said, he had found in the splenic veins of many animals, and he believed they had never before been described, and that their mechanism tended to throw some light upon the function of the spleen.

Dr. Crisp also exhibited a drawing of the microscopical appearance of the cast-skin of the Toad (*Bufo vulgaris*). It consists of a beautiful network of hexagonal cells, with central nuclei.

The following papers were read:—

1. OBSERVATIONS ON THE NESTS OF HUMMING BIRDS.  
BY JOHN GOULD, F.R.S. ETC.

Mr. Gould exhibited a collection of nests of Humming Birds, exemplifying the habitual characteristic structures of several genera. The first group to which his remarks were directed were the Hermit birds (*Phaëthornis*), which invariably build at the extremity of leaves, perhaps from the protection which that situation affords against the attacks of monkeys and other predatory animals. *Oreotrochilus* builds a beautiful nest, attached to the sides of rocks. *Heliomaster mesoleucus* makes a nest in a beautiful species of moss, depending from the trees. Most of the nests are cup-shaped, some being placed in forks, some on branches, some on leaves, some in ferns; they are shallow and delicately formed, ornamented in the most varied manner with feathers, or with festoons of moss and lichen, especially in the genus *Hylocharis*. The attachment of the lichen and other ornaments is effected by means of fine cobwebs.

The differences in the eggs of Humming Birds are not very observable; they are invariably two in number, white and oblong, with one supposed exception,—namely, that of a species inhabiting the Upper Amazon, which, according to Mr. Edwards, lays a spotted egg. But the differences of structure in the nests sufficiently corroborate the generic divisions into which these birds have been separated by modern ornithologists.

Most of the nests exhibited were from the collection of Mr. Reeves of Rio, who presented them to Mr. Gould in the most liberal manner, with a view to assisting him in the completion of his monograph of this family.

2. DESCRIPTION OF A NEW SPECIES OF SOREX, FROM INDIA.  
BY R. TEMPLETON.

SOSEX? PURPURASCENS, n. sp.

Dark slate-coloured, with a tinge of purple; snout beneath and lower lip brownish, with a mesial groove above, running back half the distance to the eyes; front covered with black hairs having white tips, and gradually increasing in length as they extend backwards to the eyes, and arched a little forwards; eyes small and very black; ears nearly naked and slaty brown; belly slaty grey; legs slaty brown, thinly covered with short greyish hairs, which project in a little tuft over each claw, beneath naked; the toes with eight or nine transverse wrinkles; tail about two-thirds as long as the body, covered with short bristly hairs, and appearing beyond the middle somewhat grey from white annular wrinkles; furnished for about two-thirds of its length with long black bristly hairs.

Length of body,  $2\frac{1}{2}$  inches; tail,  $1\frac{3}{4}$ .



### 3. ON SOME STAPHYLINIDÆ, FOUND IN THE NESTS OF TERMITES. BY M. SCHIÖDTE.

It has long been known that some species of ants keep insects belonging to different orders. The intention of the communication I am going to make is to point out that the same extraordinary phenomenon exists among the Termites.

The insects which I have now the honour to bring under the notice of the Society, dwell amongst a certain species of Termites in the Brazils, and were collected, together with the *Termes*, by Mr. Reinhardt, whilst travelling for the Royal Museum of Natural History in Copenhagen through the province Minas Geraës.

This *Termes* belongs to a peculiar little group of small species, the nests of which are built around branches of trees, and contain in their interior only a labyrinth of uniform passages, without any separate cell for the queen. The soldiers are not much larger than the working individuals, and are nearly as numerous; their head has its greatest dimension in the height; the front extends below in a large horn; the mandibles are not elongated, but exceedingly broad, and have a crenulated edge and a considerable horn on their outside.

From physiological as well as from anatomical reasons I am of opinion, that the constitutional state of the society of Termites is established on the same fundamental laws as the societies amongst the Hymenoptera. Several species of ants have also soldiers. The working Termites are quite different from the larvæ. In the species here mentioned they may be distinguished by the form of the *instrumenta cibaria*, especially by the two teeth at the end of the interior lobe of the maxillæ, which are separated by a pointed incision in the working individuals, but in the larvæ by a rounded one.

The strangers or guests of Termites known to me are *Staphylinidæ*, belonging to the group of *Aleocharini*; they constitute two new genera. They agree with *Lomechusa* and *Dinarda*, in having a corneous hook on the end of the interior lobe of their maxillæ, but in other respects they present characters in the construction of the parts of the mouth and of the tarsi, which strikingly separate them from all other genera of that group. The abdomen is constructed in a most extraordinary manner, being membranaceous, of an enormous size, bent upwards so as to cover the thorax, and fixed in this position by the dorsal faces of the second and third segments having grown together.

Of one of the genera, which I have named *Corotoca*, two species are known to me (*Corotoca Melantho* and *C. Phylo*); they are about 3 millim. in length from the front to the end of the second segment of the abdomen. Of the first of these I have observed both sexes. The male is a little smaller than the female, but otherwise only to be distinguished by the dissection of the organs of generation.

Of the other genus, named by me *Spirachtha*, the male is still unknown to me. The abdomen is furnished with three pairs of appendages, which are elongate, cylindrical, 2-jointed, membranaceous, and moveable by muscles at the base. These appendages are perhaps in-

tended for the same purpose as the tufts of hairs on the abdomen of the genus *Claviger*, which are known to be sucked by the ants; even in *Lomechusa* there are similar hairy appendages on the sides of the abdomen. Of this genus only one species is known to me (*Spirachtha Eurymedusa*), of about 2 millim. in length, from the front to the end of the second segment of the abdomen.

In the abdomen of both genera I have found eggs in different stages of development, in *Corotoxa* even eggs with fully developed larvæ; so that, beyond doubt, these animals are viviparous.

If the *Strepsiptera* are to be considered as belonging to the order *Coleoptera*, an opinion which I endeavoured to prove as early as the year 1840\*, this will be the *second* instance of viviparous *Coleoptera*.

#### FAM. STAPHYLINI.

#### Trib. ALEOCHARINI.

#### Genus COROTOXA.

*Maxillæ mala interiori cornea, uncinata. Palpi maxillares 4-articulati. Ligula lata, rotundata, paraglossis obsoletis. Palpi labiales 3-articulati. Tarsi 4-articulati, posteriores articulo primo valde elongato. Abdomen membranaceum, fractum; parte posteriori fixa, maxima, globosa, dorso anteriori animalis superposita. (Κόρη, τίκτω.)*

1. **COROTOXA MELANTHO.** *Fusca, fronte foveolata, pronoto multifoveolato, disco bituberculato; tibiis posterioribus fusiformibus, fuscis; scutis ventralibus segmenti quarti quintique transversis.*—Mas., Fem.

Long. a fronte ad apicem segmenti secundi abdominis  $2\frac{1}{2}$ –3 mill.

2. **COROTOXA PHYLO.** *Fusca, vertice foveolato, pronoto multifoveolato, disco trituberculato; tibiis posterioribus linearibus, nigrofuscis; scutis ventralibus segmenti quarti quintique subquadratis.*—Fem.

Long. a fronte ad apicem segmenti secundi abdominis  $2\frac{1}{2}$ – $3\frac{1}{2}$  mill.

#### Genus SPIRACHTHA.

*Maxillæ mala interiori cornea, uncinata. Palpi maxillares 3-articulati. Ligula ampla, rotundata, paraglossis obsoletis. Palpi labiales 3-articulati, minutissimi, verruciformes, ligula superjecti. Tarsi 4-articulati, posteriores articulo primo subelongato. Abdomen membranaceum, maximum, fractum; parte anteriori articuli secundi globosa; parte posteriori fixa, conica, antè ascendente, tribusque utrinque munita appendicibus membranaceis, filiformibus, biarticulatis. (Σπειραχθῆς.)*

**SPIRACHTHA EURYMEDUSA.** *Albissima, membranacea; antennis, capite, scutis thoracicis et abdominalibus pedibusque corneo-*

\* See the introduction to 'Danmark's Eleutherata,' p. 21, note.

*membraneis, pallide fuscis, coxis, femorum basi, trochanteribus posticis tibiisque fuscis, oculis fusco-nigris.*—Fem.

Long. a fronte ad apicem segmenti secundi abdominis 2 mill.; lat. segmenti secundi abdominis 1 mill.

This paper will be printed in full, illustrated with plates from the author's drawings, in the Transactions of the Society.

4. ON THE CAPTURE OF DELPHINUS ORCA IN SOUTH GREENLAND. BY M. REHÜLLER. COMMUNICATED BY SIR WALTER TREVELYAN.

This note contained a description of a method of capturing these animals with a net, which had proved so successful, that the number taken in Westmanhavn alone since 1843, when the net was first used, amounted to 2200, whereas between 1819 and 1843, 280 only had been secured. As each animal is considered to average thirty gallons of oil, this branch of industry has produced upwards of £4000 sterling to the inhabitants of Westmanhavn within the last ten years.

The meeting was then adjourned to Tuesday, November 8th.

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November 8, 1853.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. ON THE ANATOMY OF THE WALRUS.  
BY PROFESSOR OWEN, F.R.S., F.Z.S. ETC.

Professor Owen communicated the chief results of his dissection of the Walrus (*Trichecus rosmarus*) which died at the Gardens of the Zoological Society, October 1853. The author prefaced his anatomical description by some remarks on the physiognomy, attitudes and movements of the living animal; and more especially dwelt on the superior strength of its fin-shaped limbs, as compared with the ordinary Seals, the Walrus being able, when it moves on dry land, to raise its trunk from the ground—in other words, to walk—a mode of progression which strikingly contrasts with the awkward shuffle of the Seal, as it trails its belly on the earth, aiding its fore fins with the action of its powerful abdominal muscles. Both the bones and muscles of the fins of the Walrus are more powerfully developed than in the Seal, and this, the author concluded, had reference to its natural habitat among bergs and floes of ice, and the necessity of clambering among and over their rough, irregular surfaces. The sex of the animal dissected was female; the mammae were four in

number, two abdominal and two inguinal. There was no trace of external ears. The eye is defended by a circular external eyelid, and by a broad thin *membrana nictitans*; there is a small Harderian, or inner lacrymal gland, but no true lacrymal gland, *punctum lacrymale*, nor *ductus ad nasum*. The subcutaneous cellular tissue was very coarse, tough and elastic, almost granular to the touch, and resembling a *corpus cavernosum*. The disposition of the peritoneum and of the viscera of the abdomen was minutely described, and it was remarked that the odour of the visceral cavities and parts in this Walrus resembled more that of ordinary land quadrupeds than the peculiar odour noticed in the dissection of Seals; but the flesh of the Walrus was dark coloured, as in the Seal tribe: the young animal dissected, had been fed, since its captivity, on oatmeal, milk, and water. The stomach had the form of an elongated siphon closely bent upon itself. The liver was divided into seven lobes. There was a large gall-bladder. The intestines in this young animal, which did not exceed four feet in length, were seventy-five feet long, the great intestine being only one foot in length, and the *cæcum coli* one inch and a half. The kidneys were very complex, each being made up of about 400 small kidneys or renules, and each of these showing the normal structure of a simple kidney, such as is found in the dog or lion, viz. with the cortical and medullary part, the pelvis, mammilla and ureter. In the description of the viscera of the chest, the large thymus gland was noticed, and the notched or serrated character of the anterior margin of the lungs. The *foramen ovale* and *ductus arteriosus* were both obliterated.

The following is the description of the heart of the Walrus:—The blood is returned into the right auricle by a large precaval and postcaval vein, and by the coronary vein, which terminates close to the latter: there is a small semilunar valve at the coronary orifice, but no eustachian valve. A broad crescentic fold, looking downwards, divides the sinus or fossa receiving the precaval vein, from the larger and deeper one receiving the postcaval vein: this fold answers to the upper border of the ‘fossa ovalis’ in the human heart; there is no orifice in the ‘fossa’ communicating with the left auricle. The appendix of the auricle extends in front of the base of the aorta as far as the pulmonary artery; it gradually contracts to an obtuse point: in the *Cystophora proboscidea* the auricular appendix is short, broad and bifid; in both it is occupied by a reticular arrangement of *carneæ columnæ*. The ventricles are broader in proportion to their length, and the apex is not produced, as in the *Cystophora proboscidea*: the *carneæ columnæ* of the anterior division of the tricuspid valve, and a few of those of the right or external division, are attached to a short and thick fleshy column from the free wall of the ventricle; this column is connected by a short and thick ‘trabecula’ with the septum: most of the other tendinous chords are attached to the septum; and a few to *trabeculæ* connecting that fixed wall with the free wall of the ventricle. The pulmonary artery presents no peculiarity; it is connected by the ligamentous remnant of the ‘ductus arteriosus,’ which is 10 lines long and 5 lines in diameter, to the under part of the aortic arch, just beyond the origin of the left subclavian; its

cavity is obliterated, but a short, thick, semilunar fold of the lining membrane of the aorta, with its concavity turned towards the end of the arch, indicates the place of the former foetal communicating channel. The left auricle and ventricle offer no peculiarities. The coats of the aortic arch are thickest near the origins of the great vessels sent to the head and fore-limbs, especially at the lower part of the arch, where they are 3 lines thick. The right subclavian and carotid arise close together, but scarcely from a common trunk: the left carotid and left subclavian have more obviously separate origins. The aorta suddenly diminishes beyond those primary branches, where it is connected with the consolidated and contracted 'ductus arteriosus.' There is no arrangement, even in the very young Walrus here described, for accommodating the animal to its aquatic habits, by any direct intercommunication between the right and left sides of the heart. The hepatic veins, in their dilatations, resemble those of the ordinary Seals.

The brain weighed 1 lb. 9 oz. avoird.; its convolutions and structure were described. The hip-joint was found to be devoid of the ligamentum teres. Drawings were exhibited of the viscera of the thorax and abdomen, and the Memoir was terminated by a minute account of the dentition, and a disquisition on the homologies of the teeth of the Walrus, as elucidated by the state of the dentition in the young animal dissected.

Professor Owen detected the following minute teeth exposed or buried in the gum, and adhering to the gum and periosteum of the jaws:—two denticles in each premaxillary bone; two denticles in each maxillary bone; together with a deciduous canine, and four denticles in each ramus of the mandible. He gave the following as the formula of the deciduous dentition of the Walrus:—

$$i \frac{2-2}{2-2}, c \frac{1-1}{0-0}, m \frac{2-2}{2-2} = 18.$$

Of the permanent series, the canine tusks had pushed through the gum, and on laying open the substance of the jaws, the following teeth were found in course of formation:—in the premaxillary, the successor of the second minute incisor; in the maxillary, the successors of the two deciduous molars, together with a third molar. In the lower jaw the successor of the second deciduous incisor, the successors of the two deciduous molars, and a third similar permanent molar. The germ of the permanent tusk, confined to the upper jaw, was 2 inches in length, and, like the germs of the smaller permanent teeth, its base was widely open, and contained a large formative pulp.

In addition to the upper canine tusks, the normal number of permanent and functional teeth in the Walrus is four on each side of both jaws; these teeth are simple, short, thick and obtuse, having the office of grinders. With respect to their nature and homologies, Professor Owen argued that the first, from its position in the premaxillary bone, was an 'incisor'; the two following teeth, by their position in the maxillary bone, and their relation to the deciduous denticles, were 'premolar' teeth; and he also regarded the last of the series of four, from its minor degree of development, as belong-

ing rather to the same (premolar) series, than as being the first of the true molars. As the first of the molariform permanent teeth in the lower jaw passes in front of the permanent incisor above, when the mouth is closed, it must be regarded as an 'incisor'; the other three grinders as being 'premolars', two being proved to be such by displacing vertically their predecessors, and the third also appearing to be of the same series by its state of development. The Professor accordingly proposed the following as the formula of the normal or functional dentition of the Walrus:—

$$i \frac{1-1}{1-1}, c \frac{1-1}{0-0}, p \frac{3-3}{3-3} = 18.$$

But, as might be expected in a dentition deviating so remarkably from that of other Mammals of the same order, varieties are not unfrequently met with in the number of the teeth of the Walrus. Professor Owen cited instances of such varieties in ten skulls of the Walrus, of different ages and sex. The result of which was, that occasionally a small tooth was found anterior to the normal series of four, and more commonly in the upper than in the lower jaw; and that, more rarely, a small tooth was superadded behind the normal four, in the upper jaw, and still more rarely in the lower jaw: the formula of the dentition of such varieties, in excess, being,—

$$i \frac{2-2}{2-2}, c \frac{1-1}{0-0}, p \frac{3-3}{3-3}, m \frac{1-1}{1-1} = 26.$$

The additional anterior small incisor was due either to the retention and growth of the first deciduous denticle, or to the development of a small successor to it. The additional posterior grinder was due to the occasional development of a germ in the back part of the gum or jaw. The minute milk-teeth relate, by their gubernacula, to the development of the permanent teeth, but seem never to be put to use themselves; the milk-canine was buried in the gum outside the protruded point of the permanent canine; so that this tooth is extricated and cuts the gum before the tooth of which it is the successor makes its appearance, that tooth being probably removed by absorption. Here, therefore, was another instance, analogous to that of the rudimental teeth in the foetal Whale, of parts developed without any obvious office as organs of mastication, but serving to illustrate the relation of adhesion to a more normal type of dentition. In conclusion, Professor Owen remarked that the food of the Walrus consisted, in a state of nature, of sea-weed, crustaceans and mollusks; and that although, by the totality of its organization, it must be placed near the Seals, and with them be classed in the order *Carnivora*, yet that the incisors and premolars were alike well adapted to pound marine plants, and to break and crush shells. Fragments of a bivalve shell, a species of *Mya*, had been found with pounded sea-weed, by the Surgeon of Parry's Polar Expedition, in the stomach of a full-grown Walrus. The great descending canine tusks serve as weapons of offence and defence, and to aid the animal in mounting and clambering over ice-blocks, bergs and floes in the Arctic Seas, in which the Walrus has been organized to enjoy its existence.

2. DESCRIPTION OF A NEW SPECIES OF CORYNACTIS.  
BY WILLIAM THOMPSON.

CORYNACTIS HETEROCERA.

*Spec. Char.*—Coriaceous; the tentacula in each row varying in shape, the animal but slightly mutable.

This *Corynactis* measures nearly an inch in diameter, and the same in height, when in a state of expansion; when contracted it has the shape of a button and is firm to the touch, coriaceous, and of a delicate yellow colour.

The body is covered by an epidermis, which is easily detached and slimy; when this was rubbed off the animal was of a dirty white; the epidermis was replaced in a few days, when the animal recovered its colour; when portions only of the epidermis are rubbed off, it has a mottled appearance.

When closed all the tentacles are completely withdrawn.

The margin of the disk is crenated; the tentacles are placed within it.

The tentacles in the outer row are thirty-two in number; the other three rows have each two or three less; there are four rows in all. The tentacles in each row differ from the others; those in the outer row are the longest, then those of the second, third and fourth, in the order that I have named them; the third and fourth rows having the peduncles so short as to be nearly sessile. The shape of the tentacles, as I have stated, differs much. The rows of tentacula, as also the individual tentacles, closely approximate; those in the outer row diverge slightly, and, when looked at from above, bear the appearance of a finely-lobed edge to the disk, the real margin being hidden by the heads of the tentacles hanging over it. The tentacles in each row appear to the eye short, stout and capitate; those in the first or outer row have the head bilobed or kidney-shaped, and a round tubercle placed below the head on the inner side; all the tentacles are horizontal. The tentacles of the second row are of a peculiar construction, apparently uniting the capitate extremities of *Corynactis* with the elongated form of *Actinia*; the apex is a spear-shaped process, and this is seated on a peduncle formed by four globose bodies placed two and two, and divided from each other by constrictions more or less deep. In the third row the peduncles of the tentacles are very short, thick and capitate; the crown is round, rather oblong, and with a constriction at half the distance from each end, giving the crown the appearance of a figure of 8. The fourth or innermost row is short, or shorter than those in the third; they are in fact nearly sessile. The heads of the tentacles in the fourth row appear occasionally to vary; sometimes being of the same shape as those in the third row, that is, bilobed, whilst at other times they are decidedly five-lobed. The whole of the tentacula are straight, rigid, regularly disposed, and point slightly outwards. They slightly change their shape at times when the animal is opening; this however is not always the case.

The disk within the inner row of tentacles is ample.

The mouth is formed of two crenated lips, forming a straight ori-

fice; at times this is drawn into the shape of a crescent. Whilst copying this portion of my notes, my *Corynactis* does not appear quite easy; it has thrown out its lobes, covering every part of the disk, with the exception of the crenated margin; the lobes do not rise, as in species of *Actinia*, above the margin; they are on the contrary flat and even with it, and are firm to the touch.

The colour of the animal is a delicate yellow or buff. The disk is of a pellucid white, streaked with fine radiating lines of a dead white. The tentacles of the first row are pellucid white, with the capitate extremities dead white; the tentacles in the three remaining rows are also pellucid white, in parts tinged faintly with a reddish hue; the capitate extremities have a powdered white edge. The mouth is of a darker yellow than the body.

This species does not appear to change its shape very much, thus differing from the other known British species; the only change I have noticed was that from a state of contraction to one of expansion, from the button shape to nearly a true cylinder, of pretty equal dimensions at both extremities, with a constriction immediately under the crenated margin. It easily adheres by its base to any substance, and may be said to be rather lively, often continuing for some time constantly opening and closing.

It also throws out lobes in the manner of other *Actiniadæ*, and these at times completely cover the disk. If touched it instantly contracts, but does not turn sulky, commencing immediately to reopen, which it does very slowly, and this by exerting the tentacles on one quarter of the disk before it begins to exert those on the other three quarters. The tentacles have not the motion of *Actinia* or *Anthea*. I dropped a piece of meat on the disk when opened; it remained there some little time without being taken into the stomach; after some time the animal wished to rid itself of the meat; it then slowly bent over, and the meat rolled or floated across the tentacles without being impeded by them. When taken this animal was perfectly smooth and free from all foreign substances, such as sand and gravel.

The appearance of this *Corynactis* reminds me of a coronet, the heads of the outer row of tentacles bearing a resemblance to the balls on the edge of the coronet, and this more so than in either *C. viridis* or *C. Allmannii*; and I should have proposed the specific name of *coronalis*, did it not partly apply to the other species.

*Corynactis heterocera*, it will have been seen by the description, differs very materially from the other British species, in the form of the tentacles, the colour, the superior size, the coriaceous texture, its general immutability of form, and in having no foreign substance attached to the epidermis when caught, as in *C. Allmannii*. I have named it *heterocera* in reference to its most prominent distinction from the other species in its differently shaped tentacles.

*Hab.* Dredged in Weymouth Bay, in 8 fathoms of water, on a gravelly bottom, Sept. 10, 1853.



November 22, 1853.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF TWO NEW SPECIES OF HUMMING BIRDS,  
FROM PERU. BY JOHN GOULD, F.R.S.

1. SPATHURA CISSIURA.

General plumage bronzy green; wings purplish brown; four outer tail-feathers purplish steel black; under surface green, paler on the throat; thighs thickly plumed and of a reddish buff.

Total length,  $4\frac{1}{4}$  inches; bill,  $\frac{5}{8}$ ; wing,  $1\frac{5}{8}$ ; tail,  $2\frac{3}{8}$ .

*Hab.* Peru.

*Remark.*—Most nearly allied to *Spathura Peruana*, but differing from that and all the other members of the genus, in having the outer tail-feathers webbed throughout their entire length, and consequently the spatulate tips less conspicuous.

2. CALOTHORAX MICRURUS, Gould.

All the upper surface mealy bronzy green; throat of a glittering amethystine hue; under surface buff, deepest on the sides; tail narrow, rigid and black.

Total length,  $2\frac{3}{8}$  inches; bill,  $1\frac{9}{16}$ ; wing,  $1\frac{5}{16}$ ; tail,  $\frac{3}{8}$ .

*Hab.* Peru.

*Remark.*—This is a very diminutive species, and differs from all others in the extreme shortness of the tail, which is exceeded in length by both the upper and under coverts.

2. DESCRIPTIONS OF TWO NEW GENERA (PFEIFFERIA AND  
JANELLA) OF LAND MOLLUSCA.

BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S.

Some years ago I described a new genus of *Helices* under the name of *Nanina*, remarkable from the mantle of the animal being reflexed and produced over the surface of the shell, as in *Vitrina*, but differing from that genus in the shell being more Helicoid, and in the mantle not being produced in front, or forming a kind of shield over the back of the neck; this genus has been very generally adopted, and now contains a large number of species.

The animal of *Nanina*, like the *Parmacellæ* and *Helicariones*, has the hinder part of the uppermost extremity of the foot truncated and furnished with a linear perpendicular gland with thickened lips.

Mr. Cuming, who lately supplied me with a number of animals of shells in spirits, sent me, along with other kinds, specimens of a shell which Dr. Pfeiffer has described under the name of *Helix micans*, which at once attracted my attention, on account of the shell near

the peristome being covered with a thin reflexed portion of the mantle. I at first considered it was a modification of the genus *Nanina* with a more dilated mantle, and a much more globular shell; but on more particular examination, I am convinced that it is the type of a new genus, as the back of the foot is depressed and flattened, and quite destitute of any appearance of a subcaudal gland.

I propose to call this genus *Pfeifferia*, after my excellent friend Dr. Louis Pfeiffer, the author of the "Monographia Helicum;" it may be characterized as follows:—

#### PFEIFFERIA.

Animal large for the size of the shell; mantle edge expanded, thin, reflexed over the outer surface of the shell when contracted in spirits, forming an even margin to the outer part of the peristome. Foot moderate, depressed behind, acute at the tips, without any subcaudal gland. Shell subglobose, imperforate, thin, brittle, white, pellucid. Spire with small whorls, third and fourth rapidly enlarging, the last inflated; aperture rounded, lunate. Columella slightly and regularly arched. The peristome thin, straight, acute.

Mr. Cuming informs me, that when he poured boiling water on them, to kill them, the animal, in attempting to return within the shell, burst it, from being so much larger than the shell itself; he was consequently compelled to drown the animal and let it remain in the water until it was half putrid, by which means he was able to procure sound shells. He tried boiling water several times, and destroyed some hundreds of shells before resorting to the latter means.

I may observe, that the animal in spirits does not give one the impression of being so large, compared with the shell, as the above description would imply; but, like the *Succineæ*, *Vitrinæ* and other genera, these animals appear to have the faculty of absorbing a quantity of moisture and of inflating their bodies and making them appear of a large size, and when suddenly killed they have not the power of lessening it, but while alive they certainly have. During dry and perhaps cold weather they expel the air and water, and so contract their bodies, that they can be withdrawn a considerable distance within the cavity of the shell. I have often seen this œconomy in the amber snails, *Succineæ*, and the shield shells, *Vitrinæ*, and Professor Nilsson has observed the same fact with regard to the latter genus, as quoted by me (Gray, Turton Man. 119).

The type of the genus is

#### PFEIFFERIA MICANS.

*Helix micans*, Pfeiffer, Proc. Zool. Soc. 1845, 71; Monogr. Helic. ii. 24.

*Corasia micans*, Albers, Heliceen, 111.

*Nanina Albaiensis*, Gray, Ann. & Mag. Nat. Hist. xii. 1853, p. 331, teeth.

*Hab.* Luçon.

Mr. Cuming observed it in the greatest abundance on the leaves of bushes at St. Jauno, in the province of Cagayan, at the extreme north part of the island of Luçon.

Dr. Albers refers the species to his subgenus *Corasia*, consisting of *Helices* with large reflected peristomes; the shells have some resemblance to the young imperfect specimens of some species of that genus, as *Helix Albaiensis*, but they differ from them in the pillar lip being evenly arched and imperforate, and not straight from the axis and slightly perforated, as in their young shells it always is.

MM. Quoy and Gaimard described a land mollusk which they discovered on leaves in Tasman's Bay, New Zealand, under the name of *Limax bitentaculatus*, Voy. Astrolabe, t. 13. f. 1, 2, 3. They only found a single specimen, which, they say, they only partially examined. From this description, as the animal differed from *Limax* in so many particulars that it was impossible to keep it in that genus, I formed a provisional genus for it under the name of *Janella*, in the 4th volume of Mrs. Gray's 'Figures of Mollusca,' p. 112. I have just received from New Zealand a specimen of land mollusk which agrees with the animal described by MM. Quoy and Gaimard in so many particulars, that I am inclined to believe it to be either the species they observed, or a second species of the same genus; and as it offers some peculiarities not noticed in their description or figure, I shall proceed to characterize the genus.

#### JANELLA.

Body elongate, convex; back rounded; tail not keeled, tapering, acute behind, without any subcaudal gland. Mantle covering the whole of the back, with a slightly raised lateral margin, leaving a rather broad space between its edge and the edge of the foot, thin, smooth, with a longitudinal groove along the centre of the back extending the whole length of the animal, and giving out branches from each side which diverge backward to the edge; in front, over the head, there is given out a short, straight, diverging branch on each side to the hinder base of the tentacles, then forked, and the two branches continued on the under edge of the mantle to the corner of the mouth; tentacles two, arising from the front just within the edge of the mantle, and quite retractile like those of the Slugs. Aperture of respiration a very small round foramen, with a raised edge, on the right side and close to the central groove on the back, just above the aperture of reproduction. Mouth inferior, just at the end of the foot, with three tubercles in front, which are formed by the continuation of the grooves on the front of the mantle. Aperture for reproductive organs on the front part of the edge of the right side of the mantle, about one-fourth the entire length from the head.

The foot narrow, divided into three indistinctly-marked longitudinal bands, the middle band rather the widest, the lateral bands with rather distant cross grooves, most distinct on the outer edge, and

with shorter marginal grooves between them, giving the edge of the foot a crenated appearance; the end of the body becomes suddenly more slender, with a prominence on the back just before this sudden alteration, as if the mass of the viscera were confined to the first two-thirds of the body; but this may be caused by the contraction of the animal from being in spirits.

*Shell* none, or at least there is no appearance of any through the skin.

**JANELLA ANTIPODARUM.**

*Hab.* New Zealand. Length three-fourths of an inch.

This genus is most nearly allied to *Philomycus* (= *Tebenophorus*, Binney = *Limacella*, Blainville), with which it agrees in having a thin mantle covering the whole of the back; but it differs from it in the position of the respiratory aperture, and in the presence of only two tentacles, which, instead of being placed on the head, as in *Philomycus* and all the other *Arionidæ* and *Helicidæ*, are placed in the front part of the mantle. All these characters induce me to regard it as the type of a new family of *Pulmonata*, which may be called *Janellidæ*.

**3. ON THE ATTITUDES AND FIGURES OF THE MORSE.**

BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S.

The arrival of a living Morse, or Walrus, in this country, showing that it is very different in its manner of moving from the Seals, has induced me to examine and compare the figures which have hitherto been given of this animal. Most of the oldest figures were purely imaginary. To this series must be referred the *Rosmarus* and

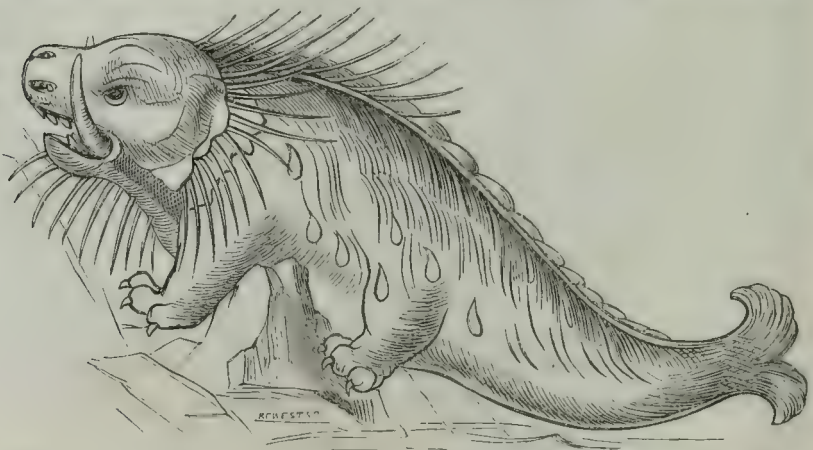


Fig. 1. *Rosmarus*. Gesner, Addenda, 368, 16. 1560.

(Reduced one-ninth.)

*Vacca marina* in the Addenda to Gesner (pp. 368, 369), published



Fig. 2. *Vacca marina*. Gesner, Addenda, p. 369. 1560.  
(Reduced nearly one-third.)

in 1560, and the *Porcus monstrosus* of Olaus Magnus (p. 788), published in 1568. They all have more or less elongated tails, four feet, and the elongated tusks in the lower jaw.

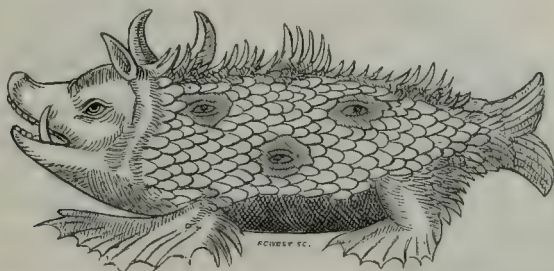


Fig. 3. *Porcus monstrosus Oceani Germanici*. Olaus Magnus, 1568, p. 788.

The *Rosmarus* of Olaus Magnus (p. 789) agrees with the preceding in most of its characters, but has the tusks in the upper jaw.



Fig. 4. *Rosmarus seu Morsus Norvegicus*. Olaus Magnus, 1568, p. 789.

Gesner, in his *Icones*, 1560 (p. 178), gives another figure more like a Seal, and with the teeth in the upper jaw; but it is repre-



Fig. 5. *Rosmarus*. Gesner, *Icones Animalium*, 1560, p. 178. De Cetis, Ord. xii.  
(Reduced two-thirds.)

sented as having four feet, with claws like a Cat's, the fore legs being furnished with short wings at their junction with the body; and the body ends in a broad fan-like tail, similar to the hinder extremities of the Seal. This figure is copied in Jonston's 'Pisces,' t. 44, in 1657.



Fig. 6. *Sea Horse*. 1609.

In 'The Three Voyages to the North in the year 1609,' reprinted by the Hakluyt Society, a plate shows a "true portraiture of our boat, and how we nearly got into trouble with the sea horses." This animal is represented like a Seal, with the teeth in its upper jaw, but the back is arched, and the belly a considerable distance from the ice, on which it is walking. Another very rough seal-like figure



Fig. 7. *Wall-Ross*. Marten's *Spitzbergen*, &c. 1675, t. P. fig. *b*.  
(Reduced three-tenths.)

is given in Marten's 'Spitzbergen in 1675,' tab. P. fig. *b*. Buffon,

in 1765, in the tenth volume of his 'Histoire Naturelle,' t. 54, gives the figure of a male, evidently from a stuffed skin, exactly resem-

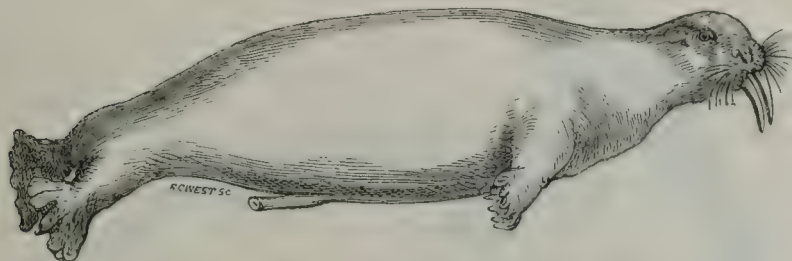


Fig. 8. *Le Morse*. Buffon, xiii. t. 54 ♂. 1765.  
(Reduced two-fifths.)

bling the common Seal in form and position; and this figure has been repeatedly copied.

In a small quarto tract, called the 'Histoire du Pays nommé Spitsberghe, écrit par H. G. A., Amsterdam, chez Hessel Gerard A.,' 1613, a plate at page 20 contains an excellent figure of the Morse and its young, "ad vivum delineatum ab Hessel G. A."



Fig. 9. *Walrus*. Ad vivum delineatum ab Hessel G. A.  
Histoire de Spitsberghe, by H. G. A., 1613. Another edition, same date.  
(Reduced four-sevenths.)

This figure was repeated in Laet's 'Amer. Descript.' p. 28, 1633, by Jonston, 'Pisces,' t. 44, in 1657, and by Shaw, 'Zoology,' t. 68\*, from Jonston.

In Cook's last 'Voyage' there is a fine plate (t. 52), after a drawing by Westall, of a boat's party attacking a drove of Sea-horses; the centre animal of this group is copied, under the name of the Arctic Walrus, by Shaw, 'Zoology,' t. 68. This figure also represents the animal in its natural position, with the hinder legs bent under the

body, but the figure is more artistic and less natural than that of Mr. Hessel Gerrard A.

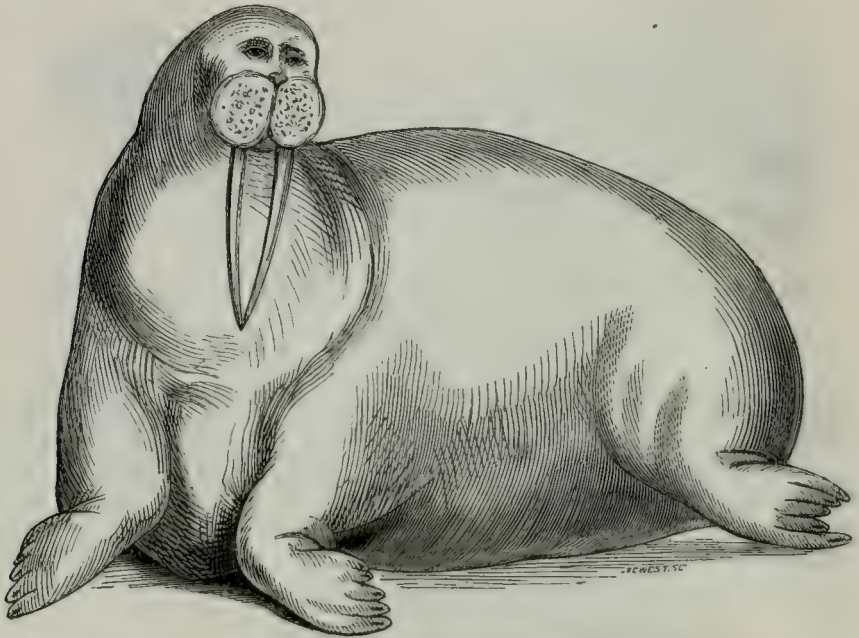


Fig. 10. *Arctic Walrus*. Cook's last Voy. t. 52. Shaw, Zool. t. 68.  
(Reduced one-sixth.)

4. DESCRIPTIONS OF NEW SPECIES OF THE GENUS CONUS,  
FROM THE COLLECTION OF HUGH CUMING, ESQ.  
BY ARTHUR ADAMS, F.L.S., SURG. R.N.

1. *CONUS OPTABILIS*, A. Adams. *C. testa pyramidato-conica, solida, lævigata, albida, immaculata; spira conica, acuminata, apice acuto; anfractibus permultis, in medio angulatis, radiatim striatis; labro in medio producto, postice prope suturam valde inciso.*

*Hab.* — ?

2. *CONUS SULCIFERUS*, A. Adams. *C. testa oblongo-turbinata, solidiuscula, transversim valde sulcata, sulcis distantibus, longitudinaliter elevatim striatis; fusca, maculis obscuris, albidis, transversim dispositis, ornata; spira acuminata; anfractibus gradatis, transversim valde sulcatis et transversim striatis, ad peripheriam luteo maculatis; apice elato, acuto.*

*Hab.* New Ireland. Mus. Cuming.

3. *CONUS CYANOSTOMA*, A. Adams. *C. testa turbinata, conica, leviter inflata, subcinerea, fasciis tenuibus, articulatis, maculisque fuscescentibus sparsim variegata, basi valde sulcata;*



*apertura fauce violaceo-purpurea; spira ad suturas sulcata, anfractibus gradatis; apice elevato, acuto.*

*Hab.* West Africa. Mus. Cuming.

4. *CONUS SPECTABILIS*, A. Adams. *C. testa elongato-cylindracea, albida, aurantiaco-nebulosa, transversim lirata, liris elevatis, subdistantibus, rufo-fusco articulatis; spira convexa, obtusa; anfractibus convexiusculis, sulcatis, ultimo rotundato.*

*Hab.* Australia. Mus. Cuming.

This species belongs to the subgenus *Hermes*, and differs from *H. nussatella* in the last whorl being roundly angulated posteriorly, in the elevated distant ridges and in the obtuse spire: in form it is like *H. violaceus*.

5. *CONUS CÆLATUS*, A. Adams. *C. testa parva, turbinato-conica, transversim valde sulcata, sulcis distantibus, longitudinaliter elevatim striatis; albida, aurantiaco late reticulata; spira depresso-concava, anfractibus sulcatis, concinne coronatis; apice mucronato, subacuto.*

*Hab.* Chinese Seas. Mus. Cuming.

6. *CONUS STICTICUS*, A. Adams. *C. testa elongato-turbinata, lævi, nitida, ad basin valde sulcata, fusca, fasciis nigro alboque articulatis, confertis, ubique cincta; spira valde elata, anfractibus gradatis, ad peripheriam albo maculatis; apice acuto.*

*Hab.* —? Mus. Cuming.

7. *CONUS PULCHER*, A. Adams. *C. testa elongato-turbinata, transversim sulcata, longitudinaliter tenuissime striata, sulcis cancellatis; albida, rufescente nebulosa, fasciis angustis, albo rufoque articulatis, ubique ornata; spira acuminata, anfractibus coronatis, transversim liratis et striatis; apice acuto, mucronato.*

*Hab.* New Caledonia. Mus. Cuming.

This species belongs to the section *Cylindrella*.

8. *CONUS DEALBATUS*, A. Adams. *C. testa obeso-turbinata, læviuscula, basi oblique valde sulcata, alba, nitida; spira elata, concava; anfractibus striatis, convexiusculis; apice acuto.*

*Hab.* —? Mus. Cuming.

9. *CONUS COMMODUS*, A. Adams. *C. testa elongato-turbinata, angusta, lævi, basi oblique sulcata, alba, epidermide fulva obtecta; spira elevata, convexo-acuta, pallide fulvo variegata; apice elato, acuto, suturis valde impressis; anfractu ultimo postice acuto, carinato.*

*Hab.* —? Mus. Gruner.

10. *CONUS NEGLECTUS*, A. Adams. *C. testa pyramidato-conica, subventricosa, transversim sulcata, carneola, rufescente variegata, fascia unica rufa, lineisque transversis, albo rufoque arti-*

*culatis, ornata; spira depressa, rufo radiatim picta, anfractibus concentricè striatis, in medio depressiusculis.*

*Hab.* —? Mus. Cuming.

11. *CONUS LURIDUS*, A. Adams. *C. testa pyramidato-conica, lævi, longitudinaliter substriata, cinerascete, fasciis duabus distantibus, albis ornata; anfractu ultimo postice zona albo-articulata cincto; spira depressa, anfractibus concavis, sutura impressa.*

*Hab.* Australia. Mus. Cuming.

12. *CONUS VINCTUS*, A. Adams. *C. testa turbinato-conica, solida, longitudinaliter strigosa, olivacea, maculis albis, irregularibus, lineisque transversis, nigro alboque articulatis, undique ornata; spira conica, elata, anfractibus valde sulcatis; apice mucronato; labro arcuato, intus nigro-fusco articulato.*

*Hab.* Australia. Mus. Cuming.

13. *CONUS SUCCINCTUS*, A. Adams. *C. testa turbinato-conica, ventricosa, lævi, carneola, fascia angusta, albo rufoque articulata, in medio succincta, fascia altera evanida, anteriore; spira obtusa, anfractibus subgradatis, marginibus rotundatis, in medio sulcatis; labro arcuato; apertura antice subeffusa.*

*Hab.* Natal. Mus. Cuming.

14. *CONUS ANGULATUS*, A. Adams. *C. testa pyramidato-conica, lævi, nitida, solida, alba, maculis rufescentibus variegata, maculisque rufis, in fasciis transversis dispositis, ornata; spira acuta, concava, anfractibus lævibus, anfractu ultimo postice acute angulato; labro tenui, acuto, in medio producto, postice valde inciso.*

*Hab.* —? Mus. Cuming.

15. *CONUS ASSIMILIS*, A. Adams. *C. testa turbinato-conica, longitudinaliter striata, transversim creberrime sulcata, sulcis antice validioribus, alba, maculis cæruleo-nigris, irregularibus, undulatis, lineisque transversis, nigro rufoque articulatis, ornata; spira conica, acuta, anfractibus cancellatis; apice roseo, mucronato; labro arcuato, margine intus albo nigroque articulato.*

*Hab.* Australia. Mus. Cuming.

16. *CONUS HEVASSII*, A. Adams.

We have imposed this name upon the *Conus pulchellus* of Sowerby, that appellation having been already employed for another species.

17. *CONUS INNEXUS*, A. Adams. *C. testa elongato-turbinata, lævi, solidiuscula, fulva, aurantiaco nebulosa, fasciis duabus, latis, rufo-fuscis, lineisque transversis, articulatis, subconfertis ornata; spira conica acuminata, anfractibus subgradatis, concentricè valde liratis, marginibus rufo-punctatis; labro recto, postice arcuato; apertura intus alba.*

*Hab.* Natal. Mus. Cuming.

18. **CONUS ANCEPS**, A. Adams. *C. testa pyramidato-conica, transversim striata, antice valde sulcosa, solida, alba, rufo-variegata, fasciis duabus, transversis, aurantiacis ornata; spira conica, acuta, anfractibus excavatis, ad suturas subcrenulatis, anfractu ultimo postice subrotundato; labro in medio inflexo.*  
*Hab.* Moluccas. Mus. Cuming.
19. **CONUS COMPTUS**, A. Adams. *C. testa turbinato-conica, ventricosula, lævi, nitida, antice oblique sulcata, fulva, cingulo unico macularum fuscicarum ornata; anfractu ultimo postice convexo, antice attenuato, basi subreflexo; labro tenui, arcuato; spira depressa; anfractibus concentrice sulcatis, marginibus subnodulosis.*  
*Hab.* Natal. Mus. Cuming.
20. **CONUS FASCIATUS**, A. Adams. *C. testa elongato-turbinata, nitida, transversim striata, albida, fasciis tribus, latis, aurantiacis ornata; spira depressa, anfractibus concavis, extus marginatis; labro in medio coarctato; anfractu ultimo postice angulato.*  
*Hab.* —? Mus. Cuming.
21. **CONUS NOVÆ-HOLLANDIÆ**, A. Adams. *C. testa turbinato-conica, subventricosa, longitudinaliter striata, transversim valde sulcata, cinerascens, castaneo maculata et nebulosa; spira elevatiuscula, apice acuto, anfractibus angulatis, concentrice sulcatis, et radiatim striatis; apertura intus luride violascente; labro margine arcuato.*  
*Hab.* Swan River. Mus. Cuming.
22. **CONUS STIGMATICUS**, A. Adams. *C. testa elongato-turbinata, lævi, basi oblique sulcata, alba, maculis rufis irregularibus, in seriebus tribus dispositis, ornata; spira elevatiuscula, anfractibus concavis, transversim sulcatis, fasciis rufis radiatim pictis; apice acuto, submucronato; labro acuto, margine arcuato.*  
*Hab.* New Caledonia. Mus. Cuming.
23. **CONUS PRÆCELLENS**, A. Adams. *C. testa pyramidato-conica, albida, maculis irregularibus, rufescentibus varie picta, transversim valde lirata, interstitiis pulcherrime cancellatis; spira valde elata, acuminata, anfractibus multis, angulatis et cancellatis, anfractu ultimo antice attenuato; labro in medio inflexo, postice valde inciso.*  
*Hab.* China Seas. Mus. Cuming.
24. **CONUS DESIDIOSUS**, A. Adams. *C. testa pyramidato-conica, lævissima, basi oblique sulcata, pallide fusca, fascia albida, transversa, lineisque castaneis, interruptis, confertis, et lineis albidis undulatis postice ornata; spira elata, conica, anfractibus planiusculis, in medio transversim bisulcatis; labro arcuato, postice inciso.*  
*Hab.* West Africa. Mus. Cuming.

5. MONOGRAPH OF PLECOTREMA, A NEW GENUS OF GASTROPODOUS MOLLUSKS, BELONGING TO THE FAMILY AURICULIDÆ, FROM SPECIMENS IN THE COLLECTION OF HUGH CUMING, ESQ. BY H. AND A. ADAMS.

Genus PLECOTREMA, H. & A. Adams.

*Testa ovato-conica, umbilicata, transversim sulcata; spira elata, acuta; apertura angusta; labio triplicato, plica mediana bipartita; labro extus incrassato, intus bidentato.*

Shell ovate-conic, solid, umbilicated; spire elevated, acute; aperture contracted, oblong; inner lip with three plaits, the middle one bifid; outer lip with a marginal varix, internally bidentate.

A genus of small shells allied to *Cassidula*.

1. PLECOTREMA TYPICA, H. & A. Adams. *P. testa ovato-conica late et profunde umbilicata, pallide ferruginea, fulvo cincta; spira conica, elata, transversim valde sulcata, anfractu ultimo basi truncato; apertura angusta; columella triplicata, plica mediana bipartita; labro extus incrassato, quasi varicoso, margine antice subreflexo, intus bituberculato; umbilico patulo, perspectivo.*

*Hab.* Pulo Penang (*Lieut. Taylor*). Mus. Cuming.

This is the most characteristic species of the genus, and is remarkable for the great size of the umbilicus, causing the base of the shell to appear as if truncated.

2. PLECOTREMA MONILIFERA, H. & A. Adams. *P. testa ovato-conica, vix perforata; spira conica, acuta, transversim lirata, liris granulosis, moniliformibus, confertis; apertura angusta; columella triplicata, plica mediana bipartita; labro extus incrassato, intus bidentato.*

*Hab.* —? Mus. Cuming.

This species is not distinctly umbilicated, and the conspicuous transverse liræ are granular, so as to assume a moniliform appearance; the columella, as usual in this genus, is furnished with three plaits, and the outer lip is thickened externally.

3. PLECOTREMA PUNCTIGERA, H. & A. Adams. *P. testa ovata, vix perforata; spira conica, obtusiuscula; fulva, fusco-zonata, transversim punctata, punctis in lineis æquidistantibus, transversis dispositis; apertura angusta, coarctata; columella triplicata, plica postica tuberculiformi, mediana bipartita; labro intus tuberculato, tuberculo mediano valido.*

*Hab.* Borneo (*Lieut. Taylor*). Mus. Cuming.

The most conspicuous feature in this species consists of the numerous distinct punctures arranged in transverse rows, and in the character of the tubercles in the interior of the outer lip.

4. PLECOTREMA IMPERFORATA, H. & A. Adams. *P. testa ovato-conica, imperforata; spira elata, obtusiuscula; pallide fusca,*

*transversim punctato-striata; anfractibus supremis transversim sulcatis, ultimo basi attenuato, postice valde transversim sulcato; apertura angusta; columella triplicata, plica mediana bipartita; labro intus quadrituberculato.*

*Hab.* Philippines. Mus. Cuming.

In this species there is no umbilicus, and the last whorl is pointed and subacute anteriorly; the whorls of the spire are sulcate, and the outer lip is furnished internally with four tubercles.

5. PLEOTREMA LIRATA, H. & A. Adams. *P. testa umbilicata, ovato-conica, fusca, pallide fulvo-cincta; spira acuta, anfractibus planis, transversim liratis, liris confertis; apertura parva, angusta; labio subcalloso; columella triplicata, plica postica obsoleta, tuberculiformi; labro extus incrassato, intus bidentato; umbilico intus costa elevata, spirali munito.*

*Hab.* Moreton Bay. Mus. Cuming.

In this species the outer lip is thickened, and there is a spiral callus in the rather wide umbilicus.

6. PLEOTREMA CLAUSA, H. & A. Adams. *P. testa rimata, ovato-conoidea; spira acuta; rufo-fusca, aut pallide fulva, transversim lirata, liris confertis, elevatis; apertura angusta, ringente; labio calloso, triplicato, plica mediana bipartita, antica pervalida; labro extus incrassato, margine inflexo, intus valde bidentato.*

*Hab.* Sandwich Islands. Mus. Cuming.

The aperture in this species is very narrow and ringent, the outer lip is thickened externally, with the margin somewhat reflexed, and the umbilicus is reduced to a narrow fissure.

7. PLEOTREMA DECUSSATA, H. & A. Adams. *P. testa ovato-conica, umbilicata; spira conica, apice acuto; brunnea, longitudinaliter striata, transversim sulcata, liris intermediis subgranulosis; apertura oblonga, angusta, antice quadrata, quasi truncata; columella triplicata, plica postica tuberculiformi, mediana bipartita; labro acuto, extus pallide fusco, intus albo marginato, bituberculato; regione umbilicali carina spirali circumcincta.*

*Hab.* Philippines. Mus. Cuming.

The base of the last whorl, owing to the large size of the umbilicus, appears as if truncated.

8. PLEOTREMA PUNCTATO-STRIATA, H. & A. Adams. *P. testa ovata, solida, vix rimata; spira elata, conica; ferruginea, transversim punctato-striata; apertura oblonga, angusta; columella triplicata, plica postica tuberculiformi, mediana bipartita; labro acuto, intus albo-marginato, tridentato.*

*Hab.* Borneo (*Lieut. Taylor*). Mus. Cuming.

The transverse striæ in this species are conspicuously punctate, and there are three tubercles in the interior of the outer lip; the spire is acute, and the last whorl rather produced, with only an umbilical fissure.

9. **PLECOTREMA CONCINNA**, H. & A. Adams. *P. testa umbilicata, ovato-conica; spira elata, apice acuto; sordide fulva, transversim valde sulcata, liris intermediis subgranulosis; apertura parva, angusta; labio calloso, columella triplicata, plica mediana bipartita; labro extus marginato, margine reflexo, intus bidentato; umbilico magno, patulo.*

*Hab.* —? Mus. Cuming.

The umbilicus in this species is large and open; the inner lip is callous, and the outer lip thickened externally, with the margin somewhat reflexed.

10. **PLECOTREMA EXARATA**, H. & A. Adams. *P. testa ovato-conica, umbilicata; spira elata, acuta; brunnea, transversim sulcata, liris intermediis læviusculis; apertura angusta; columella triplicata, plica mediana bipartita; labio subcalloso; labro extus incrassato, margine antice subreflexo, intus bituberculato.*

*Hab.* —? Mus. Cuming.

In this species the umbilicus is pervious, and the spire is elevated and acute; the spaces between the transverse grooves are nearly smooth, and the margin of the outer lip is somewhat reflected.

11. **PLECOTREMA LABRELLA**, Deshayes.

*Auricula labrella*, Desh. *Encycl. Meth. Vers.* p. 92; *Mag. de Zool.* part 1. pl. 14. p. 14.

?*Auric. faber*, Férussac.

12. **PLECOTREMA INÆQUALIS**, C. B. Adams.

*Pedipes inæqualis*, C. B. Adams, *Contrib. to Conchology.*

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December 13, 1853.

R. C. Griffith, Esq., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF NEW SPECIES OF BUCCONIDÆ.  
BY PHILIP LUTLEY SCLATER, F.Z.S.

(Aves, Pl. L. LI.)

1. **BUCCO RADIATUS**, Sclater. (Pl. L.) *B. supra clare ferrugineus, nigro transversim radiatus; nucha et dorso summo pæne omnino nigris; corpore subtus et torque cervicali supra pallide fulvescenti-albis; capitis lateribus, pectore et ventris lateribus lineis nigris transversim radiatis; loris, gula, ventre medio crissoque albis; pedibus nigris; rostro plumbeo.*

Long. tota 8·0; alæ, 3·4; caudæ, 3·0.



Wolf, lith.

M & H. Hanhart, Imp<sup>l</sup>

BUCCO RADIATUS. *Sclater.*









J. W. P. 116

M & N. Hanhart Imp.

*MAIACOPTILA SUBSTRIATA* .Sabin

*Hab.* in Nova Grenada. Mus. Britannico.

*Obs.* *B. chacuru* affinis, sed subtus radiatus et rostro plumbeo nec rubro; maculis auricularibus nullis.

2. *BUCCO STRIATPECTUS*, Sclater. *B. corpore supra nigrescente, alis caudaque magis brunnescentibus, omnino rufescente transversim striatis; capite nigro fere immaculato; mento albo; gutture toto et collo undique fulvo-rufis; pectore et ventris lateribus albis, nigro longitudinaliter striatis; ventre medio albo, crisso fulvescente.*

Long. tota, 7·8; alæ, 3·5.

*Hab.* in Bolivia. Mus. Derbiano.

*Obs.* Species *B. maculato* maxime affinis sed subtus striis nigris nec maculis rotundis aspersa.

3. *MALACOPTILA FULVOGULARIS*, Sclater. *M. capite toto et dorso summo nigris, scapis plumarum clare fulvis; dorso, alis caudaque fuliginoso-brunneis; dorso medio punctis paucis triangularibus fulvis; uropygii plumis anguste fulvo marginatis; cauda immaculata; mento et gutture toto clare fulvis; pectore nigro, scapis plumarum late albis; ventre pallide fulvescente.*

Long. tota 8·5; alæ, 3·7.

*Hab.* in Bolivia. Mus. Derbiano.

Affinis *M. torquata*, Hahn.

4. *MALACOPTILA SUBSTRIATA*, Sclater. (Pl. LI.) *M. supra umbrino-brunnea, capite nigrescentiore; capite et dorso summo longitrorsum fulvo striolatis; dorsi et uropygii plumis rufescentibus, ochraceo anguste marginatis; alis caudaque immaculate cinerascenti-brunneis; loris et mystacibus elongatis, albis; lateribus capitis et corpore infra nigrescentibus, ochraceo et albo late striatis; gula media et pectore toto rufescenti-ochraceis; ventre brunneo et ochraceo-albido confuse mixto; cauda subtus cinerascentiore; rostro pedibusque nigris.*

Long. tota, 7·8; alæ, 3·8; caudæ, 3·8.

*Hab.* in Nova Grenada.

5. *MALACOPTILA ASPERSA*, Sclater. *M. supra fuliginoso-brunnea, dorso rufescentiore; alis caudaque immaculate brunneis; nucha, dorso toto et alarum tectricibus maculis triangularibus, clare fulvis, aspersis; loris albescentibus; regionis auricularis plumarum scapis pallide fulvis; mystacibus et plumis mentalibus rigidis; gula alba; pectore in ferrugineum transeunte; ventre toto crissoque obscure albis, ferrugineo tinctis; pectore et ventris lateribus obsolete fuliginoso-striatis; rostro nigro, mandibula inferiore ad basin flava; pedibus obscure brunneis.*

Long. tota 7·25; alæ, 3·2; caudæ, 3·2.

*Hab.* in Venezuela. Mus. Britannico.

*Obs.* Species præcedenti et *M. mystacali*, Lafr., quasi intermedia; coloribus corporis superi huic, inferioris vero illi approximans.

I am at present acquainted with about thirty-two species of the

fissirostral family *Bucconidae*, of which I believe the five just described to be hitherto unrecognised. Two of them are to be found in the Derby Museum at Liverpool; of two there are specimens in the British Museum: the only example of the *Malacoptila substriata* I have yet seen is in my own collection.

Four natural genera have been constituted in this family, *Bucco*, *Malacoptila*, *Monasa*, and *Chelidoptera*. For the more debile and passerine form of *Malacoptila*, represented by the *Bucco rubecula*, Spix, and *Lypornix ruficapilla*, Tschudi, I propose the new generic or subgeneric appellation *Nonnula*, type *N. rubecula* (*Bucco rubecula*, Spix, Av. Bras. i. t. 39. fig. 1. p. 51). The members of this section are much inferior in size to the true *Malacoptilæ*.

## 2. DESCRIPTIONS OF NINETEEN NEW SPECIES OF HELICEA, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. **HELIX GANOMA**, Pfr. *H. testa aperta, perforata, turbinato-depressa, solida, sublævigata, spiraliter indistincte striata, verrucosa, fulva; spira convexo-conoidea, obtusa; sutura impressa, simplice; anfractibus 5, convexiusculis, ultimo inflato, medio subcarinato, infra angulum et circa perforationem late fusco-fusciato, non descendente, basi distincte radiato-striato; apertura obliqua, subangulato-lunata, intus lactea; peristomate recto, obtuso, lilaceo-limbato, margine columellari superne breviter dilatato, repando.*

Diam. maj. 51, min. 43, alt. 26 mill.

*Hab.* in insula Ceylon rarissima (*F. Layard*).

2. **HELIX CONCAVOSPIRA**, Pfr. *H. testa subperforata, trochiformi, tenui, vix striatula, sub epidermide fugace, fulvescente alba; spira concavo-conica, apice acutiuscula; sutura submarginata; anfractibus 7, planiusculis, ultimo convexiore, medio acute carinato, antice non descendente, basi convexo; apertura parum obliqua, angulato-lunari; peristomate simplice, recto, margine columellari arcuato, ad perforationem brevissime reflexo.*

Diam. maj.  $13\frac{1}{2}$ , min. 12, alt. 11 mill.

*Hab.* in insula Ceylon (*Thwaites*).

3. **HELIX HYPHASMA**, Pfr. *H. testa vix perforata, trochiformi, tenui, confertim radiato-striata, sulcis remotioribus spiralibus quasi texta, pellucida, corneo-albida; spira subconcavo-conica, acutiuscula; sutura marginata; anfractibus  $7\frac{1}{2}$ , convexiusculis, ultimo convexiore, compresso-carinato, non descendente, basi convexo, nitido, sublævigato; apertura obliqua, rhombeo-lunari; peristomate simplice, recto, margine columellari substrictè descendente, superne vix dilatato, reflexiusculo.*

Diam. maj. 15, min.  $13\frac{1}{2}$ , alt.  $10\frac{1}{2}$  mill.

*Hab.* in insula Ceylon (*Thwaites*).

4. *HELIX TRIFILOSA*, Pfr. *H. testa perforata, depresso trochiformi, tenui, radiato-striata, acute carinata, vix nitidula, pallide cerea; spira conoidea, apice hyalina, obtusiuscula; sutura marginata; anfractibus  $6\frac{1}{2}$ , convexiusculis arcte convolutis, superne carinis 3 filiformibus munitis, ultimo non descendente, basi convexiore, nitido; apertura verticali, depressa, angulato-lunari; peristomate recto, acuto, marginibus remotis, supero brevissimo, basali leviter arcuato, columellari declivi, superne dilatato, reflexo.*

Diam. maj.  $5\frac{2}{3}$ , min. 5, alt.  $3\frac{1}{2}$  mill.

*Hab.* in insula Ceylon (*Thwaites*).

5. *HELIX POLITISSIMA*, Pfr. *H. testa subaperte perforata, depressa, tenui, politissima, virenti-cornea vel castanea; spira vix elevata, vertice subtili, obtuso; sutura profunda; anfractibus  $4\frac{1}{2}$ , convexis, sensim accrescentibus, ultimo rotundato, non descendente; apertura parum obliqua, rotundato-lunari; peristomate simplice, recto, marginibus convergentibus, dextro antrosum subarcuato, columellari arcuatim descendente, superne breviter reflexo.*

Diam. maj. 24, min. 20, alt. 11 mill.

*Hab.* in insula Ceylon (*Thwaites*).

6. *HELIX THWAITESI*, Pfr. *H. testa aperte perforata, convexo-depressa, striatula, nitida, cereo-hyalina; spira breviter conoidea, obtusiuscula; sutura profunda, submarginata; anfractibus  $6\frac{1}{2}$ , convexis, arcte convolutis, ultimo non descendente, basi inflato; apertura verticali, lunari; peristomate recto, acuto, margine columellari arcuatim oblique descendente, ad perforationem vix dilatato.*

Diam. maj. 5, min.  $4\frac{1}{3}$ , alt. 3 mill.

*Hab.* in insula Ceylon (*Thwaites*).

7. *HELIX SUBOPACA*, Pfr. *H. testa semiobtecte perforata, conoideo-depressa, solidula, superne subarcuatim costulata, basi radiato-striata, subopaca, pallide rubello-cornea; spira breviter conoidea; sutura simplice, impressa; anfractibus  $6\frac{1}{2}$ , vix convexiusculis, ultimo non descendente, basi planiusculo; apertura obliqua, lunari, intus margaritacea; peristomate simplice, recto, margine columellari declivi, subincrassato, ad perforationem triangulatim dilatato.*

Diam. maj. 17, min.  $14\frac{1}{2}$ , alt. 9 mill.

*Hab.* in insula Ceylon (*Thwaites*).

8. *HELIX PARTITA*, Pfr. (= *H. marcida*, Bens.? non Shuttl.) *H. testa perforata, convexo-depressa, solidula, superne confertissime et inæqualiter subarcuato-costulata, sericina, fulvo-cornea; spira magis minusve elevata, vertice subtili, prominulo; sutura levi; anfractibus  $5\frac{1}{2}$ , convexiusculis, sensim accrescentibus, ultimo vix latiore, non descendente, basi læviusculo, subplanulato; apertura parum obliqua, lunari; peristomate simplice, recto,*

*marginibus vix convergentibus, columellari declivi, ad perforationem subincrassato, reflexiusculo.*

Diam. maj. 13, min.  $11\frac{1}{2}$ , alt. 7 mill.

*β. major, tenuior, pallide cornea.*

Diam. maj. 15, min. 13, alt.  $7\frac{2}{3}$  mill.

*Hab.* in insula Ceylon (Layard, *β. Thwaites*).

Differt ab *H. subopaca* sculptura subtiliore, minus regulari, anfractu ultimo minus dilatato, &c.

9. *HELIX FOVEATA*, Pfr. *H. testa sinistrorsa, subumbilicata, depressa, tenui, confertim subacute striata, et impressionibus radiantibus sculpta, nitida, superne cinnamomea; spira brevissime conoidea, vertice castaneo, elevatiore; anfractibus  $5\frac{1}{2}$ , sensim accrescentibus, convexiusculis, ultimo albo-carinato, infra carinam subacutam cingulo castaneo notato, basi inflato, circa umbilicum angustissimum pallidiore; apertura obliqua, late lunari; peristomate simplice, recto, margine columellari superne in laminam triangularem reflexo.*

Diam. maj. 39, min. 32, alt. 17 mill.

*Hab.* in India.

10. *HELIX LACERA*, Pfr. *H. testa imperforata, ovato-globosa, solida, vix striatula, fusca, epidermide lacera, flavo-cinerea, strigata; spira semiglobosa, obtusa; sutura pallide filomarginata, superne plana, tandem profunda; anfractibus  $4\frac{1}{2}$ , superis vix convexiusculis, 2 ultimis rotundatis, ultimo antice subascendente; apertura obliqua, subtetragono-ovali, intus livida; peristomate breviter expanso et reflexo, margine columellari substricto, plano, dilatato, cum basali angulum formante.*

Diam. maj. 33, min.  $27\frac{1}{2}$ , alt. 30 mill.

*Hab.* in insulis Philippinis.

11. *HELIX PURPURASCENS*, Pfr. *H. testa imperforata, subtrochiformi, solida, undique minute granulata, nitidula; spira convexo-conoidea, fulva, apice obtusiuscula; anfractibus 6, lente accrescentibus vix convexiusculis, ultimo convexiore, infra medium subcarinato et albedo-cingulato, antice purpurascente, gibbo, breviter descendente, basi subplano; apertura perobliqua, triangulari-lunari, intus margaritacea; peristomate fusco, reflexo, marginibus callo crasso, nitido junctis, columellari substricto.*

Diam. maj. 29, min. 25, alt.  $15\frac{1}{2}$  mill.

*Hab.* in Korea.

12. *HELIX PRÆSTANS*, Pfr. *H. testa imperforata, globoso-depressa, tenuiuscula, striatula, superne castanea, flammulis luteis ornata, basi lutea, irregulariter castaneo-fasciata et tæniata, epidermide parum nitida vestita; spira brevi, obtusa; anfractibus  $4\frac{1}{2}$ , convexiusculis, ultimo inflato, antice vix descendente; apertura obliqua, rotundato-lunari, intus margaritacea; peristomate livido, breviter expanso et reflexiusculo, mar-*

*ginibus via conniventibus, callo junctis, columellari fornicatim dilatato.*

Diam. maj. 53, min. 42, alt. 26 mill.

*Hab.* in provincia Ocana, Novæ Granadæ (*Schlim*).

13. **HELIX MICROSPIRA**, Pfr. *H. testa imperforata, depressoglobosa, solidula, levissime striatula, nitida, fulvido-flava, ple-rumque fasciis 3 nigris (1 suturali, 1 mediana, 1 columellari) ornata; spira parva, convexa, obtusa, alba vel lilacea; sutura albo-marginata; anfractibus 4, rapide accrescentibus, convexiusculis, ultimo perinflato, non descendente; apertura diagonali, truncato-ovali, intus albida; peristomate late expanso et reflexiusculo, albo, margine columellari plano, fere stricto, basi subdentato.*

Diam. maj. 44, min. 34, alt. 31 mill.

*Hab.* in insulis Philippinis.

14. **HELIX DIFFICILIS**, Pfr. *H. testa imperforata, globoso-depressa, tenui, minutissime striata, nitida, pallide fulvescente, ad suturam albam castaneo-fasciata; spira parvula, semiglobosa; anfractibus 4½, convexiusculis, ultimo inflato, ad peripheriam et basin castaneo-fasciato, non descendente; apertura fere diagonali, tetragono-lunari, intus alba; peristomate subincrassato, breviter reflexo, margine columellari stricto, per-dilatato, plano, albo.*

Diam. maj. 42, min. 34, alt. 26 mill.

*Hab.* in insulis Philippinis.

15. **HELIX CHARPENTIERI**, Pfr. *H. testa umbilicata, discoidea, solidula, oblique costato-striata, parum nitida, virenti-cornea; spira regulari, plana; anfractibus 5½, lente accrescentibus, modice convexis, ultimo rotundato, antice profunde descendente; umbilico lato, conico, subirregulari; apertura fere horizontali, rotundato-lunari, intus albida, prorsus edentula; peristomate albo, undique late expanso et reflexo, marginibus convergentibus, infero ad insertionem attenuato.*

Diam. maj. 27½, min. 22, alt. 9 mill.

*Hab.* in insula Ceylon (*F. Layard*).

16. **HELIX PROCERA**, Pfr. *H. testa umbilicata, depressa, am-bitu irregulari, subelliptica, solida, minute granulata, unicolore nigro-castanea; spira brevi, obtusa; anfractibus 5, convexiusculis, sensim accrescentibus, ultimo carinato, supra et infra carinam irregulariter anguloso, prope suturam tumido, basi constricto, in umbilico mediocri profunde sulcato, antice per-deflexo; apertura perobliqua, subtetragono-rotundata, dente libero acuto parietis aperturalis coarctata; peristomate crasso, reflexo, marginibus callo albo, sinuato junctis, supero arcuato, basali substricto, dente acuto, conico interposito.*

Diam. maj. 62, min. 49, alt. 27 mill.

*Hab.* in provincia Antioquia, Columbiæ (*Schlim*).

17. *HELIX CONTINUA*, Pfr. *H. testa umbilicata, lenticulari, carinata, solidula, striata et subgranulata, fusca, maculis albidis superne conspersa; spira vix elata, vertice subtili, obtuso; sutura fere lineari; anfractibus 5, planiusculis, ultimo acute carinato, antice inflato et deflexo, basi tumido, pone aperturam constricto, in umbilico mediocri leviter sulcato; apertura perobliqua, lunari, dente libero, compresso parietis aperturalis coarctata; peristomate continuo, albo, calloso, expanso et reflexo, margine basali levissime arcuato.*

Diam. maj. 41, min. 35, alt. 15 mill.

*Hab.* in provincia Ocana, Columbiae (Schlim).

18. *BULIMUS VICTOR*, Pfr. *B. testa imperforata, fusiformi-ovata, solidula, leviter striata, non nitente, fasciis flavido-albis, spadiceo tessellatis, fasciisque latioribus virenti-fuscis, albidostrigatis picta; spira conica, apice obtusiuscula; anfractibus 5, superis parum convexis, ultimo  $\frac{3}{5}$  longitudinis æquante, convexiore basi attenuato; columella leviter arcuata, alba; apertura obliqua, oblongo-ovali, intus margaritacea; peristomate rubro, incrassato, breviter reflexo, marginibus callo saturate violaceo junctis.*

Long. 65, diam. 29 mill.

*Hab.* in provincia Antioquia, Columbiae (Schlim).

19. *SPIRAXIS PARADOXA*, Pfr. *Sp. testa turrita, solida, distincte et confertim granulata, nigro-fusca; spira elongata, superne conum acutiusculum formante; anfractibus 8, convexis, supremis remote costatis, ultimo  $\frac{2}{7}$  longitudinis subæquante, infra medium angulato, lævigato; apertura parum obliqua, subrhombea, intus cærulescente; columella callosa, alba, torta, basi subtruncata; peristomate recto, acuto.*

Long. 46, diam. 16 mill.

*Hab.* in insula Kauai, Sandwich, rarissima (Newcomb).

3. DESCRIPTIONS OF SEVENTY-NINE NEW SPECIES OF ACHATINELLA, SWAINS., A GENUS OF PULMONIFEROUS MOLLUSKS, IN THE COLLECTION OF HUGH CUMING, ESQ. BY W. NEWCOMB, M.D., CORR. MEMB. LYC. NAT. HIST. NEW YORK, NAT. HIST. SOC. MONTREAL.

(Mollusca, Pl. XXII. XXIII. XXIV.)

ACHATINELLA.

It will be necessary to slightly change the definition of this genus, that several species clearly belonging under this head may not be excluded. It will be seen that several new typical species are herein described, one of which, *A. crassa*, makes a near approach to *Partula*; but an examination of the animal proves conclusively that it belongs to the genus *Achatinella*. Several species are subumbili-







cated, and a number have a subreflected lip. The whorls of several species are not smooth; the beautiful little group of *A. Cumingii*, *A. Pfeifferii* and *A. plicata*, so far as discovered, form the striking exceptions. Several species are turreted, not conical. Farther research, however, is necessary before a complete and satisfactory generic description can be given. The animal is provided with four tentacula, the superior ones clubbed at the end, elongated and oculated, the inferior ones short and slightly clavate; surface of the body covered with numerous granulations more or less strongly developed; respiratory foramen, in dextral shells, upon the right side at the angle of the outer lip with the body whorl, in sinistral shells, in a corresponding position on the left side; the foot is long, narrow, and tapering behind. They are always viviparous, and may be divided into arboreal and terrestrial species. The latter are found among leaves and decayed wood, among the crevices of rocks and in moist places, crawling upon the ground; the former are met with on the bodies, limbs and foliage of various trees: their most common resorts are on the Tutui, Ohia, and a few other species of forest trees, and on the Hau and Ti bushes.

The natives have never fed upon the animal as far as I can learn by careful inquiry, although the experiment has been made with almost every marine animal inhabiting the waters of these seas. It is a prevalent belief among the Hawaiians, that the arboreal species have the power of making a noise which they call singing; hence the name of *Pupu Kanioe*, by which they are known. The following is said to be their vesper hymn:

Kahuli aku  
Kahuli mai  
Kahuli lei ula  
Lei ako lea.

A free translation of which may be given as follows:

Turn away from my sight—  
Nay—but turn to *me* now,  
And a red wreath so bright,  
I will weave for thy brow.

It scarcely is necessary to add, that the singing and the song are alike imaginary.

1. *ACHATINELLA GOULDII* (Pl. XXII. fig. 1). *A. testa conico-ovata; anfractibus 6, plano-convexis, ad longitudinem striatis, supra marginatis; sutura subdepressa; apertura rotundata, ovata; columella subcallosa; labro expanso et inferne subreflexo; colore flavide albo, in anfractu 3tio lineis fuscis, formæ ziczac asperso, anfr. 3 inferioribus lineamentis variis plus minusve numerosis cinctis; apertura et labro flavescens.*

Long.  $\frac{17}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Wailuku, Mani.

Shell conically ovate; whorls 6, flatly convex, margined above, but slightly; sutures slightly marked; aperture ovate; columella lightly callous; lip expanded and subreflected below; colour yellowish white, with zigzag lines of brown on the third whorl, and brown lineations more or less numerous encircling the three lower whorls; aperture and lip yellowish. Found on Tutui trees.

This rare and beautiful species I take pleasure in dedicating to Dr. A. A. Gould of Boston, who is well known as one of the most efficient and accurate natural historians in the United States.

2. *ACHATINELLA OVATA* (Pl. XXII. fig. 2, 2a). *A. testa dextrorsa vel sinistrorsa, elongato-ovata; anfractibus 6, superne submarginatis, rotundis; sutura moderate impressa; apertura subovata, margine nigro circumdata; columella brevi, valde plicata, contorta; labro incrassato et subexpanso; testæ colore niveo vel flavo-albido, cum vel sine vittis obsoletis subfuscis.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Kahana, Koolan, Oahu.

Shell dextral or sinistral, elongately ovate; whorls 6, slightly margined above, rounded; suture moderately impressed; aperture subovate, entirely margined with black; columella short, plicate, strong and twisted; lip thickened and slightly expanded; colour of shell pure white or yellowish white, with or without obsolete brownish bands above.

A very beautiful species, distinguished by its glossy black lip contrasting finely with the white of the shell.

3. *ACHATINELLA RUFA* (Pl. XXII. fig. 3). *A. testa conico-ovata, solida; anfractibus 6, plano-convexis, cum striis decussatis; columella fortiter callosa; sutura simplici, subimpressa; umbilico exiguo aperto; labro expanso, inferne subreflexo; colore fusco rubro, epidermide e fusco et albo mixta oblecto, albo in anfractibus mediis in lineis exiguis ad formam zigzag quæ in anfr. ultimo in uniusmodi umbræ colorem fusco-cinereum evanescent, disposito; anfractus ultimi dimidio inferiori zona lata alba cincto.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Molokai.

Shell conically ovate, solid; 6 whorls, flatly convex, with decussating striæ; columella strongly callous; suture plain, moderately impressed; umbilicus small and open; lip expanded, and subreflected below; ground colour brownish red, covered with an epidermis of a mottled brown and white, the latter arranged on the central whorls in fine zigzag markings, which are lost on the last whorl in a uniform greyish umber. The inferior half of the last whorl (usually) encircled by a broad white band.

This is a very rare species, the numbers found scarcely furnishing the materials for a description to fix or determine the permanent characters.

4. *ACHATINELLA FULGENS*. *A. testa elongato-conica, polita, fulgente; anfractibus 6, plano-convexis; sutura subimpressa; apertura ovata; columella brevi, tuberculata; labro simplici, interne costato; colore testæ superbe castaneo, cum fascia suturali lata, centrum anfr. ventral. transeunte; apice et columella albis.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Niu, Oahu.

Shell elongately conic, polished, shining; whorls 6, flatly convex; suture slightly impressed; aperture ovate; columella short, tuberculated; lip simple, ribbed within; colour rich chestnut-brown, with a broad white sutural fascia cutting the centre of the last whorl; apex and columella white.

Var.  $\alpha$ . White, with broad chestnut bands.

Var.  $\beta$ . Chestnut-coloured above, yellowish below, with two black and one white band; the columella dark brown; of large size, measuring  $\frac{22}{20}$ ths by  $\frac{19}{20}$ ths of an inch.

This last variety may upon further examination prove to be a distinct species. The locality of this last is Makika Valley, "Mauka roa," or far back in the mountain range. An examination of the respective animals will resolve the doubt.

5. *ACHATINELLA SPLENDIDA* (Pl. XXII. fig. 4). *A. testa sinistrorsa vel dextrorsa, solida; striis delicate decussatis; anfractibus 6, anfractu ultimo subinflato; sutura modice depressa, marginata; apertura ovata; labro expanso; columella brevi, lata et contorta; anfractibus duobus superioribus albido et castaneo tessellatis, cæteris anfr. albis nitidis, lineis vittisque multis transversalibus, castaneis ornato; linearum et vittarum margine superiori integro, inferiori irregulariter serrato.*

Long.  $\frac{20}{20}$ ; lat.  $\frac{11}{20}$  poll.

*Hab.* Wailuku, Mani, on Tutui trees.

Shell sinistral or dextral, solid; whorls 6, with finely decussating striæ; body whorl somewhat inflated; suture moderately impressed, margined below; aperture ovate; lip expanded; columella short, broad and twisted; two upper whorls tessellated with chestnut and white, with numerous chestnut-coloured transverse lines and fillets on the other whorls, traced on a polished white ground; markings correctly lined superiorly, and irregularly serrated inferiorly.

Var.  $\alpha$ . Bright chestnut banded with white, not serrated.

Var.  $\beta$ . White, with numerous black transverse bands.

6. *ACHATINELLA REDFIELDI* (Pl. XXII. fig. 5). *A. testa elongato-conica, sinistrorsa; anfractibus 6, supra marginatis, ad longitudinem striatis; sutura bene impressa; apertura subovata; columella fusca, plano-contorta; labro subreflexo, columella concolore; colore albido-flavo, infra in castaneum fuscum transeunte, simplici, vel fasciis fuscis, obscure undulatis, in tertio solum anfractu varie striato; fascia alba suturas permeante.*

Long.  $\frac{20}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Molokai and E. Mani.

Shell conically elongate, sinistral; whorls 6, margined above, striated longitudinally; suture well impressed; aperture subovate; columella brown, flat and twisted; lip subreflected, of the colour of the columella; colour of shell light fawn passing into deep chestnut, paler above, plain or variously marked with brown bands, and obscure undulations on the third whorl only: a white band traverses the sutures.

This species belongs to the native group of "Pupu Caniohi," or *singing snails*, and it is with pleasure that we dedicate it to J. H. Redfield, Esq., of New York. It is not an abundant species. Found on Tutui, Ohia and Ti trees.

7. *ACHATINELLA NIVOSA* (Pl. XXII. fig. 6). *A. testa dextrorsa, conica; anfractibus 6, rotundis, supra marginatis; apertura subovata; columella brevi, infra in plicam flexuosam contorta; labro simplici; apice obtuso; colore supra subfusco, infra albo, striis interruptis, longitudinalibus, viridibus vel subfuscis pulchre ornato, cum vel sine vittis nonnullis transversis, rubris vel fuscis; columella rosea vel albida.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Niu, Oahu.

Shell dextral, conical; whorls 6, rounded, margined above; suture moderate; aperture subovate; columella short, twisted into a flexuous plait inferiorly; lip simple; apex of shell obtuse; colour above brownish, below pure white, ornamented with beautiful longitudinal green or brownish interrupted stripes, with or without one or more pink-coloured or brown transverse bands; columella pink or white.

This beautiful species belongs to the same group with *A. abbreviata* and *A. bacca*.

8. *ACHATINELLA MELANOSTOMA* (Pl. XXII. fig. 7). *A. testa dextrorsa, solida, polita, conica; anfractibus 6, plano-convexis, supra submarginatis; sutura moderate impressa, nigro-vittata; apertura subovata; labro nigro, interne incrassato; columella brevi, ferruginea, abrupte in plicam vel tuberositatem fortem terminante; colore flavo vel umbroso, cum vel sine lineis transversis fuscis.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Ewa, Oahu.

Shell dextral, polished, solid, conical; whorls 6, plano-convex, slightly margined above; suture moderate, accompanied by a black revolving band; aperture subovate; lip black, thickened within; columella short, brownish red, terminating abruptly in a strong plait or tuberosity; colour yellowish or umber, with or without transverse brown lines.

9. *ACHATINELLA CESTUS* (Pl. XXII. fig. 8). *A. testa solida, ventricosa, sinistrorsa vel dextrorsa, apice acuminato; anfractibus 6, rotundis, superne marginatis, penultimo tumido; apertura*

*subovata; columella brevi, valde tuberculata; labro subexpanso, interne incrassato; colore apicis nigro, anfr. secundi et tertii albedo, 3 reliquorum albo, subflavo, nigro vel diverso, cum cingulo albo, suturas transeunte et anfr. ventralem infra centrum secante, cum vel sine fascia latiori subjacente; interdum maculis vel tessuris albis et nigris aut lineis undulantibus, longitudinalibus eorundem colorum; columella castanea; labro castaneo, albo inperso.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Palolo, Oahu.

Shell solid, ventricose, sinistral or dextral, pointed at the summit; whorls 6, rounded, corded above, last one tumid; aperture subovate; columella short, strongly tuberculate; lip slightly expanded, thickened within; colour of tip black, second and third whorls white, three last white, yellowish, or black or mixed, with a white cincture traversing the sutures and cutting the body whorl below the centre, with or without a broader band below, sometimes with blotches or tessellations of black and white or longitudinal undulating lines of the same colours; columella chestnut; lip same colour, interrupted with white.

A fine shell, approaching *A. similans* of Reeve, which it resembles in form, but from which it differs strikingly in its markings.

10. *ACHATINELLA SWIFTHII* (Pl. XXII. fig. 9, 9a). *A. testa ventricosa, apice acuminato, polita, nitente; anfractibus 6, superne subrotundis, ultimo valde inflato, superne conspicue marginato; labro purpureo-roseo, crasso et subinflato; apertura ovata; columella brevi, in tuberculum purpureo-roseum terminante; anfr. 3 primis albis, inferioribus cum lineis numerosis longitudinalibus delicatissimis nigris et albis signatis, testæ colorem cinereum impertientibus; lineis exquis albidis obsoletis transverse testam transeuntibus; anfr. 2 ultimis linea suturali alba signatis.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* District of Ewa.

Shell ventricose, pointed at the apex, smooth, polished, shining; whorls 6, slightly rounded above, the last strongly inflated, distinctly margined above; lip purplish rose, thick and slightly subreflected; aperture ovate; columella short, terminating in a tubercle of the colour of the lip; three first whorls white, the lower with very fine and numerous markings of black and white arranged longitudinally to the shell, giving it a greyish aspect: fine obsolete white lines traverse the shell transversely, and a white sutural line is traced on the last two whorls.

Var.  $\alpha$ . With a broad fascia cutting the body whorl.

Var.  $\beta$ . Yellowish ground colour, with few markings.

This species approaches *A. turgida*, but is distinct in appearance, locality and habits.

11. *ACHATINELLA TURGIDA* (Pl. XXII. fig. 10, 10 a). *A. testa ventricosa, apice acuminato, sinistrorsa vel dextrorsa, levi, polita; anfr. 4 graduatim, 2 ultimis rapide increscentibus; sutura subimpressa, infra depressione lineari; apertura subovata; columella brevi, in tuberculum conicum, in aperturam projicientem terminante; labro exteriori simplici, interne incrassato, sicut tuberculo subroseo vel fusco tincto; faucibus albis; colore variante, albo, flavo vel nigro, lineis ziczac longitudinalibus, vittis transversis vel maculis ornato.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{11}{20}$  poll.

*Hab.* Ewa, Oahu.

Shell ventricose, pointed at the apex, sinistral or dextral, smooth, polished, gradually enlarging for four turns and then very rapidly, the last two forming most of the shell; suture slightly impressed, beneath which revolves a linear depression; aperture subovate; columella short, terminating in a strong conical tubercle projecting into the aperture; outer lip simple, thickened within, slightly tinged with pink or brown; tubercle the same; fauces white; colouring extremely various, ground white, yellow or black, with (or without) longitudinal zigzag lines, transverse bands or blotches covering the surface.

Approaches the *A. tristis* of Férussac found at Waianoe.

12. *ACHATINELLA CYLINDRICA* (Pl. XXII. fig. 11). *A. testa dextrorsa, elongato-cylindrica, pyramidis instar ad apicem decurrente; anfractibus 7, subrotundis; apertura oblongo-ovata; columella in dentem flexuosum terminante; testæ superficie ad longitudinem fortiter striata, subfusca, vittis numerosis fuscis, angustis circumdata.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{6}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell dextral, elongately cylindrical, tapering to a point at the summit; whorls 7, slightly rounded; suture moderate; aperture oblong-ovate; columella terminating in a flexuous tooth; surface of shell longitudinally strongly striate, of a light horn colour, encircled by numerous narrow brown bands.

This species, with the following, are found, like their nearest analogues, on the ground; viz. *A. porphyrea* and *spirizona*, which latter species, by almost insensible gradations, passes into the *A. turritella*, a shell apparently of quite a different type.

13. *ACHATINELLA CASTA* (Pl. XXII. fig. 12). *A. testa conico-elongata, solida, polita, nitida, dextrorsa vel sinistrorsa; anfractibus 6, rotundis, supra marginatis; apertura subovata, breviuscula; labro simplici, interne incrassato; columella brevi, cum dente fortiter plicato; colore albido vel luteo, vittis transversis variis nigris, fuscis, roseis vel albidis diverse dispositis.*

Long.  $\frac{13}{20}$ ; lat.  $\frac{6\frac{1}{2}}{20}$  poll.

*Hab.* Ewa, Oahu.



Shell conically elongate, solid, polished, shining, dextral or sinistral; whorls 6, rounded, margined above; aperture subovate, rather small; lip simple, thickened within; columella short, with a strong plaited brownish tooth; colour white or yellow, with extremely variable transverse bands of black, brown, pink or white, variously arranged.

This species is readily distinguished from any yet described. Its northern limit is the valley below Mouna Rua, and half a dozen ravines, south, in the district of Ewa.

14. *ACHATINELLA INTERMEDIA* (Pl. XXII. fig. 13). *A. testa dextrorsa, subcylindrica; anfractibus 7, rotundis; sutura profunda; apertura parva, subovata; columella plica flexuosa exigua ornata; labro acuto; striis longitudinalibus, numerosis, bene expressis, colore uniusmodi bætico, versus suturas pallescente, interne subcæruleo vel cinereo; columella cæruleo-albida.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell dextral, subcylindrical; whorls 7, rounded; suture rather deep; aperture small, subovate; columella with a small flexuous plait; lip acute; striæ numerous, well-developed, and longitudinal to the shell; colour uniform dark brown, usually lighter at the sutures, interiorly of a bluish white or slate colour; columella bluish white.

This shell is intermediate between *A. cylindrica* and the more cylindrical forms of *A. spirizona*.

15. *ACHATINELLA VIOLACEA* (Pl. XXII. fig. 14). *A. testa dextrorsa, ovato-oblonga, solida; anfractibus convexis, ad longitudinem fortiter striatis; sutura simplici et valde depressa; apertura ovata; columella brevi, in plicam albam, contortam desinente; labio simplici; colore passim violaceo.*

Long.  $\frac{21}{20}$ ; lat.  $\frac{11}{20}$  poll.

*Hab.* Molokai.

Shell dextral, ovately-oblong, solid; suture plain and deeply impressed; aperture ovate; columella short, terminating in a white twisted plait; lip simple; colour violaceous suffused with white.

16. *ACHATINELLA SANGUINEA* (Pl. XXII. fig. 15). *A. testa acuminato-oblonga; anfractibus 7, infra convexis, supra plano-convexis; sutura distincte expressa; apertura subovata; columella dente plicato, contorto ornata; labro simplici; colore testæ roseo in sanguineum transeunte, lineationibus nigris, catenationes et signa ziczac in anfr. 3 inferioribus formantibus, dense oblecto; testa superne epidermide denudata; apice mammillato nigro.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Lehu, Oahu.

Shell acuminately oblong; whorls 7, convex below, plano-convex above; suture distinctly marked; aperture subovate; columella

armed with a twisted plicate tooth; lip simple; colour of shell from roseate to sanguineous, thickly covered with black lineations, forming chain-work and zigzag markings on the three lower whorls; denuded of epidermis above; apex mammillate and black.

17. *ACHATINELLA PORPHYREA* (Pl. XXII. fig. 16). *A. testa solidiuscula, acuminato-conica; anfractibus 7, superne subcarinatis, non marginatis, plano-convexis; sutura valde impressa; apertura subovata, infra contracta; labro tenui; columella brevi, in plium contortam terminante; epidermide tenui et nigra; striis longitudinalibus, fortibus; colore sub epidermide plumbeo, lineis numerosis fuscis, transversis testam circumambientibus.*

Long.  $\frac{15}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell rather solid, acuminately conical; whorls 7, subcarinated above, plano-convex; suture deeply impressed; aperture subovate, contracted below; lip thin; columella short, terminating in a twisted plait; epidermis thin and black; striæ longitudinal and strong; colour beneath epidermis of a leaden hue, with numerous transverse brown lines encircling the shell.

This species belongs to the same group with *A. spirizona*, Fér., *A. cylindrica* and *A. intermedia*, Nob., but which are quite distinct in specific characters. They are all terrestrial, not arboreal species.

18. *ACHATINELLA GIGANTEA* (Pl. XXII. fig. 17). *A. testa dextrosa, elongato-ovata, apice acuminato; anfractibus 7, fortiter striatis, anfractu ultimo superne, penultimo inferne subcarinato; apertura ovali; columella subarcuata, interne in levem callum terminante, externe continuata, cum labro externo juncta; labro interno callo crasso, striato; labro externo plano; sutura profunda; striis longitudinalibus; colore externe subplumbeo et interne sublilaceo.*

Long.  $1\frac{1}{2}$ ; lat.  $\frac{12}{20}$  poll.

*Hab.* Hale a Ka la, Mani.

Shell dextral, elongate-ovate, apex pointed; whorls 7, strongly striate, slightly carinated superiorly on the last whorl, inferiorly on the penultimate; columella slightly arched, terminating internally in a slight callosity, externally continued to unite with the outer lip; columellar lip with a strong deposit spread over its surface; outer lip simple; suture deep; striæ longitudinal; colour light plumbeous externally, internally pale lilac.

This species, the largest yet described, belongs to the same group with *A. violacea*, from Molokai, and *A. Baldwinii*, from Ranai, all of which are described in this communication.

19. *ACHATINELLA SUBVIRENS* (Pl. XXII. fig. 18). *A. testa conico-ovata; anfractibus 6, rotundis et superne marginatis; sutura distincta, albida; apertura ovata, infra expansa; labro incras-*

*sato; columella brevi, plana et oblique truncata; colore epidermidis subvirente, colore pallidiore ad longitudinem intersperso, columellæ, labri et aperturæ albo.*

Long.  $\frac{15}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Niu, Oahu.

Shell conically ovate; whorls 6, rounded and margined above; suture distinct and lined with white; aperture ovate, expanding below; lip thickened; columella short, flat and obliquely truncated; colour of epidermis light green, interspersed with a lighter shade arranged longitudinally; columella, lip and aperture white.

Var.  $\alpha$ . Pure white.

Var.  $\beta$ . Brown or chestnut replacing the green colour.

Through var.  $\alpha$  this species approaches a variety of *A. rutila*, and through var.  $\beta$ , *A. decipiens*. It is readily distinguished from the first by its smaller size, greater solidity, stronger striæ and more elongate form; from the latter by its less acuminate form, white suture, less solidity, and their widely-separated localities.

20. *ACHATINELLA AMPLA* (Pl. XXII. fig. 19). *A. testa dextrorsa, conico-ovata, polita; anfractibus 5, rotundis; sutura simplici, vitta nigra fasciolata; apertura magna, albida; labro externo simplici, acuto, interne incrassato; columella brevi, alba vel rosea; epidermide supra subviridi vel olivacea, in anfractu ultimo subfusca.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Kolau, Oahu.

Shell dextral, conically ovate, polished; whorls 5, rounded; suture simple, banded with a black stripe; aperture large and white; outer lip simple, acute, thickened within; columella short, white or roseate, terminating in a twisted plait; apex obtuse, roseate; epidermis light green or olive above, of a deeper colour on the last whorl.

21. *ACHATINELLA ADAMSII* (Pl. XXII. fig. 20). *A. testa dextrorsa, conico-acuminata; anfractibus 6, cum striis transversalibus exiguis, longitudinalibus fortibus; sutura valde depressa; labro expanso; columella in plicam solidam, abrupte tortam desinente; testæ lamina interna coloris plumbei, externa obscuri castanei, irregulariter albido punctata et striata.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* E. Mani, at the root of ferns.

Shell dextral, conically acuminate, whorls 6, finely striated transversely, roughly striated longitudinally; suture deeply impressed; lip expanded; columella terminating in a strong abruptly twisted plait; interior of shell of a leaden blue colour, exterior dark chestnut, irregularly mottled and striped with white.

This species makes the nearest approach in form to *A. perdix* of Reeve, an immature specimen of which is figured in his Monograph, fig. 43. The locality of this latter species is the almost inaccessible

ravines of the mountainous districts around Lahania, W. Mani. The *A. perdis* is arboreal, and the *A. Adamsii* terrestrial in its habits.

The species is dedicated to Professor C. B. Adams, of Amherst College, Mass.

22. *ACHATINELLA RUTILA* (Pl. XXII. fig. 21). *A. testa ovata, conica; anfractibus 6, rotundis, ultimo superne marginato; sutura bene impressa; apertura subquadrata; labro expanso, subreflexo, interne valde incrassato; columella brevi, in plicam robustam, contortam terminante; colore substramineo pallido, olivaceo vel fusco; labro albo vel subroseo.*

Long.  $\frac{17}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Niu, Oahu.

Shell ovately conic; whorls 6, rounded, the last margined above; suture well-marked; aperture subquadrate; lip expanded, subreflected, strongly thickened within; columella short, terminating in a strong twisted plait; colour a light straw, olive or brown.

23. *ACHATINELLA RUGOSA* (Pl. XXII. fig. 22, 22a). *A. testa dextrorsa, conica, fulgente; anfractibus 6, rotundis, supra marginatis; sutura bene impressa; labro expanso, versus marginem ferrugineo et incrassato; columella albida, brevi, plicata, callo forti supra umbilicum expanso; apertura subrhomboidali; striis numerosis longitudinalibus et in anfractu ultimo rugosis; colore epidermidis prasino interdum umbrosi instar pallidi vel fusci, coloribus simul cum striis alternantibus cum vel sine vittis transversis subviridibus.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Ewa, Oahu.

Shell dextral, conical, glossy; whorls 6, rounded, margined above; suture well-impressed; lip expanded, of a reddish brown at the margin, thickened near the edge; columella white, short, twisted, and with a strong callus spread over the umbilicus; aperture subrhomboidal; striæ longitudinal, numerous, and on the last whorl rugose; colour of epidermis of a deep green, a light or dark umber, sometimes alternating and arranged with the striæ, with or without pale green transverse lines.

24. *ACHATINELLA MULTILINEATA* (Pl. XXII. fig. 23). *A. testa dextrorsa vel sinistrorsa, solida, conico-elongata; anfractibus 6, rotundis, supra marginatis; labro infra expanso et subreflexo, supra acuto et interne adaucto; columella brevi robusta, subplicata cum callo umbilicum obtegente et pane claudente; apertura oblongo-ovata; colore columellæ, labri et suturæ albo, interdum flavido interstincto; testa alba, cum vel sine fasciis et lineis numerosis transversis, ferrugineis.*

Long.  $\frac{19}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Kolau poco, Oahu.

Shell dextral or sinistral, solid, elongately conical, whorls 6, rounded, margined above; lip expanded below and slightly subre-





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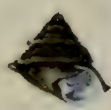
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flected, above acute and thickened within; columella short, stout, slightly twisted, with a callus spread over and nearly closing the umbilicus; aperture oblong-ovate; colour of columella, lip and suture white, sometimes tinged with yellow; shell white, with or without numerous transverse lines of a brown or black colour.

This species makes a near approach to *A. mustelina* of Mighels, but is more elongate in form, with the lineations much stronger, and never passes into the variety of *mustelina* with the depressed spire and obese body whorl. The locality is also different, which is always worthy of particular remark in examining the shells of this genus.

25. *ACHATINELLA GLABRA* (Pl. XXII. fig. 25). *A. testa conico-ovata, fulgente; anfractibus 6, interdum inflatis, supra marginatis; sutura bene expressa; apertura ovata; labro subreflexo, e nigro fusco margine nigro, interne incrassato; columella brevi, robusta, expansa, in plicam contortam desinente; colore argillaceo-cæruleo vel plumbeo, pallidior in anfractuum parte superiore, interdum fasciis transversis albidis vel castaneis.*

Long.  $\frac{9}{20}$ ; lat.  $\frac{17}{20}$  poll.

*Hab.* Kolau poko.

Shell conically ovate, glossy; whorls 6, somewhat inflated, margined above; suture well-marked; aperture ovate; lip slightly sub-reflected, dark brown edged with black, thickened within; columella short, robust, expanded, and terminating in a twisted plait; colour bluish slate, much lighter on the upper portion of the whorls; sometimes transversely banded with white or chestnut.

26. *ACHATINELLA TESSELLATA* (Pl. XXIII. fig. 26). *A. testa sinistrorsa, oblongo-ovata, solida; anfractibus 6, convexis, ultimo paulum inflato, superficie minutissime decussata; colore albido-flavescente, vittis transversis nigris vel castaneis diverse striato, aut non; anfractibus superioribus semper nigro et albido tessellatis; apertura alba vel rosea, ovata, infra effusa; columella brevi et late callosa.*

Long.  $\frac{21}{20}$ ; lat.  $\frac{12}{20}$  poll.

*Hab.* Molokai.

Shell sinistral, oblong-ovate, solid; whorls 6, convex, the last somewhat inflated; white or fawn-coloured ground, very finely shagreened, plain, or variously striped with transverse black or chestnut bands; the upper whorls always tessellated black and white; aperture white or roseate, ovate, effuse below; columella short and broadly callous; lip expanded, thickened within and semireflected; animal light grey, tentacles black, mantle slate-colour.

Found at Kalai on Tutui trees, and on the broad leaf of the Ti.

Has some resemblance to *virgulata*, Mighels, but the tessellated top at once distinguishes it.

27. *ACHATINELLA SORDIDA* (Pl. XXIII. fig. 27). *A. testa elongato-conica, solida; anfractibus 7, subrotundis, supra marginatis; apertura parva, leviter contracta; labro infra subreflexo, supra acuto; interne incrassato; columella brevi, subplicata, cum callo*

*expanso, umbilicum parvum, parum profundum partim obtegente; colore variabili, albido, striis vel vittis fuscis et nigris transversis diverse lineato.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Lettui, Oahu.

Shell elongately conical, solid; whorls 7, slightly rounded, margined above; aperture small, somewhat contracted; lip subreflected below, acute above, thickened within; columella short, slightly twisted, with an expanded callus partially covering a shallow small umbilicus; colour variable; ground white variously banded and striped transversely with brown or black.

This species, like the *A. multilineata*, is drawn from the group of *A. mustelina*, the variations in character, with different localities and a peculiarity of habits in each, demanding their separation.

28. *ACHATINELLA FUMOSA* (Pl. XXIII. fig. 28). *A. testa cylindrica, ovata, perobscure cornea, tenui, nitente; anfractibus 7, plano-convexis; sutura subimpressa; striis longitudinalibus, bene expressis, numerosis; apertura ovata; labro simplici, albido-fimbriato; columella brevi cum dente lamellari albo, vitta fusco-nigra cum altera rubicunda subjacente anfractus infra suturas permeante.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* Manoa, Oahu.

Shell cylindrically ovate, very dark, corneous, thin, shining; whorls 7, plano-convex; suture slightly impressed; striae numerous, longitudinal, and strongly developed; aperture ovate; lip simple, edged with white; columella short, with a lamelliform white tooth. A dark brown band, accompanied by an obsolete reddish one below, traverses the whorls beneath the suture.

29. *ACHATINELLA LINEOLATA* (Pl. XXIII. fig. 29). *A. testa elongata, turrimiformi; anfractibus 6, ventricosis, nitidis; sutura simplici; apertura ovata; columella dente obliquo, plicato munita; colore epidermidis luteolo, in anfr. ultimo lineis ziczac brevibus coloris umbrosi ad longitudinem dense signato.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{4\frac{1}{2}}{20}$  poll.

*Hab.* Hawaii.

Shell elongate, turreted; whorls 6, rounded, polished, shining; suture simple; aperture ovate; columella with an oblique plaited tooth; colour of epidermis yellowish; on the last whorl thickly lined longitudinally with umber-coloured markings.

The large island of Hawaii has yielded to our explorations but three species, all of which are herein described.

30. *ACHATINELLA NITIDA* (Pl. XXIII. fig. 30). *A. testa tenui, levi, subcornea, nitida, pellucida, ovato-conica; anfractibus 6, ventricosis, supra marginatis; apertura ovata; labro subcrasso; columella in pliculam obliquam, contortam, albidam desinente.*

Long.  $\frac{8}{20}$ ; lat.  $\frac{4}{20}$  poll.

*Hab.* E. Mani.



Shell light corneous, shining, pellucid, conical, thin; whorls 6, rounded; aperture ovate; lip slightly thickened; columella terminating in a twisted oblique white plait.

31. *ACHATINELLA CRASSILABRUM* (Pl. XXIII. fig. 31). *A. testa dextrorsa, conico-ovata, apice acuminato, infra ventricosa, solidiori; anfractibus 6, rotundis; apertura ovata; labro intus valde incrassato; columella brevi, in plicam brevem, obliquam terminante; striis longitudinalibus fortibus; superficie anfractus ultimi sæpe cicatricibus notata; colore anfractus ultimi subflavo-albido, anfractuum reliquorum fusco vel nigro.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{6}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell conically ovate, pointed at the apex, ventricose below, rather solid; whorls 6, rounded; aperture ovate; lip very much thickened within; columella short, terminating in a strong oblique plait; longitudinal striæ strong, surface of the last whorl often marked with cicatrices; body whorl yellowish white, other whorls dark brown or black.

32. *ACHATINELLA CORNEA* (Pl. XXIII. fig. 32). *A. testa inæquali, acuta, conica, apice acuminato, tenui, corneo; striis longitudinalibus minutis; anfractibus 7, rotundis, ultimo inflato; apertura subovata; labro tenui, translucido; columella recta, alba et dente plicato, transverso munita; colore testæ ubique fusco-corneo, columellæ et dentis albido.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* — ?

Shell irregularly acutely conical; the apex pointed; last whorl inflated; thin, corneous, with minute longitudinal striæ; whorls 7, rounded; aperture subovate; lip thin, translucent; columella straight, white and armed with a transverse plaited tooth; colour uniform dark horn; columella and tooth white.

33. *ACHATINELLA LABIATA* (Pl. XXIII. fig. 33). *A. testa elongato-conica; anfractibus 7, fere planis, supra paullo marginatis; sutura modice impressa; apertura elongato-ovata; labro incrassato, albido, cum callo interno centrali; columella brevi, dente projiciente, valde plicato munita; colore externe corneo-pallido.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{4\frac{1}{2}}{20}$  poll.

*Hab.* Lehui, Oahu.

Shell elongately conical; whorls 7, flattened, slightly margined above; aperture elongately ovate; lip thickened, white, with a central internal callus; columella short, with a strong plaited projecting tooth; colour of epidermis light corneous.

Var.  $\alpha$ . With the lower third of the last whorl dark brown.

This species forms a new type of the genus; characterized by the white auricular-formed aperture. It is terrestrial, and not arboreal in its habits.

34. *ACHATINELLA VITREA* (Pl. XXIII. fig. 34). *A. testa conico-ovata, tenui, nitida, pellucida; anfractibus 7, rotundis, supra, prope suturam, obscure marginatis; striis fortibus prope suturam, distinctis in testa; apertura elongata, subovata; labro simplici, interne subincrassato, infra contracto; columella brevissima, in plicam contortam terminante; colore corneo, speciem luteam vel roseam accipiente; sutura vitta lata, nigra signata.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* Manoa, Oahu.

Shell conically ovate, thin, shining, diaphanous; whorls 7, rounded, indistinctly margined above, very near the suture; striæ strong near the suture, distinct over the shell; aperture elongately subovate; lip simple, slightly thickened within, contracted below; columella very short, terminating in a twisted plait; colour corneous, with a yellowish or pinkish tinge; suture marked by a broad black band.

This is an extremely beautiful species. Its locality is near the summit of the mountain ridge dividing Manoa from Palolo valley.

35. *ACHATINELLA AFFINIS* (Pl. XXIII. fig. 35). *A. testa acute conica; anfractibus 6, rotundis, non marginatis; sutura bene impressa; apertura ovata; labro tenui; columella dente lamellari, albo, plicato munita; colore albo, roseo vel rubro-flavo cum vestigiis epidermidis fusco-nigræ; anfractu ultimo superioribus pallidiore.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{5\frac{1}{2}}{20}$  poll.

*Hab.* Kula, E. Mani.

Shell acutely conical; whorls 6, rounded, not margined; suture well-impressed; aperture ovate; lip thin; columella with a white lamellar twisted tooth; colour white, roseate or salmon, with traces of a dark brown epidermis; last whorl lighter-coloured than the upper ones.

This species belongs to a group of which the following are associated, viz. *A. modesta*, Adams, from Molokai, *A. mucronata*, *A. pupoidea*, *A. Mastersi*, *A. assimilis* and *A. flavida*. To the same group may be referred *A. rubens*, Gould, *A. decepta*, Adams, and *A. nubiloza*, Mighels.

36. *ACHATINELLA ACUTA* (Pl. XXIII. fig. 36). *A. testa acute tur-riformi, sinistrorsa; anfractibus 7, ventricosis; sutura profunda; columella plicata; apertura ovata; labro simplici; striis numerosis longitudinalibus et bene notatis; colore epidermidis fusco.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{4\frac{1}{2}}{20}$  poll.

*Hab.* Lehui, Oahu.

Shell acutely turreted, sinistral; whorls 7, rounded; suture deep; striæ numerous, longitudinal and well-defined; aperture ovate; lip simple; columella plicate; colour of epidermis brown.

But a solitary specimen of this shell has been found; but its characters are clearly marked, and no described species resembles it in form.

37. *ACHATINELLA POLITA* (Pl. XXIII. fig. 37). *A. testa dextrorsa, nitida; anfractibus 5, convexis, supra marginatis; sutura bene*

*definita; apertura oblongo-ovata; columella fortiter tuberculata, extremitate purpurea; labro simplici; colore luteo; apertura interne alba vel nigro-purpurea; anfr. superioribus partim notis coloris umbrosi obscure signatis; sutura cum vel sine vitta nigra.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{6\frac{1}{2}}{20}$  poll.

*Hab.* Molokai.

Shell dextral, polished; whorls 5, convex, margined above; suture well-defined; aperture oblong-ovate; columella strongly tuberculate, with purple tip; lip simple; colour yellow, upper whorls tinged with umber; sutures with or without a black band; aperture within white or dark purple.

This species shows two varieties with and without the sutural band. The aperture of the first is purple within, of the second a pure white.

38. *ACHATINELLA SOROR* (Pl. XXIII. fig. 38). *A. testa sinistrorsa, conica, turritiformi; anfractibus 7, rotundis; sutura valde impressa; apertura subovata, parva; labro simplici; columella brevissima, in dentem contortum, plicatum terminante; epidermide tenui, supra fusco-cornea et infra pallido-cornea.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* Mani.

Shell sinistral, conically turreted; whorls 7, rounded; suture deeply impressed; aperture subovate, small; lip simple; columella very short, terminating in a twisted plicate tooth; epidermis thin, dark corneous above and light corneous below.

Var. *a.* Last whorl white, shell solid.

Length  $\frac{9}{20}$ ; breadth  $\frac{5}{20}$  inch.

Var. *β.* Shell thin, dark corneous, polished.

Length  $\frac{10}{20}$ ; breadth  $\frac{4}{20}$  inch.

This species is the complete analogue of *A. acuta* found in Oahu; it has a more ventricose aspect, and the striæ are more developed in the *A. acuta*.

39. *ACHATINELLA OBESA* (Pl. XXIII. fig. 39, 39 a). *A. testa depressa, conica, solida, inflata; anfractibus 5, ventricosis, striatis; sutura bene definita; apice acuto; apertura ovata; columella plica forti, alba munita; labro intus incrassato; epidermide coloris umbrosi; apertura alba.*

Long.  $\frac{8}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Hale a ka la, Mani.

Shell depressed, conical, solid, inflated; whorls 5, rounded, striate; suture well-marked; apex acute; aperture ovate; columella with a strong white plait; lip thickened within; colour of epidermis dark umber; aperture white.

Var. *agglutinans.*

Shell somewhat carinated on the last two whorls, with the keel extended by agglutinations, giving it a pagoda-like form.

This is the most depressed of the genus, but distinctly preserves the generic characters, and in the variety exhibits a habit in land shells, found, perhaps, only in *Helicina agglutinans* of Sowerby.

40. *ACHATINELLA TEREBRA* (Pl. XXIII. fig. 40). *A. testa turrata; anfractibus 6, rotundis, supra marginatis, ultimo subinflato; sutura bene impressa; apertura elongato-ovata; labro subreflexo, interne aducto; columella brevi, in plicam prominentem, contortam terminante; striis decussantibus; colore melleo cum signis undulantibus fuscis, pæne obsoletis in anfr. superioribus; labro, apertura et columella niveis.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{6}{20}$  poll.

*Hab.* W. Mani.

Shell turreted; whorls 6, rounded, last one inflated, margined above; suture well-impressed; aperture elongate-ovate; lip slightly reflected, thickened within; columella short, terminating in a prominent twisted plait; striæ decussating; colour light yellow, with wave-like brown-coloured markings, nearly obsolete on the upper whorls; lip, columella and aperture white.

41. *ACHATINELLA MELANOSIS* (Pl. XXIII. fig. 41). *A. testa dextrorsa, tenui, depressa, conica; apice acuto; anfractibus 5, rotundis, ultimo inflato; sutura bene impressa; apertura subrotunda; labro simplici, tenui; columella recta, alba et in plicam valde obliquam terminante; colore nigro.*

Long.  $\frac{8}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* Hawaii.

Shell dextral, thin, conically depressed; apex acute; whorls 5, rounded, the last inflated; suture well-impressed; aperture subrotund; lip simple, thin; columella straight, white, and terminating in a very oblique plait; colour black.

42. *ACHATINELLA PUPOIDEA* (Pl. XXIII. fig. 42). *A. testa dextrorsa, elongata; anfractibus 7, rotundis; sutura profunda; apertura parva, subovata; labro simplici; columella brevi, subdentata; epidermide tenui, pallide fusca; colore anfr. ventral. albo, trium superiorum subroseo et reliquorum plumbeo: lineæ fusæ ziczac interdum reperiuntur in partibus superioribus anfractuum inferiorum.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* E. Mani.

Shell dextral, cylindrically elongate; whorls 7, rounded; suture deep; aperture small, subovate; lip simple; columella short, lightly toothed; epidermis thin, of a light brown, beneath which the body whorl is white, the three above pinkish, and the others leaden: brown zigzag undulations are sometimes found on the upper portions of the lower whorls.

43. *ACHATINELLA CURTA* (Pl. XXIII. fig. 43). *A. testa conica, sinistra, polita; anfractibus 5, rotundis, supra marginatis, ulti-*

*mis valde ventricosis; apertura ovata; labro simplici, interne leviter incrassato; columella brevi, in callum abrupte terminante; sutura leviter impressa; colore luteo vel castaneo, unicolori vel cum fascia suturali nigra, rare duabus vel pluribus anfr. 2 ultimis impositis; columella albida vel subfusca.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Waialua, Oahu.

Shell conical, sinistral, polished; whorls 5, rounded, margined above, the last very ventricose; aperture ovate; lip simple, slightly thickened within; columella short, with an abrupt callous termination; suture but slightly impressed; colour yellow or chestnut, plain or with a black sutural band, rarely with two or more on the last two whorls; columella white or light brown.

The rounded whorls and obese appearance of this shell are strikingly characteristic. It is a rare species and extremely limited in its range.

44. *ACHATINELLA FUSCA* (Pl. XXIII. fig. 44). *A. testa tenui, cylindrico-elongata; anfractibus 5, fere planis; sutura lineari, subimpressa; apertura ovata; striis longitudinalibus bene expressis; colore fusco; sutura infra marginem inferiorem fasciola coloris cornei circumcincta; anfr. ultimi dimidio inferiori corneo.*

Long.  $\frac{6}{20}$ ; lat.  $\frac{3\frac{1}{2}}{20}$  poll.

*Hab.* Manoa, Oahu.

Shell thin, cylindrically elongate; whorls 5, nearly flat; suture linear, slightly impressed; aperture ovate; lip acute; columella dentated within; longitudinal striæ strongly developed; colour brown, with a narrow horn-coloured band revolving below each suture; lower half of the last whorl horn-coloured.

This small species is not arboreal in its habits, and is found among the decaying leaves of the Tutui, near the base of the mountain at the head of Manoa valley.

45. *ACHATINELLA RECTA* (Pl. XXIII. fig. 45). *A. testa plerumque dextrorsa, solida, pyramidalis; anfractibus 6, subrotundis, superne marginatis; sutura leviter impressa; apertura subovata; labro simplici, interne incrassato; columella brevi, torta et cum labro interiori coalescente; colore vario, plerumque flavo, unicolori vel vittis 2 nigris in anfr. ultimo ornato, quarum una in apertura decurrente, altera suturam appropinquante.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Waialua, Oahu.

Shell usually dextral, solid, pyramidal; whorls 6, but slightly rounded, margined above; suture slightly impressed; aperture subovate; lip simple, thickened within; columella short, twisting to unite with the inner lip; colour various, usually yellow, plain, or with two black bands on the last whorl, one of which is lost in the aperture, the other becomes sutural.

The shell above described is peculiar for its solidity and rigid aspect. It possesses none of the graceful curves which give to this

genus so much of its beauty. The largest size yet discovered is given in the measurement.

46. *ACHATINELLA GRANA* (Pl. XXIII. fig. 46). *A. testa elongato-conica, cornea; anfractibus 6, ventricosis, submarginatis; apertura oblongo-ovata; labro subincrassato; sutura valde impressa; columella plica albida, in apertura profunde immersa munita.*

Long.  $\frac{5}{20}$ ; lat.  $\frac{2}{20}$  poll.

*Hab.* Mani.

Shell elongately conic, corneous; whorls 6, rounded, faintly margined; aperture oblong-ovate; lip slightly thickened, white; columella with a white plait deep in the aperture.

47. *ACHATINELLA PORCELLANA* (Pl. XXIII. fig. 47). *A. testa solidiori, conica, polita, fulgente; anfractibus 5, rotundis, superne marginatis; apertura ovata; labro expanso, margine tenui, interne incrassato; columella brevi, tuberculari; colore albo porcellaneo, cum vitta flavo-fusca, pallida anfractum singulum circumambiente, quarum binæ in anfr. ultimo.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{6}{20}$  poll.

*Hab.* E. Mani.

Shell rather solid, conical, polished, shining; whorls 5, rounded, margined above; aperture ovate; lip expanded, thin at the margin, thickened within; columella short, tubercular; colour of a porcelain whiteness, with a light fawn-coloured band encircling each whorl, the last whorl having two.

48. *ACHATINELLA VENULATA* (Pl. XXIII. fig. 48, 48a). *A. testa dextrorsa, elongato-conica; anfractibus 7, convexis, superne submarginatis; sutura bene impressa; apertura subovata; labro simplici, interne adaucto; columella fortiter plicata, contorta, colore subroseo suffuso; colore albido vel albido-roseo cum venis longitudinalibus viridibus vel olivaceis, ex epidermide formatis.*

Long.  $\frac{21}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Kolau, Oahu.

Shell dextral, elongately conic; whorls 7, convex, slightly margined above; suture well-impressed; aperture subovate; lip simple, thickened within; columella strongly plicate, twisted, of a pinkish hue; colour of shell white, or pinkish white, with longitudinal veins of green or olive-green epidermal matter.

Var.  $\alpha$ . Sinistral, with a deep black sutural band.

49. *ACHATINELLA MUCRONATA* (Pl. XXIII. fig. 49). *A. testa elongato-ovata; anfractibus 6, ventricosis; sutura superne subimpressa, profunda ad juncturam anfr. ultimi; apertura parva, ovata; labro simplici; columella contorta, plicata; anfractu ultimo contracto et epidermide densa fusco-nigra tecto; testa reliqua alba, signis mucronatis, numerosis, fuscis ornata.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{6\frac{1}{2}}{20}$  poll.

*Hab.* Mani.

Shell elongate-ovate; whorls 6, rounded; suture above lightly impressed, becoming deep at the junction of the last whorl; aperture small, ovate; lip simple; columella with a twisted plait; the last whorl contracted and covered with a dense black epidermis; the superior whorls white, with numerous arrow-headed brown markings.

This shell is intermediate between *A. modesta* of Adams, a Molokai species, and *A. assimilis*, the following species.

50. *ACHATINELLA JOHNSONI* (Pl. XXIII. fig. 50). *A. testa dextrorsa, elongato-conica; anfractibus 7, subrotundis, superne leviter submarginatis; sutura profunda; apertura subovata; columella valde plicata, rosea, margine nigro; colore testæ albo vel roseo cum lineis nigris 2 aut pluribus, quarum una vel duo centralibus, una suturali et altera plerumque ampliori infra anfr. ultimum.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Kolau, Oahu.

Shell dextral, conically elongate; whorls 7, slightly rounded, superiorly indistinctly margined; suture rather deep; aperture subovate; columella with a strong plication, pink, margined with black; colour of shell white or pinkish, banded with two or more narrow black lines, one or two of which are central, one sutural, and one usually broader inferiorly on the last whorl.

The following form an allied group:—*A. producta, hybrida, aplustre, venulata* and *Johnsoni*.

This species is dedicated to the Rev. Mr. Johnson, of Kawai, whose assistance in my researches I most thankfully acknowledge.

51. *ACHATINELLA APLUSTRE* (Pl. XXIII. fig. 51). *A. testa conica, dextrorsa; anfractibus 7, rotundis; sutura leviter impressa, simplici; apertura semiovata; labro tenui; columella callosa, in plicam tortam terminante, colore albo-caruleo, apice fusco; anfr. 3 primis spiralibus albidis, reliquis vitta ampla, centrali coloris rosei et fasciis binis nigris, marginalibus ornatis; anfr. ultimo fasciis 2 viridibus.*

Long. 1; lat.  $\frac{10}{20}$  poll.

*Hab.* Kolau, Oahu.

Shell conical, dextral; whorls 7, rounded; suture moderately impressed, simple; aperture semiovate; lip thin, with a callus, terminating in a twisted plait, bluish white tipped with brown; three first spiral turns white, the others with a broad central pink band, margined by two deep black bands; on the last whorl, superiorly and inferiorly, is a broad bright green band.

The gaudy colouring of this species alone separates it from the *A. Johnsoni*, nob. It belongs to the same section with *A. producta*, Reeve, which may be taken as the type of a group of species numbering some half-a-dozen, and which requires still further additions to render it complete.

52. *ACHATINELLA HYBRIDA* (Pl. XXIII. fig. 52). *A. testa dextrorsa, conica; anfractibus 6, rotundis, superne marginatis; ul-*

*timo subinflato; sutura bene impressa; columella alba vel subfusca, in plicam contortam desinente; apertura ovali alba; labro simplici, interne incrassato; striis longitudinalibus delicatis; anfr. ultimo viridi vel fusco, superioribus albis cum venis longitudinalibus, formosis, epidermide concoloribus.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Kolau, Oahu.

Shell dextral, conical; whorls 6, rounded, margined above, the last somewhat inflated; suture well-impressed; columella white or brownish, terminating in a twisted plait; aperture ovate, white; lip simple, thickened within; striæ longitudinal, fine; colour of shell green or brown on the last whorl, above white, with fine longitudinal veins of the colour of the epidermis.

This species seems to be intermediate between *A. producta*, Reeve, and *A. venulata*.

53. *ACHATINELLA ASSIMILIS* (Pl. XXIII. fig. 53). *A. testa conico-elongata, superne acuta; anfractibus 7, rotundis; sutura bene impressa; apertura parva, ovata; columella brevissima, plicata, contorta; labro acuto, interne subincrassato; colore albo vel rubro-flavido, anfractus ultimi dimidio inferiori interdum albido; interne albo-niveo.*

Long.  $\frac{11}{20}$ ; lat.  $\frac{5\frac{1}{2}}{20}$  poll.

*Hab.* W. Mani.

Shell conically elongate, acute above; whorls 7, rounded; suture well-impressed; aperture small, ovate; columella very short, plicate, twisted; lip acute, thickened slightly within; colour white or salmon, sometimes the lower half of the last whorl white, and the rest of salmon; within pure white.

This species might be mistaken for a dwarf variety of *A. Mastersi*. Its habits are quite different, its locality distant, and the shell has an aspect quite distinct from the small varieties of *A. Mastersi*, as found on W. Mani.

54. *ACHATINELLA RETICULATA* (Pl. XXIV. fig. 54). *A. testa conico-ovata; anfractibus 6, perrotundis; sutura superne mediocri, supra anfr. ultimum profunda; apertura parva, ovata; columella brevi cum dente plicato, fere transverso; colore fusco vel castaneo cum lineis et notis transversis, albidis, figuras varias epidermide imponentibus, speciem texti spiculati vel operis acupicti præbentibus.*

Long.  $\frac{12}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell conically ovate; whorls 6, much-rounded; suture moderate, except at the junction of the last whorl, which is deep; aperture small, ovate; columella short, with a plicate tooth, nearly transverse; colour brown or chestnut, with white transverse lines and markings, laid on to the epidermis in various patterns like lace-work or embroidery.







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55. *ACHATINELLA ORNATA* (Pl. XXIV. fig. 55). *A. testa sinistrorsa, acute pyramidalis, nitida; anfractibus 6, plano-convexis, supra marginatis; sutura bene impressa; apertura in testa adulta subquadrata, in immatura subovata; labro margine subincrassato; columella lata et complanata; testæ superficie undulis alternantibus vel signis ziczac albidis vel nigris, longitudinaliter dispositis, oblecta, cum vitta subcentrali transversa nigra, interdum etiam cum albida contigua infra in anfr. ultimo.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{4}{20}$  poll.

*Hab.* E. Mani.

Shell sinistral, acutely pyramidal, shining; whorls 6, plano-convex, margined above; suture well-impressed; aperture subquadrate in adult, subovate in immature shells; lip slightly thickened at the edge; columella broad and flattened; surface of shell covered with alternating undulations or zigzag markings of white and black arranged longitudinally, with a subcentral transverse black band, sometimes margined with a white one below on the last whorl.

This is an extremely rare species, found in a limited locality, in a deep ravine, at the back of Lahaina.

56. *ACHATINELLA ALBO-LABRIS* (Pl. XXIV. fig. 56). *A. testa conico-ovata; apice acuto; anfractibus 6, rotundis, non marginatis; apertura ovata; columella brevi, plicato-dentata; labro semilunari, incrassato, albo; colore umbroso, cum linea suturali flava, interne cæruleo-albido.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{6\frac{1}{2}}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell conically ovate; apex acute; whorls 6, rounded, not margined; aperture ovate; columella short, plicately toothed; lip semilunar, thickened and white; colour dark umber, with a yellow sutural line; within bluish white.

We are compelled to separate this and another, the *A. reticulata*, from *A. nucleola* of Gould, from which they differ in important and permanent characters.

57. *ACHATINELLA ELEGANS* (Pl. XXIV. fig. 57). *A. testa conico-elongata, polita, nitente, solidiori; anfractibus 6, plano-convexis, superne marginatis; sutura bene impressa; apertura subovata; labro albo, expanso, subreflexo, in medio subcontracto, intus adaucto; columella brevi, plana et subdentata; colore albo et per-fusco, modo secundum lineas ad longitudinem, modo maculis latis alternante, nonnunquam cum fascia alba, suturali et altera in anfr. ventrali addita.*

Long.  $\frac{18}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Hauula, Oahu.

Shell conically elongate, polished, shining, rather solid; whorls 6, plano-convex, margined above; suture well-impressed; aperture subovate; lip white, expanded, subreflected, somewhat contracted in its centre, thickened within; columella short, flat and lightly toothed;

colour light and dark brown alternating, longitudinally arranged in lineations or broad patches; sometimes with a white sutural band, and an additional one on the body whorl.

58. *ACHATINELLA PFEIFFERI* (Pl. XXIV. fig. 58). *A. testa sinistrorsa, acuminata, turritiformi; anfractibus 6, plano-convexis; sutura profunda; apertura oblongo-ovata; columella simplici, plana; labio exteriori simplici; superficie sulcis longitudinalibus profundis, striis transversis, bene expressis, decussatis; colore fusco cum lineis albis, longitudinalibus in anfr. superioribus.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{4}{20}$  poll.

*Hab.* Molokai.

Shell sinistral, acuminate, turreted; whorls 6, flatly convex; suture deep; aperture oblong-ovate; columella plain and smooth; outer lip simple; surface irregularly cut up into furrows, ridges and tubercles by deep longitudinal sulcations, crossed by strongly developed transverse striæ; colour brown, with white longitudinal lines on the upper whorls.

59. *ACHATINELLA CUMINGII* (Pl. XXIV. fig. 59). *A. testa sinistrorsa, acuminata, turritiformi; anfractibus 6, planulatis, supra marginatis; sutura subimpressa; apertura oblongo-ovata; columella subcallosa; labio externo tenui, elliptico; striis numerosis, oblique transversis et fortiter delineatis, striis longitudinalibus decussatis, supra totam testam diffusis; colore fusco cum undulis albidis in anfr. superioribus.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{4}{20}$  poll.

*Hab.* Hale a Ka la, E. Mani.

Shell sinistral, acuminate, turreted; whorls 6, margined above, planulate; suture moderately impressed; aperture oblong-ovate; columella slightly callous; outer lip thin, elliptical; numerous striæ, obliquely transverse and well-marked, traverse the entire shell, with longitudinal incremental striæ more or less developed; colour brown, with obsolete white undulations on the superior whorls.

This species, with the preceding, form, with the *A. plicata* of Mighels, a group of an eccentric and extremely interesting type.

No apology will be offered for dedicating this remarkable species to H. Cuming, Esq., of London.

60. *ACHATINELLA SOLITARIA* (Pl. XXIV. fig. 60). *A. testa ovata, conica, dextrorsa; anfractibus 6, plano-convexis; sutura subimpressa; apertura ovata; labro acuto, intus incrassato; columella alba, brevi, lata et abrupte contorta; colore castaneo pallido cum striis obscurioribus, longitudinalibus, prope basin viridi; fascia suturali alba in anfr.  $2\frac{1}{2}$  ultimis, in superioribus fusca; apice lacteo.*

Long.  $\frac{14}{20}$ ; lat.  $\frac{8\frac{1}{2}}{20}$  poll.

*Hab.* Palolo, Oahu.

Shell ovately conical, dextral; whorls 6, flatly convex; suture

slightly impressed; aperture ovate; lip acute, thickened within; columella white, short, broad and abruptly twisted; colour light chestnut, with darker longitudinal stripes, green at the base; a white sutural band for the last  $2\frac{1}{2}$  whorls, and a brown band on the suture above.

But a solitary specimen of this species has been obtained. Its characters are, however, sufficiently striking to warrant us in giving it a place as a distinct species.

61. ACHATINELLA GERMANA (Pl. XXIV. fig. 61). *A. testa dextrorsa, ovato-conica; anfractibus 6, plano-convexis; apertura ovata; labro acuto, intus incrassato; columella brevi, tuberculari, fusca; colore castaneo cum lineis delicatis, obsoletis, transversis, obscurioribus, vitta alba suturam ultimam transeunte et anfr. ventralem medio secante; fascia lata in apertura evanescente, columellam circumdante.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Makawao, Mani.

Shell dextral, ovately conical; whorls 6, flatly convex; aperture ovate; lip acute, thickened within; columella brown, short and tubercular; colour chestnut, with fine obsolete darker transverse lines; a white band traverses the last sutural whorl and cuts the body whorl centrally; around the columella is a broad white band, losing itself in the aperture.

Closely resembles the *A. solitaria*, and but for the widely distant localities, might be taken for a variety of the same species. The markings and columellæ are however quite distinct.

62. ACHATINELLA FLAVESCENS (Pl. XXIV. fig. 62). *A. testa dextrorsa, conica; anfractibus 6, subrotundis; sutura simplici, bene impressa; striis numerosis longitudinalibus, et bene expressis; apertura semiovali; labro simplici; columella brevi, dente obliquo, plicato munita; colore testæ externe uniusmodi subflavo, interne albido vel subroseo.*

Long.  $\frac{13}{20}$ ; lat.  $\frac{6}{20}$  poll.

*Hab.* Hawaii.

Shell dextral, conical; whorls 6, slightly rounded; suture simple, well-impressed; striæ numerous, longitudinal and well-developed; aperture semiovate; lip simple; columella short, with an oblique plaited tooth; colour of shell externally of a uniform light reddish yellow, internally white or pale rose.

This species belongs to a group, at the head of which stands *A. rubens* of Gould. Its specific character is sufficiently marked. It is one of three species thus far obtained on the large island of Hawaii.

63. ACHATINELLA HELENA (Pl. XXIV. fig. 63). *A. testa ovato-conica; anfractibus 5, ventricosis; sutura profunda; apertura ovata; columella subcallosa; striis minute decussatis; colore rufo alternante cum lineis ziczac albis, longitudinalibus, latis, totam*

*testam obtegentibus, cum vel sine fascia alba, anfr. ultimum cingente.*

Long.  $\frac{10}{20}$ ; lat.  $\frac{5\frac{1}{2}}{20}$  poll.

*Hab.* Molokai, within the coil of the Ti tree leaf, as it starts from the trunk.

Shell ovate-conical; whorls 5, rounded; suture deep; aperture ovate; columella slightly callous; striæ finely decussated; colour rufous, alternating with broad, longitudinal, zigzag lines of white covering the entire shell, with or without a white band encircling the last whorl.

This forms the commencement of the type alluded to under the description of *A. dubia*.

64. *ACHATINELLA PHYSA* (Pl. XXIV. fig. 64). *A. testa sinistrorsa, acuto-conica, tenui, inflata; anfractibus 5, rotundis; sutura bene impressa; apertura oblongo-ovata; columella tenui, subplicata; labro simplici; colore subflavo-fusco cum flammulis albidis longitudinalibus, cum vel sine linea alba, subcentrali circa anfractum ventralem.*

Long.  $\frac{11}{20}$ ; lat.  $\frac{5}{20}$  poll.

*Hab.* Mouna Kea, Hawaii.

Shell sinistral, acutely conical, thin, inflated; whorls 5, rounded; suture well-marked; aperture widely ovate; columella thin, slightly twisted; lip simple; colour light yellowish brown, with white longitudinal flammules, with or without a subcentral, revolving, white line on the body whorl.

65. *ACHATINELLA DUBIA* (Pl. XXIV. fig. 65). *A. testa dextrorsa vel sinistrorsa, tenui, conico-elongata; anfractibus 6, minute decussatim striatis; sutura simplici; apertura ovata; labro expanso, subreflexo; columella alba, bulimoida in speciebus junioribus (adultis callo conspicuo munitis); umbilico parvo et perforato; colore pallide corneo, cum lineis ziczac et maculis pallidis.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Waianoe, Oahu.

Shell dextral or sinistral, thin, conically elongate; whorls 6, with finely decussating striæ; suture simple; aperture ovate; lip expanded, slightly reflected; columella white, bulimoid except in adult specimens (which exhibit a callus); umbilicus small and perforate; colour light corneous, with radiating zigzag lines and blotches of a light colour.

Found on bushes.

The above shell approaches in its characters very near to the genus *Bulimus*. It is referred to this genus from its disposition to be either sinistral or dextral; from its animal being viviparous; and from old specimens exhibiting a flat, twisted columellar tooth. It forms the terminus of a series of four species herein described; the others are *A. Helena*, *A. physa* and *A. grisea*, all heterostrophe species.

66. *ACHATINELLA GRISEA* (Pl. XXIV. fig. 66). *A. testa sinistrorsa, infra inflata, apice acuminato; anfractibus 6, rotundis, non marginatis; apertura ovata; columella brevi, plana et subplicata; labro expanso, interne incrassato; sutura bene impressa; umbilico subaperto; colore supra cinereo-albo, fusco pallide maculato, infra cinereo; anfractu ultimo vitta angusta, albida circumdato.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Makawao, Mani.

Shell sinistral, inflated below, pointed at the summit; whorls 6, rounded, not margined; aperture ovate; columella short, flat and but slightly twisted; lip expanded, thickened within; suture well-impressed; umbilicus open; colour above greyish white mottled with light brown, below ashy grey; the body whorl encircled by a narrow white band.

67. *ACHATINELLA MASTERSI* (Pl. XXIV. fig. 67). *A. testa dextrorsa, tenui, conica; anfractibus 7, rotundis, supra leviter rugosis, inferioribus fortiter inflatis; apice acuto; sutura valde impressa; apertura ovata; labro simplici; columella brevi, plica lamellari, tenui munita; colore superbe castaneo vel albo, cum vestigiis epidermidis tenuis, fusco-nigræ; interne albo vel cæruleo-evanido.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Mani.

Shell dextral, thin; whorls 7, rounded, slightly rugose above, the last strongly inflated; apex acute; suture well-impressed; aperture ovate; lip simple; columella short, with a thin lamellar plait; colour of shell white or rich chestnut, with traces of a thin brown epidermis; within white or bluish white.

This species I dedicate to S. I. Masters, Esq., who has been indefatigable in his researches on the islands of Oahu, Mani and Ranai, and who has furnished many choice and beautiful shells of this genus before unknown to science.

The size varies much in this species, and the colouring is also various, running from pure white through various tints to a light mahogany. The lower part of the shell is not unfrequently white, and the upper portion bright chestnut or rose-coloured.

68. *ACHATINELLA DECIPIENS* (Pl. XXIV. fig. 68). *A. testa conico-elongata, solida; unfractibus 6, subrotundis, supra depressis; apertura elongato-ovata; labro subreflexo; columella brevi, oblique plicata, cum callo expanso; sutura subimpressa; striis numerosis, longitudinalibus, obliquis; colore albo cum fasciis transversis, luteis, vel luteo cum lineis transversis, albidis, et striis longitudinalibus, castaneis.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{7}{20}$  poll.

*Hab.* Kahana, Oahu.

Shell conically-elongate, solid; whorls 6, slightly rounded, margined above; aperture elongately-ovate; lip subreflected; columella short, obliquely twisted, with an expanded callus; suture slightly impressed; striæ numerous, longitudinal, oblique; colour white with yellow transverse bands, or yellow with white transverse lines, and longitudinal chestnut-coloured stripes.

This species cannot be confounded with any other than the *A. subvirens* in one of its varieties, the distinctive marks of which are given under that species.

69. *ACHATINELLA RUBIGINOSA* (Pl. XXIV. fig. 69). *A. testa dextrorsa, solida, ovato-conica; anfractibus 6, rotundis, supra marginatis; sutura bene impressa; labro subreflexo, interne incrassato; apertura ovata; columella brevi, fortiter dentata, cum callo expanso umbilicum obtegente; colore ferrugineo-fulgente, cum vitta alba suturali; columella et anfractus ultimi parte inferiore et exteriore albidis.*

Long.  $\frac{15}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* Palolo, Oahu.

Shell dextral, solid, ovately conical; whorls 6, rounded, margined above; suture well-impressed; lip lightly subreflected, thickened within; aperture ovate; columella short, strongly dentate, with an expanded callus covering the umbilicus; colour a bright reddish brown, with a white band accompanying the sutures; columella and lower and outer portion of last whorl white.

This species passes into the white variety of *A. tæniolata* of Pfeiffer; but in the latter species the mantle of the animal is of a dark slate-colour, and in the present species it is of a light flesh-colour. The markings are characteristic of the species, the rusty hue varying in intensity and quantity of surface covered in different specimens.

70. *ACHATINELLA VARIABILIS* (Pl. XXIV. fig. 70). *A. testa sinistrorsa vel dextrorsa, conico-acuminata, polita, nitente; anfractibus 6, rotundis, superne submarginatis; apertura subovata; columella brevi, tuberculo forti coloris rosei munita; labro expanso, acuto; colore testæ vario, albo, flavo, nigro, etc., unicolori vel cingulis sex minusve, colorum diversorum in anfr. ultimo ornato.*

Long.  $\frac{8}{20}$ ; lat.  $\frac{14}{20}$  poll.

*Hab.* Ranai.

Shell sinistral or dextral, conically acuminate, polished, shining; whorls 6, rounded, lightly margined above; aperture roundly ovate; columella short, armed with a strong tubercle of a roseate colour; lip expanded, acute; colour of shell white, yellow, black and other shades, plain or with from one to six bands of various colours on the last whorl.

This is the most variable species in markings that has yet been found among the *Achatinellæ*. It is extremely difficult to find two (except the plain ones) precisely alike in this respect.



71. *ACHATINELLA CRASSA* (Pl. XXIV. fig. 71). *A. testa dextrorsa, conica, solida, apice acuminato; anfractibus 6, rotundis, ultimo ventricosus; striis decussantibus; sutura modice distincta; apertura subovata; columella brevi, in plicam fortem terminante; labro albo, late expanso et subreflexo; umbilico aperto; colore castaneo-fusco, albis punctis asperso, cum vitta alba, subcentrali in anfractu ultimo.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Ranai.

Shell dextral, conical, solid, pointed at the apex; last whorl ventricose; striæ decussating; whorls 6, rounded; suture moderate; aperture subovate; columella short, terminating in a very strong plait; lip white, broadly expanded and subreflected; umbilicus open; colour dark chestnut sprinkled with white, with a white subcentral band on the last whorl.

This shell in form approaches the genus *Partula*. Having obtained the specimens alive, I have been enabled to examine the animal, and can find no marks to distinguish it from the common type of the genus *Achatinella*.

72. *ACHATINELLA BALDWINII* (Pl. XXIV. fig. 72). *A. testa dextrorsa, conico-ovata, ad longitudinem striata; anfractibus 7, subconvexis, non marginatis; sutura simplici, bene impressa; apertura elongato-ovata; columella longa, dente albo, plicato munita; labro acuto, massa alba oblecto, interne fusco-marginato; apertura cæruleo-albida; colore subfusco, cum vestigiis epidermidis tenuis, nigrae; anfr. 4 supremis nigris.*

Long.  $\frac{21}{20}$ ; lat.  $\frac{10}{20}$  poll.

*Hab.* Ranai.

Shell dextral, conically elongate, striated longitudinally; whorls 7, slightly convex, not margined; suture simple, well-impressed; aperture elongate-ovate; columella long, with a white plicate tooth; lip acute, margined within with brown; aperture bluish white; labrum with a white deposit; colour of shell light brown, with traces of a thin, black epidermis; first four whorls black.

This species is dedicated to the Rev. Mr. Baldwin of Lahaina. It belongs to the limited group of *A. gigantea* and *A. violacea*. There has been but one specimen of this species as yet obtained.

73. *ACHATINELLA BUDDII* (Pl. XXIV. fig. 73). *A. testa sinistrorsa, conico-ovata, solida; anfractibus 6, convexis, supra delicate marginatis; sutura moderate depressa, albo cingulata; apertura ovata; labro acuto, inferiori recedente, interne incrassato; columella brevi, cum plica terminali; colore albido-luteo, plumbeo vel fulvo; apertura et columella albis.*

Long.  $\frac{16}{20}$ ; lat.  $\frac{9}{20}$  poll.

*Hab.* Palolo, Oahu.

Shell sinistral, conically ovate, solid; whorls 6, convex, slightly margined above; suture moderately impressed, banded with white;

aperture ovate; lip acute, thickened within; columella short, with a terminal plication; colour yellowish (or cinnamon), slate or fawn; columella and aperture white.

This uncommon species I take pleasure in dedicating to Dr. B. W. Budd of New York, who has largely contributed in assisting others to build up a scientific reputation in the United States.

74. *ACHATINELLA EMMERSONII* (Pl. XXIV. fig. 74). *A. testa conica, polita, dextrorsa, solidiori; anfractibus 6, rotundis, supra marginatis; sutura distincta; apertura subovata, intus peralbida; columella brevi, tuberculata; labro acuto, intus nigro-marginato; testæ superficie externa omnino margaritaceo-alba.*

Long.  $\frac{11}{20}$ ; lat.  $\frac{8}{20}$  poll.

*Hab.* District of Waialua.

Shell conical, polished, dextral, rather solid; whorls 6, rounded, margined above; suture distinct; aperture subovate; columella short, tuberculate; lip acute, margined with black within; aperture internally pure white; exterior of shell uniform pearly white.

This shell in its general aspect is the complete counterpart of *A. Mighelsiana* of Pfeiffer. The latter species is from Molokai. This is clearly distinct, as may be seen by a cursory examination of the two species.

75. *ACHATINELLA BIPLICATA* (Pl. XXIV. fig. 75). *A. testa dextrorsa, elongato-cylindrica; anfractibus 7, rotundis, longitudinaliter valde striatis; sutura profunda; apertura parva, subovata; labio subcalloso; columella biplicata; labro acuto, intus submarginato; colore subroseo, epidermide fusco, tenui partim obtecta; anfractibus supremis nigris; apertura intus rubra.*

*Hab.* Ranai, Sandwich Islands.

Shell dextrorsal, elongately cylindrical; whorls 7, rounded, longitudinally strongly striated; suture deep; aperture small, subovate; inner lip rather callous; columella biplicate; outer lip acute, submarginate within; colour rosy, partly concealed by a thin brown epidermis; upper whorls black; aperture red within.

76. *ACHATINELLA SEMICARINATA* (Pl. XXIV. fig. 76). *A. testa dextrorsa, solida, ovato-conica, longitudinaliter substriata; anfractibus 5, planulatis, supra marginatis, ultimo in medio angulato et semicarinato; apertura ovata; columella valde uniplicata, plica contorta, dentiformi; labro antice producto, intus valde marginato; colore stramineo; apertura intus alba.*

*Hab.* Island of Ranai.

Shell dextrorsal, solid, ovately-conical, longitudinally substriated; whorls 5, flattened, marginate above the last, angulated in the middle and semicarinated; aperture ovate; columella ending in a tortuous, obtuse, dentiform plait; outer lip anteriorly produced, strongly marginate within; colour pale yellow; aperture white internally.

A straw-coloured conical species, with the last whorl partially surrounded with an elevated keel.





1 Saturnia Jorulla  
2. \_\_\_\_\_ Orizaba.  
3. \_\_\_\_\_ Lavendera.

77. *ACHATINELLA MÆSTA* (Pl. XXIV. fig. 77). *A. testa dextrorsa, turrato-conica; anfractibus 7, convexis, longitudinaliter striatis; apertura parva, ovata, leviter contracta; columella recta, plica valida, spirali, alba, in medio munita; colore rufescente; anfractibus supremis nigris, mediis lineis nigris, flexuosis et angulatis, ultimo epidermide fusca obtecto.*

*Hab.* Island of Ranai.

Shell dextrorsal, turrato-conical; whorls 7, convex, longitudinally striated; aperture small, ovate, slightly contracted; columella straight, with a strong, white, spiral callus in the middle; colour reddish brown; the upper whorls black, the middle ones with black zigzag lines, the last covered with a dark brown epidermis.

78. *ACHATINELLA OBSCURA* (Pl. XXIV. fig. 78). *A. testa dextrorsa, turrato-conica; anfractibus 7, longitudinaliter striatis, subrotundis, superne marginatis; sutura leviter impressa; apertura parva, ovata; columella subtortuosa, lamina spirali munita; labro acuto, simplici; colore sordide fulvo, epidermide nigro-fusca obtecto; anfractibus supremis nigris.*

*Hab.* Island of Ranai.

Shell dextrorsal, turrato-conical; whorls 7, longitudinally striated, rather convex, marginate superiorly; suture slightly impressed; aperture small, ovate; columella subtortuous, furnished with a spiral lamina; outer lip acute, simple; colour dirty fulvous, covered with a blackish brown epidermis; the upper whorls black.

79. *ACHATINELLA CONCINNA* (Pl. XXIV. fig. 79). *A. testa dextrorsa, umbilicata, subnitida, longitudinaliter creberrime striata; anfractibus 6, convexis; sutura impressa; apertura ovata; columella brevi, recta, reflexa, lamina spirali antice munita; labro simplici, acuto; colore citrino; anfractibus supremis roseis.*

*Hab.* Island of Ranai.

Shell dextrorsal, umbilicated, longitudinally very finely striated, rather shining; whorls 6, convex; suture impressed; aperture ovate; columella short, straight, the margin reflexed, furnished anteriorly with a spiral plait; outer lip simple, acute; colour pale yellow; the uppermost whorls rosy.

#### 4. DESCRIPTIONS OF SOME NEW SPECIES OF EXOTIC MOTHS BELONGING OR ALLIED TO THE GENUS SATURNIA.

By J. O. WESTWOOD, F.L.S. ETC.

(Annulosa, Pl. XXXII. XXXIII.)

Having, in a former Article in this Work (No. CXCII. March 27, 1849), reviewed the whole of the known species of large African moths belonging or nearly allied to the genus *Saturnia*, and having also, in the "Cabinet of Oriental Entomology," described and figured a number of species of the same group from various parts of India, I purpose in the present paper to describe several additional species, chiefly from the New World, which appears to be very rich in these

fine insects. For several of the species contained in this memoir I am indebted to D. Coffin, Esq., who on his return from Mexico most liberally presented me with his whole collection, formed in that country during a residence of considerable extent.

SATURNIA ORIZABA, Westw. (Pl. XXXII. fig. 2.) *S. alis anticis maris subfalcatis, posticis elongatis; in utroque sexu fulvis, brunneo griseoque variis, omnibus plaga magna triangulari (in omnibus alis aequali), apice extus in strigam undatam albam intus nigro marginatam, insidenti, macula subapicali alarum anticarum e guttis tribus nigris composita, linea tenuissima nigra valde undulata submarginali serie macularum parvarum in alis posticis includente.* ♂ ♀

Expans. alar. antic. maris,  $5\frac{1}{4}$  unc.; foem.  $6\frac{1}{8}$  unc.

*Hab.* in Mexico. Communicavit D. Coffin. In Mus. Westwood.

This species is closely allied to *Sat. Aurota* (Cramer, pl. 8. fig. A), from Surinam, but differs at once in the form of the vitreous patch of the hind wings. The specimen figured by Cramer is a female. The one represented in our illustration is a male, but I possess both sexes, agreeing exactly together in the markings of all the wings, and differing only in the female being larger, with the fore wings broader and almost straight along the outer margin, and the hind ones shorter and more regularly ovate.

The general colour is dark fulvous, the middle portion of the wings being darker than the base and apex. The front of the thorax is marked by a narrow transverse white line, and there is a broader transverse one across its hind part, connected with a white streak running in a continuous line along the hind margin of the fore wings for about one quarter of their length, where it forms a strong angle and runs nearly to the costa; it is outwardly edged with black; this is succeeded by the large vitreous patch in the centre of the wings, of a triangular form, the side towards the base of the wing being rather emarginate; and its apex rests upon a white undulated striga running across the wings, edged within with black, beyond which the wing is much irrorated with pale and grey scales, especially towards the costa; near the tip of the wing is a black crescent, and a patch composed of three small black spots in a triangle, on a fulvous ground, preceded by a curved white line; the margin of the wing is ashy buff, traversed by a very slender, very much waved black line.

The hind wings have a similar-sized vitreous patch in the middle, its basal edge being nearly straight, preceded by an arched white line, outwardly edged with black and connected towards the costa with the strongly-waved white line (inwardly edged with black) on which the apex of the vitreous patch rests; the ashy buff margin of the wing bears a series of small black spots, followed by a very slender waved black line.

On the underside the wings have the base of a rich darker brown colour (extending as far as the undulated transverse striga), the apical half of the wings (as well as the costa of the hind ones) being much paler.

The antennæ of the males are not very broadly feathered; they are 32-jointed, each joint emitting four branches of equal length, except about eight of the terminal joints, in which one of the pairs of branches gradually diminishes in length, and becomes obsolete in two or three of the terminal joints. The antennæ of the female are less strongly feathered, and one of the pairs of branches becomes obsolete in about seven of the terminal joints.

SATURNIA ZACATECA, Westw. (Pl. XXXIII. fig. 4.) *S. alis valde angustis subfalcatis nigris, omnibus macula maxima vitrea, anticis striga basali geniculata alba, ad apicem fulvo, castaneo griseoque variegatis, fascia interrupta alba extus rufescenti; posticis nigris, prope marginem posticum fascia interrupta alba extus castaneo-rufa, margine postico griseo variegato.* ♂

Expans. alar. antic. unc.  $3\frac{5}{8}$ .

*Hab.* in Bogota, Americæ Meridionalis. In Mus. Hope.

This curious species is at once distinguished by its very narrow wings and the large size of the glassy spots, especially in the hinder pair; the body is black, with a white ring round the neck and a less distinct fascia across the hind part of the thorax. The antennæ are very strongly branched; the fore wings are especially long and narrow and slightly falcate at the tip, which is rounded; they are of a black colour, slightly tinged with chestnut, and powdered, especially along the fore margin, with grey scales. A narrow, straight, white striga extends from the base of the wing to the vitreous spot, where it is angulated, and runs towards the fore margin. The centre of the wing is occupied by a large, elongated, suboval heptagonal vitreous spot, which is not traversed by any transverse vein, the branches of the median vein being pushed so far backward, as to admit of its occupying so large a clear space; a narrow white fascia extends from its extremity to the costa, and from the middle of its hinder margin to the hind margin of the wing, the space between which and the apical margin is varied with chestnut, red and grey scales and luteous patches. The tip of the wing is orange, with a chestnut patch and a white angulated line, below which is a large oval chestnut-red patch, bearing a black spot and divided into several parts by dark luteous lines. The hind wings are almost entirely occupied by a large oval glassy patch destitute of veins, the subcostal vein being pushed towards the costal margin, and the median one towards the anal margin, and their branches emitted at an unusual distance from the base of the wing; the apical portion is coloured in the same way as in the fore wings, except that the luteous spots form a narrow, continuous, submarginal fascia, enclosing a series of transverse, black spots more or less united in pairs.

SATURNIA JORULLA, Westw. (Pl. XXXII. fig. 1.) *S. alis fulvo-fuscis; anticis macula subtriangulari, posticis macula subovali, vitreis albo nigroque marginatis, striga angulata e basi ad costam anticarum, alteraque multidentata (communi) pone medium albis nigro roseoque marginatis; striga tenui, nigra, undata, subapicali, macula*

*tripartita, nigra versus apicem connexa; posticis serie submarginali macularum rosearum, extus linea undata, nigra e margine griseo separata.* ♂ ♀

Expans. alar. antic. maris, unc. 4.

*Hab.* in Mexico, Cuantla. E folliculo in mense Octobris invento imago prodiit Augusto sequente. Communicavit D. Coffin. In Mus. Westwood.

This species is allied to *Saturnia Hesperus* (Cramer, pl. 68. fig. A), but is smaller, and has the dentated fascia of the fore wings extending in a straight line entirely across them; it is also much more brightly coloured. Both sexes have the fore wings emarginate along the outer margin, those of the female being rather less so than those of the male. The general colour of the wings is tawny brown; the fore wings with the fore margin thickly clothed with grey scales being white towards the base; the front of the thorax has a continuous white band; another extends also across the hind part of the thorax, and is continued by a white bar along the wing for about one-third of its length, where it is angulated, and extends nearly to the costa; it is inwardly edged with bright rosy, and outwardly in part with black; the vitreous patch which occupies the middle of the wing is subtriangular, having a narrow white margin succeeded by a wider black one. This spot is followed by a multidentate white striga, edged with black on the inside and with rosy red on the out, running nearly in a straight direction across the wing, and extending also in a curved one across the hind wings to the anal margin. This striga is followed in both wings by a rather wide space much powdered with grey atoms, except towards the costa, which is more ashy coloured; the dull luteous margin is traversed by a slender, wavy, black line, followed by a white band, and towards the tip of the fore wings is a black patch, outwardly dentate, succeeded by two smaller black ones edged with tawny, and a short curved and dentated white line extends to the tip of the wing.

The hind wings are very similar to the fore ones, having near the base a slightly curved white streak outwardly edged with black, followed by a nearly oval vitreous spot, edged with white and black, slightly larger than the spot of the fore wings; and the luteous margin of these wings bears a slender wavy black line, preceded by a row of small rosy and black spots.

The wings on the under side are coloured exactly as on the upper, except that the costa of the hind wings is narrowly white. The antennæ of the males are but moderately feathered: they are about 30-jointed, each joint producing two branches of equal length on either side, except that in the eight or nine terminal joints one of the pairs of branches is gradually obsolete, being entirely wanting in the six last. The antennæ of the female resemble those of the male, but are rather less strongly feathered.

SATURNIA LAVENDERA, Westw. (Pl. XXXII. fig. 3.) *S. alis flavis, basi obsolete fusco-strigosis; omnibus ocello parvo ovali (fere æquali) livide carneo, medio vitreo, nigro tenue cincto, anticis pone*



*medium strigis duabus tenuibus undulatis valde obliquis, fascia lata fulvo-brunnea extus undulata maculaque parva nigra subapicali; posticis striga ante medium integra, alteraque pone medium dentata nigris serieque subapicali lunularum fulvo-brunnearum.* ♀

Expans. alar. antic. fœm. unc.  $4\frac{3}{5}$ .

*Hab.* in Mexico. E larva magna viridi spinosa mense Junio in truncum populi capta imago mense sequenti producta. Communicavit D. Coffin. In Mus. Westwood.

Of this handsome species I am only acquainted with female specimens, varying in the more or less golden yellow tint of the ground colour of the wings, which are thickly irrorated with small blackish scales. The anterior pair have the fore margin (as well as the front of the thorax) grey. They are rather dusky near the base and next the costa. There is a dusky spot followed by a short transverse black bar, which is connected with a scarcely distinct waved oblique striga extending to the inner margin. In the middle of the wing is an oval rosy-liver-coloured ocellus, the centre vitreous, surrounded by a black ring, resting on the outside on a very oblique waved black line, which is followed by another, broader but rather less waved, and this is succeeded by a broad space of reddish brown irrorated with grey scales, deeply scalloped along its outer margin. Near the tip of the wing is a black spot, below which is a slender black longitudinal line.

The hind wings are rather dusky at the base, with a nearly straight blackish streak running across them rather before the middle. The ocellus on these wings is sometimes rather larger than that of the fore wings, and in other specimens is united with the transverse blackish bar; beyond the ocellus is a slender dentated blackish line, followed at a short distance by a second, less distinct, and which forms the fore margin of a row of submarginal broad reddish brown lunules.

The antennæ of the females are but moderately feathered; they are 31-jointed, each joint only producing a single branch on each side, the place of the two wanting branches being indicated by two minute bristles in their stead; the branches gradually decrease in length, from about one-third of the length of the antennæ to the tip.

SATURNIA CALLETA, Westw. (Pl. XXXIII. fig. 2.) *S. alis nigricanti-fuscis, omnibus in medio macula angulata strigaque communi integra inter medium et apicem albis notatis; anticis striga angusta angulata versus basin, ocello nigro extus ferrugineo serieque lunularum nigrarum subapicalibus; posticis serie subapicali macularum nigrarum lineaque tenui undata nigra.* ♂ ♀

Expans. alar. antic. maris, unc.  $4\frac{3}{4}$ ; fœminæ, unc.  $5\frac{1}{2}$ .

*Hab.* in Mexico. E pupa mense Augusti producta. Communicavit D. Coffin. In Mus. Westwood.

This very distinct species is at once distinguished by the black-brown colour of its wings, marked in the place of the ordinary ocellus with an angulated white mark, like a wide prostrate V. The female is considerably larger than the male, and has broader wings, the an-

terior being nearly straight along the apical margin, and the hind ones shorter and wider. The thorax has a pale fleshy coloured fascia in front, and the hind part has a less distinct one of dull fulvous; towards the base of the wing is an angulated white striga, and all the wings are marked in the middle with the above-mentioned angulated white mark; half way between which and the outer margin of the wings is a white fascia with the edges entire, rather wider in the hinder wings, followed by a space which is much irrorated with grey and fulvous scales, especially in the hind wings, but becoming more uniformly ashy towards the costa of the fore wings. This space incloses in the fore wings ten slender black lunules arranged in pairs, each pair united together above by a more strongly marked black lunule, edged towards the apical margin with white. The anterior pair of lunules is followed towards the costa by a black ocellus bearing a slender white arched line, and outwardly bearing a broad ferruginous border, and next the apical angle are two white arched lines resting in the middle on a ferruginous patch; the dull luteous apical margin inwardly becomes paler, and is preceded by a slender waved black line; the uniformly dull luteous margin of the hind wings bears a row of small black oval spots, followed by a slender slightly-waved black line. The underside is coloured and marked as above, except that the subapical markings are all more clearly defined.

The antennæ of the males are deeply feathered; they consist of about 30 joints, each emitting a pair of setose branches on either side, except the six terminal joints, which are extremely short, each only emitting a single very short branch on its upper side. In the female antennæ the branches extend (gradually diminishing in length) to the tip, but in the eight terminal joints one of the branches on each side becomes gradually obsolete, being quite wanting in the five terminal joints.

SATURNIA CHAPATA, Westw. *S. alis roseo-fulvis anticarum costa colloque griseis, omnibus ocello medio, magnitudine mediocri, aquali, medio vitreo, intus hepatico, extus flavo, circuloque fusco cincto; anticis striga recta valde obliqua pone medium fusca, macula parva nigra subapicali adjecta.* ♂

Expans. alar. antic. maris, unc.  $4\frac{1}{2}$ .

*Hab.* in Mexico. Communicavit D. Coffin. In Mus. Westwood.

My unique specimen of this species is a male, and having been reared from the larva, its hind wings are not quite fully expanded. The fore wings are more strongly falcate than in any of the other Mexican species described in this article. The ground colour of all the wings is a rich rosy fulvous, with slight brown shades across the middle of the fore wings. The fore margin of these wings, as well as the front of the thorax, is greyish; half way between the base and the middle is a very ill-defined and irregularly angulated dusky striga; in the middle of all the wings is a moderate sized oval ocellus, being of the same size in all the wings, the centre vitreous, the anterior part being liver-coloured, and the outer part gradually yellow, surrounded by a narrow dusky circle; half way between the ocellus and the api-



- 1 *Saturnia Sapatoza*
- 2 ——— Calleta
- 3 ——— Janeira
- 4 ——— Zacateca



cal margin runs a straight but very oblique dusky striga, extending from rather beyond the middle of the hinder margin nearly to the apex of the wing, where it is dilated into a small black patch. The hind wings have a more rosy tint, with a transverse, very ill-defined, dusky striga a little in front of the ocellus, and there is a slender undulated dusky striga half way between the ocellus and the hinder margin.

On the under side the wings are rather more ashy in their general colour, and the dusky stripe between the base and the ocellus in all the wings is better defined; across all the wings there is a central cloud of tawny running through the ocelli, which are smaller on this side than above, and beyond these marks is a very slight and slender row of dusky scallops; the subapical margin of the fore wings is more tawny, especially towards the hinder angle. The antennæ are fulvous and broadly feathered, consisting of about 30 joints, each emitting two branches on either side.

SATURNIA SAPATOZA, Westw. (Pl. XXXIII. fig. 1.) *S. alis supra viridi-sulphureis, nigro-atomosis; anticis in mare subfalcatis; omnibus lunula vitrea mediocri, equali, anticis fascia obscura parum undata inter basin et medium, alteraque undulata inter lunulam et marginem apicalem; puncto nigro subapicali; posticis striga transversa media lunulisque subapicalibus obscuris.* ♂ ♀

Expans. alar. antic. unc.  $3\frac{1}{5}$ .

*Hab.* in Bogota. In Mus. Britann.

This beautiful species is one of the smallest of its tribe, and is well distinguished by its peculiar colour and by the form of the lunate vitreous patch, of nearly equal size on all the wings. The wings are sulphur-yellow-coloured above, the disk covered with minute black scales, which give it a greenish tinge; fore wings with the extremity slightly falcate in the male, more regular shaped in the female, brownish buff, with a small subapical black oval dot, edged behind with an angulated white line. All the wings marked rather beyond the middle with a lunate vitreous spot, of equal size in all the wings, narrowly edged with black and with a slender curved vein (uniting the lower branch of the subcostal with the upper branch of the median veins) running through the centre of it; the fore wings moreover with a slightly waved dusky fascia before the middle and a slender waved subapical dark striga (much more strongly marked in the female than in the male), adjoining which, on the outside, is a narrow wave, paler than the ground colour of the wing, the terminal portion of the wing being duller coloured than the disc, and irrorated in both sexes towards the hinder angle with brown scales. Hind wings entire along the outer margin, with a nearly straight dusky striga running across the centre a short distance preceding the vitreous lunule, with a slender waved lilacy-brown striga half way between the lunule and the outer margin, and with a series of submarginal brown curved streaks, followed by patches of flesh-coloured scales. On the underside the male has the wings chestnut-grey, the disc more strongly suffused with red, with the striga and waved lines of the

upper side slightly indicated; the female on the underside is greyish buff slightly shaded with brown, especially in the middle, with the dark markings of the upper side slightly indicated, the legs flesh-coloured. The antennæ of the male are short and about 26-jointed, each of the joints (except two or three at the tip) emitting four long branches. The female antennæ are 25-jointed, each joint emitting a short branch on each side at its extremity. The female has the branches of the antennæ shorter than those of the male.

SATURNIA JANEIRA, Westw. (Pl. XXXIII. fig. 3.) *S. alis anticis apice acuminatis brunneo-ferrugineis, striga sub-basali interrupta lutescenti, ocello fusco luteo-annulato strigaeque nigra e medio marginis interni ad apicem extensa; posticis supra castaneo-rufis, margine postico fusco ocello magno concolori maculam ovalem nigram includente fulvoque extus annulato.*

Expans. alar. antic. unc.  $3\frac{2}{5}$ .

*Hab.* apud Rio Janeiro, Brasiliæ. In Musæo Britannico.

This species is at once distinguished by the singularly acute falcated form of the fore wings, which peculiarity is probably less strongly marked in the female; supposing as I do that the unique specimen in the British Museum is a male, although the comparatively narrow antennæ might seem to indicate the opposite sex. The fore wings on the upper side are dark rich red-brown, the apical margin being dark ashy. They are marked near the base with a much-interrupted and slightly-indicated luteous striga; in the middle is a moderate sized oval ocellus, dark brown, surrounded by a slender ring of pale luteous scales, and with a very small greyish white lunule in the middle; beyond the ocellus is a regular black line running from the apex to a little beyond the middle of the inner margin, where it is marked with a few pale scales. Hind wings on the upper side rich chestnut-red, with the outer margin brown, and clothed with brown hairs along the anal margin; in the middle is a large ring of black, outside of which is a slender circle of fulvous scales, and in the centre is a rather small oval black spot crowned with a slight white lunule. On the under side the wings are dark fulvous-red, with a dusky apical margin, the fore wings with a black central circular spot inclosing a white dot, and the hind wings with a minute white transverse dot visible on the upper side in the centre of the large ocellus. The antennæ are short, 26-jointed, each joint (except three or four of the terminal ones) emitting four moderately short branches, gradually shortening towards the tip.

This species seems to approach near, if indeed it does not belong to the subgenus *Hyperchiria* of Hübner (Verzeichniss, p. 155), *Io*, Boisduval, the species of which are especially American. The transformations of one of the species (*Saturnia Metzli* from Mexico) have been recently illustrated by M. Sallé, in the 'Revue de Zoologie,' 2nd series, tom. v. (1853) p. 171. pl. 5.

SATURNIA? PLUTO, Westw. *S. alis luridis, cinereo-fuscis, fusco badioque transversim subfasciatis, absque ocellis et lunulis vitreis,*

*anticis sub apicem emarginatis; posticis elongatis et in caudam latam mediocrem extus oblique extensam, productis.*

Expans. alar. antic. unc. 5.

*Hab.* in partibus calidioribus Americæ Meridionalis, Venezuela.  
In Mus. Westw.

The general colour of the wings of this species is dark brown, with a purplish leaden kind of gloss; the fore wings are traversed towards the base (which is of a rich chestnut colour) by two nearly straight chestnut fasciæ, followed by a shorter one of the same colour covering the transverse veinlets at the extremity of the discoidal cell, a short distance beyond which is another straight fascia of the same colour; half way between which and the tip of the wing are two dull sooty fasciæ, diffused towards the costa, and condensed in the middle of the wing into two closely approximated strigæ; beyond the outer of these strigæ the broad margin of the wing is chestnut-brown, the spaces between the veins being of a greyer tint; the hind wings are of a more uniform brown colour, with a broad darker brown central fascia, and the wide outer margin redder brown, preceded by a greyish cloud. The fore wings are somewhat falcate, being truncate at the tip, with a rather deep emargination below the extremity; the hind wings are elongated, the anal angle rounded off, and the outer margin is produced into a wide tail three quarters of an inch long, extending outwardly; the outer margin between the tail and the outer angle has two moderately deep and wide emarginations. The body is small and slender, of an uniform greyish brown colour, without a distinctly coloured grey fascia in front of the thorax.

The antennæ in the only specimen I have seen (which I believe is a female, notwithstanding the slenderness of the body) are rather short, and composed of forty-two short joints, each producing two short pectinations on each side; these pectinations gradually decrease in length from the base to the extremity, where the antennæ are quite thin and acute. The palpi are rather broad, and the spiral maxillæ are distinct, but very slender and weak.

The costal vein of the fore wings extends about three-fifths of the length of the costa; the postcostal vein emits a branch at about one-third of the length of the wing, which runs close behind the costal and beyond it almost to the tip of the wing; the discoidal cell extends rather more than one-third of the length of the wing; it terminates transversely, the postcostal vein emitting a second branch at its anterior termination; this second branch is furcate at a short distance beyond the cell, the upper division of the fork extending to the tip, the lower division to the outer margin below the tip, and the postcostal itself extending to the upper angle of the emargination below the apical truncature of the wing; the transverse vein closing the discoidal cell emits a vein from its centre, and joins the third branch of the median vein at a short distance beyond its origin; the hind wings have the branches of the median vein arising near the anal margin of the wing, and the discoidal cell is closed by a very oblique veinlet, which emits a vein above its middle, which vein extends to the anterior extremity of the tail of these wings.

**SATURNIA THIBETA**, Westw. *S. alis anticis flavis, squamis griseis, præsertim pone medium, variegatis, striga angusta valde obliqua prope basin; omnibus ocello fere æquali, ovali, medio, extus fulvo, puncto nigro incluso; pone medium lineis duabus contiguis valde undulatis, macula parva nigra obliqua strigaeque carnea obliqua contigua, subapicalibus; posticis basi subcarneo, medio flavo variegatis, striga arcuata inter basin et medium lineisque tribus obscurioribus pone ocellum, fascia lata submarginali griseo-fusca lunulisque fulvis externis.* ♂

Expans. alar. antic. unc. 5.

*Hab.* Thibet. In Mus. Westwood.

This species is closely allied to the *Sat. Simla*, Westw., figured in the 'Cabinet of Oriental Entomology,' pl. 20. fig. 1, but differs both in the colour and the position of the markings. The fore wings are yellow, much varied with grey scales, especially at the base of the costa and beyond the middle: at a short distance from the base a slender red striga runs very obliquely across the wing. In the middle of all the wings is a moderate-sized oval ocellus, with a small black dot in the middle, marked on its inner edge with a curved white line, the outer part being liver-coloured, edged with a black ring. Outside the ocellus the wings bear a darker fulvous, ill-defined, very oblique fascia, followed by two slender very strongly undulating dark lines; the undulations being much stronger towards the tip of the wing, where the outer one is connected with a white curved line, like a U, which ends on the costa in an oval black patch, and is bounded on its outside by a slender rich red-brown line; parallel and near the apical margin is an interrupted slender black striga, followed by a row of submarginal fulvous oblong spots. The ocellus of the hind wings is preceded by a curved dark brown line, and is followed by three slender very much undulated lines, the two next the ocellus being chestnut and the outer one black; beyond the last is a broad greyish fascia edged outwardly with a slender interrupted black line, followed by a row of fulvous oblong sublunulated spots. Beneath the wings are similarly marked but more uniformly coloured, being fulvous buff without the grey scales.

The antennæ are about 32-jointed, each joint emitting two branches on each side, the branches of the central joints being moderately elongate and gradually diminishing in length to the tip of the antennæ. The body, legs and antennæ are fulvous yellow, the front of the thorax with a grey band.

**SATURNIA MELVILLA**, Westw. *S. alis sulphureo-fulvis, anticis versus basin obscure angulato-fasciatis ocello parvo medio rotundato in medio vitreo carneo bicingulato, fascia lata subcinerea intus striga undata fusco-ferruginea et extus serie macularum ejusdem coloris inclusa; posticis ocello minimo cæco carneo, fascia subcinerea versus costam oblitterata similiter inclusa.* ♂

Expans. alar. maris unc.  $4\frac{1}{4}$ .

*Hab.* in Melville Island. In Mus. Hope.

This species agrees in the general orange colour of its wings with



*S. Lavendera*, as well as in the small size of the round ocelli in the middle of all the wings; but the slightly ashy fascia on the wings, between the ocellus and the apical margin, is much more uniform in width and nearly straight; the fore wings are slightly but acutely hooked at the tips; the fore margin is ashy coloured, as is also the fore margin of the thorax; in the middle of the discoidal cell is a scarcely distinct light-brown angulated fascia, which is continued (although much nearer the base) across the wing to the inner margin, being also angulated in this portion; in the middle of the wing is a small round ocellus, the centre being vitreous, edged with bright red, succeeded by a ring of buff, which is surrounded by another slender ring of red; at a short distance beyond the ocellus is a reddish brown undulated striga running across the wing, nearly parallel with the apical margin, the waves following the same direction as in *S. Lavendera*, and not as in *S. Jorulla*; this striga forms the inner margin of a moderately wide greyish fulvous space, which is inclosed on its outside by a corresponding row of reddish brown lunular spots, the one next the costa being the widest; the moderately wide apical margin is uniformly pale orange. The hind wings have a very indistinct curved fascia at some distance from the base, darkest next the anal margin, as is the case with the other markings of these wings. The central ocellus is not above half the size of that of the fore wings; the centre consists of a small round bright claret-red dot inclosed within an orange ring, and this within a very fine red one. This is followed by a rather strongly dentated striga of reddish brown, followed by a row of small lunular spots of the same colour, the inclosed space being irrorated with grey atoms.

The antennæ are fulvous-red and broadly feathered.

5. OBSERVATIONS SUR LES ANIMAUX DE QUELQUES GENRES DE MOLLUSQUES ACÉPHALÉS (CHAMOSTREA, GLAUCONOME, CIRCE AND CAPSA). PAR G. P. DESHAYES.

(Mollusca, Pl. XXI.)

Genus CHAMOSTREA, De Roissy. (Pl. XXI. figs. 4-7.)  
(*Cleidotherus*, Stutchbury.)

Animal irrégulier, enveloppé d'un manteau mince bordé d'un muscle orbiculaire étroit; les bords simples joints dans presque toute la circonférence; une très petite ouverture antérieure située à l'angle antérieur et inférieur du manteau un peu au dessous de l'extrémité du muscle adducteur antérieur; deux siphons postérieurs dépassant à peine les bords du manteau; ils sont un peu comprimés et entièrement séparés; leur bord terminal est simple; deux muscles adducteurs très inégaux, l'antérieur très long, très étroit, occupant presque toute la hauteur du côté antérieur de l'animal; muscle postérieur plus court et plus épais; pied petit, comprimé, linguiforme; bouche très petite, accompagnée de quatre petites palpes labiales

étroites, courtes, pointues, triangulaires. Une seule branchie de chaque côté du corps ; elle est fort épaisse, transverse, un peu oblique, divisée en deux parties inégales par un sillon ; elles embrassent la masse abdominale et le pied contracté ; l'osselet appendiculaire de la charnière compris dans l'épaisseur du manteau et des organes abdominaux.

Le genre *Chamostrea* indiqué par de Roissy a été caractérisé d'une manière plus précise par Blainville dans son *Traité de Malacologie* ; quelques années plus tard Mr. Stutchbury en donna de nouveau une description plus complète, et imposa au genre un nom sous lequel il a été plus généralement connu, celui de *Cleidothærus*.

La coquille, type du genre, ayant offert dans la charnière, ce fait remarquable d'un osselet isolé fixé par le ligament, attira l'attention des naturalistes, et presque tous, frappés d'une telle particularité, se laissèrent entraîner à classer le genre, non d'après l'ensemble des caractères comme le prescrivent les règles de la science, mais d'après un seul à l'exclusion des autres.

La *Camostree* n'est pas la seule coquille dans la charnière de laquelle on rencontre un osselet calcaire attaché au ligament. Mr. Turton le premier, dans son bel ouvrage sur les Coquilles bivalves de l'Angleterre, fit voir dans son genre *Lyonsia* un petit osselet quadrangulaire, aplati, fixé au ligament interne entre deux petits cuillerons écartés. Deux ans plus tard nous faisons la même observation sans connaître encore l'ouvrage du savant que nous venons de citer, et nous proposons la famille des *Ostéodesmes*, dans laquelle nous introduisons les genres *Thracia*, Leach, *Anatina*, Lamarck, *Periploma*, Schumacher, *Lyonsia*, Turton, à côté duquel nous avons laissé notre genre *Ostéodesma* pour des *Lyonsia* équivalves peu régulières et fort baillantes en arrière.

Cette famille, fondée sur l'ensemble des caractères des animaux et de leur coquille, ne pouvait d'après nous recevoir d'autres genres, et lorsque les genres *Myodora* et *Mæra* furent plus complètement connus, quoiqu'ils eussent un osselet à la charnière, ils ne furent point admis dans la famille des *Ostéodesmes* ; cependant d'autres conchyliologues les y avaient rangés. La connaissance des deux genres dont nous venons de parler, nous porta à penser que la présence de l'osselet cardinal, n'est point l'indice d'une organisation semblable, et n'entraîne pas nécessairement dans un même groupe tous les genres qui offrent ce caractère. Si pour nous les *Myodora* ne sont pas des *Ostéodesmes*, à plus forte raison les *Chamostrea* et les *Myochama*, ce dernier genre avec sa coquille irrégulière, ne peut cependant s'éloigner beaucoup de la famille des *Ostéodesmes*, parceque l'animal est pourvu de deux siphons assez longs, pour lesquels existe un muscle rétracteur qui laisse son empreinte sur la coquille.

A l'égard du genre *Chamostrea* jamais nous ne l'avons admis, comme tant d'autres conchyliologues, dans la famille des *Ostéodesmes* ; il nous a toujours paru plus rapproché des *Cames*, et c'est dans la famille des *Camacées* de Lamarck que nous l'avons récemment placé. La forme irrégulière de la coquille, la manière de s'attacher aux rochers, les impressions musculaires, et celle du manteau indiquaient

chez l'animal des mœurs semblables à celles des *Cames*, et par conséquent une organisation analogue.

Les caractères que je viens d'exposer de l'animal du *Chamostrea* prouvent que j'avais placé ce genre dans ses rapports les plus naturels. Les *Cames* en effet sont des animaux irréguliers qui ont trois ouvertures au manteau ; l'ouverture antérieure est la plus grande, et les siphons sont très courts, presque réduits à de simples perforations\*. Voilà les différences extérieures les plus considérables. Quant aux organes plus profondément cachés ils présentent aussi dans les deux genres quelques différences importantes ; ainsi le pied des *Cames* est cylindracé, coudé vers son extrémité ; il rappelle par là un peu et de loin celui des *Cardium* ; dans les *Chamostrea* cet organe est très petit, comprimé, linguiforme ; les palpes de la bouche sont plus petites dans les *Chamostrea* que dans les *Cames*, mais les branchies sont presque semblables dans les deux genres, un seul feuillet branchial épais tombant de chaque côté du corps, et enveloppant non seulement la masse abdominale, mais encore le pied lorsqu'il est contracté.

De ce qui précède nous concluons :—

1. La présence de l'osselet dans la charnière d'une coquille bivalve est une caractéristique qui peut se reproduire dans des familles fort éloignées par leur organisation.

2. Le genre *Chamostrea* doit venir se ranger dans la famille des *Cames* de Lamarck, ou constituer à côté d'elle une petite famille distincte, fondée sur ce triple caractère d'une coquille à osselet cardinal, d'un animal à manteau presque complètement fermé, et portant un pied comprimé et linguiforme.

#### Genus GLAUCONOME, Gray. (Pl. XXI. fig. 2.)

Animal ovale, oblong, transverse, à manteau mince ; muscle orbiculaire du manteau assez large et peu épais ; bords simples, membraneux, portant à l'intérieur une double lèvre très courte ; les lobes du manteau soudés dans la moitié postérieure de leur longueur ; siphons allongés, réunis dans toute leur longueur, un peu comprimés de chaque côté, inégaux en diamètre, et un peu inégaux en longueur ; le siphon branchial plus large et plus long, garni sur son bord d'un rang de tentacules courts et cylindracés ; ouverture du siphon anal simple. Muscles adducteurs des valves petits et fort écartés : pied petit, aplati, sublancéolé. Bouche petite ; palpes labiales très grandes, ovales, lancéolées, paraissant lisses en leur face interne, quoique couvertes de stries transverses extrêmement fines et obsolètes. Branchies très inégales, presque lisses ou à peine plissées ; la branchie interne très allongée, assez large, trapézoïdale, terminée en pointe du côté postérieur ; branchie externe très petite, près de moitié plus courte et plus étroite.

J'ai vu deux espèces qui offrent exactement les mêmes caractères.

Institué par Mr. Gray dans le premier fascicule de ses *Spicilegia Zoologica* le genre *Glaucome* a été adopté par tous les conchyliologues. Il devait en être ainsi, car les coquilles qu'il renferme ont

\* Dans les *Chamostrea* l'ouverture antérieure est presque nulle, mais les siphons sont un peu plus longs.

des caractères très distincts, parfaitement appréciés par le savant auteur de la nouvelle coupe générique. En présence des caractères assez ambigus de la coquille, il était presque impossible aux zoologistes d'avoir une seule opinion au sujet du classement du genre dans la méthode, aussi on pourrait le dire sans trop d'exagération que chacun se laissa guider par sa propre inspiration. Pour faire cesser l'incertitude il fallait étudier l'animal qui jusqu'ici est resté inconnu.

En examinant la riche collection de mollusques conservés dans l'alcool que possède Mr. Cuming, il me montra plusieurs individus très bien conservés de deux espèces de *Glauconome*, et grâce à l'esprit éclairé de ce conchyliologue distingué, il comprit l'intérêt scientifique des recherches que je me proposais de tenter, et il consentit à m'abandonner plusieurs individus de sa collection. Il s'agissait en effet de savoir si les *Glauconome* avoisinait les *Venus*, comme le pensent le plus grand nombre, ou s'il se rapproche des *Solen* comme le croyait quelques classificateurs. Il est actuellement évident par les caractères que nous venons d'exposer, que le genre dont nous nous occupons n'appartient par aucun caractère au groupe des *Vénéridées*. Si il existe dans cette famille des genres chez lesquels les siphons sont réunis (*Dosinia*, *Clementia* et *Chione*), tous sans exception ont les lobes du manteau désunis dans toute la longueur du bord inférieur. Chez ces genres les siphons étant d'une longueur relativement médiocre, la sinuosité palléale est généralement large et courte ; dans les *Glauconome* au contraire cette impression est étroite et très profonde, ce qui annonce des siphons longs et grêles comme ceux des *Tellines* ou des *Psammobies* ; cependant ce n'est pas à ce groupe qu'appartiennent les *Glauconome*, leurs siphons sont longs, mais ils sont réunis, tandis que la famille des *Tellinides* est caractérisée par des siphons longs mais désunis dans toute leur longueur. Il faut donc chercher ailleurs les rapports naturels des *Glauconome* ; nous trouvons dans la famille des *Solens* quelques mollusques qui ont une véritable analogie avec celui qui nous occupe, mais tous les *Solénacés* sont caractérisés par le développement considérable de l'organe locomoteur ; dans les *Glauconome* au contraire cet organe est fort petit, et il se rapproche infiniment plus de celui des *Lutraires*. En considérant dans leur ensemble les caractères des deux genres on leur trouve la plus grande somme de ressemblances ; il n'est pas à dire pour cela que les *Glauconome* soit pour nous des *Lutraires*, chaque genre conserve des caractères propres et constituent des familles distinctes, mais ils ne peuvent être très éloignés l'un de l'autre dans une méthode naturelle.

Les *Glauconome* comme les *Lutraires* ont les lobes du manteau réunis dans la moitié au moins de la longueur du bord inférieur ; comme dans les *Lutraires* les siphons sont fort longs et réunis dans toute leur longueur, seulement ils sont plus grêles dans les *Glauconome*. Le pied a une forme semblable dans les deux genres, plus long en proportion dans les *Lutraires*, mais dans ce dernier genre les palpes labiales sont très longues, étroites, pointues, les branchies sont étroites et très alongées surtout en arrière ; ces organes importants sont plus larges et autrement disposés dans les *Glauconome*. Si l'on

veut faire entrer aussi pour quelque chose les caractères des coquilles dans la distribution des genres et des familles, on arrivera facilement à cette conséquence,—que si les deux genres que nous venons de comparer ont des ressemblances, ils offrent aussi des différences qui justifient pour eux la création de deux familles distinctes mais peu éloignées.

Genus CLEMENTIA (*C. papyracea*). (Pl. XXI. fig. 1.)

Animal ovale, ayant le manteau mince, épaissi sur le bord par le muscle orbiculaire; le bord simple, sans tentacules, bilabié à l'intérieur; ouverture palléale grande, s'étendant du muscle adducteur antérieur à la base des siphons. Siphons grêles, réunis dans toute leur longueur, coniques, aplatis latéralement, inégaux en diamètre, distincts au dehors par une ligne déprimée, terminés par une ouverture petite et simple; une valvule membraneuse simple et transverse devant l'ouverture interne du siphon branchial; pied petit, subquadrangulaire, comprimé, un peu allongé en avant. Bouche petite; palpes labiales inégales, allongées, triangulaires, très finement lamelleuses à leur face interne; branchies petites, très inégales, obliques, le feuillet interne le plus grand, subquadrangulaire et presque entièrement découvert; feuillet externe trapézoïdale, attaché par le milieu de sa surface.

Le genre *Clementia* a été créé par Mr. Gray pour une coquille singulière rapportée généralement à la famille des *Venus*; elle en offre les caractères les plus essentiels, seulement contrairement aux autres *Venus*, le test reste mince, fragile et sans couleur. En examinant l'intérieur des valves on y aperçoit un grand sinus palléale triangulaire obliquement ascendant comme dans le plus grand nombre des *Dosinia* (*Artemis*, Poli); ce caractère nous faisait soupçonner que dans l'animal des *Clementia* les siphons devaient être réunis: c'est en effet ce qui a lieu. Ainsi que nous venons de le voir par la description de son animal, le genre *Clementia* a tous les caractères des autres *Vénéridées*; mais de tous les genres de ce groupe c'est des *Dosinia* qu'il se rapproche le plus, et c'est à leur suite qu'il doit venir dans un arrangement naturel de la famille. Sans doute les caractères des *Dosinia* et des *Clementia* ont beaucoup d'analogie, ils prouvent que ces mollusques dépendent d'une même famille, mais ils diffèrent assez entre eux pour justifier leur séparation comme genres.

Nous ne terminerons pas sans ajouter que nous devons la connaissance de l'animal du genre *Clementia* à la libéralité de Mr. Cuming, qui le premier en a rapporté de beaux exemplaires de son voyage aux Philippines. C'est également à cet amateur zélé des sciences conchyliologiques que nous sommes redevables de la connaissance de l'animal des *Circe* et de celui des *Capses*, sur lesquels nous croyons utiles de donner quelques renseignements.

Genus CIRCE, Schum. (Pl. XXI. fig. 3.)

Le genre *Circe* de Schumacher renferme des coquilles semblables à celles des autres *Cythérées*, avec cette seule différence, que l'impression palléale est simple et non sinueuse en arrière comme dans les

*Cythérées* proprement dites. Il s'agissait de savoir si au point de vue de l'organisation des animaux, ce caractère des coquilles avait une valeur réelle ; l'examen des animaux pouvait seul faire cesser le doute, et nous nous sommes empressé de profiter de la collection de Mr. Cuming pour faire l'anatomie de plusieurs espèces de *Circe* appartenant aux deux principaux groupes du genre (*Circe scripta*, Linn. et *C. testudinalis*, Chemnitz). Ces animaux ne diffèrent en rien de celui des *Meretrix* ; le manteau est ouvert dans toute la longueur du bord inférieur, il est pourvu en arrière de deux siphons courts et désunis (du moins dans l'état de violente contraction), le pied est linguiforme, aplati, il est semblable à celui des *Venus* et des *Cythérées* ; il en est de même des palpes et des branchies. De cette identité, parfaitement constatée pour nous, entre les *Meretrix* et les *Circe*, nous concluons que ce dernier genre doit rentrer dans le premier à titre de simple division ; en réunissant les espèces des deux groupes on voit s'établir entre elles une transition insensible dans la transformation des formes extérieures.

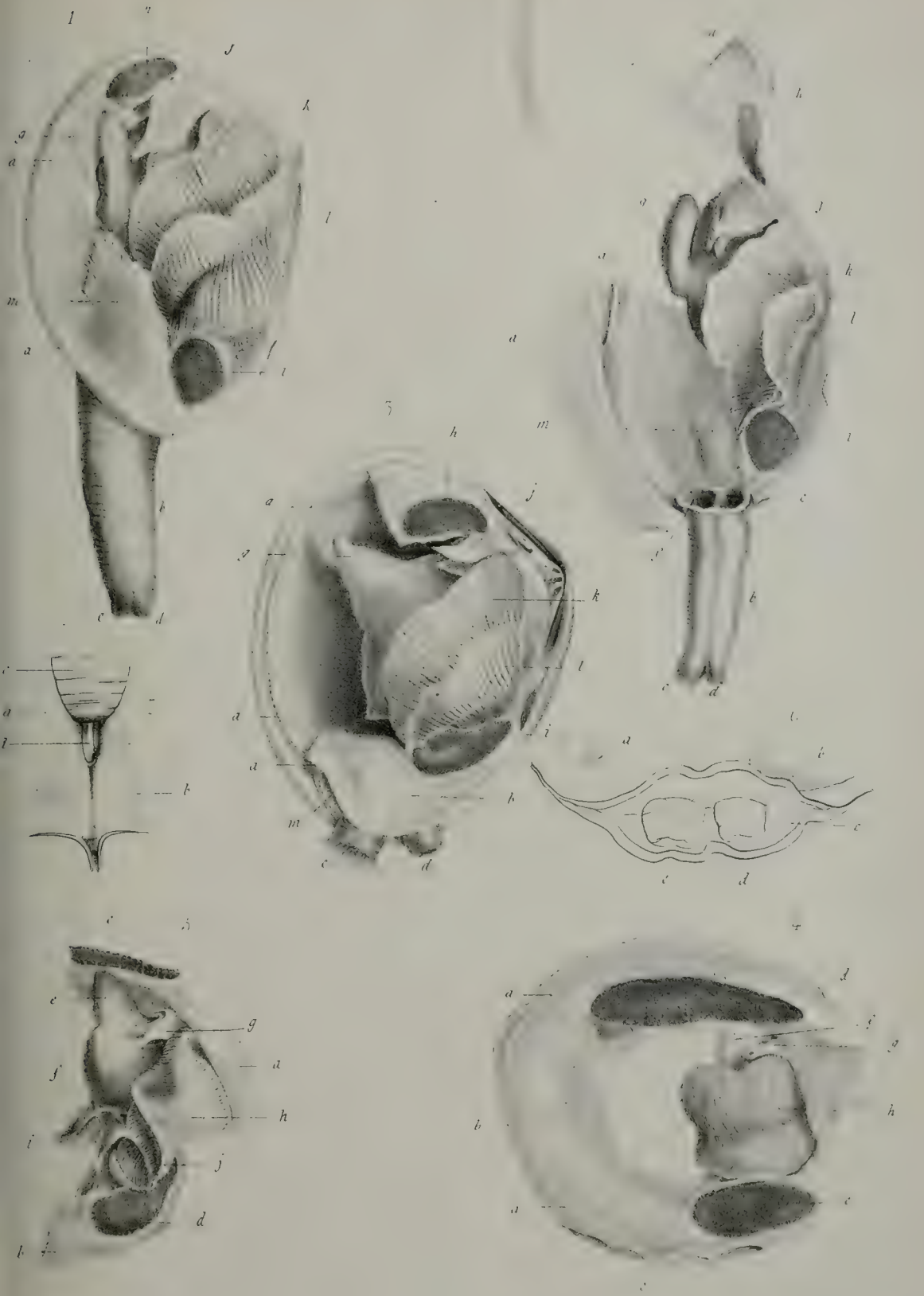
#### Genus CAPSA, Brug.

Le genre *Capse* de Bruguière, non de Lamarck, créé pour le *Venus deflorata* de Linné, a été récemment placé par Mr. Gray dans la famille des *Vénéridées*, puis, plus récemment encore, séparé en une petite famille distincte par le même naturaliste ; il transporte cette nouvelle famille dans le voisinage de celle des *Tellines*. Pour nous, depuis longtemps les *Capses* nous paraissaient beaucoup plus voisines des *Psammobies*, mais il fallait étudier l'animal pour décider définitivement de la place qu'il doit occuper dans la série méthodique. Il résulte de nos observations que l'animal du *Capsa deflorata* ne diffère en rien d'essentiel de celui des *Psammobies* ; il est même permis de douter si le genre *Capse* devra rester dans une méthode où les coupures génériques sont fondées sur des caractères d'une égale importance.

#### EXPLICATION DES FIGURES.

##### PL. XXI.

- Fig. 1. *Clementia papyracea*, Gray. *a a*, muscle orbiculaire du manteau ; *b*, les siphons ; *c*, ouverture du siphon branchial ; *d*, ouverture du siphon anal ; *g*, le pied ; *h*, le muscle adducteur antérieur ; *i*, muscle adducteur postérieur ; *j*, les palpes labiales ; *k*, feuillet branchial interne ; *l*, feuillet branchial externe ; *m*, muscle rétracteur des siphons.
- Fig. 2. *Glaucanome Cerea*, Reeve. (Les mêmes lettres désignent les parties semblables à celles de la figure précédente ; il faut ajouter) *c, f*, ouverture interne des siphons et l'éperon qui les sépare ; *a'*, commissure du manteau au point où les lobes se réunissent.
- Fig. 3. *Circe divaricata*, Chemn. *a a*, le manteau appliqué sur la surface interne de la coquille ; *a'*, commissure du manteau ; *b*, base des siphons cachée par l'appendice postérieur du manteau ; *c*, siphon branchial ; *d*, siphon anal. (Les autres lettres comme dans les figures précédentes.)
- Figs. 4, 5, 6, 7. *Chamostrea albida*, Desh.
- Fig. 4. Animal entier auquel manque la partie centrale et membraneuse du manteau. *a a*, muscle orbiculaire du manteau ; *b*, portion membraneuse ; *c*, point où sont situés les siphons ; *d*, muscle adducteur antérieur des



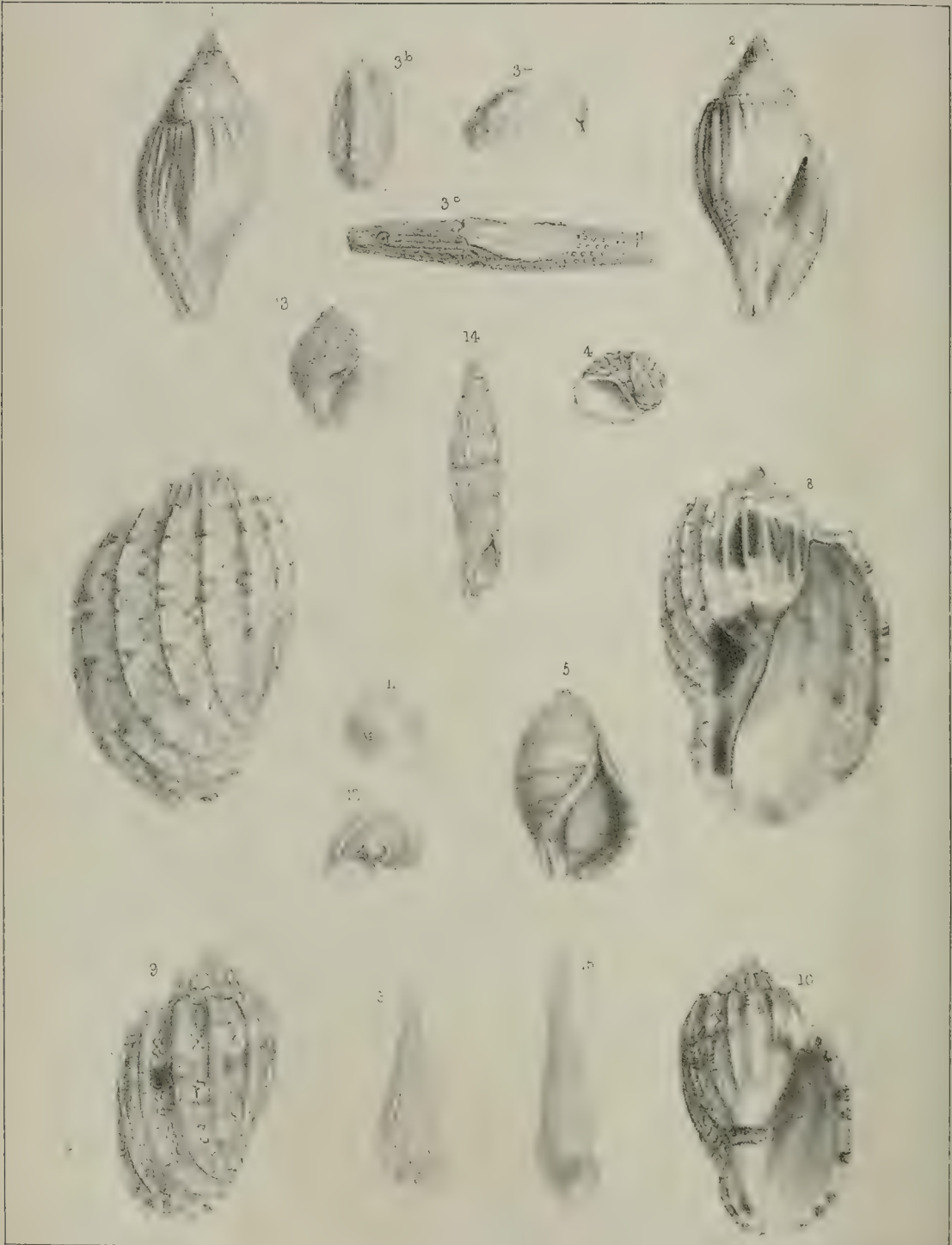
1 *Clementia papyracea*, Gray.  
2. *Glaucanome Cerea* Reeve

3. *Circe divaricata* Chemn  
4 5. 6. 7. *Chamostrea albida* Desh.









W. Ming and nat. lith.

Printed by Hullmandel & Watson.

Fig. 1-2. <i>Metula Cumingii</i> .	A. Adams.	Fig. 9-10 <i>Harpa solidula</i> .	A. Adams.
3. <i>Hipponyx granulata</i> .	"	11-12. <i>Fossar bicarinatus</i> .	"
4. <i>Vanicoro Quoyana</i> .	"	13. <i>E. reticulatus</i> .	"
5. <i>Holcostoma setigerum</i> .	"	14. <i>Colina pupiformis</i> .	"
6. <i>Pyramidella subulata</i> .	"	15. <i>Chemnitzia varicosa</i> .	"
7-8. <i>Harpa striatula</i> .	"		

valves; *e*, muscle adducteur postérieur; *f*, le pied; *g*, les palpes labiales; *h*, les branchies.

Fig. 5. L'animal un peu grossi. *a*, lambeau du manteau; *b*, portion du muscle orbiculaire; *c*, partie du muscle antérieur; *d*, le muscle postérieur; *e*, le pied; *f*, la masse abdominale; *g*, les palpes labiales; *h*, surface interne des branchies; *i*, *j*, extrémité postérieure des branchies.

Fig. 6. Bord postérieur du manteau montrant les siphons. *a*, portion du muscle orbiculaire; *b*, *c*, bords libres du manteau recouvrant les siphons; *c*, *d*, siphons dans l'état de contraction.

Fig. 7. Ouverture du manteau vue à l'intérieur. *a*, *b*, portion du muscle orbiculaire; *c*, extrémité du muscle adducteur antérieur; *d*, ouverture palléale de grandeur naturelle.

## 6. DESCRIPTIONS OF NEW SPECIES OF SHELLS, IN THE COLLECTION OF HUGH CUMING, ESQ.

BY ARTHUR ADAMS, R.N., F.L.S. ETC.

(Mollusca, Pl. XX.)

**HARPA STRIATULA**, A. Adams. (Pl. XX. figs. 7, 8.) *H. testa ovato-ventricosa, tenui, spira brevi, apice acuto, lineis rubris et fuscis ziczaciformibus varie picta, costis longitudinalibus angustis, lævibus, postice valde aculeatis et undulatis, interstitiis striis elevatis, longitudinalibus et transversis, conspicue decussatis; apertura ampla; labio nitido, bimaculoso; labro tenui, acuto.*

*Hab.* —? Mus. Cuming.

A thin, light, ventricose species, with strongly aculeate ribs, and the interstices conspicuously striated.

**HARPA SOLIDULA**, A. Adams. (Pl. XX. figs. 9, 10.) *H. testa ovato-ventricosa, solida, crassa, nitida, spira brevi, apice acuto, roseo, fascia lata fusca transversa, et lineis rufo-fuscis undulatis varie picta, costis longitudinalibus crassis, postice aculeatis, lineis fuscis, transversis ornatis; apertura elongato-ovali; labio callo nitido, incrassato obtecto; labro crasso.*

*Hab.* —? Mus. Cuming.

This is a thick solid species, less elongated than *H. minor*, and with much thicker ribs.

**METULA CUMINGII**, A. Adams. (Pl. XX. figs. 1, 2.) *M. testa ovato-fusiforimi, spira subacuta, apice cancellato, fulvescente, castaneo-nebulosa, longitudinaliter plicata, transversim striata, striis antice distinctioribus, plicis crassis, postice crenulatis, antice evanidis; apertura angusta, utrinque coarctata, antice subcanaliculata, intus aurantiaca; labio callo crasso, circumscripto; labro margine acuto, crenulato, extus valde incrassato, intus transversim lirato.*

*Hab.* West coast of Africa. Mus. Cuming.

The discovery of this shell forms an interesting addition to the little-known genus *Metula*, which is probably an African type, and

an inhabitant of deep water. The species here described is of a much more ovate form than those already known, and is only cancellated near the apex of the spire. The circumscribed inner lip and mitri-form appearance will at once mark the genus *Metula*.

#### HOLCOSTOMA. (Nov. gen.)

Shell ovate, thin, spire short, acuminate; suture channelled; aperture obpyriform, posteriorly canaliculated, anteriorly emarginate; columella arcuated, smooth, with a posterior callosity; outer lip expanded, the margin everted, posteriorly free and ascending on the body-whorl.

This peculiar form, which we have here characterized as generic, most resembles *Planaxis* in texture and general character, but is at once distinguished from that genus by its short channelled spire, by the peculiar form of the aperture, and by the solution of the peristome at the junction of the outer lip and last whorl.

**HOLCOSTOMA SETIGERUM**, A. Adams. (Pl. XX. fig. 5.) *H. testa ovata, semipellucida, fusco-cinerea, fascia lata, lutescente, et linea angusta, rufo-fusca ornata, transversim sulcata, sulcis setis aureolis, elongatis, epidermicis, in seriebus transversis dispositis ornatis.*

*Hab.* Mauritius. Mus. Cuming.

The surface is beautifully ornamented with long golden bristles, arranged in transverse rows.

**MORUM XANTHOSTOMA**, A. Adams. *M. testa oblonga, subcylindrico-conoidali, spira depressa, complanata, nigro alboque variegata, dorso tuberculis rotundatis in seriebus quinque dispositis; apertura angusta, intus lutea; labio granuloso, expanso; labro extus incrassato, recto, antice inclinato, intus valde dentatolirato.*

*Hab.* Galapagos Archipelago. Mus. Cuming.

*Oniscia tuberculata*, Sow., var.  $\alpha$ , Reeve, Conch. Syst.

This species, which has been confounded with *M. tuberculatum* of Sowerby, figured in the 'Genera' of that author, and twice figured as a variety of that species by Mr. Reeve, is at once distinguished by its conoid form, yellow aperture, and flattened spire, characters which are constant and specific. I have used the name *Morum* as restricted to the tubercular species of the genus *Oniscia*.

**VANICORO RUGATA**, A. Adams. *V. testa orbiculato-ovata, subglobosa, crassa, albida, spira subproducta, longitudinaliter valde plicata, anfractu ultimo plicis irregularibus, longitudinalibus et liris subgranulosis, transversis, prominentibus decussata; apertura rotundato-ovali; labio arcuato, postice et antice dilatato; umbilico medioeri; canali subpatulo, arcuato.*

*Hab.* — ?

This species somewhat resembles *V. Petitiana*, Recluz, in sculpture, but is of a different form, and the spire is elevated.

VANICORO QUOYIANA, A. Adams. (Pl. XX. fig. 4.) *V. testa parva, solida, subglobosa, ovata, alba, spira parva, depressa, costis longitudinalibus, crassis, remotis, et liris elevatis, transversis valde clathrata, interstitiis transversim striatis; apertura semiovata; columella recta, postice expansa, antice subdilatata; umbilico profundo; canali subangusto, arcuato.*

*Hab.* Chusan (Benson).

A small, widely clathrated species, most nearly resembling in sculpture *V. clathrata*, Recluz, but it is very solid, and deeply pitted throughout.

PHOS LIGATUS, A. Adams. *P. testa ovato-fusiforimi, rufo-fusca, albido variegata, spira acuminata, costis subdistantibus, longitudinalibus, liris elevatis, transversis decussata; apertura ovali, antice producta; columella antice uniplicata; labro intus lirato, antice sinuato.*

*Hab.* —? Mus. Cuming.

This species is of a rust-brown colour, varied with white; it is fusiform, and the ribs appear as if crenulated, owing to the decussation of the transverse ridges.

PHOS PLICATUS, A. Adams. *P. testa ovato-turrita, spira acuminata, pallide fusca, anfractibus convexiusculis, in medio angulatis, costis crassis, longitudinalibus, et liris elevatis transversis (ad costas tuberculatis) ornata, costis, prope labrum, confertis, frequentibus; apertura ovata; columella transversim corrugato-plicata, antice fusco maculata; labro margine rufo-fusco.*

*Hab.* Eastern Seas. Mus. Cuming. Collected during the voyage of H.M.S. Samarang.

PHOS FILOSUS, A. Adams. *P. testa ovato-fusiforimi, spira acuminata, fulvescente, costis longitudinalibus, prominentibus, liris angustis, rufo-fuscis, transversis, elevatis, (ad costas nodulosis) ornata; apertura ovata, antice producta; columella uniplicata; labro simplici, intus lirato.*

*Hab.* —? Mus. Cuming.

This species resembles, in some particulars, the *Phos retecosus* of Hinds; it may possibly be the same in a young state.

PHOS FASCIATUS, A. Adams. *P. testa ovato-fusiforimi, spira acuminata, albida, rufo-variegata, anfractibus convexiusculis, fascia rufo-cinerea cinctis, ad suturas rubro cinctis, costis pliciformibus, longitudinalibus, et liris crassis, distantibus, transversis valde decussatis; apertura ovali; labio antice triplicata; labro intus albo lirato.*

*Hab.* Philippine Islands. Mus. Cuming.

A very pretty, banded species, of distinct form and sculpture.

## COLINA. (Nov. gen.)

Shell elongated, slender, acuminate, tumid in the middle, tapering at each end, whorls rounded, longitudinally ribbed, transversely striated; aperture oval, canal short, recurved; columella oblique, outer lip expanded, reflected.

*Colina macrostoma*, Hinds.—*Cerithium macrostoma*, Hinds, Zool. Voy. Sulphur.

This genus is chiefly known by its being tumid in the middle, and by its expanded outer lip.

COLINA PUPIFORMIS, A. Adams. (Pl. XX. fig. 14.) *C. testa elongato-turrita, acuminata, apice truncata, in medio tumida, pallide fulva, anfractibus convexiusculis, in medio subangulatis, suturis tuberculis moniliformibus, costis longitudinalibus, et liris transversis, elevatis, (ad costas tuberculatis) ornatis, costis in anfractu ultimo obsoletis; apertura elongato-ovali; columella obliqua, simplici; labro antice expanso.*

*Hab.* Dumaguete, Philippines. Mus. Cuming.

HIPPONYX GRANULATA, A. Adams. (Pl. XX. fig. 3.) *H. testa capuliformi, lateribus compressis, apice postico, valde declinato, rufescente, granis albis, oblongis, in seriebus longitudinalibus dispositis, ornata, transversim lineis concentricis subflexuosis striata; basi convexo, antice et postice sinuato; aperturae margine crenulato; intus rufo-fusca.*

*Hab.* West coast of Africa. Mus. Cuming.

This curiously-formed species of *Hipponyx* was attached to the spine of a *Cidaris*: it forms an oblong testaceous plate with thickened edges, and the margin of the aperture is adapted to the semi-cylindrical surface of attachment. At first sight this species has very much the appearance of a *Pedicularia*.

7. A MONOGRAPH OF PYRAMIDELLA, A GENUS OF GASTEROPODOUS MOLLUSCA, BELONGING TO THE FAMILY PYRAMIDELLIDÆ. BY ARTHUR ADAMS, F.L.S.

(Mollusca, Pl. XX.)

GENUS PYRAMIDELLA, Lamarck.

Tentacles auriform, dilated, eyes sessile at their inner bases; mantle with a short anterior siphonal fold; operculum elongate, transverse, subspiral at one end, the columellar margin sinuated.

Shell turreted, longitudinally ribbed; spire elevated, whorls angulated, numerous; aperture semioval, anteriorly subcanaliculated; columella curved, with three plaits, outer lip acute.

In this analysis the genus *Pyramidella* is restricted to the longitudinally ribbed species: the smooth ones form the genus *Obeliscus*.

Our information regarding the animal is derived from a specimen

of *Pyramidella auris-cati*, Chemn., preserved in spirits, in the Cumingian Collection.

The *Pyramidellæ*, according to our observations, conceal themselves, like the *Olivæ*, under small heaps, which they raise; and they may be traced by the trails they leave behind them in the sand.

*Pyram. corrugata*, Lam., belongs to this genus, but I am unacquainted with the species.

1. PYRAMIDELLA AURIS-CATI, Chemnitz.

*Voluta auris-cati*, Chemn. Conch.—*Pyram. plicata*, Lam.; Reeve, Conch. Syst. pl. 207. f. 5, 6.—*Voluta spiralis*, Rumph.; Wood.—*Pyram. punctata*, Wagner.—*Pyram. maculosa*, Lam.; Sow. Gen. f. 3.

2. PYRAMIDELLA GLANS, Reeve.

*Pyramidella glans*, Reeve, Proc. Zool. Soc. 1842; Conch. Syst. pl. 207. f. 1.

3. PYRAMIDELLA MAGNIFICA, Adams & Reeve.

*Pyramidella magnifica*, Adams & Reeve, Zool. Voy. Samarang, Moll. pl. 10. f. 1.

4. PYRAMIDELLA MITRALIS, A. Adams. *P. testa elongato-pyramidalis, albida, rufo-fusco variegata, anfractibus octo, convexiusculis, longitudinaliter costatis, costis prominentibus, subdistantibus, interstitiis transversim liratis; apertura obliqua, semiovata, antice subcanaliculata, columella plicis tribus, postica magna, transversa, instructa.*

*Hab.* St. Estevan, North Ilocos, Isle of Luzon, sand, low water. Mus. Cuming.

An elegant, elongated, mitriform species, with prominent longitudinal ribs.

5. PYRAMIDELLA PROPINQUA, A. Adams. *P. testa ovato-pyramidalis, spira acuminata, submucronata, albida, luteo-fusco variegata, anfractibus convexiusculis, longitudinaliter plicatis, plicis prominentibus, distantibus, interstitiis liris transversis ornatis, anfractu ultimo dorso alveolato; apertura semiovata, antice producta, subcanaliculata; columella plicis tribus instructa; labro antice subdilato.*

*Hab.* Reetea, Society Islands, on the reefs. Mus. Cuming.

Somewhat resembling *P. auris-cati*, but differing in the mucronate spire and form of the whorls.

6. PYRAMIDELLA SUBULATA, A. Adams. (Pl. XX. fig. 6.) *P. testa subulato-pyramidalis, umbilicatu, vertice mucronato, levigato, pellucido, albida, subnitida, anfractibus planiusculis, longitudinaliter costatis, costis lævibus, subobliquis, crassis, interstitiis lævibus, in medio unipunctatis; apertura obliqua, semielliptica, antice producta, subcanaliculata et eversa; columella in medio plica valida instructa.*

*Hab.* Sarsogon, province of Albay, Luzon, coarse sand, 4 fathoms. Mus. Cuming.

Remarkable for its subulate form and umbilicus : its styli-form apex is formed of transparent nuclear volutions, the first of which is placed as in the genus *Chemnitzia*.

7. PYRAMIDELLA NITIDA, A. Adams. *P. testa ovato-pyramidalis, alba, nitida, anfractibus convexiusculis, longitudinaliter costellatis, costellis angustis, rectis, subdistantibus, levibus, interstitiis subcrenulatis, anfractu ultimo basi producto; apertura obliqua, semiovata, antice subcanaliculata; columella plicis tribus, plica antica duplicata, instructa.*

*Hab.* —? Mus. Cuming.

A small, white, neatly sculptured species, with the anterior columellar fold double.

8. PYRAMIDELLA GRACILIS, A. Adams. *P. testa parva, aciculato-turrita, albida, nitida, linea fusca supra suturas ornata, anfractibus planis, longitudinaliter costatis, costis rectis, distantibus, interstitiis levibus; apertura ovali, antice subcanaliculata; labio supra calloso, in medio plica valida instructo.*

*Hab.* Loay, isle of Bohol, Philippines, hard clayey mud, 60 fathoms. Mus. Cuming.

A small, slender, nearly acicular species, somewhat resembling a *Chemnitzia*, but with all the generic characters of *Pyramidella* proper.

9. PYRAMIDELLA VARIEGATA, A. Adams. *P. testa elongato-pyramidalis, alba, rufo-fusco maculata et variegata, anfractibus septem, planiusculis, longitudinaliter costatis, costis parvis, subconfertis (interstitia æquantibus), interstitiis concinne clathratis; apertura semiovata, obliqua, antice subcanaliculata; columella triplicata; labro extus incrassato.*

*Hab.* Island of Masbate, Philippines, 7 fathoms, sandy mud. Mus. Cuming.

A pretty variegated species, with small, slightly-elevated, regular longitudinal ribs.

## 8. CONTRIBUTIONS TOWARDS A MONOGRAPH OF THE GENUS CHEMNITZIA. BY ARTHUR ADAMS, F.L.S. ETC.

(Mollusca, Pl. XX.)

### Genus CHEMNITZIA, D'Orbigny.

Animal with a broad head, ending in a narrow bilobed snout, furnished with a retractile proboscis; tentacles auriform, their inner bases connate; eyes at the inner sides of their base; fore part of foot with a prominent fold or mentum; foot short, lanceolate, operculigerous lobe with a small conical process on each side.

Shell turreted, of many whorls, longitudinally ribbed, apex of the spire with a persistent embryonic sinistral shell forming the summit; aperture oblong or subquadrate, columella toothless, or with an ob-



lique plait, nearly straight; operculum horny, pyriform, subspiral at one end.

In the present list I have restricted the genus *Chemnitzia* to those species which are longitudinally ribbed, and in which there is no tooth on the columella: when there are teeth, they belong to *Pyramidella* properly so called. The smooth species with teeth are *Obelisci*, and those without teeth *Eulimellæ*: the *Odostomiæ* are ovate, with a single tooth.

1. CHEMNITZIA ELEGANTISSIMA, Montagu.

*Turbo elegantissimus*, Mont. Test. Brit. vol. ii. p. 298. pl. 10. f. 2.—? *Turbo lacteus*, Linn.—*Turbo acutus*, Donovan.—*Helix elegantissima*, Maton & Rack.—*Turritella elegantissima*, Flem.—*Melania elegantissima*, Forbes.—*Parthenia elegantissima*, Lowe.—*Eulima elegantissima*, Macgill.—*Pyramis elegantissima*, Brown.—*Odostomia lactea*, Jeff.—*Chemnitzia elegantissima*, Phil.—*Chemn. gracilis*, Phil.—*Chemn. pusilla*, Phil.

*Hab.* British Islands and Mediterranean.

2. CHEMNITZIA FORMOSA, Jeffreys.

*Odostomia formosa*, Jeff. Ann. & Mag. Nat. Hist. ser. 2, 1848, vol. ii. p. 347.

*Hab.* Britain.

3. CHEMNITZIA RUFÆ, Philippi.

*Melania rufa*, Phil. Enum. Moll. Sicil. vol. i. p. 158. pl. 9. f. 7.—? *Turbo similis*, Mont.—*Turritella fulvocincta*, Thomson.—*Parthenia crenata*, Lowe.—*Pyramis crenatus*, Brown.—*Chemnitzia fulvocincta*, Alder.—*Odostomia rufa*, Jeffreys.

*Hab.* British Islands and Mediterranean.

4. CHEMNITZIA FENESTRATA, Forbes and Jeffreys.

*Odostomia fenestrata*, Jeff. Ann. & Mag. Nat. Hist. ser. 2. vol. ii. p. 345.

*Hab.* British Islands.

5. CHEMNITZIA SCALARIS, Philippi.

*Melania scalaris*, Phil. Enum. Moll. Sicil. vol. i. p. 157. pl. 9. f. 9.—*Odostomia scalaris*, Jeffreys.

*Hab.* British Islands and Mediterranean. Mus. Cuming.

6. CHEMNITZIA RUFESCENS, Forbes.

*Turritella indistincta*, Fleming, Brit. Anim. p. 304.—*Odostomia scalaris*, Jeffreys.

*Hab.* British Islands. Mus. Cuming.

7. CHEMNITZIA INTERRUPTA, Totten.

*Turritella interrupta*, Totten.

*Hab.* United States. Mus. Cuming.

8. CHEMNITZIA INDISTINCTA, Montagu.

*Turbo indistinctus*, Mont. Test. Brit. Suppl. p. 129.—*Turritella*

*truncata*, Flem.—*Terebra formosa*, Bean.—*Pyramis indistinctus*, Brown.—*Chemnitzia curvicostata*, Searles Wood.—*Odostomia indistincta*, Jeffreys.

*Hab.* British Islands.

9. CHEMNITZIA CLATHRATA, Jeffreys.

*Odostomia clathrata*, Jeff. Ann. & Mag. Nat. Hist. ser. 2. vol. ii. p. 345.

*Hab.* British Islands. Mus. Cuming.

10. CHEMNITZIA OBLIQUATA, Philippi.

*Chemnitzia obliquata*, Phil. Enum. Moll. Sicil. vol. ii. p. 137. tab. 24. f. 10.

*Hab.* Mediterranean.

11. CHEMNITZIA PALLIDA, Philippi.

*Chemnitzia pallida*, Phil. Enum. Moll. Sicil. vol. ii. p. 136. vol. i. p. 157. tab. 9. f. 8.—*Melania pallida*, Phil.

*Hab.* Mediterranean.

12. CHEMNITZIA DENSECOSTATA, Philippi.

*Chemnitzia densecostata*, Phil. Enum. Moll. Sicil. vol. ii. p. 137. tab. 24. f. 9.

*Hab.* Mediterranean.

13. CHEMNITZIA TURRITELLA, Pfeiffer.

*Parthenia turritella*, Pfeiff.

*Hab.* Cuba. Mus. Cuming.

14. CHEMNITZIA GRANDIS, Adams and Reeve.

*Chemnitzia grandis*, Adams & Reeve, Zool. Voy. Samarang, Moll. p. 52. tab. 11. f. 17.

*Hab.* Eastern Seas. Mus. Cuming.

15. CHEMNITZIA COSTULATA, Mighels.

*Turritella costulata*, Mighels, Bost. Journ.

*Hab.* United States.

16. CHEMNITZIA TRILINEATA, A. Adams. *C. testa aciculata, turrita, fusca, anfractibus planulatis, lineis tribus fuscis ornata, costis rectis, transversim striatis, interstitiis lineis transversis, angustatis, ornatis; apertura ovali; columella curvata.*—Long.  $\frac{1}{3}$  poll.

*Hab.* Ceylon, deep water (*Dr. Gardner*). Mus. Cuming.

The three bands and striated ribs will distinguish this species: the sculpture is much finer than in *Chemn. lirata*, from the same island.

17. CHEMNITZIA BOHOLENSIS, A. Adams. *C. testa subulato-cylindracea, pallide fusca, anfractibus rotundatis, costis flexuosis, simplicibus, subconfertis, interstitiis (sub lente) transversim striatis; apertura subquadrata; columella recta.*—Long.  $\frac{1}{3}$  poll.

*Hab.* Island of Bohol, Philippines. Mus. Cuming.

This small species is distinguished from *Chemn. cornea* by the rounded whorls and straightness of the columella: the ribs are also flexuous.

18. CHEMNITZIA LIRATA, A. Adams. *C. testa aciculata, subcylindrica, albida, anfractibus planulatis, sutura profunda, costis rectis, distantibus, lineis elevatis, transversis decussatis, interstitiis liris transversis, elevatis clathratis, anfractu ultimo sulco transverso ad partem anteriorem; apertura ovali; columella curvata.*—Long.  $\frac{1}{4}$  poll.

*Hab.* Ceylon, deep water (*Dr. Gardner*). Mus. Cuming.

The ribs are crossed with coarse raised lines, and the interstices strongly clathrated.

19. CHEMNITZIA CORNEA, A. Adams. *C. testa turrilo-lanceolata, cornea, anfractibus planulatis, costis subrectis, confertis, superne angulatis, interstitiis simplicibus; apertura ovali; columella incurvata, in medio plica obliqua instructa.*—Long.  $\frac{1}{4}$  poll.

*Hab.* Eastern Seas. Mus. Cuming.

Chiefly distinguished from *Chemn. Boholensis* by its large size and flattened whorls: the columella, moreover, is arched, and the aperture oval.

20. CHEMNITZIA CONCINNA, A. Adams. *C. testa cylindracoaciculata, gracili, alba, anfractibus rotundatis, costis rectis, simplicibus, subconfertis, interstitiis punctatis; apertura subquadrata; columella superne plicata.*—Long.  $\frac{1}{3}$  in.

*Hab.* Island of Bohol, Philippines, 60 fathoms. Mus. Cuming.

This is a small, elongated, semipellucid species, with the ribs prominent and the interstices apparently punctate, owing to spiral transverse lines.

21. CHEMNITZIA FUSCA, A. Adams. *C. testa turrilo-lanceolata, nitida, rufo-fusca, anfractibus rotundatis, superne subangulatis, sutura profunda, costis angustis, simplicibus, frequentibus, interstitiis æquantibus, interstitiis lævibus; apertura subquadrata; columella plica obliqua.*—Long.  $\frac{1}{5}$  poll.

*Hab.* Port Lincoln. Mus. Cuming.

A small, shining, red-brown species, with convex whorls and numerous thin ribs.

22. CHEMNITZIA VARICOSA, A. Adams. (Pl. XX. fig. 15.) *C. testa magna, turrilo-subulata, pallide fusca, fasciis rufis, pallidis ornata, anfractibus planulatis, varicosis, costis frequentibus, confertis, rectis, liris elevatis, transversis decussatis; interstitiis lineis elevatis, transversis clathratis; apertura subquadrata; columella recta, torquata.*—Long. 1 poll.

*Hab.* Eastern Seas. Mus. Cuming.

A large, thin, brown, decussated species, with a prominent varix on each whorl.

23. CHEMNITZIA CANDIDA, A. Adams. *C. testa turrila, subulata, candida, anfractibus convexiusculis, costis simplicibus, flexuo-*

*sis, rotundis, confertis, postice prope suturam tuberculatis, interstitiis lævissimis, anfractu ultimo subangulato, basi convexiuscula, lævi; apertura subquadrata; columella recta, superne flexuosa.*—  
Long.  $\frac{1}{2}$  poll.

*Hab.* Japan? Mus. Cuming.

An elegant white species, somewhat pyramidal in form, and with simple sculpture.

24. CHEMNITZIA ACICULARIS, A. Adams. *C. testa cylindraceuto-aciculata, alba, anfractibus planulatis, costis rectis, simplicibus, distantibus, interstitiis lævissimis; apertura subquadrata; columella recta, oblique plicata.*—Long.  $\frac{1}{5}$  in.

*Hab.* Loay, island of Bohol, hard clayey sand, 60 fathoms. Mus. Cuming.

A small acicular species, with the ribs wide apart and the interstices plain.

## 9. DESCRIPTIONS OF NEW GENERA AND SPECIES OF GASTEROPODOUS MOLLUSCA. BY ARTHUR ADAMS, R.N., F.L.S.

### 1. HINDSIA, n. g.

*Shell* ovately fusiform; spire acuminate; whorls longitudinally ribbed and cancellated; aperture ending anteriorly in a long recurved canal; inner lip thin, circumscribed, transversely corrugately plicated; outer lip grooved internally.

*Animal* with the tentacles connate at the base; with the eyes near their distal ends; foot anteriorly produced, ending behind in a simple tail without filament.

*Operculum* horny, ovately unguiform, the margin entire.

*Obs.*—This genus partakes of the characters of several recognized forms. Its animal, however, differs from that of *Triton* in the approximated tentacles, with the eyes near their ends, and the anteriorly produced foot; from that of *Nassa* in the tail not being bifurcated; and from *Phos* in the absence of the long, single, caudal filament. In its shell, it may be known from *Phos* by its recurved canal; from *Nassa* by its circumscribed inner lip and elongated canal; and from *Triton* by its want of irregular varices.

#### 1. HINDSIA ACUMINATA, Reeve, sp.

*Triton acuminatus*, Reeve, Conch. Iconica, Mon. Triton. pl. 14. fig. 54.

#### 2. HINDSIA NIVEA, Pfeiffer, sp.

*Triton niveus*, Pfeiffer; Reeve, Conch. Iconica, pl. 17. fig. 75.

#### 3. HINDSIA NASSOIDES, Reeve, sp.

*Triton nassoides*, Reeve, Conch. Iconica, Mon. Triton. pl. 20. fig. 96.

#### 4. HINDSIA CARDUUS, Reeve, sp.

*Triton carduus*, Reeve, Conch. Iconica, Mon. Triton. pl. 19. fig. 95.

5. *HINDSIA EGREGIA*, Reeve, sp.

*Triton egregius*, Reeve, Conch. Iconica, Mon. Triton. pl. 18. fig. 78.

6. *HINDSIA SUTURALIS*, A. Adams. *H. testa elongate ovata, spira producta, acuminata, alba fusco sparsim nebulosa, anfractibus rotundatis, sutura profunde canaliculata, costis longitudinalibus rotundis (in anf. ultimo novem), lineisque salientibus, transversis, in paribus dispositis, decussatis, costis infra suturas productis et angulate nodosis; columella varicosa, antice valde producta; labro intus lirato, canali ad dorsum curvato.*

*Hab.* Malacca. (Mus. Cuming.)

7. *HINDSIA NODICOSTATA*, A. Adams. *H. testa elongate ovata, acuminata, alba, sparsim fusco maculata, anfractibus rotundatis, costis longitudinalibus, rotundis, (in anfractu ultimo decem,) liris æquidistantibus, salientibus, ad costas nodulosis, lineisque elevatis, interpositis, decussatis; columella transversim corrugato-plicata; labro intus valde lirato; canali ad dorsum inclinato.*

*Hab.* —? (Mus. Cuming.)

8. *HINDSIA BITUBERCULARIS*, A. Adams. *H. testa elongate ovata, spira producta, acuminata, rufo-fusca, albocincta, et variegata, anfractibus rotundatis, sutura subcanaliculata; costis longitudinalibus, rotundis, (in anf. ult. duodecim,) lineisque elevatis, æqualibus, transversis, duabus mediis ad costas elevate tuberculatis; costis infra suturas rotundatis; columella transversim corrugata, antice producta; labro intus lirato, canali ad dorsum valde curvato.*

*Hab.* Philippines; Sorsogon. (Mus. Cuming.)

9. *HINDSIA VARICIFERA*, A. Adams. *H. testa ovato-fusiforimi, rufescente, albido-varicosa; spira acuminata, anfractibus octo, costis longitudinalibus et liris elevatis transversis (ad costas nodulosis) ornatis; lateribus varicibus spiraliter dispositis instructis; apertura ovali, antice in rostro canaliculato, producto terminata; labio transversim rugoso; labro extus marginato, intus valde sulcato.*

*Hab.* Eastern Seas. Mus. Cuming.

2. *CYCLOSTREMA*, Marryat.

1. *CYCLOSTREMA GRANULATA*, A. Adams. *C. testa orbiculato-depressa, late umbilicata, alba, costis transversis, granulatis, infimis subplanulatis, instructa; anfractu ultimo rotundato; umbilico patulo, perspectivo, callo marginato; apertura rotundata; columella sinuata; labro intus incrassato, subcrenulato.*

*Hab.* Philippines. (Mus. Cuming.)

3. *TEINOSTOMA*, n. g.

*Animal* —? *Operculum* —?

*Shell* orbicular, depressed, subspiral, polished, last whorl rounded at the periphery; umbilical region covered with a large, flat callo-

sity; aperture transverse, rounded, greatly produced and elongated, ending anteriorly in a slightly canaliculated point; inner lip smooth and callous, not emarginate or truncated, anteriorly; outer lip thin, simple, not marginated or reflected.

1. TEINOSTOMA POLITUM, A. Adams. *T. testa alba, glabra, polita, semipellucida, longitudinaliter tenuissime striata, lineis transversis tenuibus decussata.*

*Hab.* Sancta Elena, 8 fathoms (*H. C.*). Mus. Cum.

Although but a single species has yet been found, I have made a genus of this singular shell, because I was unable fairly to refer it to any known form. It has resemblances to *Cyclope*, *Camtia* and *Rotella*, but agrees with neither.

#### 4. PSEUDOLIVA, Swainson.

*Animal* — ?

*Operculum* horny, ovate, with imbricated lateral elements.

*Shell* ovate, thick, ventricose; spire short, acute; suture slightly channelled; last whorl with a spiral groove, ending in a notch at the fore-part of the outer lip; columella thickened, with a callosity at the hind part.

*Gastriidia*, Sow.—*Pseudodactylus*, Hermann.—*Eburna*, sp. Sow.—*Struthiolaria*, sp. Gray.—*Monoceros*, sp. Lea.—*Fusus*, sp. Lea.

1. PSEUDOLIVA PLUMBEEA, Chemn. sp.

*Buccinum plumbeum*, Chemn. 188. f. 1806, 1807.

2. PSEUDOLIVA ÆTHIOPS, Reeve, sp.

*Buccinum æthiops*, Reeve, Conch. Iconica, Mon. Buccinum.

3. PSEUDOLIVA SEPIMENTA, Rang, sp.

*Buccinum sepimentum*, Rang, Mag. de Zool. 1832, pl. 18; Kiener, Mon. pl. 18. f. 66.

4. PSEUDOLIVA STRIATULA, A. Adams. *P. testa ovata, solida, spira brevi, anfractibus rotundatis, longitudinaliter subplicata, transversim creberrime striata, striis confertis; epidermide fusco tecta; apertura ovali; labio lævi subplanulato; labro intus lævi, antice subemarginato.*

*Hab.* Africa. (Mus. Cuming.)

5. PSEUDOLIVA ZEBRINA, A. Adams. *P. testa ovata, solida, spira brevi, acuta, albida, lineis longitudinalibus rufo-fuscis ornata; anfractu ultimo superne nodoso-plicato, transversim sulcato; apertura ovali; labio lævi incurvato; labro intus sulcato.*

*Hab.* Africa. (Mus. Cuming.)

6. PSEUDOLIVA AUSTRALIS, Sowerby.

*Eburna australis*, Sow. (Mus. Cuming.)

7. PSEUDOLIVA (STRUTHIOLARIA) MONOCEROS, Gray (mihi ignota).

8. *PSEUDOLIVA KELLETTII*, A. Adams. *P. testa ovata, solida, subperforata, epidermide fusco villosa tecta; spira prominula, anfractibus rotundatis, sutura canaliculata, anfractu ultimo transversim sulcato, sulcis postice evanidis, antice valde distinctis, unica profunda, in dente sulcato, ad labrum, terminata; apertura ovali, columella postice callosa, antice flexuosa, producta; labro postice inflexo, antice sinuato-dentato.*

*Hab.* — ?

I am indebted for this species to Professor Edward Forbes, who, although himself describing the shells collected during the Voyage of the Herald and Pandora, insisted upon my describing this species when he heard I was preparing a monograph of the genus.

#### 5. PYRGULA, Crist and Jans.

*PYRGULA CLATHRATA*, A. Adams. *P. testa turrata, acuminata, alba; anfractibus decem, planulatis, cingulis duabus transversis, costellisque elevatis, longitudinalibus, regulariter clathratis, sutura canaliculata; anfractu ultimo angulato, cingulis transversis quatuor, basi concavo, cingula spirali circa regionem umbilicalem; apertura subquadrata; columella recta, antice subtruncata, rotundata.*

*Hab.* Barelayon, Philippines, H.C. North-east Australia, Jukes.

This is a beautiful species of a small group belonging to the *Melaniadæ*, of which *Melania helvetica*, Desh. is the type.

#### PINAXIA, n. g.

*Shell* conical; spire short acute. Aperture ovate-oblong, emarginate anteriorly. Inner lip flattened, with several transverse plaits in the middle. Outer lip acute, grooved internally.

*Animal* unknown.

*Operculum* — ?

1. *PINAXIA CORONATA*, A. Adams. *P. testa ovato-conica, aurantiaca, albo variegata, cingulis transversis elevatis albo-articulatis, interstitiis longitudinaliter striatis ornata, anfractu ultimo plicis longitudinalibus instructo et postice nodoso-coronato.*

*Hab.* Philippines. (Mus. Cuming.)

Mr. Cuming collected three specimens of this curious genus during his researches among the Philippines; in form they resemble *Imbricaria*, in the flattened columella *Purpura*, and in the possession of plaits *Turbinellus*.

#### ONISCIA, Sowerby.

1. *ONISCIA GRANDIS*, A. Adams. *O. testa subtrigono-ovata, spira brevi, acuta, anfractibus convexis, albida, sparsim fusco variegata, costis transversis nodosis lineisque longitudinalibus regulariter cancellata, longitudinaliter plicata, plicis tenuibus, lamelliformibus, æquidistantibus; labio late expanso, granulato; labro valde reflexo, plicis dentiformibus, æqualibus, æquidistantibus, munito.*

*Hab.* China Seas. Mus. Cuming.

A large species, resembling in general appearance *O. cancellata*, but distinguished by the spread and flattened inner lip, the longitudinal elevated plicæ, and the regular plication of the outer lip, which wants the intermediate plicæ of *O. cancellata*.

10. A MONOGRAPH OF FOSSAR, A GENUS OF GASTEROPODOUS MOLLUSCA. BY ARTHUR ADAMS, F.L.S., R.N.

(Mollusca, Pl. XX.)

FOSSAR, Gray.

*Animal* with the head proboscidiiform, the tentacles filiform, with a head lobe at their inner bases, the eyes sessile on their outer bases, foot moderate, and rounded at both ends.

*Operculum* horny, oval, subspiral.

*Shell* semiglobose, umbilicated; aperture entire, semilunar; inner lip edentulate, never callous; umbilicus open; outer lip acute, smooth within.

*Fossar*, Gray, 1840.—*Fossarus*, Philippi, 1841.—*Natica* (*fossar*), Adanson.—*Maravignia*, Aradas and Mag.—*Natica* (animal, not shell), Lam., Rang.—*Delphinula*, sp. Phil.—*Rissoa*, sp. Scacchi.—*Nerta*, sp. Brocchi.—*Purpura*, sp. Sow.—*Sigaretus*, sp. Serres.—*Naticella*, Munster.—*Turbo*, sp. Michaud.—*Helix*, sp. Linn.

Mr. Gray first indicated and named this genus, but to Dr. Philippi is due its proper diagnosis and detailed description.

1. FOSSAR ADANSONII, Philippi, En. Moll. Sicil. vol. ii. p. 147. tab. 25. fig. 1.

*Natica Fossar*, Adans.—*Helix ambigua*, Linn.—*Turbo costatus*, Scacchi.—*Rissoa lucullana*, Scac.—*Delphinula costata*, Phil.

*Hab.* Senegal. Mus. Cum.

2. FOSSAR COSTATUS, Brocc. p. 300. t. 11. f. 11.

*Nerita costata*, Brocc.—*Delphinula costata*, Bron.—*Purpura costata*, Sow.—*Sigaretus costatus*, Serres.

*Hab.* Sicily, Borneo, China Sea. Mus. Cum.

3. FOSSAR CLATHRATUS, Phil. En. Moll. Sicil. vol. ii. p. 148. tab. 25. f. 5.

*Hab.* Mediterranean. Mus. Cum.

4. FOSSAR MINUTUS, Michaud, Bull. Soc. Linn. de Bord. vol. ii. p. 122. f. 7, 8, 9.

*Hab.* — ?

5. FOSSAR RETICULATUS, A. Adams. (Pl. XX. fig. 13.) *F. testa elevate conica, spira producta, late umbilicata, anf. rotundatis, ultimo subevoluto, sutura profunda, canaliculata, cingulatis, cingulis numerosis transversis, lineis elevatis longitudinalibus eleganter reticulatis; umbilico valde profundo.*

*Hab.* Singapore (*H. C.*). Mus. Cum.



6. FOSSAR TROCHLEARIS, A. Adams. *F. testa elevato-conica, spira acuminata, subperforata, anfractibus cingulatis, cingulis transversis distantibus (in anfractu ultimo quinque), interstitiis lineis elevatis transversis instructis rima umbilicali angusta.*

*Hab.* Calapan, in the Philippines (*H.C.*). Mus. Cum.

7. FOSSAR VARIEGATUS, A. Adams. *F. testa ovata, late umbilicata, spira brevi acuminata, albida, fusco variegata, cingulis transversis elevatis subgranulosis, ornata, interstitiis planis, umbilico patulo.*

*Hab.* Eastern Seas. Mus. Cuming.

8. FOSSAR CUMINGII, A. Adams. *F. testa ovato-rotunda; umbilicata, alba, spira brevissima; costis transversis elevatis, interstitiis transversim striatis, ornata; apertura semi-ovata, expansa; labro margine fimbriato, ejus angulo postice producto, libero.*

*Hab.* — ? Mus. Cuming.

9. FOSSAR BICARINATUS, A. Adams. (Mollusca, Pl. XX. figs. 11, 12.) *F. testa turbinato-depressa, perforata, subevoluta, pallide fusca, spira planiuscula, apice acuto, producto, longitudinaliter substriata, carinis duabus prominentibus, interstitiis transversim striatis ornata; anfractu ultimo basi carinulis duabus circa regionem umbilicalem; apertura semiovata, peritremate soluto, labio recto, antice dilatato, sulco transverso, labro biangulato.*

*Hab.* Red Sea. Mus. Cuming.

An elegant, partially unrolled species, with a flat spire and two prominent parallel keels.

## 11. A MONOGRAPH OF UMBONIUM (ROTELLA), A GENUS OF TROCHIDÆ. BY ARTHUR ADAMS, F.L.S.

### Genus UMBONIUM, Link.

Animal with the lateral fringe of the foot distinct, with three filaments on each side; on the front of the right side near the base of the tentacles produced into a fleshy lobe; right tentacle free, with the eye-peduncle compressed, and bearing a rudimentary eye; left eye-peduncle cylindrical, with a distinct eye, and furnished with an expansion or frontal lobe, which is folded on itself and fringed at its free margin (*Gray*). Operculum horny, orbicular, multispiral.

Shell orbicular, depressed, porcellanous; whorls smooth, polished; umbilical region covered with a large prominent callosity; aperture small, transverse; inner lip rounded, ending in a simple point, outer lip acute.

*Globulus*, Schumacher, not J. Sowerby.—*Helicina*, Lamk. (olim).—*Pitonellus*, Montfort.—*Rotella*, Lamk.

#### 1. UMBONIUM VESTIARIUM, Linnæus.

*Trochus vestiarius*, Linn. Syst. Nat. ed. 12. p. 1230.—*Rotella lineo-*

*lata*, Lam. Hist. ed. Desh. vol. ix. p. 117; Kien. Mon. *Rotella*, pl. 1. fig. 1a, 1f.—*Rotella rosea*, Lam., var., Hist. ed. Desh. vol. ix. p. 117.  
*Hab.* East Indies.

2. UMBONIUM MONILIFERUM, Lamarck.

*Rotella monilifera*, Lam. Hist. ed. Desh. vol. ix. p. 118; Gualt. Test. t. 65. fig. e; Kien. Mon. *Rotella*, pl. 2. fig. 4, 4a.  
*Hab.* East Indies.

3. UMBONIUM SUTURALE, Lamarck.

*Rotella suturalis*, Lam. Hist. ed. Desh. vol. ix. p. 117; Kien. Mon. *Rotella*, pl. 2. fig. 3.

4. UMBONIUM JAVANICUM, Lamarck.

*Rotella Javanica*, Lam. Hist. ed. Desh. vol. ix. p. 118; Kien. Mon. *Rotella*, pl. 3. fig. 4.  
*Hab.* East Indies.

5. UMBONIUM GIGANTEUM, Lesson.

*Rotella gigantea*, Lesson, Ill. de Zool. vi. (no. 17.) pl. 17; Kien. Mon. *Rotella*, pl. 3. fig. 7.—*Rotella aucta*, Sow. Genera, 17.  
*Hab.* Japan.

6. UMBONIUM COSTATUM, Valenciennes.

*Rotella costata*, Valenc.; Kien. Mon. *Rotella*, pl. 2. fig. 5.  
*Hab.* Korean Archipelago (*A. Adams*).

7. UMBONIUM ELEGANS, Beck.

*Rotella elegans*, Beck; Kien. Mon. *Rotella*, pl. 3. fig. 6.  
*Hab.* ———?

8. UMBONIUM SAGITTATUM, Hinds.

*Rotella sagittata*, Hinds, Zool. Voy. Sulph.  
*Hab.* West Indies.

9. UMBONIUM CONICUM, Adams & Reeve.

*Rotella conica*, Adams & Reeve, Zool. Voy. Samarang.

10. UMBONIUM CHALCONOTUM, A. Adams. *U. testa orbiculato-conica, imperforata; spira obtusiuscula, anfractibus quinque, planulatis, nitidis, (sub lente) transversim creberrime striolatis, ultimo, ad peripheriam, valde sulcato, quasi bicarinato, suturis submarginatis; lurida, cupreo-nitente, infima facie planiuscula, striata; callo mediocri umbilicum obtegente; apertura ovali.*

*Hab.* Island of Ticao, sandy mud, 6 fathoms (*H. C.*). Mus. Cuming.

11. UMBONIUM DEPRESSUM, A. Adams. *U. testa orbiculato-depressa, imperforata, laevi, nitida, anfractibus planiusculis; albida, lineis irregularibus, longitudinalibus, undulatis, fuscis, confertis, maculisque ornata; infima facie callo albo, convexo, punctulato, umbilicum obtegente, instructa.*

*Hab.* Borneo, on the sands. Mus. Cuming.

12. **UMBONIUM ZELANDICUM**, A. Adams. *U. testa orbiculato-conoidea, imperforata; spira elata, anfractibus quinque, excavatis, transversim striatis, ultimo subangulato, ad peripheriam sulcato, suturis anguste marginatis; albida, cupreo-nitente, lineis fuscis, undulatis, longitudinalibus, radiatim picta; infima facie planiuscula, striata, albida, cingulo cinereo circa umbilicum ornata; callo medioeri umbilicum obtegente, externe sulco spirali impresso; apertura ovali; labio incrassato.*  
*Hab.* New Zealand. Mus. Cuming.

Subgenus **ETHALIA**.

Shell orbicular, turbinately depressed; whorls smooth or transversely striated, convex, rounded at the periphery; umbilicus partly closed by a callous deposit.

13. **UMBONIUM GUAMENSE**, Quoy & Gaimard.

*Rotella Guamensis*, Quoy & Gaim. Voy. Astrol.; Kien. Mon. *Rotella*, pl. 2. fig. 2.

*Hab.* Island of Guam (Quoy & Gaimard); Philippine Islands (Cuming). Mus. Cuming.

14. **UMBONIUM STRIOLATUM**, A. Adams. *U. testa discoidea, subglobulosa, subperforata, transversim striata, anfractibus quinque, convexiusculis; lineis transversis, angustissimis, albido-articulatis ornata; infima facie lævi, ad peripheriam rufofusco maculata, cingulo rufo circa regionem umbilicalem ornata, callo albo, parvo, umbilicum partim obtegente munita; apertura ovali.*

*Hab.* Island of Borneo. Mus. Cuming.

12. A MONOGRAPH OF ISANDA, A NEW GENUS OF TROCHIDÆ, ALLIED TO UMBONIUM. BY ARTHUR ADAMS, F.L.S. ETC.

Genus **ISANDA**, H. & A. Adams.

Shell porcellanous, orbiculately conoidal, polished; aperture subquadrate, inner lip straight, forming an angle with the outer lip; umbilicus open, perspective, the margin crenulated.

In this genus, which is founded on three undescribed species of shells, the umbilicus is open, and not covered by a callous deposit, as in *Umbonium*, and the margin is crenulated; the texture of the shell is solid and porcellanous, and not thin and nacreous, as in *Margarita*.

- ISANDA CORONATA**, A. Adams. *I. testa orbiculato-conica, umbilicata, lævi, nitida; spira obtusa, anfractibus quinque, planis, superne angulatis, et concinne crenulatis; sutura canaliculata; lineis albidis, transversis, et maculis fuscis, in seriebus transversis dispositis, et, ad suturas, fascia alba, lata, ornata; aper-*

*tura subquadrata; umbilico aperto, perspectivo, margine valde crenulato; labio recto, subreflexo; labro postice angulato.*

*Hab.* South Australia. Mus. Cuming.

A beautiful, small, turbinate species, with the whorls elegantly coronated and with their upper part white.

*ISANDA LEPIDA*, A. Adams. *I. testa turbinato-conica, albido-cinerea, polita, umbilicata; spira elatiuscula, anfractibus rotundis, suturis crenulatis; anfractu ultimo ad peripheriam subangulato; umbilico perspectivo, peromphalo, crenato; apertura quadrato-orbiculari; labio rectiusculo.*

*Hab.* Australia. Mus. Cuming.

This is a small species of a somewhat conical form, with the sutures of the whorls crenated, and of an ashy white colour.

*ISANDA SULCIFERA*, A. Adams. *I. testa orbiculato-conoidea, umbilicata, nitida; spira elatiuscula; anfractibus quinque subplanulatis, postice angulatis, et sulco impressis, supremis ad suturas crenulatis et angulatis, ultimo transversim sulcato, ad peripheriam carina filiformi cincto; albida, lineis longitudinalibus, angulatis et undulatis, confertis, ornata; umbilico aperto, perspectivo, intus sulcato, margine crenato; apertura subquadrata; labio subrecto, crenulato.*

*Hab.* Philippines.

In this species there is a conspicuous and deep groove round the upper part of the whorls near the suture.

*ISANDA PULCHELLA*, A. Adams. *I. testa orbiculata, depresso umbilicata, nitida; spira depressa, anfractibus quinque, convexiusculis, superne vix angulatis, lævibus, inferne transversis, sulcatis, ad suturas corrugatis; albida, lineolis fuscis, confertis, longitudinalibus, undulatis, maculisque fuscis, radiatim dispositis pulcherrime picta; umbilico patulo, perspectivo, margine crenulato; apertura transversa, subquadrata; labio subcalloso.*

*Hab.* Puerto Galero, Island of Mindaro, on the sands (*H. C.*). Mus. Cuming.

The shell in this species is depressed and shaped as in *Umbonium*, but the umbilicus is entirely open, and the margin crenulated.

### 13. OBSERVATIONS ON SOME RARE INDIAN ANIMALS.

By Dr. J. E. GRAY, F.R.S., V.P.Z.S.

(Mammalia, Pl. XXXV.—XXXVIII.)

Mr. Hodgson having sent to the India House a specimen, with its skull, of his Tibetan Badger, *Taxidea leucurus* (Journ. Asiatic Soc. Bengal, xvi. 763, 1847), I have compared the skull with those of the various Badgers in the Museum collection. I find that all the Old World Badgers (*Meles*) have a moderate-sized triangular flesh-tooth,





and a very large four-sided oblong tubercular grinder in the upper jaw, which is rather longer than broad; and the skull is rounded behind. The nose of the Tibetan Badger, or 'Tumpha (*Meles leucurus*), is rather more tapering and more compressed than that of the European Badger (*Meles taxus*), which it most resembles. The Japanese Badger (*Meles ankuma*) differs from both in having a much shorter skull, and a short, rather broad nose.

The American Badgers (*Taxidea*, Waterhouse) have a very large triangular flesh-tooth, and an equally triangular tubercular grinder in the upper jaw, the latter not exceeding the flesh-tooth in size; the skull is also much broader, more depressed, and truncated behind. Of this genus I only know a single species, *T. labradoria*. The *Taxidea leucurus* of Hodgson is exceedingly like *Arctonyx collaris*, but the fur of the back is longer and more flaccid, and the chin and throat are black, as well as the belly and legs, which is not the case in that species.

Mr. Hodgson, on my informing him that the skull was very different from the *Taxidea* of North America, proposed that it should be formed into a genus under the name of *Pseudomeles*.

The collection of the East India Company also contains skins of the following species, recently presented by Mr. Hodgson, which deserve notice, as several of them are now transmitted by him for the first time.

#### 1. HELICTIS NEPAULENSIS.

Dark grey; the forehead and nape black; the nuchal streak long, broad, pure white.

Differs from *H. Chinensis* in the blackness of the nape, and the distinctness and depth of the colours.

#### 2. MUSTELA STRIGODORSA, Hodgson MSS.

Dark chestnut-brown, with a very narrow streak of a few longer white hairs down the centre of the back; the chin, throat and chest, and a narrow streak down the centre of the belly, pale yellow, becoming whiter in the older specimens; tail slender, about half the length of the body.

#### 3. PARADOXURUS QUADRISCIPTUS, Hodgson MSS.

I cannot see any difference between these specimens and the *P. Musanga*.

#### 4. POËPHAGUS GRUNNIENS. The YAK. (Mammalia, Pl. XXXV.)

The skin of a *young calf* represented in the accompanying plate is black, with a tuft of long pale yellow hair across the crown of the head; the under side of the body, and the tail, are covered with rather long pale yellow hair; the dorsal streak, which is broader over the withers and rump, and interrupted on the middle of the back, is white.

5. *BUDORCAS TAXICOLOR*. (Pl. XXXVI.)  
A splendid adult male.
6. *PORCULA SALVONIA*. (Pl. XXXVII.)
7. *FELIS MACROSELLOIDES*. (Pl. XXXVIII.)

14. ON THE EGGS OF *OTOGYPS* AND *PROSTHEMADERA*.  
BY H. F. WALTER, ESQ.

(Aves, Pl. LVI.)

Mr. H. F. Walter exhibited specimens of the eggs of *Otogyps* and *Prothemadera novæ seelandiæ* from his own collection.

The egg of *Otogyps* (Plate LVI. fig. 1) was obtained by Herr Ludwig Parreyss of Vienna from North Africa, and will therefore be that of *O. nubicus* (H. Smith; Bp. Consp. p. 10), if that species is really distinct from the southern *O. auricularis*. The long diameter of this egg is 3·9, the short diameter 2·8 inches.

The egg of the Parson-bird or Tui, *Prothemadera novæ seelandiæ* (Gm.) (Plate LVI. fig. 2), was taken in New Zealand in 1852 by Dr. White. Its colouring is somewhat different from that of the other Honey-eaters with which we are acquainted, not presenting the usual rich red ground-colour which is the general characteristic of the eggs of that family of birds. The long diameter of this egg is 1·0, the short diameter 0·75 inch.





IBEX BOAS TAXIDERM. *Hesperia*

M. W. Bennett Eng.

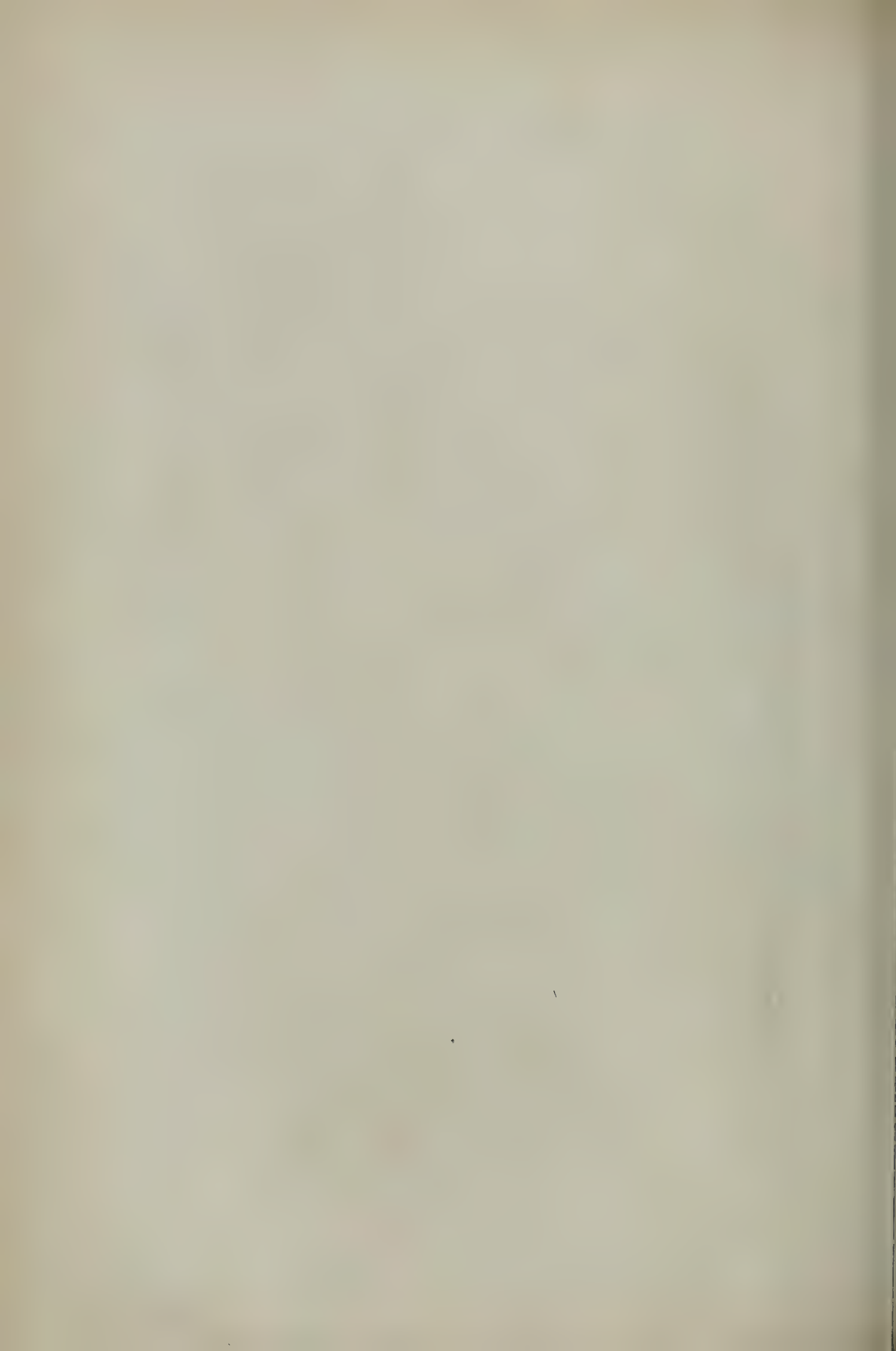




M. & N. Hanhart Imp.

PORCULA SALVANIA, Hodgson.

J. Wolf Ill.



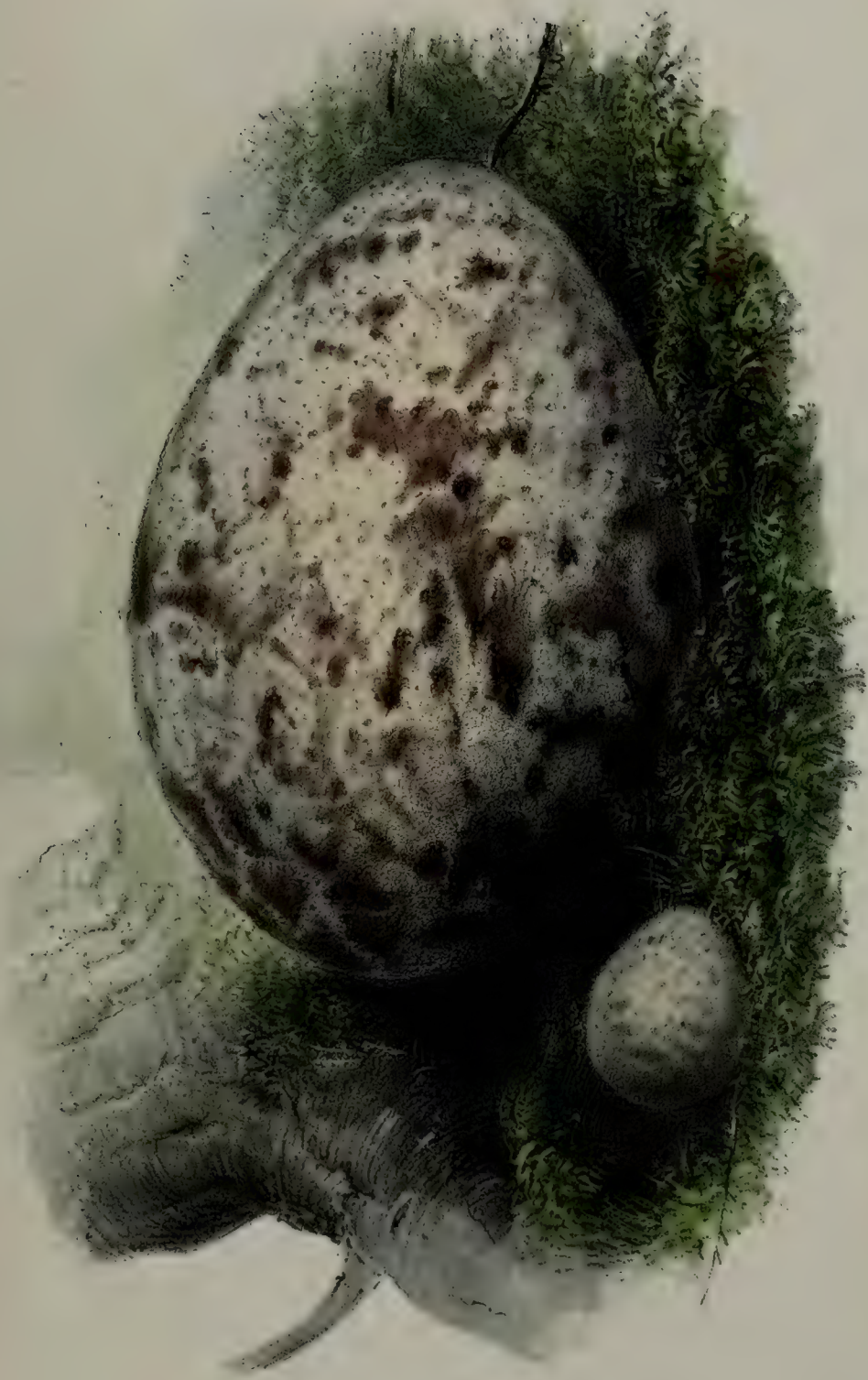


M & N. Hanhart, Imp.

FELIS MACROSCELCIDES. Hodgson.

J. Wolf, lith.





J Wolf. lith.

1. OTOGYPS AURITUS.
2. PROTHEMADERA NOVÆ-ZEALANDIÆ.

M & N. Hanhart, Imp.





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PROCEEDINGS  
OF THE  
ZOOLOGICAL SOCIETY OF LONDON.

January 10, 1854.

H. F. Walter, Esq., in the Chair.

The following papers were read:—

1. NOTES ON THE HABITS OF INDIAN BIRDS.—PART I.  
BY LIEUT. BURGESS.

Order I. RAPTORES.

Family VULTURIDÆ.

Genus VULTUR.

VULTUR PONDICERIANUS. BLACK VULTURE.

This Vulture, as far as I have had opportunities of observing it, is much more common in the Deccan than either the large (*Vultur Indicus*) or the small brown Vulture (*Vultur Bengalensis*). I have never, however, seen more than two or three together, and these generally in the neighbourhood of the low ranges of hills which intersect that part of the country. As this bird has doubtless been already figured, it is not my purpose in these notes to enter into any further description of it, but merely to state what I have observed of its habits, food, manner and time of nesting, with any other information regarding it which I may have gained by actual investigation, or learned from credible sources. In its habits the Black Vulture, I should certainly say, is not gregarious; I do not remember to have seen more than four or five together, and then it has been for the purpose of partaking of a social meal. It flies in circles with the wings extended, apparently without motion, and their tips pointed upwards, the legs being stretched out beneath the tail. The food of this Vulture consists of decaying animal substances; one which I shot drinking in a

stream disgorged the entire leg of a cat. They breed during the months of February and March. In my notes taken at the time, I find the following:—"March 7. Found to-day, on the top of rather a low peepul (species of banian tree), the nest of the Black Vulture, on which one of the old birds was sitting. The nest, which was very large, was built of small sticks; it contained one egg. On the same tree a pair of the Black-headed Ibis (*Tantalus melanocephalus*, Lath.) had also built their nest; it contained four white eggs, very similar to those of the Pelican Ibis (*T. leucocephalus*)."—"March 19. Shot a male Black Vulture sitting on one egg; the nest was about a yard in circumference, built on the top of a thorny tree; it was composed of the thorny branches and other sticks below it. Among the thorny twigs forming the nest were two small nests, belonging to birds of the Passerine order, containing young." In both these cases only one egg was found, of a pure white colour,  $3\frac{8}{10}$  inches in length by  $3\frac{1}{20}$  inches in width. In a third also, only one egg was found. The natives say that the Black Vulture lays two eggs, containing a male and female bird, but these facts seem opposed to such a statement.

#### Genus NEOPHRON.

##### NEOPHRON PERCNOPTERUS. EGYPTIAN VULTURE.

This is the most common and most efficient scavenger to be found in the cantonments of India. The last-mentioned Vulture feeds only, I believe, on decaying animal substances, but this bird usurps the place of the night-cart, removing the filth that would otherwise cause pestilence under a tropical sun. Any one who has been in India must have observed these disgusting-looking birds, from the young in its black to the mature in their white plumage, stalking with awkward gait in troops about the plains which generally surround an Indian military station, and no one can mistake the errand on which they are there. They breed during the months of February, March, and probably April. I have found their nests most frequently during the month of March. The nest, of a large size, is composed of sticks; in one case it was lined with rags and other refuse. It is generally built on tall trees, especially the banian. I found one on a ledge of rock on the side of a steep hill. The eggs are in general two in number, varying very much in colour, from white spotted with brown to a universal rust or liver-brown, darkest at the large end;  $2\frac{7}{10}$  inches in length by  $2\frac{1}{20}$  inches in breadth. One nest contained two eggs, one nearly white, the other equally brown. The young when first hatched are covered with a whitish-brown down, the down being whitest on the oldest. I give a description of a young bird brought to me on the 15th of April: "Beak and naked skin under the chin and about the gape and beak, dull greenish lead-colour, that over the eyes and on the forehead, lead. Irides dark; a white spot of down on the crown of the head; feathers on the neck and upper part of the body tipped with ferruginous; back upper tail-coverts dull white, tipped with fawn; tail-feathers dull whitish fawn; lesser coverts whitish, tipped with ferruginous brown; quills greenish-black; legs

and feet dull lead-colour; middle toe very long." In notes taken at the time, I find an entry that I saw an Egyptian Vulture on her nest as late as the 4th of May.

### Family FALCONIDÆ.

#### Subfamily AQUILINÆ.

##### Genus AQUILA.

The eggs of the Eagle forwarded with these notes are those, I believe, of *Aquila fusca*, Gray (identical I imagine with *Aquila nævia*, Gould), because that bird is by far the most common of the family in that part of Western India situated above the Ghauts. In the hilly portions of the country this bird may be seen perched on some elevated point of rock, sitting motionless, basking in the rays of the early sun; in the plains a solitary tree is almost sure to have one of them on its topmost branch. After the sun has been up some two or three hours, it commences its search for food, consisting chiefly, I believe, of hares. A Mharatta of high family, who had a very considerable knowledge of the habits of the birds of the country, told me that when an eagle discovers a hare in her form, which is generally in the grass at the foot of a bush, she will strike the bush with her wings to drive her victim out, before striking at it. That a large portion of this eagle's food consists of hares, I can attest, having found their skulls and bones in a nest. The nest, of a large size and composed of sticks, is built on tall trees; it contains two eggs,  $2\frac{7}{10}$  inches in length and  $2\frac{1}{10}$  inches in breadth, of a white ground, sprinkled over with reddish spots. They commence breeding as early as the latter end of November, and their eggs may be found up to the beginning of April.

#### Subfamily CYMINDINÆ.

##### Genus ELANUS.

##### ELANUS MELANOPTERUS.

I was never able to procure the nest and eggs of this handsome little Kite, but A. F. Davidson, Esq., of the Revenue Survey, a great sportsman and accurate observer of birds, told me that he obtained a young bird of this species and two eggs. The eggs were of a pure white colour, and about as large as the egg of the Indian Blue Pigeon. They were laid during the month of December. The stomach of one of these birds contained a rat.

From the colour of the eggs, and the manner in which the radiating hairs between the eye and beak meet over the ridge of the beak, it has struck me that this bird approaches nearer to the family of the Harriers than that of the Kites. Dr. Jerdon, in his notes, also says that "it frequents long grass and grain fields, over which it may be seen to hover like the Kestrel."

## Subfamily BUTEONINÆ.

## Genus MILVUS.

## MILVUS AFFINIS. COMMON INDIAN KITE.

This is one of the most common, if not the commonest bird of prey to be found in India. Over every cantonment, town and village they are to be seen, sweeping round in graceful circles, ever and anon making a swoop, as their quick eye descries some offal thrown out from cook-room or hut, seizing it in their claws without alighting, and making their repast on the wing. So sudden and bold is their dash, that in two cases which occurred amongst my own servants, a Kite pounced on the contents of a plate which a servant was bringing from the cook-room, and was off almost before the man knew who the thief was, and whence he came. On another occasion the theft was not confined to meat, for either a silver fork or spoon was thus whipped up, and the thief, after being chased by the affrighted servant, and scared by his shouting, dropped it in a neighbouring garden. The poor servant doubtless thought that a Kite would never be suspected of having committed the theft. The food of this bird consists of every kind of animal refuse; and in providing two such efficient scavengers as this Kite and the Egyptian Vulture, in a country where all animal matter begins at once to decay and would form a constant source of pestilence, the hand of an all-wise and gracious God is clearly visible. The common Indian Kite builds its nest on tall trees, during the months of February, March and April. I saw a bird building as late as the 18th of April. The nest is composed of sticks, and contains as many as three eggs. I never found more than that number. The eggs are  $2\frac{3}{10}$  inches in length and  $1\frac{1}{2}\frac{3}{10}$  inch in breadth, varying a good deal in colour, but generally of a whitish ground, more or less blotched and spotted with reddish-brown; in some the markings are chiefly at the large end, in others at the small.

## MILVUS PONDICERIANUS. BRAHMINY KITE.

The eggs of this fishing Kite I have never seen, but I transcribe a note of its nest and young: "Feb. 27, 1850. Found the nest and two young birds of a species of fishing Hawk; the young ones were covered with whitish down, that on the back of a pale brown colour. The nest, formed of sticks and lined with mud, was built on a tall tree on the banks of the Bheema River, where these birds are common." As far as my observations go, I should say that this bird is decidedly a fishing Hawk. I have never seen it but either sailing along the course of a river or in the vicinity of water.

## Genus PERNIS.

## • PERNIS CRISTATA ?

I have not been able to ascertain anything relating to the nesting or the eggs of this Buzzard, but I was informed by a Mhar who saw it, of a curious habit of this bird; that when about to feed on a

comb, these birds spread their tail, and with it drive off the bees before attacking it. This was told me by a villager in a portion of thickly-wooded country where these birds are common.

### Genus BUTEO.

#### BUTEO TEESA, Gray.

This is one of the commonest Hawks in the Deccan. Its plaintive cry may be heard in almost every tope of trees. It is easily distinguished by its white throat and silvery-white eyes. Dr. Jerdon, in his 'Catalogue of Birds of India,' says: "It frequents topes as well as open country, where it may be seen seated on low trees and bushes, an ant-hill, or the banks of rivers, whence it pounces on mice, lizards, small snakes, and various large insects and their larvæ." In the stomach of one of these birds I found a small snake entire, said to be of a very venomous kind, and a large locust; in that of another the remains of a full-grown rock quail. I am not aware whether the eye of all or most of the *Falconidæ* is strengthened by a ring of bony plates, as is the eye of the Golden Eagle, but it is the case in this bird. The Teesa breeds during the months of March, April and May. The nest is composed of sticks laid on the forked branches of the babool, mango and other trees. It sometimes contains as many as four eggs,  $1\frac{8}{10}$  inch in length and  $1\frac{5}{10}$  inch in breadth, white, spotted and dashed with brown.

I am very much inclined to think that the Teesa migrates during the monsoon, and returns to the Deccan about September, as I used not to hear its peculiar cry from the end of May to the middle of that month. Mr. Elliot, in his notes, mentions that *Circus cyaneus* and *Falco peregrinus* also migrate during the hot season and monsoon. I never noticed any of the Harriers about until September or October. The name of the Teesa in Mharata is 'Surudmar,' and in Hindoostani, 'Girgootmar,' meaning in both languages, I believe, 'the destroyer of lizards.' This name also applies, or is applied, to the Kestrel Black-wing (*Elanus melanopterus*), and Harriers.

The eggs sent with the others, I believe are those of one of the Harrier family, but of which I am unable to say. Most probably they belong to *Circus cyaneus* or *Circus Montagui*, as these are the most common. *Circus cyaneus* (*C. pallidus*, Sykes) is exceedingly common in the Deccan. In the grass lands amongst the hills, where quails abound, I have observed these birds beating particular spots of ground in the most regular manner, and when shooting, have found such spots to yield the best sport. I was told by a gentleman of the Civil Service, an ardent sportsman, that when shooting near Belgaum, many of the quails have been carried off by the Harriers before the beaters had time to secure them. They will fly over a plot of grass land, scanning every foot of it, and in the most careful manner beat the hedges and strips of bush and grass between the fields. They feed on lizards, mice, and small birds. I have been told that these birds remain to breed in the Deccan.

## Subfamily FALCONINÆ.

## Genus FALCO.

## FALCO LUGGUR.

Of the true Falcons, the Luggur is the most abundant on the tablelands of Western India. The top of a tall tree in the midst of cultivation is its favourite resort. It breeds during the months of March, April, and probably May, making its nest, like that of all the birds of prey, of twigs and sticks on a tall tree, and lays four eggs,  $1\frac{9}{10}$  inch in length, and  $1\frac{6}{10}$  inch in breadth, of a reddish-white ground, spotted with two shades of reddish-brown, and thickly mottled with red-brown at the larger end; some are of a more yellow colour. As the plumage of the young birds has been already noted, any further description is unnecessary. In the stomachs of two birds of this species I found the remains of lizards.

## FALCO CHICQUERA.

This handsome little Falcon is also common in Western India. It is a bird of rapid flight, and peculiarly active and energetic in all its movements. The natives told me that it is a great enemy to the sparrows, killing numbers of them. Its shrill scream quite betokens its fierce character. Like the last-named Falcon it lays four eggs, smaller in size, of a yellow-brown, mottled with a darker shade of the same colour, particularly at the larger end; in length  $1\frac{4}{10}$  inch, and nearly  $1\frac{4}{10}$  inch in breadth. It breeds during the months of February and March.

## FALCO TINNUNCULUS. KESTRIL.

I have not been able as yet to discover whether this bird breeds in the Deccan or not.

## 2. DESCRIPTION OF A NEW SPECIES OF CYPRIS.

BY W. BAIRD, M.D., F.L.S.

In a collection of shells procured some years ago by the British Museum, from M. Parreyss of Vienna, were two species under the name of *Nuculina*, the *N. donaciformis* and *N. triangularis*. Neither of these, however, belong to the Mollusca, both species being Entomostracans, and belonging to two totally different genera. The former I have described and figured in the 'Proceedings of the Zoological Society' for 1849, (p. 89), under the name of *Estheria donaciformis*; the latter is the one now under consideration. It belongs to the genus *Cypris*, and I propose naming it *C. triangularis*. It may be characterized thus:—

## CYPRIS TRIANGULARIS.

Shell or carapace of a triangular form, smooth and shining, of a transparent green colour; anterior and posterior extremities nearly of equal size; centre of carapace very gibbous; left valve overlapping the other at the lower margin.

*Hab.* Abeid, Kordofan. Mus. Brit.



3. MONOGRAPHS OF ELLOBIUM AND MELAMPUS, TWO GENERA  
OF PULMONIFEROUS MOLLUSCA. BY H. AND A. ADAMS.

Genus ELLOBIUM, Bolten.

Head ending in a snout; tentacles subcylindrical; eyes situated at their inner bases. Pulmoniferous; respiring free air. Living on the land.

Shell oblong-oval, covered with a brown epidermis; spire short, obtuse; aperture narrow, elongated; inner lip with 2-3 large anterior plaits; outer lip thickened internally.

*Otis*, Humph., not Linn.—*Auricula*, Lamk., not Klein.—*Auriculus*, Montf.—*Marsyas*, Oken.—*Geovula*, Swains.

The animals of this genus resemble in their habits those of *Pythia*, Bolten (*Scarabus*, Montfort), living in salt marshes and mangrove-swamps.

1. ELLOBIUM AURIS-MIDÆ, Linnæus.

*Voluta auris-Midæ*, Linn. Syst. Nat. ed. 12, p. 1186.—*Helix auris-Midæ*, Müll. Verm. p. 118. no. 311.—*Bulimus auris-Midæ*, Brug. Dict. no. 76.—*Auricula Midæ*, Lamk. Hist. viii. p. 323.

2. ELLOBIUM AURIS-JUDÆ, Linnæus.

*Voluta auris-Judæ*, Linn. Syst. Nat. ed. 12, p. 1187.—*Helix auris-Judæ*, Müll. Hist. Verm. p. 109. no. 310.—*Bulimus auris-Judæ*, Brug. Dict. no. 78.—*Auricula Judæ*, Lamk. Hist. viii. p. 324.—*Auric. protracta*, Beck, Ind. (var.).—*Auric. densata*, Beck, Ind. (var.).—*Auric. reticulata*, Anton, Cat. (var.).

3. ELLOBIUM SUBNODOSUM, Metcalfe.

*Auricula subnodosa*, Metc. Proc. Zool. Soc. 1851; Ann. and Mag. Nat. Hist. ser. 2. p. 67 (1853).

4. ELLOBIUM POLITUM, Metcalfe.

*Auricula polita*, Metc. Proc. Zool. Soc. 1851; Ann. and Mag. Nat. Hist. ser. 2, p. 67 (1853).

5. ELLOBIUM SHEEPMAKERI, Petit.

*Auricula Sheepmakeri*, Petit, Journ. de Conch. i. p. 404.

6. ELLOBIUM GRANULINUM, Mühlfeldt.

*Auricula granulina*, Mühlf. Anton, Verzeich.—*Auric. stagnalis*, Petit, Guér. Mag. 1835, p. 23.—*Auric. papillifera*, Küst. Chemn. Conch. Cab. (Auric.) p. 25. tab. 3. f. 9, 10.

7. ELLOBIUM TORNATELLIFORME, Petit.

*Auricula tornatelliformis*, Petit, Ann. Nat. Hist. xii. p. 437; Proc. Zool. Soc., Dec. 1842.

8. ELLOBIUM PALLIDUM, Sowerby.

*Auricula pallida*, Sow., Beechey's Voy. (Moll.) t. 38. f. 27; Küst. Chemn. Conch. Cab. (Auric.) p. 51. tab. 7. f. 8.

9. **ELLOBIUM HELVACEUM**, Philippi.  
*Auricula helvacea*, Phil. Zeitschr. für Malacozool.
10. **ELLOBIUM ELONGATUM**, Parreyss.  
*Auricula elongata*, Parr. in litt.; Küst. Chemn. Conch. Cab. (Auric.) p. 53. tab. 8. f. 6-8.
11. **ELLOBIUM SUBULA**, Quoy & Gaimard.  
*Auricula subula*, Quoy & Gaim. Voy. Astrol. ii. pl. 13. f. 39, 40.
12. **ELLOBIUM CEYLANICUM**, H. & A. Adams. *E. testa oblongo-ovata, cornea, subdiaphana, longitudinaliter strigosa, transversim tenuissime corrugato-striata; anfractibus supremis punctatis, pallide fuscis; spira elevatiuscula, apice obtuso; apertura oblonga; columella oblique biplicata; labro intus incrassato, postice sinuato.*  
*Hab.* Ceylon (*Dr. Gardner*). Mus. Cuming.
13. **ELLOBIUM SIMPLEX**, H. & A. Adams. *E. testa oblongo-ovali, crassiuscula, pallide fusca, nitida, spira elata, obtusa, anfractibus convexiusculis, postice decussatim striatis, ad suturas marginatis, ultimo longitudinaliter strigato; apertura oblonga; columella triplicata, plica postica evanida; labro vix incrassato, postice vix sinuato.*  
*Hab.* —? Mus. Cuming.
14. **ELLOBIUM INCRASSATUM**, H. & A. Adams. *E. testa elongato-ovata, crassa, lævi, nitida, alba; spira elata, anfractibus quinque, convexiusculis; apertura oblonga, angusta; columella biplicata; labro incrassato, postice tenui et valde sinuato.*  
*Hab.* Loon, island of Bohol. Mus. Cuming.
15. **ELLOBIUM SEMIPLICATUM**, H. & A. Adams. *E. testa subulato-cylindracea, spira obtusa, apice eroso, olivacea, lævi, nitida, anfractibus planis, longitudinaliter plicatis, ultimo postice plicato, antice lævigato; apertura angusta, postice coarctata; columella triplicata, plica postica valida, spirali; labro acuto, simplice, postice coarctato.*  
*Hab.* Singapore (*Lieut. Taylor*). Mus. Cuming.
16. **ELLOBIUM PUSILLUM**, H. & A. Adams. *E. testa subulato-ovata, alba, nitida, lævi, spira producta, apice acuto; apertura oblonga, angusta; columella subcallosa, triplicata, plica postica valida, anterioribus parvis, obliquis; labro margine subincrassato, postice vix sinuato.*  
*Hab.* Bais, island of Negros. Mus. Cuming.
17. **ELLOBIUM ORYZA**, H. & A. Adams. *E. testa elongato-ovali, alba, solida, nitida; spira elata, acuta; anfractu ultimo fascia alba, opaca cincto; apertura angusta; columella triplicata, plica postica valida, anterioribus parvulis, subobsoletis; labro intus incrassato vix bilirato, postice subsinuoso.*  
*Hab.* Island of Annaa, Society Islands, under loose coral, high water. Mus. Cuming.

18. *ELLOBIUM OPARICUM*, H. & A. Adams. *E. testa subulato-ovali, gracili, lævi, fulva; spira elata, apice acuto; apertura angusta; columella antice vix truncata, triplicata, plica postica valida, duabus anterioribus subobsoletis, obliquis; labro acuto, simplice.*

*Hab.* Island of Opara, Society Islands. Mus. Cuming.

19. *ELLOBIUM SEMISCUPTUM*, H. & A. Adams. *E. testa oblongo-ovata, subfusiformi, spira elata, obtusiuscula, pallide fusca; anfractibus convexiusculis, superne lineis granulosis, confertis, transversis, inferne lævibus, anfractu ultimo superne granuloso, inferne (sub lente) minutissime granulato; apertura oblonga, antice dilatata; columella biplicata, plica postica valida, spirali; labro antice intus marginato, postice tenui, subsinuato.*

*Hab.* Gambier's Islands, South Seas. Mus. Cuming.

### Genus MELAMPUS, Montfort.

Foot bifid posteriorly.

Shell ovato-conical, spire short, obtuse; aperture narrow, linear; inner lip with several transverse plaits; outer lip acute, internally plicate.

*Pedipes*, Blainv., not Adans.—*Melampa*, Schweigg.—*Conovula*, Féruss.—*Conovulus*, Lamk.—*Conovulum*, Sow.

#### 1. MELAMPUS COFFEUS, Linnæus.

*Voluta coffea*, Linn. Syst. Nat. ed. 12, p. 1187.—*Voluta minuta*, Gmel. p. 3436. no. 6.—*Bulimus coniformis*, Brug. Dict. no. 72.—*Conovulus coniformis*, Encycl. pl. 459. f. 2, A. B.—*Conovula coniformis*, Bowd. Elem. of Conch. t. 6. f. 25.—*Tornatella coniformis*, Blainv. Malac. t. 27 bis, f. 4.—*Auricula coniformis*, Féruss. Prod. p. 739.—*Conovulus coffeus*, Beck, Ind. Moll.—*Auricula coniformis*, Pfeiff. Wieg. Arch. 1840, Heft 3. p. 251. no. 39.

#### 2. MELAMPUS UMLAASIANUS, Krauss.

*Auricula Umlaasiana*, Krauss, in litt.; Küst. Chemn. Conch. Cab. (Auriculacea) p. 43. tab. 6. f. 16–20.

#### 3. MELAMPUS FUSCUS, Philippi.

*Conovulus fuscus*, Phil. in litt.—*Auricula fusca*, Küst. Chemn. Neuer Conch. Cab. (Auriculacea) p. 38. tab. 5. f. 18–20.—*Auric. leucodon*, Beck; Adams & Reeve, Zool. Voy. Samarang.

#### 4. MELAMPUS FLAVUS, Gmelin.

*Voluta flava*, Gmel. Syst. Nat. p. 3436. no. 5.—*Auricula monile*, Quoy & Gaim. Voy. Astrol. ii. p. 166. tab. 13. f. 28–33.—*Voluta flava*, Dillw. Cat. i. p. 506. no. 17.—*Bulimus monile*, Brug. Encycl. Méth. no. 70.

#### 5. MELAMPUS TABOGENSIS, C. B. Adams.

*Auricula Tabogensis*, C. B. Adams, Shells of Panama, p. 211. no. 314.

## 6. MELAMPUS BIDENTATUS, Say.

*Melampus bidentatus*, Say, Amer. Conch.—*Auricula cornea*, Desh. Encycl. Méth. Vers, p. 90. no. 9; Lamk. Hist. ed. Desh. tom. viii. p. 339. no. 28.

## 7. MELAMPUS PYRIFORMIS, Petit.

*Auricula pyriformis*, Petit, Proc. Zool. Soc. 1842; Ann. & Mag. Nat. Hist. xii. p. 437.

## 8. MELAMPUS PALLESCENS, Sowerby.

*Melampus pallescens*, Sow. Zool. Beechey's Voy. tab. 38. f. 11.—*Auricula pallescens*, Küst. Chemn. Neuer Conch. Cab. (Auriculacea) p. 51. tab. 5. f. 11.

## 9. MELAMPUS PHILIPPII, Küster.

*Auricula Philippii*, Küst. Chemn. Conch. Cab. (Auriculacea) p. 50. tab. 7. f. 23–25.—*Auricula Ceylanica*, Petit, Proc. Zool. Soc. 1842, p. 42.

## 10. MELAMPUS CORONULUS, C. B. Adams.

*Auricula coronulus*, C. B. Adams, Contrib. to Conch.

## 11. MELAMPUS BOREALIS, Conrad.

## 12. MELAMPUS LIVIDUS, Linnæus.

*Voluta livida*, Linn. Syst. Nat. ed. 12, p. 1187.—*Auricula livida*, Desh. Encycl. Méth. Vers, p. 91. no. 10.

## 13. MELAMPUS ATER, Mühlfeldt.

*Conovulus ater*, Mühlf. in litt.; Anton, Verzeich. p. 48. no. 1773.—*Auricula caffra*, Küst. Chemn. Conch. Cab. (Auriculacea) tab. 5. f. 6–8.—? *Conovulus Sciari*, Lesson.

## 14. MELAMPUS LUTEUS, Quoy &amp; Gaimard.

*Auricula lutea*, Quoy & Gaim. Voy. Astrol., Zool. ii. p. 163. pl. 13. f. 25–27.—*Conovulus luteus*, Anton.—*Auricula Columbiensis*, Mühlf.

## Subgenus TRALIA, Gray.

Foot posteriorly acute, entire.

Shell ovate, smooth; spire elevated; aperture narrow, linear, dilated anteriorly; inner lip usually with three oblique plaits; outer lip acute, sinuated posteriorly, internally with one or more transverse elevated ridges.

## 15. MELAMPUS (TRALIA) PUSILLUS, Gmelin.

*Voluta pusilla*, Gmel. p. 3436. no. 7.—*Bulimus ovulus*, Brug. Dict. no. 71.—*Auricula ovula*, Féruss. Prod. p. 104. no. 21.—*Auric. nitens*, Lamk. viii. 333.—*Conovulus nitens*, Cuv.—*Voluta triplicata*, Donovan. B. S. t. 138.—*Auric. leucodonta*, Nuttall, MSS.

## 16. MELAMPUS (TRALIA) PANAMENSIS, C. B. Adams.

*Auricula Panamensis*, C. B. Adams, Shells of Panama, p. 209. no. 312.

## 17. MELAMPUS (TRALIA) OLIVULA, Moricand.

*Auricula olivula*, Moric. Mém. de la Soc. de Genève, viii. ; Küst. Chemn. Conch. Cab. (Auriculacea) p. 33. tab. 3. f. 11-13.—*Auric. oliva*, D'Orb. Moll. p. 189. t. 12. f. 8-10.

## 18. MELAMPUS (TRALIA) INFREQUENS, C. B. Adams.

*Auricula infrequens*, C. B. Adams, Shells of Panama, p. 209. no. 311.

## 19. MELAMPUS (TRALIA) EXIGUUS, Lowe.

*Melampus exiguus*, Lowe, Mon. Melamp. Zool. Journ. v. p. 291. pl. 13. f. 6, 7.

## 20. MELAMPUS (TRALIA) PELLUCIDUS, Cooper.

*Conovulus pellucidus*, Cooper, MSS. Mus. Brit.

## 21. MELAMPUS (TRALIA) FASCIATUS, Chemnitz.

*Voluta fasciata*, Chemn. ix. pt. 2. p. 44. tab. 121. f. 1041.—*Auricula fasciata*, Desh. Encycl. Méth. Vers, p. 90. no. 8.—*Conovulus fasciatus*, Anton, Verzeich. p. 48. no. 1774.

## 22. MELAMPUS (TRALIA) KÜSTERI, Krauss.

*Auricula Küsteri*, Krauss ; Küst. Chemn. Neuer Conch. Cab. (Auriculacea) p. 34. tab. 4. f. 10-13.—*Auric. monile*, Reeve, Conch. Syst. t. 187. f. 8.

## 23. MELAMPUS (TRALIA) MAURUS, Mühlfeldt.

*Conovulus maurus*, Mühlf. in litt. ; Anton, Verzeich. p. 48. no. 1778 ; Küst. Conch. Cab. (Auriculacea) tab. 5. f. 12-14.

## 24. MELAMPUS (TRALIA) ELONGATUS, Petit.

*Conovulus elongatus*, Petit, Mag. de Zool. ser. 2. vii. pl. 138.

## 25. MELAMPUS (TRALIA) ANGIOSTOMA, Deshayes.

*Auricula angiosstoma*, Desh. Encycl. Méth. Vers, ii. p. 92. no. 16 ; Mag. de Zool. 1830, i. tab. 11.

## 26. MELAMPUS (TRALIA) FLORIDIANUS, Shuttleworth.

*Auricula Floridiana*, Shuttleworth.

## 27. MELAMPUS (TRALIA) CINGULATUS, Pfeiffer.

*Auricula cingulata*, Pfeiff. Wieg. Archiv, 1840, p. 251. no. 40 ; Küst. Chemn. (Auriculacea) tab. 6. f. 4, 5, 6 ?—*Auric. oliva*, D'Orb. Hist. de l'île de Cuba, t. 13. f. 8-10.

## 28. MELAMPUS (TRALIA) GLOBULUS, Férussac.

*Conovulus globulus*, Féruss. ; D'Orb. Voy. dans l'Amér. Mérid. ; Mag. de Zool. 1833.

## 29. MELAMPUS (TRALIA) PULCHELLUS, Petit.

*Auricula pulchella*, Petit, Proc. Zool. Soc. 1842 ; Ann. & Mag. Nat. Hist. xii. p. 437.

## 30. MELAMPUS (TRALIA) GRANIFER, Mousson.

*Auricula granifera*, Mouss. Land- und Süßwass. Moll. v. Java, p. 46. pl. 5. f. 9.

## 31. MELAMPUS (TRALIA) COSTATUS, Quoy &amp; Gaimard.

*Auricula costata*, Quoy & Gaim. Voy. Astrol. ii. p. 173. pl. 13. f. 43-46; Küst. Chemn. Conch. Cab. (Auriculacea) tab. 7. f. 5-7.

32. MELAMPUS OBOVATUS, H. & A. Adams. *M. testa obversim conica, basi attenuata, spira obtusa, nitidiuscula, corneo-fusca, sæpius fasciis inæqualibus transversis ornata, longitudinaliter strigosa; anfractu ultimo basi transversim striato, postice gibboso; apertura angusta; columella biplicata, plica postica valida, transversa; labro acuto, intus bilirato.*

*Hab.* Liberia (Dr. Parkins). Mus. Cuming.

33. MELAMPUS ZEALANDICUS, H. & A. Adams. *M. testa ovata, cornea, castanea, subpellucida, nitida, longitudinaliter strigosa; spira elevatiuscula, apice acuto; anfractibus planis, ultimo postice subgibboso; apertura angusta; columella biplicata, plica postica validiori; labro margine acuto, intus valde lirato, liris multis albidis.*

*Hab.* New Zealand. Mus. Cuming.

34. MELAMPUS COMMODUS, H. & A. Adams. *M. testa oblongo-ovata, castanea, nitidiuscula; spira elata, acuta; anfractibus longitudinaliter plicatis, ultimo lævigato, vel substrigato; apertura angusta, oblonga; columella antice uniplicata; labro acuto, intus liris tribus elevatis, transversis instructo.*

*Hab.* New Zealand. Mus. Cuming.

35. MELAMPUS LIBERIANUS, H. & A. Adams. *M. testa oblonga, ovato-conica, spira brevi, olivaceo-fusca, fasciis pallidis, transversis, inæqualibus ornata, lævigata, nitidiuscula, postice et antice transversim striata; apertura angusta, in medio coarctata; columella biplicata, plica antica subobsoleta; labro acuto, in medio inflexo, intus multilirato.*

*Hab.* Liberia, W. Africa (Dr. Parkins). Mus. Cuming.

36. MELAMPUS COSTELLARIS, H. & A. Adams. *M. testa ovata, brunnea, longitudinaliter costata; spira subelevata, apice obtuso; anfractu ultimo postice vix angulato; apertura oblonga; columella biplicata, plica postica transversa, valida; labro acuto, antice incrassato, albido-marginato, intus lævi.*

*Hab.* New Zealand (Mr. Strange). Mus. Cuming.

37. MELAMPUS (TRALIA) NITIDULUS, H. & A. Adams. *M. testa elongato-ovali, lævissima, fusca, spira elata; apertura angusta, elongata; columella triplicata, plica postica callosa; labro margine vix incrassato, intus unilamellato.*

*Hab.* Island of Bohol. Mus. Cuming.

38. MELAMPUS (TRALIA) MITRALIS, H. & A. Adams. *M. testa elongato-ovali, spira producta, apice obtuso, livido, pallide castanea, fusco-fasciata, lævi, nitida; anfractibus supremis longitudinaliter plicatis, ultimo basi subgibboso; apertura angusta; columella antice uniplicata, plica spirali; labro acuto.*

*Hab.* —? Mus. Cuming.

39. MELAMPUS (TRALIA) EXARATUS, H. & A. Adams. *M. testa ovata, fusca, spira elata, apice obtuso; anfractibus planis, transversim liratis, longitudinaliter decussatim striatis; apertura oblonga, in medio subdilatata; columella biplicata, plicis validis, postica spirali; labro margine acuto, in medio subangulato.*

*Hab.* Catbalonga, island of Samaar. Mus. Cuming.

4. DESCRIPTIONS OF NEW SPECIES OF SHELLS, FROM  
THE COLLECTION OF H. CUMING, ESQ.  
BY M. G. P. DESHAYES.

1. BATISSA INSIGNIS, Desh. *B. testa ovato-orbiculari, oblique inæquilaterali, tumida, tenui, intus violacea, epidermide nigro-virescente, nitida vestita, in latere antico late sulcata, sulcis remotis, ad lunulam sæpius inter se conjungentibus; umbonibus prominentibus, erosis, antice inclinatis; cardine angusto, obliquo, inæqualiter tridentato; dentibus in valva sinistra angustioribus, mediano bifido, in dextra crassioribus, simplicibus; dentibus lateralibus angustis, postico valvæ sinistrae laminato, apice regulariter serrulato.*

*Hab.* Calamang, Island of Luzon, Philippines.

2. BATISSA TRIQUETRA, Desh. *B. testa trigona, obliqua, inæquilaterali, cuneiformi, lævigata, epidermide nigra vestita, depressiuscula; margine antico rectilineo, postico valde convexo, dilatato, inferiore vix arcuato; umbonibus profunde erosis; lamina cardinali angusta, dentibus cardinalibus tribus, inæqualibus, brevibus, subcanaliculatis; lateralibus elongatis, angustis, subæqualibus, antico cardine adnato, postico remoto; valvis tenuibus, intus albis.*

*Hab.* Philippine Islands; Australia.

3. BATISSA PRODUCTA, Desh. *B. testa suborbiculari, valde obliqua, inæquilaterali, depressiuscula, crassa, solida, transversim late et obsolete plicata, vel subundulata, epidermide polita, atrovirescente vestita, intus superne alba, postice inferneque violacea; umbonibus magnis, productis, antice obliquatis; cardine lato, crasso, valde obliquo, inæqualiter tridentato, dentibus majoribus superne obsolete canaliculatis, lateralibus validis, antico crasso, obsolete rugoso vel striato, postico compressiore et paulo longiore; latere antico brevi, rotundato, postico dilatato.*

*Hab.* Philippine Islands.

4. **BATISSA LENTICULARIS**, Desh. *B. testa orbiculari, tantum alta quam lata, æquilaterali, subsquatina, lenticulari, turgidula, epidermide nitidissima, atro-virescente vestita, lineis longitudinalibus, tenuissimis, obsolete irregulariter in medio radiata, intus albo-violacea; latere antico posticum æquante et æqualiter obtuso; cardine angusto, tridentato; dentibus majoribus superne canaliculatis, mediano valvæ dextræ majori; dentibus lateralibus subæqualibus, antico crassiore, tenue rugoso, postico laminato, obsolete striato; umbonibus parvis, acutis, integris, oppositis.*  
*Hab.* Philippine Islands (Cuming).
5. **BATISSA CORBICULOIDES**, Desh. *B. testa oblique triangulari, inæquilaterali, tumida, crassa, solida, epidermide squalide viridi-fuscescente vestita, transversim inæqualiter sulcata et striata; umbonibus productis, erosis, obliquis; lunula angulo obtusissimo notata, magna, ovato-lanceolata, lævigata; area posticali rugis irregularibus, obsolete, divaricatis corrugata; cardine lato, crasso, inæqualiter tridentato, dentibus compressis, divergentibus, simplicibus, dentibus lateralibus sicut in Corbiculis elongatis, angustis, tenue striatis, antico paulo brevioribus; valvis intus albis, in margine postico violaceo-maculatis.*  
*Hab.* New Guinea (Jukes).
6. **BATISSA HUMEROSA**, Desh. *B. testa trigona, inæquilaterali, cuneiformi, superne gibbosa; transversim inæqualiter striato-sulcata, epidermide nigrescente vestita, intus alba, in medio pallide purpureo tincta; latere antico rectilineo, valde declivi, inferne obtuse angulato, margine dorsali leviter convexo, declivi, margine inferiore parum arcuato, rugis aliquibus in latere postico divergentibus; umbonibus profunde erosis; cardine lato, tridentato, dentibus inæqualibus, simplicibus, medianis majoribus; dente laterali antico cardine adnato, irregulariter corrugato, postico longiore, angustiore, striis brevibus notato.*  
*Hab.* New Guinea.
7. **BATISSA MEGADESMA**, Desh. *B. testa ovato-transversa, magna, crassa, ponderosa, inæquilaterali, antice brevi, obtusa, rotundata, fusco-nigrescente late et irregulariter transversim undulata, antice sulculosa; latere supero et postico sulco obsolete decurrente distincto; ligamento maximo, elongato, cylindræo, in medio carinato; umbonibus erosis; valvis intus candidissimis; cardine crasso, in utraque valva tridentato, dente posticali valvæ sinistræ angusto, elongato, dentibus obliquis; dente laterali antico cardine proximo, irregulariter sulcato, posticali angusto, cardine remotissimo.*  
*Hab.* — ?
8. **BATISSA ATRATA**, Desh. *B. testa orbiculari, sublenticulari, æquilaterali, transversim obsolete striato-sulcata, intus extus-*



que aterrime violacea; umbonibus brevibus, minimis, oppositis, approximatis, apice decorticatis; valvis tenuibus; cardine angusto, inæqualiter tridentato; dente antico in utraque valva angusto; dentibus lateralibus brevioribus, angustis, oblique sulcato-rugosis; impressione pallii postice leviter inflexa.

Hab. — ?

9. CYRENA INQUINATA, Desh. *C. testa orbiculato-trigona, tur-gida, inflata, subcordiformi, inæquilaterali, epidermide squalide fusca, fuliginosa, dense et irregulariter lamellosa vestita; umbonibus tumidis, profunde erosis; margine superiore antico declivi, rectilineo, postico convexiusculo, inferiore subsemicirculari; valvis solidiusculis, intus albis; cardine angusto, arcuato, tridentato; dentibus inæqualibus, brevibus, obliquis, parallelis, angustis, parum prominentibus, duobus bifidis; dentibus lateralibus minimis, brevibus, antico prominentiore; ligamento brevi, partim infosso; impressione pallii prope marginem decurrente.*

Hab. China (rivers).

10. CYRENA FALLAX, Desh. *C. testa ovato-trigona, plus minusve tumida, crassa, solida, in medio ventricosa, epidermide squalide fuscescente, ferruginea, in junioribus flavescente vestita, transversim irregulariter striata; latere antico brevior, superne fere rectilineo, declivi, rotundato, inferiore margine postico superiore recto, declivi; extremitate postica sensim attenuata, breviter truncata; area plana, lævigata, angulo obtusissimo circumscripta; cardine satis lato, dentibus tribus inæqualibus, in valva dextra crassioribus, majoribus, bilobatis; dente laterali antico compresso, brevi, postico longiore.*

Long. 81 mill., haut. 69, épais. 48.

Hab. Philippine Islands; Australia (Cuning).

11. CYRENA CONJUNCTA, Desh. *C. testa orbiculato-trigona, crassa, solida, ventricosa, subæquilaterali, utroque latere obtusa, rotundata, inferne regulariter arcuata, margine antero-supérieure declivi, rectilineo, postico convexo, epidermide viridi, fuscescente, transversim regulariter tenue lamellosa vestita; umbonibus tumidis, obliquis, brevibus, obtusis, erosis; ligamento brevi, angusto, immerso; valvis intus albis; dentibus cardinalibus tribus inæqualibus, postico valvæ dextræ latiore, inæqualiter bifido, mediano eminentiore, acuto, profunde bilobato; dentibus lateralibus parvis, distantibus, antico eminentiore, conico, compresso.*

Hab. — ?

12. CYRENA LAUTA, Desh. *C. testa ovato-transversa, subtri-gona, inæquilaterali, superne inferneque convexiuscula, postice subtruncata, antice valde declivi, rectilinea, crassa, solida, in medio convexa; epidermide fusca, nitida, tenue irregulariter striata; umbonibus depressis, brevibus, apice acutis, approximatis, sæpius erosis; lamina cardinali lata, dentibus cardina-*

*libus tribus, obliquis, angustis, elongatis, approximatis, fere parallelis, superne canaliculatis, antico valvæ dextræ dimidia parte brevior; dentibus lateralibus subæqualibus, postico valde remoto.*

*Hab.* — ?

13. CYRENA SIMILIS, Desh. *C. testa ovato-trigona, oblonga, inæquilaterali, in medio tumida, transversim distanter striata, epidermide fusciscente, ferrugineo-nitente vestita, umbonibus minimis decorticatis; latere antico brevi, rotundato, obtuso, latere postico superne convexiusculo, declivi, sensim attenuato, extremitate breviter subtruncato; dentibus primariis tribus, duobus subæqualibus, apice inæqualiter bifidis; dentibus lateralibus minimis, antico valvæ sinistræ conico, depressiusculo, postico longiore.*

Long. 77 mill., haut. 65, épais. 39.

*Hab.* Manilla.

14. CYRENA AFFINIS, Desh. *C. testa oviformi, ovato-transversa, inæquilaterali, ventricosa, crassa, solida, epidermide tenui, fusco-ochracea, lævigata induta, transversim inæqualiter striata, subcontabulata; umbonibus minimis, depressis, integris, vix prominentibus; latere antico brevi, late rotundato, postico attenuato, obtuso; cardine angusto, dentibus tribus angustis, duobus majoribus profunde canaliculatis, dentibus lateralibus æqualibus, antico acutiussculo, postico valde remoto.*

Long. 54 mill., haut. 45, épais. 32.

*Hab.* Australia (Cuming).

15. CYRENA OVIFORMIS, Desh. *C. testa ovato-transversa, crassa, solida, turgida, inæquilaterali, transversim irregulariter incrementis striata, area lunulaque lævigatis, epidermide tenui, brunnea vel flavescens vestita, antice brevi, declivi, obtusa, postice magis attenuata; latere superiore postico convexiusculo; umbonibus brevibus, depressis, apice acuminatis, sæpius erosis; ligamento angusto, elongato, vix immerso; valvis profundis, intus albis; cardine angusto, arcuato, inæqualiter tridentato; dentibus divaricatis, duobus in utraque valva inæqualibus, apice bilobatis; dente laterali antico, conico, crasso, prominente, compresso, dente postico longiore, angustiore.*

Long. 77 mill., haut. 61, épais. 44.

*Hab.* Basilan, Philippine Islands; Port Essington.

16. CYRENA VENTRICOSA, Desh. *C. testa ovato-transversa, sub-trigona, inæquilaterali, in senioribus crassa, solida, ponderosa, in medio turgida, epidermide squalide fusciscente aut rubiginosa, tenui, inferne posticeque breviter lamellosa et atrata vestita, intus candidissima, antice superne arcuato-declivi, obtusa, postice sensim attenuata, truncata, margine superiore dorsali rectilineo, declivi; umbonibus parvis, parum obliquis; cardine angusto, tridentato, dentibus inæqualibus, majoribus*

*bifidis, subparallelis, dentibus lateralibus crassis, compressiusculis, postico paulo longiore; ligamento angusto, partim immerso; area posticali planata.*

Long. 91 mill., alt. 80, lat. 50.

*Hab.* Philippine Islands; Australia.

17. *CYRENA MACTROIDES*, Desh. *C. testa ovato-transversa, depressa, inæquilaterali, epidermide viridi-glaucescente et transversim striato-laminata vestita, postice lamellis appressis, imbricatis; umbonibus brevibus, obliquis, approximatis, integris; latere antico brevi, late obtuso, postico superne declivi, attenuato, subangulato; cardine angusto; dentibus cardinalibus compressis, majoribus apice profunde furcatis; lateralibus compressis, brevibus, in fossulis angustis profundisque valvulæ dextræ receptis; ligamento angusto, semi-immerso.*

Long. 98 mill., alt. 78, lat. 42.

*Hab.* — ?

18. *CYRENA DECIPIENS*, Desh. *C. testa ovato-subtrigona, tumida, inæquilaterali, parum crassa, epidermide viridi, lamellis transversis, distantibus, crispis instructa vestita, lamellis postice multo numerosioribus, appressis, erectis, umbonibus minimis, decorticatis, vix obliquis; latere antico brevior, superne convexiusculo, declivi, inferne obtuso, postico rotundato; valvis intus albis; cardine angusto, tridentato, dentibus majoribus profunde furcatis, lateralibus angustis, compressis, antico valvæ sinistræ furcato, fossula valvæ dextræ antice marginata.*

Long. 86 mill., alt. 75, lat. 43.

*Hab.* — ?

19. *CYRENA PALLIDA*, Desh. *C. testa orbiculato-trigona, magna, solida, in medio convexa, inæquilaterali, antice posticeque declivi, rectilinea, extremitate posticali attenuata, brevi, truncata, epidermide tenui, luteo-flavescente, late striata vestita; umbonibus parvis, obtusis; area posticali plana, angulo obtusissimo circumscripta; ligamento brevi, angusto, partim immerso; valvis solidis, intus candidissimis; cardine angusto, tridentato, dentibus angustis, duobus in utraque valva bifidis, dente laterali antico crasso, conico, compresso, posticali elongato, compresso.*

*Hab.* — ?

20. *CYRENA DIVARICATA*, Desh. *C. testa ovato-subcirculari, inæquilaterali, tumida, crassa, solida, epidermide fusco-nigrescente vestita, transversim inæqualiter obsolete striata, rugis undulatis, irregularibus, in latere postico divergentibus; umbonibus obliquis, profunde erosis; latere antico brevior, superne recto, declivi, in medio attenuato, subangulato, latere postico lato, dilatato, obtuse subtruncato; lamina cardinali lata, plana; dentibus primariis tribus inæqualibus, angustissimis, in valva*

*sinistra duobus latis, valde pediculatis, in valva dextra profunde canaliculatis; dentibus lateralibus minimis, antico conico, acuto, postico oblongo, angusto.*

*Hab.* New Guinea.

21. *CYRENA SUBLOBATA*, Desh. *C. testa ovato-transversa, subquadrangulari, valde inæquilaterali, tumidiuscula, epidermide viridi-nigrescente, transversim striata et laminosa vestita; laminis crispis, inferne posticeque numerosioribus; latere antico brevissimo, declivi, fere rectilineo, inferne obtuso, marginibus superiore et inferiore subparallelis, æqualiter convexiusculis, latere postico late truncato, sulco profundo flexuraque distincta quasi sublobato; cardine angusto, dentibus inæqualibus tribus, valde obliquis, in valva sinistra angustioribus, in dextra validioribus, apice profunde et inæqualiter bilobatis; dente laterali antico conico, acuto, postico elongato, compresso, extremitate postica remoto.*

Long. 100 mill., alt. 85, lat. 50.

*Hab.* — ?

22. *CYRENA SINUOSA*, Desh. *C. testa ovato-rotundata, tumida, cordiformi, solida, valde inæquilaterali, epidermide fusco-fuliginosa, transversim tenue lamellosa vestita; latere antico brevi, rotundato, postico subtruncato, latere supero-posticali sulco profundo, sinuoso, decurrente separato; umbonibus tumidis, brevibus, sæpius erosis; ligamento angusto, partim infosso; valvis intus albis; cardine crasso, utroque latere tridentato, dentibus obliquis, mediano et postico valvæ dextræ bifidis; dentibus lateralibus brevibus, antico crasso, conico, apice acuto.*

*Hab.* The river Paningbang, Java. Brit. Mus.

23. *CYRENA IMPRESSA*, Desh. *C. testa ovato-subcirculari, obscure subquadrangulari, valde inæquilaterali, turgida, mediocriter crassa; epidermide viridi-glaucescente, transversim tenuissime laminata, postice inferneque atro-virente, lamellis sæpius crispis; umbonibus minimis, oblique antice curvatis, decortictis, acutis, parum prominentibus; latere antico declivi, rectilineo, inferne obtuso; margine superiore convexiusculo, postico latere subtruncato, sulco impresso ab umbone descendente distincto; lamina cardinali lata, dentibus primariis tribus angustis, elongatis, prominentibus, apice profunde furcatis, dente laterali antico conico, brevi, compresso, postico longiore.*

Long. 92 mill., alt. 87, lat. 52.

*Hab.* Java (*Jukes*); Philippine Islands (*Cuming*); Australia.

24. *CYRENA COMPTA*, Desh. *C. testa ovato-trigona, ventricosiuscula, subæquilaterali, antice et postice fere æqualiter declivi, antice paulo brevior, rotundato, postice obtuso, paululum attenuato, epidermide tenui, nitente, flavido-virescente, tenue striata vestita; latere postico sulco obsolete notato;*

*umbonibus minimis, obtusis, decorticatis; cardine angusto, tridentato, dentibus angustis, basi paulo angustioribus, apice profunde bilobatis, lateralibus compressis, antico prominente, acuto, postico longiore.*

Long. 72 mill., alt. 63, lat. 38.

Hab. — ?

25. CYRENA INCERTA, Desh. *C. testa ovato-suborbiculari, ventricosa, inæquilaterali, parum crassa, transversim irregulariter striata, striis tenuibus, profundis, epidermide squalide fuscescente, postice nigrescente et nitente vestita; umbonibus minimis, integris, parum obliquis, valde approximatis, lunula in medio prominente; antico latere brevi, late rotundato, postico declivi, attenuato, extremitate subtruncato; cardine angusto, tridentato, dentibus minimis, angustis, inæqualibus, majoribus profunde furcatis, lateralibus inæqualibus, compressis, antico majore.*

Long. 74 mill., alt. 65, lat. 40.

Hab. — ?

26. CYRENA ESSINGTONENSIS, Desh. *C. testa ovato-suborbiculari, subtriangulari, inæquilaterali, transversim striata, striis inæqualibus, epidermide viridi-fuscescente, postice nigrescente vestita; latere antico brevior, rotundato, superne leviter arcuato, declivi, postico paululum angustior; cardine angusto, inæqualiter tridentato, dentibus prominentibus, apice profunde fissis, basi coarctatis, subpediculatis, dentibus lateralibus parvis, antico majore, conico, fossula valvulæ dextræ profunda, superne canaliculata, dente cardinali ejusdem valvulæ oblique prominente.*

Long. 73 mill., alt. 67, lat. 38.

Hab. Port Essington (Cuming).

27. CYRENA JUKESEI, Desh. *C. testa ovato-trigona, turgidula, inæquilaterali, transversim irregulariter striata, epidermide nitida, flavicante, pallide virescente et brevissime laminata vestita; latere antico brevi, superne fere rectilineo, declivi, postico rotundato, superne convexiusculo; valvis intus albis; umbonibus minimis, brevibus, antice obliquatis; cardine angusto, tridentato, dentibus subæqualibus, duobus majoribus apice bifidis, angustis, lateralibus subæqualibus, conicis, compressis.*

Long. 66 mill., alt. 52, lat. 34.

Hab. Cape Upstart, Australia.

28. CYRENA PLACIDA, Desh. *C. testa suborbiculari, sublenticulari, inæquilaterali, in medio turgidula, epidermide squalide fuscescente, tenuissime striata vestita; umbonibus brevibus, erosis, vix prominentibus; latere antico brevior, late rotundato, postico truncato, angulo decurrente obtusissimo separato; cardine lato, dentibus inæqualibus, angustis, elongatis,*

*subparallelis, depressis, apice late canaliculatis, dentibus lateralibus subæqualibus, depressis, compressis, postico minore.*

Long. 54 mill., alt. 48, lat. 28.

Hab. — ?

29. CYRENA DURA, Desh. *C. testa ovato-subrotundata, ventricosa, inæquilaterali, crassa, solida, ponderosa, transversim irregulariter striato-rugosa; epidermide squalide fuscescenti-ochracea, impolita; umbonibus minimis, depressis, obliquis, decorticatis; lunula indistincta, in medio producta; latere antico late rotundato, postico æqualiter rotundato, obscure subtruncato, angulo obtusissimo decurrente notato; cardine lato, solido, dentibus tribus primariis inæqualibus, crassis, apice emarginatis; dente laterali antico brevi, conico, acuto, compressiusculo, cardine approximato, postico oblongo, depresso, remoto; linea pallii sub impressione musculari postica breviter sinuosa.*

Long. 70 mill., alt. 63, lat. 43.

Hab. — ?

30. CYRENA ARCTATA, Desh. *C. testa trigona, inflata, cordiformi, solidissima, valde inæquilaterali, transversim regulariter striata, epidermide atro-virente nitente, vestita, intus alba, sæpius impressionibus muscularibus violaceis; umbonibus magnis, turgidis, obliquis; latere antico brevi, declivi, rotundato, postico attenuato, subtruncato, angulo decurrente obtuso circumscripto, area lunulaque levigatis; cardine angusto, brevi, crasso, dentibus primariis tribus inæqualibus, parvis, approximatis, simplicibus; dentibus lateralibus crassis, subæqualibus, prominentibus.*

Long. 36 mill., alt. 36, lat. 30.

Hab. Maracaibo.

31. CYRENA ÆQUILATERA, Desh. *C. testa trigona, depressiuscula, æquilaterali; lateribus subæqualibus; epidermide squalide fusca vel griseo-fuscescente, striata, postice squamosa; latere antico paulo brevior et posticali rectilineis, inferiore parum arcuato; umbonibus parvis, depressis, oppositis, approximatis; latere postico plano, angulo obtusissimo circumdato; valvis tenuibus, intus albis, in fornice pallide aurantiis; cardine angustissimo, tridentato; dentibus parvis, inæqualibus, divaricatis, duobus in valvula sinistra bifidis, dentibus lateralibus parvis, remotis, fossula valvæ sinistrae anguste canaliculata usque ad basin dentis antici.*

Hab. Cayenne (rivulets).

32. CYRENA (ANOMALA) INSIGNIS. *C. testa ovato-cordiformi, turgida, crassiuscula, inæquilaterali, epidermide fusco-virente, multilaminosa vestita, lamellis crispis, multo numerosioribus ad margines; umbonibus magnis, tumidis, decorticatis, parum obliquis, oppositis; latere antico paulo brevior, late rotundato,*

*postico lato, truncato, obtuse angulato; cardine angusto, crasso, tridentato; dentibus inæqualibus, divergentibus; lateralibus inæqualibus, antico majore, conico, basi ovali, postico remoto, angusto; valvis intus albis, latere postico violaceo; sinu pallii angustissimo, acutissimo, profundo, oblique ad umbones ascendente.*

Long. 50 mill., alt. 44, lat. 35.

*Hab.* Bay of California.

33. CYRENA SUBQUADRATA. *C. testa ovato-subquadrangulari, transversa, inæquilaterali, tumida, solidiuscula, transversim tenue et irregulariter striata, striis obsoletis, epidermide viridiflavescente, ad margines multilaminosa vestita; umbonibus depressiusculis, decorticatis, parum obliquis; latere antico superne parum dilatato, antice oblique subtruncato, postico superne leviter arcuato, oblique late truncato, inferne angulato; cardine satis lato, tridentato, dentibus angustis, approximatis, divergentibus, lateralibus inæqualibus, antico crasso, conico, brevi, postico angustiore remoto; valvis intus albis, in margine postico violaceis.*

Long. 45 mill., alt. 39, lat. 30.

*Hab.* California.

34. CYRENA (ANOMALA) NITIDULA, Desh. *C. testa ovato-transversa, turgidula, tenui, fragili, inæquilaterali, transversim tenue et obsolete striata, epidermide viridi, subnitente, tenuissime laminosa vestita; umbonibus tumidiusculis, acutis, oppositis; latere antico paulo brevior, obtuso, postico superne declivi, parum attenuato, rotundato vel subtruncato; cardine angustissimo, dentibus primariis tribus inæqualibus, angustissimis, divergentibus, majoribus apice anguste fissis, lateralibus subæqualibus, distantibus, minimis, in valva dextra duplicatis, antico crassiore; sinu pallii brevi, triangulari, acuto; valvis intus pallide violaceis, ad margines saturatioribus.*

Long. 28 mill., alt. 25, lat. 17.

*Hab.* —?

35. CYRENA NOTABILIS, Desh. *C. testa ovato-transversa, subquadrilatera, depressiuscula, inæquilaterali, transversim tenue et irregulariter striata, albo-lutescente, sub epidermide tenui, fuscescente; latere antico brevi, obtuso, postico late truncato, superiore et inferiore rectis, parallelis; umbonibus obliquis, integris, approximatis; ligamento elongato, cylindræo, producto; valvis intus albo-lutescentibus, in latere postico macula intense violacea intus extusque notatis; cardine tridentato, dentibus inæqualibus, obliquis, divaricatis, dente laterali antico parvo, conico, acuminato, postico obsoleto, remotissimo.*

*Hab.* Peru (at the mouths of rivers).

36. CYRENA ANOMALA. *C. testa trigona, valde inflata, cordiformi, valde inæquilaterali, tenui, fragili, transversim tenue et*

*obsolete striata, epidermide viridi, tenue striata induta, striis ad margines et postice laminoso-crispis; umbonibus magnis, acutis, revolutis, oppositis, violaceis; latere antico brevior, late semicirculari, postico attenuato, conico, rostrato, acuminato; area plana, angulo obtusissimo circumscripta; cardine angustissimo, dentibus tribus primariis minimis, approximatis, subæqualibus, divergentibus, mediano profunde fisso; dentibus lateralibus subæqualibus, distantibus, compressis, laminatis, in valva dextra duplicatis, antico sulco profundo margine separato.*

Long. 50 mill., alt. 40, lat. 34.

*Hab.* Bay of Caraccas; Peru.

37. CYRENA (ANOMALA) CUMINGII. *C. testa ovato-subtrigona, inæquilaterali, tumida, cordiformi, satis solida, transversim inæqualiter tenuissime striata, epidermide fusco-virescente, inferne lamellosa vestita; umbonibus magnis, prominentibus, oppositis, decorticatis, approximatis; latere antico brevi, late rotundato, postico attenuato, superne declivi, extremitate truncato, angulo obtuso, decurrente circumscripto; cardine angusto, in medio paulo latiore; dentibus tribus primariis inæqualibus, approximatis, angustis, apice profunde bifidis, lateralibus magnis, æquidistantibus, antico paulo majore, conico, acuto; valvis intus candidissimis.*

Long. 60 mill., alt. 52, lat. 44.

*Hab.* Central America.

38. CYRENA (ANOMALA) ISOCARDIOIDES. *C. testa orbiculato-subtrigona, inæquilaterali, turgida, cordiformi, tenui, fragili, tenuissime transversim inæqualiter striata, epidermide olivacea, nigro-zonulata vestita; umbonibus magnis, subinvolutis, oppositis, atro-violaceis; latere antico regulariter late semicirculari, postico superne declivi, attenuato, subrostrato; area plana, ovato-lanceolata, angulo lato, obtuso, decurrente circumscripta; cardine angustissimo, dentibus primariis tribus minutissimis, approximatis, subæqualibus, duobus anticis parallelis, postico divaricato; dentibus lateralibus minimis, subæquidistantibus, margine sulco angusto, profundo separatis, in valva dextra duplicatis; pallii impressione margine inferiore proxima; valvis intus albis, utroque latere violaceo maculatis.*

Long. 54 mill., alt. 53, lat. 41.

*Hab.* Columbia.

39. CYRENA (ANOMALA) ANGULATA. *C. testa trigona, turgidula, æquilaterali, solidula, lævigata, epidermide squalide fuscescente vestita; umbonibus minimis, depressis, oppositis, latere antico atque postico æqualiter convexiusculis et declivibus; latere antico obtuso, subangulato, postico angulato, subrostrato; margine inferiore ventricoso; cardine angusto, dentibus primariis tribus minimis, angustis, duobus majoribus apice profunde fissis; dentibus lateralibus inæqualibus, com-*



*pressis, antico magno, acuto, triangulari; valvis intus albis, seu roseo superne tinctis.*

Long. 34 mill., alt. 30, lat. 20.

*Hab.* — ?

40. CYRENA (ANOMALA) INFLATA. *C. testa orbiculato-subtri-gona, cordiformi, inflata, inæquilaterali, tenui, transversim tenue et inæqualiter striata, epidermide squalide fuscescente, breviter laminosa vestita; umbonibus magnis, prominentibus, oppositis, approximatis; latere antico breviusculo, superne concaviusculo, antice producto et obtuso, latere postico latiore, oblique truncato, angulo obtuso decurrente circumscripto; cardine angustissimo, dentibus tribus primariis inæqualibus, minimis, divergentibus, postico valvæ dextræ majore, profunde fisso, dentibus lateralibus subæqualibus, in valva dextra duplicatis, antico paulo crassiore.*

Long. 55 mill., alt. 52, lat. 42.

*Hab.* Panama.

41. CYRENA NITIDA, Desh. *C. testa orbiculato trigona, depressiuscula, inæquilaterali, epidermide prasina, nitente, lævigata vestita; latere antico obtuso, brevior, postico magis attenuato flexura decurrente, oblique sinuoso, margine superiore postico convexo, inferiore regulariter arcuato; umbonibus parvis, depressis, obliquis, approximatis; ligamento elongato, partim infosso; valvis crassis, solidis, intus candidissimis; cardine angusto, inæqualiter tridentato; dentibus obliquis latis in valva dextra, angustis in altera; dente laterali postico compresso, conico, acuto, antico brevior.*

Long. 75 mill., alt. 71, lat. 44.

*Hab.* — ?

## 5. ON A NEW SPECIES OF MUSOPHAGA.

BY JOHN GOULD, F.R.S., V.P.Z.S.

Mr. Gould exhibited a drawing, made by Lieut. J. H. Stack, and some feathers shed from the tail and wings of a species of *Musophaga*, a specimen of which had been living for the last ten years at St. Helena in the possession of Lady Ross, the widow of the late Sir Patrick Ross, Governor of that island. From an examination of the drawing and feathers above mentioned, Mr. Gould was of opinion that the bird is a larger and more beautifully coloured species than any of the *Musophagæ* with which we were previously acquainted. Lady Ross informed Mr. Gould that it is nearly as large as a common hen-pheasant, and has a long, full, graduated blue tail, which is also the colour of the neck, the whole of the body and the wings, except the primaries, which are arterial blood-red, margined at the tips with a purplish-brown colour, similar to that in *Musophaga violacea*; the bill and the large denuded orbits are yellow; the irides brown; and the crown of the head surmounted with a high rounded crest of hair-

like blood-red feathers. It was brought from the western coast of Africa, but the precise locality was unknown.

For this new species Mr. Gould proposed the name of *Musophaga Rossia*, in honour of its amiable owner. A perfect skin of this bird has since been sent to England, and a full description of it, accompanied by a figure, will be given in the Transactions of the Society.

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January 24, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. ON THE SIZE OF THE RED CORPUSCLES OF THE BLOOD OF  
THE GREAT ANTEATER (*MYRMECOPHAGA JUBATA*).  
BY GEORGE GULLIVER, F.R.S.

These have the usual form, but differ in their comparatively large size from those of most other Mammalia. Their average diameter is  $\frac{1}{2769}$ th of an English inch, varying between the extremes of  $\frac{1}{3554}$ th and  $\frac{1}{2266}$ th of an inch.

All observers had come to the conclusion that there is no connection between the size of an animal and that of its blood-corpuscles, when I ascertained that in any truly natural family there is really such connection, however it may be in animals of such different orders as those to which the mouse and horse belong. The Great Anteater has larger blood-corpuscles than any yet examined in the other and smaller Edentata, though they are remarkably large in the Two-toed Sloth; and the Capybara has the largest ever seen among the Rodentia. Indeed, as this last order is characterized by a comparatively large size of blood-corpuscle, it might be supposed that in the great extinct species the corpuscles were larger than any ever measured in the Mammalia; and if any gigantic species allied to the Anteater should be found, its red corpuscles may be expected to be alike remarkable for comparative magnitude.

In the present species they are about the same size as in the Elephant, and are certainly, excepting those of this great pachydermatous animal, the largest yet observed in the Mammalia, as may be seen by reference to the copious Tables of Measurements which I have appended to the English version of Gerber's Anatomy, and to my edition of Hewson's Works, published for the Sydenham Society. With the exception just mentioned, it is still a very interesting fact, that a simple examination of less than one hundredth of a grain of its dried blood would suffice to distinguish the Anteater from any other animal in the Society's Menagerie.





J. Wolf. lith.

M & N. Hanhart, Imp<sup>t</sup>.

RUTICILLA PHŒNICUROIDES. *Moore.*





J. Wolf, lith

M & N. Hanhart, Imp<sup>l</sup>

RUTICILLA HODGSONI ♂. ♀. Moore





J. Wolf, lith.

M & N. Hanhart, Imp<sup>r</sup>.

*RUTICILLA RUFOGULARIS*. ♂ ♀. *F. Moore.*







J. Wolf, del.

M & N Hanhart, Imp<sup>t</sup>

RUTICILLA VIGORSI. *Moore.*





J. Wolf, lith.

M. & N. Hanhart, Imp<sup>t</sup>

*RUTICILLA NIGROGULARIS*. ♂. *F. Moore*

2. A MONOGRAPH OF THE GENUS RUTICILLA, WITH DESCRIPTIONS OF SOME NEW SPECIES.

BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

(AVES, PL. LVII.—LXI.)

Genus RUTICILLA (Ray), Brehm.

Syn. *Ficedula*, Boie. *Phœnicura*, Swains. *Chaimarrornis*, Hodgs.\*

1. RUTICILLA PHÆNICURA, Linn.

Syn. *Motacilla phœnicurus*, Linn. S. N. i. p. 335.

*Sylvia phœnicurus*, Lath. Ind. Orn. ii. p. 511; Gen. Hist. vii. p. 21.

*Ruticilla sylvestris*, Brehm, Vœg. Deutschl. p. 363. t. 21. f. 4.

*Phœnicura ruticilla*, Swains. Class. of B. ii. p. 240. Gould, Birds of Eur. t. 95.

*Ficedula phœnicura*, Boie, Isis (1822), p. 553.

*Phœnicura muraria*, Swains. Faun. Bor. Amer. ii. p. 489.

*Ruticilla phœnicurus*, Bonap. Geogr. Comp. List of B. p. 15, et C. G. Av. p. 296. G. R. Gray, Gen. of B. i. p. 180. Blyth, Journ. A. S. Beng. xvi. p. 133; Catal. B. Mus. A. S. Beng. p. 168.

? *Phœnicura albifrons*, Brandt.

*The Redstart*, Bewick.

*Hab.* Europe; W. Asia; N. India. In Mus. East India Company.

2. RUTICILLA PHÆNICUROÏDES, nobis. (Pl. LVII.)

Forehead, lores, ear-coverts, throat and breast black, extending much lower down on the latter than in *R. phœnicura*; crown, neck, back and upper wing-coverts ash, with a rufous tint, the ash palest on the crown; wings brown, with the edges of the exterior webs paler; from breast to vent, under wing-coverts, upper and lower tail-coverts and tail (except the two medial feathers which are brown) rufous. Male.

Length, 5 inches; wing, 3, the first primary being a  $\frac{1}{4}$  inch longer, and the second a  $\frac{1}{4}$  inch shorter than in *R. phœnicura*; tail,  $2\frac{1}{2}$ ; bill to gape,  $\frac{7}{10}$ , more elongated, not so broad at base, and it is also a trifle longer; and tarse,  $\frac{6}{8}$ .

*Hab.* N. India. In Mus. East India Company.

This species is closely allied to *R. phœnicura*, but is readily distinguished from it in the absence of the white on the front of the crown.

3. RUTICILLA TITHYS, Scopoli.

Syn. *Sylvia tithys*, Scopoli, Ann. i. p. 157. Lath. Ind. Orn. ii. p. 512; Gen. Hist. vii. p. 23.

*Ruticilla tithys*, Brehm, Vœg. Deutschl. p. 365. Gould, Birds of Eur. t. 96. G. R. Gray, Gen. of Birds, i. p. 180, et Cat. Brit. B. in B. M. p. 62. Bonap. C. G. Av. p. 296.

? *Motacilla erythæus*, Linn. S. N. i. p. 335.

\* Altered to *Chaemarrhornis* by Agassiz, in his 'Nomenclator Zoologicus'.

? *Motacilla gibraltariensis*, Gmel. S. N. L. i. p. 987.

? *Motacilla atrata*, Gmel. S. N. L. i. p. 988. Lath. Ind. Orn. ii. p. 514 (nec Lath. Gen. Hist.).

*The Black Redstart*, Eyton.

*Hab.* Europe; W. Asia; N. Africa.

#### 4. *RUTICILLA NIPALENSIS*, Hodgson.

Syn. *Phœnicura nipalensis*, v. *atrata*, Hodgs. Gray's Zool. Misc. (1844) p. 83.

*Sylvia atrata*, Lath. Gen. Hist. vii. p. 26 (nec Gmel. et Lath. Ind. Orn.).

*Phœnicura atrata*, Jard. et Selby, Ill. Ind. Orn. t. 86. f. 3. Sykes, P. Z. S. (1832) p. 92. Jerd. Madras Journ. x. p. 267. Blyth, Journ. A. S. Beng. xi. p. 190.

*Ruticilla atrata*, G. R. Gray, Gen. of Birds, i. p. 180. Hodgs. Cat. B. of Nep. p. 68.

*Ruticilla indica*, Blyth, Catal. B. Mus. A. S. Beng. p. 168 (1850). Bonap. C. G. Av. p. 296.

*Black Indian Redstart*, Jard. et Selby.

*Thirt-hira* (i. e. Shaker), Hind., Jerdon.

*Thirthir Kumpa*, Plains, Royle.

*Phirirā* or *Lālgārdi*, Beng., Dr. F. (Buch.) Hamilton, MS. ii. p. 94.

*Hab.* India generally. In Mus. East India Company.

“This species is very common in most parts of India during the cold weather, but more so in the table-land, I think, than in the Carnatic. It is solitary, frequenting wooded places, gardens, hedges, old walls and out-buildings, being often seen about the roofs of houses. It feeds on the ground, on wasps, ants, and various other insects. Has a most peculiar quivering motion of its tail, especially after feeding.”—*Jerdon*.

#### 5. *RUTICILLA HODGSONI*, nobis. (Pl. LVIII.)

Syn. *Phœnicura ruticilla*, Hodgs. Gray's Zool. Misc. (1844) p. 82 (nec Swains.).

*Ruticilla Reevesii*, Hodgs. Cat. Birds of Nepal, p. 67 (nec J. E. Gray).

*Phœnicura Reevesii*, Blyth, Journ. A. S. Beng. xii. p. 963 (nec J. E. Gray).

*Ruticilla erythrogastra*, Blyth, Cat. B. Mus. A. S. Beng. p. 168 (nec Gùldenst.).

*Tharcapni*, Nepal, Hodgson.

*Hab.* Nepal. In Mus. East India Company.

Male: forehead, lores, ear-coverts, throat and breast black; fore part of crown clear white (much narrower than in *R. phœnicura*); hind part of crown, neck, back and upper wing-coverts fine ash, lightest on the crown; wings above dusky brown, the exterior margin of the basal half of the secondaries white, forming a patch; from the breast to vent, under wing-coverts, rump, upper and lower tail-coverts and tail (except the interior and exterior margins only of the two middle feathers which are dusky brown) rufous. The female may be readily

distinguished by a general puffy appearance, and by the relative length of wing, &c.

Length, 6 inches; wing,  $3\frac{3}{8}$ ; tail,  $2\frac{6}{8}$ ; bill to gape,  $\frac{6}{8}$ ; and tarse,  $\frac{7}{8}$ .

6. *RUTICILLA RUFUGULARIS*, nobis. (Pl. LIX.)

Male: crown and back of neck mixed grey and ash; lores, ear-coverts and sides of neck black; wings and medial tail-feathers dark brown; apical margin of the exterior web of the outer tail-feather dusky; smaller wing-coverts (except the feathers immediately on the shoulder), scapulars, basal portion of the speculums, and apical margins of the greater wing-coverts white; exterior margin of the secondaries pale rufescent; throat and breast, back and upper tail-coverts and tail rufous; abdomen, under wing- and tail-coverts pale rufescent. Female: cinereous brown above, rufescent beneath; wings dark brown, margined with pale rufescent; lower part of back, upper tail-coverts and tail rufous, the two medial feathers dark brown, exterior margin of the outer dusky.

*Hab.* N. India. In Mus. East India Company.

7. *RUTICILLA ERYTHROGAstra*, Gldenstadt.

Syn. *Motacilla erythrogastra*, Gldenst. Nov. Comm. Petrop. xix. p. 469. t. 16, 17. Gmel. S. N. L. i. p. 975.

*Sylvia erythrogastra*, Lath. Ind. Orn. i. p. 503; Gen. Hist. vii. p. 27.

*Motacilla ceraunia*, Pallas, Zoogr. i. p. 478.

*Ruticilla grandis*, Gould, P. Z. S. (1849) p. 112.

*Ruticilla erythrogastra*, Bonap. C. G. Av. p. 296. Gould, Birds of Asia, t. 50.

*The Chestnut-bellied Warbler*, Lath.

*Hab.* Cashmere; Kumaon; Nepal (No. 969. *Hodgs. Catal.*). In Mus. East India Company.

“This species frequents the gravelly hollows of the Caucasian torrents during the whole of the summer, and migrates southward, in search of food, on the approach of winter; it runs along the banks of rivers; is restless, but not fearful; often moving its tail while sitting on the low shrubs; it makes its nest among the branches of the sea buckthorn, of the berries of which it is very fond.”—*Gldenstadt*.

8. *RUTICILLA VIGORSI*, nobis. (Pl. LX.)

Female: above, head, neck and back cinereous; wings dusky, with paler margins; beneath rufescent; upper tail-coverts and tail rufous, the two medial feathers dusky, as is also the exterior web of the outer and tip of each feather, but paler; bill and legs black.

Length, 7 inches; wing,  $4\frac{1}{4}$ ; first quill  $1\frac{1}{2}$  inch shorter than the second, the third  $\frac{6}{10}$  longer than the second, fourth and fifth equal and longest, the third and sixth equal and but a trifle shorter than the fourth and fifth, the seventh a  $\frac{1}{4}$  inch longer than the second, the eighth  $\frac{1}{8}$  shorter than the second; tail, 3; bill to gape,  $\frac{6}{8}$ ; and tarse, 1.

*Hab.* N. India. In Mus. East India Company.

This may eventually prove to be the female of a species allied to *R. erythrogastra*, but having no white wing-patch.

9. *RUTICILLA AUROREA*, Pallas.

Syn. *Motacilla aurorea*, Pall. Zoogr. i. p. 477. Kittl. Kupf. Vögg. t. 26. f. 1. Gmel. S. N. L. i. p. 976. Lath. Hist. vii. p. 92.

*Phœnicura Reevesii*, J. E. Gray, Zool. Misc. (1832) p. 1. M<sup>c</sup>Clelland, P. Z. S. 1839, p. 161.

*Ruticilla aurorea*, G. R. Gray, Gen. of Birds, i. p. 180 (excl. syn.). Bonap. C. G. Av. p. 296.

*Lusciola aurorea*, Schlegel, Faun. Japon. t. 21 D.

*Daurian Warbler*, Lath.

*Reeves's Redstart*, Gray.

*Hab.* Assam; China; Japan. In Mus. East India Company.

Male: forehead, lores, ear-coverts, throat, fore part of breast, back, upper wing-coverts, apical and basal portion of the secondaries and tertiaries, and the two medial tail-feathers black; exterior margin of the outer tail-feather and apical margin of the rest dusky black; medial portion of both webs of the secondaries and tertiaries white; crown of head and back of neck slaty ash, rather whitish above the ear-coverts; breast, abdomen, under wing-coverts, upper and lower tail-coverts and tail (except as above) rufous. Female: above brown, the wing-patch rufescent white; beneath rufescent; upper and lower tail-coverts and tail (except the medial feathers of the latter which are dusky brown) rufous; bill and legs black.

Length, 5 inches; wing, 3; tail,  $2\frac{1}{2}$ ; bill to gape,  $\frac{5}{8}$ ; and tarse,  $\frac{3}{4}$ .

10. *RUTICILLA LEUCOPTERA*, Blyth.

Syn. *Phœnicura leucoptera*, Blyth, Journ. A. S. Beng. xii. p. 962.

*Ruticilla leucoptera*, Blyth, Journ. A. S. Beng. xvi. p. 134; Catal. B. Mus. A. S. Beng. p. 168. G. R. Gray, Gen. of Birds, i. p. 180. Bonap. C. G. Av. p. 296.

*Hab.* Malacca; Java. In Mus. As. Soc. Bengal.

"Size of *R. phœnicura*, and much resembling in plumage *R. nipalensis*, but smaller and the wings much shorter than in the latter species; it is also generally similar to *R. phœnicura*, but has no white on the forehead, which, with the crown, neck, and fore part of the back, are ash-grey; the middle of the back is black, as are also the lores, ear-coverts, throat and breast; and the rest of the under parts, with the rump and tail, except the medial feathers of the latter, are bright ferruginous, the exterior web of the outermost tail-feather being marked with dusky; wings dusky, having a large white patch occupying the base of the secondaries and tertiaries, extending over both webs of each feather; bill and feet black. According to season, the dorsal plumage is margined with brown edgings, the under parts more slightly with greyish, and the wing-coverts with brown. Female plain brown above, paler beneath, with rufous tail, and the same great white wing-patch as in the male.

"Length about 6 inches; of wing,  $2\frac{3}{4}$ ; tail,  $2\frac{3}{8}$ ; bill to gape,  $\frac{5}{8}$ ; tarse,  $\frac{3}{4}$ ."



11. *RUTICILLA CÆRULEOCEPHALA*, Vigors.

Syn. *Phœnicura cæruleocephala*, Vigors, P. Z. S. 1830, p. 35. Gould, Cent. of Birds, t. 25. f. 2. Blyth, Journ. A. S. Beng. xi. p. 190.

*Ruticilla cæruleocephala*, G. R. Gray, Gen. of Birds, i. p. 180. Hodgs. Catal. B. of Nep. p. 68. Blyth, Journ. A. S. Beng. xvi. p. 134; Catal. B. Mus. A. S. Beng. p. 168. Bonap. C. G. Av. p. 296.

*Hab.* N. India. In Mus. East India Company.

12. *RUTICILLA SCHISTICEPS*, Hodgson.

Syn. *Phœnicura schisticeps*, Hodgs. Gray's Zool. Misc. (1844) p. 83.

*Ruticilla schisticeps*, Hodgs. Catal. B. of Nep. p. 69, et App. p. 153.

*Hab.* Nepal (No. 813. *Hodgs. Catal.*).

"Side of the head and neck, back, wings and tail black; top of the head pale slaty blue; throat and large patch on each wing white; lower part of breast and abdomen rufous chestnut.

"Length, 6 inches; wing, 3 inches 4 lines; bill from gape, 7 lines; tarse,  $10\frac{1}{2}$  lines."

The only known example of this species is in the British Museum.

13. *RUTICILLA NIGROGULARIS*, nobis. (Pl. LXI.)

Crown of the head slaty blue, lightest on the forehead; lores, ear-coverts, throat, back of neck, back, upper wing-coverts, two middle tail-feathers entirely, and the rest (except the basal portion) black; wings blackish brown, the scapulars, outer edges of the secondaries and under wing-coverts white; breast, flanks, belly, rump, upper and lower tail-coverts and base of tail (except the two middle feathers) bright chestnut; the vent and under tail-coverts have a few white feathers intermixed; bill and legs black.

Length, 6 inches; wing,  $3\frac{3}{8}$ ; tail,  $2\frac{6}{8}$ ; bill to gape,  $\frac{5\frac{1}{2}}{8}$ ; tarse,  $\frac{5}{8}$ .

*Hab.* Nepal (No. 813\*. *Hodgs. Catal.*). In Mus. East India Company.

This species is closely allied to *R. schisticeps*, but differs in having the throat black instead of white.

14. *RUTICILLA FRONTALIS*, Vigors.

Syn. *Phœnicura frontalis*, Vigors, P. Z. S. 1831, p. 172. Gould, Cent. of Birds, t. 26. f. 1. Blyth, Journ. A. S. Beng. xi. p. 190.

*Ruticilla frontalis*, G. R. Gray, Gen. of Birds, i. p. 180. Hodgs. Cat. B. of Nep. p. 68. Blyth, Journ. A. S. Beng. xvi. p. 134; Catal. B. Mus. A. S. Beng. p. 168. Bonap. C. G. Av. p. 296.

*Ruticilla melanura*, Less. Rev. Zool. (1840) p. 265.

*Phœnicura tricolor*, Hodgs. Gray's Zool. Misc. (1844) p. 83.

*Hab.* N. India. In Mus. East India Company.

15. *RUTICILLA FULIGINOSA*, Vigors.

Syn. *Phœnicura fuliginosa*, Vigors, P. Z. S. 1830, p. 35. Blyth, Journ. A. S. Beng. xi. p. 190.

*Ruticilla fuliginosa*, G. R. Gray, Gen. of Birds, i. p. 180. Hodgs. Cat. B. of Nep. p. 68. Blyth, Journ. A. S. Beng. xvi. p. 134; Cat. B. Mus. A. S. Beng. p. 169. Bonap. C. G. Av. p. 296.

- Phoenicurea plumbea*, Gould, P. Z. S. 1835, p. 185.  
*Ruticilla simplex*, Less. Rev. Zool. (1840) p. 265.  
*Phoenicurea rubricauda*, Hodgs. Gray's Zool. Misc. (1844) p. 82  
 (the male).  
*Phoenicurea lineoventris*, Hodgs. MS. (the female).  
*Hab.* N. India. In Mus. East India Company.  
 "Found along rivers, near or among mountains, haunts rocks just  
 appearing above the torrent. Feeds on coleopterous insects. Con-  
 tinually spreading its tail out like a fan, and in a vibrating manner."  
 —Griffith.

16. RUTICILLA LEUCOCEPHALA, Vigors.

- Syn. *Phoenicurea leucocephala*, Vigors, P. Z. S. 1830, p. 35. Gould,  
 Cent. of Birds, t. 26. f. 1.  
*Sylvia erythrogastra*, var. A, Lath. Hist. vii. p. 28.  
*Ruticilla leucocephala*, Less. Rev. Zool. (1840) p. 265. G. R.  
 Gray, Gen. of Birds, i. p. 180. Hodgs. Cat. B. of Nep. p. 68. Blyth,  
 Journ. A. S. Beng. xvi. p. 134; Catal. B. Mus. A. S. Beng. p. 169.  
 Bonap. C. G. Av. p. 296.  
*Chaimarrornis leucocephalus*, Hodgs. Gray's Zool. Misc. (1844)  
 p. 82.

*The White-capped Redstart.*

*Gir-Chaondeea*, Hind., Hardwicke.

*Kalee pholia*, Mohun Ghats, Royle.

*Hab.* N. India. In Mus. East India Company.

"This species is extremely common in the valley of the Dhoon,  
 and also in the hills, along the banks of streams and rivers, flitting  
 from rock to rock and stone to stone, and eternally shaking and  
 spreading its tail."—Hutton.

17. RUTICILLA ERYTHRONOTA, Eversman.

- Syn. *Sylvia erythronota*, Eversm. Addend. Pallas, Zoogr. Fasc. ii.  
*Ruticilla erythronota*, G. R. Gray, Gen. of Birds, i. p. 180. Bonap.  
 C. G. Av. p. 297.  
*Hab.* Caucasus (non vidi).

3. CONTRIBUTIONS TOWARDS THE NATURAL HISTORY OF THE  
 AURICULIDÆ, A FAMILY OF PULMONIFEROUS MOLLUSCA;  
 WITH DESCRIPTIONS OF MANY NEW SPECIES FROM THE  
 CUMINGIAN COLLECTION. BY H. AND A. ADAMS.

Dr. Pfeiffer, in the 'Zeitschrift für Malacozoologie,' has very  
 naturally divided the *Auriculidæ* into two subfamilies, viz. *Auricu-*  
*linæ*, including those genera which live on the land, and of which  
 the peritreme of the shells is thickened or expanded; and the *Me-*  
*lampinæ*, or those which are amphibious or living in brackish water,  
 and in which the peritreme of the shell is straight and acute. To  
 the first subfamily belong *Ellobium* (or *Auricula*), *Pythia* (or *Sea-*  
*rabus*), *Cassidula*, *Alexia*, *Carychium*, and *Plecotrema*, a new genus

proposed by the authors of this communication ; to the other sub-family the following genera will appertain, viz. *Melampus*, *Tralia*, *Ophicardelus*, *Laimodonta*, *Marinula*, *Leuconia*, *Pedipes*, and *Otina*. The last-mentioned genus, according to the observations of Dr. Gray\*, only seems to differ from *Pedipes* in the shell being ear-shaped and not supplied with tooth-like plaits. In the present as in former communications, the authors have endeavoured to arrange the synonymy and indicate the generic position of the numerous species of *Auriculidæ*.

#### Genus CASSIDULA, Férussac.

Shell oval, subconic, solid ; spire short, obtuse ; aperture narrow, longitudinal ; inner lip plicate anteriorly, thickened and reflected ; outer lip reflected, with an internal marginal callus, sinuated posteriorly.

*Sidula*, Gray ; *Detracia*, Gray ; *Rhodostoma*, Swainson.

##### 1. CASSIDULA COFFEA, Chemnitz.

*Voluta coffea*, Chemn. (not Linn.) ix. p. 45. t. 121. f. 1043, 1044.  
—*Bulimus auris-felis*, Brug. Dict. no. 77 ; Encycl. Méth. Vers, p. 343.—*Auricula felis*, Lamk. Hist. viii. p. 326.—*Cassidula Chemnitzii*, Beck, Ind. Moll.

##### 2. CASSIDULA NUCLEUS, Gmelin.

*Helix nucleus*, Gmelin, Syst. Nat., p. 3651. no. 255.—*Auricula nucleus*, Martyn, Univ. Conch. t. 67 ; Lamk. Hist. viii. p. 335. no. 21.—*Conovulus nucleus*, Féruss. Prodr. p. 195. no. 26.

##### 3. CASSIDULA KRAUSSII, Küster.

*Auricula Kraussii*, Küst. Chemn. Conch. Cab. (Auriculacea) p. 24. t. 3. f. 6–8.

##### 4. CASSIDULA MUSTELINA, Deshayes.

*Auricula mustelina*, Desh. Encycl. Méth. Vers, ii. p. 92. no. 14.

##### 5. CASSIDULA RUGATA, Menke.

*Auricula rugata*, Menke, Moll. Nov. Holland. p. 7. no. 15.

##### 6. CASSIDULA CUMINGIANA, Recluz.

*Conovulus Cumingianus*, Recluz, Ann. and Mag. Nat. Hist. vol. xvii. p. 295 (1846).

##### 7. CASSIDULA ANGULIFERA, Petit.

*Auricula angulifera*, Petit, Rev. Zool. vol. iv. p. 101 ; Menke, Moll. Nov. Holland. p. 8. no. 16.

##### 8. CASSIDULA DOLIOLUM, Petit.

*Auricula doliolum*, Petit, Proc. Zool. Soc. December 1842 ; Ann. and Mag. Nat. Hist. vol. xii. p. 347.

##### 9. CASSIDULA SULCULOSA, Mousson.

*Auricula sulculosa*, Mouss. Land- und Süßwass. Moll. v. Java, p. 45. pl. 5. f. 9.

\* Ann. and Mag. Nat. Hist. January 1854, p. 74.

10. *CASSIDULA SOWERBYANA*, Pfeiffer.  
*Auricula (Cassidula) Sowerbyana*, Pfr. Zeitschr. f. Malacozool. 1853, p. 125.
11. *CASSIDULA FABA*, Menke.  
*Auricula (Cassidula) faba*, Menke, Zeitschr. f. Malacozool. 1853, p. 124.
12. *CASSIDULA ZONATA*, H. et A. Adams. *C. testa parva, ovato-conoidea, fusca, zonis rufis inæqualibus cincta, transversim punctato-striata, suturis marginatis; apertura angusta; columella biplicata, postice tuberculo unico, plicam medianam magnam circa regionem umbilicalem carinam formante; labro extus incrassato, intus marginato, in medio unidentato.*  
*Hab.* Sydney, under stones, low water. Mus. Cuming.
13. *CASSIDULA DECUSSATA*, H. et A. Adams. *C. testa ovata, crassa, fusca, spira obtusa, lineis impressis, transversis et longitudinalibus valde decussata; lira elevata ad suturas; apertura oblonga, angusta; columella triplicata, plica postica obsoleta, tuberculiformi; labro marginato, postice resecto, extus albido.*  
*Hab.* Moreton Bay. Mus. Cuming.

#### Subgenus *SIONA*, H. and A. Adams.

Shell ovato-cylindrical; spire obtuse; whorls transversely striated; aperture linear; inner lip with two anterior plaits; outer lip thickened internally, posteriorly sinuated.

14. *CASSIDULA (SIONA) AVENA*, Petit.  
*Auricula avena*, Petit, Revue Zool. vol. v. p. 106 (1842).
15. *CASSIDULA (SIONA) FRUMENTUM*, Petit.  
*Auricula frumentum*, Petit, Revue Zool. vol. v. p. 105 (1842).
16. *CASSIDULA (SIONA) TRITICEA*, Philippi.  
*Auricula triticea*, Philippi (in litt.), Küster, p. 49 (not identified).

#### Genus *ALEXIA*, Leach.

Shell oblong-ovate; spire acuminate; aperture elongate; inner lip 3-5-plaited; outer lip with the margin reflexed, thickened, or dentate internally.

*Phytia*, Gray; *Pythia*, Beck (not Bolten); *Ovatella*, Bivona; *Jaminea*, Brown (part.).

1. *ALEXIA DENTICULATA*, Montagu.  
*Voluta denticulata*, Mont. Test. Brit. p. 234. t. 20. f. 5.—*Voluta ringens*, Turt. Conch. Dict.—*Auricula myosotis*, Jeffr. (not Drap.).—*Acteon denticulata*, Fleming, Brit. Anim.
2. *ALEXIA PERSONATA*, Michaud.  
*Carychium personatum*, Mich. Compl. à Drap. p. 73. no. 2. pl. 15.

f. 42, 43.—*Auricula personata*, Lamk. Hist. ed. Desh. tom. viii. p. 334. no. 18; Phil. Enum. Moll. Sicil. ii. p. 118. no. 3.—*Auricula tenella*, Menke, Syn.

3. ALEXIA REFLEXILABRIS, D'Orbigny.

*Auricula reflexilabris*, D'Orbig. Voy. dans l'Amér. Mérid. tab. 6. p. 140.

4. ALEXIA MYOSOTIS, Draparnaud.

*Auricula myosotis*, Draparn. Moll. pl. 3. f. 16, 17; Blainv. Malac., p. 453, pl. 37 bis, f. 6.—*Voluta denticulata*, Dillw. Cat. t. i. p. 506. no. 18.—*Auricula pellucens*, Menke, Syn.

5. ALEXIA ACUTA, D'Orbigny.

*Auricula acuta*, D'Orb. Syn. Mag. de Zool. 1835, p. 23. no. 2.

6. ALEXIA KUTSCHIGIANA, Küster.

*Auricula Kutschigiana*, Küst. Chemn. Conch. Cab. (Auriculacea) p. 55. t. 8. f. 11–14.

7. ALEXIA BIASOLETTIANA, Küster.

*Auricula Biasoletiana*, Küst. Chemn. Conch. Cab. (Auriculacea) p. 56. t. 8. f. 18–20.

8. ALEXIA BERMUDENSIS, H. et A. Adams. *A. testa ovato-conica, spira producta, acuta, fusca, nitida, longitudinaliter substriata; anfractibus sex, planiusculis, suturis marginatis; apertura ovali, postice acuta; columella buplicata, plica postica valida; labro subreflexo, albido-marginato.*

*Hab.* Bermuda. Mus. Cuming.

Genus CARYCHIUM, Müller.

Shell subcylindrical; spire elevated; whorls few, rounded; aperture small; inner lip straight, with a single fold; outer lip thickened and rather reflexed.

*Auricella* (part.), Jurine.

1. CARYCHIUM MINIMUM, O. F. Müller.

*Carychium minimum*, O. F. Müll. Hist. Verm. ii. p. 125. no. 321.—*Helix carychium*, Gmel. p. 3665.—*Turbo carychium*, Dillw. Cat. ii. p. 880.—*Auricula minima*, Drap. Moll. de France, p. 57. t. 3. f. 18, 19.—*Bulinus minimus*, Brug. Encycl. Méth. Vers, i. no. 21.—*Auricella carychium*, Hartm. in Sturm's Fauna, vi. Heft 6. tab. 1.—*Odostomia carychium*, Flem. Edin. Encycl.—*Auricula minima*, Lamk.—*Carychium pygmæum*, Mich.—*Auricula pygmæa*, Desh.—*Carychium nanum*, Küst. (var.) p. 5.

2. CARYCHIUM EXIGUUM, Say.

*Pupa exigua*, Say, Journ. Philad. ii. p. 375.—*Carychium exiguum*, Küst. Chemn. (Auriculacea) t. 1. f. 13, 14.

No. CCLXII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

## 3. CARYCHIUM SPELÆUM, Rossmässler.

*Carychium spelæum*, Rossm. Iconograph. ixx. p. 36. no. 2. pl. 49. f. 661.

## 4. CARYCHIUM SPECTABILE, Rossmässler.

*Carychium spectabile*, Rossm. ixx. p. 36. no. 1. pl. 49. f. 659.

## 5. CARYCHIUM INDICUM, Benson.

*Carychium Indicum*, Bens. Ann. and Mag. Nat. Hist.; 2nd ser. iv. p. 194.

## Genus OPHICARDELUS, Beck.

Shell ovate-oblong, umbilicated, smooth; spire elevated, subconic; aperture oval; inner lip anteriorly dilated and reflexed, with two plaits at the fore part, the posterior spiral, forming an elevated ridge round the umbilical region; outer lip thin, simple.

## 1. OPHICARDELUS AUSTRALIS, Bruguière.

*Bulimus australis*, Brug. Encycl. Méth. p. 347.—*Auricula australis*, Desh. Lamk. Hist. Nat. deux. édit. tom. viii. p. 333. no. 15; Quoy & Gaim. Voy. de l'Astrol. ii. p. 169. pl. 13. f. 34–38.—*Auricula ovata*, Gray, Spicil. Zool. p. 5. pl. 6. f. 21.

2. OPHICARDELUS QUOYI, H. et A. ADAMS. *O. testa ovato-conica, spira elata, conoidea, brunnea, fasciis angustis transversis cincta, lævi, nitida, longitudinaliter striata; anfractu ultimo carina spirali circa regionem umbilicalem circumcincto; apertura oblongo-ovata; columella buplicata; labro intus vix marginato et unilamellato.*

*Hab.* Moreton Bay. Mus. Cuming.

## Subgenus LAIMODONTA, Nuttall.

Shell oblong-ovate, imperforate, thin, transversely striated; spire elevated, conic; aperture oval; inner lip with three plaits, the anterior small; outer lip with the margin acute, posteriorly sinuated, internally with an elevated transverse ridge.

*Lirator*, Beck. ?

## 3. OPHICARDELUS (LAIMODONTA) TÆNIATA, Nuttall.

*Laimodonta tæniata*, Nutt. Sow. Manual.

## 4. OPHICARDELUS (LAIMODONTA) SANDWICHENSIS, Eydoux et Souleyet.

*Auricula Sandwichensis*, Eyd. et Soul. Voy. Bonite, pl. 29. f. 29, 30.

## 5. OPHICARDELUS (LAIMODONTA) CONCINNA, C. B. Adams.

*Auricula concinna*, C. B. Adams, Shells of Panama, p. 208. no. 310.

## 6. OPHICARDELUS (LAIMODONTA) SULCATA, H. et A. Adams.

*O. testa ovata, spira conica, elongata, apice erosa, brunnea, fasciis tribus pallidis transversis ornata, transversim sulcata, liris intermediis subgranulosis instructa; apertura angusta;*

*columella biplicata, plica postica carinam spiralem circa regionem umbilicalem formante; labro acuto, simplice, intus lævi.*  
*Hab.* —? Mus. Cuming.

7. OPHICARDELUS (LAIMODONTA) LAYARDI, H. et A. Adams.  
*O. testa ovato-conica, rufo-fusca, fascia alba, lata, transversa ornata; spira elata, apice acuta, anfractibus planis, transversim sulcatis; apertura ovata; columella triplicata, plicis posterioribus validis; labro intus unilamellato, margine acuto.*  
*Hab.* Ceylon (Mr. Layard). Mus. Cuming.

### Genus MARINULA, King.

Foot simple inferiorly, without a transverse groove.

Shell ovate-oblong, imperforate, solid, smooth; apex short, acute; aperture obovate; inner lip broad, excavated, with three plaits, the posterior the largest; outer lip posteriorly sinuated, internally simple, the margin acute.

1. MARINULA PEPITA, King.

*Marinula pepita*, King, Zool. Journ. vol. v. p. 344.—*Auricula pepita*, Reeve, Conch. Syst. t. 187. f. 1.—*Pythia pepita*, Beck, Ind. Moll.—*Conovulus triplicatus*, Anton, Verzeich. p. 48. no. 1779.

2. MARINULA PATULA, Lowe.

*Melampus patulus*, Lowe, Mon. Melamp. Zool. Journ. vol. v. p. 289.

3. MARINULA MARINELLA, King.

*Auricula marinella*, King, Zool. Journ. vol. v.—*Auricula nigra*, Phil. in litt. Küst. Conch. Cab. (Auriculacea) t. 3. f. 4, 5. p. 23.

4. MARINULA CALLAOENSIS, Petit.

*Auricula Callaoensis*, Petit, Proc. Zool. Soc.

5. MARINULA RECLUZIANA, Petit.

*Auricula Recluziana*, Petit, Proc. Zool. Soc. 1842, p. 201.

6. MARINULA CYMBÆFORMIS, Recluz.

*Auricula cymbæformis*, Recluz. Rev. Zool.

7. MARINULA PUNCTATA, Bivona.

*Ovatella punctata*, Bivon. Nuov. Gen. e Spec. p. 4. t. 2. f. 12.—*Auricula villosa*, Fér.—*Auricula Firminii*, Payraud, Cat. Moll. Corse, pl. 5. f. 10.—*Melampus Firminii*, Lowe.

8. MARINULA ÆQUALIS, Lowe.

*Melampus æqualis*, Lowe, Zool. Journ. (Mon. Melamp.) vol. v. p. 288. t. 12. f. 1–4.—*Melampus gracilis*, Lowe (var.).

9. MARINULA XANTHOSTOMA, H. and A. Adams. *M. testa ovato-oblonga, solida, læviuscula, nitida, fulva; spira acuta, anfractibus 5, convexiusculis; apertura oblongo-ovata, lutea;*

*columella triplicata, plica postica pervalida; labro acuto, in medio vix incrassato, postice sinuato.*  
*Hab.* Moreton Bay. Mus. Cuming.

#### Genus PEDIPES, Adanson.

Foot furnished inferiorly with a transverse groove.

Shell subglobose, imperforate, transversely striated; spire short, obtuse; aperture narrow; inner lip flattened and excavated, with three plaits, the posterior the largest; outer lip posteriorly sinuated, with two teeth internally; margin acute.

##### 1. PEDIPES AFRA, Gmelin.

*Helix Afra*, Gmel. Syst. Nat. p. 3651. no. 194.—*Pedipes*, Adanson, Voy. au Senegal, p. 11. pl. 1. f. 4.—*Pedipes Adansonii*, Blainv. Dict. t. xl. p. 288.

##### 2. PEDIPES ANGULATA, C. B. Adams.

*Pedipes angulata*, C. B. Adams, Shells of Panama, p. 207. no. 308.

##### 3. PEDIPES OVALIS, C. B. Adams.

##### 4. PEDIPES QUADRIDENS, Pfeiffer.

##### 5. PEDIPES GLOBULUS, Féruss.

#### Genus LEUCONIA, Gray.

Shell ovate-oblong, imperforate, smooth; spire conical; aperture elongate-oval; inner lip with two plaits anteriorly; outer lip smooth internally, the margin simple.

##### 1. LEUCONIA ALBA, Montagu.

*Voluta alba*, Mont. Test. Brit. 235; Turt. Dict.—*Auricula alba*, Gray, Ann. Phil. xv.; Jeffr. Linn. Trans. xvi. 370; Forbes, Malac. Monensis, 12.—*Valvaria alba*, Flem. Brit. Anim.; Walker, Min. Shells, f. 61.—*Voluta bidentata*, Mont. Test. Brit. Suppl. 100. t. 30. f. 2.—*Auricula bidentata*, Féruss. Tab. Moll. 103.—*Auricula erosa*, Jeffr. (var.)

##### 2. LEUCONIA SAYI, Küster.

*Auricula Sayi*, Küst. Chemn. Neuer Conch. Cab. (Auriculacea) p. 42. t. 6. f. 14, 15.

##### 3. LEUCONIA MICROSTOMA, Küster.

*Auricula microstoma*, Küst. Chemn. Neuer Conch. Cab. (Auriculacea) p. 52. t. 1. f. 18, 19.

##### 4. LEUCONIA MICHELI, Mittré.

*Auricula Micheli*, Mittré, Rev. Zool. vol. iv. p. 66.

##### 5. LEUCONIA BIVONÆ, Philippi.

*Auricula Bivonæ*, Phil. in litt. Küster, Chemn. Neuer Conch. Cab. (Auriculacea) p. 20. t. 2. f. 14, 15.







1. *Turcica monilifera*. — 4. *Typhis grandis*. — 7. *Ziziphinus spectabilis*  
 2. *Clanculus nodulosus*. — 5. *Eudora coronata*. — 8. *Delphinula Martini*  
 3. *Larina Strangei*. — 6. *Desmoulea ringens*. — 9. *Rostellaria melanocheilus*

Sowerby

Ford & West. Imp

## 6. LEUCONIA AURICELLA, Férussac.

*Auricula auricella*, Féruss. Prodr. p. 103. no. 5; Küster, Auriculacea, p. 47. t. 7. f. 12, 13.

## Genus PLECOTREMA, H. et A. Adams.

Shell ovato-conic, solid, umbilicated; spire elevated, acute; aperture contracted, oblong; inner lip with three plaits, the middle one bifid; outer lip with a marginal varix, internally bidentate. (Proc. Z. S. 1853. p. 120.)

1. PLECOTREMA BELLA, H. et A. Adams. *P. testa ovato-conica, late umbilicata; spira acuminata, anfractibus gradatis, ad suturas angulatis, liris transversis, granulatis, æqualibus concinne insculptis; apertura parva, peristomate libero; labio triplicato, plica mediana duplicata; labro intus bidentato, extus incrassato, limbato.*

*Hab.* Philippines. Mus. Cuming.

## 4. FURTHER CONTRIBUTIONS TOWARDS THE NATURAL HISTORY OF THE TROCHIDÆ: WITH THE DESCRIPTION OF A NEW GENUS AND OF SEVERAL NEW SPECIES, FROM THE CUMINGIAN COLLECTION. BY ARTHUR ADAMS, F.L.S. ETC.

(Mollusca, Pl. XXVII.)

## Genus TURCICA, A. Adams. (Nov. gen.)

Shell conoidal, thin, subdiaphanous, imperforate; whorls with transverse series of granules, the last rounded at the periphery; columella solid, spirally twisted at the upper part, ending below or anteriorly in an obtuse prominent point; outer lip thin, simple, acute.

This genus is founded on a beautiful trochoid shell from Australia, having somewhat the aspect and singular texture of a *Ziziphinus*; the great peculiarity, however, of the spirally-contorted columella distinguishes it from all the species of that genus.

1. TURCICA MONILIFERA, A. Adams. (Pl. XXVII. fig. 1.)  
*T. testa conoidea, subdiaphana, tenui, imperforata, fulva, aureo-nitente; anfractibus convexiusculis, cingulis moniliformibus, transversis, interstitiis oblique striatis, insculptis; suturis canaliculatis; anfractu ultimo cingula granulorum, in serie duplici dispositorum, ornato; basi convexa, cingulis granulosus granulis nonnullis fuscis instructa; apertura suborbiculari; columella superne spirali, antice in dentem desinente; labro margine acuto, intus lirato.*

*Hab.* Moreton Bay, Australia. Mus. Cuming.

2. ZIZIPHINUS SPECTABILIS, A. Adams. (Pl. XXVII. fig. 7.)  
*Z. testa conoidea, solida, imperforata, nitida, carneo-fulvescente; anfractibus planulatis, cingulis transversis, moniliformibus, granulis albidis, interstitiis subpurpureis, alternantibus ornatis;*

*anfractu ultimo rotundato, infima facie concentrice et valde lirato, regione umbilicali alba; columella solida, arcuata; apertura subquadrata; labro margine acuto, intus sulcato.*

*Hab.* New Zealand. Mus. Cuming.

3. *ZIZIPHINUS SPECIOSUS*, A. Adams. *Z. testa pyramidal-conica, imperforata, carnea, rufo variegata et punctata; anfractibus planulato-concavis, liris transversis, subgranulatis, majoribus cum minoribus alternantibus, granulis nonnullis rufo-fuscis, insculptis; anfractu ultimo obtuse angulato, basi concentrice exarato, regione umbilicali impressa, callo rufo cincta; apertura subquadrata; columella solida, subarcuata, antice vix truncata; labro intus lirato, margine in medio subangulato.*

*Hab.* Moreton Bay (Mr. Strange). Mus. Cuming.

4. *ZIZIPHINUS COMPTUS*, A. Adams. *Z. testa elevato-conica, imperforata, alba, rubro sparsim punctata, apice atro-purpurea; anfractibus planiusculis, suturis canaliculatis, cingulis transversis, granulosis, lineis elevatis alternantibus ornatis, granulis nitidissimis; anfractu ultimo rotundato; apertura quadrato-orbiculari; columella arcuata, in medio vix tuberculata; labro acuto, simplice, intus lirato.*

*Hab.* New Caledonia. Mus. Cuming.

5. *ZIZIPHINUS SCITULUS*, A. Adams. *Z. testa turbinato-conica, late et profunde umbilicata, carnea, rufo variegata; anfractibus convexis, ad suturas marginatis, liris transversis, asperulatis, rubro articulatis ornatis; anfractu ultimo rotundato, ad peripheriam vix carinato, basi convexo, radiatim striato et concentricè lirato; apertura orbiculari, columella arcuata, in medio excavata.*

*Hab.* New Zealand (Mr. Strange). Mus. Cuming.

6. *ZIZIPHINUS EUGLYPTUS*, A. Adams. *Z. testa conoidea, solida, imperforata, carnea, rubro pallide variegata, apice atro-purpurea; anfractibus convexiusculis, cingulis transversis, moniliformibus, majoribus cum minoribus alternantibus ornatis; anfractu ultimo rotundato, basi convexiusculo, cingulis granulosis, concentricis insculpta, regione umbilicali alba; apertura subquadrangulati; columella solida, convexa, rectiuscula, antice subtruncata.*

*Hab.* Van Diemen's Land. Mus. Cuming.

7. *MONILEA MENKEI*, A. Adams. *M. testa orbiculato-conoidea, umbilicata, sordide alba; anfractibus convexiusculis, supremis transversim liris, interstitiis longitudinaliter rugoso-reticulatis, infimis cingulis granulosis, confertis, granulis nonnullis majoribus ornatis; umbilici margine callo carneo, spirali, striato cincto; columella in medio sinuata, callo reflexo instructa, antice bituberculata; labro intus lævi.*

*Hab.* Masbate, Philippines. Mus. Cuming.

8. **MONILEA PHILIPPII**, A. Adams. *M. testa orbiculato-conoidea, umbilicata, sordide carnea, fusco radiatim picta; anfractibus convexiusculis, cingulis transversis, æqualibus, crenulatis, interstitiis longitudinaliter striatis ornatis; margine umbilici callo spirali, fusco, radiatim striato cincto; columella in medio sinuata, ecallosa, antice obsolete bituberculata.*

*Hab.* China Seas. Mus. Cuming.

The species most nearly resembling this is the *Trochus Belcheri* of Philippi, which I imagine is the *Trochus calyculus* of Wood.

9. **CLANCULUS NODULOSUS**, A. Adams. (Pl. XXVII. fig. 2.) *C. testa turbinato-conoidea, imperforata, albida, rubro variegata; anfractibus transversim sulcatis, et cingulis granosis ornatis, superne serie tuberculorum coronatis; sutura canaliculata; anfractu ultimo ambitu sulcato, ad peripheriam tuberculato, basi planiusculo, cingulis granosis ornato; columella superne soluta, tortuosa, antice tuberculata; margine umbilici crenulato; labro intus transversim sulcato, margine dentato-lirato.*

*Hab.* Van Diemen's Land. Mus. Cuming.

This species has most of the characters of a *Clanculus*, but the whorls are nodulous and not granular.

10. **OMPHALIUS CÆLATUS**, A. Adams. *O. testa orbiculato-conoidea, apice obtusa, umbilicata, livido-carnea; anfractibus planiusculis, cingulis granorum confertis, æqualibus insculptis, interstitiis striatis, ultimo ad peripheriam subangulato; umbilico aperto, intus callo spirali instructo, callo antice dilatato et tuberculato; apertura orbiculari; columella arcuata, simplice; labro intus lævi.*

*Hab.* Mogador. Mus. Cuming.

The character of this shell is so peculiar, on account of the internal spiral callus of the umbilicus, and the absence of characters which constitute allied forms, that I propose to consider it a subgenus of *Omphalius*, under the name of *Anadema*.

11. **OMPHALIUS STICTICUS**, A. Adams. *O. testa depresso-conica, late et profunde umbilicata, rufescente, fusco maculata; anfractibus planis, cingulis nigro alboque articulatis, anfractu ultimo ad peripheriam angulato, basi convexa, concentricè sulcata; apertura orbiculari; umbilico aperto, perspectivo.*

*Hab.* New Caledonia. Mus. Cuming.

This is a very pretty little species, of a trochoid form, but somewhat difficult to refer to any known group; the form is like *Chlorostoma*, the markings like those of *Gibbula*, and the umbilicus as in *Omphalius*.

12. **GIBBULA PULCHERRIMA**, A. Adams. *G. testa umbilicata, turbinato-conoidea, alba, flammis coccineis radiatim picta; anfractibus convexis, cingulis granulosis, transversis ornatis, ad suturas plicato-nodosis, sutura canaliculata; anfractu ultimo rotundato, ad peripheriam canaliculato, basi convexa, maculis*

*quadratis, in serie spirali dispositis ornata, et cingulis granosis insculpta; apertura suborbiculari; columella in medio excavata, in dentem terminata; labro intus lirato, margine crenulato; umbilico aperto, perspectivo.*

*Hab.* China Seas.

In many respects this beautiful species of *Gibbula* resembles *Omphalius rubro-flammulatus*, Koch.

13. MARGARITA DILECTA, A. Adams. *M. testa orbiculato-conica, late umbilicata, nitente, albida, flammulis rufis radiatim picta; anfractibus convexis, cingulis elevatis, acutis, supremis crenulatis, interstitiis concinne longitudinaliter striatis ornatis; basi convexa, albida, sublævi, radiatim striata; umbilico perspectivo, margine crenulato.*

*Hab.* Straits of Magellan. Mus. Cuming.

14. MARGARITA ASPECTA, A. Adams. *M. testa turbinato-conica, late umbilicata, grisea, aureo-nitente, fusco maculata; anfractibus rotundis, ad suturas excavatis, cingulis elevatis, crenulatis, subdistantibus, transversis, interstitiis longitudinaliter striatis ornatis; basi convexa, cingulis concentricis insculpta; umbilico magno, aperto, cingula elevata cincto, intus liris concentricis et lineis radiantibus decussato.*

*Hab.* Australia. Mus. Cuming.

15. MARGARITA BIANGULOSA, A. Adams. *M. testa orbiculato-conica, late umbilicata, lævi, brunnea, lineolis undulatis, longitudinalibus concinne picta; anfractibus planulatis, superne angulatis, ultimo biangulato; suturis marginatis; basi convexa, cingulis concentricis insculpta; umbilico perspectivo, margine crenulato, intus lineis transversis et radiantibus eleganter decussato.*

*Hab.* Siam. Mus. Cuming.

P.S. Since my former communication on the *Trochidæ*, I have had an opportunity of seeing the monograph of *Trochus* by Dr. Philippi, and am enabled to add a few corrections and additional synonyms.

ZIZIPHINUS JAVANICUS, Lamarck.

*Trochus Javanicus*, Lamk. Hist. Nat. no. 50; Phil. *Trochus*, pl. 18. f. 5.—*Ziziphinus zonamestus*, A. Adams, Proc. Zool. Soc. no. 228, 1853.

CHLOROSTOMA NIGERRIMUM, Gmelin.

*Trochus nigerrimus*, Gmel.—*Trochus niger*, Chemn.—*Chlorostoma corrugatum*, A. Adams, Proc. Zool. Soc. no. 228, 1853 (var.).

GIBBULA PREISSIANA, Philippi.

*Trochus Preissianus*, Phil. Zeit. für Malac. 1848, p. 123; Mon. *Trochus*, pl. 28. f. 3.—*Gibbula porcellana*, A. Adams, Proc. Zool. Soc. no. 228. p. 186, 1853.

## GIBBULA LEHMANNI, Menke.

*Turbo Lehmanni*, Menke, Moll. Nov. Holl. p. 18. no. 48.—*Trochus Lehmanni*, Phil. Mon. *Trochus*, pl. 28. f. 15.—*Gibbula pulchra*, A. Adams, Proc. Zool. Soc. no. 228. p. 187, 1853.

## MONILEA CORRUGATA, Koch.

*Trochus corrugatus*, Koch; Phil. Abbild. p. 67. Troch. t. 2. f. 7; Phil. Mon. *Trochus*, pl. 25. f. 9.—*Monilea lentiginosa*, A. Adams, Proc. Zool. Soc. no. 228. p. 188.

## MONILEA CRENULATA, Menke.

*Monodonta crenulata*, Menke, Moll. Nov. Holl. p. 14. no. 52.—*Trochus Solandri*, Phil. Mon. *Trochus*, pl. 28. f. 8.—*Monilea plumbea*, A. Adams, Proc. Zool. Soc. no. 228. p. 188.

## DILOMA NIGERRIMA, Gmelin.

*Turbo nigerrimus*, Gmel. Chemn. v. pl. 185. f. 1848.—*Littorina nigerrima*, Menke.—*Turbo Quoyi*, Kien.—*Turbo Araucanus*, D'Orb.

## 5. DESCRIPTION OF A NEW GENUS AND OF SEVERAL NEW SPECIES OF GASTEROPODOUS MOLLUSCA, FROM THE CUMINGIAN COLLECTION. BY ARTHUR ADAMS, F.L.S. ETC.

(Mollusca, Pl. XXVII.)

## LARINA, A. Adams. (Nov. gen.)

Operculum annular, horny, ovate; elements concentric; nucleus intramarginal near the middle of the inner edge.

Shell imperforate, semiglobose, thin; spire obtuse; whorls few, tumid, covered with an olivaceous epidermis, the last large and ventricose; aperture wide, ovate; outer lip simple, regular, acute.

This genus seems most to resemble *Amphibola*, but the operculum in that genus is subspiral, and not annular. From the circumstance of "Moreton Bay" being given as the locality, it would appear to be marine, thus affording us another example of a marine air-breathing Gasteropod.

1. LARINA STRANGEI, A. Adams. (Pl. XXVII. fig. 3.) *L. testa suborbiculari, imperforata, vix rimata, tenui, ampullacea; spira obtusa; anfractibus 3½, convexis, transversim sulcatis, epidermide olivacea, sæpius in lineis transversis elevata obtectis, anfractu ultimo ventricoso; apertura ovata, ampla; labro acuto, simplice.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

In young specimens the epidermis is disposed in transverse spiral ridges, and the surface of the shell is conspicuously striated longitudinally; in adult specimens the epidermis becomes abraded, and the surface exhibits some elevated transverse ridges.

2. **TYPHIS GRANDIS**, A. Adams. (Pl. XXVII. fig. 4.) *T. testa ovato-oblonga, sublævigata, quadrifariam varicosa, varicibus angulosis, crenulatis, postice truncatis, alba, rufo-variegata; anfractibus superne excavatis, in interstitiis tubulosis; apertura ovata, canali clauso; labro expanso, margine reflexo, crenulato.*  
*Hab.* California. Mus. Cuming.

A very large, white, solid species, with the whorls tinged with red-brown, and excavated near the sutures.

3. **CAMITIA GRAYI**, A. Adams. *C. testa orbiculari, convexo-conoidea, lævissima, carnea, maculis subquadratis rufescentibus ad suturas ornata; periphæria albida, maculis transversalibus, rufo-fuscis, in seriebus duabus dispositis; infima facie albida.*  
*Hab.* —? Mus. Cuming.

4. **DELPHINULA MARTINII**, A. Adams. (Pl. XXVII. fig. 8.) *D. testa subdiscoidea, late umbilicata, crassa, rubro-purpurea, transversim aspero-sulcata, costis transversis, spinis squamiformibus, curvatis, laciniatis armatis, instructa; spira retusa; anfractibus superne angulatis, tuberculato-asperis, anfractu ultimo soluto, disjuncto; apertura orbiculari, peristomate dilatato, margine laciniato.*

*Hab.* Padang (Capt. Martin). Mus. Cuming.

This is a large and handsome species, combining the form of *D. tyrria* with the lacinated ribs and sculpture of *D. atrata* of Chemnitz.

5. **DESMOULEA RINGENS**, A. Adams. (Pl. XXVII. fig. 6.) *D. testa ovato-acuta, ventricosa, rufo-fuscescente, longitudinaliter plicata, transversim sulcata, cancellata, scabriuscula, suturis canaliculatis; anfractibus superne angulatis, ultimo sulco profundo ad basin instructo; apertura coarctata, ringente; columella quadriplicata, plicis duabus anterioribus elatioribus; labro inflexo, intus valde corrugato-plicato.*

*Hab.* —? Mus. Cuming.

This singular shell has the characters of a *Desmoulea*, with the cancellated whorls and aspect of a *Nassa*; the ringent, plicate aperture is very conspicuous.

6. **GLADIUS (ROSTELLARIA) MELANOCHEILUS**, A. Adams. (Pl. XXVII. fig. 9.) *G. testa fusiformi-turrita, pallide castanea; anfractibus convexiusculis, lævibus, supremis longitudinaliter costatis, ultimo gibboso, antice transversim sulcato; labio antice incrassato, reflexo; labro margine dentato, fusco-nigrescente; rostro prælongo, recto.*

*Hab.* Eastern Seas. Mus. Cuming.

The characters of this species are constant both in young and adult specimens, and are such as clearly separate it from *G. fusus*, with which it has hitherto been confounded.



February 14, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTION OF A NEW GENUS AND SPECIES OF SEAL  
(*HELIOPHOCA ATLANTICA*), FROM MADEIRA.  
BY J. E. GRAY, PH.D., F.R.S., V.P.Z.S.

SOME months ago Mr. MacAndrew most kindly procured for me the skin of a Seal from the island of Madeira. A careful examination of it convinced me that it was a new species, most allied to *Phoca barbata* of the North Sea, but yet quite distinct from it. Mr. MacAndrew, after considerable trouble, at length obtained for me another skin of an older animal, with its skull, which proves that it is not only a new species, but presents such a combination of characters as entitle it to be considered the type of a new genus. It is the only species of Seal which I believe has yet been found so near the tropics on the African coast.

Both the specimens in the Museum came from the same cave in the *Deserta Grande Island*; the larger skin is full-grown, the other younger. Knight, in his 'Once on a Time,' speaks of the seals as common near Funchal; he observes, "A multitude of seals rush out from that hollow with a sudden cry, and plunge into the waves; that point shall be *Camara das Lobos*, the cave of seals." (i. p. 60.)

Mr. MacAndrew observes, that there is an island near the Canaries called *Isle Lobos*, on account of the number of seals formerly found there. It is very difficult of access, and Mr. MacAndrew could not hear of any existing there now, or of any remains of them.

The following are the characters of the genus:—

HELIOPHOCA.

Muzzle rather elongate, broad, hairy, with a slight groove between the nostrils; whiskers small, quite smooth, flat, tapering. Fore-feet short; fingers gradually shorter to the inner one; claws 5, flat, truncate. Hind-feet hairy between the toes; claws very small; hair short, adpressed, with very little or no under fur. *Skull* depressed; nose rather depressed, rather elongate, longer than the length of the zygomatic arch; palate angularly notched behind. Cutting teeth  $\frac{6}{4}$ , large, notched within, the middle upper much smaller, placed behind the intermediate ones. Canines, large, conical, sharp-edged. Grinders  $\frac{5 \cdot 5}{5 \cdot 5}$ , large, crowded, placed obliquely with regard to the central palatine line; crown large, conical, with several small conic rhombic tubercles. Lower jaw angulated in front below with diverging branches, the lower edge of the branches rounded, simple.

The feet, palate, and teeth resemble those of the genus *Callo-*

*cephalus* (*C. communis*), but the grinders are larger and less deeply lobed; and it has the smooth whiskers of the restricted genus *Phoca* (*P. barbata*). It differs from the latter genus in the depressed form of the skull, the large tubercular grinders, and the angular termination to the palate.

As the other subtropical Seal, *Phoca tropicalis* (Gray, Cat. Seals B.M. 28), from Jamaica, described from an imperfect skin without a skull, has similar small smooth whiskers, it may very probably, when its skull has been examined, be found to belong to this genus, which will then prove to be a subtropical form of the family.

*Heliophoca Atlantica*\*.

Fur short, adpressed, olive-gray, very obscurely grised at the tips of the hairs: Chin and under parts of the body rather paler.

Length 5 feet 5 inches.

*Hab.* Madeira. R. MacAndrew, F.R.S., &c.

While on the subject of Seals, I may draw the attention of naturalists on the coast of the Pacific to the account of the *Sea Horses*, said to be found in abundance on the seaward part of the island of St. Lorenza near Callao, mentioned in M. Bonelli's Travels in Bolivia, i. 90 & 128.

I have never heard of the genus *Tricheus* living out of the Arctic Ocean, and should have believed that the author had mistaken the *Sea Bear* (*Otaria Leonina*) for the *Sea Horse*, if he did not describe "the two great white tusks projecting from the mouth on either side," and further observe, that "the tusks are of great value and form an important article of commerce" (see i. 90), which cannot apply to the tusks of the *Sea Bear*.

It is to be observed that the Peruvian continuation of the Antarctic current runs up the shores of Chili and Peru (see Journ. Roy. Geog. Soc. 1853) and chills that coast. This may explain why seals are found so near the tropics in those seas. I fear that M. Bonelli is not to be relied on for his natural-history observations, for he states that the cedar, mahogany and banyan trees (i. 79), and the date-palm (i. 146) grow on the coast of Peru.

\* I have just received a well-preserved skin and the skeleton of this Seal from Algeria, under the name of *Phoca leporina*. It certainly cannot be the *Phoca leporina* of Lepechin, in Act. Acad. Petrop. 1777, 264. t. 8, 9 = the *Phoca Lepechinii*, Lesson, from the White Sea and the rivers flowing into it, which M. Nilsson considers to be the same as *P. barbata*; but I think this is doubtful, as Lepechin described the fur as dirty-white, sometimes with a yellow tinge without any spots, and the hair as erect, with abundance of under wool. The African Seal has very short, broad, closely adpressed hair, while Lepechin expressly states that the hair of *P. leporina* is not adpressed, but erect, and that his species is at once known from *Phoca barbata* by the large size of the grinders, which are very close together, and the last one very peculiarly placed across the line of the other teeth (Oct. 1854).

2. NOTES ON THE HABITS OF INDIAN BIRDS. PART II.  
BY LIEUTENANT BURGESS.

Family STRIGIDÆ.

Genus URRUA, Hodgs.

URRUA BENGALENSIS.

I have found this large Owl common on the banks of the large rivers, as also amongst the low jungly hills and patches of brushwood in the Central Deccan. It appears to prefer the small bushy ravines covered with high grass, which lead down from the high banks into the beds of the larger streams and rivers. When seated on the top of a bush in the dim twilight, it forms quite a formidable object, the gloom making it appear larger than it really is. It does not appear to be strictly nocturnal, as I met with one sitting on the sandy shore of the river Bheema some time after the sun had risen. I never found the eggs of this bird; but I have been informed, on good authority, that they make their nest at the foot of bushes in the tall grass, and lay four white eggs. I kept three nestlings of this species for some time. When brought to me out of the nest, they were covered with down of a chestnut colour, spotted and streaked with dark brown. This Owl breeds during the months of March and April.

Genus NOCTUA.

NOCTUA INDICA, Frank.

This is a very common Owl in Western India, so much so that every grove, and almost every large tree, appears to have some of this clamorous family inhabiting its holes and crevices. It is a most noisy bird, screeching and screaming ere the shades of evening draw on, and becoming quite a nuisance to any one pitched under the tree frequented by them. It appears to be very little incommoded by a strong light, moving out of its hiding-place before the sun is down, flitting backwards and forwards amongst the branches and from tree to tree. In the month of June I saw a pair of these little Owls sitting on the bare branch of a tree, with the brilliant morning sun shining full on them; in fact, they appeared to be sunning themselves. On another occasion I shot a pair, sitting on a ledge of rock, in the full blaze of the setting sun. If disturbed during the day, they fly about with the greatest activity, uttering their squabbling note, and look down on the intruder from above with eyes that appear in no way incommoded by the light. In the stomachs of the last pair above mentioned, I found the wing-cases and legs of beetles. This little owl breeds during the months of February and March, laying three or four eggs of a pure white colour, nearly  $1\frac{3}{10}$  in. long and  $1\frac{1}{10}$  in. broad. They lay their eggs in holes of trees.

## Order II. INSESSORES.

## Tribe DENTIROSTRES.

## Family LANIADÆ.

## Subfamily LANIANA.

## Genus LANIUS.

## LANIUS HARDWICKII.

This handsome little Shrike migrates, I believe, from the Deccan for the purpose of breeding, probably resorting to the thickets and ravines of the Western Ghauts, and returning to the Deccan about September. I could not find its nest when on the hills in the month of October; but I shot a young bird, which may probably be the young of this species. I give a description of its plumage. Beak rich deep brown; chin and throat dirty brownish-white; under plumage and under tail-coverts white; flanks dull grey; white streak passing from the beak over the eye and ear-coverts; ear-coverts and patch behind the eye dull black; top of the head and nape of the neck brownish-grey, the feathers having very pale whitish ferruginous tips; feathers on the lower part of the neck and back are on their basal half grey, and the remaining portion greyish-brown with light tips. On the lower part of the back the feathers are very filmy and thick-set, of a grey colour, with a dark band near their ends, and tipped with white. Primaries hair-brown; bastard wing brown; greater coverts lighter brown with pale tips; secondaries hair-brown; tertials paler brown, with light edges. Tail consists of twelve feathers; the two outer are white, with pale brown near the ends on the outer webs. The next feather has also a dark spot near the tip on the inner web; the third feather is nearly black, with a white spot on the inner web about half an inch from the end; the remaining feathers are of a black-brown, being nearly black on the inner webs; lesser coverts pale brown with light tips; feathers on the thighs of a pale grey-brown with white tips; legs and feet lead-colour; claws pale brown; the legs and claws have a white powdered look in several places, especially near the junction of the scales. This may perhaps have been the young bird of the large rufous-backed Shrike, *Lanius erythronotus*.

## LANIUS EXCUBITOR. LARGE GREY SHRIKE.

This is very common in the Deccan. It is generally seen seated on the top of small babool trees, or other thorny bushes, in open country, and may be distinguished at some distance by its silvery-white breast. When disturbed, it flies low to some neighbouring bush, on the top of which it alights, uttering its harsh and grating cry. The Grey Shrike begins to breed as early as January, as a boy brought me a pair of nearly fledged young ones on the 2nd of February. They almost, if not invariably build in a thorn bush, and generally well into the centre. I subjoin a note penned at the time of finding one of their nests:—"15th May. Saw a pair of Grey Shrikes building

in a place I never saw this species building in before, viz. on the *outside* branches of the babool tree. The nest was composed of a thorny twig or two of babool and thick bents of grass." Another nest was made in a thorny bush, about 5 feet from the ground, and *close* to the stem of the bush; it was composed of twigs of the thorn bush, pieces of cotton and a piece of rag, with grass interwoven into it. This nest contained three eggs. It is now in the Museum of the Zoological Society. The eggs are a little less than an inch in length, by a little less than  $\frac{8}{10}$  in. wide, of a white ground, spotted and mottled, especially at the large end, with grey and red-brown.

I believe that this Butcher Bird, like the last-mentioned, migrates from the Deccan during the monsoon, returning about September. It would form a very interesting subject for investigation, as to what families of birds leave the Deccan during the monsoon, whither they betake themselves, and for what purposes. I have frequently made inquiries, but could not learn anything satisfactory on this subject.

### Subfamily DICRURINÆ.

#### Genus DICRURUS.

#### DICRURUS MACRORERCUS. DRONGO SHRIKE.

This bird is not much indebted to variety or richness of colouring in its plumage, for bringing it into notice; but its pleasant cheerful note and active habits must have been remarked by all observers of nature in India. Ere the peep of day it commences its pleasant twitter, and from sunrise to sunset it may be seen, now sitting on a bare spray watching for some passing insect, now perched on the back of a browsing cow or sheep, and then off in an instant in pursuit of a fly. I have seen one chase and capture a large white butterfly, which it appeared to have some difficulty in swallowing when caught, as it did not attempt to pull it to pieces, but was endeavouring to bolt it entire. They appear to have great antipathy to crows, chasing them with great vigour and boldness whenever one enters within their domain. I subjoin a note, made at the time, of the curious flight of these birds when hawking after flies. "Saw one of them (Drongo) perched on the outside branch of a tree hanging over a field of wheat; suddenly the Shrike descended close to the ears of corn on which the flies had settled in the heat of the sun, and commenced a most curious jerking flight up and down, as if it had been tossed up and down on the waves of the sea. After performing this dancing flight for some little time, it returned to its seat, and after remaining there a short time, descended and repeated its jerking flight." The Marahta name is Kolsa, the word for charcoal, alluding I suppose to its jet-black colour. The Drongo begins to build in the month of May, and Dr. Jerdon mentions having found its nest as late as August. I found its nest in a bush in a thick hedgerow; it was composed of roots, and contained three eggs of a rather reddish creamy-white ground, spotted with red spots; the egg is  $\frac{9}{10}$  in. long by rather more than  $\frac{7}{10}$  broad. The food of the Drongo consists of insects, moths, and butterflies.

## Genus PHÆNICORNIS, Swains.

## PHÆNICORNIS PEREGRINUS, Vig.

I have not met with the nest and eggs of the small red bird, but I believe the description given below is that of a young bird soon after it had left the nest. "18th September 1849. Whole of the upper plumage olive-green, mottled about the head with pale yellow, a large spot of which is behind the eye; tips of the lesser wing-coverts pale. Primaries and secondaries dark, with pale edges; breast and belly pale whitish-yellow, with yellow streaks; legs and feet pale lead-colour; claws soft, as also the edges of the beak."

## Genus IORA.

## IORA TIPHIA.

I have never met with the nest or eggs of this handsome little bird; but Dr. Jerdon, in his Catalogue of Indian Birds, says, "I once, on the west coast, in the month of September, met with a nest of this species in the fork of a low tree; it was more neatly and carefully made than any other of the few nests I have seen in this country. It contained young ones." The Iora has a most wonderful power of voice. At one moment it is heard uttering a low plaintive cry, at the next a shrill whistle; no one could have believed the notes to have issued from the same throat. On the 29th of August, 1849, I shot a female. The eggs in the ovaries were very large. The gizzard contained the remains of a curious green insect, partly covered with black hair. The tongue of this bird is furnished with two long muscles, as in the woodpecker.

## Genus HÆMATORNIS.

## HÆMATORNIS CAFER. COMMON BULBUL.

This sprightly and truly Indian bird breeds during the months of August and September. The first time that I noticed them building in August was on the 11th, and I found a nest with one fresh-laid egg on the 25th of September. They build in thick bushes in gardens. I found two nests in my garden at Ahmednuggur, one built in a guava tree, and the other in a mass of creepers. The nest is composed of fine twigs, bound together here and there with cobwebs, and lined with fibres. The nest I send is lined with the fibre of the cocoa-nut picked off a cocoa-fibre mat. I observed the old birds picking at the mat when it was put out of doors. I do not know the number of eggs which their nest generally contains. The egg is  $\frac{9}{10}$  in. in length by a little more than  $\frac{6}{10}$  wide, of a rich madder colour, spotted and blotched with grey and madder-brown. The only egg which I possessed is unfortunately broken; but a drawing in my possession, most accurately painted by my sister-in-law, Miss Gardiner, gives it very correctly.

3. DESCRIPTIONS OF FORTY-TWO NEW SPECIES OF HELIX,  
FROM THE COLLECTION OF H. CUMING, ESQ.  
BY DR. L. PFEIFFER.

1. *HELIX URNULA*. *H. testa obtecte perforata, helicophantoidea, tenui, submembranacea, irregulariter oblique sulcata et malleata, parum nitida, pellucida, virenti-fusca; spira minuta, conoidea, apice obtusa, pallida; sutura profundiuscula; anfract. 3, convexis, rapidissime accrescentibus, ultimo magno, deorsum subcompresso, basi subexcavato; apertura obliqua, truncato-ovali, intus nitidissima; perist. simplice, obtuso, subinflexo, marginibus approximatis, columellari superne reflexo, adnato.*

Diam. maj. 16, min. 13, alt. 9 mill.

*Hab.* New Zealand.

2. *HELIX NEMATOPHORA*. *H. testa imperforata, depressa, tenui, costis filiformibus, subconfertis sculpta, diaphana, non nitente, corneo-lutea, maculis castaneis præsertim superne tessellato-variegata; spira plana; sutura impressa; anfract. 5½, convexiusculis, lente accrescentibus, ultimo altiore quam lato, antice non descendente, basi planiusculo; apertura subverticali, lunari, intus nitida; perist. simplice, recto, marginibus remotis, supero brevissimo, dextro subverticali, basali leviter arcuato, versus regionem umbilicalem dilatato, adnato.*

Diam. maj. 9½, min. 8, alt. 5 mill.

*Hab.* Salomon's Islands.

3. *HELIX QUITENSIS*. *H. testa subobtecte perforata, conoidea, tenui, lævigata, pellucida, lutescenti-hyalina; spira conoidea, acutiuscula; sutura profunda; anfract. 5, convexis, lente accrescentibus, ultimo non descendente, basi convexiusculo; apertura obliqua, lunari; perist. simplice, recto, marginibus distantibus, columellari declivi, sursum subdilatato, perforationem fere claudente.*

Diam. maj. 7, min. 6½, alt. 4 mill.

*Hab.* Quito.

4. *HELIX SACCATA*. *H. testa sinistrorsa, perforata, turbinato-depressa, tenuissima, oblique striatula et lineis spiralibus confertis minute decussata, vix nitidula, pellucida, rubello-cornea; spira subturbinata, acutiuscula; sutura impressa, anguste marginata; anfract. 4½, vix convexiusculis, celeriter accrescentibus, ultimo non descendente, compresse carinato, supra carinam oblique rugoso, basi convexo, antice saccato; apertura diagonali, contracta, subangulato-lunari; perist. simplice, recto, marginibus subconvergentibus, basali perarcuato, juxta perforationem non perviam breviter reflexo.*

Diam. maj. 28, min. 23, alt. 16 mill.

*Hab.* India.

5. *HELIX CAPITANEA*. *H. testa aperte perforata, turbinato-lenticulari, tenui, lævigata, sulcis spiralibus nonnullis obsoletissimis signata, nitidissima, pallide rubello-cornea, linea rufa immediate*

*supra carinam, alteraque suturali ornata; spira conoidea, acutiuscula; sutura vix impressa; anfract. 5, planiusculis, celeriter accrescentibus, ultimo non descendente, medio subacute carinato, basi convexo; apertura subobliqua, tetragono-lunari; perist. simplice, recto, marginibus subparallelis, columellari substricto descendente, superne breviter reflexo.*

Diam. maj. 23, min. 20, alt. 11 mill.

*Hab.* San Cristoval, Salomon's Islands (Capt. Keppell).

6. **HELIX NOVELLA.** *H. testa perforata, turbinato-depressa, tenuiuscula, leviter rugato-striata, diaphana, oleoso-micante, fusco-flavida; spira breviter turbinata, apice obtusula; sutura levi, submarginata; anfract. 5, vix convexiusculis, celeriter accrescentibus, ultimo superne convexiore, carina peripherica acuta, antice obtusa munito, non descendente, basi convexo; apertura obliqua, subtetragono-rotundata, intus margaritacea; perist. recto, obtusulo, margine basali ad dextram valde arcuato, tum subarcuatim ascendente, ad perforationem brevissime reflexo.*

Diam. maj.  $21\frac{1}{2}$ , min. 18, alt. 10 mill.

*Hab.* Ceylon (Mr. Thwaites).

7. **HELIX VERRUCULA.** *H. testa perforata, turbinata, tenui, superne grosse et regulariter granulata, sericea, pellucida, fusco-cornea; spira conoidea, obtusula; anfract.  $4\frac{1}{2}$ , vix convexiusculis, lente accrescentibus, ultimo medio acute compresso-carinato, antice non descendente, basi convexo, sublævigato, nitido; apertura vix obliqua, securiformi; perist. recto, acuto, margine columellari subverticali, superne brevissime reflexo, perforationem fere tegente.*

Diam. maj.  $7\frac{1}{2}$ , min.  $6\frac{1}{2}$ , alt.  $4\frac{1}{2}$  mill.

*Hab.* Ceylon (Mr. Thwaites).

8. **HELIX REGULARIS.** *H. testa subobtecte perforata, regulariter coniformi, tenui, minutissime striata, pellucida, oleoso-micante, luteo-cornea; spira conica, acutiuscula; sutura vix impressa; anfract. 6, subplanis, lente accrescentibus, ultimo non descendente, acute carinato, basi planiusculo; apertura diagonali, depresso securiformi; perist. simplice, recto, marginibus remotis, columellari superne dilatato, subadnato.*

Diam. 3, alt. 3 mill.

*Hab.* New Zealand.

9. **HELIX KEPPELLI.** *H. testa subobtecte perforata, depressa, tenui, lævigata (sub lente minute striolata), nitida, pellucida, fulvo-cornea; spira brevissime conoidea, obtusula; sutura simplice, impressa; anfract.  $5\frac{1}{2}$ , vix convexiusculis, sensim accrescentibus, ultimo non descendente, periphæria rotundato, basi subexcavato; apertura parum obliqua, late lunari; perist. simplice, recto, marginibus vix convergentibus, columellari arcuatim descendente, superne calloso, breviter reflexo, adnato.*

Diam. maj. 16, min. 14, alt. 8 mill.

*Hab.* San Cristoval, Salomon's Islands (Capt. Keppell).



10. *HELIX MEDIOCRIS*. *H. testa vix subperforata, depressa, discoidea, tenui, laevigata, albido-hyalina; spira subplana; sutura impressa, submarginata; anfract. 4, vix convexiusculis, sensim accrescentibus, ultimo antice subdilatato, non descendente, rotundato, basi subexcavato; apertura verticali, late lunari; perist. simplice, recto, marginibus subconniventibus, dextro fortiter, basali leviter arcuato.*

Diam. maj. 5, min.  $4\frac{1}{2}$ , alt.  $2\frac{1}{4}$  mill.

*Hab.* Santa Ana, New Granada.

11. *HELIX SWIFTI*. *H. testa angustissime umbilicata, convexo-depressa, tenui, confertim capillaceo-striata, sericea, fusco-cornea; spira parum elevata, vertice subtili; sutura impressa; anfract. 4, vix convexiusculis, sensim accrescentibus, ultimo non descendente, rotundato, periphæria obsolete angulato, circa perforationem subexcavato; apertura parum obliqua, late lunari; perist. simplice, recto, marginibus distantibus, columellari declivi, superne dilatato, patente.*

Diam. maj.  $12\frac{1}{2}$ , min. 11, alt. 6 mill.

*Hab.* St. Thomas (Bland), and Porto Rico, West Indies.

12. *HELIX SUBCONOIDEA*. *H. testa angustissime perforata, depressa, tenui, fragili, superne distincte costulata, pellucida, cornea; spira brevissime conoidea, vertice obtuso; anfract. 5, convexiusculis, lente accrescentibus, ultimo non descendente, supra medium subangulato, basi modice convexo, distanter radiato-striolato; apertura parum obliqua, lunari; perist. simplice, recto, marginibus vix convergentibus, columellari leviter arcuato, ad perforationem vix reflexiusculo.*

Diam. maj.  $10\frac{3}{4}$ , min.  $9\frac{1}{2}$ , alt.  $5\frac{1}{2}$  mill.

*Hab.* Ceylon (Mr. Thwaites).

13. *HELIX NEWCOMBI*. *H. testa angustissime perforata, depressa, tenui, confertissime rugoso-striata, vix sericea, pellucida, cornea; spira brevissime conoidea, acutiuscula; sutura impressa, subcrenata; anfract.  $3\frac{1}{2}$ , convexiusculis, rapide accrescentibus, ultimo non descendente, periphæria obsolete angulato, basi convexo; apertura diagonali, lunato-subcirculari, intus margaritacea; perist. simplice, recto, marginibus approximatis, columellari perarcuato, superne vix reflexiusculo.*

Diam. maj. 11, min. 9, alt. 6 mill.

*Hab.* Oahu, Sandwich Islands (Dr. Newcomb).

14. *HELIX PLATTI*. *H. testa perforata, depressa, tenui, membranaceo-costulata et longe pilosa, diaphana, cornea; spira brevissime conoidea, acutiuscula; anfract.  $5\frac{1}{2}$ , vix convexiusculis, sensim accrescentibus, ultimo non descendente, superne subplano, obsolete angulato, basi convexo; apertura vix obliqua, late lunari; perist. simplice, recto, marginibus distantibus, basali levissime arcuato, columellari superne perdilatato, fornicatim reflexo.*

Diam. maj. 10, min. 9, alt. 6 mill.

*Hab.* Natal, South Africa (Mr. Platt).

15. *HELIX ISABELLINA*. *H. testa perforata, depressa, tenui, minutissime granulato-rugulosa, sericea, pellucida, pallide isabellina; spira brevissima, convexa, vertice subprominulo; sutura lineari; anfract. 5, subplanis, sensim accrescentibus, ultimo acute carinato, antice non descendente, basi inflato; apertura obliqua, lunato-securiformi; perist. recto, acuto, margine basali regulariter arcuato, columellari superne in laminam brevem, triangularem reflexo.*

Diam. maj. 33, min. 27, alt. 14 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

16. *HELIX MORETONENSIS*. *H. testa perforata, conoideo-lenticulari, tenui, superne subarcuato-plicata, haud nitida, rufa; spira conoidea, subacuminata; sutura simplice, impressa; anfract. 5½, convexiusculis, lente accrescentibus, ultimo non descendente, peripheria subacute carinato, busi convexo, sublævigato, albido; apertura obliqua, subangulato-lunari, intus margaritacea; perist. recto, acuto, marginibus subparallelis, columellari superne in laminam brevem, latam, triangularem reflexo.*

Diam. maj. 19, min. 17, alt. 10 mill.

*Hab.* Moreton Bay, Australia (*Mr. Strange*).

17. *HELIX GLABERRIMA*. *H. testa umbilicata, depressa, solidula, glaberrima, nitidissima, pallide corneo-lutescente; spira parum elevata, vertice subtili, subprominulo; sutura obsolete marginata; anfract. 5½, modice convexis, sensim accrescentibus, ultimo non descendente, subdepresso, basi albido, planiusculo; apertura fere diagonali, oblique lunata, dextrorsum producta, intus margaritacea; perist. simplice, recto, marginibus convergentibus, columellari oblique ad umbilicum mediocrem, pervium ascendente, superne vix dilatato, patente.*

Diam. maj. 12, min. 10½, alt. 5½ mill.

*Hab.* Salomon's Islands.

18. *HELIX SANTANAENSIS*. *H. testa umbilicata, conoideo-depressa, tenui, striatula, nitida, pellucida, lutescenti-hyalina; spira brevissime conoidea, vertice subtili; sutura profunda; anfract. 5, convexis, angustis, ultimo vix latiore, non descendente, terete; umbilico conico, ⅓ diametri fere æquante; apertura parvula, parum obliqua, rotundato-lunari; perist. simplice, recto, marginibus vix convergentibus, regulariter arcuatis.*

Diam. maj. 4½, min. 4, alt. 2½ mill.

*Hab.* Santa Ana, New Granada.

19. *HELIX KAWAIENSIS*. *H. testa umbilicata, convexo-depressa, tenuiuscula, sublævigata, cerea; spira convexa, obtusula; sutura impressa; anfract. 4½, convexiusculis, lente accrescentibus, ultimo non descendente, terete; umbilico latiusculo, ¼ diametri superante, conico; apertura parvula, obliqua, lunato-rotundata; perist. simplice, recto, marginibus convergentibus, columellari superne vix reflexiusculo.*

Diam. maj. 3¼, min. 3, alt. 1½ mill.

*Hab.* Kawai, Sandwich Islands (*Dr. Newcomb*).

20. *HELIX SUBANGULATA*. *H. testa umbilicata, convexo-depressa, solidula, striatula, vix nitidula, cerea, fascia angusta, castanea prope suturam, duabusque latioribus infra peripheriam ornata; spira brevi, convexa, obtusa; anfract. 4½, convexiusculis, sensim accrescentibus, ultimo non descendente, periphèria subangulato, basi subplano; apertura obliqua, rotundato-subtetragona; perist. simplice, recto, marginibus subparallelis, columellari juxta umbilicum mediocrem, conicum dilatato, patente.*

Diam. maj. 17, min. 14, alt. 8 mill.

*Hab.* Van Diemen's Land.

21. *HELIX HONDANA*. *H. testa umbilicata, convexo-depressa, striatula, pallide lutescente; spira convexiuscula, vertice subtili, prominulo; anfract. 6, parum convexis, lente accrescentibus, ultimo non descendente, depresso-rotundato; umbilico latissimo, ⅓ diametri superante; apertura parvula, obliqua, rotundato-lunari; perist. simplice, recto, marginibus conniventibus, basali regulariter arcuato.*

Diam. maj.  $7\frac{3}{4}$ , min. 7, alt.  $3\frac{3}{4}$  mill.

*Hab.* Honda, New Granada.

22. *HELIX STRONGYLODES*. *H. testa umbilicata, convexo-depressa, solidula, oblique costulata, albida, maculis rufis superne variegata; spira parum elevata, obtusa; anfract. 6, sensim accrescentibus, primis planiusculis, sequentibus convexis, ad suturam lumbidis, ultimo non descendente, terete; umbilico perspectivo, ⅓ diametri æquante; apertura diagonali, lunato-rotundata; perist. simplice, recto, marginibus subconvergentibus, columellari superne fornicatim patente.*

Diam. maj. 19, min.  $16\frac{1}{2}$ , alt.  $8\frac{1}{2}$  mill.

*Hab.* Texas.

23. *HELIX BULLACEA*. *H. testa umbilicata, convexo-depressa, tenui, superne confertissime capillaceo-striata, sericea, pellucida, pallide cornea; spira vix convexa, vertice subtili; sutura simplice, impressa; anfract. 4, convexiusculis, celeriter accrescentibus, ultimo antice non descendente, periphèria rotundato, lævigato, basi convexo, radiato-striato, corneo-virente; umbilico mediocri, conico; apertura magna, obliqua, lunato-rotundata, intus margaritacea; perist. simplice, recto, marginibus conniventibus, columellari superne triangulatim patente.*

Diam. maj.  $17\frac{1}{2}$ , min. 14, alt. 9 mill.

*Hab.* Moreton Bay, Australia (*Mr. Strange*).

24. *HELIX LAMPRA*. *H. testa umbilicata, convexo-depressa, tenui, subarcuatim confertissime striata, nitidissima, saturate virenti-castanea; spira parvula, convexa, vertice obtuso; anfract. vix 4, convexiusculis, rapide accrescentibus, ultimo non descendente, rotundato, basi læviore, virenti-flavo; apertura obliqua, lunato-circulari, intus cærulescente; perist. simplice, recto, marginibus convergentibus, supero antrorsum dilatato, columellari*

*leviter arcuato, juxta umbilicum angustum, vix pervium breviter fornicato-patente.*

Diam. maj. 20, min. 16, alt. 10 mill.

*Hab.* Van Diemen's Land.

25. *HELIX EXCISA.* *H. testa umbilicata, depressa, tenuiuscula, confertim arcuato-costellata, diaphana, pallide lutescente; spira vix convexa; sutura impressa; anfract. 4, vix convexiusculis, lente accrescentibus, ultimo non descendente, subdepresso, basi angustiore; umbilico latissimo,  $\frac{2}{5}$  diametri subæquante; apertura minuta, obliqua, lunato-rotundata; perist. simplice, recto, marginibus convergentibus, dextro superne recedente, subexciso.*

Diam. maj.  $4\frac{1}{2}$ , min. 4, alt. 2 mill.

*Hab.* Santa Ana, New Granada.

26. *HELIX EUSPIRA.* *H. testa umbilicata, depressa, discoidea, solidula, arcuato-striata, lineis impressis spiralibus irregulariter decussatula, sub epidermide nitida, virenti-fulva alba; spira plana; sutura parum impressa; anfract.  $4\frac{1}{2}$ , subplanulatis, sensim accrescentibus, ultimo non descendente, depresso; umbilico perspectivo,  $\frac{1}{3}$  diametri fere æquante; apertura obliqua, rotundato-lunari, intus margaritacea; perist. simplice, recto, marginibus convergentibus, dextro antrorsum dilatato, columellari brevissime patente.*

Diam. maj. 26, min.  $22\frac{1}{2}$ , alt. 9 mill.

*Hab.* Brazils.

27. *HELIX THOMASI.* *H. testa umbilicata, depressa, subdiscoidea, tenui, striatula, parum nitente, lutescenti-hyalina; spira subplana; sutura impressa; anfract. 5, convexiusculis, lente accrescentibus, ultimo non descendente, subdepresso; umbilico  $\frac{1}{4}$  diametri superante, perspectivo; apertura vix obliqua, lunato-rotundata; perist. simplice, recto, marginibus conniventibus, dextro antrorsum subdilatato, columellari superne vix patente.*

Diam. maj.  $7\frac{1}{3}$ , min.  $6\frac{1}{3}$ , alt.  $3\frac{1}{2}$  mill.

*Hab.* Marmato, New Granada.

28. *HELIX BOMBYCINA.* *H. testa umbilicata, depressa, discoidea, tenui, costulis confertis, subarcuatis, subtus minoribus sculpta, sericea, fulva, fasciis permultis castaneis ornata; spira subplana; sutura impressa; anfract. 4, vix convexiusculis, celeriter accrescentibus, ultimo depresso, antice non descendente, basi parum convexo; umbilico perspectivo,  $\frac{1}{4}$  diametri subæquante; apertura diagonali, lunato-circulari; perist. simplice, recto, marginibus approximatis, dextro antrorsum per dilatato, basali per arcuato, ad umbilicum vix dilatato.*

Diam. maj.  $14\frac{1}{2}$ , min.  $11\frac{1}{2}$ , alt. 6 mill.

*Hab.* Van Diemen's Land.

29. *HELIX AMMONOCERAS.* *H. testa umbilicata, depressissima, tenui, arcuato-striata, nitida, pellucida, pallide cornea; spira minuta, subimmersa; sutura profunda; anfract. fere 4, planiusculis, rapide accrescentibus, ultimo non descendente, depressissimo, peri-*

*pheria obsolete angulato, basi angustiore; umbilico lato,  $\frac{1}{3}$  diametri subæquante; apertura obliqua, subtriangulâri-lunari; perist. simplice, recto, marginibus vix convergentibus, supero substricto, antrorsum dilatato, basali arcuato.*

Diam. maj.  $4\frac{1}{2}$ , min.  $3\frac{3}{4}$ , alt. vix  $1\frac{1}{2}$  mill.

*Hab.* Santa Ana, New Granada.

30. **HELIX MEMBRANICOSTA.** *H. testa mediocriter umbilicata, trochiformi, tenui, costulis radiantibus membranaceis, præsertim facie inferiore munita, parum nitida, fusco-cornea; spira conica, acutiuscula; anfract. 7, convexiusculis, lente accrescentibus, ultimo non descendente, peripheria carinato, subtus convexiore; apertura obliqua, subtetragono-lunari; perist. simplice, recto, marginibus remotis, columellari superne dilatato, patente.*

Diam. maj. 11, min. 10, alt. 7 mill.

*Hab.* Salomon's Islands.

31. **HELIX NAVIGATORUM.** *H. testa mediocriter umbilicata, lentiformi, solidula, oblique striata, sub epidermide nitida, purpurascenti-fusca rubello-grisea; spira convexa, obtusa; sutura marginata; anfract. 5, convexiusculis, sensim accrescentibus, ultimo non descendente, supra medium compresse carinato, basi convexiore; apertura diagonali, lunato-rotundata, subangulata; perist. recto, obtuso, marginibus subconvergentibus, supero antrorsum subdilatato, basali arcuato, prope umbilicum vix dilatato, patente.*

Diam. maj.  $18\frac{1}{2}$ , min. 16, alt.  $7\frac{1}{2}$  mill.

*Hab.* Navigators' Islands.

32. **HELIX SEMICONVEXA.** *H. testa umbilicata, depressa, tenuiuscula, minute striata, castanea, sericea; spira vix elevata, medio pallida, vertice subtili, obtuso; sutura impressa, distincte marginata; anfract.  $4\frac{1}{2}$ , convexiusculis, sensim accrescentibus, ultimo non descendente, peripheria compresse carinato, basi inflato, umbilico mediocri, conico; apertura obliqua, securiformi, intus carulescente; perist. simplice, recto, marginibus vix convergentibus, basali perarcuato, ad umbilicum subdilatato, patente.*

Diam. maj. 14, min.  $11\frac{1}{2}$ , alt.  $6\frac{1}{2}$  mill.

*Hab.* Salomon's Islands.

33. **HELIX PIRRIANA.** *H. testa perforata, globoso-conica, tenui, lævigata (sub lente vix striatula), pellucida, cornea; spira convexo-conica, acutiuscula; sutura impressa, marginata; anfract. 7-8, convexiusculis, angustissimis, ultimo carinato, non descendente, basi convexo, intus ter bidenticulato; denticulis subæqualibus, extus pellucetibus; apertura vix obliqua, depressa, angulato-lunari, denticulorum pari antico coarctata; perist. simplice, recto, margine columellari ad perforationem apertam dilatato, reflexo.*

Diam. maj. 5, min.  $4\frac{1}{2}$ , alt. 4 mill.

*Hab.* Walghat, Koondah Mountains, near Calicut, India (Mr. Pirrie).

34. **HELIX RADIARIA.** *H. testa subobtectè perforata, trochiformi, tenuiuscula, striatula, parum nitente, diaphana, luteo-albida, su-*

*perne strigis spadiceis irregulariter signata; spira conoidea, obtusula; anfract. 5½, convexiusculis, sensim accrescentibus, ultimo non descendente, periphæria obsoletissime angulato, basi unicolore, subplano; apertura fere diagonali, lunari, intus nitida; perist. subsimplice, marginibus distantibus, dextro recto, antrorsum dilatato, basali incrassato, declivi, superne subdilatato.*

Diam. maj. 10, min. 9, alt. 7 mill.

*Hab.* Salomon's Islands.

35. **HELIX SCYTODES.** *H. testa umbilicata, conoidea, tenuiuscula, sub lente granulato-rugosa, vix nitidula, rubello-cornea; spira regulariter conoidea, obtusula; sutura rufo-marginata; anfract. 6½, convexiusculis, lente accrescentibus, ultimo periphæria acute rufo-carinato, antice vix descendente, basi convexo, circa umbilicum mediocrem obsolete compresso; apertura diagonali, lunato-rotundata; perist. tenui, marginibus conniventibus, supero leviter arcuato, recto, basali breviter reflexo, columellari subverticali, subdilatato, patente.*

Diam. maj. 14, min. 13, alt. 7 mill.

*Hab.* Salomon's Islands.

36. **HELIX LUTEO-CORNEA.** *H. testa subanguste umbilicata, conoideo-lentiformi, solida, capillaceo-striata, sericea, luteo-cornea; spira convexa, vix conoidea, obtusa; sutura simplice, impressa; anfract. 5, convexis, sensim accrescentibus, ultimo non descendente, medio angulato (angulo antrorsum obsoletiore), basi subconvexo; apertura fere diagonali, lunato-rotundata, intus albida, nitida; perist. simplice, marginibus subconvergentibus, supero leviter arcuato, recto, basali incrassato, prope umbilicum subdilatato, patente.*

Diam. maj. 18, min. 16, alt. 8½ mill.

*Hab.* Navigators' Islands.

37. **HELIX ÆRUGINOSA.** *H. testa imperforata, globoso-depressa, tenuiuscula, striatula, nitidula, virenti-albida; spira convexa, vertice subtili, obtuso; anfract. 4, convexiusculis, sensim accrescentibus, ultimo non descendente, inflato, periphæria obsolete angulato, ad suturam ærugineo-fasciato; columella declivi, vix arcuata, subexcavata, alba; apertura obliqua, late lunari; perist. vix reflexiusculo, marginibus subconniventibus, dextro sinuoso, basali arcuatim in columellam abeunte.*

Diam. maj. 31; min. 26, alt. 18 mill.

*Hab.* Philippine Islands.

38. **HELIX ABNORMIS.** *H. testa imperforata, trochiformi, solida, minute granulata, haud nitente, rufa, sursum alba; spira conoidea, obtusa; anfract. 5½, convexis, lente accrescentibus, ultimo antice vix descendente, periphæria subrotundato, basi plano; apertura fere horizontali, rotundato-lunari; perist. subincrassato, marginibus parallelis, callo tenui junctis, supero breviter expanso, basali ad dextram dentem conicum gerente, versus regionem umbilicalem sensim dilatato, reflexo, adnato.*

Diam. maj. 42, min. 35, alt. 23 mil.

*Hab.* Jamaica.

39. *HELIX SANNIO*. *H. testa sinistrorsa, angustissime umbilicata, turbinato-depressa, solida, oblique costulato-striata, vix nitidula, superne pallide flavicante; spira conoidea, obtusula; anfract.  $6\frac{1}{2}$ , vix convexiusculis, lente accrescentibus, ultimo non descendente, antice rugato, periphæria carinato, subtus convexo, cinnamomeo; apertura diagonali, lunari, intus alba, nitida; perist. incrassato, breviter reflexo, marginibus distantibus, basali substricto, superne sinuato, in laminam triangularem reflexo.*

Diam. maj. 38, min.  $32\frac{1}{2}$ , alt. 21 mill.

*Hab.* —?

40. *HELIX MANSUETA*. *H. testa umbilicata, depressa, tenuiuscula, striatula et sub lente minutissime granulata, non nitente, nigro-rufa vel cinnamomea; spira brevissime conoidea, vertice subtili; sutura impressa; anfract. 5, convexiusculis, sensim accrescentibus, ultimo antice vix descendente, periphæria obsolete angulato, circa umbilicum apertum, mediocrem saturate fasciato; apertura obliqua, lunari; perist. roseo, breviter expanso, marginibus distantibus, columellari superne dilatato, fornicato-patente.*

Diam. maj.  $15\frac{1}{2}$ , min.  $13\frac{1}{2}$ , alt. 8 mill.

*Hab.* Moreton Bay, Australia (*Mr. Strange*).

41. *HELIX MARMATENSIS*. *H. testa umbilicata, depressa, tenuiuscula, vix striatula, albida, superne maculis castaneis fasciatim dispositis ornata; spira plana, vertice subtili vix prominente; anfract.  $4\frac{1}{2}$ , convexis, ultimo rotundato, antice vix descendente, circa umbilicum angustum obsolete compresso; apertura obliqua, rotundato-lunari; perist. tenui, marginibus convergentibus, dextro breviter expanso, columellari superne dilatato, patente.*

Diam. maj. 12, min.  $10\frac{1}{2}$ , alt. 6 mill.

*Hab.* Marmato, New Granada.

42. *HELIX SCEPASMA*. *H. testa umbilicata, conoidea, solida, ruguloso-striata, opaca, alba; spira regulariter conoidea, vertice acutiusculo; sutura subimpressa; anfract. 7, vix convexiusculis, lente accrescentibus, ultimo antice paululum descendente, periphæria acute carinato, basi circa umbilicum mediocrem, profundum turgido; apertura diagonali, lunari; perist. subincrassato, angulatim reflexo, marginibus vix convergentibus, columellari breviter patente.*

Diam. maj. 20, min. 18, alt. 11 mill.

*Hab.* —?

4. DESCRIPTIONS OF FOUR NEW SPECIES OF BULIMUS FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

1. *BULIMUS VITELLINUS*, Pfr. *B. testa umbilicata, globoso-conica, solidula, oblique striata, nitidula, luteo-fulva; spira conica, apice obtusa; anfract. 6, rotundatis, ultimo spiram æquante, medio obtuse angulato, circa umbilicum apertum, non pervium subcom-*

*presso; apertura diagonali, lunato-ovali, intus submargaritacea; perist. tenui, recto, margine columellari leviter arcuato, sursum valde dilatato, fornicato-patente.*

Long. 22, diam. 16 mill.

*Hab.* Natal.

2. **BULIMUS PICTUS**, Pfr. *B. testa anguste umbilicata, ovato-conica, tenuiuscula, sublævigata, pallide lutea, fasciis spadiceis, interruptis strigisque sparsis elegantissime subtessellata; spira conica, acutiuscula; sutura levissime crenulata; anfract. 7, convexiusculis, ultimo  $\frac{2}{5}$  longitudinis æquante, basi rotundato, infra medium et circa umbilicum fasciis non interruptis signato; apertura parum obliqua, elliptico-ovali; perist. simplice, recto, margine dextro regulariter arcuato, columellari leviter arcuato, sursum dilatato, fornicato-patente.*

Long. 23, diam. 11 mill.

*Hab.* Peru.

3. **BULIMUS RADIOSUS**, Pfr. *B. testa semi-obtecte perforata, oblongo-conica, tenuiuscula, striatula, lineis impressis, spiralibus, subconfertis decussatula, albida, strigis epidermidis virenti-fulvæ radiata; spira conica, acuta; anfract.  $5\frac{1}{2}$ , superis planis, sequentibus convexis, ultimo spira paulo brevior, infra medium obsolete angulato; apertura parum obliqua, oblonga; perist. simplice, margine dextro recto, superne arcuato, columellari subtorto, superne dilatato, fornicato-reflexo.*

Long. 21, diam. 10 mill.

*Hab.* New Hebrides.

4. **BULIMUS GALAPAGANUS**, Pfr. *B. testa compresse umbilicata, ovato-turrita, tenui, striatula, sericea, pellucida, corneo-cerea; spira convexo-turrita, acutiuscula; sutura submarginata; anfract. 8, convexis, ultimo  $\frac{1}{3}$  longitudinis subæquante, juxta umbilicum compresso; apertura subverticali, oblongo-ovali; perist. simplice, margine dextro vix expansiusculo, superne arcuato, cum columellari introrsum subtorto, patente angulum formante.*

Long.  $15\frac{1}{2}$ , diam. 6 mill.

*Hab.* Galapagos Islands.

5. MONOGRAPHS OF ACTÆON AND SOLIDULA, TWO GENERA OF GASTEROPODOUS MOLLUSCA WITH DESCRIPTIONS OF SEVERAL NEW SPECIES FROM THE CUMINGIAN COLLECTION. BY ARTHUR ADAMS, F.L.S., SURGEON R.N.

Genus ACTÆON, Montfort.

Head in the form of a quadrate disk, bilobed in front, with broad posterior tentacular lobes; eyes sessile, on the middle of the head; mantle included; branchial plume single.

Operculum horny, sub-spiral.



Shell thin, ovate, transversely striated; spire produced, acute; aperture narrow, elongated, anteriorly rounded and entire; inner lip thin; columella with a single oblique spiral fold.

*Tornatella*, Lamarck.—? *Myosota*, Humph.—*Spes*, Risso.—*Kanilla*, Silvertop.

1. ACTÆON TORNATILIS, Linnæus.

*Voluta tornatilis*, Linn. Syst. Nat. ed. 12. p. 1187.—*Turbo ovalis*, Da Costa.—*Bulimus tornatilis*, Brug.—*Tornatella fasciata*, Lamk.—*Voluta bifasciata*, Gmel.—*Spes bifasciatus*, Risso.—*Tornatella pelucida* et *Torn. pusilla*, Macgilliv.

2. ACTÆON FLAMMEUS, Gmelin.

*Voluta flammea*, Gmel. p. 3435. no. 2.—*Bulimus variegatus*, Brug.—*Tornatella flammea*, Lamk.

3. ACTÆON VIRGATUS, Reeve.

*Tornatella virgata*, Reeve, Proc. Zool. Soc. May, 1842; Conch. Syst. vol. ii. pl. 206. f. 8, 9.

4. ACTÆON SIEBALDII, Reeve.

*Tornatella Siebaldii*, Reeve, Proc. Zool. Soc. May, 1842.

5. ACTÆON ORYZA, Reeve.

*Tornatella oryza*, Reeve, Proc. Zool. Soc. May, 1842.

6. ACTÆON SENEGALENSIS, Petit.

*Tornatella Senegalensis*, Petit, Journ. de Conch. Nov. 1851.

7. ACTÆON VENUSTUS, D'Orbigny.

*Tornatella venusta*, D'Orb. Voy. dans l'Amér. Mérid., Moll. p. 339. pl. 56. f. 4-6.

8. ACTÆON BEVALETII, Baudon.

*Tornatella Bevaletii*, Baudon, Journ. de Conch. 1853, p. 214. pl. 6. f. 5.

9. ACTÆON PUNCTO-STRIATUS.

*Tornatella puncto-striata*.

10. ACTÆON CUMINGII, A. Adams. *A. testa ovali, subcylindracea, carnea, spira exserta, anfractibus convexis, transversim sulcata, sulcis pulcherrime cancellatis, longitudinaliter striata; columella antice uniplicata; apertura intus alba; labro acuto, postice subsinuato.*

*Hab.* Rio Janeiro (*Capt. Martin*). Mus. Cuming.

This species somewhat resembles *A. tornatilis* in appearance; but it is of a uniform flesh-colour, and the whorls are strongly sulcate, the grooves being prettily crenate at their margins and finely cancellated.

11. ACTÆON DIANÆ, A. Adams. *A. testa ovato-conica, umbili-*

*cata, spira elata, anfractibus convexis, ultimo ventricoso, alba, transversim valde lirata, interstitiis concinne clathratis; apertura ovali; columella uniplicata; labio antice subreflexo; labro margine crenulato.*

*Hab.* Japan (*Dr. Siebold*). Mus. Cuming.

This species is ovately conical, with the last whorl ventricose; it is of a pure white, with the whorls strongly lirate and the interstices punctate; the plait on the columella is situated in the middle, and is not very strongly produced.

12. *ACTÆON PUDICUS*, A. Adams. *A. testa ovali, subcylindracea, subumbilicata, solida, sordide albida, subcarnea, spira elatiuscula; anfractibus convexis, transversim sulcatis, sulcis æqualibus, punctatis; apertura oblonga; columella valde uniplicata.*

*Hab.* Cagayan, Mindanao. Mus. Cuming.

For an *Actæon*, this species is rather solid; the shell, though worn, exhibits a delicate pinkish tinge, and the whorls are strongly punctate-striate.

13. *ACTÆON MARIÆ*, A. Adams. *A. testa ovato-cylindracea, spira obtusa, longitudinaliter substriata, transversim lirata, liris in medio sulco impresso, interstitiis concinne clathratis, sordide alba, fasciis duabus transversis, cinereis ornata; apertura oblonga; columella uniplicata.*

*Hab.* China Seas. Mus. Cuming.

In this species the whorls are ornamented with two spiral, transverse, ash-coloured bands, and the liræ are double, each being divided in the middle by a fine transverse groove.

14. *ACTÆON MODESTUS*, A. Adams. *A. testa elongato-conica, subpellucida, tenui, alba, spira turrato-acuta, anfractibus convexiusculis, transversim sulcata, sulcis æquidistantibus, punctatis, longitudinaliter striata; apertura ovali; columella obliqua, uniplicata.*

*Hab.* Corrigidor, 7 fathoms. Mus. Cuming.

This is an elongated semipellucid species, resembling more a *Monoplygma* than an *Actæon*, with the spire elevated, and the plait on the columella near the hind part.

#### Genus *SOLIDULA*, Fischer.

Animal as in *Actæon*.

Operculum transverse, elongated, curved, with imbricate elements and a linear scar.

Shell thick, solid, ovate, transversely sulcate; spire elevated, acute; aperture longitudinal, narrow, entire and rounded in front; inner lip callous; columella with two plaits, the anterior grooved and continued into the outer lip.

? *Buccinulus*, Planc.—*Dactylus*, Schum., not Klein.—*Pupa*, Bolt., not Humph.

1. *SOLIDULA SOLIDULA*, Linnæus.

*Voluta solidula*, Linn. Syst. Nat. ed. 12. p. 1187; Chemn. Conch. vol. x. pl. 149. f. 1405.—*Bulinus solidulus*, Brug.—*Bulla solidula*, Linn.—*Helix nævia*, Gmel.—*Tornatella solidula*, Lamk.

2. *SOLIDULA COCCINATA*, Reeve.

*Tornatella coccinata*, Reeve, Proc. Zool. Soc. May 1842; Conch. Syst. ii. pl. 206. f. 10.

3. *SOLIDULA GLABRA*, Reeve.

*Tornatella glabra*, Reeve, Proc. Zool. Soc. May 1842; Conch. Syst. ii. pl. 206. f. 12.

4. *SOLIDULA TESSELLATA*, Reeve.

*Tornatella tessellata*, Reeve, Proc. Zool. Soc. 1842; Conch. Syst. ii. pl. 206. f. 3.

5. *SOLIDULA NITIDULA*, Lamarck.

*Tornatella nitidula*, Lamk. Anim. s. Vert. ed. Desh. vol. iv. p. 42; Kien. Mon. Tornat. pl. 1. f. 5; Reeve, Conch. Syst. ii. pl. 206. f. 5.

6. *SOLIDULA INSCULPTA*, Reeve.

*Tornatella insculpta*, Reeve, Proc. Zool. Soc. 1842; Conch. Syst. ii. pl. 206. f. 2.

7. *SOLIDULA AFFINIS*, A. Adams. *S. testa cylindraceo-ovata, spira acuminata, apice acuta, albo-lutescente, colore varia sæpius picta, maculis subquadratis, irregularibus, nigrescentibus tessellata, transversim sulcata, sulcis crenulatis, inæqualibus, subdistantibus; columella biplicata, plica postica obsoleta, antica biloba.*

*Hab.* China Seas; New Ireland; Borneo; Philippines. Mus. Cuming.

This species most nearly resembles *S. solidula*; the colour varies from uniform reddish-brown to whitish, tessellated with ashy or blackish markings.

8. *SOLIDULA SUTURALIS*, A. Adams. *S. testa cylindraceo-ovata, spira elata; anfractibus planiusculis, superne angulatis, suturis canaliculatis, alba, maculis cinereis sæpius tessellata, longitudinaliter striata, transversim lirata, interstitiis cancellatis; columella uniplicata, plica biloba.*

*Hab.* Island of Luzon, sandy mud. Mus. Cuming.

In this species the hind tubercle usually present in *Solidula* is wanting; the colour varies from pure white to greyish, with grey tessellated markings; the chief peculiarity of the species consists, however, in the canaliculated suture of the whorls.

9. *SOLIDULA PUSILLA*, A. Adams. *S. testa ovato-conica, parva, alba, solida, nitida, spira exserta, apice obtuso, transversim valde sulcata, sulcis distantibus, cancellatis; apertura elon-*

*gata, postice attenuata; columella biplicata, plica postica tuberculiformi, antica biloba.*

*Hab.* Catbalonga; Samaar, 8 fathoms; Philippines. Mus. Cuming.

This is a small white solid species, resembling in appearance the *Actæon oryza* of Reeve; but the columella is biplicate, and the front plica is double.

6. DESCRIPTIONS OF NEW SPECIES OF SHELLS, FROM THE  
COLLECTION OF HUGH CUMING, ESQ.

BY G. P. DESHAYES.

1. *MACTRA APHRODINA*, Desh. *M. testa transversa, ovato-trigona, tenui, depressiuscula, inæquilaterali, albido-violacea, zonulis transversis, saturatoribus irregulariter interrupta, transversim regulariter eleganterque striata; latere antico paululum attenuato, superne recto, declivi, postico æqualiter obtuso; umbonibus minimis, acutis, parum prominentibus, albidis; cardine angusto, utroque latere violaceo-maculato; fossula minima, angusta, obliqua, dentibus lateralibus lamellosis; valvis intus vivide violaceis in medio pallidioribus; impressione pallii margine inferiore remoto, sinu angusto, brevi, horizontali.*

*Hab.* —? Coll. Cuming.

2. *MACTRA ATTENUATA*, Desh. *M. testa ovato-trigona, transversa, tenui, turgida, inæquilaterali, transversim irregulariter striatissima, livide violacea, ad umbones atro-violacea, intus pallidior violacea; latere antico brevior, obtuso, superne declivi, latere postico declivi, attenuato; umbonibus brevibus, parum obliquis, approximatis; area elongato-ovata lunulaque tenue striatis; cardine angusto, fossula profunda, dentibus lateralibus lamellosis, prominentibus, antico multo brevior; sinu pallii lato, vix excavato.*

*Hab.* —? Coll. Cuming.

3. *MACTRA CONTRARIA*. *M. testa ovato-trigona, æquilaterali subsymmetrica, compressiuscula, nitida, transversim obsolete tenuissime striata, utroque latere æqualiter convexiuscula, declivi, latere inferiore valde arcuato, latere antico et postico subangulatis; lunula areaque sulcatis, sulcis lunulæ profundis, inferne convergentibus, rugis brevibus in extremitate antica contrariis; umbonibus minimis, violaceo-tinctis; valvis tenuibus, pallide stramineis, intus violascentibus; cardine angusto, fossula minima, dentibus lateralibus lamellosis, æqualibus; sinu pallii brevi, angusto.*

*Hab.* —? Coll. Cuming.

4. *MACTRA CORBICULOIDES*, Desh. *M. testa trigona, ventricosiuscula, subæquilaterali, transversim tenue et obsolete striata, griseo-cærulescente, zonulis angustis, violascentibus transversim interrupta; umbonibus tumidis, lævigatis, oppositis, atro-viola-*

*ceis; latere antico et postico æqualiter declivibus, antico brevior, obtuso, postico attenuato, acuminato, margine inferiore in medio valde convexo; lunula planulata, tenue et regulariter striata; area angulo obtuso circumscripta, tenue striata; cardine angusto, fossula minima; dentibus lateralibus crassiusculis, brevibus, æqualibus, prominentibus; sinu pallii brevissimo, vix inflexo; valvis intus profunde violaceis.*

*Hab.* Ceylon. Coll. Cuming.

5. *MACTRA CORBULOIDES*, Desh. *M. testa* M. donaciformi similima sed multo minore, æquilatera, turgidula, satis solida, alba, lævigata; latere antico obtuso, postico acuminato, angulo decurrente acutiusculo notato; area magna, subplana, lævigata; lunula elongato-lanceolata, angulo obsoletissimo circumscripta; cardine solido, fossula minima angusta, recta, dentibus lateralibus brevibus, tenue perpendiculariter sulcatis; sinu pallii brevissimo, lato, fere semicirculari.

*Hab.* —? Coll. Cuming.

6. *MACTRA DECORA*, Desh. *M. testa* ovato-transversa, turgida, inæquilaterali, nitida, ex albo et violaceo eleganter radiata et transversim zonata; latere antico paulo brevior, obtuso, transversim tenue et regulariter sulcato, sulcis in medio evanescentibus; umbonibus tumidulis, atro-violaceis, parum distantibus; lunula bicolorata, albo et violaceo regulariter plicata; area concaviuscula, tenue plicata.

*Hab.* —? Coll. Cuming.

7. *MACTRA DISSIMILIS*, Desh. *M. testa* transversa, ovato-trigona, inæquilaterali, turgidula, nitida, albo-grisea, ad margines rufescente, aliquantisper zonulis transversis, cærulescentibus interrupta, intus rubro-violacea; latere antico paulo brevior, obtuso, superne recto, declivi, latere postico superne convexiusculo, extremitate obtuso; umbonibus brevibus, acutis, postice obtuse angulatis; lunula areaque distinctis, eleganter sulcatis; valvis regulariter transversim tenue sulcatis, sulcis inferne continuis, superne ad umbones et latus posticum evanescentibus.

*Hab.* Australia (Jukes). Coll. Cuming.

8. *MACTRA HEPATICA*, Desh. *M. testa* transversa, oblique trigona, inæquilaterali, turgidissima, lævigata, nitida, antice solum modo brevi-striata, intus extusque colore hepatica infucata; umbonibus tumidis, apice acutis, nigro-violaceis, distantibus; latere antico brevior, obtuso, superne recto vel concaviusculo, postico obtuse angulato; lunula areaque depressis, ovatis, subæqualibus, tenuiter striatis; cardine angustissimo, fossula parva, obliqua, dente V-formi duabus partibus valde inæqualibus composita, dentibus lateralibus brevibus, angustissimis, antico multo minore; linea pallii margine inferiore proxima; sinu pallii brevi, oblique semicirculari.

*Hab.* Philippines. Coll. Cuming.

9. **MACTRA INCONGRUA**, Desh. *M. testa ovato-trigona, obliqua, inæquilaterali, turgida, cordiformi, subepidermide squalide flavescente alba, lævigata, transversim substriata, latere antico brevior, declivi, rectilineari, obtuso, postico convexiusculo, subangulato; umbonibus tumidis, acutis, parum obliquis; lunula ovata, planulata, areaque posticali in medio carinulata, tenuiter plicatis; cardine angusto, fossula brevi, angusta, obliqua, dentibus lateralibus compressis, subæqualibus, antico paulo brevior; impressione pallii lata; sinu brevi, obliquo, lato.*

*Hab.* Luzon, Philippines. Coll. Cuming.

10. **MACTRA INÆQUALIS**, Desh. *M. testa ovato-transversa, subtrigona, inæquilaterali, compressiuscula, ad marginem inferiorem acutiuscula, polita, nitente, epidermide nitide flavescente vestita; latere antico longior, parum attenuato, obtuso, postico angulato; lunula areaque posticali tenuiter plicatis; umbonibus brevibus, acutis, oppositis; cardine angustissimo; fossula cardinali brevi, angusta, obliqua; dentibus lateralibus compressis, brevibus, in altera valvula duplicatis; valvis intus albo-pallide flavis; sinu pallii angusto, profundo, horizontali.*

*Hab.* China. Coll. Cuming.

11. **MACTRA INTUSPICTA**, Desh. *M. testa oblique trigona, tenui, turgida, inæquilaterali, transversim obsolete inæqualiter striata, sub epidermide pallide flavescente fusco-grisea, ad umbones cærulescente aliquantisper obscure radiata, intus vivide rubro-violacea, radiis pallidioribus, albicantibus picta; latere antico declivi, superne rectilineari, obtuso, postico convexiusculo, inferne obtuse angulato; lunula plana areaque ovatis, subæqualibus, tenue plicatis; cardine angusto, dentibus lateralibus compressis, valde prominentibus; linea pallii margine inferiore proxima, sinu brevi, oblique ascendente.*

*Hab.* Manilla; China. Coll. Cuming.

12. **MACTRA LUZONICA**, Desh. *M. testa transversim trigona, æquilaterali, subsymmetrica, turgidula, æqualiter utroque latere declivi, nitida, pallide fusca vel albo rufescente, in latere postico castanea, extremitatibus æqualiter obtusis; umbonibus minimis, acutis, apice violaceis; lunula areaque æqualibus, regulariter plicatis, violaceo-maculatis; valvis antice inferneque sulcatis, sulcis irregulariter evanescentibus, intus rubro-violaceis; cardine angusto, fossula angusta, obliqua; dentibus lateralibus lamellosis, æqualibus, prominentibus; sinu pallii angusto, profundiusculo.*

*Hab.* Luzon, Philippines.

13. **MACTRA MURCHISONI**, Desh. *M. testa ovato-transversa, convexa, solida, subæquilaterali, clausa, albo-grisea, subepidermide pallide straminea, decidua, inæqualiter substriata, latere antico paulo brevior, obtuso, superne declivi, postico subangulato, extremitate parumper acuminato; margine inferiore regu-*

*lariter convexo; lunula magna, angulo obtusissimo superne circumscripta, plicata, macula elongata, rufescente notata, plicis latis, abrupte terminatis; area magna, obsolete notata, angulo obtuso circumdata; umbonibus acutis, brevibus, oppositis; cardine angusto; dente cardinali tenui, brevissimo, sub angulo recto aperto; fossula lata explanata; dentibus lateralibus compressis, longiusculis, æqualibus; sinu pallii brevi, lato, obtuso, subtrigono.*

*Hab.* New Zealand.

14. *MACTRA OPPOSITA*, Desh. *M. testa parvula, transversa, trigona, turgidula, subæquilaterali, transversim obsolete sulcata, grisea, radiis numerosis rufis, pallidis, interruptis picta, intus violaceo transversim zonulata; umbonibus acutis, brevibus, oppositis, apice violaceis; latere antico posticoque æqualiter declivibus, angulo obtuso æqualiter distinctis; lunula areaque planulatis, tenue striatis, macula violacea notatis; cardine angusto; fossula cardinali minima, angusta, dentibus lateralibus compressis, prominentibus, postico brevioribus; sinu pallii lato, satis profundo, obtuso, superne parum dilatato.*

*Hab.* Luzon, Philippines. Coll. Cuming.

15. *MACTRA RADIOLATA*, Desh. *M. testa trigona, obliqua, inæquilaterali, turgida, cordiformi, sub epidermide flavescente, tenui alba, intus extusque eleganter rufo-rubescente radiata; latere antico paulo brevioribus, late rotundato, postico rapide declivi, attenuato; lunula areaque plano-concaviusculis, regulariter striatis; umbonibus tumidis, prominentibus, parum obliquis; cardine crassiusculo, fossula profunda, dentibus lateralibus laminatis, prominentibus, triangularibus; sinu pallii brevi, oblique semicirculari.*

*Hab.* Zebu, Philippines. Coll. Cuming.

16. *MACTRA SCALPELLUM*, Desh. *M. testa transversa, angusta, late trigona, æquilaterali, subsymmetrica, superne æqualiter declivi, anterieus tantisper obtusioribus, utroque latere attenuata, inferne regulariter convexa, albo-cornea, nitidissima, area lunulaque tenue plicatis; cardine in medio dilatato, fossula basi prominente, trigona, lata; dente cardinali parvo, obliquo, dentibus lateralibus lamellosis, antico paulo longioribus; sinu pallii elongato.*

*Hab.* New Zealand.

17. *MACTRA SERICEA*, Desh. *M. testa ovato-transversa, tumida, tenui, subæquilaterali, postice paulo hiante, epidermide sericea, tenue striata vestita, lævigata substriatave, latere antico paulo brevioribus, compressiusculo, rotundato, postico paulo magis attenuato, margine inferiore regulariter arcuato; umbonibus acutis, brevibus, apice violaceis; area planulata, vix convexa, sulcata, lunula æqualiter sulcata, in medio carinata; cardine*

*angusto; fossula angusta, obliqua, dentibus lateralibus elongatis, antico basi longe et profunde foveolato; sinu pallii lato, parum profundo, oblique ascendente.*

*Hab.* —? Coll. Cuming.

18. *MACTRA TRANSVERSA*, Desh. *M. testa ovato-oblonga, transversa, angusta, subæquilaterali, solida, compressa, alba, transversim regulariter striato-sulcata, antice declivi, acuminata, postice angulo acuto inferne terminata, oblique truncata, angulo decurrente notata; umbonibus parvis, acutis, oppositis; cardine angusto, fossula basi lata, obliqua, dentibus lateralibus brevibus, angustissimis, parum prominentibus; sinu pallii lato, profundo, obtuso.*

*Hab.* —? Coll. Cuming.

19. *MACTRA SUBLANCEOLATA*, Desh. *M. testa trigona, depressiuscula, subcuneiformi, inæquilaterali, candida, epidermide tenui, flavicante, tenuissime striata vestita, in medio posticeque lævigata, antice tenue striata; latere antico obtuso, rotundato, superne declivi, postice attenuato, acuminato, postico angulo obtuso, obliquo distincto; area lata, subplana, lunulaque sulcatis, sulcis parum numerosis; cardine angusto, fossula minima, basi non prominente; dentibus lateralibus brevibus, compressis, sulcatis; sinu pallii minimo, angusto, oblique ascendente.*

*Hab.* —?

20. *MACTRA DOLABRATA*, Desh. *M. testa transversa, trigona, inæquilaterali, tumidula, tenui, fragili, alba, lævigata, obsolete tenuissime et irregulariter striata; latere antico longiore, supero concavo, antice obtuso, postico brevi, declivi, truncato, angulato, extremitate acuminato; umbonibus acutis, obliquis, approximatis, apice involutis; area elongata, in medio excavata; dentibus lateralibus lamellosis, brevibus, triangularibus, acutis; sinu pallii angusto, brevi, oblique ascendente.*

*Hab.* —? Coll. Cuming.

21. *MACTRA EXPLANATA*, Desh. *M. testa ovato-subtrigona, compressa, lata, tenui, lactea, subæquilaterali, transversim tenue et obsolete striata; latere antico lato, obtuso, paulo brevior, postico valde declivi, attenuato, compresso, hiant; umbonibus minimis, obliquis; lunula elongato-lanceolata, in medio carinata, elevata, area angusta, concava, angulis duobus inæqualibus circumscripta, angulo proximo obtuso, altera lineari; cardine lato, peculiari, fossula magna, profunda, sub lunula, loco ductus lateralis; dente laterali postico lamellosa in valva sinistra, in valva dextra inter duas lamellas oblique conniventes recepto; dente cardinali parvo, fossula ligamenti pyriformi, sinu pallii lato, profundiusculo, obtusissimo.*

*Hab.* Australia, Swan River. Coll. Cuming.

22. *MACTRA VIRGO*, Desh. *M. testa ovato-trigona, subæquilaterali, crassa, solida, depressiuscula, irregulariter et transversim*



*striatissima, incrementi sulcis profundioribus, irregularibus, interrupta, intus extusque candidissima, nitente, utroque latere æqualiter declivi, antice obtusa, postice acuminata, obtuse angulata, umbonibus minimis, acutis, oppositis; lunula areaque lævigatis; cardine crasso, lato, fossula mediana, dente cardinali angusta, obliqua, dentibus lateralibus validis, æqualibus; sinu pallii brevi, lato, obtuso, obliquo.*

*Hab.* Australia, Swan River. Coll. Cuming.

23. *MACTRA CARINULATA*, Desh. *M. testa trigono-transversa, tumida, cordiformi, æquilaterali, sub epidermide squalide fusciscente alba, obsolete irregulariter striata, æqualiter superne declivi et convexiuscula; latere antico obtusiusculo, postico attenuato, angulo paulo prominente, obtuso distincto; lunula indistincta areaque lævigatis; umbonibus angulatis, prominentibus, acutis, obliquis, valde distantibus; cardine solidiusculo, fossula trigona, obliqua, profunda; dentibus lateralibus solidiusculis, simplicibus, elongatis, subæqualibus; sinu pallii angusto, profundo, oblique ascendente.*

*Hab.* —? Coll. Cuming.

24. *MACTRA ANGUSTA*, Desh. *M. testa ovato-transversa, angusta, subtrigona, subæquilaterali, compressa, alba, tenui, fragili, transversim argute et regulariter striata; latere antico paulo brevior, obtuso, superne concaviusculo, latere postico superne declivi, attenuato; area angusta, elongata, planulata, liris duabus parum divergentibus circumscripta; umbonibus minimis, parum obliquis, regulariter undato-plicatis; lunula minima, lanceolata; cardine in medio lato, fossula lata, trigona, explanata; dentibus lateralibus brevibus, inæqualibus, postico brevior; sinu pallii oblongo, horizontali, apice obtuso.*

*Hab.* Panama. Coll. Cuming.

25. *MACTRA BILINEATA*, C. B. Adams, MSS. *M. testa ovato-transversa, angusta, depressa, inæquilaterali, translucida, alba, sub epidermide pallide flavicante, tenuissime striata in latere postico fusciscente, latere antico declivi, obtusiusculo, attenuato, postico declivi, latiore, oblique truncato, in truncatura hiante, lineis binis, obliquis, albis, divergentibus distincto; area angusta, plana; lunula indistincta; umbonibus minimis, vix prominentibus, oppositis; cardine lato, fossula magna, lata, basi prominente, dentibus lateralibus brevibus, subæqualibus; sinu pallii magna, lato, profundo, semi-elliptico.*

*Hab.* Jamaica.

26. *MACTRA BULLATA*, Desh. *M. testa ovato-subrotundata, inflata, inæquilaterali, tenuissima, fragili, membranacea, sub epidermide pallide flaviscente albo-hyalina, antice oblique gibbosa, postice attenuata, late truncata, hiante, latere antico paulo longiore, late rotundato, transversim satis regulariter plicata et*

*striata, plicis postice evanescentibus; umbonibus angustis, minimis, acutis, oppositis; cardine brevi, in medio latiore, fossula basi producta, profunda, dente cardinali minimo, subcalloso, dentibus lateralibus nullis; sinu pallii profundo, angusto, a margine remoto.*

*Hab.* —? Coll. Cuming.

27. *MACTRA CALIFORNICA*, Desh. *M. testa transversa, ovato-elliptica, convexiuscula, inæquilaterali, epidermide straminea, nitente vestita, griseo-fuscescente, transversim substriata, antice inter valvulas fissa, postice hiante; latere antico brevior, obtuso, latiore, postico sensim attenuato, rotundato; cardine angusto; dente cardinali valvæ sinistræ compresso; fossula magna, obliqua, parum profunda, basi prominente; dente laterali postico angustissimo, elongato, obliquissimo, laterali antice brevi, parum obliquo, cardine approximato; sinu pallii lato profundoque, horizontali, subspathulato.*

*Hab.* Gulf of California. Coll. Cuming.

28. *MACTRA EGENA*, Desh. *M. testa ovato-transversa, compressa, inæquilaterali, candidissima, incrementi irregulariter striata; latere antico brevi, angustato, obtuse attenuato, superne declivi; latere postico latiore, obtuso; area angustissima, profunda, angulo obtuso, irregulariter plicato circumscripta; lunula lanceolata, impressa, ad peripheriam tenue plicata; umbonibus parvis, vix obliquis; cardine in medio lato, fossula magna, subæquilaterali, basi prominente, dente cardinali compresso, dentibus lateralibus brevibus, subæqualibus, angustis, prominentibus, sinu pallii profundo, lato, digitiformi, dimidiam partem valvarum attingente.*

*Hab.* —? Coll. Cuming.

29. *MACTRA HIANTINA*, Desh. *M. testa ovato-transversa, trigona, depressiuscula, inæquilaterali, epidermide squalide fuscescente vestita, alba, transversim irregulariter denseque striata; latere antico brevi, valde declivi, attenuato, paululum obtuso, subclauso, postico superne declivi, latiore, truncato, late hiante, linea elevata, oblique decurrente separato; area elongata, in medio canaliculata, angulo angusto distincta; lunula elongata, angusta, depressa; cardine in medio lato, prominente, fossula magna; dentibus lateralibus brevibus, lamellosis; sinu pallii maximo, linguiformi.*

*Hab.* Puna, Guayaquil.

30. *MACTRA PELLICULA*, Desh. *M. testa ovato-transversa, tenuissima, alba, hyalina, subæquilaterali, antice oblique gibbosa, latere antico paulo longiore, late rotundato, latere postico attenuato, cuneiformi, subtruncato, hiante, plicis striisque irregularibus notata; umbonibus minimis, acutis, parum obliquis et prominentibus, lunula areaque nullis; cardine angustissimo, dente cardinali minimo, in valva dextra fere nullo, fossula mi-*

nima, basi parum prominente, dentibus lateralibus vix perspicuis; sinu pallii profundo, horizontali, obtuso.

*Hab.* Japan. Coll. Cuming.

31. *MACTRA PLICATILIS*, Desh. *M. testa transversa, oblonga, ovata, angusta, inæquilaterali, compressiuscula, tenui, fragili, hyalina, transversim plicata, plicis prominentibus, elevatis, regularibus, antice parum obliquis; latere antico paulo brevior, rotundato, postico hiante, paululum angustior, oblique carinato; area angustissima, plana, lævigata, angulo obtuso circumdata, lunula inconspicua; cardine angusto; dente cardinali satis magno, lateralibus lamellosis, brevibus, prominentibus, triangularibus, acutis; sinu pallii profundo, lato, subtrigono, apice obtuso.*

*Hab.* — ? Coll. Cuming.

32. *MACTRA ROSTRALIS*, Desh. *M. testa ovato-transversa turgida, tenui, hyalino-vitrea, inæquilaterali, transversim plicata, plicis regularibus, antice prominentioribus, transversim tenuissime striatis; latere antico paulo longior, late obtuso, postico declivi, hiante, attenuato, subrostrato; cardine angustissimo, dente cardinali compresso, fossula minima, dentibus lateralibus brevissimis, angustis, cardine approximatis; lunula impressa, plana, ovata.*

*Hab.* Japan. Coll. Cuming.

33. *MACTRA SILICULA*, Desh. *M. testa ovato-transversa, compressiuscula, subæquilaterali, postice hiante, candidissima, epidermide pallide flavicante, sericea vestita; latere antico obtuso, superne concaviusculo, postico superne convexiusculo, extremitate parumper attenuato; area posticali angusta, in medio concaviuscula, epidermide fusciscente, irregulariter plicata induta, linea elevata circumscripta; lunula inconspicua; valvis extus argutissime transversim striatis; umbonibus parvis, parum obliquis, politis; cardine in medio lato, fossula magna, dentibus lateralibus parvis, brevibus, lamellosis, acutis.*

*Hab.* Luzon, Philippines. Coll. Cuming.

34. *MACTRA CAPILLACEA*, Desh. *M. testa transversa, ovato-cuneiformi, valde inæquilaterali, tenui, candida, sub epidermide tenui, decidua, straminea, lineis capillaceis, longitudinalibus, parum prominentibus, numerosis, approximatis, irregularibus, inter se confluentibus, sæpe interruptis reticulatim intricatis; latere antico brevissimo, obtusissimo, semicirculari, postico sensim attenuato, hiante, superne declivi, rectilineo; cardine angustissimo, dente cardinali magno, fossula angusta, postice obliquata; dentibus lateralibus parvulis, postico longior; sinu pallii profundissimo, lato, marginibus fere parallelis.*

*Hab.* Philippines; mouth of the Indus. Coll. Cuming.

35. *MACTRA TRISTIS*, Desh. *M. testa ovata, transversa, compressa, tenui, inæquilaterali, utroque latere hiante, epidermide*

*squalide fuscescente ad margines induta, transversim irregulariter et dense striata, squalide grisea, ferrugineo in medio infuscata, intus albo, squalide rufescente; latere antico brevi, rotundato, postico duplo longiore, æqualiter obtuso; area lunulaque nullis; umbonibus depressis, minimis, approximatis, vix obliquis; fossula cardinali lata, trigona, basi producta; dentibus lateralibus minimis, brevibus, antico brevissimo, cardine adnato; sinu pallii magno, obtuso, basi dilatato.*

*Hab.* Australia, Moreton Bay.

36. *MACTRA GONIATA*, Gray, MSS. B. M. *M. testa transversa, trigona, æquilaterali, tumida, cordiformi, epidermide tenui, flavida, antice posticeque squamosa vestita, alba, irregulariter transversim tenue striata; latere antico superne plano, in medio obtuso, postico angulato, abrupte truncato; area ingentissima, planulata, angulo postico circumscripta, lævigata; umbonibus tumidis, acutis, vix obliquis, valde distantibus; cardine solido, fossula profunda, basi prominente; dentibus lateralibus brevibus, compressis, triangularibus, valde elatis; sinu pallii angusto, profundo, digitiformi.*

*Hab.* California.

37. *MACTRA ANGULIFERA*, Desh. *M. testa ovato-trigona, transversa, compressa, utroque latere hiante, subæquilaterali, candida, nitida, transversim obsolete et irregulariter striata, latere antico brevior, obtuso, superne concaviusculo, postico declivi, brevi, truncato, angulo acuto, angusto, oblique decurrente notato; umbonibus brevibus, depressis, obliquis, tenue et regulariter plicatis; lunula ovata, lævigata, concaviuscula, area angusta, concava; cardine in medio lato; fossula explanata, ovato-trigona, dentibus lateralibus elongatis, tenuibus, acutis, dente cardinali brevi, angusto, sinu pallii lato, profundo.*

*Hab.* Ticao, Philippines. Coll. Cuming.

38. *LUTRARIA IMPAR*, Desh. *L. testa elongato-transversa, angusta, inæquilaterali, convexiuscula, tenui, alba, antice profunde et regulariter transversim plicata, plicis in medio evanidis, latere postico irregulariter striato, undulato; latere antico brevior, paulo latiore, postico paululum attenuato; extremitatibus æqualiter obtusis; margine inferiore recto, superiore fere parallelo, margine dorsali postico canaliculato; dente cardinali prominente, dente laterali postico brevi, lamelliformi, cardine adnato; sinu pallii profundissimo, usque ad latus anticum attingente, margine superiore oblique declivi, inferiore horizontali.*

*Hab.* Moreton Bay, Australia. Coll. Cuming.

39. *LUTRARIA ARCUATA*, Desh. *L. testa elongato-transversa, valde inæquilaterali, arcuata, solida, convexiuscula, antice posticeque valde hiante, epidermide flavescens, tenui, lucido, postorius saturatiore vestita, omnino alba, transversim tenue et satis regulariter striata; latere antico brevi, paululum attenuato;*

*fossula cardinali oblonga, postice obliquata; dente cardinali angusto; sinu pallii magno, lato, extremitate late obtuso, marginibus subparallelis, superiore parumper declivi.*

*Hab.* Luzon, Philippines. Coll. Cuming.

40. LUTRARIA AUSTRALIS, Desh. *L. testa transversim ovata, breviuscula, lata, inæquilaterali, arcuata, postice late hiante, omnino alba, sub epidermide fuscescente, nitida, postice fusca, transversim irregulariter striata, postice obtuse undulata; latere antico paululum attenuato, hiante, postico rotundato; dente cardinali compresso, brevi, fossula magna, parum obliqua basi valde prominente; sinu pallii magno, ad marginem inferiorem obliquato, apice lato et oblique subtruncato; margine superiore antice posticeque canaliculato.*

*Hab.* New Holland. Coll. Cuming.

41. LUTRARIA PHILIPPINARUM, Desh. *L. testa magna, elongato-transversa, valde inæquilaterali, crassa, solida, convexa, postice hiantissima, sub epidermide fuscescente alba, transversim, præcipue antice, striato-rugosa; latere postico angulo obtusissimo, obliquo separato, latere antico brevi, attenuato; margine dorsali superiore concaviusculo, inferiore convexiusculo; dente cardinali parvo, fossula magna, excavata, postice obliquata; sinu pallii profundo, basi paulo latiore, apice lato, subtruncato.*

*Hab.* Philippines. Coll. Cuming.

42. LUTRARIA CURTA, Desh. *L. testa ovato-transversa, brevi, satis lata, convexiuscula, inæquilaterali, alba, rudi, postice irregulariter striato-subplicata, utroque latere et præcipue postice hiante; latere antico brevi, regulariter obtuso, postico angustiore, subtruncato; margine superiore postico concaviusculo, inferiore convexo; dente cardinali parvo, angusto, fossula parum obliqua, dilatata; sinu pallii lato, profundo, parum inferne obliquato, marginibus parallelis, extremitate late obtuso, semicirculari.*

*Hab.* —? Coll. Cuming.

43. LUTRARIA SIEBOLDII, Desh. *L. testa regulariter ovato-transversa, longe elliptica, compressa, tenui, inæquilaterali, utroque latere hiante, præcipue postice, epidermide decidua squalide fusca ad margines vestita, alba, transversim irregulariter striata et obsolete undulata; margine anteriore brevi, rotundato, postico obtuso; dente cardinali parvo, compresso, fossula postice obliquata, late trigona; sinu pallii inferne obliquato, lato, profundo, subtriangulari, basi dilatato, apice angustiore, obtuso, margine superiore declivi.*

*Hab.* Japan. Coll. Cuming.

44. LUTRARIA INTERMEDIA, Desh. *L. testa ovato-transversa, rugosiuscula, inæquilaterali, crassa, solida, antice posticeque valde hiante, convexiuscula, alba, sub epidermide fuscescente,*

*postice irregulariter plicata, transversim striato-rugosa, postice obscure plicata vel undulata; latere antico multo brevior, superne declivi, in medio attenuato, ventrali dilatato, postico superne parumper concavo, oblique truncato, hiantissimo; umbonibus parvulis, vix prominentibus; dente cardinali in valva sinistra magno, aperto, in dextra compresso; fossula magna, profunda, valde postice obliquata, basi prominente; sinu pallii maximo, fere tam profundo quam lato, obtuso, subtruncato.*

*Hab.* Madagascar.

45. *LUTRARIA DISSIMILIS*, Desh. *L. testa ovato-transversa, convexiuscula, valde inæquilaterali, rugosula, epidermide squalide fusca vestita, rudi, postice tenuè irregulariter plicata; latere antico brevi, obtuso, hiantè, paululum attenuato, superne declivi; latere postico obtuso, valde hiantè; margine superiore inferiori parallelo; dente cardinali in valva sinistra angusta, compressa; fossula obliqua, parum excavata; sinu pallii magno, profundissimo, obtuso, parumper ad marginem inferiorem declivi.*

*Hab.* Australia. Coll. Cuming.

46. *ZENATIA SOLENOIDES*, Desh. *Z. testa oblongo-transversa, compressa, valde inæquilaterali, rufo-albicante, sub epidermide fuscescente, postice irregulariter plicato, transversim irregulariter striata; latere antico brevissimo, regulariter semicirculari, latere postico oblique obtuso, late hiantè; margine superiore concaviusculo, inferiore fere parallelo; cardine brevi, dente cardinali V-formi, magno, fossula perobliqua, trigona, explanata, oblique prominente; sinu pallii profundo, trigono, apice obtuso, basi lato, oblique ad marginem inferiorem declivi.*

*Hab.* New Zealand. Coll. Cuming.

47. *ZENATIA CUMINGIANA*, Desh. *Z. testa oblongo-transversa, tenui, subpellucida, valde inæquilaterali, depressa, utroque latere hiantè, sub epidermide tenui, nitida, alba, transversim obsolete striata; latere antico brevissimo, oblique rotundato, postico obtuso, rotundato; margine superiore concavo, inferiore convexo, parallelo; cardine angusto, brevi, fossula cardinali parva, perobliqua, plana; sinu pallii magno, trigono, inferne valde declivi.*

*Hab.* New Zealand. Coll. Cuming.







February 28, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTION OF A NEW VOLUTE, FROM NEW CALEDONIA.  
BY LOVELL REEVE.

(Mollusca, Pl. XXVI.)

*VOLUTA DESHAYESII.* *Vol. testa ovato-oblonga, basin versus contracta et retrorsum contorta, pallide carneo-alba, fasciis duabus latissimis, miniaceo-roseo marmoratis cingulata, epidermide tenui, fugacea induta; spira breviuscula, maculis grandibus, vivide miniaceo-roseis ornata, apice perampliter obtuse papillata, flavescente; anfractibus superne leviter concavis, ultimo sæpissime angulato, ad angulum tuberculato, tuberculis subdescendentibus; columella quadriplicata, plicis fortissimis, subquadratis, transversis; apertura subcontracta, aurantio-carneola.*

Long.  $3\frac{1}{2}$  poll., lat.  $1\frac{1}{2}$  poll.

*Hab.* New Caledonia.

This delicately painted Volute, of which three specimens, in fine condition, containing portions of the animal dried within them, have just been received from New Caledonia, approaches nearest in colouring and general aspect to *V. aulica*. It differs from that species in being twisted and recurved at the base, and in having columellar plaits of a different typical character, more like those of *V. Hebixa* or *musica*. The general contour of the shell is, however, more like that of *V. vespertilio*. The colouring consists of two broad variously mottled vermilion red bands, with the base of the same colour, whilst the spire is painted with large very characteristic vermilion-rose spots of a deeper tone. The apex is largely papillary, not flesh-tinted as in *V. aulica*, but pale yellow. The columella and interior of the aperture are of a warm orange carnelian hue.

Being honoured at this time with a visit from M. Deshayes, I have the pleasure of distinguishing this beautiful Volute with his name.

2. DESCRIPTIONS OF SOME NEW AND LITTLE-KNOWN SPECIES OF BIRDS FROM NORTHERN INDIA, CONTAINED IN THE MUSEUM OF THE HON. EAST INDIA COMPANY. BY FREDERIC MOORE, ASSIST. HON. COMP. MUSEUM.

(Aves, Pl. LXII.)

Fam. MERULIDÆ, Vigors.

Subfam. MYIOTHERINA, Swains.

Genus PNOËPYGA, Hodgs.

Syn. *Microura*, Gould (nec Ehrenb.).

1. PNOËPYGA LONGICAUDATA, nobis.

Colour of the upper parts deep olive-brown, the feathers slightly margined with black, and having blackish shafts; wings and tail inclined to ferruginous brown; upper tail-coverts long; throat whitish; breast and sides of abdomen pale dusky ferruginous, the feathers having pale centres and blackish margins; centre of lower part of breast and abdomen white; flanks the same as the back; vent and under tail-coverts dark ferruginous; bill dark horn colour, legs paler.

Length,  $4\frac{1}{2}$  inches; of wing, 2; the tail is rounded, the central feathers being  $2\frac{1}{4}$  inches long, and the outer  $1\frac{1}{2}$  inch; bill to front, through the feathers,  $\frac{1}{2}$  inch; to gape,  $\frac{6}{10}$ ; tarse,  $\frac{8}{10}$ .

*Hab.* N. India.

Genus BRACHYPTERYX, Horsfield, p. s. d.

2. BRACHYPTERYX NIPALENSIS, Hodgson.

Male: colour above a greyish cyaneous, or light greyish blue, as are also the cheeks, sides of breast and flanks, and paling to greyish white on the centre of the breast; throat, middle of belly, vent and under tail-coverts, streak over but not extending beyond the eye, white. Female: ferruginous brown above, paling on the sides; throat, breast, belly, under tail-coverts and streak over the eye, whitish, the feathers on the breast and sides fringed with brown; bill dark horn colour, legs paler.

Length,  $4\frac{1}{4}$  inches; of wing,  $2\frac{1}{2}$ ; tail,  $1\frac{3}{8}$ ; bill to gape,  $\frac{6}{8}$ ; tarse, 1.

*Hab.* Nepal (No. 943, *Hodgs. Catal.*).

This species is allied to *Br. cruralis*, Blyth, but may readily be distinguished by its smaller size, shorter tail, paler colour of the upper parts, and by its white throat and belly.

Genus CALLENE, Blyth, Journ. A. S. Beng. p. 136 (1847).

Syn. *Cinclidium*, Blyth (nec Gould).

*Gen. Char.* "Bill shorter than the head, straight, slender, higher than broad, the ridge of the upper mandible tolerably acute, and its tip very slightly emarginated; inferior gonys ascending for the terminal half, imparting to the bill the appearance of a tendency to bend



J. Wolf, lith.

M. & N. Hanhart, Imp<sup>l</sup>

NEMURA HODGSONI *Moore* .  
Male & Female



upward: nasal apertures in the form of elongate-oval fissures in the lateral nasal membrane, and partially impended by the short semi-reflected frontal feathers; gape armed with a few small setæ; wings and tail rounded, the 4th, 5th and 6th primaries equal and longest; legs and toes slender, the tarsi smooth, unscutellate, and very long, as is also the middle toe; claws but moderately curved, and of little more than mean length; plumage light, soft and full, having a scale-like appearance on the crown, breast and belly."

### 3. CALLENE FRONTALE, Blyth.

Syn. *Cinclidium frontale*, Blyth, Journ. A. S. Beng. xi. p. 181, xii. p. 954. t. p. 1010. Bonap. C. G. Av. p. 301.

*Callene frontale*, Blyth, Journ. A. S. Beng. xvi. p. 136; Catal. B. Mus. A. S. Beng. p. 178.

*Ruticilla frontalis*, G. R. Gray, Gen. of Birds, i. p. 180.

*Brachypteryx scapularis*, Horsf. MS.

*Hab.* Nepal (No. 950, *Hodgs. Catal.*).

*Spec. Char.* "Plumage dark fusco-cyaneous, the rump dusky; flanks somewhat ashy, and middle of the belly slightly grey-edged; lores and immediately above the beak blackish, contrasting with a bright cærulean forehead; bend of the wing also cærulean, but less bright; and winglet, primaries and their coverts, secondaries and tertiaries, dark olive-brown; a white spot on the under surface of the wing, beneath the winglet; bill black; legs dusky brown.

"Length,  $7\frac{5}{8}$  inches; of wing from bend,  $3\frac{3}{8}$ ; middle tail-feathers,  $3\frac{1}{2}$ , the outermost  $\frac{3}{4}$  of an inch shorter; bill to forehead nearly  $\frac{5}{8}$ , to gape  $\frac{1}{16}$ ; tarse,  $1\frac{3}{8}$ ; middle toe and claw,  $1\frac{3}{16}$ ; hind toe and claw,  $\frac{3}{4}$ ; the last,  $\frac{3}{8}$ .

"This bird is reported to be a fine songster, and heard chiefly in the evening."—*Blyth*.

### Subfam. TIMALINA.

#### Genus TRICHASTOMA, Blyth.

Syn. *Malacocincla*, Blyth.

*Gen. Char.* "Bill as long as the head, rather stout, high, much compressed, the tip of the upper mandible pretty strongly hooked, but indistinctly emarginated, and its ridge obtusely angulated towards the base, the remainder scarcely angulated; gape but little widened, and feebly bristled; nostrils large and subovate, with oval aperture to the front, a little removed from the base of the bill; tarse of mean length and strength, as long as the middle toe with its claw; the claws suited for perching, compressed, and moderately curved, that of the hind toe rather large; wings moderate, with the first primary reaching to about their middle, the second much shorter than the third, and the fourth longest; tail rather short, weak and even, except that its outermost feathers are a little shorter than the rest; plumage full and lax, the coronal feathers somewhat elongated and of a spatulate form."

4. *TRICHASTOMA ABBOTTI*, Blyth.

Syn. *Malacocincla Abbotti*, Blyth, Journ. A. S. Beng. xiv. p. 601 (1845).

*Trichastoma Abbotti*, Blyth, J. A. S. Beng. xvi. p. 462; Catal. B. Mus. A. S. Beng. p. 147. Bonap. C. G. Av. p. 259.

*Malacopteron Abbotti*, G. R. Gray, Gen. of Birds, iii. App. p. 9.

*Hab.* Arracan (No. 919, *Hodgs. Catal.*).

*Spec. Char.* "Colour above plain olive-brown, tinged with rufous on the rump and tail; the upper tail-coverts ferruginous brown, under parts paler; the throat and middle of the belly white; the ear-coverts, sides of the breast and flanks rufescent; the lower tail-coverts weak ferruginous; bill horn-colour, paler beneath.

"Length, 6 inches; of wing, 3; tail,  $2\frac{1}{8}$ ; bill to gape,  $\frac{1}{2}$ ; and tarse the same."—*Blyth.*

Mr. Blyth states Arracan to be the habitat of this bird. Specimens have lately been presented to the Company's Museum by B. H. Hodgson, Esq., from Nepal, and by Capt. R. C. Tytler from Dacca.

Fam. SYLVIADÆ, Vigors.

Subfam. SAXICOLINA, Vigors.

Genus NEMURA, Hodgson.

Syn. *Ianthia*, Blyth.

5. *NEMURA HODGSONI*, nobis. (Pl. LXII.)

Male: colour of the upper parts purplish blue, brightening to vivid ultramarine on the crown; forehead, lores and sides of head, wings and tail black, the two latter margined with blue externally; on the rump some of the feathers are tipped with white; upper tail-coverts blue; lower parts yellowish ferruginous; under wing-coverts, flanks and under tail-coverts white. Female: ferruginous brown, richer on the rump; wings and tail dusky, margined with ferruginous brown externally; lores, ear-coverts and under parts pale dusky ferruginous; under tail-coverts white; bill black; legs pale horn colour.

Length,  $3\frac{3}{8}$ ths of an inch; wing,  $3\frac{7}{8}$ ; tail,  $1\frac{1}{4}$ ; bill to front,  $\frac{2}{8}$ ; to gape,  $\frac{3\frac{1}{2}}{8}$ ; tarse,  $\frac{1}{2}$  an inch.

*Hab.* Nepal (No. 949, *Hodgs. Catal.*).

Subfam. PHILOMELINA, Swains.

Genus TARSIGER, Hodgson.

6. *TARSIGER SUPERCILIARIS*, Hodgson.

Male: above deep cyaneous; wings brown, margined with cyaneous and rufous on the shoulder, primaries also margined with rufous, secondaries with cyaneous; tail brown, margined with cyaneous; a white superciliary streak extending one inch and a half from the nares to the back of the neck; lores and cheeks black; beneath rufous;

centre of belly white. Female: olive-brown above; wings and tail brown, margined with rusty olive; superciliary streak not so clear as in the male; beneath pale dull rufous; centre of belly and shafts of the underside of tail white; bill black; legs horn colour.

Length,  $5\frac{1}{2}$  inches; of wing,  $3\frac{2}{8}$ ; tail,  $2\frac{5}{8}$ ; bill to gape,  $\frac{5}{8}$ ; tarse,  $1\frac{1}{8}$ .

*Hab.* Nepal (No. 924, *Hodgs. Catal.*).

Subfam. SYLVIANA, Vigors.

Genus PRINIA, Horsfield, p. s. d.

7. PRINIA CINEREOCAPILLA, Hodgson.

Crown of the head grey, the shaft and margin of the feathers being darker; nareal and frontal plumes, a streak over and beyond the eye, and the whole under parts rufescent, brightest on the flanks and thighs; lores and upper part of ear-coverts greyish; nape, back, rump and wings bright rufous brown, the tips of the latter dusky; tail the same colour as the back, paler beneath, with a terminal dusky band and rufescent white tips; bill black; legs pale horn colour.

Length,  $4\frac{1}{4}$  inches; wing,  $1\frac{8}{12}$ ; tail, 2; bill to front,  $\frac{3}{8}$ ; to gape,  $\frac{5}{8}$ ; tarsus,  $\frac{3}{4}$ ; middle toe and claw,  $\frac{7}{12}$ ; hind ditto,  $\frac{6}{12}$ .

*Hab.* Nepal (No. 890\*, *Hodgs. Catal.*).

Genus SUYA, Hodgson.

8. SUYA ATROGULARIS, nobis.

Colour above dusky brown, in some specimens ashy brown; edge of wing at shoulder and under wing-coverts buff; primaries margined with buffish and secondaries with rufescent brown; a whitish streak extending from the base of the lower mandible to the end and under the ear-covert; chin, throat, side of neck, breast and centre of abdomen black, the feathers of the two latter broadly centred with white; flanks and sides of abdomen mixed grey, brown and rufescent; vent buff; thighs buffy rufous; tail paler than the back, and has no perceptible terminal band; bill horn colour, feet paler.

Length,  $6\frac{1}{2}$  inches, including the tail; wings, from  $1\frac{3}{4}$  to 2 inches in some specimens; central feathers of tail from  $3\frac{1}{2}$  to 4, its outermost being only 1 inch; bill to gape,  $\frac{8}{12}$ ; to front,  $\frac{5}{12}$ ; height from chin to front,  $\frac{1}{10}$ ; width at chin,  $\frac{2}{10}$ ; tarsi,  $\frac{7}{8}$ .

*Hab.* Darjeeling; Nepal (No. 893, *Hodgs. Catal.*).

A single specimen of this beautiful bird has been in the Museum of the East India Company for a number of years, collected in Darjeeling by F. T. Pearson, Esq.; and B. H. Hodgson, Esq., has brought home several examples from Nepal.

Genus DRYMOICA, Swains. p. s. d.

9. DRYMOICA NIPALENSIS, Hodgson.

Above rufous brown; wings dusky brown, the primaries exteriorly and secondaries interiorly and exteriorly margined with bright rufous

brown; tail rufous brown, paler beneath, and distinctly rayed, has a terminal dusky band, the tips being pale but not white; the whole under parts rufescent, as in *Prinia socialis*, Sykes; bill dusky horn colour, paler below at base; legs pale horn colour.

Length,  $4\frac{1}{2}$  to 5 inches; wing,  $1\frac{10}{12}$ ; tail varying from  $2\frac{1}{2}$  to 3; bill to front,  $\frac{4}{12}$ ; to gape,  $\frac{7}{12}$ ; tarsi,  $\frac{10}{12}$ ; middle toe and claw,  $\frac{8}{12}$ ; hind ditto,  $\frac{7}{12}$ .

*Hab.* Nepal (No. 913, *Hodgs. Catal.*).

3. NOTICE OF THE SPECIES OF THE GENUS ORTHOTOMUS OF HORSFIELD, WITH DESCRIPTIONS OF A NEW SPECIES, AND OF THOSE HITHERTO KNOWN. BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

Fam. SYLVIADÆ, Vigors.

Subfam. SYLVIANA, Vigors.

Genus ORTHOTOMUS, Horsfield.

*Syn.* *Edela*, Lesson.—*Sutoria*, Nicholson.

1. ORTHOTOMUS SEPIUM, Horsfield.

*Syn.* *Orthotomus sepium*, Horsf. Trans. Linn. Soc. xiii. p. 166 (1820). Lath. Hist. iv. p. 265. Temm. Pl. Col. 599. f. 1. G. R. Gray, Gen. of Birds, i. p. 162. Blyth, Catal. B. Mus. A. S. Beng. p. 145. Bonap. C. G. Av. p. 282.

*The Chiglet Creeper*, Lath.

*Chiglet of the Javanese*, Horsf.

*Hab.* Java.

*O. sepium*.—The forehead, lores, over the eyes and ear-coverts, ear-coverts themselves, base of lower mandible and chin ferruginous, palest on the sides and chin; top of head, back and tail brownish olive, having a greenish tinge; wings dusky, broadly margined with brownish olive; throat and breast ashy black, the rest of the under parts yellowish; tail with a terminal dusky band, tipped with yellowish; thighs ferruginous; bill brownish, paler below; legs pale.

Length,  $4\frac{1}{2}$  inches; of wing,  $1\frac{8}{10}$ ; tail,  $1\frac{3}{4}$ ; bill to gape,  $\frac{7}{10}$ ; tarsus,  $\frac{3}{4}$ .

The above description is taken from Dr. Horsfield's typical specimens, contained in the Mus. East India Company.

2. ORTHOTOMUS ATROGULARIS, Temminck.

*Syn.* *Orthotomus atrogularis*, Temm. Pl. Col. Texte, 599 (1836). G. R. Gray, Gen. of Birds, i. p. 162. Bonap. C. G. Av. p. 282.

*Hab.* Malacca; Borneo.

*O. atrogularis*.—"The forehead, top of the head and occiput bright brownish red; the neck, the back and the wings of a grassy



green; the tail of a yellowish green, marked near the end and on the inner web with a narrow yellowish band; the chin, throat, breast and upper parts of flanks pure black, the sides of the abdomen yellowish; middle of the belly and abdomen white; bill and feet brown. No difference in the sexes.

“Length,  $3\frac{1}{2}$  inches.”—*Temm.*

### 3. ORTHOTOMUS FLAVOVIRIDIS, nobis.

The forehead, crown, round the eyes, and occiput ferruginous; back and rump yellowish green; tail more dusky green; wings brown, broadly margined exteriorly throughout with yellowish green; chin, base of lower mandible, ear-coverts, centre of some of the feathers of the throat and breast white; lower part of the breast ash and white; centre of abdomen white; throat and fore part of the breast black, centred as above; flanks yellowish; extreme edge of shoulder of wing yellow; under part of tail yellowish, with a terminal dusky band, tipped with yellowish; thighs greenish ferruginous. Specimens labelled “male.”

Length, 4 inches; of wing,  $1\frac{3}{4}$ ; tail,  $1\frac{1}{2}$ ; bill to gape,  $\frac{7}{10}$ ; tarsus,  $\frac{7}{10}$ .  
*Hab.* Malacca. In Mus. East India Company.

### 4. ORTHOTOMUS EDELA, Temminck.

Syn. *Orthotomus edela*, Temm. Pl. Col. 599. f. 2 (1836). G. R. Gray, Gen. of Birds, i. p. 162. Blyth, Catal. B. Mus. A. S. Beng. p. 144. Bonap. C. G. Av. p. 282.

*Motacilla sepium*, Raffles, Trans. Linn. Soc. xiii. p. 313. Lath. Hist. vii. p. 218 (nec Horsf. v. Lafres.).

*Edela ruficeps*, Less. Cent. Zool. p. 212. t. 71 (1834) (nec Less. Tr. d'Orn.).

*Kachichi of the Malays of Sumatra*, Raffles.

*Hab.* Malayan peninsula; Sumatra. In Mus. East India Company.

*O. edela*.—“The forehead, lores and crown ferruginous; the entire lower parts whitish, but the sides of the neck slightly variegated with clear ashy; back of neck, back, wing-coverts and tail greenish; the wings ashy, but bordered with greenish ferruginous; the tail is regularly of one colour; the bill and feet brownish.”—*Temm.*

Length,  $4\frac{1}{4}$  inches; of wing,  $1\frac{3}{4}$ ; tail,  $1\frac{1}{2}$ ; bill to gape,  $\frac{3}{4}$ ; tarsus,  $\frac{5}{8}$ .

### 5. ORTHOTOMUS RUFICEPS, Lesson.

Syn. *Edela ruficeps*, Less. Tr. d'Ornith. p. 309 (1831) (nec Less. Cent. Zool.).

*Orthotomus sericeus*, Temm. Pl. Col. Texte, 599 (1836). G. R. Gray, Gen. of Birds, i. p. 162. Bonap. C. G. Av. p. 282.

*Hab.* Malacca; Borneo.

*O. ruficeps*.—The forehead, crown, occiput, lores and upper part of ear-coverts bright ferruginous; the chin, base of lower mandible, lower part of ear-coverts and the rest of the under parts silky white;

back, rump and wings deep ash; tail bright ferruginous, at base ashy, and with no terminal band; thighs ferruginous; bill yellowish brown, pale below; legs pale.

Length,  $4\frac{1}{2}$  inches; wing, 2; tail,  $1\frac{3}{4}$ ; bill to gape,  $\frac{7}{8}$ ; tarsus,  $\frac{8}{10}$ .

The above description is from a specimen in the East India Company's Museum. This species may readily be distinguished by the bright ferruginous colour of the head, the tail also being of the same colour, and by the bill being considerably longer and stouter (though strictly typical) than in any of the other known species.

#### 6. ORTHOTOMUS CINERACEUS, Blyth.

Syn. *Orthotomus cineraceus*, Blyth, Journ. A. S. Beng. xiv. p. 589 (1845); Catal. B. Mus. A. S. Beng. p. 144. Bonap. C. G. Av. p. 282.

*Orthotomus sepium*, Lafres. Mag. de Zool. 1836, t. 51 (nec Horsf. v. Raffles).

*Hab.* Malacca.

*O. cineraceus*.—"Upper parts pure ash-grey, without any tinge of green; forehead and sides of the head light ferruginous, palest on the cheeks, and there is a slight tinge of the same upon the chin; crown tinged with olive-brown; lower parts white, passing to light ashy on the sides of the breast; tail somewhat brownish, with terminal dusky band, and whitish extreme tips to its outer feathers; tibial plumes rust-coloured; the tarsi and toes red-brown; bill dusky above, pale beneath.

"Length about  $4\frac{1}{2}$  inches; of wing,  $1\frac{8}{10}$ ; tail,  $1\frac{5}{8}$ ; bill to gape,  $\frac{5}{4}$ ; tarse,  $\frac{5}{8}$ ."—*Blyth*.

A specimen in the East India Company's Museum, from Malacca, has the centre of the throat and the whole of the breast and flanks lightish ash, paling to silky white on the centre of the belly; the under tail-coverts are also white; wings brown, the primaries margined exteriorly with pale dusky ferruginous, the secondaries with ashy olive; extreme edge of wing, under spurious wing-coverts and exterior margin of the latter ferruginous white, contrasting with the ash on the breast; under wing-coverts white. The wing and tarsus are both an eighth of an inch longer. Other characters as in the description above.

#### 7. ORTHOTOMUS LONGIROSTRIS, Swainson.

Syn. *Orthotomus longirostris*, Swains. 2 $\frac{1}{4}$  Cent. p. 343 (1837); Classif. Birds, ii. p. 62. f. 135. G. R. Gray, Gen. of Birds, i. p. 162. Bonap. C. G. Av. p. 282.

*Hab.* S.W. Australia (*Swains.*). Malacca?

*O. longirostris*.—"Cinereous; sides of the body beneath cinereous, the middle white; head, chin and thighs ferruginous; throat black; tail brownish, graduated, the latter with dusky black ends, tipped with whitish; bill and legs pale.

"Length,  $4\frac{1}{2}$  inches; wing,  $2\frac{1}{10}$ ; tail, beyond 1; base,  $1\frac{4}{10}$ ; bill to gape,  $\frac{8}{10}$ ; tarsus,  $\frac{9}{10}$ ."—*Swains.*

This species differs from *O. cineraceus* in having a black throat, and in the wing being three-tenths of an inch longer, the tarsus also being longer by a quarter of an inch. Mr. Swainson has given S.W. Australia as the habitat of this species, which must evidently be an error.

#### 8. ORTHOTOMUS CUCULLATUS, Temminck.

Syn. *Orthotomus cucullatus*, Temm. Pl. Col. 599. f. 3 (1836).  
G. R. Gray, Gen. of Birds, i. p. 162. Bonap. C. G. Av. p. 282.

*Hab.* Java; Sumatra.

*O. cucullatus*.—"Top of the head bright ferruginous; neck, cheeks, and the sides of the breast of a pure ash; the neck in front, the breast, and the middle of the belly are pure white; the sides, the thighs and the abdomen of a citron-yellow; back and wings of a greenish tint, the quills and tail margined with greenish; upper mandible brown, the lower as well as the feet yellowish."—*Temminck*.

#### 9. ORTHOTOMUS LONGICAUDA, Gmelin.

*Motacilla longicauda et sutoria*, Gmel. S. N. L. i. pp. 954, 997.

*Orthotomus longicauda*, Strickl. Ann. N. H. xiii. p. 35. Blyth, J. A. S. Beng. xiii. p. 377; Catal. B. Mus. A. S. Beng. p. 144.  
G. R. Gray, Gen. of Birds, i. p. 162. Tickell, J. A. S. Beng. xvii. pt. i. p. 298. Hutton, J. A. S. Beng. xvii. pt. ii. p. 691. Bonap. C. G. Av. p. 281. Layard, Ann. N. H. 1853, p. 262.

*Sylvia longicauda et sutoria*, Lath. Ind. Orn. ii. pp. 545, 551; Gen. Hist. vii. pp. 79, 119. Vieill. Enc. Méth. p. 456.

*Malurus longicaudus*, Pearson, J. A. S. Beng. x. p. 644.

*Sylvia guzuratta*, Lath. Ind. Orn. ii. p. 554; Gen. Hist. vii. p. 129.

*Orthotomus Bennettii et O. lingoo*, Sykes, P. Z. S. (1832) p. 90.  
Lafres. Mag. de Zool. (1836) t. 52, 53. Jerdon, Madr. Journ. xi. p. 1.  
Hodgs. Cat. B. Nep. p. 63.

*Orthotomus ruficapilla*, Hutton, J. A. S. Beng. ii. p. 504 (1833).

*Orthotomus sphenurus*, Swains. 2 $\frac{1}{4}$  Cent. p. 343 (1838).

*Orthotomus sutorius*, v. *ruficapillus*, v. *sphenurus*, Hodgs. Gray's Zool. Misc. (1844) p. 82.

*Orthotomus sutoria et O. patia*, Hodgs. P. Z. S. (1845) p. 29.

*Sutoria agilis*, Nicholson, P. Z. S. (1851) p. 194.

*The Indian Tailor Bird.*

*Phutki*, of the Hindoos, Jerdon.

*Tuntuni*, of the Bengalese, Hamilton, Blyth.

*Patia*, or "*Leaf Bird*," Nepal, Hodgson.

*Hab.* India generally; Ceylon; Burmese countries; Malayan peninsula?

This species is too well known to require further description.

"*The Tailor Bird* is tolerably common in most wooded districts, and universally spread, frequenting cultivated ground, especially gardens, groves of trees, and is also found in high jungle, in the more open spaces. It lives in pairs or in small flocks, incessantly hopping about the branches of trees and shrubs, peas and other vegetables, with a

loud reiterated note, and picking various insects (chiefly ants and small larvæ) off the bark and leaves, and not unfrequently seeking them on the ground. It has the habit of frequently jerking up its tail while feeding or hopping about, and at times (especially when calling) it has the power of raising the feathers on the lower part of the throat, and displaying on either side a small black stripe. This has been noted by no one except Lieut. Hutton, who states, 'it is only seen when the bird is in motion, and wholly disappears when in a state of rest.' It has various notes, one of which sounds like *twee, twee, twee*, as mentioned by Col. Sykes, and another which is generally used when alarmed or angry, and sounds like *chick, chick, chick, chick, chick*. It is a familiar bird, and ventures close to houses, but when observed becomes wary."—*Jerdon*.

Dr. Nicholson says, "It has a loud, short, and not unmelodious song; its general cry being '*wheet, wheet, wheet,*' often repeated; but its alarm cry is like '*cheertah, cheertah, cheertah.*'"

The following are a few observations on the structure of two specimens of the nest of the Tailor Bird, found in the garden belonging to Capt. Hearsey, by Lieut. Hutton: "The first was neatly formed of raw cotton and bits of cotton threads, woven strongly together, thickly lined with horse-hair, and supported between two leaves on a twig of the Amaltás tree (*Cassia fistula*). These two leaves were first placed longitudinally upon each other, and stitched in that position from the points to rather more than halfway up the sides with a strong thread spun from the raw cotton by the bird, leaving the entrance to the nest at the point where they join the branch of the tree. Both of these leaves were of course green and living. Subsequently, however, they were blown down by a high wind, and being now withered, the nest appears enclosed between two dead leaves. The second specimen was at the end of a branch of the Bhela (*Semecarpus anacardium*), about two feet from the ground, and constructed of the same materials as the above, viz. raw cotton, cotton threads, also a little flax, and lined with horse-hair alone; the leaves were stitched together partly with thread prepared by the bird, and partly with spun thread; and so well concealed was it, that even after Capt. Hearsey had discovered it (by accident) he could scarcely find it again to show to me. In it were found an egg and two young birds nearly fledged. These I placed, with the nest, in a trap-cage, and thus succeeded in capturing both of the old birds. The young birds are similar in colours to the adults, except that they are paler and the top of the head cinereous with a faint rufous tinge; bill yellowish. The eggs are white, spotted, chiefly at the larger end, with tawny spots."

Further notices of the habits and nest of this curious bird are given by the following authors, at the places above referred to, viz. Hodgson, Sykes, Blyth, Layard, Nicholson, &c.

4. A MONOGRAPH OF CERITHIDEA, A GENUS OF MOLLUSCA, WITH DESCRIPTIONS OF SEVERAL NEW SPECIES, FROM THE COLLECTION OF HUGH CUMING, ESQ.: TO WHICH ARE ADDED, DESCRIPTIONS OF TWO NEW SPECIES OF COLINA, AND ONE OF DONAX. BY ARTHUR ADAMS, F.L.S.

Genus CERITHIDEA, Swainson.

1. CERITHIDEA DECOLLATA, Linnæus.

*Murex decollatus*, Linn. Syst. Nat. ed. 12. p. 1226.—*Cerithium decollatum*, Brug. Dict. no. 45.—? *Turbo pulcher*, Dillw. Cat. no. 91.

2. CERITHIDEA OBTUSA, Lamarck.

*Cerithium obtusum*, Lamk. Hist. Nat. ed. Desh. vol. iv. p. 294. no. 17.—*Strombus obtusus*, Wood.—*Cerithium decollatum*, Sow. Gen.

3. CERITHIDEA VARICOSA, Sowerby.

*Cerithium varicosum*, Sow. Gen. of Shells, f. 5; Kien. Mon. Cerith. pl. 30. f. 2.—*Cerithium validum*, C. B. Adams, Shells of Panama, p. 157.

4. CERITHIDEA MONTAGNEI, D'Orbigny.

*Cerithium Montagnei*, D'Orb. Voy. dans l'Amér. Mérid., Moll.; Kien. Mon. Cerith.—*Cerithium Reevianum*, C. B. Adams, Shells of Panama, p. 156.

5. CERITHIDEA PULCHRA, C. B. Adams.

*Cerithium pulchrum*, C. B. Adams, Shells of Panama, p. 156.

6. CERITHIDEA HEGEWISCHII, Philippi.

*Cerithium (Potamides) Hegewischii*, Phil. Zeit. f. Malac. 1848, p. 19; Abbild. und Beschreib.

7. CERITHIDEA SINENSIS, Philippi.

*Cerithium (Potamides) Sinense*, Phil. Zeit. f. Malac. 1848, p. 19.

8. CERITHIDEA CHARBONNIERI, Petit.

*Cerithium Charbonnieri*, Petit, Journ. de Couch. Nov. 15, 1851.—*Cerithium unicarinatum*, Metcalfe, Ann. and Mag. Nat. Hist.

9. CERITHIDEA LAFONDI, Michaud.

*Cerithium Lafondi*, Mich. Actes de la Soc. Linn. de Bord. 1829, pl. 5. f. 7, 8; Kien. Mon. Cerith. pl. 24. f. 3.

Subgenus PIRENELLA, Gray.

10. CERITHIDEA (PIRENELLA) CAILLAUDI, Potiez et Michaud.

*Cerithium Caillaudi*, Pot. et Mich. Cat. des Moll. de Douai, pl. 31. f. 17, 18.

## 11. CERITHIDEA (PIRENELLA) BICARINATA, Gray.

*Cerithium bicarinatum*, Gray, Fauna of New Zealand, p. 241.—*Cerithium lutulentum*, Kien. Mon. Cerith. pl. 22. f. 3.

## 12. CERITHIDEA (PIRENELLA) CONICA, Blainville.

*Cerithium conicum*, Blainv. Faun. Franc., Moll. p. 158. no. 5. pl. 6A. f. 10.—*Cerithium Sardoum*, Cantr.; Kien. Mon. Cerith. pl. 22. f. 2.

## 13. CERITHIDEA (PIRENELLA) DIEMENENSIS, Quoy et Gaim.

*Cerithium Diemenense*, Quoy et Gaim. Voy. de l'Astr. iii. p. 128. pl. 55. f. 11–13; Kien. Mon. Cerith. pl. 23. f. 1.

## 14. CERITHIDEA (PIRENELLA) LARGILLIERTI, Philippi.

*Cerithium (Potamides) Largillierti*, Phil. Zeit. f. Malac. 1848, p. 20.

15. CERITHIDEA BALTEATA, A. Adams. *C. testa turrito-conica, apice truncata, tenui, rufo-fusca, linea spirali, albida ad medios anfractuum et altera ad suturas, ornata; anfractibus convexis, varicibus nullis, costis longitudinalibus, angustis, numerosis insculptis, transversim subsulcatis, ultimo rotundato, basi sulcato; apertura subquadrata, antice canaliculata; labro expanso, margine albo, reflexo, antice producto, auriculato.*

*Hab.* Island of Ticao, marshy places, salt water. Mus. Cuming.

This is a handsome shell, of a rich red-brown colour, ornamented with two yellowish-white bands, the hinder one interrupted and less distinct.

16. CERITHIDEA SIMILIS, A. Adams. *C. testa turrito-conica, apice obtusa, truncatu, solidiuscula, rufescente, albido variegata; anfractibus planiusculis, varice unico ad anfractum ultimum, costis permultis, confertis, nodulosis, cingula moniliformi ad suturas instructis; anfractu ultimo rotundato, basi sulcato; apertura suborbiculari, antice canaliculata; labro expanso, extus incrassato, antice producto ac auriculato.*

*Hab.* Philippine Islands. Mus. Cuming.

Of a pale fulvous-brown colour, with flat decussated whorls, and a whitish moniliform band immediately below the sutures.

17. CERITHIDEA CRASSILABRUM, A. Adams. *C. testa elongato-conica, apice cornea, vix truncata, solida, cinerea; anfractibus convexis, varicibus nullis, ad suturas cingula filiformi instructis, costellis albidis, confertis; anfractu ultimo rotundato, basi sulcato; apertura quadrato-orbiculari, basi subeffusa; labro expanso, valde incrassato, reflexo, arcuato.*

*Hab.* Philippine Islands. Mus. Cuming.

This species is remarkable for the great thickness of the outer lip, and the thread-like belt at the sutures; the outer lip at the fore part is marked with two obscure brown spots; in some smaller varieties the ribs are more strongly developed, and the interstices between them are horn-coloured, and the upper whorls corneous.

18. CERITHIDEA ALBIVARICOSA, A. Adams. *C. testa turrito-conica, apice acuta, solida, fusco-grisea, linea spirali, luteola, ad medios anfractuum ornata, albivaricosa; anfractibus convexiusculis, varicibus numerosis, distantibus, alternantibus instructis, longitudinaliter costatis, costis nodulosis, transversim sulcatis; anfractu ultimo rotundato, basi spiraliter sulcato; apertura suborbiculari, antice sinuata; labro expanso, margine acuto, subreflexo.*

*Hab.* Philippine Islands. Mus. Cuming.

This species is easily recognized, on account of the conspicuous white varices of the whorls.

19. CERITHIDEA RARICOSTATA, A. Adams. *C. testa turrito-conica, apice truncata, tenui, rubro-fusca, linea albo-lutea spirali ad medios anfractuum ornata; anfractibus convexis, suturis impressis, varicibus nullis, costis longitudinalibus distantibus, interstitiis lævibus, subcostellatis; anfractu ultimo ad basin funiculo cincto, infra funiculum subplano et sulcato; apertura suborbiculari; labro margine acuto, expanso ac reflexo.*

*Hab.* Catbalonga, island of Samaar. Mus. Cuming.

The ribs in this species are few and wide apart, and the interstices are nearly smooth; the whorls are very convex, and the shell is thin and semipellucid.

20. CERITHIDEA FORTUNEI, A. Adams. *C. testa turrito-conica, apice acuta, solida, olivacea, linea spirali fusca ad medios anfractuum; anfractibus convexis, ad suturas marginatis, varicibus obsoletis nonnullis, costis permultis, elevatiusculis, æqualibus, arcuatis sculptis, transversim substriatis; anfractu ultimo rotundato, basi spiraliter sulcato; apertura suborbiculari, antice effusa; labro expanso, valde sinuato vix reflexo.*

*Hab.* China (Mr. Fortune). Mus. Cuming.

This is a solid and somewhat smooth species, with numerous ribs, which are obsolete on the last whorl.

21. CERITHIDEA CORNEA, A. Adams. *C. testa turrito-conica, apice truncata, tenui, cornea, fusca; anfractibus planiusculis, varicibus nullis, costis longitudinalibus, arcuatis, æqualibus sculptis; anfractu ultimo ad peripheriam angulato, basi subplano, sulcato; apertura subquadrata, antice sinuata; labro expanso, margine acuto, reflexo.*

*Hab.* Borneo, mouths of rivers. Mus. Cuming.

This species is more fluviatile than many of the others, and the texture of the shell is thin and horny; in general appearance it most resembles *C. Charbonnieri* of Petit, but the last whorl is not acutely carinated.

22. CERITHIDEA RHIZOPHORARUM, A. Adams. *C. testa turrito-conica, apice truncata, subsolida, cinerea; anfractibus superne pallide flavidis, planis, varice unico, subobsoleto ad*

*anfractum ultimum, costellis arcuatis, nodulosis, permultis ornatis, transversim sulcatis; anfractu ultimo vix angulato; apertura quadrato-orbiculari, basi sinuata; labro breviter reflexo et arcuato.*

*Hab.* Cagayan, province of Misamis, Mindanao. Mus. Cuming.

This species inhabits estuaries near the sea, and is found among the roots of the *Rhizophora*, or mangrove; it is a dull, solid, ashy-brown shell, with numerous corrugated ribs.

23. CERITHIDEA (PIRENELLA) LAYARDII, A. Adams. *C. testa turrata, apice acuta, solida, castaneo-fusca, albo-zonata; anfractibus planiusculis, triseriatim granosis, cingula moniliformi ad suturas instructis; anfractu ultimo ad peripheriam subangulato et bicarinato; apertura ovata, antice subcanaliculata; labro tenui, in medio sinuato.*

*Hab.* Ceylon (*E. L. Layard, Esq.*). Mus. Cuming.

This is a very pretty species, somewhat resembling the *P. mamillata* of Philippi, but the character of the sculpture of the whorls is entirely different.

24. CERITHIDEA (PIRENELLA) PAUXILLA, A. Adams. *C. testa parva, turrato-conica, apice acuta, nitida, straminea; anfractibus planiusculis, varice unico ad anfractum ultimum, suturis canaliculatis, anfractibus triseriatim granosis; apertura quadrato-orbiculari, antice sinuata; labro acuto, expanso, margine sinuato.*

*Hab.* Burias, Philippines. Mus. Cuming.

This is a small yellowish-brown shining species, with deeply-channeled sutures, and with the whorls ornamented with three series of rather acute tubercles.

25. COLINA PINGUIS, A. Adams. *C. testa fusiformi, in medio ventricosa, flavido-fusca, transversim sulcata, spira attenuata, apice mucronata; anfractibus supremis lævibus, mediis serie tuberculorum instructis, ultimo lævigato, superne nodoso-plicato; apertura ovali, antice canaliculata, canali brevi; labro expanso, margine subreflexo, fusco articulado.*

*Hab.* Philippine Islands. Mus. Cuming.

This is a very singular shell, with a series of large tubercles on the middle gibbose whorls, and with the last whorl smooth, and exhibiting all the characters of the genus *Colina*.

26. COLINA COSTATA, A. Adams. *C. testa fusiformi, in medio gibbosula, flavescente, rufo sparsim maculata, transversim lirata, longitudinaliter costata, costis crassis, æqualibus, interstitiis lineis transversis, elevatis insculptis; anfractu ultimo ecostato, cingulis granulosis, transversis ornato, antice angulato, basi sulcato; apertura ovali, antice canaliculata, canali brevi, aperto; labro expanso, margine incrassato et reflexo.*

*Hab.* Philippine Islands. Mus. Cuming.

This species differs from the others of the genus in the longitudinal ribs of the whorls, and in the elevated granular transverse liræ.



27. DONAX KEYII, A. Adams. *D. testa trigonali, inæquilaterali, latere antico abrupte truncato, epidermide fusca, tenui oblecta, oblique valde costata, costis æqualibus, interstitiis concinne cancellatis; margine ventrali denticulato, arcuato, postice subsinuato; intus, ad laterum anticum, macula oblonga, violacea ornata.*

*Hab.* Hippopotamus Point, Quilimane River, East Africa (*Gilbert Key, Esq., R.N.*).

A very pretty and curious species, characterized by the strongly-marked oblique ribs with the interstices cancellated, and with a violet spot in the interior of the valves.

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March 14, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. OBSERVATIONS ON THE GENUS *PALUDOMUS* OF SWAINSON, WITH DESCRIPTIONS OF SEVERAL NEW SPECIES, AND THE DESCRIPTION OF A NEW SPECIES OF *ANCULOTUS*. BY EDGAR L. LAYARD, F.Z.S., C.M.E.S. ETC. ETC.

A cursory survey of the genus *Paludomus*, which Swainson many years ago separated from *Melania*, at once satisfied me that several genera or subgenera, differing in structure and habits, were united together under one name by Mr. Reeve, in his monograph on the genus in the 'Conchologia Iconica,' where he describes the characters of the genus as follows :—"Animal fluviatile, with a horny subtriangularly-ovate concentrically-striated operculum."

Had Mr. Reeve been furnished with the operculum and a correct account of the habits of each species, he never would have left the genus as it now stands. I was not aware that Dr. Gray had separated one division from it, until so informed by him when I introduced the subject to the notice of the Zoological Society on a former evening; and I rejoice to find that my observations on the Mollusca in their natural state confirm the views to which that learned zoologist has arrived, from the structure of the opercula.

This induced me carefully to examine the whole group; and the ample collection of Mr. Cuming, ever open to the investigator, my own cabinet, particularly rich in this family, and my memoranda taken in Ceylon, have furnished the results here presented to the Society.

I propose to separate the genus into four divisions, founded upon the structure of the operculum.

The first I shall designate *PALUDOMUS*, as, with the addition of the position of the nucleus in the operculum, the characters, as given

by Reeve, sufficiently describe that organ, and from its partiality to sluggish waters (two species being found in the marshy borders of tanks or artificial lakes), it better suits the name than any of the other divisions. A note of interrogation after a species implies that I have not seen the operculum, but from the form I consider it to belong to the division in which it is placed.

#### Genus 1. PALUDOMUS, Swains.

Animal inhabiting gently-running or still water. Operculum horny, subtriangularly ovate, with the apex superior and slightly inclined; concentrically striate; nucleus subcentral, sinistral.

<i>P. lævis</i> , Layard.	<i>P. decussatus</i> , Reeve?
<i>P. palustris</i> , Layard.	<i>P. Stephanus</i> , Benson?
<i>P. chilinoides</i> , Reeve.	<i>P. conicus</i> , Gray.
<i>P. phasianinus</i> , Reeve.	<i>P. bifasciatus</i> , Reeve.
<i>P. acutus</i> , Reeve.	<i>P. spiralis</i> , Reeve.
<i>P. bicinctus</i> , Reeve.	<i>P. pictus</i> , Reeve?
<i>P. constrictus</i> , Reeve.	<i>P. bacula</i> , Reeve?
<i>P. nigricans</i> , Reeve.	<i>P. abbreviatus</i> , Reeve?
<i>P. paludinoides</i> , Reeve.	<i>P. clavatus</i> , Reeve?
<i>P. punctatus</i> , Reeve.	<i>P. Maurus</i> , Reeve?
<i>P. globulosus</i> , Reeve?	<i>P. rudis</i> , Reeve?

#### Genus 2. GANGA \*, Layard.

Animal inhabiting gently-running water. Operculum horny, subtriangularly ovate; apex superior, slightly inclined, concentrically striate; nucleus subcentral, dextral.

*G. dilatata*, Reeve. *G. neritoides*, Reeve? *G. olivacea*, Reeve?

#### Genus 3. TANALIA, Gray.

Animal fluviatile, delighting in the most rapid mountain torrents. Operculum horny, subtriangularly ovate; apex lateral, lamellated; nucleus lateral, dextral.

<i>T. loricata</i> , Reeve.	<i>T. Gardneri</i> , Reeve.
<i>T. crinascens</i> , Reeve.	<i>T. Tennentii</i> , Reeve.
<i>T. ærea</i> , Reeve.	<i>T. Reevei</i> , Layard.
<i>T. Layardi</i> , Reeve.	<i>T. similis</i> , Layard.
<i>T. undata</i> , Reeve.	<i>T. violacea</i> , Layard.
<i>T. funiculata</i> , Reeve.	

#### Genus 4. PHILOPOTAMIS, Layard.

Animal fluviatile, amphibious, delighting in rocky torrents. Operculum horny, subtriangularly ovate; apex superior, paucispiral; nucleus sub-basal, dextral.

*Ph. sulcatus*, Reeve. *Ph. Thwaitesii*, Lay. *Ph. regalis*, Lay.

\* Cingalese name for a river.

One characteristic habit, separating the whole of these species, as far as I can ascertain, from *Melania*, is that they are constantly found adhering to stones, or the submerged roots of trees and stems of aquatic plants, which the *Melaniæ* never are; neither do they burrow in sand, as do the *Melaniæ*, though they often resort to a sandy locality, perhaps for the purpose of breeding. The habit in *Ph. sulcatus* of crawling several feet out of the water on the damp grass is remarkable.

A few remarks on the various species in detail may prove not unacceptable.

#### PALUDOMUS CHILINOIDES, Reeve.

This is the commonest species of the whole tribe. It is found in gently-running water generally, but often in paddy fields and other marshy grounds to which these running waters have access.

The animal is blackish-mottled, forehead produced into an obtuse point, slightly indented in the centre and fringed with red dots; tentacula two, acuminate; eyes two, sessile, situated about one-fifth of the distance up the tentacles.

I have taken the operculum of this species as the type of the family; it therefore needs no description.

#### PALUDOMUS LEVIS, Layard.

Shell oblong-ovate; axis 11 lines, diam. 7 lines; spire acute, exerted, moderately long; whorls rounded, not depressed round the upper part, smooth. Colour olive-yellow, the lower whorls seldom marked, but the upper always spotted with one or two rows of arrow-headed dots; apex bluish; aperture white.

Operculum as in *Pal. chilinoides*.

*Hab.* Ceylon, in slow-running streams on the northern side of the mountain zone extending into the flat country beyond Anarajahpoora. I also obtained a few in a paddy field in the south of the island, near the village of Heneratgodde. Mus. Cuming et Layard.

I think this may prove to be but a variety of *Pal. chilinoides*, although the experienced eye of Mr. Cuming at once separated it from that species. It is found in the same localities, and only differs from it in wanting the depression round the upper part of the whorls and in the colouring; the mollusk is similar.

#### PALUDOMUS PALUSTRIS, Layard.

Shell ovate, thin; axis 10 lines, diam. 6 lines; spire exerted, long; whorls rounded, rather flat, spirally closely grooved with minute granular striæ (visible under the lens). Colour of adult shell \* a rich yellow spotted with dark brown, the markings frequently running into wavy lines; apex bluish; aperture white.

\* In young shells the ground colour is almost hidden by the dark markings, and the aperture is found to be spirally marked with thin lines of the same colour.

Operculum nearly oval, the apex slightly inclined to the left ; concentric nucleus subcentral, sinistral.

*Hab.* The grassy margins of a tank at Anarajahpoora. Mus. Cuming et Layard.

**PALUDOMUS NIGRICANS, Reeve.**

Operculum as in *Pal. chilinoides*, Reeve.

*Hab.* Balcaddua Pass, mountain torrent, affecting the little pools and not found in the rapids.

**PALUDOMUS CONSTRICTUS, Reeve.**

Operculum as in *Pal. chilinoides*, Reeve, but with the apex very much inclined to the left.

*Hab.* Kadaganava Pass, mountain streams. I have not taken it *in situ*. Mus. Cuming et Layard.

**PALUDOMUS BICINCTUS, Reeve.**

Operculum as in *Pal. chilinoides*, Reeve.

*Hab.* Balcaddua Pass, in the Mahavillaganga, shallow quiet places on sand. Mus. Cuming et Layard.

**PALUDOMUS PHASIANINUS, Reeve.**

Operculum as in *Pal. chilinoides*, Reeve.

I cannot help thinking that this is but a geographical variety of *Pal. chilinoides*, of which the Ceylon race will be the connecting link. Seychelles type. Mus. Cuming. Ceylon var. Mus. Layard.

**PALUDOMUS PALUDINOIDES, Reeve.**

Operculum as in *Pal. chilinoides*, Reeve.

*Hab.* Ganges. Mus. Cuming et Layard.

**PALUDOMUS DECUSSATUS, Reeve.**

Operculum as in *Pal. chilinoides*.

*Hab.* Balcaddua Pass, mountain torrent, in company with *Pal. nigricans*, Reeve. Mus. Cuming et Layard.

**PALUDOMUS PARVUS, Layard.**

Shell ovate ; axis 6 lines, diam. 4 lines ; spire exerted, moderately long ; whorls slightly rounded, smooth. Colour dark olive-yellow, more or less marked with fine spiral brown lines ; aperture white.

Operculum as in *P. chilinoides*, Reeve.

*Hab.* Bombay. Mus. Cuming et Layard.

**PALUDOMUS GLOBULOSUS, Reeve.**

I am not quite satisfied that the opercula which I received with the specimens of this shell presented to me, are really the proper opercula of the species, but it probably belongs to this group.

I was told that the shells came from Rambodde Pass, between Newera Elia and Kandy, but never saw it *in situ*, as I did not visit that locality. Mus. Layard et Cuming.

## PALUDOMUS SPIRALIS, Reeve,

I include in this group, from its resemblance to my *Pal. palustris*. The only specimens I ever saw are in Mr. Cuming's cabinet.

## PALUDOMUS DILATATUS, Reeve.

Operculum concentric; nucleus subcentral, dextral.

*Hab.* Ceylon, Rambodde Pass, mountain torrent. This species was given to me along with *Pal. globulosus*; I therefore know nothing of its habits.

## Genus TANALIA, Gray.

## TANALIA LORICATA, Reeve.

This species grows to its largest size in the Calloo ganga, above Ratnapoora, where it is found in the most rapid foaming currents adhering to rocks. It resorts to deep sandy pools and reaches at some seasons, but apparently will not exist in a river devoid of rocks and rapids. Most of the streams of the southern provinces answering to this description contain it; but I never met with it to the northward, where the rivers become more sluggish.

The mollusk is almost black.

## TANALIA CRINASCENS, Reeve.

I doubt this being more than a geographical variety of the preceding species; and not being aware that it had been separated from it, did not pay attention to the operculum, though it evidently belongs to this group. I have only received the species from one locality, Kadaganava Pass, between Colombo and Kandy; but have intermediate varieties, on which half the spines are solid, as in *loricata*, half capped and hollow, as in *crinascens*.

## T. ÆREA, Reeve.      T. LAYARDI, R.      T. UNDATA, R.

I seek in vain for sufficient distinction in these species to separate them from *loricata*. Take a strongly-marked specimen of each, and the division appears an excellent one; place a hundred of each, and the gradations are imperceptible.

As far as my recollection serves me, there is nothing different in the animals; but as I was not aware of the separation of *ærea* and *Layardi*, I did not closely scrutinize them; however, of *undata* dozens passed in review with careful survey.

They are found with *loricata* and the pseudo-variety *crinascens* before mentioned; and the opercula are undistinguishable, save that those of *ærea* having a wider aperture to fill, are larger and not quite so angular. I look upon them as varieties of *loricata*.

## TANALIA GARDNERI, Reeve.

Operculum not distinguishable, except in size, from that of *loricata*. In very large specimens the angle is often very great, and is bent outward on the exterior side.

*Hab.* I found this species in a waterfall pool at Tambilichna, below Ratnapoora; also in the Calloo ganga, but only in the most rapid current, mixed with *loricata* and the next species.

**TANALIA TENNENTII**, Reeve.

Operculum the same as in the preceding species, but, if anything, always more angular.

*Hab.* as in *T. Gardneri*.

**TANALIA REEVEI**, Layard.

Shell oblong ovate; axis  $1\frac{1}{2}$  inch, diam. 1 in. 2 lines. Spire exerted, short. Whorls rounded, spirally corded with rather distant obtuse ridges, longitudinally striated with well-marked close-set striæ, the great characteristic mark of the species. Aperture: outer lip edged with deep purple-brown, columellar lip white. Colour a dark yellow-brown, thickly marked with longitudinal, slanting, jet-brown wavy bands.

*Hab.* The Calloo ganga, Ratnapoora.

I have much pleasure in dedicating this beautiful species to the gentleman who has so extensively investigated this peculiar family.

**TANALIA VIOLACEA**, Layard.

Shell globose; axis 6 lines, diam. 5 lines. Spire very short, slightly exerted. Whorls rounded, ventricose, spirally grooved with close-set, fine, minutely decussated striæ (in one variety the striæ become ridges). Colour a dark bluish-brown, almost amounting to black, with darkish brown patches appearing in some specimens. Aperture deep violet inside; columella white, stained on the outside edge with dark brown.

*Hab.* A small mountain torrent in a dense forest between Gillymalle and Pallabaddoola, towards Adam's Peak, Ceylon.

**TANALIA SIMILIS**, Layard.

Shell rather globose; axis 8 lines, diam. 6 lines. Spire short, exerted. Whorls rounded, ventricose, spirally grooved with close-set, fine, minutely decussated striæ. Colour rich olive-yellow, profusely marked with longitudinal, wavy, dark lines, interrupted by four or five fine transverse bands of the same colour. Aperture: the dark markings of the shell show through, and are dimmed by a bluish haze; columellar lip white, stained on the outside edge with dark brown, which runs round the outer lip in a thin band.

*Hab.* A mountain torrent at Kandangamoa, near Ratnapoora.

**TANALIA FUNICULATA**, Reeve.

I never could find any species which answered to Mr. Reeve's description of this shell, until Mr. Cuming kindly lent me the type specimen, when an hour's immersion in soap and water showed that the "jet-brown" was merely the accumulation of the freshwater algæ (which always cover this sluggish family) and the red cabooky dust of "India's utmost isle." This cleaning revealed a bright yellow epidermis, variegated with dark brown wavy lines, and the very minutely striated structure of the shell; and the specimen immediately ranged itself with a series of a very variable shell, which I had in vain endeavoured to reconcile with any published description.

A more lengthened description of this species, which I shall still call *T. funiculata*, Reeve, may prove acceptable, and prevent others from experiencing the same difficulty which I have felt.

Shell oblong ovate; axis 13 lines, diam. 10. Spire exerted. Whorls rather depressed round the upper part, spirally corded with rather distant obtuse ridges placed at unequal distances, sometimes with a thread-like ridge between two larger ones, the whole minutely longitudinally striated. Colour a bright rich yellow, variegated with closely set, dark brown, broadish, zigzag lines. Interior whitish; exterior lip faintly marked all round with purplish-brown, with frequent dark brown spots; columellar lip white, with the exterior margin stained with a bright pale brown. This description is taken from the original type shell; in some examples the ridges are almost, if not quite, obsolete; the spire is hardly exerted, the zigzag lines lost, and the aperture almost pure white; one of these specimens measures, axis  $9\frac{1}{2}$  lines, diam. 8 lines. In another, measuring, axis 17 lines, diam. 14 lines, the striæ are much coarser, and some of the upper ridges present a decided indication of nodules! The outer lip is pretty deeply edged with dark brown, and the bright brown of the columellar lip, though still present, is soon changed into a deep rich hue.

The species is abundant in a mountain stream not far from Ratnapoora, probably the very stream whence my lamented friend Dr. Gardner procured the type specimen, as it is crossed by the high road leading thither from Colombo; and, as I have had opportunity of witnessing, Dr. Gardner never failed to examine every stream he passed.

#### PHILOPOTAMIS SULCATUS, Reeve.

Operculum ovoid; apex slightly inclined, sinistral, paucispiral. Nucleus sub-basal, dextral. Mollusk black; forehead produced, as in *Paludomus chilinoides*; tentacles and eyes also the same.

*Hab.* Weyweldenia, a rocky rivulet. I found this species *loc. cit.*, and I then remarked that vast numbers of them were crawling on the wet grass on the banks of the stream. I subsequently found it at Kandangamoa and in the Calloo ganga.

#### PHILOPOTAMIS REGALIS, Layard.

Shell oblong ovate; axis 1 inch, diam. 9 lines. Spire exerted, short. Whorls rounded, depressed at the upper part, spirally corded with close-set slight ridges, longitudinally minutely striated, and crowned with a single row of short, sharp, hollow, angular spines, closely set. Colour yellowish-olive, painted with wavy, dark brown longitudinal lines. Aperture pure white.

Operculum unknown, but most probably as in *P. sulcatus*.

*Hab.* Stream in the Cnia Corle, Western province, Ceylon.

#### PHILOPOTAMIS THWAITESII, Layard.

Shell oblong ovate; axis 13 lines, diam. 9 lines. Spire exerted, short. Whorls almost carinated round the upper part, spirally

corded with unequal-sized, close, but irregularly set ridges, granulated or minutely striated. Colour yellowish-olive, painted more or less with wavy, dark brown longitudinal lines. Aperture pinkish-white, occasionally having the outer lip dotted with dark pink-brown marks.

*Hab.* Same as *P. sulcatus*.

This is a rare shell, if really distinct from *sulcatus*, from which and from *regalis* it may at once be distinguished by the shallowness and irregularity of the ridges.

#### ANCULOTUS CARINATUS, Layard.

Shell somewhat globose; axis 5 lines, diam. 4 lines. Spire exerted, short. Whorls inflated, rather square, sharply keeled round the inferior angle, minutely longitudinally striated. Colour dull olive, marked faintly with two or three broad bands of dark rufous-brown, which are very apparent in the aperture; columellar lip white, stained with a light dash of the same rufous-brown on the exterior margin.

*Hab.* Streams in the Mahakeshwar Hills, Bombay Presidency. Mus. Cuming.

## 2. DESCRIPTIONS OF SOME NEW SPECIES OF LOPHOCERCIDÆ AND PHILINIDÆ, FROM THE CUMINGIAN COLLECTION. BY ARTHUR ADAMS, F.L.S. ETC.

1. LOPHOCERCUS KROHNII, A. Adams. *L. testa involuta, ovato-oblonga, postice gibbosa, ad apicem subangulata et plicata; spira occulta, alba, nitida, fragili, pellucida; apertura ovali, postice acuta, antice dilatata; labro postice soluto, angulo postico libero inflexo ac rotundato.*

*Hab.* Sandwich Islands. Mus. Cuming.

This species is more gibbose posteriorly than *L. Sieboldii*; the region of the spire is plicate, and the shell is pellucid, white, and fragile.

2. LOBIGER PELLUCIDUS, A. Adams. *L. testa ovali, subinvoluta, alba, fragili, pellucida, longitudinaliter substriata, spira occulta; apertura oblonga, ampla, postice producta et subangustata, antice dilatata; labio tenui, subreflexo; labro arcuato, margine acuto.*

*Hab.* —? Mus. Cuming.

This species differs from *L. Philippii* in being white and nearly pellucid, and from *L. Cumingii* in the very different form of the aperture, this not being produced into a narrow spout-like canal posteriorly.

3. PHILINE ORIENTALIS, A. Adams. *P. testa ovato-rotundata, subinvoluta, alba, solida, nitida, spira nulla; apertura magna, antice effusa; labro semicirculari, angulo postico producto et rotundato.*

*Hab.* Eastern Seas. Mus. Cuming.







J. Wolf, lith.

M & N. Harb.

BUTHRAUPIS CHLORONOTA. *Scoter.* ( $\frac{1}{2}$  Nat; Size)





J. Wolf, del.

M. N. Silliman, sculp.

1. EUPHONIA BERGDIACKA, Z. S.

2. EUPHONIA GONCINNA, Z. S.

This species has somewhat the form of *P. aperta*, but wants the transverse impressed groove seen in that species; the plates of the gizzard, moreover, are produced at each end into long slender processes, somewhat similar to those of *P. Schroeteri*, the shell of which is very different in form.

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March 28, 1854.

Dr. Gray, Vice-President, in the Chair.

Mr. Gould exhibited male and female specimens of a very rare English Duck, described in 1847 by Mr. Bartlett, under the name of *Fuligula ferinoides*. The specimens exhibited were lent to Mr. Gould by M. Van den Bergh, of Rotterdam. Mr. Gould mentioned, that only three instances of the occurrence of the bird in England are on record; one of the specimens is in the collection of J. H. Gurney, another in that of Mr. Doubleday, of Epping, and the third in the museum of the late Earl of Derby, at Liverpool.

The following papers were then read:—

1. CHARACTERS OF SOME NEW OR IMPERFECTLY-DESCRIBED  
SPECIES OF TANAGERS.

By PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. LXIV. and LXV.)

I have been collecting Tanagers for some time, with the view of ultimately attempting a monograph of the family. But the forms in many of the genera are so closely allied, and the limits of the family itself at present so unsettled, that a larger collection of species, and a much greater familiarity with the subject-matter than I have yet had time to acquire, are requisite before such a monograph can be satisfactorily completed. Puzzling indeed to ornithologists would seem the question, "What is a Tanager?" as puzzling perhaps as to political economists Sir Robert Peel's celebrated poser, "What is a pound?" My ideas on this point, that is, I mean, as to the position and extent of the family or subfamily of Tanagers, coincide, I believe, nearly with those of Mr. G. R. Gray.

A Tanager I consider to be a *dentirostral* Finch—to be distinguished from other more typical *Fringillidæ* by the presence of one or more teeth or notches in the upper mandible (sometimes further developing themselves into serrations, as in certain species of *Euphonia* and *Tachyphonus*), and the culmen being always more or less inflexed, never straight. The colours of the group are generally very brilliant. They feed on ripe fruit, some on insects, and perhaps in habits rather resemble *Sylviadæ* than true *Fringillidæ*.

With these views, *I* keep among the Tanagers the *Pityli* and *Saltatores*, excluded therefrom by certain modern systematists, and retained among the *Fringillidæ*, while the whole of what may be termed the more typical portion of the group is removed far away to the neighbourhood of the *Sylvicolinæ*.

Now I think it will be impossible to settle these, and other families belonging to the South American Fauna, in a really satisfactory way, until we know much more than we do at present of the habits and customs of the animals of that vast continent. Unfortunately those who have hitherto written upon the ornithology of that country have in general had too little previous *scientific* knowledge of the subject. Not, of course, that this makes them less accurate observers of facts, but only less likely to hit upon the right facts to be observed. A person previously well acquainted with the varied forms of South American ornithology by study of the European collections, so as to know what points required looking up, would, I have little doubt, be in a much more favourable condition for observing these animals in their native haunts, and thereby solving many of those doubts which at present so perplex the student of natural history. As, however, we may perhaps have to wait some time before a determination of the question "What is a Tanager?" can be arrived at in this manner, I propose adopting as provisional limits for the family or subfamily, nearly those given by Mr. G. R. Gray in his 'Genera of Birds,' excluding only the genera *Pipilo*, *Embernagra*, and *Emberizoides*, which appear to me to go better with *Zonotrichia* and its allied forms. To show the arrangement I contemplate, I have formed a list\* of the genera and species, which may perhaps be useful for collectors to mark off their duplicates or desiderata; though, as a mere catalogue of names, it is, of course, of no scientific value. Some of the many lately-formed genera now used, I may hereafter find occasion to consolidate, the principle of subdivision having been carried to great lengths in this as in other families.

My present list contains the names of 222 species, though I have no doubt that many more remain to be discovered. These are all believed to be *real*, not *nominal* species; indeed I have myself seen specimens of nearly the whole of them, and the ten or twelve I have not personally examined I believe rest on good authority. The names used are many of them taken from Bonaparte's 'Conspectus,' his "Note sur les Tangaras" in the 'Rev. et Mag. de Zool.' for 1851, the 'Museum Heineanum' of Cabanis, and my own papers in Sir William Jardine's 'Contributions.'

The Tanagers are essentially a South American family. Out of the whole 222 species, 193 are from the continent south of the Isthmus of Panama, and the rest mostly either from Central America or Southern Mexico. Three or four only are peculiar to certain of the West Indian islands, and three only, well-known members of the genus *Pyrranga*, extend as summer migrants into the United States of North America. Through South America they range down to the Rio

\* Tanagarum Catalogus Specificus. Auctore Philippi Lutley Sclater. Basingstoke, 1854. 8vo. 16 pp.

de la Plata, but on the western coast I am not aware that they have been observed nearly so far south. M. d'Orbigny met with but one species\* at all on the occidental slope of the Andes; Tschudi mentions but three or four as occurring in the vicinity of Lima, on the coast-region of Peru.

Subjoined are the specific characters of five species occurring in my list, of which accurate descriptions have not yet been published.

1. ARREMON AXILLARIS, Sclater. *A. supra olivaceo-viridis; capite atro; superciliis productis albis; vitta verticali et cervice postica cinereis: subtus niveus, lateribus cinerascens; macula utrinque cervicali vittam quasi imperfectam formante, mentoque summo atris; remigibus reatricibusque nigricantibus: tectricibus alarum majoribus flavo-olivaceis, minoribus et axillis læte flavis: mandibula superiore nigra, inferiore flava: pedibus clare brunneis.*

Long. tota 5·2, alæ 3·0, caudæ 2·0 poll. Angl.

*Avis junior.* Semitorque collari vix conspicuo.

*Hab.* In Nova Grenada.

*Obs.* Species *Arremoni semitorquato* maxime affinis, sed hujus axillis olivaceis, illius lætissime flavis.

2. RAMPHOCELUS DORSALIS, Bp. MS. ♂ *Coccineus: dorso medio obscurius coccineo: alis caudaque nigris: rostro nigro, mandibula inferiore basi læte alba.*

♀ *Fusco-brunneus: alis caudaque nigricantibus: uropygio et ventre toto erubescens: rostro brunneo.*

Long. tota 7·0, alæ 3·2, caudæ 3·2.

*Hab.* In imp. Brasiliensi.

*Obs.* *R. brazilio* maxime affinis at dorso medio obscurius coccineo.

I should hardly have ventured to have separated this species from *R. brazilus*, from which it only differs, so far as I can make out, in the patch of darker colouring in the middle of the back; but as the Prince Charles Bonaparte has done so, and his MS. name has attained wide circulation on the MM. Verreaux's labels, I think it best to give a published description of the grounds of the alleged specific difference. However, M. Jules Verreaux,—a good authority,—considers the two species truly distinct, and has assured me, if I recollect right, that he has seen and shot them both frequently at Rio and Pernambuco.

3. BUTHRAUPIS CHLORONOTA, Sclater. (Pl. LXIV.) *B. supra viridis; pileo cæruleo: alis caudaque nigris, illarum tectricibus minoribus cæruleis; majoribus et secundariis viridi limbatis: subtus flavus, crisso saturatiore: gutture toto atro: rostro pedibusque nigris.*

\* The *Tanagra striata*, Gm., in the ravines of Palca in Peru, 18° S.L. M. d'Orbigny attributes a wide range to this species, which he says occurs besides in the Banda Oriental, near Monte Video, at Buenos Ayres, near La Paz, and in the provinces of Yungas, Sicasica, Cochambamba, Valle Grande, and Chiquisaca in Bolivia. (Voy. p. 272.) But, *quære*, does he not confound with *T. striata*, Tschudi's *T. frugilegus*?

Long. tota 8·8, alæ 4·6, caudæ 3·8.

*Hab.* In republ. Equatoriana.

*Obs.* Affinis *B. eximia*, sed major, dorso toto viridi nec uropygio cæruleo.

I have seen only one specimen of this species, which was received by the Frères Verreaux of Paris from Ecuador. It is closely allied to *B. eximia*, but is larger in all its dimensions, nearly equalling in size *B. cucullata*. Its distinguishing character is the uniform green back, whence I have named it *chloronota*. I have examined multitudes of *B. eximia*, and invariably found the uropygium blue.

#### 4. EUPHONIA CONCINNA, Sclater. (Pl. LXV. 2.)

*E. hirundinacea*, Bp. Rev. et Mag. de Zool. 1851, p. 156?—

*E. affinis*, Less. Rev. Zool. 1842, p. 175?

*E. supra nigro-violacea valde purpurascens; pileo summo flavo: infra gutture nigro-violaceo; abdomine aurantio-flavo: cauda subtus immaculate nigra.*

Long. tota 3·8, alæ 2·2, caudæ 1·4.

*Hab.* In Nova Grenada.

*Obs.* *E. chlorotica* similis, sed cauda subtus immaculata, fronte latius nigro, dignoscenda.

This bird is one of the group so closely affine to *E. chlorotica*, but may be distinguished from all of them (as *E. melanura* from *E. violacea* and its affines) by the absence of white markings on the exterior rectrices. The middle of the belly is also of a brighter orange tint, and the black front is broader than in *E. chlorotica*. A skin of this species, received from the MM. Verreaux, is labelled *E. hirundinacea*, Bp., and it is probably the species referred to by that name in the "Note sur les Tangaras," Rev. et Mag. de Zool. 1851, p. 156. It is not however the true *E. hirundinacea*, Bp. Proc. Zool. Soc. 1837, p. 117; for on examination of the type of that species, which is now in the Derby Museum at Liverpool (labelled *E. hirundinirostris*!), I found it coequal with the bird described by me (Cont. to Orn. 1851, p. 86) as *E. laniirostris*, which again is not the true *laniirostris* of MM. de Lafresnaye and d'Orbigny, but a closely allied species, called in the Baron de Lafresnaye's museum *E. fortirostris*. This must, of course, for the future bear the first proposed specific appellation *hirundinacea*, and will stand as follows:—

#### 5. EUPHONIA HIRUNDINACEA, Bp. (Pl. LXV. 1.)

*Euphonia hirundinacea*, Bp. Proc. Zool. Soc. 1837, p. 117.—*E.*

*laniirostris*, Sclater, Cont. to Orn. 1851, p. 86.—*E. hirundini-*

*rostris*, Bp. in Mus. Derb.—*E. fortirostris*, Lafr. in mus. suo.

*E. æneo-nigra: capite summo antico et corpore toto subtus flavis: rectricibus 2 utrinque extimis late albo intus notatis: rostro et pedibus nigris.*

Long. tota 4·5, alæ 2·5, caudæ 1·5.

*Hab.* In Guatimala (*Bp.*); Chiriqué in Veragua (*Kellett* in Mus. Brit.); Nova Grenada?

*Obs.* *E. violacea* similis, sed æneo-nigra nec purpurascens: rostro robustiore.



April 11, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF TWO NEW SPECIES OF PUCRASIA.  
BY JOHN GOULD, F.R.S. ETC.

Mr. Gould having recently found in the rich stores of the East India Company, at their house in Leadenhall Street, a new species of Pheasant, of the same form but remarkably different from the Pucras Pheasant, took the earliest opportunity, with Dr. Horsfield's permission, of bringing it under the notice of the Society. This fine bird, of which two specimens have been sent to the East India Company from Kafiristan by Dr. William Griffith, may be at once recognized by the uniform chestnut colouring of its mantle, breast and flanks, which has suggested the specific name of

PUCRASIA CASTANEA.

Forehead, cheeks, chin and lengthened portion of the crest dark shining green; hinder part of the head and the shorter portion of the crest dull sandy-buff, the two colours blending on the occiput; on each side of the neck an oval patch of white; lanceolate feathers of the neck, both above and below, breast and flanks, deep chestnut; feathers of the upper part of the back black, stained with chestnut on the outer web and margined with grey; lower part of the back and rump grey, fading into white on the edges, and with a narrow streak of blackish-brown down the shaft; wing-coverts dark brown, largely edged with greyish and ashy-brown; primaries brown on the inner margins, cream-white on the outer ones; feathers of the lower part of the abdomen brownish-black, edged with whitish; under tail-coverts chestnut, with a black line down the centre, and fringed with white at the tip; upper tail-coverts ashy-grey, with a broad mark of blackish-brown down the centre, but not extending to the tip; tail-feathers black, the central ones broadly margined with grey freckled with black, the remainder fringed with whitish at the tip; bill black; feet horny-brown.

Total length, 23 inches; wing,  $9\frac{3}{4}$ ; tail,  $10\frac{1}{2}$ ; tarsi,  $2\frac{5}{8}$ .

*Hab.* Kafiristan.

*Remark.*—This species is altogether a stouter and larger bird than *Pucrasia macrolopha*.

Mr. Gould further remarked that, upon a careful examination and comparison of the Pheasants from Nepal, which have usually been considered as identical with the *P. macrolopha*, with true examples of that species, he found them to differ so considerably, that he felt justified in characterizing the Nepaulese birds as distinct, under the name of

PUCRASIA NIPALENSIS.

Forehead, cheeks, chin and lengthened portion of the crest deep shining green; hinder part of the head and the shorter portion of the crest buff, with lighter shafts, the two colours blending on the occiput; on each side of the neck an oval spot of white; feathers of the sides and back of the neck and upper part of the back brownish-black, with a narrow mark of rich chestnut down the centre, and edged with rufous or whitish; feathers of the lower part of the back brownish-black, with white shafts and edges; wing-coverts brownish-black, with white shafts and margins; scapularies broadly margined with deep reddish-buff; primaries brown on the internal web, deep buff on the outer; tertiaries pale chestnut, mottled with black along the shaft and towards the edge, which is sandy-buff; throat, centre of the breast and abdomen rich chestnut; flank-feathers brownish-black with white shafts, bordered on each side by a very fine line of chestnut, and narrowly edged with grey, the markings becoming larger and paler behind the thigh; under tail-coverts lively chestnut, with an oval spot of white at the tip of each; centre tail-feathers rufous, stained with black near the shaft, the remainder black on the inner web and at the tip, the outer webs chestnut, which colour curves round into and occupies a portion of the internal web near the tip; all fringed with white at the tips; bill black; feet horny-brown.

Total length,  $20\frac{3}{4}$  inches; wing,  $8\frac{1}{2}$ ; tail, 9; tarsi,  $2\frac{1}{2}$ .

*Hab.* Nepal and Bhotan.

*Remark.*—In size this bird is the smallest of the three species of the genus, but it is by far the most highly coloured and beautifully marked; the mantle, the sides of the neck and the flank-feathers are conspicuously striated with black, chestnut and grey; the same parts in the other species being sombre in comparison.

Specimens are contained in the collection at the British Museum, in that of the East India Company, and, Mr. Gould believes, in that of the Jardin des Plantes at Paris.

2. ON THE REPRODUCTION OF THE LOST PART OF AN OPERCULUM, AND ITS PROBABLE RESTORATION WHEN ENTIRELY DESTROYED. BY DR. J. E. GRAY, F.R.S., V.P.Z.S. ETC.

It is to be expected that the operculum of a Gasteropodous Mollusk may be sometimes broken or injured, but I have never hitherto been able to find any very distinct example of the kind, so as to study how the repair of the lost part would be effected. That such an occurrence would most probably be rare, is easily explained from its situation, as the operculum is protected by the last whorl of the spire of the shell when the animal is expanded, and by the mouth when it is contracted into the cavity of the shell.

I have lately met with a very distinct example in a specimen of *Fusus* in the British Museum collection. In this specimen the apical half of the operculum has been broken off (see fig. 1), and the lost part has been renewed by an irregular roundish process, nearly of

the size of the lost part, not quite as thick as the original portion, and formed of rather irregular horny plates; the smaller or first-formed portion being in the centre of the broken line, so that the restored part bears some similarity to the annular operculum of a *Paludina*. This restoration is exactly like that which would have taken place in a shell under similar circumstances, and is a further proof of the truth of the theory which I have long advocated, that the operculum is a rudimentary valve, and is homologous to the second valve of the Bivalve Mollusks.

Fig. 1.



In examining two specimens of *Pleurotoma babylonica*, preserved in spirits, with the opercula attached, I was much surprised to observe that the opercula of the two specimens were exceedingly different in structure and belonged to two distinct modifications of that valve, one (fig. 2) being subannular, with the nucleus apical, like the other species of the genus, and the other (fig. 3) annular, with the nucleus subcentral, somewhat like the operculum of *Paludina*.

Fig. 2.



Fig. 3.



The examination of the restoration of the lost half of the operculum of the *Fusus* before referred to has solved the difficulty, and I have no doubt that one of these animals had by some accident lost its operculum, and that it had gradually restored it; commencing, as in the case of the restored part of the operculum of the *Fusus*, by a small nucleus in the centre of the opercular mantle, on the back of the foot, and gradually adding new layers round the edge of it, until it formed an annular operculum nearly of the size of the original, but differing from it in shape, being less acute in front and nearly similar in form at the two ends. A more minute examination has strengthened this theory, for the operculum of this specimen is less regularly developed than is usual in the annular operculum of the kind, and is much thinner than the normal operculum of the genus, as is the case in both these particulars with the restored part of the operculum of the *Fusus*.

This change in the formation of the operculum when it is reproduced, is just what one might have expected. The animal, when it has to form its operculum at its birth, begins its formation at the tip, and increases its size, as the animal requires a larger operculum for its protection, by the addition of new layers to the outer edge of its larger and last-formed end: but when it has to reproduce this organ, the opercular mantle having reached a certain size, it proceeds

to cover its surface with a new protection in the most easy and rapid manner, and, commencing from a more or less central spot on the surface, enlarges the surface covered by adding new matter to the entire circumference of the first-formed part; it continues this process without waiting to make the operculum as thick and solid as the one which was lost, until it reaches the size of the original, moulding itself on the opercular mantle, and adapting its form to the form of the throat of the aperture of the shell which it has to close. The change of form in the front of the restored and mended operculum is caused by the parts being moulded on the existing opercular mantle—consequently they have not the narrow front part which is found in the normal form, caused by that part having been formed when the animal had this part of a small size; and as it increases in size the whole opercular mantle moves forward, leaving the small tip of the operculum free, and useless to the animal, and therefore not necessary to be reproduced when the operculum is re-formed in the adult age of the animal.

In the British Museum collection there is also a specimen of *Cominia maculata* with the operculum almost entirely reproduced, with the same alteration of the general form and position of the nucleus. These mended or reproduced opercula are always known from the normal operculum of the animal by being more or less irregularly formed and thinner in consistence.

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April 25, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART III.  
BY LIEUT. BURGESS.

Family MERULIDÆ.

Subfamily TIMALINÆ.

Genus TIMALIA.

TIMALIA MALCOLMI, Sykes. LARGE BABBLER.

This Large Babbler, though not generally so common, I believe, as *Timalia grisea*, I have shot in the Deccan in the districts near the city of Ahmednuggur. It is gregarious in its habits, flying about in flocks of eight or ten. It lives much on the ground, seeking its food, which consists of grasshoppers, beetles, black and white ants, and other insects, under large trees and hedgerows, scratching up and turning over the dead leaves with its strong claws. It also feeds on grain; the stomach of one which I examined contained bajocee

seeds and the remains of black ants, of another the remains of black and white ants. This fact, I think, accounts for the habit of these birds, of scratching amongst the decayed leaves round the trunks of large trees, where both the black and white ants are sure to be found; indeed it is almost impossible to find a large tree without a colony of the former round its roots. I am not certain whether the nest and eggs in the Museum of the Zoological Society, marked as those of the Greater *Timalia*, belong to this bird, or to *Timalia grisea*; but as I procured two or three specimens of the Large Babbler and not one of *T. grisea*, I think that there is every probability that the nest and eggs belong to this species. I believe that birds of the genus *Timalia* breed twice during the year, as I have found their nests in the months of May and October. The nest brought to me in the month of October was found in a tuft of high grass in a boggy piece of ground; it contained four eggs of a uniform rich blue,  $\frac{9}{10}$  in. in length by nearly  $\frac{7}{10}$  in. in width. The number of eggs does not exceed four. The nest above-mentioned was composed of coarse matted grass at the bottom, and finer bents on the sides, lined also with bents of grass; it was loosely put together.

There are the nest and eggs of another species of *Timalia* in the Museum of the Zoological Society; but not having put the bird off her nest, I am unable positively to assert to what species they belong. I believe, from the smallness of the eggs, that they probably belong to *Timalia hyperythra* or *T. hypoleuca*; but this point requires further investigation.

### Subfamily ORIOLINÆ.

#### Genus ORIOLUS.

#### ORIOLUS AUREUS, Gmel. INDIAN ORIOLE or MANGO BIRD.

This is common in the Deccan, frequenting banian trees and topes of mangoes, whence its name. These birds are particularly fond of the fruit of the banian, or Indian fig; the gizzard of one which I shot was full of the seeds of this small fig. The Indian Oriole begins to breed in the month of June. A pair of these birds built their nest on the small forked branches of a flowering tree in my garden at Ahmednuggur. The nest was composed of various fibrous substances, amongst which pieces of hemp appeared to predominate; with this two of the branches were bound together; some fragments of part of a letter which had been torn up and thrown away were inserted; the handwriting on the paper I easily recognized as that of a lady at the station. The nest, in its position, and in the manner in which it was attached to the boughs, was much like that figured by Mr. Yarrell in his work on British Birds as the nest of the Golden Oriole. The nest, I believe, contained four eggs, of a white ground with claret-coloured spots. This nest, with the eggs, and a pair of the old birds, are in the possession of the Zoological Society.

2. NOTICE OF A NEW INDIAN SWALLOW.  
 BY FREDERIC MOORE, ASSIST. EAST IND. COMP. MUSEUM.

(Aves, Pl. LXIII.)

The subject that I beg to lay before the Meeting this evening, is a new form belonging to the family *Hirundinidæ*, lately collected in Nepal and presented to the Museum of the East India Company by B. H. Hodgson, Esq., which is allied to, but certainly distinct from, the genus *Chelidon*, and for which the following anagrammatic name is proposed.

DELICHON (nov. gen.).

*Gen. Char.* Bill short, thick, robust, gape rather wide, the culmen rounded, the nostrils basal, lateral and rounded. Wings rather long, with the first quill the longest. Tail short, and emarginated or nearly even at the end. Tarsi longer than the middle toe, and clothed with plumes. Toes long and clothed with plumes, the inner shorter than the outer; the claws moderate and curved.

Type, *D. Nipalensis*, Hodgs. n. sp. (Pl. LXIII.)

*Spec. Char.* Top of the head, chin, cheeks, ear-coverts, nape, back, upper and under tail-coverts, fine glossy black; wings black, paler beneath, the upper coverts fringed with glossy black, the under coverts dusky black; tail black, fringed on the external webs with glossy black; a band of white across the rump; throat, breast, abdomen, lower part of flanks and vent white, upper part of flanks black; tarsi and toes covered with white plumes; claws pale flesh-colour; bill black.

Length from tip of the bill to the end of the tail,  $3\frac{3}{4}$  inches; of wing,  $3\frac{5}{8}$ ; of tail,  $1\frac{5}{8}$ ; bill to front,  $\frac{3}{16}$ ; to gape,  $\frac{7}{16}$ ; height from chin to front,  $\frac{1}{8}$ ; breadth at front,  $\frac{3}{20}$ ; tarse,  $\frac{7}{16}$ ; middle toe and claw,  $\frac{9}{20}$ ; hind toe,  $\frac{7}{20}$ .

*Hab.* Nepal. (No. 963. Hodgs. Catal.)

This interesting bird differs from the type of the genus *Chelidon* by its smaller and more robust bill and by its shorter and even tail; the wings also are shorter. From the genus *Cotyle* it is at once distinguished by its plumed feet.

3. NOTICE OF SOME NEW SPECIES OF BIRDS CONTAINED IN THE  
 MUSEUM OF THE HON. EAST INDIA COMPANY.

BY FREDERIC MOORE, ASSIST. EAST IND. COMP. MUSEUM.

Family MERULIDÆ, Vigors.

Subfamily TIMALINA, Vigors.

Genus PYCTORHIS, Hodgson (1844). *Chrysomma* (Blyth),  
 Hodgson (1845).

1. PYCTORHIS LONGIROSTRIS, Hodgson.

Forehead, crown, nape, back, rump, upper tail-coverts and tail rufous-brown, deepest on the crown, wings and tail, the last being







distinctly rayed; chin, throat, base of lower mandible, middle of belly and vent white; ear-coverts, sides of the neck and breast pale rufescent, brightening on the flanks, thighs and under tail-coverts; under wing-coverts also rufescent; bill black, yellowish beneath at base; legs pale horny.

Length,  $8\frac{1}{4}$  inches; of wing,  $2\frac{3}{4}$ ; tail,  $3\frac{1}{4}$ ; bill to frontal plumes,  $\frac{5}{8}$ ; to gape, 1 inch; height from chin to front,  $\frac{2}{10}$ ; tarse, 1 inch; middle toe and claw,  $1\frac{1}{10}$ ; central and lateral ditto,  $\frac{7}{10}$ ; hind ditto,  $\frac{7}{10}$ .

*Hab.* Nepal. (No. 892. Hodgs. Catal.)

This bird may be distinguished from *Pyc. sinensis* (better known under the name of *Timalia hypoleuca*) by its larger size, by the lengthened bill, the rufescent colour of the under parts, and by the absence of white before the eye. It may possibly be the species noticed by Mr. I. W. Frith, in the 'Journ. As. Soc. Beng.' xiii. p. 370, as being found in Bengal, which he states "differs from the common species in being about half larger."

I may here notice, in connexion with this genus, that Mr. Hodgson, in 'Proc. Zool. Soc.' 1845, p. 24, refers his genus *Pycorhis* only to *sinensis*, and not to the bird named *rufifrons*, which is there described as an *Actinodura*, it being synonymous with the species previously described by Mr. Gould under the name of *Actinodura Egertoni*.

## Family SYLVIADÆ, Vigors.

### Subfamily SYLVIANA, Vigors.

#### Genus HOREITES, Hodgson.

#### 2. HOREITES MAJOR, Hodgson.

Above olive-brown, ruddier on the wings; tail rounded, more of a dusky-brown, with the outer webs fringed with olive-brown; cap red-brown; a yellowish-ferruginous superciliary streak, extending over the ear-coverts; upper part of the latter ruddy-brown, lower ashy; throat, sides of neck, centre of breast and abdomen ashy-white; sides of the breast and flanks olive-brown; bill dark horn-colour, yellowish at base beneath; feet also yellowish.

Length, 5 inches; of wing,  $2\frac{1}{2}$ ; tail,  $2\frac{2}{10}$ , outer feather  $\frac{1}{2}$  an inch shorter than the middle; bill to front,  $\frac{3}{8}$ ; to gape,  $\frac{5}{8}$ ; tarsus,  $\frac{9}{10}$ ; middle toe and claw,  $\frac{7}{10}$ ; inner ditto,  $\frac{5}{12}$ ; outer ditto rather more than  $\frac{1}{2}$  an inch.

*Hab.* Nepal. (No. 946. Hodgs. Catal.)

This species may easily be distinguished by its greater size, and larger bill, the wings being much longer, though rounded as in the other species, and by the nearly total absence of ash-colour on the under parts; the feet also are much longer and stronger.

## GENUS ABRORNIS, Hodgson.

## 3. ABRORNIS POLIOGENYS, Blyth.

*Culicipeta polioGENYS*, Blyth, J. A. S. Beng. xvi. p. 441 (1847).  
*Rhipidura polioGENYS*, G. R. Gray, Gen. of Birds, iii. App. p. 12.  
*Hab.* Darjeeling, Nepal. (No. 920. Hodgs. Catal.)

Head and nape, base of lower mandible and ear-coverts dark ash-grey, the loreal feathers tipped with greyish-white; round the eye a clear white ring; back, rump and shoulders bright olive-green; wings dusky black, margined with olive-green, the greater coverts tipped with whitish-yellow; throat greyish-white, the rest of the under parts clear yellow; tail dusky on the six central feathers, which are margined with olive-green, the three outer being greenish-dusky on the terminal half of the outer web, the basal half with the whole of the inner web being white; upper mandible blackish horn-colour, lower yellowish; feet yellowish horn-colour.

Length about  $4\frac{1}{4}$  inches; of wing, 2 inches; tail,  $1\frac{3}{4}$ ; bill to front,  $\frac{3}{10}$ ; to gape,  $\frac{1}{2}$  an inch; and tarse the same.

"This species is nearly allied to *Abrornis xanthoschistos*, Hodgs., from which it differs in having the cheeks and ear-coverts, with the feathers commencing from the base of the lower mandible, of the same ash-grey colour as the head, and the throat greyish-white, instead of these parts being bright yellow as in that species."

## 4. ABRORNIS AFFINIS, Hodgson †.

This species is closely allied to *A. polioGENYS*, but differs from it in having the lores, base of lower mandible, lower portion of the ear-coverts, and the chin and throat, the same bright yellow as the rest of the under parts; the feathers of the crown are pale shafted, which is not the case in *polioGENYS*; the tail is pale dusky, the two outer feathers only being white on the apical portion of the inner web, the basal portion of which is dusky; the outer web in both is pale dusky green; the other ten are fringed with greenish on the outer web. The wing in *affinis* is a quarter of an inch longer, but has the same markings; the tarsus is also longer by a tenth of an inch. Other characters agree in both species. The bill in this and *polioGENYS* is broader than in *A. xanthoschistos*, Hodgson.

*Hab.* Nepal. (No. 920\*. Hodgs. Catal.)

## 5. ABRORNIS ALBOGULARIS, Hodgson.

Forehead, lores, over and under the eyes to nape, and ear-coverts brightish ferruginous, the crown being dusky ferruginous, passing to yellowish olive-green on the back and shoulders; the rump yellowish; wings black, margined with the colour of the back; tail pale dusky greenish, edged exteriorly throughout with yellowish-green; throat and base of lower mandible white, the feathers black at base; breast bright yellow; abdomen white, vent yellowish; bill

† No. 920\*, to distinguish it from 920 of Mr. Hodgson's Catalogue.

horny, paler beneath; feet pale horny; the rictorial bristles black, strong, nearly as long as the bill.

Length,  $3\frac{1}{2}$  inches; of wing,  $1\frac{3}{4}$ ; the first quill  $\frac{1}{2}$  an inch shorter than the second; third  $\frac{7}{10}$ ths longer than the first; fourth, fifth and sixth nearly equal, the fifth being the longest; tail,  $1\frac{1}{2}$  inch; bill to frontal plumes,  $\frac{3}{12}$ ; to gape,  $\frac{5}{12}$ ; tarsus,  $\frac{6}{10}$ ; middle toe and claw,  $\frac{5}{12}$ ; hind ditto,  $\frac{3}{8}$ ; tarsus and hind claw strong.

*Hab.* Nepal. (No. 936. Hodgson's Catal.)

#### 4. ON RUNCINA HANCOCKI.

BY DR. J. E. GRAY, F.R.S., V.P.Z.S. ETC.

When in company with Mr. William Thompson, I observed *Runcina Hancocki* in considerable abundance in the pools left between the rocks at low tide in Belmont Cove, Weymouth, but only on the tufts of *Hypnea purpurascens* which were infested with *Diatomaceæ*, which induces me to believe that they feed on these parasitic plants. I brought several of them to London, and have since sent some to Mr. Alder, who verified the determination. Messrs. Alder and Hancock (Ann. and Mag. Nat. Hist. xviii. 289. t. 4), when they first described the animal, referred it to the genus *Limapontia*, order *Inferobranchiata*. Mr. Edward Forbes (Brit. Moll. iii. 611. t. CCC) formed it into a genus, placed provisionally at the end of the *Eolididæ*, observing that in all probability it represented a distinct family.

The examination I have been able to bestow on the animal induces me to agree with Mr. Forbes on this point, and I should be inclined to arrange the *Runcinidæ* in the order *Pleurobranchiata*, near *Bullidæ* and *Pleurobranchidæ*. It has the armed gizzard and the gills of *Aplysiadæ*. To the excellent description of Messrs. Alder and Hancock, I may add, that the tongue-membrane is covered with three longitudinal series of large transparent teeth, like that of some of the *Bullidæ*. The central tooth is broad, transverse, with the upper edge reflexed, notched in the middle, and with three unequal denticles on each side of the middle line. The lateral teeth are rather large, versatile, conic, arched, compressed, with an acute tip. The prehensile collar is horny, large, rugose, with roundish tubercles. I am somewhat inclined to consider the front part of the back, enclosing the eyes, which are rather bent up on the sides and separated from the other part of the back by a paler colour, as the frontal lobe of the *Bullidæ*, which is united at this paler part to the true mantle, giving the animal the appearance of having a single oblong shield-like mantle. The mantle is very hard and tough, but without any appearance of a shell or of spicula.

## 5. ON THE GENUS MODIOLARCA.

BY DR. JOHN EDWARD GRAY, F.R.S., P.B.S., V.P.Z.S. ETC.

In the Synopsis of the British Museum for 1840, pp. 144, 155, I established a family of bivalve shells under the name of *Crenellidæ*, for the genera *Crenella* and *Modiolarca*, taking the character of the family from the animal of *Modiola trapezina*, the type of the genus *Modiolarca*, the only one that had then come under my examination. The following were the characters given:—

“The family of *Crenellidæ* chiefly differs from the former (*Mytilidæ*) in the mantle lobes being united together so as to leave only two posterior holes for the entrance and exit of the water, and a slit for the foot and beard. The hinge-margin is denticulated at each end, and the umbo is nearly central.”

Shortly after, Mr. Alder described the animal of the British *Crenella undulata*, and found that the mantle was nearly as much open as that of the *Modiolæ*, and complained of the inaccuracy of the description; the fact being, that the two genera had very different animals, and that *Crenella* had been wrongly referred to the group, and taken as the patronymic of it.

I have lately had an opportunity of verifying my description of the animal of *Modiolarca*, and find that it exactly agrees with the above character, and that it has a very peculiar-formed foot, most resembling that found in some *Arcidæ*, which caused me to call the genus *Modiolarca*\*

The following is a more particular description of the animal of the genus, which must be considered as the type of a peculiar family, called

## MODIOLARCADÆ.

*Crenellidæ*, Gray, 1840.

Genus MODIOLARCA, Gray, 1840.

Mantle lobes united. Siphonal apertures two, distinct; anal moderate; branchial very large, inferior, simple edged; pedal aperture small, basal, subanterior. Gills four, thick, dependent, subtrigonal, truncated in front, narrow, produced and united together behind. Lips four, moderate. Palpi obsolete. Foot oblong, base truncated, lower end lanceolate, acute in front, with a subposterior, central cavity for the byssus.

Shell equivalve, oblong, thin; umbo subanterior. Hinge-teeth none, or rudimentary. Cartilage linear, external. Periostraca polished, hard.

The animal lives attached to floating sea-weed.

*Modiolarca trapezina*† = *Modiola trapezina*, Lamk. Hist. A. s. V. n. 17. ed. 2. vii. 24; Delessert, Icon. t. 13. fig. 7; Hanley, Cat. Recent Shells; 237.

\* Two genera have been made out of this word. Dr. Beck when in this country made a note that I had called the genus *Modiolarca*; but he appeared to have read it *Modiolaria*, and that name has been used for it. The latter name is now chiefly used for the more oblong *Crenella*.

† Since the above was read, I find that M. Valenciennes has considered this shell as the type of a new genus, *Phascalicama* (see Gay's Chili, 1854); and Mr. Gould has, more lately, formed a genus for it, under the name of *Gaimarda*.—J. E. GRAY.





1

J. Wolf; lith.

M & N. Hanhart, I

(1) TYRANNULA PHOENIXEA *Sister*.

(2) TYRANNULA ORNATA *Sister*.







May 9, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTION OF A NEW SPECIES OF HUMMING BIRD,  
FROM QUIJOS. BY JOHN GOULD, F.R.S. ETC.

Mr. Gould exhibited a Humming Bird, lately received from Quijos, which is very nearly allied to *Threnetes leucurus*, but which differs from that species in its larger size, and in having those parts of the tail-feathers of a deep fawn-coloured hue which are white in *T. leucurus*; precisely, in fact, the difference which occurs between *Lafresnaya flavicaudata* and *L. Gayi*. For this bird Mr. Gould proposed the name of

THRENETES CERVINICAUDA.

Head, all the upper surface, upper wing-coverts, two central tail-feathers, sides of the neck, breast and flanks shining olive-green; wings purplish-brown; lateral tail-feathers deep fawn-colour, stained on the apical half of the outer margin and the tip of the outer feather with dark brown; a crescent of the same, but of a much paler hue, at the tip of the next; a still fainter mark of the same colour near the tip of the external web of the third; and a nearly obsolete mark, of a similar tint, in the same situation on the fourth; lores and ear-coverts brown; on the chin and throat a lengthened triangular mark of black, bounded on either side by a narrow line of greyish-white, and below by a broad band of deep sandy-buff crossing the throat; centre of the abdomen greyish-buff; under tail-coverts olive, narrowly edged with greyish-buff; bill black, with the cutting edge of the upper mandible and the basal three-fourths of the under one pearly-white; feet yellow.

Total length,  $4\frac{5}{8}$  inches; bill,  $1\frac{7}{16}$ ; wing,  $2\frac{3}{8}$ ; tail,  $1\frac{1}{2}$ .

*Hab.* Quijos, in Ecuador.

2. LIST OF A COLLECTION OF BIRDS RECEIVED BY MR. GOULD,  
FROM THE PROVINCE OF QUIJOS IN THE REPUBLIC OF  
ECUADOR. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXVI. and LXVII.)

Among the many novelties in ornithology lately received by Mr. Gould from different parts of the world, is a small but valuable collection of birds from the province of Quixos, or Quijos, in the republic of Ecuador. This country, which lies on the eastern slope of the Andes, where the Rio Napo and other adjoining tributaries of the mighty Amazon take their rise, is a very interesting locality to those who study South American ornithology, being intermediate between

New Grenada—whence so many new forms have lately been sent to Europe—on the one side, and the wood regions of Peru and Bolivia, where Von Tschudi and D'Orbigny pursued their laborious researches in natural history, on the other.

Mr. Gould having most liberally placed this collection in my hands for examination, I have drawn up a complete list of the species as far as I can determine them satisfactorily, in order to show the character of the ornithology of this country—observing that Mr. Gould is expecting fresh consignments from the same quarter, which will doubtless much further increase our knowledge of the fauna of this highly interesting region.

#### HIRUNDINIDÆ.

1. *Acanthylis albicollis* (Vieill.).

*Hirundo albicollis*, Vieill. Nouv. Dict. xiv. 524 (1817).

*Hirundo collaris*, Wied, Reise nach Bras. i. p. 75 (1820), et Beit. z. Nat. iii. p. 344.

*Acanthylis collaris*, Gray's Gen. i. p. 55. sp. 6.

This fine spine-tailed Swift seems generally distributed over the northern portion of the continent. It was observed by Prince Max. of Neuwied in many provinces of Brazil, by Schomburgk in British Guiana, and Sir William Jardine has examples transmitted by Professor Jameson from the vicinity of Quito. Mr. Gosse has recorded its appearance in Jamaica.

#### TROGONIDÆ.

2. *Trogon melanopterus*, Sw. (Gould's Mon. pl. 10, 11).

3. *Calurus auriceps*, Gould.

#### BUCCONIDÆ.

4. *Bucco macrorhynchus*, Gm.

5. *Bucco collaris*, Lath.

6. *Malacoptila fusca* (Gm.).

#### GALBULIDÆ.

7. *GALBULA CHALCOTHORAX*, Selater, sp. nov.

*G. læte cupreo-viridis*; capite cærulescente; pectore læte violaceo; macula gulari triangulari alba: ventris plumis basi nigricantibus, apice albis; rostro pedibusque nigris.

Long. tota 8·3, alæ 3·3, caudæ 3·5, rostri 1·5.

*Obs.* Similis *G. leucogastræ*, sed major et pectore violaceo-cuprescente.

This is an immature bird of a species closely resembling *G. leucogastra*, but of larger size and with a bright violet or purple tinge on the breast, which does not appear in examples of the older species.

#### CÆREBINÆ.

8. *Dacnis cayana* (L.) (Pl. Enl. 669. fig. 1).

9. *Dacnis angelica*, De Fil. (Pl. Enl. 669. fig. 2).

10. *Dacnis atricapilla* (V.).

## TROCHILIDÆ.

Mr. Gould has himself determined the species of *Trochilidæ* that occur in the present collection, as also the Trogons and Toucans.

11. *Phaëthornis striigularis*, Gould (Mon. Trochil. viii. pl. 15).  
A new species allied to *P. intermedia*.

12. *Phaëthornis superciliosus* (Linn.)?

13. *Threnetes cervinicauda*, Gould.

A new species resembling *T. leucurus*, but with the tail-feathers fawn-coloured where they are white in the other species (see p. 109).

14. *Thalurania viridipectus*, Gould.

15. *Chrysuronia ænone* (Lesson).

16. *Iolæma Schreibersi* (Bourc.).

Mr. Gould has made a new generic name for this bird, which has been placed by Prince Charles Bonaparte in his 'Conspectus Trochilorum' among the *Campylopteri*.

17. *Cæligena typica*, Bp.

18. *Gouldia Langsdorfi* (Vieill.).

## DENDROCOLAPTINÆ.

19. *Xiphorhynchus procurvus* (Temm.) (Pl. Col. 28. fig. 4).

20. *Dendrornis guttata* (Licht.).

*Nasica guttatus*, Lafr. Rev. Zool. 1850, p. 385.

These are both Brazilian forms.

## MENURINÆ.

21. *Scytalopus griseicollis* (Lafr.).

*Merulaxis griseicollis*, Lafr. Rev. Zool. 1840, p. 103.

A Bogota bird.

## MNIOTILTINÆ.

22. *Setophaga ruticilla* (L.).

This North American species is one of the few Passeres of that country that extend all through Central America into the northern portions of the southern continent. It is included by Schomburgk among the birds of British Guiana.

23. *Myiodioctes canadensis* (L.).

Described from Bogota by the Baron de la Fresnaye as a new species under the name of *Setophaga nigrocincta* (Rev. Zool. 1843, p. 292), but, as afterwards acknowledged by the same author, quite identical with North American specimens.

24. *Sylvicola Blackburniæ*, juv.

Also a common U. S. species.

## TURDINÆ.

25. *Turdus minimus*, Lafr. (Rev. Zool. 1848, p. 5).

The Prince Charles Bonaparte has reunited this bird to the *minor* of the U. S., from which M. de la Fresnaye considered it distinct.

## FORMICARIINÆ.

26. *Thamnophilus stellaris*, Spix ? (Av. Bras. ii. p. 27. pl. 36. fig. 2).  
 ♂ cinereus : pileo dorsoque summo et medio nigris, hujus pennis  
 basi niveis : alarum tectricibus apice maculis rotundis, albis.  
 ♀ supra pallide cinereus : subtus brunneus, lateribus cinerascen-  
 tibus : alis externe rufis.

Long. tota 5·2, alæ 3·0, caudæ 1·6.

This is a typical *Thamnophilus* with a strong thick bill. There are several examples of it in the Paris Museum in different states of plumage, and it was from examining them that I was enabled to decide that the female above described (which is in my own collection) belongs to this species.

27. *Cymbilanius lineatus* (Leach), ♂ & ♀.

28. *Formicivora cærulescens* (Vieill.), Menetr. Mon. t. 6. fig. 1 & 2. p. 499 (?).

29. *Pyriglena quixensis* (Cornalia).

*Thamnophilus quixensis*, Corn. Vert. Syn. p. 12\*.

*P. atra*, abdomine cinerascēte : tectricibus alarum maculis rotundis, albis terminatis : dorsi plumis laxis, elongatis, basi albis : rectricibus apice albis.

Long. tota 4·5, alæ 2·1.

30. *Pyriglena rufiventris* (Cornalia).

*Thamnophilus rufiventris*, Corn. Vert. Syn. p. 12.

*P. atra*, abdomine læte castaneo : alarum tectricibus maculis rotundis, albis terminatis : dorsi plumis laxis, elongatis, basi albis : rectricibus graduatis, harum extimis apice albis ; rostro pedibusque nigris.

Long. tota 4·5, alæ 2·1, caudæ 2·0.

I have little doubt that I have correctly referred these two birds to the species described by Dr. Cornalia, the types of which I had an opportunity of examining through his kindness when last at Milan. Although they closely resemble one another, except in the colouring of the belly, there is so much difference in the form of the bill in the two specimens in this collection, that I think it hardly possible that, as suggested by Dr. Cornalia, the variations between them can be due to age or sex, and I believe them distinct though nearly allied species. I have placed them in the genus *Pyriglena*, with the type of which, *P. domicella*, they agree in several respects ; particularly in the lax and elongated feathering of the lower back—a curious structure occurring in several groups of birds, *Pycnonotus*, *Philen-toma*, &c., and which has not yet, as far as I am aware, been fully explained. In this same genus I should also place that peculiar form, the *Myiothera nudiceps* of Cassin (Proc. Ac. Sc. Phil. 1850, p. 106),

\* Dr. Cornalia's paper, which is little known in this country, is entitled "Ver-tebratorum Synopsis in Museo Mediolanense exstantium quæ per novam orbem Caietanus Osculati collegit annis 1846, 47, 48 speciebus novis vel minus cognitis adjunctis necnon descriptionibus atque iconibus illustratis : Modoetia 1849."

*Pyriglena nudiceps*, mihi, of which Mr. Gould has a specimen from Panama, and the MM. Verreaux have lately received examples from Santa Martha in New Grenada.

There are several other birds of this family in the collection that I cannot make out. A modern monograph of the group would be a great addition to our knowledge of South American ornithology.

31. *Conopophaga aurita* (Linn.) (Pl. Enl. 822).

Agrees with Cayenne specimens.

#### TYRANNINÆ.

32. *Pyrocephalus rubineus* (Bodd.), Pl. Enl. 675. fig. 1.

33. *Todirostrum* —? —.

34. TYRANNULA PHÆNICURA, Sclater, sp. nov. (Pl. LXVI. 1).

*T. flavo-olivacea*: dorso imo et ventre flavissimis: capite nigro-cinerascente, crista media flava utrinque nigra: fronte lorisque albis: gula cinerea: alis nigricantibus, tectricibus majoribus et secundariis rufescente limbatis: cauda unicolore clare rufa.

Long. tota 4·0, alæ 2·5, caudæ 1·7.

Obs.—Similis *T. ornata*, Lafr. Rev. et Mag. de Zool. 1853, p. 57, (Pl. LXVI. 2), sed cauda clare rufa et secundariis rufescente marginatis sane diversa.

35. *Elania cayennensis* (Linn.).

#### TÆNIOPTERINÆ.

36. *Copurus flicauda* (Spix).

#### TITYRINÆ.

37. *Tityra marginata* (Licht.).

#### AMPELIDÆ.

38. *Pipreola Sclateri* (Cornalia).

*Euchlornis Sclateri*, Corn. Jard. Cont. to Orn. 1852, p. 133. pl. 101; Rev. et Mag. de Zool. 1853, p. 104. pl. 4.

Dr. Cornalia, to whom I owe many thanks for the honour he has done me in calling this elegant bird after my name, rightly insists on the claims of priority of De Filippi's genus *Euchlornis* over Lafresnaye's *Pyrrhorhynchus*. But both these names must, I think, give way to Swainson's term *Pipreola*, established in 1838 (Animals in Menag. p. 357), the type of which, his *P. chlorolepidota*, seems closely allied to D'Orbigny's *Ampelis viridis*. I was rejoiced to see this bird in the present collection, as it clears up a mystery about its *habitat*, which Dr. Cornalia supposed to be Peru or Bolivia. But I have now no doubt that the type specimen in the Museo Civico at Milan, which is the only other I have seen, came, as the present, from the province of Quixos, and was probably collected there by the enterprising Italian traveller Osculati.

39. *Pipreola Riefferi* (Boiss.).

*Ampelis Riefferi*, Boiss. Rev. Zool. 1840, p. 3.

40. *Laniisoma arcuatum*, Swains.

This generic name of Swainson's must be used as prior by several years to *Ptilochloris* of the same author. M. de la Fresnaye has recently reunited his *Ptilochloris remigialis* to the type species *arcuata*, but I am sure that there are two birds confounded under this name, though I have not yet seen enough specimens to enable me to distinguish them accurately. The *P. rufo-olivaceus* and *virescens* of La-fresnaye, described in the Revue Zoologique, 1838, p. 238, do not, I think, belong strictly to this genus. They have both been previously named by Prince Maximilian of Neuwied, the first as *Muscicapa turdina*, Beit. iii. 817, the second as *Muscicapa virescens*, ib. p. 802.

41. *Pipra Isidori*, Sclater, Rev. et Mag. de Zool. 1852, p. 9; Cont. to Orn. 1852, pl. 100. fig. 1. p. 132.

42. *Pipra coronata*, Spix, Av. Bras. ii. pl. 7. fig. 1.

(*P. cyaneocapilla*, Hahn. *P. herbacea*, Spix, ii. pl. 8 a. fig. 1 ♀.)

I believe Spix's name is prior to Hahn's. The *Pipra herbacea* of the former (of which I have seen the type in the Munich Museum) is certainly a female of this species.

43. *Pipra leucocilla*, Linn.

44. *Chiromachæris gutturosa* (Desm.) Tang. & Man. pl. 58.

I have my doubts whether this bird is really separable from *Pipra manacus*, as made out in Bp.'s Consp. p. 171.

## GARRULINÆ.

45. *Cyanocorax yncas*, Bodd. (Pl. Enl. 625. *Corvus yncas*, Bodd., *Corvus peruvianus*, Gm.).

## STURNIDÆ.

46. *Cacicus persicus* (L.).

47. *Gymnomystax mexicanus* (Linn.) (Bp. Consp. p. 431).

## TANAGRINÆ.

48. ARREMON SPECTABILIS, Sclater, sp. nov. (Pl. LXVII.)

*A. supra aurescenti-olivaceus*: capite nigro, vitta verticali cinerea: superciliis albis: axillis lætissime croceis: subtus albus; mento summo et torque gutturali nigris; lateribus cinerascentibus; rostro flavo.

Long. tota 5·8, alæ 2·8, caudæ 2·5.

This beautiful *Arremon* appears to me to be quite new. It comes nearest perhaps to the *A. aurantirostris* of Lafr. (Des Murs, Icon. Orn. pl. 55), but that has a very broad pectoral band, this a narrow one. Besides, the deep saffron, almost chestnut colour of the bend of the wing is of itself sufficient to distinguish it from all the other species of the genus.

A second example of this bird is in a collection lately received by Sir William Jardine from the same locality.

49. *Pyranga* —? —♀.

A bad skin of a female or immature bird.

50. *Ramphocelus* —? —.

A female of one of the species allied to *R. jacapa*.

51. *Tachyphonus luctuosus*, D'Orb. & Lafr.

52. *Tanagra caelestis*, Spix, Av. Bras. ii. p. 42. pl. 55. fig. 2.

Readily distinguished from the other *Bishop* Tanagers by the silky white bar across the wing. A rare bird in collections. In the Paris museum are examples collected by MM. Castelnau and Deville at Pontobamba in June 1847.

53. *Calliste Parzudakii* (Lafr.).

54. *Calliste Schranki* (Spix).

55. *Calliste xanthogastra*, Sclater.

56. *Calliste gyroloides* (Lafr.) ♀.

57. *Calliste cyanicollis* (D'Orb. & Lafr.).

58. *Calliste thalassina* (Strickl.).

59. *Calliste xanthocephala* (Tsch.).

60. *Euphonia xanthogastra*, Sund.

#### CAPITONIDÆ.

61. *Eubucco Bourcieri* (Lafr.).

62. *Eubucco Hartlaubi* (Lafr.).

63. *Capito peruvianus* (Cuv.).

#### CUCULIDÆ.

64. *Piaya cayana* (Linn.) (Pl. Enl. 211).

#### PSITTACIDÆ.

65. *Psittacula passerina*, Spix?

Agrees with Bogota specimens.

#### RAMPHASTIDÆ.

66. *Pteroglossus castanotis*, Gould.

67. *Pteroglossus flavirostris*, Fraser.

68. *Andigena nigrirostris*, Waterhouse.

#### RALLIDÆ.

69. *Corethrura cayennensis* (Gm.) (Pl. Enl. 368).

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May 23, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. NOTICE OF ALL THE KNOWN SPECIES OF THE GENUS ACCENTOR, WITH THE DESCRIPTION OF AN UNCHARACTERIZED SPECIES FROM NEPAL. BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

Family SYLVIADÆ, Vigors.

Subfamily ACCENTORINA, Vigors.

Genus ACCENTOR, Bechstein.

1. ACCENTOR ALPINUS, Gmelin.

*Motacilla alpina*, Gmel. S. N. L. i. p. 957.

*Sturnus moritanus*, Gmel. S. N. L. i. p. 804.

*Sturnus collaris*, Scop. Ann. i. p. 131. no. 192. Gmel. S. N. L. i. p. 805. Lath. Ind. Orn. i. p. 323.

*Accentor alpinus*, Bechst. Naturg. Deutschl. iii. p. 700. Eyton, Cat. Brit. B. p. 13. Macgill, Hist. Brit. B. ii. p. 258. Gould, Birds of Eur. t. 99. G. R. Gray, Gen. of Birds, i. p. 187; Catal. Brit. B. in B. M. p. 64. Blyth, Cat. B. Mus. A. S. Beng. p. 130. Bonap. C. G. Av. p. 305.

*Le Fauvette des Alpes*, Buffon.

The Alpine *Accentor*, Eyton; Yarrell.

*Hab.* Europe.

2. ACCENTOR NIPALENSIS, Hodgson.

*Accentor nipalensis*, Hodgson, J. A. S. Beng. xii. p. 958 (1843); Gray's Zool. Misc. 1844, p. 83; P. Z. S. 1845, p. 34; Cat. B. of Nepal, p. 71. G. R. Gray, Gen. of Birds, i. p. 187. Blyth, J. A. S. Beng. xv. p. 42. Bonap. C. Gen. Av. p. 305.

*Accentor cacharensis*, Hodgs. P. Z. S. 1845, p. 34.

The Nepal *Accentor*, Gray.

*Hab.* Nepal.

*A. nipalensis*.—“Newly-moulted adults have the upper parts nearly as in *A. modularis*, but the dark colour predominating, and the striation of the head and neck obsolete, or nearly so, these parts, with the ear-coverts and breast being of an almost uniform dark brownish-grey; throat white, spotted with dusky-black, which forms two cross-bars on each feather, their extreme tips being greyish; belly and flanks bright dark ferruginous, mingled with the hue of the breast along the middle of the former; under tail-coverts dusky, tinged with ferruginous, and laterally margined with white; the feathers of the back are greyish-brown, with broad dark centres, or they may be described as blackish, with brown lateral margins, tinged with ferruginous towards and upon the scapularies; wings dusky-black, the



tertiaries broadly margined with ferruginous, the other large alars slightly so, and all having a spot of this colour at the extremity of their outer edge; wing-coverts having a white spot at the tip of their exterior webs, and the small feathers near the bend of the wing coloured like the head; tail brownish-black, tipped with brown, the terminal spot of the inner web of each feather successively more albescent to the outermost; upper tail-coverts long, and brown with a dark central streak; bill dusky, the lower mandible yellow except at tip; legs reddish-brown. In worn plumage, the margins of all the feathers have more or less disappeared, and what remains of them is faded in hue; the conspicuous white spots on the wing-coverts, and ferruginous margins of the tertiaryes, being completely abraded, the former leaving a semicircular sinus, as if artificially cut away. The young have the clothing plumage of the usual flimsy texture, the under parts coloured like the back, with no ferruginous on the belly, the spots on the wing-coverts are larger and less purely white; and the ferruginous on the scapularies and wing-coverts dingy."

Length about 7 inches; of wing  $3\frac{3}{4}$  inches; tail  $2\frac{3}{4}$ ; bill to gape  $\frac{5}{8}$ ths; and tarse  $\frac{1}{6}$ ths of an inch.

This species appears to represent *A. alpinus* on the Kachar region of Nepal.

### 3. ACCENTOR VARIEGATUS, Blyth.

*Accentor himalayanus*\*, Blyth J. A. S. Beng. xi. p. 187.

*Accentor variegatus*, Blyth, J. A. S. Beng. xii. p. 958 (1843); Cat. B. Mus. A. S. Beng. p. 131. G. R. Gray, Gen. of Birds, i. p. 187. Bonap. C. G. Av. p. 305.

*Accentor alpinus*, Vieill, Gall. des Ois. t. 156 (nec Gmel.).

The Variegated *Accentor*.

*Hab.* Sikim; Kasouli; Nepal (No. 964, Hodgson's Catalogue).

*A. variegatus*.—"Forehead, crown, occiput, neck, shoulder of the wings, and rump dingy grey-brown, with an inconspicuous lighter greyish eye-streak; throat and fore-neck white, with small round spots disposed as in *alpinus*; ear-coverts streaked with fulvescent, and small loreal and infra-orbital feathers tipped with fulvous-white; gorget brown, more or less tinged with rufous, which latter brightens on the lower breast, flanks, and sides of the belly, the feathers being laterally edged with white, and some having dark streaks on the flanks posteriorly; lower tail-coverts white, with lanceolate central dusky spots; wings intricately mottled, having the anterior range of coverts dusky-black with white tips, the next or great range fulvescent-grey exteriorly at base, and dusky-black for the remainder with slight whitish tips; primaries edged with grey, secondaries with brown, and tertiaryes with fulvous; scapularies and interscapularies rufous-brown, mottled with large black terminal spots on the middle of each feather; tail dusky, having a large white spot at the tip of the inner web of each feather; bill black; legs pale reddish."

\* This name was changed to *variegatus* by Mr. Blyth, as the other Indian species of this genus are also found in the Himalayas.

4. *ACCENTOR MODULARIS*, Linn.

*Motacilla modularis*, Linn. S. N. i. p. 329.

*Accentor modularis*, Bechst. Naturg. Deutschl. iii. p. 617. Eyton, Cat. Brit. B. p. 13. Macgill. Hist. Brit. B. ii. p. 251. Gould, B. of Eur. t. 100. G. R. Gray, Gen. of Birds, i. p. 187; Catal. Brit. B. in B. M. p. 65.

*Sylvia modularis*, Lath. Ind. Orn. ii. p. 511; Gen. Hist. vii. p. 20.

*Tharrhaleus modularis*, Kaup. Naturl. Syst. i. p. 137.

The Hedge *Accentor*. Selby. Yarrell.

*Hab.* Europe.

5. *ACCENTOR RUBIDUS*, Temm. et Schlegel.

*Accentor rubidus*, Temm. et Schleg. Faun. Japon. Av. p. 69. t. 32. Bonap. C. G. Av. p. 305.

The Japan *Accentor*.

*Hab.* Japan.

This species is closely allied to the common *A. modularis*, Linn.

6. *ACCENTOR MONTANELLUS*, Pallas.

*Motacilla montanella*, Pallas, It. iii. p. 695. Gmel. S. N. L. i. p. 968.

*Accentor montanellus*, Bechst. Naturg. Deutschl. iii. Temm. Man. d'Orn. ii. ed. p. 251. Lath. Gen. Hist. vii. p. 15. Eyton, Cat. Brit. B. p. 13. Macgill. Hist. Brit. B. ii. p. 251. Gould, Birds of Eur. t. 101. G. R. Gray, Gen. of Birds, i. p. 187.

*Sylvia montanella*, Lath. Ind. Orn. ii. p. 526; Gen. Hist. vii. p. 90.

*Spermolegus montanellus*, Kaup. Naturl. Syst. i. p. 152.

?*Accentor Temminckii*, Brandt. Bull. Sci. Acad. Imp. St. Petersb.

The Mountain *Accentor*. Gould.

*Hab.* Eastern portions of Europe and Asia.

7. *ACCENTOR RUBECULOIDES*, Hodgson, n. sp.

*Accentor rubeculoides*.—Forehead, crown, nape, ear-coverts and chin brown; infra-orbital feathers tipped with whitish; throat, sides of neck, and shoulder of wings dingy grey-brown, the feathers of the throat blackish at base; back and rump ferruginous, centred with dusky; wings dusky, margined exteriorly with ferruginous; lesser and greater wing-coverts tipped with white; tail dusky, margined exteriorly with pale ferruginous; breast and fore part of flanks ferruginous, the latter streaked with dusky; belly white, tinged with ferruginous on the flanks posteriorly, vent, and margins of the under tail-coverts; the latter centred dusky. Bill blackish; feet pale reddish.

Length 6 inches; of wing 3; tail  $2\frac{1}{2}$ ; bill to front  $\frac{4}{10}$ ths; to gape  $\frac{1}{2}$  inch; tarse  $\frac{3}{4}$ .

The Robin *Accentor*.

*Hab.* Nepal (No. 970, Hodgson's Catalogue).

This fine undescribed species was lately presented by B. H. Hodgson, Esq., to the Museum of the Hon. East India Company.

### 8. ACCENTOR STROPHIATUS, Hodgson.

*Accentor strophiatu*s, Hodgs. J. A. S. Beng. xii. p. 959; Gray's Zool. Misc. 1844, p. 83; P. Z. S. 1845, p. 34; Cat. B. of Nepal, p. 72. G. R. Gray, Gen. of Birds, i. p. 187. t. 51. Blyth, Cat. B. Mus. A. S. Beng. p. 131. Bonap. C. G. Av. p. 305.

The rufous-breasted *Accentor*, Gray.

*Hab.* Himalayas.

*A. strophiatu*s.—“Upper parts much as in *A. modularis*, but the colours brighter and more contrasted, and the crown and neck uniform with the back; a broad eye-streak, the first of which is white to beyond the eye, surmounting a ferruginous streak continued backward to the occiput; a semicircle of the same surrounds the dusky ear-coverts, and the entire breast is also ferruginous; throat white, with dusky spots, forming a line descending from each angle of the lower mandible; belly and lower tail-coverts white with dusky streaks; wing-feathers dusky, margined with ferruginous, with an albescent spot at the tip of each covert; tail brownish, with dull rufous outer margins; bill black; legs reddish-brown.”

Length about  $5\frac{1}{2}$  inches; of wing  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ; tail  $2\frac{3}{8}$  to  $2\frac{1}{4}$ ; bill to gape  $\frac{5}{8}$ ths; and tarse  $\frac{1}{3}$ ths of an inch.

### 9. ACCENTOR IMMACULATUS, Hodgson.

*Accentor immaculatus*, v. *nipalensis*, Hodgs. Gray's Zool. Misc. 1844, p. 83; P. Z. S. 1845, p. 34; Cat. B. of Nepal, p. 71 et App. p. 153.

*Accentor mollis*, Blyth, J. A. S. Beng. xiv. p. 581 (1845); Cat. B. Mus. A. S. Beng. p. 131. G. R. Gray, Gen. of Birds, iii. App. p. 8. Bonap. C. G. Av. p. 306.

The unspotted *Accentor*.

*Hab.* Nepal; Sikim.

*A. immaculatus*.—“Upper parts a rich brown, passing into pure dark ash-colour on the head and neck, and into maroon on the scapularies and tertiaries, and less deeply on the hind part of the back; coverts of the secondaries pure dark-grey, those of the primaries, with the winglet black, as also the primaries, these last having their unemarginated portion externally bordered with pale-grey; tail greyish dusky; frontal feathers to above the eyes margined with white, the lores blackish, and the entire under parts slightly embrowned deep ash-colour as far as the vent, which is pale and tinged with ferruginous, the under tail-coverts being deeper ferruginous, and the hind portion of the flanks dark ferruginous; bill blackish; feet fleshy grey; iris straw-colour.”

Length about 6 inches; tail  $2\frac{1}{2}$ ; wing  $3\frac{1}{4}$ ; bill to frontal feathers  $\frac{5}{16}$ ths; and tarse  $\frac{3}{4}$  of an inch.

### 10. ACCENTOR HUTTONI, Moore.

*Accentor atrogularis*, Hutton (nec Brandt?), J. A. S. Beng. xviii.

p. 811 (1849). Blyth, Cat. B. Mus. A. S. Beng. p. 131. Bonap. C. G. Av. p. 305.

Hutton's *Accentor*.

*Hab.* Simla; Afghanistan. In Mus. East Ind. Company.

*A. Huttoni*.—"General colour above brown, the feathers centred dusky, more rufescent on the back, greyer on the nape, rump and upper tail-coverts; crown darker; a broad line above the superciliar streak, with the ear-coverts and throat dusky-black, the latter divided from the ear-coverts by a pale line proceeding from the base of the lower mandible, and this with the entire supercilium and the breast, of a uniform light rufescent sandy hue; belly whitish, the flanks streaked with dusky; wing-coverts slightly tipped albescent, forming slight cross-bands. Bill dusky, yellowish towards gape, and feet pale." "Irides brown."

Length 6 inches; of wing  $2\frac{7}{8}$ ths; tail  $2\frac{1}{2}$ ; bill to gape  $\frac{9}{16}$ ths; and tarse  $\frac{3}{4}$ th of an inch."

#### 11. ACCENTOR ALTAICUS, Brandt\*.

*Accentor Altaicus*, Brandt, Bull. Sci. Acad. Imp. St. Petersb. (1841?). G. R. Gray, Gen. of Birds, i. p. 187. Bonap. C. G. Av. p. 306.

The Altaic *Accentor*.

*Hab.* Siberia.

#### 12. ACCENTOR ATROGULARIS, Brandt.

*Accentor atrogularis*, Brandt, (nec Hutton?), Bull. Sci. Acad. Imp. S. Petersb. (1841?). G. R. Gray, Gen. of Birds, i. p. 187.

The Black-throated *Accentor*.

*Hab.* Siberia.

"The species of this genus," remarks Mr. Yarrell, in his admirable work on British Birds, "are very limited in number, only five, I believe, being at present known; two are figured in this work as belonging to England, two others are found in the north and east of Europe†, and a fifth has been received from the Himalaya mountains." The discovery of six distinct species in India, which have mostly been collected in Nepal by B. H. Hodgson, Esq., one from Japan, and the two described by Dr. Brandt, making in all twelve species, is accordingly no small accession to the known species of this interesting genus.

\* Not having been so fortunate as to examine the descriptions of Dr. Brandt's species, I am unable to describe them in this notice.

† One of which species is in all probability the so-called *Accentor Calliope* of Temm. v. *Calliope Camtschatkensis*, Gmel., which, certainly, has no affinity to *Accentor*.

June 13, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF SIX NEW SPECIES OF AURICULACEA,  
FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. AURICULA TURRITA, Pfr. *A. testa imperforata, oblongo-turrita, solida, striis longitudinalibus et transversis granulato-decussata, sub epidermide fusca, parum nitente alba; spira elongata, apice obtusula, sæpe erosa; anfr. 7, infra suturam turgidis, celeriter accrescentibus, ultimo spiram æquante, basi subattenuato; apertura angusta, acuminato-ovali, intus lactea; plicis parietalibus 2, superiore antice nodiformi, introrsum attenuata, altera oblique extrorsum producta; plica columellari duplicata, vix obliqua; perist. recto, acuto, intus callo crasso, albo aucto.*

Long. 50, diam. 16 mill.

*Hab.* Philippine Islands.

This species belongs to the genus *Ellobium* of H. and A. Adams, not of Bolten, who comprises under that name species of *Bulimus*, *Auricula*, Lamk., (as stated in 1801) and *Melampus*. Therefore Lamarck's name should be retained for it.

2. AURICULA SACCATA, Pfr. (*Ellobium elongatum*, var., H. and A. Adams, in Mus. Cuming). *A. testa breviter et profunde rimata, obclavata, solida, striatula, irregulariter erosa, nitidula, fusco-lutea; spira elongato-conica, acuta; sutura plana, lacera; anfr. 8-9, planis, ultimo spiram subæquante, deorsum dilatato, basi saccato; apertura verticali, anguste ovali; plica parietali 1 parvula, mediana, subtransversa; plica columellari obsolete bidenticulata; perist. obtuso, margine dextro superne sinuato, intus medio incrassato, columellari dilatato, calloso, patente.*

Long. 14, diam. max. 6 mill.

*Hab.* Manilla.

3. MELAMPUS ADAMSIANUS, Pfr. *M. testa subrimata, ovato-oblonga, solidula, lævigata, atro-virente; spira convexo-conica, acuta; sutura lineari; anfr. 9, planis, superis subplicatis, ultimo  $\frac{2}{3}$  longitudinis formante, superne obsolete angulato, prope suturam fascia 1 latiore, nonnullisque angustis pallidis ornato, striis incrementi nonnullis irregulariter sculpto, basi rotundato; apertura subverticali, anguste semiovali; plica parietali 1 mediocri, compressa, transversa; plica columellari obliqua, extrorsum porrecta; perist. recto, albo-limbato, margine dextro superne sinuato,*

*intus plicis 6-7 brevibus, albis munito, columellari calloso, subdilatato.*

Long. 10, diam. 5 mill.

*Hab.* New Zealand.

4. **MELAMPUS SPIRALIS**, Pfr. *M. testa subrimata, biconica, solidula, striatula, nitidula, alba; spira conoidea, acute mucronata; sutura lineari; anfr. 10, superis planis, distincte spiraliter striatis, ultimo  $\frac{3}{4}$  longitudinis fere æquante, spiraliter obsolete striato, infra suturam excavato, tum obtuse angulato, deorsum regulariter attenuato, basi compresso; apertura subverticali, oblonga, basi rotundata; plicis parietalibus sub 2, superiore lamellæformi, intrante, altera immediate infra illam, obsoleta; plica columellari alta, extrorsum subhorizontaliter porrecta; perist. acuto, margine dextro superne angulato, intus plicis transversis 7-8 munito, columellari parum dilatato, subpatente.*

Long. 16, diam. max. 9 mill.

*Hab.* — ?

5. **MELAMPUS CRISTATUS**, Pfr. *M. testa imperforata, oblongo-ovata, solida, spiraliter confertim striata, sericea, luteo-fulva; spira brevi, convexa, mucronata; sutura canaliculata; anfr. 8, convexiusculis, penultimo latiore, ultimo  $\frac{2}{3}$  longitudinis formante, supra medium ventroso, basi attenuato; apertura vix obliqua, perangusta, basi bisinuosa; plicis parietalibus 3, suprema nodiformi, 2 subtransversis, extus in cristam callosam, spiralem continuatis; plica columellari valida, fere verticali; perist. acuto, margine dextro intus callo crasso, albo, confertim transverse plicato munito, columellari subdilatato, appresso.*

Long.  $9\frac{1}{2}$ , diam. 6 mill.

*Hab.* Philippine Islands.

6. **PEDIPES TRIDENS**, Pfr. *P. testa imperforata, globoso-conica, tenui, obsolete et confertim spiraliter striata, saturate fusca; spira turbinata, acutiuscula; sutura profunda, marginata; anfr. 5, convexis, ultimo  $\frac{2}{5}$  longitudinis formante, inflato; apertura fere diagonali, subsemicirculari; plica parietali mediocri; labio columellari calloso, dentibus 2 distantibus munito; perist. simplice, acuto, edentulo.*

Long.  $3\frac{3}{4}$ , diam. max.  $2\frac{1}{2}$  mill.

*Hab.* Bermuda.

## 2. DESCRIPTIONS OF SIXTEEN NEW SPECIES OF HELICEA, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. **VITRINA AUREA**, Pfr. *V. testa ambitu subauriformi, depressa, nitidissima, pellucida, aurea; spira plana, vertice vix prominulo; sutura levissima, marginata; anfr. 3 subplanis, rapide accrescentibus, ultimo depresso, periphæria obsolete subangulato,*

*basi vix convexiore, lato; apertura perobliqua, ovali, intus submargaritacea; perist. simplice, margine dextro antrorsum subdilatato, columellari leviter inflexo.*

Diam. maj. 13, min. 9, alt.  $4\frac{2}{3}$  mill.

*Hab.* Salomon's Islands.

2. *SUCCINEA SIMPLEX*, Pfr. *S. testa ovata, tenui, striata, pellucida, nitida, succinea; spira brevi, conica, vertice submammillato, acutiusculo; anfr.  $2\frac{1}{2}$  convexis, ultimo  $\frac{2}{3}$  longitudinis æquante; columella substrictè recedente, leviter callosa; apertura obliqua, incumbente, angulato-ovalis; perist. simplice, recto, marginibus regulariter conniventibus.*

Long.  $9\frac{1}{2}$ , diam. 6, alt.  $4\frac{1}{2}$  mill.

*Hab.* Salomon's Islands.

3. *SUCCINEA REPANDA*, Pfr. *S. testa ovato-oblonga, tenui, confertissime capillaceo-striata, vix sericea, pallide griseo-cornea; spira conica, acuta, plerumque erosa; anfr.  $3\frac{1}{2}$ , penultimo convexiusculo, ultimo basi repando; columella superne subplicata, callosa, leviter arcuata; apertura obliqua, angulato-ovalis, intus submargaritacea; perist. simplice, recto, marginibus callo tenuissimo junctis.*

Long. 12, diam.  $6\frac{1}{2}$ , alt. 5 mill.

*Hab.* Banks of the river Negro, New Granada.

4. *HELIX GENERALIS*, Pfr. *H. testa imperforata, globoso-turbinata, striatula et rugulis obliquis præcipue subtus sculpta, non nitida, sub epidermide luteo-virente alba; spira convexo-conoidea, obtusula; sutura levi, submarginata; anfr.  $4\frac{1}{2}$ , convexiusculis, celeriter accrescentibus, ultimo antice vix descendente, supra peripheriam lira plana latiuscula cincto, basi parum convexo; columella vix obliqua, compressa, excavata, alba; apertura diagonali, oblique truncato-ovalis, intus lactea; perist. tenui, marginibus conniventibus, dextro vix expansiusculo, basali incrassato, breviter reflexo, cum columella angulum obtusum formante.*

Diam. maj. 57, min. 45, alt. 40 mill.

*Hab.* Philippine Islands.

5. *BULIMUS EXCORIATUS*, Pfr. *B. testa aperte umbilicata, ovato-acuminata, tenuiuscula, striatula, sub lente punctulata, non nitente, carnea; spira conica, acuta; anfr. 6, convexiusculis, ultimo spiram superante, subinflato; apertura parum obliqua, acuminato-ovalis; perist. tenui, expanso, marginibus fere contiguis, callo tenui junctis, dextro medio dilatato, columellari perdilatato, patente.*

Long. 39, diam. 19 mill.

*Hab.* Andes of Peru (Captain Keppell).

6. *BULIMUS CRETACEUS*, Pfr. *B. testa umbilicata, ovato-conica, solidula, striatula et impresso-punctata, opaca, cretacea; spira*

*convexo-conica, apice acutiuscula; anfr. 6, vix convexiusculis, ultimo spiram paulo superante, antice subascendente, basi juxta umbilicum profundum, subcompressum rotundato; apertura vix obliqua, oblongo-ovali, intus fusca; perist. tenui, albo-limbato, marginibus convergentibus, callo junctis, dextro late expanso, columellari fusco, dilatato, fornicatim patente.*

Long. 36, diam. 18 mill.

*Hab.* Eastern Islands (Captain Keppell).

7. **BULIMUS TRISTIS**, Pfr. *B. testa compressa umbilicata, oblongo-conica, tenui, lævigata, nitidula, albida, fasciis et strigis vel seriebus macularum quadratarum, violaceo-fuscarum ornata; spira convexo-conica, apice acuta; anfr.  $6\frac{1}{2}$ , vix convexiusculis, ultimo spira paulo brevior, basi angustato, rotundato; columella leviter arcuata; apertura vix obliqua, ovali; perist. tenui, margine dextro breviter expanso, columellari luteo vel albo, superne dilatato, fornicatim reflexo.*

Long. 28, diam. 11 mill.

*Hab.* New Granada.

8. **BULIMUS HISTRIO**, Pfr. *B. testa subperforata, ovato-conica, tenui, lævigata, nitida, lutescenti-alba, serie macularum castanearum, subquadratarum supra suturam picta; spira conica, apice nigra, obtusula; anfr.  $5\frac{1}{2}$ , convexiusculis, ultimo spiram vix superante, infra medium nigro-fusco bizonato, basi rotundato; apertura parum obliqua, elliptico-ovali; perist. simplice, recto, margine dextro arcuato, columellari subverticali, superne late reflexo, perforationem fere tegente.*

Long. 13, diam.  $7\frac{1}{2}$  mill.

*Hab.* Tanna, New Hebrides.

9. **BULIMUS COLUMBIENSIS**, Pfr. *B. testa breviter rimata, subperforata, oblongo-turrita, solida, sublævigata, parum nitida, flavido-albicante; spira elongata, subconvexo-turrita, apice cornea, acutiuscula; anfr. 7, vix convexiusculis, ultimo  $\frac{3}{7}$  longitudo æquante, basi subcompresso; columella stricta, recedente; apertura parum obliqua, oblongo-ovali; perist. recto, acuto, margine dextro leviter arcuato, columellari subito reflexo, patente.*

Long. 28, diam.  $11\frac{1}{2}$  mill.

*Hab.* Columbia.

10. **BULIMUS SIMPLICULUS**, Pfr. *B. testa perforata, conico-ovata, solida, ruguloso-striata (lineis spiralibus sub lente obsolete decussata), nitidula, alba, punctis pellucidis passim conspersa; spira convexo-conica, apice cornea, obtusula; sutura minute crenulata; anfr. 6, modice convexis, ultimo spira paulo brevior, basi subrotundato; columella substricta, superne subplicata; apertura vix obliqua, oblongo-ovali; perist. simplice,*



*recto, margine dextro leviter arcuato, columellari dilatato, fornicatim reflexo.*

Long.  $19\frac{1}{2}$ , diam.  $9\frac{1}{2}$  mill.

Hab. — ?

11. **BULIMUS MARMATENSIS**, Pfr. *B. testa perforata, globosconica, tenui, striatula, pellucida, pallide griseo-fulva; spira conica, obtusiuscula; anfr.  $4\frac{1}{2}$ , modice convexis, ultimo spiram vix superante, rotundato; columella leviter arcuata; apertura parum obliqua, rotundato-ovali; perist. simplice, recto, margine dextro perarcuato, columellari superne dilatato, supra perforationem angustam fornicatim reflexo.*

Long. 17, diam. 10 mill.

Hab. Marmato, New Granada.

12. **BULIMUS HAPLOCHROUS**, Pfr. *B. testa perforata, ovato-fusiforimi, tenui, sublævigata, non nitente, diaphana, corneo-albida; spira elongata, convexo-turrita, acutiusscula; anfr. 7, vix convexiusculis, ultimo spira paulo brevior, basi attenuato; columella leviter arcuata; apertura obliqua, subelliptica, basi subangulata; perist. simplice, recto, margine dextro regulariter arcuato, columellari sursum dilatato, fornicato-reflexo.*

Long. 30, diam. 12 mill.

Hab. — ?

13. **BULIMUS DIAPHANUS**, Pfr. *B. testa anguste perforata, turrito-oblonga, tenui, striatula, haud nitente, diaphana, epidermide rufa, transversim lirata induta; spira elongato-conica, apice obtusula; anfr. 6, convexiusculis, ultimo  $\frac{3}{4}$  longitudinis subæquante, basi rotundato; columella substricta; apertura vix obliqua, oblongo-ovali; perist. simplice, acuto, margine dextro recto, leviter arcuato, columellari vitreo, superne fornicatim reflexo.*

Long. 15, diam. 7 mill.

Hab. S. Thomas, W. Indies (Bland).

14. **PARTULA PACIFICA**, Pfr. *P. testa compresse umbilicata, ovato-conica, tenuiuscula, sublente minutissime spiraliter striata, nitidula, straminea, lineis albis et fulvis radiata; spira conica, apice acuta; sutura profunda, submarginata; anfr.  $5\frac{1}{2}$ , convexis, ultimo spira paulo brevior, basi subattenuato; columella superne recedente, fornicata; apertura vix obliqua, truncato-oblonga; perist. albo, expanso, margine dextro superne arcuato, columellari late patente et reflexo.*

Long. 22, diam. 10 mill.

Hab. Pacific Islands.

15. **ACHATINA VIRENS**, Pfr. *A. testa cylindraco-turrita, tenuissima, leviter striatula (striis ad suturam distinctioribus), nitidissima, pellucida, virenti-cornea; spira elongata, superne sensim attenuata, apice obtusula; sutura subcrenulata; anfr.*

8, *convexiusculis*, ultimo  $\frac{1}{3}$  longitudinis vix æquante, convexiore; *columella perarcuata*, abrupte truncata; *apertura verticali*, irregulariter ovali; *perist. simplice*, recto, *marginè dextro leviter arcuato*.

Long. 18, diam. 8 mill.

*Hab.* —?

16. *ACHATINA MANIENSIS*, Pfr. *A. testa subrimata*, ovato-oblonga, *solidula*, *sublævigata*, *pallide cornea*; *spira convexo-turrita*, *apice obtusa*; *sutura marginata*; *anfr.* 6, *vix convexiusculis*, ultimo  $\frac{2}{5}$  longitudinis subæquante, *basi subcompresso*; *columella verticali*, *introrsum subtorta*, *ad basin aperturæ subrhombæo-ovalis truncatula*; *perist. simplice*, *obtusò*, *marginè columellari reflexiusculo*, *adnato*.

Long. 7, diam. 3 mill.

*Hab.* Mani, Sandwich Islands (*Dr. Newcomb*).

### 3. DESCRIPTIONS OF ELEVEN NEW SPECIES OF CYCLOSTOMACEA, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. *CYCLOSTOMA (CYCLOPHORUS) ALABASTRINUM*, Pfr. *C. testa umbilicata*, *subdepresso-turbinata*, *solida*, *sublævigata*, *spirallyer minutissime striata*, *alabastrina*; *spira turbinata*, *sursum livido-fusca*, *apice convexiuscula*; *anfr.* 5, *convexis*, *celeriter accrescentibus*, *ultimo peripheria obsoletissime subangulato et antice rudimenta fasciæ castaneæ exhibente*, *basi inflato*; *umbilico angusto*, *vix pervio*; *apertura vix obliqua*, *circulari*; *perist. fulvo-carneo*, *continuo*, *breviter adnato*, *crasso*, *undique reflexo*, *marginè sinistro subdilatato*.

Diam. maj. 45, min. 34, alt. 25 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

2. *CYCLOSTOMA (CYCLOPHORUS) POLYNEMA*, Pfr. *C. testa umbilicata*, *depresso-turbinata*, *tenuiuscula*, *oblique striatula et liris filiformibus confertissimis*, *subtus obsoletioribus*, *cincta*, *superne flammis angulosis læte castaneis et albidis variegata*; *spira brevi*, *turbinata*, *apice obtusula*; *anfr.*  $4\frac{1}{2}$ , *convexiusculis*, *rapide accrescentibus*, *ultimo ad suturam antice subplanato*, *peripheria obsoletissime angulato et fascia lata*, *nigro-fusca*, *deorsum diluta ornato*, *circa umbilicum mediocrem pallido*; *apertura obliqua*, *subrotundata*, *latiore quam alta*; *perist. albo*, *continuo*, *breviter adnato*, *marginè dextro expansiusculo*, *columellari breviter revoluto*.

Diam. maj. 33, min. 26, alt. 17 mill.

*Hab.* —?

3. *CYCLOSTOMA (CYCLOPHORUS) EXCELLENS*, Pfr. *C. testa umbilicata*, *subturbinato-depressa*, *solida*, *confertim spiraliter*

*sulcata, parum nitida, fusco-aurantiaca, strigis angustis, fulguratis, albis elegantissime picta; spira breviter turbinata, apice corneo, obtusulo; anfr. 5, convexis, rapide accrescentibus, ultimo carina funiformi alba et adjacente linea rufa cincto, superne turgido, juxta suturam excavato, basi pallido, circa umbilicum late infundibuliformem subangulato; apertura parum obliqua, subcirculari, intus margaritaceo-alba; perist. pallide carneo, continuo, breviter adnato, superne subangulato, margine dextro breviter patente, sinistro anguste reflexo.*

Diam. maj. 53, min. 42, alt. 24 mill.

Hab. — ?

4. **CYCLOSTOMA (CYCLOPHORUS) SPIRONEMA**, Pfr. *C. testa umbilicata, subturbinato-depressa, solida, liris crebris filiformibus sculpta, superne læte castaneo et albido variegata; spira brevi, vertice acutiusculo; sutura submarginata; anfr. 4, convexis, rapide accrescentibus, ultimo juxta suturam subplano, ad peripheriam rotundatam fascia alba et infra eam altera læte castanea ornato, circa umbilicum latiusculum sublævigato, pallido; apertura vix obliqua, subangulato-circulari; perist. continuo, breviter adnato, vix expanso, ætate in tubum mediocrem, spiraliter striatum, producto.*

Diam. maj. 28, min. 22½, alt. 14 mill.

Hab. India.

5. **CYCLOSTOMA (CYCLOPHORUS) THWAITESI**, Pfr. *C. testa late umbilicata, depressa, subdiscoidea, tenui, subconfertim arcuato-striata, nitidula, luteo-fulva, strigis angulosis castaneis eleganter flammata; spira subplana, vertice vix prominulo; sutura profunda; anfr. 4, modice convexis, celeriter accrescentibus, ultimo terete, antice vix descendente; apertura fere diagonali, ovali-rotundata; intus submargaritacea; perist. simplice, acuto, marginibus fere contiguis, callo tenui junctis, dextro expansiusculo, columellari subreflexo.*

Diam. maj. 12, min. 9, alt. 5 mill.

Hab. Ceylon (Mr. Thwaites).

6. **CYCLOSTOMA (LEPTOPOMA) FLAMMEUM**, Pfr. *C. testa angustissime umbilicata, elongato-conica, tenui, oblique leviter striatula, fulva, strigis angulatis rufis ornata; spira elevata, conica, apice acutiuscula, pallida; sutura profunda; anfr. 6, perconvexis, lente accrescentibus, ultimo rotundato; apertura parum obliqua, subcirculari, intus concolore; perist. simplice, recto, marginibus breviter disjunctis, columellari subdilato, patente.*

Diam. maj. 8, min. 7, alt. 8 mill.

Hab. Ceylon (Mr. Layard).

7. **CYCLOSTOMA (LEPTOPOMA) CONULUS**, Pfr. *C. testa anguste umbilicata, conica, tenui, epidermide corneo-fulva, distanter membranaceo-costulata induta; spira regulariter conica, apice*

*obtusiuscula*; anfr. 5, sensim accrescentibus, subangulato-convexis, ultimo liris sub 6 distinctis filiformibus cincto; apertura parum obliqua, subangulato-circulari; perist. simplice, acuto, vix expansiusculo, marginibus subdisjunctis, columellari reflexiusculo.

Diam. maj. 4, min.  $3\frac{2}{3}$ , alt.  $3\frac{1}{2}$  mill.

Hab. Ceylon (Mr. Thwaites).

8. *CYCLOSTOMA* (*ADAMSIELLA*?) *LONGICOLLE*, Pfr. *C. testa penitus perforata, oblongo-turrita, truncata, tenuiuscula, liris spiralibus obsolete et costulis confertis, acutiusculis clathrata, albida, seriatim rufo-punctata; spira convexo-turrita; sutura profunda, minutissime crenulata; anfr. superst.  $4\frac{1}{2}$ , convexis, ultimo subterete, dorso vix angulato, antice longe soluto, oblique descendente; apertura obliqua, circulari; perist. duplice: interno breviter porrecto, externo dilatato, latere columellari subexciso, præterea rectangulariter patente, spiraliter substriato, rufo-radiato.*

Long. max. 17, diam. anfr. penult. 8 mill.

Hab. Jamaica.

9. *CYCLOSTOMA* (*CYCLOSTOMUS*) *PARVISPIRUM*, Pfr. *C. testa angustissime umbilicata, globoso-conica, solidula, sublævigata, nitidula, flavida, fascia 1 angusta, spadicea infra peripheriam, sæpeque aliis interruptis ornata; spira parvula, conoidea, apice acutiuscula; anfr.  $4\frac{1}{2}$ , modice convexis, celeriter accrescentibus, ultimo ventroso, circa umbilicum liris nonnullis elevatis munito; apertura vix obliqua, ovali-rotundata, superne vix angulata; perist. simplice, recto, ad anfr. penultimum breviter interrupto, margine columellari reflexiusculo. Operc. *C. elegantis*.*

Diam. maj. 12, min. 10, alt. 9–10, mill.

Hab. —?

10. *CYCLOSTOMA* (*CHONDROPOMA*?) *PUNCTICULATUM*, Pfr. *C. testa anguste perforata, ovato-oblonga, truncata, liris spiralibus levibus, costulisque illas transgredientibus confertissimis sculpta, cereo-albida, seriebus spiralibus punctulorum ruforum ornata; spira subturrita; sutura eleganter et subremote dentata; anfr. superst. 4, modice convexis, regulariter accrescentibus, ultimo antice soluto, dorso carinato, infra medium lineis nonnullis rufis cincto; apertura verticali, subelliptica, superne angulata, basi subeffusa; perist. simplice, continuo, undique breviter expanso.*

Long. 10, diam. 5 mill.

Hab. West Indies.

11. *CYCLOSTOMA* (*CHONDROPOMA*?) *ANGUSTATUM*, Pfr. *C. testa vix perforata, oblongo-turrita, truncata, solidula, liris spiralibus costisque confertioribus obtuse clathrata, fulvo-lutea, fasciis interruptis castaneis picta; spira convexo-turrita; sutura confertim et acute crenata; anfr. superst.  $4\frac{1}{2}$ , convexiusculis, ul-*



1

2a

3a

4

5

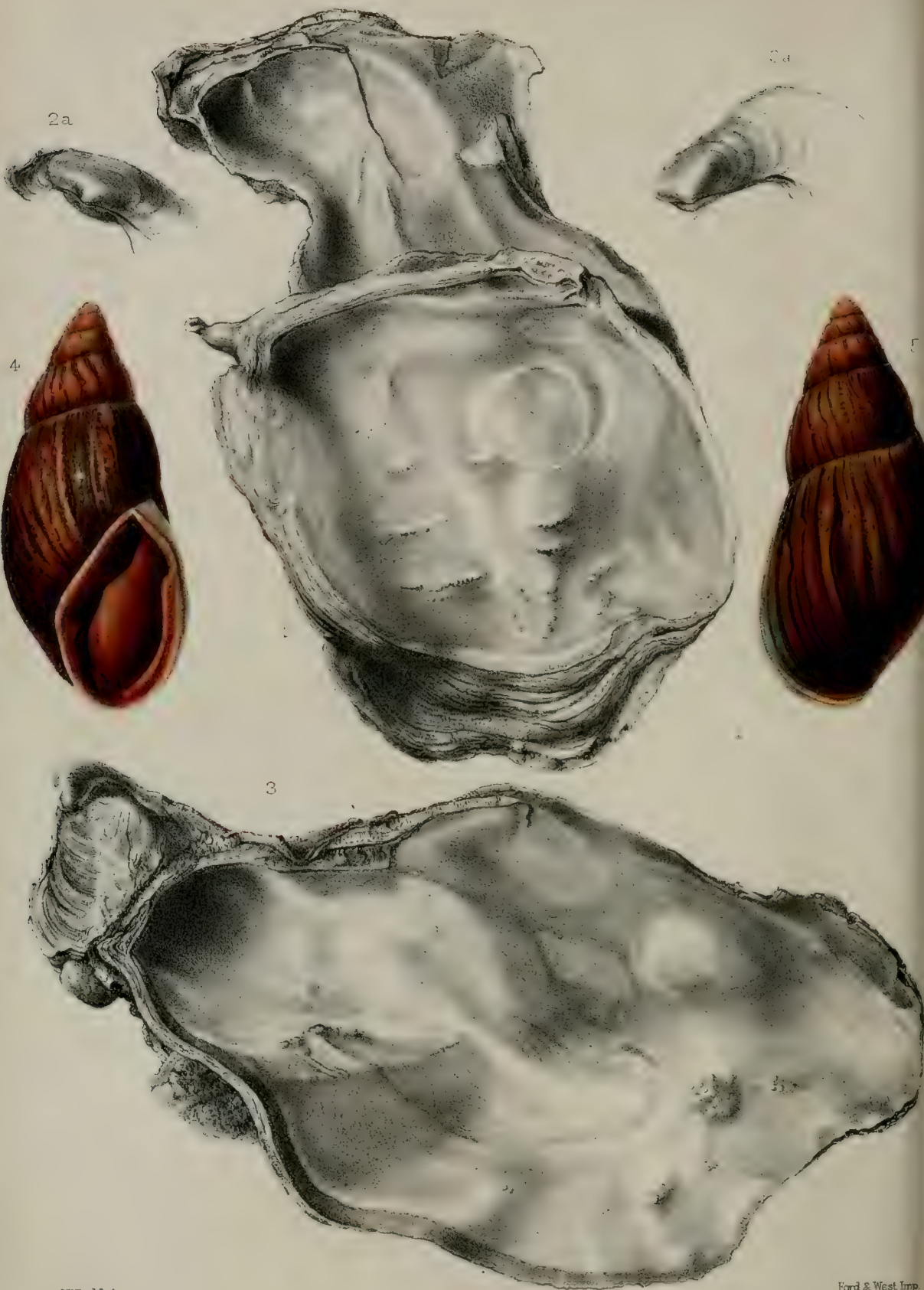
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G.H. Ford Lith.

Ford & West Imp.

1. 2. 3. *Mulleria lobata*. 2a. 3a. apices enlarged, shewing the symmetrical state of the Shells.

4. 5. *Bulimus bivaricosus*. Gask



*timo angustato, basi confertius spiraliter sulcato, antice vix soluto; apertura verticali, ovali-rotundata; perist. subduplicato, undique breviter expanso, superne subangulato.*

Long, 16, diam. 7 mill.

*Hab.* — ?

4. ON THE GENUS MULLERIA, SOWERBY, OR  
ACOSTÆA, D'ORBIGNY.

BY DR. JOHN EDWARD GRAY, F.R.S., P.B.S., V.P.Z.S.

(Mollusca, Pl. XXIX.)

M. d'Orbigny has very kindly transferred to me the specimens of the shells which he described, in the 'Rev. et Mag. Zool.' 1851, under the name of *Acostæa Guaduasana*, and which he had received from Rio Sero near Guadual (Rio Magdalena) in Bogota. The examination of the specimens proves the truth of the supposition which I formerly expressed, that Mr. Sowerby's genus *Mülleria* was described from an imperfect specimen of this shell which had lost its umbones, with the young free state of the shell attached to them, in the manner so characteristic of this genus.

The series of specimens consists of a pair, not in a very perfect condition, and without the produced umbo of the attached valve, like the specimen described by Mr. Sowerby, but in a less worn condition, four specimens of the attached valve, and several of the free upper one.

The series of attached valves is curious, as showing the very different state of the umbo, the manner in which the free valves are modified before one of the valves becomes fixed; also the manner in which the upper free valves separate from the free part by a natural crack, when the free valves become united together by their edges, forming a shelly tube. In two of the specimens this crack takes place almost immediately behind the posterior end of the symmetrical free shell; in two of the others, the hinder part of the free shell is dilated into a triangular irregular portion before the hinder older part of the upper valve separates from the young one; in one of these the triangular tube thus formed is narrow and elongate; in the other, broad, forming a nearly equilateral triangular cavity under the umbo of the attached valve.

In three of the five specimens the shell is attached by the outer surface of the right valve, and in the other two by that of the left valve; the three specimens attached by the right valve exhibit all the three variations in the form of the umbo, viz. the absence of the free shell (fig. 1.), the small (fig. 2.), and the large and much-dilated (fig. 3.) state of it.

There can be no doubt, as far as one can undertake to determine from the examination of the shell alone, of the affinity of this genus with *Etheria*, from which it appears only to differ in the very small size, or indeed in the total absence of the anterior adductor muscle. Like *Etheria*, the lower valve is rather attached to the stones and

shells to which it is affixed, by inequalities in the form and surface of the shell, than by any real attachment of the substance of the shell itself, for the attached valves are covered with a continuous periostraca.

As all attached shells have a free young state, as may be seen by examining the umbones of *Arcinella*, *Chama*, and other attached bivalves, the young of *Etheria* are doubtless free, and there is nothing peculiar in the young of *Mülleria* being free; but there is a great peculiarity in the young shell becoming united into a tubular case, and one of the valves, after the other has become attached, separating itself from its younger part by a natural caries, or crack.

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June 27, 1854.

Dr. Gray, Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF THIRTY-NINE NEW SPECIES OF SHELLS,  
FROM THE COLLECTION OF HUGH CUMING, ESQ.  
BY ARTHUR ADAMS, F.L.S., &c.

(Mollusca, Pl. XXVIII.)

1. VOLVA ROSEA, A. Adams. (Pl. XXVIII., fig. 9.) *V. testa elongata, medio ventricosa, ad extremitates attenuata, coarctata, rectiuscula, rosea, albo-varicosa, levi, dorso fascia angusta, transversa, albida ornato, labio in medio ventricoso, ad extremitates subrecurvo, labro crasso, antice angulatim arcuato, ad canalem emarginato.*

*Hab.* China. Mus. Cuming.

Like *V. birostrata*, but is more slender, and more attenuated posteriorly, and wants the spiral fold on the hind part of the inner lip; the anterior beak is straight and not recurved, and the marginal varix of the outer lip is thinner.

2. AMPHIPERAS MARGARITA, A. Adams. *A. testa ovali, ventricosa, alba, nitida, semipellucida, transversim striata, dorso obscure angulato; apertura angusta, canalibus brevibus, obtusis, integris, labio postice vix calloso, antice excavato, labro complanato, lirato, intus denticulato.*

*Hab.* New Caledonia. Mus. Cuming.

This is a pure white, pearl-like shell, semi-pellucid, finely striated across, gibbous on the back, with hardly any trace of the usual callus at the hind part of the inner lip, and with a prominent longitudinal ridge at the fore part.

3. AMPHIPERAS RHODIA, A. Adams. (Pl. XXVIII., fig. 8.)  
*A. testa ventricosa, subpyriformi, rosacea, albo-varicosa, dorso*





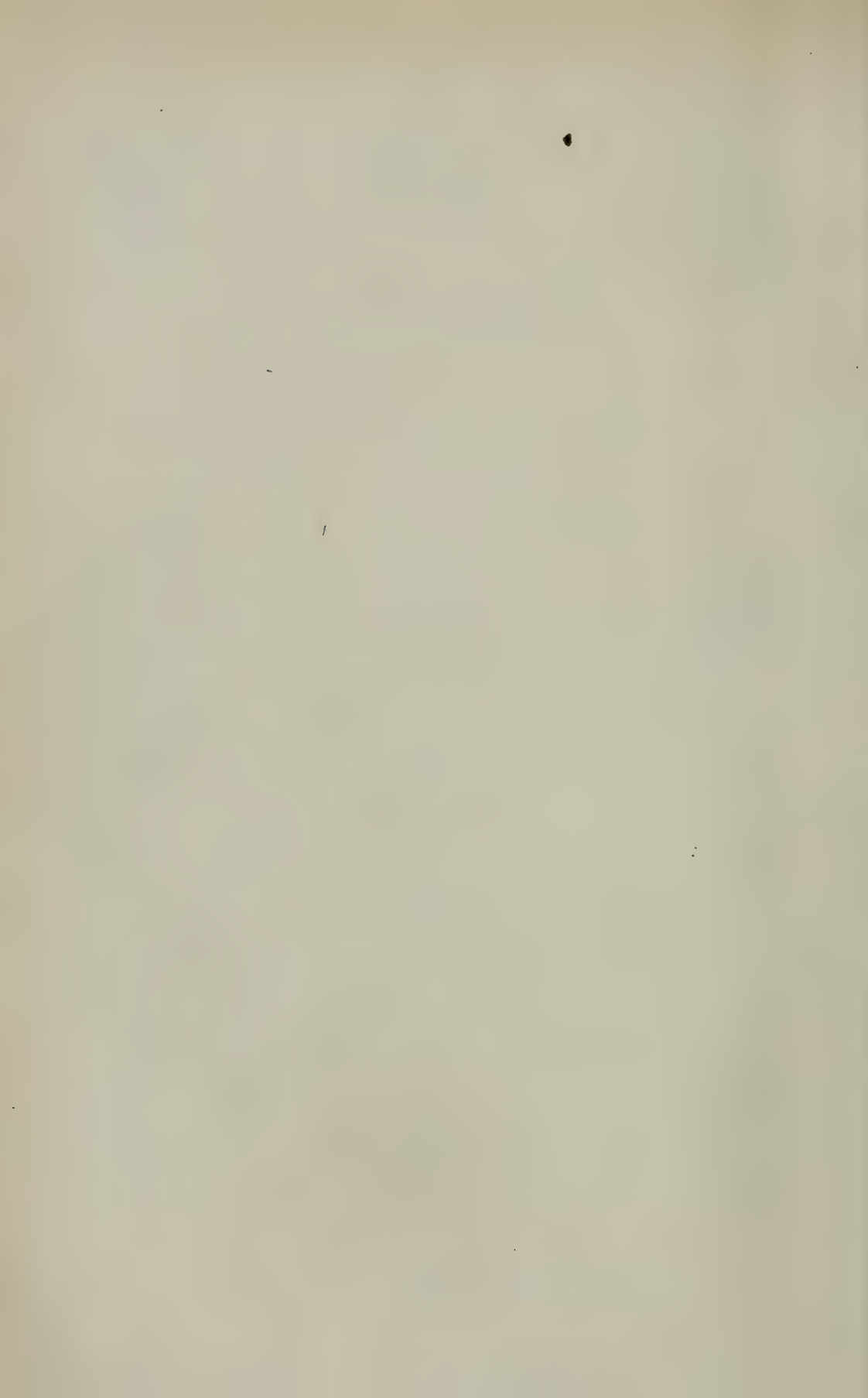
George B. Sowerby, Junr.

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- 1. *Rapana Rhodostoma*.—
- 2. *Stomatia decorata*.—
- 3. *Clypidella Balkici*.—

- 4. *Tudicla recurva*.—
- 5. *Mitra Mörchii*.—
- 6. *Sconsia Grayi*.—

- 7. *Pisania Hermannsenii*.—
- 8. *Amphiperas Rhodia*.—
- 9. *Volva rosea*



*subgibboso, ad extremitates subacuta, canalibus brevibus, subproductis, integris; apertura angusta; labio lævi, tumido, postice callo producto, spirali instructo, ad canalem tortuoso, antice excavato, ad canalem obscure uniplicato, labro complanato, lirato, intus denticulato.*

*Hab.* Japan. Mus. Cuming.

A beautiful delicate pink species, with the posterior canal a little produced, and the inner lip at that part spirally contorted, the anterior part excavated and the extremities transversely sulcated.

4. AMPHIPERAS SCITULA, A. Adams. *A. testa ovali, ventricosa, lævi, alba, transversim striata, ad extremitates subproducta; apertura angusta, canalibus brevissimis, integris, labio postice callo spirali instructo, antice uniplicato, labro complanato intus et ad extremitates usque ad marginem plicato-dentato.*

*Hab.* New Caledonia. Mus. Cuming.

This is a small species of a white colour somewhat resembling *A. concinna*, Sow., but the back is not gibbous, and is transversely striated; the striæ are sometimes almost obliterated in the middle.

5. AMPHIPERAS PYRULINA, A. Adams. *A. testa ventricosa, pyriformi, albida, ad extremitates subproducta et pallide fulva, transversim striata; apertura angusta; labio lævi, in medio tumido, canalibus brevibus vix emarginatis, postice callo simplici instructo, labro intus crenulato.*

*Hab.* New Caledonia. Mus. Cuming.

A neat pyriform species very much resembling *A. bimaculata*, but the interior of the beaks wants the orange spots seen in that species, and the general form of the shell is pyriform and constricted anteriorly.

6. AMPHIPERAS BIMACULATA, A. Adams. *A. testa ovali, subpyriformi, albida, fasciis tribus pallide fuscis, transversis ornata, ad extremitates vix producta, transversim striata, canalibus intus aurantiaco tinctis; apertura angusta, labio postice callo crenato instructo, labro intus crenulato-plicato.*

*Hab.* New Caledonia. Mus. Cuming.

Somewhat resembling *A. pyrulina* in colour, but is not so pyriform; the posterior callus of the inner lip is crenate, and there are three pale brown bands across the back of the shell; the orange marks in the beaks are also peculiar.

7. AMPHIPERAS (OVULA) PUDICA, A. Adams. *A. testa ovata, ventricosa, carnea, albo-varicosa, lævi, canalibus brevibus, vix emarginatis; apertura angusta, alba; labio postice tuberculo elevato, subacuto instructo, antice producto, angulato, ad canalem uniplicato, labro intus crenulato, margine serrato.*

*Hab.* New Caledonia. Mus. Cuming.

A flesh-coloured bulliform species with the aperture and varix of the outer lip white and the margin of the outer lip serrated; it is

something like the *A. carnea* of Lamarck, but differs in the formation of the inner lip.

8. POLYDONTA (INFUNDIBULUM) TRITONIS, A. Adams. *P. testa elevato-conica, pseudo-umbilicata, viridi, albido subvariegata, anfractibus superne gibbosiusculis, cingulis transversis granorum ornatis, ultimo ad peripheriam angulato, basi concava, albida, concentricè striata, regione umbilicali infundibuliformi, columella superne tortuosa, margine tuberculato.*

*Hab.* New Zealand. Mus. Cuming.

This is a well-marked, greenish species, obscurely varied with white; the whorls are gibbose, the last acutely angulated and crenate at the periphery, and the base is white and concave.

9. POLYDONTA (INFUNDIBULUM) NEPTUNI, A. Adams. *P. testa elevato-conica, lateribus convexiusculis, viridi-fusca, anfractibus planis, cingulis granosis transversis ornatis, ultimo angulato, basi planiusculo, cingulis granosis instructo, centro excavato, umbilicum mentiente, columella superne soluta, margine tuberculato-dentato, labro intus lirato ad marginem intus lævigato.*

*Hab.* China. Mus. Cuming.

A greenish-brown species, with regular transverse rows of beaded ridges, and with the lateral outline convex; the colour is of a uniform greenish brown.

10. POLYDONTA (INFUNDIBULUM) ÆMULANS, A. Adams. *P. testa depresso-conica, pseudo-umbilicata, albida, rufo-fusco radiatim picta, anfractibus planis, cingulis transversis granulorum ornatis, serie bituberculata ad suturas, basi convexiusculo, rubro radiatim ornato ac cingulis confertis, concentricis, crenulatis instructo; regione umbilicali infundibuliformi, alba, columella superne tortuosa, margine simplice.*

*Hab.* China. Mus. Cuming.

A handsome species variegated with broad radiating red-brown markings, and with a conspicuous double row of tubercles at the sutures.

11. POLYDONTA (INFUNDIBULUM) CONCINNUM, A. Adams. *P. testa conica, pseudo-umbilicata, lutescente, fusco vividoque variegatim picta, anfractibus planiusculis, cingulis transversis granulorum, cingulis distantioribus, interstitiis liris moniliformibus ornatis, anfractu ultimo ad peripheriam angulato; regione umbilicali infundibuliformi, albida, basi lævigata, cingulis concentricis, articulatis ornata; columella recta, margine simplice.*

*Hab.* China Seas. Mus. Cuming.

This is a small but handsomely variegated species, with the false umbilicus infundibuliform and of a whitish colour, and with the base of the shell adorned with concentric zones articulated with dark brown.

12. STOMATELLA CLATHRATULA, A. Adams. *S. testa imperforata, turbinato-depressa, spira elevatiuscula, anfractibus convexis, transversim liratis, liris nonnullis prominentibus, rufo articulatis, asperis, interstitiis concinne clathratis; regione umbilicali impressa; columella crassa, reflexa; apertura mediocri, orbiculari, intus margaritacea. Operculum corneum.*

*Hab.* —? Mus. Cuming.

As in *S. cancellata*, *S. imbricata*, and others of this group, there is a multispiral horny operculum; the whorls are finely clathrate, and the axis is not perforate.

13. STOMATELLA COMPTA, A. Adams. *S. testa haliotidea, orbiculato-depressa, fusca, intus vivide iridescenti, spira obtusiuscula, anfractibus convexis, longitudinaliter oblique striatis, transversim liratis, liris inæqualibus, nonnullis prominentibus ac nodulosis; regione umbilicali impressa; columella acuta; apertura suborbiculari.*

*Hab.* —? Mus. Cuming.

A well-defined, thin, brown species, with transverse, elevated, nodulose liræ, and with the interior of the aperture vividly iridescent.

14. STOMATELLA SELECTA, A. Adams. *S. testa haliotidea, spira prominula, subperforata, virescente, rufo, fusco, alboque maculata et punctata, longitudinaliter oblique striata, transversim lirata; regione umbilicali alba, lævi; apertura intus vivide margaritacea, columella superne reflexa, umbilicum partim obtegente.*

*Hab.* —? Mus. Cuming.

This is a species of great delicacy and beauty, most nearly allied to *S. haliotidea*, Sow., but with the umbilical region surrounded by a smooth white space and with the columellar margin reflexed and producing the appearance of an umbilicus.

15. STOMATIA SPLENDIDULA, A. Adams. *S. testa haliotidea, orbiculato-depressa, spiræ anfractibus tribus, bicarinatis, anfractu ultimo transversim lirato, liris inæqualibus, asperulatis, interstitiis longitudinaliter striatis, superne pallida, ad suturas rubro-fusco radiata, inferne rufescente, fusco punctata, infima facie flammulis rubris, radiantibus ornata; apertura intus alba, opaca, spiraliter viridi lineata, margine margaritacea.*

*Hab.* —? Mus. Cuming.

In this species the columellar margin is reflexed and pearly, but the interior of the aperture, with the exception of the inner margin of the outer lip, is opaque white, with green spiral lines.

16. STOMATIA DECORATA, A. Adams. (Pl. XXVIII., fig. 2.) *S. testa haliotidea, orbiculato-depressa, obtecte umbilicata, anfractibus spiræ bicarinatis, transversim sulcata ac striata, ad suturas oblique plicata, anfractu ultimo unicarinato; apertura intus alba, opaca, margaritacea; colore fusco-luteo, rubro maculato et punctato.*

*Hab.* —? Mus. Cuming.

This is a large and showy species somewhat resembling *S. rubra*, Lamk., in the character of the markings and colour; it is not tubercular like that species.

17. MITRA MORCHII, A. Adams. (Pl. XXVIII., fig. 5.) *M. testa ovato-fusiforimi, candida, spira acuminata, aperturam æquante, anfractibus octo, convexiusculis, transversim undique liratis, interstitiis crebre clathratis; apertura angusta, columella quinqueplicata, labro intus simplice.*

*Hab.* Australia. Mus. Cuming.

A large elegant white shell of the same form and with the same style of sculpture as *M. filosa*, and belonging to the subgenus *Cancellilla*. I have much pleasure in dedicating this fine species to M. Mörch, the talented author of the 'Catalogue of Count Yoldi's Shells,' &c.

18. MITRA RUBIGINEA, A. Adams. *M. testa oblongo-ovata, rubiginosa, spira acuta aperturam æquante, anfractibus novem planiusculis, transversim liratis, liris carinatis, interstitiis clathratis; apertura longiuscula, columella quadriplicata, labro margine crenato, intus sulcato.*

*Hab.* Australia. Mus. Cuming.

This species somewhat resembles *M. ferruginea*, Lamk., but the interstices between the transverse liræ are cancellated, and the liræ themselves have a filiform carina in the middle.

19. MITRA PUNCTOSTRIATA, A. Adams. *M. testa ovato-fusiforimi, sordide lutea, ad suturas rufo maculata, spira acuta, aperturam vix æquante, anfractibus planiusculis, glabris, transversim punctato-striatis, ultimo ad basin liris transversis instructo; apertura angusta, columella quadriplicata, labro intus simplice.*

*Hab.* Ceylon (*E. L. Layard, Esq.*), Mus. Cuming.

This species, which seems to belong to the subgenus *Mitreola* has a smooth, glabrous appearance; but when examined with a lens, the whorls will be seen to be transversely punctato-striate.

20. VOLUTOMITRA CINNAMOMEA, A. Adams. *V. testa oblongo-fusiforimi, lævi, tenui, cinnamomea, spira acuta, aperturam æquante, anfractibus planiusculis, supremis longitudinaliter costatis, infimis lævibus; apertura oblonga, columella quadriplicata, labro intus simplice.*

*Hab.* Natal. Mus. Cuming.

This is a small, brown, horny species, having all the peculiarities of shell which characterize the genus *Volutomitra* of Gray.

21. VOLUTOMITRA VINCTA, A. Adams. *V. testa oblongo-ovata, lævi, tenui, lutescente, ad suturas linea nigro-fusca cincta, et altera linea nigro-fusca transversa in medio anfractus ultimi; spira acuta, apertura longiore, anfractibus planiusculis; apertura oblonga, columella quadriplicata, labro acuto, intus simplice.*

*Hab.* Cape Natal. Mus. Cuming.

This is a pretty little species, of a yellowish colour, neatly banded

with brown-black, and partaking of the characters of *V. corniculum* of the Mediterranean, and other species forming the genus *Volutomitra* of Gray.

22. *VOLUTOMITRA DIGNA*, A. Adams. *V. testa ovato-fusififormi, spira acuminata, aperturam æquante, anfractibus planis, transversim punctato-striatis, anfractu ultimo antice contracto; apertura longiuscula, columella quinqueplicata, antice truncata, labro tenui, intus simplice; colore hepatico, ad suturas maculis strigisque pallide fulvis ornato.*

*Hab.* Australia. Mus. Cuming.

This peculiar-looking species belongs to Mr. Gray's genus *Volutomitra*, which appears to have the lingual dentition of *Voluta*, with the shell resembling in form that of *Mitra*.

23. *TURRICULA ROSEATA*, A. Adams. *T. testa fusiformi-turrita, in medio angustata, rubella, spira anfractibus tumidiusculis, apice obtusa, rosea, undique crebre clathrata, anfractu ultimo antice contracto, vix producto; apertura angusta, labro intus lirato.*

*Hab.* West Africa. Mus. Cuming.

Most like *M. mirifica*, Reeve, but the nucleus is large, smooth and pink, the spire is shorter, and the last whorl is not so much produced and reflexed anteriorly as in that species; it belongs to the subgenus *Thala*.

24. *TURRICULA LAYARDII*, A. Adams. *T. testa fusiformi-turrita, spira acuminata, aperturam magis æquante, anfractibus decem, planulatis, ad suturas vix angulatis, supremis longitudinaliter costellatis, interstitiis clathratis, ultimo transversim lirato, interstitiis punctato-clathratis; apertura angusta, columella quadriplicata, plica postica duplicata, labro intus lirato; rufo-fusca, suturis pallidis, anfractuum medio linea rubra.*

*Hab.* Ceylon (*E. L. Layard, Esq.*). Mus. Cuming.

Most like *Mitra crebrilirata*, Reeve, but more subulate and slender; the spire is longer, the whorls are less angulated at the sutures, and the columella is not so tortuous anteriorly. The species belongs to Swainson's subgenus *Callithea*.

25. *TUDICLA FUSOIDES*, A. Adams. *T. testa fusiformi, fulvescente, rufo-fusco variegata ac lentiginosa, spira acuminata, apice mamillata, transversim lirata, liris majoribus cum minoribus alternantibus, fusco articulatis, anfractibus in medio angulatis, serie unica tuberculorum acutorum ornatis; apertura ovali, intus alba, columella plica valida antica instructa, canali producta, recta, antice recurva, labro intus valde lirato.*

*Hab.* China. Mus. Cuming.

This species is fusiform, with a produced spire; the apex, however, is papillary, and the shell has all the characteristics which mark Bolten's genus *Tudicla*, or *Pyrella* of Swainson.

26. *TUDICLA RECURVA*, A. Adams. (Pl. XXVIII. fig. 4.) *T. testa fusiformi, fulvicante, lineis transversis, rufescentibus ornata,*

*spira acuminata, apice mamillato, anfractibus transversim striatis, superne excavatis, in medio serie unica nodulorum instructis; apertura ovali, intus violascente, columella callosa, plica antica obliqua instructa, canali producta, valde recurva, labro acuto, margine sinuoso, intus lirato.*

*Hab.* Senegal. Mus. Cuming.

In this species the whorls are encircled with a series of nodules; the columella is smooth and callous, the canal strongly recurved, and the interior of the aperture is of a delicate violet colour.

27. *PSEUDOLIVA LIVIDA*, A. Adams. *P. testa ovali, cinerascente, livida, spira obtusa, apice erosa, anfractibus 3-4 convexiusculis, transversim crebre striatis, anfractu ultimo antice oblique sulcato, sulco unico valde impresso; apertura ovali, columella alba, postice callo spirali instructa, antice oblique plicata, canali brevi, aperta, labro margine antice unidentato, intus lirato.*

*Hab.* West Coast of Africa. Mus. Cuming.

Most like *P. sepimenta*, Le Guillou, but the callous spiral ridge is less prominent, the inner lip is without the dark mark, the columella is less produced anteriorly, the spire is obtuse and eroded, and the whorls are rounded.

28. *CLYPIDELLA BAIKIEI*, A. Adams. (Pl. XXVIII. fig. 3.) *C. testa scutiformi, oblonga, depresso-conica, postice valde elevata, alba, lineis rufis, sagittiformibus radiatim picta, costis subnodulosis radiantibus ornata, concentrice striata; margine simplice; orificio magno, oblongo, postice valde inclinato.*

*Hab.* —? Mus. Cuming.

This is a very beautiful species, with the foramen placed far behind, and the posterior margin greatly elevated. It is dedicated to my friend and collaborateur in the 'Manual of Natural History for the Use of Travellers,' Dr. Baikie, who is now exploring the waters of the Chadda.

29. *CONUS CONNECTENS*, A. Adams. *C. testa turbinata, albida, aurantiaco sparsim tincta, spira vix elevata, apice submucronato, anfractibus angulatis, externe coronatis, supra excavatis ac radiatim striatis, anfractu ultimo lævigato, antice transversim sulcato; apertura angusta, labro vix arcuato.*

*Hab.* China. Mus. Cuming.

This Cone appears to be most closely allied to *C. lithoglyphus*; it is whitish, clouded with pale orange; the spire is irregularly coronated, and the whorls are angulated.

30. *SCONSIA GRAYI*, A. Adams. (Pl. XXVIII. fig. 6.) *S. testa ovali, ventricosa, subtenui, sordide fulva, immaculata, spira brevi, anfractibus quinque, convexiusculis, transversim crebre sulcatis, longitudinaliter substriatis; labio callo lævi, expanso oblecto, columella antice corrugato-plicata, labro margine subreflexo, postice ascendente, intus incrassato ac plicato, canali brevi, vix recurva.*

*Hab.* —?



This species is thinner and more ventricose than *S. striata*; it is spotless, and more finely transversely grooved; the spire is less acute, the outer lip not so much thickened and inflexed, and plicate, not crenate, internally.

31. OPERCULATUM PICTUM, A. Adams. *O. testa orbiculato-ovali, plana, apice producto, fusco, incurvato, epidermide tenui, corneo obtecta, concentrice striata, albida, aurantiaco radiatim picta, intus nitida ad marginem aurantiaca.*

*Hab.* Lord Hood's Island. Mus. Haslar.

This species is richly painted with reddish-orange, disposed in a radiated manner round the outer margin, the rays extending towards the centre; the apex is hooked and more elevated than in the other species. The Linnean name of the genus is here used, but it has also been called *Umbella* by Chemnitz, and *Umbrella* by Lamarck.

32. STYLIFER BARRONII, A. Adams. *S. testa ovali, turrata, alba, nitida, semipellucida, apice mucronata, anfractibus septem, planis, postice angulatis, longitudinaliter oblique striatis; apertura oblongo-ovali, labro postice angulato, margine subincrassato.*

*Hab.* —? Mus. Cuming.

This species, remarkable for the angulated form of the whorls, is named after its discoverer, Mr. Charles Barron, who found it imbedded in the skin of a tropical species of *Asterias*, in which it had formed for itself a cystiform cavity.

33. PANOPÆA MIDDENDORFII, A. Adams. *P. testa transversa, ovato-trigonalis, alba, epidermide corrugata, cornea, fusca obtecta, transversim irregulariter plicata; latere antico rotundato, angustiore, postico latiore, subtruncato, ligamento prominente.*

*Hab.* Arctic Seas. Mus. Haslar.

This species appears to differ entirely in form from other known species, being more triangular and truncate posteriorly; the epidermis is peculiarly plicato-corrugate.

34. RHIZOCHILUS ASPER, A. Adams. *R. testa umbilicata, ovato-turrata, alba, rufo sparsim tincta, anfractibus sex, longitudinaliter plicatis, superne excavatis, in medio angulatis, transversim liratis, liris asperulatis, ad plicas spinulosis; apertura ovali, canali brevi, vix recurva, labro intus lirato.*

*Hab.* Gulf of California. Mus. Cuming.

This is a very beautiful white *Murex*-like species, with transverse spinulose liræ, and longitudinally plicate, angulated whorls.

35. RHIZOCHILUS (CORALLIOPHILA) RADULA, A. Adams. *R. testa ovali, imperforata, candida, spira prominula, anfractibus convexis, longitudinaliter plicatis, transversim liratis, liris squamulis, acutis, parvis asperulatis, interstitiis clathratis; apertura ovali, intus violascente, canali brevi, excurvata, regione umbilicali impressa, labro intus sulcato.*

*Hab.* China. Mus. Cuming.

This is a beautiful pure-white species, with the interior of the aperture of a pale violet, and with the entire surface covered with transverse rows of small acute scales, resembling the points of a rasp.

36. RAPANA (LATIAXIS) RHODOSTOMA, A. Adams. (Pl. XXVIII. fig. 1.) *R. testa fusiformi-turrita, umbilicata, spira acuminata, rutila, albo-fasciata, anfractibus convexiusculis, longitudinaliter plicatis, transversim liratis, liris squamulis asperulatis, suturis canaliculatis, anfractu ultimo antice coarctato, regione umbilicali carina spirali circumcincta; apertura ovali, intus carnicolore, canali producta, recurvata.*

*Hab.* China. Mus. Cuming.

A handsomely coloured species, with a delicate pink aperture and channelled suture, partaking somewhat of the characters of *Rhizochilus*.

37. PISANIA HERMANNSENI, A. Adams. (Pl. XXVIII. fig. 7.) *P. testa oblongo-fusiforimi, lævi, fulvicante, obscure albo-punctata, anfractibus septem tumidiusculis, ultimo antice transversim sulcato; apertura quadrato-ovali, columella postice lamina callosa instructa, labro expanso, antice dilatato, intus lirato.*

*Hab.* China. Mus. Cuming.

A fine mitriform species, of a fulvous colour, with the outer lip rather expanded, and sulcated interiorly. We have named it after M. Hermannsen, who has contributed so materially towards the natural history of the Mollusca, by his valuable work on Bibliography and Synonyms.

38. PISANIA CRENILABRUM, A. Adams. *P. testa fusiformi, spira exserta, brunnea, fascia lata spadiceo obscure articulata, anfractibus septem, supremis longitudinaliter plicatis, ultimo transversim lirato; apertura ovali, breviuscula, labio callo nitido obtecto, labro extus subincrassato, margine crenulato.*

*Hab.* West Indies. Mus. Cuming.

The spire in this species is longer than the aperture, the whorls are crossed with sharp elevated lines, and the margin of the outer lip is regularly crenulated.

39. PISANIA RETICULATA, A. Adams. *P. testa fusiformi-oblonga, fulvescente, rufo fuscoque lineata aut variegata, anfractibus septem, tumidiusculis, liris longitudinalibus et transversis undique creberrime reticulatis; apertura ovali, labio postice vix callosa, labro extus incrassato, intus lirato.*

*Hab.* New Caledonia. Mus. Cuming.

An elegant reticulated form, having very much the appearance of a *Metula*, but partaking chiefly of the peculiarities of *Pisania*.

2. DESCRIPTIONS OF THREE NEW SPECIES OF TITMICE.  
BY FREDERIC MOORE.

Fam. PIPRIDÆ, Vigors.

Subfam. PARIANA.

Genus ORITES, Mœhring.

1. ORITES? LEUCOGENYS, Moore.

Colour above grey, tinged with pinkish on the rump : before the eye and a broad streak over it black, passing to mixed black and grey on the nape ; the centre of the head dusky reddish-isabelline ; base of lower mandible, below the eyes, ear-coverts and sides of the neck white ; chin and throat jet-black ; abdomen pale pinkish-isabelline ; wings dusky and having an isabelline tinge, the winglet and coverts of the primaries black ; the primaries and secondaries fringed externally with grey ; axillæ white ; tail dusky, tinged with isabelline, the outer feathers graduated and obliquely tipped externally with white, the centre feathers margined with grey. Bill black ; feet yellowish-brown.

Length  $4\frac{1}{2}$  inches ; of wing  $2\frac{1}{8}$ th ; of tail  $2\frac{1}{4}$  ; the three outer feathers graduated, the middle pair  $\frac{2}{10}$ ths shorter than the next ; bill to frontal plumes  $\frac{2}{10}$ ths ; to gape  $\frac{5}{12}$ ths ; height from chin to front  $\frac{2}{12}$ ths ; and tarse  $\frac{7}{12}$ ths of an inch.

*Hab.* Afghanistan. In the Museum of the East India Company. " Found in pairs, in the woods above Balu Chughur, at 4,000 feet elevation. Irides straw-colour." Griffith, MSS. Notes.

This species is allied in colour to *O. jouschistos*, Hodgson, from which it may at once be distinguished by its broad, thick and higher bill, by its white cheeks and ear-coverts, and by its black chin and throat ; and from *O. erythrocephalus*, Vigors, by its larger size, by the absence of the white superciliary streak, white chin, black ear-coverts, &c. On the habits of the latter species I beg to quote the following remarks made by Capt. Hutton, in 'Journ. A. S. Bengal,' 1848, p. 689. He says, " It is common at Mussooree, and in the hills generally throughout the year. It breeds in April and May ; the situation chosen is various, as one taken in the former month at Mussooree at 7,000 feet elevation, was placed on the side of a bank among overhanging coarse grass ; while another taken in the latter month at 5,000 feet, was built among some ivy turning round a tree, and at least 14 feet from the ground. The nest is in shape a round ball with a small lateral entrance, and is composed of green mosses warmly lined with feathers. The eggs are five in number, white with a pinkish tinge, and sparingly sprinkled with lilac spots or specks, and having a well-defined lilac ring at the larger end. Diameter  $\frac{8}{16} \times \frac{6}{16}$  in."

## 2. ORITES (?) GLAUCOGULARIS, Gould, MS.

Colour above greyish-ash; crown black, with a broad pale-buff line extending down the centre; forehead and lores isabelline; base of lower mandible, ear-coverts, chin, breast, and middle of belly buff colour; rump, upper tail-coverts, flanks and sides of belly pinkish-isabelline, brightening to ferruginous on the vent and under tail-coverts; throat of a silvery or bluish-ash; sides of the neck below the ear-coverts whitish; wings brownish-black, coverts and speculars quite black, primaries and secondaries margined with greyish-white; axillæ and edge of shoulder white; tail black, the four outer feathers obliquely across both webs white. Bill black, and thick as in *O. leucogenys*; legs dark brown.

Length  $4\frac{1}{2}$  inches; of wing  $2\frac{1}{8}$ th; tail  $2\frac{1}{2}$ ; its outermost feather 1 inch shorter; bill to frontal plumes  $\frac{2}{10}$ ths, to gape  $\frac{5}{12}$ ths; and tarse  $\frac{7}{12}$ ths of an inch.

*Hab.* China. In the collection of John Gould, Esq.

## 3. ORITES (?) NIVEOGULARIS, Gould, MS.

Forehead white, passing to buff-brown on the back of the head, nape, and fore-part of the back, and thence to the tail grey, tinged with isabelline on the rump; lores, over the eyes and ear-coverts black, passing into the brown on the nape; ear-coverts blackish anteriorly and brownish-buff posteriorly, and somewhat striped longitudinally with white; base of lower mandible, chin, throat, fore-part of breast, and sides of the neck to the nape behind the ear-coverts snowy-white, and contrasting with a brownish band which runs from the nape across the middle of the breast; the lower part of the breast with the abdomen pale pinky-isabelline passing to white in the middle of the belly: wings brown, margined with greyish-white, coverts and speculars blackish: tail dusky-black, margined externally with greyish-white, its outermost feathers white on the outer web. Bill black, longish, and slender as in *O. jouschistos*, Hodgson; feet yellowish.

Length  $4\frac{1}{2}$  inches; of wing  $2\frac{1}{2}$ ; tail  $2\frac{5}{8}$ ths, its outermost feather  $\frac{1}{2}$  inch shorter; bill to frontal plumes  $\frac{3}{10}$ ths to  $\frac{5}{10}$ ths; tarse  $\frac{7}{12}$ ths of an inch.

*Hab.* N. India. In the collection of John Gould, Esq.

*Remark.*—These three new species, together with *O. erythrocephalus*, Vigors, and *O. jouschistos*, Hodgs., will, I believe, upon further examination, prove to form two separate divisions, distinct from the genus *Orites*; the species named *erythrocephalus*, *leucogenys*, and *glauco-gularis* forming one division, and *jouschistos* with *niveogularis* the second.

3. NOTICE OF SOME IMPERFECTLY-KNOWN SPECIES OF BIRDS  
CONTAINED IN THE MUSEUM OF THE HON. EAST INDIA COM-  
PANY. BY FREDERIC MOORE.

Fam. MERULIDÆ, Vigors.

Subfam. BRACHYPODINA, Swainson.

Genus IXULUS, Hodgson, P. Z. S. (1845) p. 23.

1. IXULUS OCCIPITALIS, Blyth.

*Siva occipitalis*, Blyth, J. A. S. Beng. xiii. p. 937. (1844.)

*Ixulus occipitalis*, Blyth, J. A. S. Beng. xiv. p. 552. xvi. p. 448;  
Cat. B. Mus. A. S. Beng., p. 100.

*Hab.* Sikim, Nepal. (No. 955 Hodgson's Catalogue.)

“Colour dull brownish olive-green above, the shafts of the dorsal and scapular feathers pale; below much lighter and rufescent, the throat whitish, the feathers of the fore-neck having dark shafts: crown, nape, and lower tail-coverts ferruginous-brown, which also tinges the flanks; coronal feathers considerably elongated, and the occiput beneath the crest white; bill black; legs yellowish-brown.

“Length about 5 inches; of wing  $2\frac{1}{2}$ ; tail 2; bill to gape  $\frac{2}{16}$ ths; and tarse  $\frac{7}{8}$ ths of an inch.”

A single specimen only of this species was collected in Nepal by B. H. Hodgson, Esq.

2. IXULUS CASTANICEPS, Moore, n. sp.

Colour above dull brownish-olive, the shafts of the dorsal and scapular feathers pale; crown dark-chestnut, and subcrested, the frontal plumes short and scaly, and having pale margins, the occiput paler chestnut; behind the eyes whitish; ear-coverts chestnut; wings blackish, the secondaries and tertiaries with pale shafts; axillæ white; tail black, the three outer feathers graduated, and tipped obliquely externally with white, the next white at the extreme tip only, and the rest entirely black; the whole underparts of a dirty ruddy-white colour; bill reddish-brown; legs yellowish.

Length  $5\frac{3}{4}$  inches; of wing  $2\frac{3}{10}$ ; tail  $2\frac{1}{4}$ ; its outermost feather  $\frac{5}{8}$ ths less; bill to front  $\frac{3}{10}$ ths; to gape  $\frac{1}{2}$ ; and tarse  $\frac{3}{4}$  of an inch.

*Hab.* Afghanistan.

This species is at once distinguished by the white tips to the tail feathers.

Genus STACHYRIS, Hodgson, J. A. S. Beng. 1844, p. 378.

3. STACHYRIS RUFICEPS, Blyth.

*Stachyris ruficeps*, Blyth, J. A. S. Beng. xvi. p. 452 (1847);  
Catal. B. Mus. A. S. Beng. p. 150. Bonap. C. G. Av. p. 332.

The rufous-headed *Stachyris*.

*Hab.* Sikim; Nepal. (No. 923, Hodgson's Catalogue.)

“Allied in form and size to *St. pyrrhops*, but having the crown light ferruginous, and the chin and middle of the throat white, with

slight black central streaks to the feathers; rest of the upper parts plain olive, and of the lower whitish, with a fulvous tinge on the sides of the neck and breast" [in some specimens the crown and nape are bright ferruginous, and the whole under-parts pale ferruginous]. Bill and legs pale horn-colour.

Length  $4\frac{1}{2}$  inches; of wing  $2\frac{1}{3}$ th; tail 2 inches; bill to frontal plumes  $\frac{4}{10}$ ths; to gape  $\frac{6}{10}$ ths; and tarse  $\frac{7}{8}$ ths of an inch.

Fam. PIPRIDÆ, Vigors.

Subfam. LEIOTHRICHINA.

Genus LEIOTHRIX, Swainson.

4. LEIOTHRIX CINEREA, Blyth.

*Minla cinerea*, Blyth, J. A. S. Beng. xvi. p. 449 (1847).

*Leiothrix cinerea*, Blyth, Catal. B. Mus. A. S. Beng. p. 100.

The grey *Leiothrix*.

*Hab.* S. E. Himalaya; Nepal. (No. 671, Hodgson's Catalogue.\*)

"Colour olive-grey above, tinged with green; beneath white, tinged on the flanks with ashy, and showing some yellow along the middle of the abdomen; a broad yellowish-white supercilium, and over this a black one; the coronal feathers margined with black, and the cheeks mingled black and white; orbital feathers subdued white; wings and tail without markings, the tertiaries edged with grey, and the secondaries with very faint dull yellowish. Bill yellowish-horny above, paler beneath, legs yellowish."

"Length  $4\frac{1}{2}$  inches; of wing  $2\frac{1}{4}$ ; tail  $1\frac{3}{4}$ ; bill to gape nearly  $\frac{5}{8}$ ths; and tarse  $\frac{3}{4}$  of an inch."

Allied in form and size to *L. castaniceps*.

4. NOTES ON THE HABITS OF INDIAN BIRDS. PART IV.

BY LIEUT. BURGESS.

Family SYLVIADÆ.

Genus THAMNOBIA.

THAMNOBIA FULICATA. INDIAN ROBIN.

This bird is well known in the Deccan, and is found not only about villages, walls and outhouses, but is also common on low stony hills. Dr. Jerdon says that "its familiar habits have gained for it its name of Indian Robin." It breeds during the months of March, April and May, building its nests in holes of walls and rocks, as also

\* No. 887 of Mr. Hodgson's Catalogue was attached to this bird, which number was previously used for *Loxia himalayana*; the above number being unoccupied, it is retained for the present species.

in hollows under tussocks of grass. I subjoin some notes on the subject:—"May 9, 1850. When passing outside the wall of a town, an Indian Robin flew off the wall and hovered before me, uttering a sharp hissing cry. Knowing by her manner that she had a nest near, I searched in the wall and found the nest, composed of rotten grass and straw, and some threads of woollen cloth; the nest contained three young ones, quite unfledged; their skin was of a black-lead colour."—"March 19, 1851. Found in a hole in the rocks the nest of the Indian Robin, containing two eggs."—"March 27, 1851. Found the nest of the Robin, containing two eggs, built at the foot of a little tuft of grass, in a hole amongst the roots."

The egg of this bird is of a very pale dusky blue spotted all over with light brown, and a few purplish spots here and there; length rather more than  $\frac{8}{10}$ ths of an inch, by  $\frac{6}{10}$ ths in width.

Dr. Jerdon says: "I have twice seen the nest of this bird; once, built among a heap of large stones raised from a bourn, and the bird made its nest during the time the well was being blasted, and continued the process of incubation till the young ones were hatched, when it was accidentally destroyed. On the other occasion it had built its nest in a hole inside the wall of a house. It has four eggs, light dusky bluish colour, spotted with purplish brown."

#### Genus PRINIA.

##### PRINIA INORNATA, Sykes. COMMON WREN WARBLER.

I believe that the nest and egg herewith forwarded, are the nest and egg of this little Warbler, though, not having shot the bird from her nest, I cannot say so positively. I think, however, that Dr. Jerdon's observation, though it differs in not mentioning the spots on the eggs, partly corroborates it. He says: "I once procured the nest of this species; it was open at the top, neatly enough made of grass well interwoven, without any lining, and fixed in a low bush very near the ground; it contained four blue eggs." The nest which I forward was found in the midst of some low jungle shrub, about a foot from the ground, during the monsoon. The egg is a little less than  $\frac{6}{10}$ ths of an inch in length, by rather more than  $\frac{4}{10}$ ths in width, of a rich blue ground, blotched and spotted with two shades of red-brown and pale purple.

#### Tribe CONIROSTRES.

##### Family CORVIDÆ.

##### Subfamily CORVINÆ.

#### Genus CORVUS.

##### CORVUS SPLENDENS, Vieill. COMMON INDIAN CROW.

All the noise and impudence of the tribe appear to be concentrated in the Common Indian Crow. They abound, I believe, in every part of the Indian continent; and when to their number is added their

thievish character, some idea may be formed of the nuisance they are. There is, however, a redeeming point in their character, viz. that they are very efficient scavengers. An officer of the Bombay army told me an anecdote illustrative of their sagacity, which he himself witnessed. Some crows had been sitting near a young dog, watching him whilst engaged with a bone. Having apparently concerted the plan, one of them alighted, stepped up and took a peck at the dog's tail; the dog, irritated, made a snap at the bully; on which a comrade, who appears to have been ready, made a dash and went off with the prize. He told me that he had seen another crow coolly walk off with a bit of bread, having actually taken it out of the hand of a child who was eating it. No one who has not been in India can form an idea of the noise which these crows make. In the morning, in Bombay, the tops of some of the bungalows are covered with them, squabbling and chattering, and it is reported that these black gentry are not proof against the seducing influence of the pots of toddy hanging up in the cocoa-nut trees. The juice of these trees is harmless before the sun is hot, but if taken after, has a decidedly inebriating effect. The common Crow begins to build at the end of April, forming its nest of sticks. It lays four eggs, of a dull greenish-blue, blotched and spotted with greenish-brown and grey,  $1\frac{4}{10}$ th in. in length by rather more than 1 inch in width. The eggs, however, differ in size and colour.

**CORVUS CULMINATUS, Sykes. LARGE BLACK CROW.**

Less numerous, and of less intrusive and impertinent habits than the last. It breeds at the same time, and lays the same number of eggs as the Common Crow of India. The eggs are of a pale blue dashed and spotted with olive and grey, 1 inch and rather more than  $\frac{7}{10}$ ths of an inch in length, by 1 inch and rather more than  $\frac{2}{10}$ ths of an inch in width. The eggs of this Crow also vary in size and colour.

**Family STURNIDÆ.**

**Subfamily STURNINÆ.**

**Genus PASTOR.**

**PASTOR TRISTIS, Temm. COMMON MYNA.**

This sprightly talkative bird is common in Western India. It lives in small flocks, and is a close attendant on cattle, walking amongst them with a cheerful upright gait, its head inclined, now on this side now on the other, watching for insects, all the while talking and muttering with its peculiarly smooth and oily note. It is a great favourite with the natives, who keep numbers of them in cages. The Myna breeds during the month of May, making its nest in the holes of trees and buildings, also in stacks and ricks. It lays as many as six eggs, of a pale blue colour, 1 inch and rather more than  $\frac{2}{10}$ ths of an inch in length, by  $\frac{9}{10}$ ths of an inch in width. Eggs out of the same nest differ in size.



July 11, 1854.

J. S. Gaskoin, Esq. F.L.S., in the Chair.

The following papers were read:—

I. DESCRIPTIONS OF TWENTY-THREE SPECIES OF HELICEA, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

1. HELIX PAGODULA, Pfr. *H. testa imperforata, gradato-conoidea, solidula, opaca, striatula et lineis impressis nonnullis obsolete, spiralibus sculpta, sub epidermide decidua fulva albida; spira conoidea, apice obtusula; anfract. 6½, superis planis, 3 ultimis carina compressa, acuta, subelevata munitis, ultimo subrecedente, basi parum convexo; apertura subdiagonali, angulato-lunari; perist. simplice, marginibus distantibus, supero brevi, recto, basali ad insertionem subdilatato, adnato.*

Diam. maj. 15, min. 14, alt. 9 mill.

Hab. — ?

2. HELIX BELLA, Pfr. *H. testa perforata, globoso-turbinata, tenuiuscula, confertim striata, rufo-fusca, nitida; spira convexo-conica, subtilissime mucronulata; sutura levi, candido-marginata; anfr. 5½ convexiusculis, ultimo non descendente, spiram æquante, pallidiore, fascia lata albida cincto, basi inflato, circa perforationem pallido; apertura parum obliqua, truncato-ovali, longiore quam lata; perist. recto, margine dextro ab insertione statim descendente, columellari substricto, declivi, superne breviter triangulatim dilatato.*

Diam. maj. 40, min. 34, alt. 28 mill.

Hab. Moluccas.

3. HELIX YORKENSIS, Pfr. *H. testa subobtecte perforata, turbinato-depressa, tenui, capillaceo-striata, sericea, rubello-cornea; spira convexiusculo-conoidea, vertice subtili; sutura levi, simplice; anfr. 5 convexiusculis, sensim accrescentibus, ultimo non descendente, periphæria subangulato, basi nitidiore, medio impresso; apertura diagonali, rotundato-lunari, intus rubello-margaritacea; perist. simplice, recto, marginibus subconniventibus, columellari supra perforationem calloso, dilatato.*

Diam. maj. 10, min. 8½, alt. 5 mill.

Hab. Cape York, N. Australia.

4. HELIX CUMULUS, Pfr. *H. testa perforata, turbinato-semiglobosa, tenui, levissime striatula, nitida, fulvo-cornea; spira convexo-conoidea, vertice subtili vix prominulo; sutura levi, submarginata; anfr. 5½ vix convexiusculis, lente accrescentibus, ultimo non descendente, periphæria subangulato, basi parum convexo; apertura diagonali, lunari; perist. simplice, recto, mar-*

*ginibus distantibus, columellari leviter arcuato, superne subdilatato-reflexo.*

Diam. maj. 10, min. 9, alt. 5 mill.

Hab. Manning River, E. Australia.

5. **HELIX OPHELIA**, Pfr. *H. testa perforata, turbinato-depressa, tenui, sub lente irregulariter capillaceo-striata, haud nitida, diaphana, cornea, strigis angustis rufulis notata; spira convexiusculo-conoidea, vertice subtili, acutiusculo; anfract. 5 planiusculis, subæsertis, sensim accrescentibus, ultimo non descendente, subangulato, basi planiusculo; apertura obliqua, rotundato-lunari, intus nitida; perist. simplice, recto, marginibus vix convergentibus, basali strictiusculo, columellari declivi, juxta umbilicum angustissimum, pervium breviter reflexo.*

Diam. maj. 8, min. 7, alt.  $4\frac{1}{2}$  mill.

Hab. Australia?

6. **HELIX ZOSTEROPHORA**, Pfr. *H. testa subclausæ perforata, conoideo-depressa, solida, oblique striatula et lineis spiralibus confertissimis sub lente sculpta, albida, cingulo 1 castaneo ad peripheriam, secundo fusco-aurantiaco supra illud et fascia lata fusca in basi ornata; spira conoidea, acutiuscula; anfract. 6 convexiusculis, lente accrescentibus, ultimo non descendente, rotundato; apertura vix obliqua, transverse auriformi; perist. recto, margine supero brevi, dextro perarcuato, columellari declivi, leviter arcuato, superne calloso, dilatato, adnato.*

Diam. maj. 34, min. 29, alt. 19 mill.

Hab. —?

7. **HELIX VILLARIS**, Pfr. *H. testa perforata, convexo-depressa, tenuiuscula, lævigata, oleoso-micante, albido-cornea; spira brevissime conoidea, vertice subtili; sutura levi, marginata; anfract.  $5\frac{1}{2}$  convexiusculis, sensim accrescentibus, ultimo non descendente, periphæria rotundato, basi parum convexo; apertura obliqua, lunari, intus submargaritacea; perist. simplice, recto, marginibus vix convergentibus, columellari declivi, superne calloso, breviter reflexo.*

Diam. maj.  $10\frac{1}{2}$ , min.  $9\frac{1}{2}$ , alt.  $5\frac{1}{2}$  mill.

Hab. Cape York, Torres Strait, Lizard Point, Australia.

8. **HELIX CALCULUS**, Pfr. *H. testa latissime umbilicata, discoidea, tenui, striatula, corneo-lutescente, rufulo obsolete strigata; spira plana, subimmersa; anfract.  $8\frac{1}{2}$ , convexis, angustissimis, ultimo non descendente, altiore quam lato, superne et basi subangulato; umbilico conoideo,  $\frac{7}{10}$  diametri occupante; apertura obliqua, erecto-lunari; perist. simplice, recto, marginibus distantibus, basali perarcuato.*

Diam. maj. 10, min. 9, alt.  $3\frac{1}{2}$  mill.

Hab. —?

9. **HELIX HORIOMPHALA**, Pfr. *H. testa umbilicata, lenticulari, tenui, striis obliquis et spiralibus sub lente confertissime decussata,*

*vix nitidula, diaphana, pallide cornea; spira vix elevata, subconicoidea; sutura lineari; anfract.  $6\frac{1}{2}$  planiusculis, sensim accrescentibus, ultimo non descendente, periphæria acutissime carinato, basi paulo convexiore, carina secunda in umbilico lato, cyathiformi continuata munito; apertura perobliqua, tetragona; perist. simplice, recto, marginibus subparallelis, dextro subsinuato, basali leviter arcuato, angulum cum columellari formante.*

Diam. maj. 25, min. 22, alt. 6 mill.

Hab. Japanese Archipelago.

10. *HELIX GONIOMPHALA*, Pfr. *H. testa umbilicata, conoidea, solida, oblique ruguloso-striata, fulva; spira convexo-conoidea, obtusiuscula; sutura plana, marginata; anfract.  $6\frac{1}{2}$  planis, lente accrescentibus, ultimo superne convexiore, non descendente, periphæria subcompressæ et acute carinato, basi planiusculo, circa umbilicum perangustum, pervium distincte angulato; apertura perobliqua, depresso securiformi; perist. recto, marginibus distantibus, supero simplice, antrorsum arcuato, basali calloso, incrassato, leviter arcuato, columellari angusto, breviter ascendente.*

Diam. maj.  $20\frac{1}{2}$ , min. 19, alt.  $9\frac{1}{2}$  mill.

Hab. — ?

11. *HELIX FUNICULATA*, Pfr. *H. testa umbilicata, depressa, tenuiuscula, undique subruditer granulata, nitidula, rufa; spira brevissime conoidea, obtusa; sutura subcanaliculata; anfract. 6 convexiusculis, lente accrescentibus; ultimo rotundato, supra periphæriam fascia alba et carina funiformi cincto, antice descendente, basi inflato, circa umbilicum mediocrem, profundum subcompresso; apertura perobliqua, subangulato-lunari, intus margaritacea; perist. simplice, marginibus vix convergentibus, supero recto, basali breviter reflexo, columellari superne dilatato, fornicatim patente.*

Diam. maj. 29, min. 24, alt. 14 mill.

Hab. Torres Strait, Australia.

12. *HELIX CURVIDENS*, Pfr. *H. testa imperforata, globoso-conoidea, solidula, undique minute granulata, alabastrina; spira semiglobosa, vertice obtuso; sutura mediocri; anfract. 4 sensim accrescentibus, vix convexiusculis, ultimo antice vix descendente, periphæria carina subfuniformi, rugulosa, alba cincto, basi convexiore; apertura perobliqua, subtetragono-lunari; perist. simplice, marginibus distantibus, dextro recto, columellari calloso, per dilatato, introrsum dente elongato, curvato munito.*

Diam. maj. 28, min. 24, alt. 17 mill.

Hab. — ?

13. *HELIX MALACCANA*, Pfr. *H. testa aperte perforata, depressa, tenui, lævigata, irregulariter pustuloso-punctata, castaneo-cornea; spira vix elevata; vertice subtili; sutura distincte marginata; anfract.  $5\frac{1}{2}$ , vix convexiusculis, sensim accrescentibus, ultimo latiore, non descendente, subdepresso, periphæria rotundato; apertura parum obliqua, late lunari; perist. simplice, recto, marginibus*

*subconvergentibus, columellari breviter descendente, superne anguste reflexo.*

Diam. maj.  $15\frac{1}{2}$ , min. 13, alt. 7 mill.

*Hab.* Province of Quedo, Straits of Malacca (Capt. A. Martin).

14. *HELIX CARNEOLA*, Pfr. *H. testa angustissime umbilicata, depressa, tenui, lævigata, nitida, pellucida, rubello-cornea; spira brevissime conoidea, vertice subtili, subprominulo; sutura canaliculata, submarginata; anfract. 6, convexiusculis, lente accrescentibus, ultimo non descendente, periphæria obsolete angulato, basi planiusculo; apertura obliqua, lunari; perist. simplice, recto, marginibus distantibus, basali leviter arcuato, columellari superne dilatato, patente, perforationem perviam non occultante.*

Diam. maj.  $11\frac{1}{2}$ , min. 10, alt. 5 mill.

*Hab.* Ceylon.

15. *HELIX SOLIDULA*, Pfr. *H. testa subobtecte perforata, conoideo-semiglobosa, solidula, oblique costulato-striata, fulva; spira convexo-conoidea, vertice subtili, acutiusculo; sutura submarginata; anfract.  $5\frac{1}{2}$ , vix convexiusculis, sensim accrescentibus, ultimo non descendente, compresse et acute carinato, basi lineis spiralibus obsoletis notato, medio impresso; apertura diagonali, angulato-lunari; perist. recto, marginibus distantibus, dextro recto, acuto, columellari calloso, incrassato, perforationem angustissimam fere claudente.*

Diam. maj. 12, min. 11, alt. 7 mill.

*Hab.* — ?

16. *HELIX CRASSIDENS*, Pfr. *H. testa imperforata, subglobosa, solida, ponderosa, superne confertim arcuato-striata, unicolore atro-fusca; spira semiglobosa, obtusa; anfract. 5, vix convexiusculis, ultimo antice deflexo, periphæria obsolete angulato, basi subplanato, radiato-striato, nitido; apertura diagonali, trisinuato-lunari; perist. crasso, cæruleo-albido, marginibus callo crasso, dentem validum, triangularem, transversum gerente junctis, dextro brevi, vix reflexiusculo, basali dilatato, intus dentibus 2 subæqualibus munito.*

Diam. maj.  $16\frac{1}{2}$ , min. 15, alt. 15 mill.

*Hab.* Martinique.

17. *HELIX SUBVITREA*, Pfr. *H. testa umbilicata, trochiformi, solidiuscula, oblique distincte striata, striis spiralibus tenuissimis confertim decussata, sericina, lutescenti-hyalina; spira convexo-conica, obtusula; anfract. 6, convexiusculis, lente accrescentibus, carina funiformi, exserta munitis, ultimo antice vix deflexo, infra carinam medianam convexiore, antice turgidulo, juxta umbilicum angustum subcanaliculato; apertura perobliqua, subtriangulari-lunari; perist. albo, nitido, marginibus remotis, dextro expansiusculo, columellari substricto, extus reflexo, intus subdentato, ad insertionem in laminam fornicatam vitream dilatato.*

Diam. maj.  $20\frac{1}{2}$ , min. 19, alt. 15 mill.

*Hab.* Moluccas.

18. **HELIX STIMPSONI**, Pfr. *H. testa anguste et pervie umbilicata depressa, solidiuscula, confertim striatula, oleoso-micante, rufo-cornea; spira brevissime conoidea; anfract. 5½ planiusculis, sensim accrescentibus, ultimo non descendente, turgido, peripheria obsoletissime angulato, basi distinctius striato; apertura obliqua, rotundato-lunari, intus nitida; perist. calloso, albo, undique breviter reflexo, marginibus conniventibus, dextro subhorizontaliter abeunte, columellari subarcuato, sursum dilatato.*

Diam. maj. 15, min. 13, alt. 8 mill.

Hab. China.

19. **HELIX MARTINI**, Pfr. *H. testa umbilicata, conoideo-depressa, tenui, oblique confertim subgranulato-striata, vix sericea, pallide fulva; spira breviter conoidea, vertice subtili, obtusulo; anfract. 7-8, planiusculis, lente accrescentibus, ultimo turgido, antice non descendente, supra peripheriam subacute carinato; umbilico angusto, non pervio; apertura diagonali, oblique lunari, intus margaritacea; perist. albo, marginibus callo tenuissimo junctis, dextro breviter expanso, superne subangulatim producto, basali paulo latius revoluta, juxta umbilicum sinuato, subdilatato.*

Diam. maj. 35-43, min. 31-37, alt. 16-21 mill.

Hab. Pedang (Capt. A. Martin).

20. **HELIX APPENDICULATA**, Pfr. *H. testa umbilicata, globoso-depressa, solidula, oblique striata, fulvo-lutea, fasciis variis nigro-castaneis ornata; spira brevi, convexa, vertice subtili non prominulo; anfract. 6, vix convexis, ultimo rotundato, antice deflexo; apertura diagonali, rotundato-lunari, intus margaritaceo-albida; perist. simplice, atro-violaceo vel albo, marginibus subconvergentibus, dextro expanso, basali reflexo, columellari supra umbilicum mediocrem in appendiculam triangularem, planam, superne adnatam dilatato.*

Diam. maj. 41, min. 34, alt. 24 mill.

Hab. Australia.

21. **STREPTAXIS CONOIDEA**, Pfr. *Str. testa anguste et pervie umbilicata, subregulariter conoidea, solidula, superne oblique costulato-striata, virenti-alabastrina; spira gradato-conoidea, apice obtusa; anfract. 7, convexis, lente accrescentibus, hinc inde varicosis, ultimo peripheria subangulato, antice vix deviante, basi planiusculo, laevigato, nitido; apertura diagonali, lunari, intus margaritacea; perist. undique breviter revoluta.*

Diam. maj. 18, min. 16, alt. 10 mill.

Hab. Province of Quedo, Straits of Malacca (Capt. A. Martin).

22. **STREPTAXIS FORTUNEI**, Pfr. *Str. testa profunde arcuato-rimata, subperforata, depresso ovata, tenui, pellucida, hyalina; spira laterali, apice subconoideo; anfract. 6, convexiusculis, laevigatis, ad suturam striatulis, penultimo varicoso, gibboso, ultimo antrorsum deviante; apertura perobliqua, late lunari; pariete aperturali lamella mediocri intrante munito; perist. calloso,*

*albo, undique expanso et reflexo, margine dextro superne repando, medio crassiore.*

Diam. maj. 9, min.  $6\frac{1}{2}$ , alt.  $5\frac{1}{3}$  mill.

*Hab.* Shanghai, China (Mr. Fortune).

23. *ACHATINA FLEXUOSA (GLANDINA) Pfr.* *A. testa subfusiformi-oblonga, solida, longitudinaliter flexuose plicato-striata, alba, epidermide fulva, strigis angustis castaneis irregulariter notata induta; spira conica, obtusa; sutura sublacera; anfract. 7, vix convexiusculis, ad suturam subcrenatis, ultimo antice deflexo, spiram superante, basi attenuato; columella arcuata, ad basin apertura elongato-semiovalis abrupte truncata; perist. obtuso, margine dextro repando, medio antrorsum dilatato.*

Long 53, diam. 20 mill.

*Hab.* — ?

## 2. DESCRIPTIONS OF SEVEN SPECIES OF CYCLOSTOMACEA AND AURICULACEA, FROM MR. CUMING'S COLLECTION.

By Dr. L. PFEIFFER.

1. *CYCLOSTOMA CASTUM (CYCLOSTOMUS?)*, Pfr. *C. testa umbilicata, globoso-turbinata, tenui, striis elevatis obliquis et spiralibus confertissime reticulata, vix nitidula, candida; spira breviter turbinata, vertice truncatulo; anfract. 5, convexis, rapide accrescentibus, ultimo rotundato, fascia 1 obsoleta fulva infra medium signato; umbilico profundo,  $\frac{1}{4}$  diametri fere æquante; apertura obliqua, subcirculari, intus concolore, nitida; perist. medicriter expanso et revoluto, margine columellari in laminam latis-simam, superne adnatam, umbilicum semioccultantem dilatato. Operc. — ?*

Diam. maj. 28, min. 22, alt. 16 mill.

*β Anfractu ultimo antice longe soluto, dorso carinato.*

*Hab.* Madagascar.

2. *CYCLOSTOMA VIRGO (CYCLOSTOMUS?)*, Pfr. *C. testa umbilicata, turbinato-globosa, depressiuscula, tenui, confertim striata et liris spiralibus (quorum singulis validioribus) asperato-granulata, haud nitente, diaphana, albido-fulvescente, castaneo trifasciata; spira breviter turbinata, vertice submamillari; anfract. 5, convexis, rapide accrescentibus, ultimo rotundato; umbilico profundo,  $\frac{1}{6}$  diametri vix superante; apertura obliqua, subangulato-circulari, intus nitida; perist. dilatato, undique subrectangule patente, nitido, albo, castaneo-maculato, superne subfornicato, margine sinistro crenulato, supra umbilicum in laminam magnam superne adnatam dilatato. Operc. — ?*

Diam. maj. 26, min. 21, alt. 15 mill.

*Hab.* Madagascar.

3. *CYCLOSTOMA CHLORITICUM* (*CYCLOSTOMUS*?), Pfr. *C. testa umbilicata, turbinato-depressa, tenuiuscula, oblique striatula et liris confertis, inaequalibus, basi validioribus cincta, vix nitidula, diaphana, albida, fasciis pallidissime lutescentibus ornata; spira brevi, submucronata; anfract. 5, convexis, rapide accrescentibus, ad suturam depressis, marginatis, ultimo rotundato, non descendente; umbilico profundo,  $\frac{1}{4}$  diametri subæquante; apertura obliqua, subcirculari, intus nitida; perist. simplice, marginibus fere contiguis, supero sinuato, vix expansiusculo, basali reflexo, columellari dilatato, fornicatim patente. Operc. — ?*

Diam. maj. 34, min. 27, alt. 16 mill.

Hab. Madagascar.

4. *CYCLOSTOMA COMORENSE* (*OTOPOMA*?), Pfr. *C. testa subobtecte perforata, ovato-conica, solida, longitudinaliter capillaceo-striata et irregulariter rugosa, castanea, fasciis pallidis ornata; spira elongata, convexo-conica, obtusula; anfract. 5, superis parum convexis, spiraliter liris, penultimo convexiore, ultimo rotundato, spiram vix æquante; apertura obliqua, angulato-ovali; perist. simplice, marginibus vix junctis, dextro recto, superne sinuato, flexuoso, sinistro calloso, superne dilatato, supra perforationem adnato. Operc. C. clathratuli.*

Long. 16, diam. 11 mill.

Hab. Comoro Islands, Africa.

5. *MELAMPUS DUPLICATUS*, Pfr. *M. testa imperforata, oblonga, solida, arcuato-striata, sub epidermide decidua, virenti-fulva alba; spira brevi, conoidea, obtusula; sutura obsoleta; anfract. 5-6, contiguis, ultimo  $\frac{3}{4}$  longitudinis formante, supra medium inflato, basi parum attenuato; apertura verticali, semielliptica, basi canaliculata; pariete aperturali callo nodiformi et infra eum plica lamellæformi transversa munito; columella plicis 2 obliquis, parallelis duplicata; perist. simplice, margine dextro leviter arcuato, intus subcalloso.*

Long. 10, diam.  $5\frac{1}{2}$  mill.

Hab. — ?

6. *AURICULA DACTYLUS*, Pfr. *A. testa imperforata, ovato-oblonga, solida, longitudinaliter ruditer striata, infra suturam sulcis validis granulata (striis spiralibus in reliqua parte levibus), olivaceo-fusca, nitida; spira inflato-conica, apice obtusula, erosa; anfract. 7, superis planis, lente accrescentibus, penultimo lato, inflato, ultimo non descendente,  $\frac{2}{3}$  longitudinis fere æquante, supra medium obsolete angulato, basi vix attenuato; apertura vix obliqua, sinuato-semiovali; plicis parietalibus 2 albis, superiore nodiformi, altera valida, obliqua; plica columellari vix torta, fere verticali, introrsum subsulcata, extus ad marginem producta; perist. crasso, recto, margine dextro superne valde sinuato, intus perincrassato, columellari dilatato, plano, adnato.*

Long. 52, diam. max. 25 mill.

Hab. Borneo.

This species and the following one are allied to *A. Judæ*, L.

7. *AURICULA CHINENSIS*, Pfr. *A. testa subrimata, ovato-oblonga, solida, striis longitudinalibus et spiralibus minute granulata, fulvida, castaneo-strigata; spira conica, obtusa; sutura lineari, sublacera; anfract. 6, planiusculis, ultimo non descendente,  $\frac{2}{3}$  longitudinis subæquante, basi rotundato; apertura verticali, sinuato-semiovali, paulo supra basin latissima; plicis parietalibus 2, superiore nodiformi, altera valida, compressa, subobliqua, callo longitudinali plicæformi extus subjunctis; plica columellari valida, tecta; perist. recto, marginibus callo tenui junctis, dextro intus valide labiato, superne sinuato, columellari crasso, fornicatim reflexo, adnato.*

Long. 28, diam. 14 mill.

*Hab.* China.

### 3. DESCRIPTIONS OF TWO NEW SPECIES OF LAND SHELLS.

BY J. S. GASKOIN.

(Mollusca, Pl. XXIX.)

1. *BULIMUS BIVARICOSUS*. (Pl. XXIX. fig. 4). *Testa oblongo-ovata, turrata, solida, longitudinaliter rugato-striata, castaneo-fulva; apice obtusiusculo; anfractibus 6-7 subventricosis, ad suturas depressiusculis, ultimo  $\frac{2}{3}$  subæquante testæ longitudinis; apertura ovali, postice angulata, intus nitida rubeo-castanea, varicibus valde prominentibus duobus, uno ab antica parte aperturæ infra fornicem columellæ extenso, altero medio labri externi ad anticam partem aperturæ efformante; peristomate continuo, parte libera crassa, extus valde marginata albicanteque, columellari incrassata, juxta umbilicum reflexa; umbilico subobsoleto.*

Long.  $2\frac{3}{10}$ , lat. 1 poll.

*Hab.* in insula Lord Howe.

2. *HELIX SOPHIÆ*. *Testa subdiscoidea, tenui, diaphana, parum umbilicata, fulvescente, vix nitidula; spira circa apicem rufescente, apice obtusa, anfractibus 5-6 convexiusculis, celeriter accrescentibus, ultimo antice paululum descendente, striis elevatis spiralibus munitis, lineis tenuissimis undulatis irregulariter transversim decussatis; basi rotundata, confertim spiraliter levius striata; apertura obliqua, semiovali, intus pallidior, nitidissima; peristomate simplice, recto, ad umbilicum reflexo.*

Alt.  $\frac{6}{10}$ , diam. maj.  $1\frac{8}{10}$ , diam. min.  $1\frac{1}{10}$  poll.

*Hab.* in insula Lord Howe.



July 25, 1854.

John Gould, Esq. F.R.S., in the Chair.

The following papers were read :—

1. DESCRIPTION OF A NEW SPECIES OF *REGULUS*, FROM  
MADEIRA. BY EDWARD VERNON HARCOURT.

“ Mr. Gould exhibited two specimens of a new species of *Regulus*, from Madeira, belonging to Edward Vernon Harcourt, Esq., and at the request of that gentleman gave them the name of *Regulus Maderensis*. Mr. Gould remarked that there could be no doubt of their specific value, as they not only differed from all the other European species, but from all the known species of the group. The following notes from Mr. Harcourt are given in his own words.

“ This bird, which is a true *Regulus*, differs from all the three European species ; namely, *cristatus*, *ignicapillus* and *modestus*. It may be described as follows :—

“ *REGULUS MADERENSIS*.

“ Beak black ; forehead white, the white extending backwards and forming a small band ; base of the crest black, the crest bright orange, differing in this respect from the *ignicapillus*, the crest of which is fiery red ; from the beak to the eye a small black band, not extending beyond the eye, in which respect it also differs from *ignicapillus* ; upper part of the neck and the whole of the back olive-green, with a bright mark of orange-yellow on each side of the neck ; greater wing-coverts brownish-black, and tipped with buffy-white, forming a band ; primaries brownish-black, with a narrow external edging of green ; secondaries similar, but with a broad velvet black mark at the base ; tail-feathers brownish-black, tinged with greenish-yellow on the outer web ; chin and throat white slightly tinged with green ; under surface white tinged with yellowish-green ; under wing-coverts white ; legs pale brown.

“ Total length, 4 inches ; from the carpus to the end of the wing  $2\frac{3}{16}$  ; tarsus,  $\frac{3}{4}$ .

“ Believing so small a bird to have but a limited range, and not finding it recorded among the birds of the Canary Islands by Webb and Berthelot, or among the birds of Africa, I am induced to regard it as new, and have ventured to propose for it the name of *Regulus Maderensis*.

“ The sex of the birds I examined was not noted ; but from the brightness of their colours, which surpassed those of the *ignicapillus*, they were probably males.

“ This species lives in the laurel forest and in the *urze* (or tree heaths) in the northern and more unfrequented parts of the island of Madeira. I have frequently seen it on the wing, but could never get near enough to hear its voice.”

2. DESCRIPTION OF A NEW SPECIES OF MOMOTUS.  
 BY JOHN GOULD, F.R.S. ETC.

Mr. Gould exhibited a species of *Momotus*, which he had had in his collection for many years, and which he believed to be entirely new to science. It is most nearly allied to the *Momotus Mexicanus*, but differs from that species in its much larger size, in the deeper chestnut-colour of the head, and in having a greyish-white mark under the eye, in lieu of the rich blue one observable in *M. Mexicanus*. These differences induce Mr. Gould to consider it to be distinct; in which opinion he was greatly confirmed by finding other examples, precisely similar in colour, in the fine collection of the late Earl of Derby, now in Liverpool. He therefore proposed for it the name of

MOMOTUS CASTANEICEPS.

Crown of the head very deep chestnut, gradually blending on the back of the neck into the reddish grass-green of the back and wing-coverts; primaries and secondaries bluish green on the external web and next the shaft on the internal web, the remainder of the feathers being brownish-black, largely margined with buffy-yellow at the base, and with black shafts; upper tail-coverts and tail bluish-green, the latter with black shafts, and the spatulate terminations of the two centre feathers largely tipped with black; lores and lengthened ear-coverts black, the latter bounded above by a narrow line of blue; beneath the eye a narrow streak of greyish-white, bounded above by a finer streak of blue; under surface very pale green, becoming of a still paler and more buffy hue on the vent; on the centre of the breast a few lanceolate pendent feathers of a deep velvety black, narrowly bordered with pale blue; bill black; feet brownish-black.

Total length,  $15\frac{1}{2}$  inches; bill, 2; wing,  $5\frac{1}{4}$ ; tail,  $8\frac{5}{8}$ ; tarsi,  $1\frac{1}{8}$ .  
*Hab.* Guatemala.

3. ON THE ANATOMY OF THE GREAT ANTEATER  
 (MYRMECOPHAGA JUBATA).

BY PROFESSOR OWEN, F.R.S., V.P.Z.S.

Professor Owen read a paper on the Anatomy of the Great Anteater (*Myrmecophaga jubata*). The animal dissected was a full-grown female; it was received at the Gardens September 29, 1853, and died July 6, 1854. It weighed 62 lbs.; the weight of the brain was 3 oz. avoirdupois. The nipples were two in number, post-pectoral in position; the vulva and vent opened by a common cloacal aperture. The integument was thick; well-developed dermal muscles attached it to parts of the skeleton: the extent and attachments of these were described. The position of the viscera on opening the abdominal cavity was detailed. The intestinal canal is supported by one broad fold of peritoneum, as in reptiles. A long narrow continuous gland extends along the base line of the mesenteric part of the fold, and a parallel series of detached glands along the mesocolic part. Other

modifications of the peritoneum were described in relation to the support and connection of other viscera. The stomach consisted of two parts, a cardiac or membranous, and a pyloric or muscular part. The cardiac part is a subglobular cavity, measuring when distended 9 inches in its longest diameter, 7 inches in depth from the cardia, to the left of which the cavity bulges about 4 inches. The circumference of the cavity is 18 inches. The pyloric part is 3 inches in both longitudinal and vertical diameter,  $2\frac{1}{2}$  inches across; its muscular part is so thick that it may be called a gizzard: it has not however the thick callous epithelial lining of a true ornithic gizzard.

The lining membrane of the stomach, as compared with that of the œsophagus, becomes more vascular and is furnished with a thinner epithelium at the cardiac orifice; but the lining membrane for some distance from that orifice, and between it and the entry to the gizzard, is smoother and covered by a thicker layer of epithelium than in the rest of the cardiac cavity, where the ordinary vascular villous gastric surface prevails: the one modification passes insensibly into the other. When fully distended, the cardiac cavity is smooth; as it contracts, the lining membrane falls into rugæ, very minute and irregular near the cardia, thicker and larger at the greater curvature, and assuming a longitudinal direction as they approach and converge towards the entry to the gizzard: at this part the folds were ten in number. In the distended stomach of the female Anteater the transverse diameter of the aperture was 1 inch 3 lines; its vertical diameter from 3 to 4 lines; the distance from it to the cardia, 3 inches.

In the smaller male Anteater, subsequently dissected, the gizzard was 2 in. 3 lines in length and 2 in. 9 lines in depth.

Vertically and longitudinally bisected, the cavity of the gizzard appeared as a gently bent canal about a line in diameter, suddenly expanding near the pylorus to receive a valvular prominence from the upper muscular wall, which projected towards that opening. The vertical thickness of the muscular wall above the canal was 1 inch 10 lines, below the canal 1 inch.

In the female Anteater Prof. Owen divided the gizzard, previously injected and distended with alcohol. When the gizzard was divided vertically and transversely the cavity presented a crescentic figure, with the horns directed upwards, on each side a large fleshy protuberance which descended into the cavity. On the lower part of the protuberance are three or four thick angular longitudinal ridges, which fit into the interspaces of similar ridges along the lower part of the cavity. The epithelium of the protuberance is thicker than that of the rest of the cavity, concealing in a greater degree, but not wholly, the vascularity of the subjacent injected membrane: the cellulo-vascular layer uniting the mucous with the muscular coats is most abundant at the walls of the gizzard opposite the protuberance. The thickness of the muscular wall, from the upper part of the gizzard to the bottom of the protuberance, is 2 inches, that of the lower wall of the gizzard 6 lines: the difference of thickness here, as compared with the same part in the smaller Anteater's stomach, is due to the more contracted state of the gizzard in the latter animal.

On exposing the pylorus from the duodenal side, it presents the form of a crescentic aperture 1 inch in diameter, but reduced to a transverse figure by the pressure of the upper protuberance against its inferior thickened ridge: the mucous membrane of both parts is produced into longitudinal wavy rugæ. A second pylorus might be described where these rugæ abruptly terminate and where the smooth surface of the duodenum begins: this aperture presents a full oval form, 1 inch 2 lines by 9 lines, when that intestine is distended.

The length of the animal, from the muzzle to the vent, was 4 feet 7 inches; the length of the head, 14 inches; of the tail, 33 inches. The length of the intestinal canal was 34 feet, the small intestines measuring 30 feet. The ileum, with a circumference of 1 inch 9 lines, rapidly expands at its termination to form the colon, without any cæcal beginning of the latter gut. This presents a circumference of  $9\frac{1}{2}$  inches near its commencement, and gradually decreases to a circumference of 6 inches at the rectum. The inner surface of the first half of the small intestines is smooth and even; the last half, or ileum, is characterized by a single continuous longitudinal fold of the mucous membrane from 2 to 3 lines in breadth, extending along the side of the gut opposite the attachment of the mesentery. The modifications of the colon and rectum were described.

The weight of the liver was 28 oz.; that of the spleen, 2 oz. 6 drachms; that of the pancreas, 2 oz.: the form and structure of these viscera and of the gall-bladder were described. The renal and generative organs were next referred to.

The disposition of the pleura in the thorax, and the form and structure of the thoracic viscera were detailed. A peculiarity was noticed in the right auricle of the heart: the entry of the inferior cava was guarded as usual by the eustachian valve, the homologue of the posterior of the two semilunar valves which guard the communication between the sinus and the auricle in the heart of Reptiles; in the great Anteater there is a narrower valvular fold or ridge on the opposite side of the orifice of the inferior cava, answering to the anterior valve in the Reptiles' auricle, and a ridge is continued from both valves in the Anteater, towards the opening of the superior cava.

Of the salivary glands of the Anteater the submaxillary pair were those most developed and modified to supply the unusual quantity of adhesive saliva with which the long, slender and moveable tongue is bedewed: these glands extended over the fore part of the neck and chest, and were upwards of 16 inches in length and 2 inches in thickness.

The parotid gland retained its ordinary proportional size and relative position. The sublingual gland was represented by an extensively diffused thin layer of follicles, opening by many small pores upon the inner surface of the mouth. The labial glands were small, as were also the tonsils.

The muscles of the jaws were described.

The cavity of the mouth is susceptible of great dilatation, and presents the peculiarity of being extended far back beyond the root of









W. J. P., lith.

M & N. Hanhart, Imp.

TACHYPHONUS XANTHOPYGIUS, ♀. *Sclater.*



the tongue. The author accordingly defines, in his description, a postlingual and a prelingual part of the mouth. A hard longitudinal cartilaginous ridge projects downwards into the mouth from the inner side of each ramus of the jaw. The author conceives that the termites may be crushed by the action or pressure of the tongue against those callous ridges, which seem to occupy the place of teeth. A fossa descends between the epihyals, which the author called the epihyal pouch. The hyoid-arch has no immediate connection with the tongue, but is situated far behind the tongue, preserving its usual relations with the larynx.

The thyroid is ossified; the cricoid and arytenoids are cartilaginous.

The total length of the nasal passages is 22 inches, the last 8 inches being muscular and membranous, and extended backwards beyond the base of the skull, where the canals terminate in most other mammals.

The antero-posterior diameter of the base of the tongue was  $3\frac{1}{2}$  inches; it rapidly diminishes to a cylindrical form, with a diameter of 8 lines, and is thus continued for 18 inches, gradually decreasing to its obtuse apex, which is 1 line in breadth. This long cylindrical tongue is composed almost wholly of muscular fibres, and covered by a smooth epithelium; the only papillæ are two fossulate ones (*papillæ vallatæ*) on the dorsum, about 2 inches in advance of the frenum; the muscles of the tongue and their action were minutely described; also those of the larynx and pharynx.

The brain, which weighed only 3 oz., presented a narrow, elongated, depressed form, the back part of the cerebral hemispheres resting against, but not overlapping, the cerebellum. The hemispheres showed a few symmetrical convolutions; they were united by a large corpus callosum: the olfactory lobes are very large and hollow. Many plexuses and other peculiarities of the vascular system were noticed.

This memoir will appear, illustrated with numerous figures, in the Transactions of the Society.

#### 4. DESCRIPTIONS OF TWO NEW TANAGERS IN THE BRITISH MUSEUM. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXVIII. and LXIX.)

1. CHLOROSPINGUS MELANOTIS, Sclater (Pl. LXVIII.). *C. supra nigro-plumbeus, dorso imo brunnescentiore: alis caudaque brunnescentibus, illis penitus nigricantibus: loris et capitis lateribus cum regione auriculari nigris: subtus pallide ochraceo-rufus, mento summo nigricante; ventre medio dilutiore: rostro nigro: pedibus pallidis.*

Long. tota 5·25 poll., alæ 2·5, caudæ 2·25.

*Hab.* in Nova Grenada. Mus. Brit.

*Obs.* Species rostro et forma *Chlorospingo atropileo* similis, sed ab hoc et aliis hujus generis colore corporis inferi *ochraceo-rufo* facile distinguenda.

This little species, of which there are two examples in the National Collection, both apparently Bogota skins, differs from all its congeners in the colouring of the lower surface of the body, which is of a pale reddish buff, growing much whiter in the middle of the belly. Above the plumage is lead-coloured, with a greenish tinge superinduced towards the lower part of the back. The wings and tail are brown, with slight greenish edgings; the ear-coverts and whole side of the face are black. In the second specimen, apparently not so mature, there is a light-coloured spot on the front, just above the nostrils. The bill of this species agrees with that of *Chlorospingus atropileus*, (Lafr.), in size, but is rather straighter in form, as in *C. verticalis*, (Lafr.).

2. *TACHYPHONUS XANTHOPYGIUS*, Sclater. (Pl. LXIX.). *T. nigro-cinereus, subtus dilutior: axillis et tectricibus subalaribus albis: dorso postico citreo-flavo: rostro et pedibus nigris.*

Long. tota 5·8, alæ 3·1, caudæ 2·5.

*Hab.* in Nov. Grenada. Mus. Brit.

This bird seems intermediate between *Tachyphonus* and *Pyranga*, and might be placed in either of these groups. The white axillary feathers point to the former genus, the yellow rump to the latter. The bill, however, is more compressed than is usual in *Pyranga*, and agrees nearly with that of *Tachyphonus coronatus*, (Vieill.). The upper plumage has a mottled appearance, caused by the feathers being centrally black and broadly edged with cinereous. In the middle of the back is a perceptibly greenish gloss. The only examples I have seen of this as of the former species are in the British Museum, where Mr. G. R. Gray's uniform kindness affords me every opportunity of studying the collection under his care.

5. NOTES ON THE HABITS OF SOME INDIAN BIRDS.—PART V.  
BY LIEUT. BURGESS.

Family STURNIDÆ.

Subfamily STURNINÆ.

Genus PASTOR.

PASTOR ROSEUS, Temm. THE ROSE-COLOURED PASTOR.

This bird visits the Deccan in immense flocks to feed on the grain called *jowaree* which begins to ripen in the month of November, and is cut about March. The arrival of these birds is uncertain, in some years being earlier, in others later. On referring to notes made at the time, I find that in the year 1848 the first Rose-coloured Pastor was seen on the 28th of November, and the last on the 5th of April 1849. The first which I observed in the autumn of that year, was on the 16th of November. In the year 1850, I saw a large flock as early as the 24th of August; I transcribe the note: "August 24,

1850. Saw a large flock of the Rose-coloured Starlings with their broods to-day feeding in an open field, evidently on insects, as they were constantly in chase of them, flying." I never saw this bird so early as it was that year, and they arrived long before the jowaree was ripe. This grain when ripe, and before it is ripe, is their staple food. After it is cut and housed, I have observed them busily feeding on the flowers of the leafless Caper, a shrub very common in many parts of the Deccan, especially on the banks of the larger rivers. I have made many, but hitherto ineffectual attempts, to ascertain where these birds breed; that they do breed somewhere on the continent of India, there can be no doubt, as the young birds which I saw on the 24th of August 1850, were in brown plumage, and appeared as if they had not long left the nest. I was informed by a clever and well-informed Mharatta, who seemed to have considerable knowledge of the habits of various birds, that the Rose Starling retires to the Ghauts to breed. On visiting those mountains in 1849, I made many inquiries of the hill people, but was unsuccessful in getting any information from them. However, I think it very probable that these birds, after leaving the Deccan in March and April, break up into pairs, and retire to the ravines and forests in the Ghauts to breed. Like the common Starling, these birds congregate in immense flocks before going to roost, and it is a curious sight to watch their movements as they fly in clouds over their night haunts. Towards sunset they begin to collect from the grain-fields, and fly off in detached parties, at first containing only a few individuals. These soon amalgamate, and form large masses, which, as they dash, now upwards and now downwards, now in circles, at one time almost disappear, at another look like a rapidly passing cloud. As soon as the sun is down, they retire to the babool brakes that clothe the banks of the streams and rivers. These birds collect in such numbers on the small bushes and trees on the outskirts of the grain-fields, as to make them appear as if loaded with rich, rosy blossoms, and to make one wonder that the tree is not broken down with their weight.

#### Family FRINGILLIDÆ.

#### Subfamily COCCOTHAUSTINÆ, Swain.

#### Genus EUPLECTES, Swain.

#### EUPLECTES (BENGALENSIS?).

I forwarded a paper on the nidification, habits, &c. of this little bird, together with specimens of the skins, nests and eggs, in the year 1852. The paper was read, and the specimens exhibited at the meeting of the Society on July 27th, 1852. Repetition therefore is needless.

Genus *AMADINA*, Swain.Subgenus *SPERMESTES*.*SPERMESTES CHEET*, Sykes.

This is a very common little bird, living in flocks, to be found in hedges and low bushes, and is, I believe, partial to those of the leafless Caper. It breeds, I conclude, twice in the year, as I have found its nest in the months of November and March. The nest in two instances was formed of the flower-stems of the silk-grass, which is abundant in the beds of streams; it was lined with feathers and the silky seeds of the grass; its shape was that of a hollow ball. The largest number of eggs I have found was six, but I see that Col. Sykes found as many as ten. The eggs are very small and of a pure white colour, rather more than  $\frac{6}{10}$ ths of an inch long by  $\frac{5}{10}$ ths of an inch wide. These little birds are often to be seen on the ground picking up grass-seeds, and so close together that several may be killed at a shot: they do not take long flights, but merely from bush to bush. I saw numbers of them in the leafless Caper on the banks of the river Bheema.

Subfamily *FRINGILLINÆ*.Genus *PYRGITA*, Swain.*PYRGITA DOMESTICA*. HOUSE-SPARROW.

Common enough in India. It breeds during the monsoon. I saw them building in the month of August, and its habits, mode of building its nest, &c., are similar to those of the Sparrow at home.

*PYRGITA FLAVICOLLIS*, Frankl. YELLOW-NECKED SPARROW.

Of the time of breeding or nesting habits I know nothing, but Dr. Jerdon in his Catalogue says, "It is said to breed in holes of trees. The egg is of a greenish-white, much streaked and blotched with purple-brown: I obtained one from the body of a female."

Genus *EMBERIZA*.*EMBERIZA MELANOCEPHALA*, Jerdon.

This handsome Bunting is very common in the Deccan when the grain crops are becoming ripe. The Patel or headman of the town of Jintee, near the river Bheema in the Deccan, assured me that these birds, or some of them, remain to breed in the thick babool copses that clothe the banks of the river near that town, but I did not obtain the nests or eggs. I believe that the greater part migrate much about the same time as the Rose-coloured Pastor.

## Subfamily ALAUDINÆ.

## Genus ALAUDA.

## ALAUDA DEVA, Sykes.

I have some eggs which I believe to be those of this lark, though on account of the similarity of the two or three species that inhabit the Deccan it is very difficult to state this positively. I obtained the eggs on the 11th of September; the nest was composed of a few stems of grass collected together, and forming a very slight receptacle for the eggs. Birds of this species breed twice during the year; I have obtained their eggs during the months of May, September, and October. They lay but two eggs, of a pale mottled brown colour, with a band of the same round the larger end; they are rather more than  $\frac{7}{10}$ ths of an inch long by nearly  $\frac{6}{10}$ ths of an inch wide.

6. CATALOGUS MOLLUSCORUM PNEUMONATORUM INSULARUM MADERENSIIUM: OR A LIST OF ALL THE LAND AND FRESH-WATER SHELLS, RECENT AND FOSSIL, OF THE MADEIRAN ISLANDS: ARRANGED IN GROUPS ACCORDING TO THEIR NATURAL AFFINITIES; WITH DIAGNOSES OF THE GROUPS, AND OF THE NEW OR HITHERTO IMPERFECTLY DEFINED SPECIES. BY R. T. LOWE, M.A., CORRESPONDING MEMBER OF THE ZOOLOGICAL SOCIETY, ETC.

The list of Madeiran Land Mollusks has been considerably extended of late years, in some measure by my own researches, but incomparably more by the discoveries of Mr. Wollaston and Mr. T. S. Leacock. To the penetrating eye and accurate discriminative powers of the first-named able and accomplished naturalist are due not less than thirty species, which had hitherto escaped notice; belonging principally to the genus *Pupa*, yet comprising several fine and some most curious new forms of *Helix*: whilst his rich collections of *Achatina* in Porto Santo have enabled me to establish at least twice the number of species previously found there, and to fix, on more substantial grounds, the diagnoses of the rest. Mr. Leacock also has discovered several new species, and by his exact observations helped materially in many cases to confirm or elucidate the characters assigned to those already noticed.

These additions being so considerable, it seemed better, instead of intercalating them in a late republication of some former papers on the Fauna and Flora of Madeira\*, to furnish in a distinct form a fresh and complete list of all the species, recent and fossil: giving the diagnoses of those only which remain imperfectly described, or which have been discovered since 1830; and reserving fuller details

\* Primitiæ et Novitiæ Faunæ et Floræ Maderæ et Portûs Sancti, &c. Cum Appendice. Van Voorst, London, 1851.

for a larger work on the whole subject. Such a catalogue, containing some account of every ascertained native species, will be acceptable, it is believed, at once to the geologist and heliologist.

The groups into which the species are distributed were chiefly settled previously to my acquaintance with the very useful work of Dr. Albers, entitled 'Die Heliceen, nach Natürlicher Verwandtschaft,' &c.; Berlin, 1850: but I gladly embrace this occasion to acknowledge my obligations in various particulars to that interesting and important work, and to record my recollection of much pleasant intercourse and friendly communication in Madeira, during the winter of 1850-51, with its able author.

Lea Rectory, June 12th, 1854.

## MOLLUSCA GASTEROPODA PNEUMONATA.

### Division A. TERRESTRES.

#### Family I. LIMACIDÆ.

##### Genus 1. ARION, FÉR.

1. *A. ATER* (L.) var. *limbata*. *Limax ater* var.  $\epsilon$ , Müll. Verm. i. p. 3. *A. empiricorum* var.  $\iota$ , Fér. Tabl. p. 17. *A. empiricorum* varr.  $\alpha$  et  $\delta$ , Prim. Faunæ et Fl. Mad. p. 39, nec Fér.  
*Hab.* in Madera.

##### Genus 2. LIMAX, (L.) FÉR.

2. *L. GAGATES*, Drap. var.  $\alpha$ . *nigra*, Fér. Tabl. p. 22. *L. gagates*, Drap. p. 122. t. 9. f. 1, 2. *L. antiquorum* var.  $\alpha$ , Prim. p. 39, nec Fér.

*Hab.* in Madera.

3. *L. CINEREUS*, Müll. (*maximus*, L.) var. *pardalis*. *L. antiquorum* var.  $\epsilon$ , Fér. Tabl. p. 20.

*Hab.* in Madera.

4. *L. FLAVUS*, L. var. *virescens*. *L. variegatus*, Drap. p. 127. *L. variegatus*  $\beta$ , Fér. Tabl. p. 21; Prim. p. 39.

*Obs.* *L. antiquorum*  $\eta$ , Prim. p. 39, hic potius quam (ut in Prim. ed. 2. (1851) App. p. vi) ad *L. antiquorum* var.  $\eta$ , Fér. (*L. cinereus*  $\beta$ , Drap.) referas.

*Hab.* in Madera.

##### 5. *L. AGRESTIS*, L.

Var. *punctata*. *L. agrestis*  $\beta$ , Müll. p. 9; Drap. 126. t. 9. f. 9. *L. agrestis*  $\epsilon$ , Fér. p. 21; Nilss. p. 9; Prim. p. 39.

Var. *maculata*. *L. reticulatus*, Müll. p. 10. *L. agrestis*  $\delta$ , Nilss. p. 9. *L. agrestis*  $\eta$ , Fér. p. 22; Prim. p. 39.

*Hab.* in Madera.

## Family II. TESTACELLIDÆ.

## Genus 1. TESTACELLA, Cuv.

6. T. HALIOTIDEA, Drap. 121. t. 8. f. 43-48, et t. 9. f. 12-14. *Testacellus haliotideus*, Fér. p. 26; Sow. Gen. f. 1-6; Gray, Man. p. 124. t. 3. f. 19, 20; Prim. p. 40.

*Hab.* in Madera, rariss.

*Obs.* Animal ochraceo-flavum.

7. T. MAUGEI, Fér. Tabl. pp. 26, 27; Sow. Gen. f. 7-10; Gray, Man. p. 5. t. 3. f. 18; Prim. p. 40.

*Hab.* in Madera, parum vulg.

*Obs.* Animal olivaceo-fuscum, ora pedis aurantio-carnea.

## Family III. HELICIDÆ.

## Genus 1. VITRINA, Drap.

8. V. TENERIFFÆ, Quoy et Gaim. *Testa haliotidiformis valde depressa squamato-planata transverse oblonga tenuissima membranacea succineo-virente nitida lævigata, saepe remote et obsolete lineis impressis exoletis raris spiraliter sulcato-pectinata, striis transversis accretionis vel subtilissime (oculo armato) quasi crenulato-fimbriatis v. ciliato-striolulatis; anfractibus duobus planatis, ultimo vastissimo, sutura obsoleta, spira minima laterali planata (apice depressa) intus incompleta aperta, columella (revera nulla) laxe spirali aperturaque auriformi faciem inferiorem adæquante ad apicem usque patulis, peristomate infra et intus sæpissime membranaceo-limbato.*

*Animal pallide cinereum, corpore immaculato, pedis limbo intus immarginato lineis pallidis transversis tessellato.*

Testæ diam. maj. 15-17, min. 11-13, alt.  $5\frac{1}{2}$ - $7\frac{1}{2}$ , axis 3- $3\frac{1}{2}$  mill. Anfr. 2- $2\frac{1}{2}$ .

*V. Teneriffæ*, Quoy et Gaim. (Dumont, Voyage de l'Astrolabe) Zool. vol. ii. p. 142, Atlas Moll. t. 13. f. 4-7 (animal), 8, 9 (shell), 9' (tooth of animal). *V. Lamarckii*, Webb, Syn. Moll. Canar. p. 7; ejusd. Hist. Canar. tom. ii. part. ii. p. 53. no. 37; Pf. Mon. Hel. ii. 506. *V. Ruivensis* (Couth. MSS. Gould) Pf. ii. 507. *V. Behnii*, Lowe, Syn. Diagn. p. 3. no. 1; Prim. (ed. 1851) App. pp. vii. xiii. *V. Lamarckii* status, Prim. (ed. 1830) pp. 40, 68. t. 5. f. 1 b.

*Hab.* in Madera, vulg.

Speciem icone Primitiarum supra citata jam plures annos indicatam primus mecum in Madera distinctam agnovit cl. Behn, Prof. Kielensis. Nomen vero ejus in honorem jam pridem datum, sed nuperius publice factum, cedit priori cl. Quoy et Gaim.: qui rectissime pro specie a *V. Lamarckii*, Fér. distincta (ut nuperrime compertum habeo) primi ediderunt. Striolæ spirales quodammodo *Haliotidis tuberculatæ* L. vel *Sigareti haliotoidei* Lam. omnino vero obsoletissimæ.

9. V. MEDIA. *T. parvula subhaliotidiformis v. sigaretiformis depressa subplanata transverse oblongiuscula tenuis pellucido-succinea subvirescens pallida nitidissima lævissima; anfr. tribus convexiusculis, ultimo subplanato antrorsum oblique ampliato v. subproducto, sutura distinctiuscula subimpressa, spira parva subcentrali convexiuscula (apice subprominula) intus completa; apertura sub-lunato-auriformi antice oblique deorsum subproducto.*

*Animal (semel observatum) nigricans, corpore fusco, nigro maculato, postice colloque late roseo v. roseo-castaneo; pede subtus pallido, limbo fuscescente unicolore (nec tessellato) linea nigra interrupta intus marginato.*

Diam. maj. 5-10 v.  $11\frac{1}{2}$ , min.  $3\frac{3}{4}$ - $7\frac{1}{2}$  v. 8, alt.  $2\frac{1}{2}$ - $4\frac{1}{2}$  v. 5, axis 1-2 v.  $2\frac{1}{4}$  mill. Anfr.  $2\frac{1}{2}$ -3.

*V. marcida*, (Gould) Pf. ii. 507?

*Hab.* in Madera (Rib. Frio) rarior, et in Portu St<sup>o</sup>.

*Obs.* Inter *V. Teneriffæ* et *V. Lamarckii* media, huic propior.

10. V. LAMARCKII (Fér.). *T. helicoidea transverse subgloboso-depressa v. subinflato-ventricosa bullata tenuis pellucido-succinea aurea subvirescens nitidissima lævigata, raro obsoletissime spiraliter sulcato-pectinata et subrugulosa, striis accretionis subtilissime crenulato-fimbriolatis; anfr. 3-4 convexiusculis, ultimo subventricoso, sutura distincta impressa, spira subcentrali convexiuscula (apice prominula subæserta) intus completa; apertura transverse lunato-ovali subrotundata, peristomate æqualiter arcuato.*

*Animal nigricans, corpore fusco, nigro maculato; pede subtus pallido, limbo intus immarginato fuscescente unicolore (nec tessellato).*

Diam. maj.  $11\frac{1}{2}$ - $14\frac{1}{2}$ , min. 8- $11\frac{1}{2}$ , alt. 6- $7\frac{1}{2}$ , axis  $3\frac{1}{2}$ - $4\frac{1}{2}$  mill. Anfr. 3- $3\frac{1}{2}$ .

*Helicolimax Lamarckii*, Fér. Hist. t. 9. f. 9; Zool. Journ. iv. 338-344, tab. suppl. 38. f. 1-5.

*Vitrina Lamarckii*, Prim. 40. t. 5. f. 1 a.

*V. nitida*, (Gould) Pf. ii. 507?

*Hab.* in Madera vulgatiss.

*Obs.* 1. *V. Lamarckii*, Webb et Berth. necnon cl. Pf. ii. 506, ex descriptionibus certissime ad *V. Teneriffæ*, Quoy et Gaim. referuntur. Synonymia ambas species amplectitur.

*Obs.* 2. Vitrinæ tres Maderenses, sc. *V. Teneriffæ*, *V. media*, et *V. Lamarckii*, species tres Europæas, sc. *V. elongatam*, *V. diaphanam*, et *V. pellucidam*, Drap. miro perquam analogiæ ordine repetunt.

## Genus 2. HELIX, L.

### § 1. LEPTAXIS.

(Typ. *H. erubescens*, Lowe.)

*Testæ imperforatæ (jun. perforatæ) subconoideo-globosæ, statu saltem juniore subcarinatæ subtenuis glabræ lævigatæ leviter ruguloso-malleatæ late coloratæ fasciatæ. Anfr. 4-5, ultimo leviter cari-*



nato, undique convexo-rotundato, antice deflexo carina evanescente. Apertura lunato-rotundata. Peristoma fere rectum simplex acutum v. obtusiusculum, intus sublabiatis, marginibus æqualiter omnino rotundato-arcuatis, labris remotis disjunctis. Axis (sæpe roseus) tenuis verticalis intrans, labro arcuatim junctus.

11. *H. MEMBRANACEA*, Syn. Diagn. p. 3. no. 2. *T. imperf. depresso-globosa subcarinata tenuissima membranacea flexilis undatim ruguloso-malleata nitidiuscula roseo-flavescentes rarius virescens pellucida, opaco-lacteo ad carinam suturamque præsertim sed et alicubi coagulato-liturata, fascia carinali unica angusta opaco-albida; spira convexo-depressa, apice obtusa; anfr. 4, cito crescentibus convexiusculis, ult. antice vix descendente, sutura distincta; apert. transverse lunato-ovali, labris disjunctis, lamina ventrali tenuissima v. nulla; perist. columellaque simplicibus acutis.*

Diam. maj. 10–12, min.  $8\frac{1}{2}$ – $10\frac{1}{2}$ , alt. 7–9, axis 4–6 mill. Anfr. 4– $4\frac{1}{2}$ .

*Vitrina marcida*, (Gould) Pf. ii. 507?

*Hab.* in Madera vulg.

*Obs.* 1. Animal (vera *Helix*, nec *Vitrina*) pede vix intra testam retractili.

*Obs.* 2. Cum *H. furva* juniore, cui simillima, haud confundenda. Differt testa nitida læviore, semper imperforata, membranacea tenuiore flexili (potius quam fragili), pallidiore pellucidior lacteo coagulatum liturata efasciata, spiræ anfr. convexioribus apice obtusior, carina obsoletiore nec fusco-fasciata v. tessellato-maculata.

12. *H. FURVA*, Prim. p. 40. t. 5. f. 2; Küst. M. et C. p. 231. no. 202. t. 29. f. 20–22; Pf. i. 29.

*Hab.* in sylvis Maderæ, rarior.

*Obs.* Neglectis prout levioribus varr.  $\alpha$ . et  $\beta$ , Prim. l. c., dignoscuntur varr. duæ:  $\alpha$ . major, fusco tessellatim unifasciata (Prim. l. c. t. 5. f. 2; Küst. M. et C. l. c.); et  $\beta$ . minor tenuior carina obsoletiore.

13. *H. ERUBESCENS*, Prim. pp. 40, 41; Küst. M. et C. p. 38. no. 422; Pf. 1. 270.

*Hab.* in sylvis Maderæ, et in Ins. Desertis.

*Obs.* 1. Distinguuntur varr. 3 Maderenses ( $\alpha$ ,  $\beta$ ,  $\gamma$ ) minores v. majores, fasciatae v. efasciatae, spira plus minus exserta, cum subvar. rhodostomatibus v. leucostomatibus; adjecta var.  $\delta$ , in Ins. Des. Australi degente, maxima inflatiuscula tenuiore læte colorata roseo-fulva, subquinquefasciata (*H. hyæna*, Syn. Diagn. p. 3. no. 3).

*Obs.* 2. Icon. Prim. l. c. t. 5. f. 3. ad Subv. 1, Küsteri l. c. t. 71. f. 5, 6. ad Subv. 2, var.  $\alpha$ . referendæ.

*Obs.* 3. *H. advena*, Webb, Syn. Moll. Canar. App. p. 21. no. 1. Exempla orig. typ. cl. Auct. in Mus. Brit. repostata, ad *H. erubescens*, var.  $\gamma$ , nostram certissime pertinentia, ob characterem peculiarem procul omni dubio ex Ins. Desertis Septentr. v. Majore Media, nec (quod revera ipse cl. Auctor minime asseveravit) ex Ins.

Canariensibus proveniunt. *H. erubescens* ideoque Maderæ Insulisque Deserti (in Portu S<sup>to</sup> omnino deest) species adhuc omnino propria.

§ 2. KATOSTOMA.

(Typ. *H. phlebophora*, Lowe.)

*T. imperf. (jun. perf.) conoideo-globosæ, statu saltem jun. subcarinata, subsolidiusculæ granulata plicatæ v. striatæ, læte coloratæ fasciatæ. Anfr. 5, ult. angulato s. leviter carinato subdepresso, antice valde et subito deflexo, penult. antice gibboso. Apert. perobliqua prono-deflexa coarctato-rotundata v. ovalis plerumque circinata. Perist. simpliciusculum rectum acutum v. obtusiusculum subsolutum, labris conniventibus callo sæpe relevato junctis v. continuis, basali axin versus incrassato dilatato-planato. Axis (roseus) latens obsoletus.*

14. *H. PHLEBOPHORA*, Prim. p. 41; (*H. nivosa*, Sow., Fér.; *H. exalbida*, Wood; *H. simia*, Fér., sunt status albicantes v. decolorati).

*Obs.* Varr.  $\alpha$ . *chlorata* (Icon. Prim. l. c. t. 5. f. 6);  $\beta$ . *planata*, carinata;  $\gamma$ . *decolorata* (*H. nivosa*, Sow. Zool. Journ. i. p. 56. t. 3. f. 3; *H. phlebophora*, (Lowe) Küst. M. et C. t. 7. f. 7, 8);  $\delta$ . *scrobiculata* (*H. craticulata*, Syn. Diagn. p. 4. no. 6).

*Hab.* (in Madera nunquam) in Portu S<sup>to</sup> insulisque parvulis proxime circumjacentibus, nec alibi:  $\alpha$ . vulgatiss.:  $\beta$ . rariss.:  $\gamma$ . (semifoss. et recens) rarior:  $\delta$ . vulg. in Ins. Ferro juxta Portum S<sup>m</sup>, nec alibi.

15. *H. PSAMMOPHORA*, Syn. Diagn. p. 4. no. 5. *T. imperf. subpyramidato-globulosa ecarinata solidiuscula subobsolete inæquistriata grossiuscule areolato-granulata, striolis tenuissimis obsoletis spiralibus obliquas inæquales (accretionis) rudiusculas subtilissime decussantibus; spira exserta pyramidata producta, apice acutiuscula lævigata, sutura impressa strictiuscula; anfr. 5½ convexis, penult. antice gibboso, ult. antice longe rapideque descendente; apert. constricta coarctato-rotundata subcirculari; perist. continuo simplici acuto, axin versus dilatato-plano, labris conniventibus continuis callo relevato junctis.*

Diam. maj. 12–13, min. 11–12, alt. 12–10 mill. Anfr. 5–5½.

*Hab.* in Portu S<sup>to</sup> semifoss. in arena calcarea, nec recens; vulg. T. V. Wollaston.

*Obs.* *H. phlebophoræ*  $\gamma$ , forma habituque proxima. Sculptura insigniter differt.

§ 3. MACULARIA, Alb. p. 80.

(Typ. *H. niciensis*, Fér.)

*T. imperf. v. obtecte perf. subgloboso-depressæ sæpissime subcarinata subtenuiusculæ læte coloratæ interruptim s. maculatim fasciatæ. Anfr. 4½–5 convexiusculi, ult. depresso plerumque angulato s. le-*

*viter carinato, antice deflexo. Apert. obliqua transverse lunato-ovalis. Perist. acutum v. obtusiusculum labiatum, labris remotis disjunctis, basali axin versus oblique adscendente parum strictiusculo incrassato dilatato-reflexo v. expanso, raro colorato. Axis latens obsoletus.*

*Obs. 1.* Species Porto-Sanctano-Maderenses paullum aberrantes; prima (*H. chrysomela*) ad Archelicem Alb. tendente. *H. fluctuosa* eodem ad *H. chrysomelam* gradu stare videtur quo *H. Paciniana*, Phil. (*vieta*, Rossm.) ad *H. muralem*, Müll.

*Obs. 2.* Sectio Macularia per *H. muralem*, Müll. subundulato-plicatam arete Katostomatibus (*H. phlebophoræ* imprimis) adjuncta; ut per *H. serpentinam*, Fér. et *chrysomelam*, Pf. ad Archelices tendit.

16. *H. CHRYSOMELA*, Pf. *T. imperf. globuloso-depressa (Arche-licoidea) obtuse carinata v. angulata nitidiuscula distincte ruguloso-malleata; spira convexiuscula, apice obtusa, sutura distinctiuscula parum impressa; anfr. 5 planiusculis, ult. antice parum deflexo, subtus subplanato, carina exacte media antice evanescente; apert. transverse ovato-lunata depressa; perist. recto incrassato obtuso, axin versus strictiusculo calloso-dilatato convexo; labris remotis parallelis callo expanso subtilissime arenulato junctis; perist. intus calloque parietali coloratis (aurantio-fulvis v. ochraceo-gilvis, raro citrinis v. cerinis).*

Diam. maj. 9–10, min. 7–9, alt.  $5\frac{1}{2}$ –7, axis 4–5 mill. Anfr. 5.

*H. chrysomela*, Pf. i. 281 (habit. “Brasilia” erronea); Ib. p. 447; Küst. M. et C. p. 241. no. 709. t. 113. f. 6–8.

*H. ænostoma*, Lowe MSS. olim.

*Hab.* in arena (recentiore?) calcarea Portûs S<sup>ti</sup> semifossilis, nec recens, ubi ipse A.D. 1828 abundanter inveni.

*Obs.* Testæ optime conservatæ, sed præter faucem omnino decoratæ cretaceæ sc. candidæ subpellucido-flavescentes, lituris opacolacteis coagulato-rugulosæ: quibusdam fasciis angustis fuscis subinterruptis evanidis v. indistinctis, duabus supra, unica infra carinam, vittatis. Species elegans, Archelicis Alb. accedens, *H. syriacæ* (Ehr.) Pf. i. 131 (*H. onychina*, Rossm.) etiam affinis.

17. *H. FLUCTUOSA*, Syn. Diagn. p. 3. no. 4. *T. imperf. depresso-trochoidea acute carinata obsolete ruguloso-malleata levigata; spira plerumque depressa, apice obtusa, sutura obsoletiuscula; anfract. 5½ planatis, ult. antice parum deflexo, subtus subplanato, carina acuta antice obsoletiore; apert. transverse ovato-lunata depressa; perist. recto incrassato obtuso, axin versus strictiusculo calloso-dilatato planato, labris remotis parallelis.*

Diam. maj.  $9\frac{1}{2}$ – $15\frac{1}{2}$ , min.  $8\frac{1}{2}$ –14, alt.  $5\frac{1}{2}$ –10, axis 4–6 mill. Anfr. 5– $5\frac{1}{2}$ .

*Hab.* omnino fossilis in arena (vetustiore?) calcarea Portûs S<sup>ti</sup>, ubi A.D. 1828 ipse perparce legi.—Vulg. T. V. Wollaston, 1849.

*Obs.* Variat forma magis globosa v. helicoidea, carina obsoletiore, spira exsertiore; in *H. chrysomelam* transiens. Characteres vero

superstites (testis omnino fossilibus decoloratis etiam decorticatis), necnon magnitudo, sicut etiam analogia *H. Pacinianæ* Phil. quoad *H. muralem* Müll., pro distincta specie habendam suadent.

#### § 4. CRYPTAXIS.

(Typ. *H. undata*, Lowe.)

*T. imperf. v. obtecte perf. (jun. perf.) depresso-globosæ, statu saltem jun. subcarinata l. angulata, subtenuiusculæ glabræ ruguloso-malleatæ v. undulato-corrugatæ granulata fasciatæ v. subconcolores. Anfr. 5, ult. depresso vix subangulato antice deflexo. Apert. lunato-ovalis. Perist. simplex obtusum vix sublabiatum, labris remotis disjunctis, basali strictiusculo axin versus oblique adscendente et (sicut in Katostomatibus) incrassato dilatato-planato ecolorato. Axis latens obsoletus lamina planata obductus.*

18. *H. UNDATA*, Prim. p. 41. t. 5. f. 5; Fér. i. 165. t. 46 A. f. 1; Küst. M. et C. p. 154. no. 593. t. 93. f. 3, 4; Pf. i. 191.

*H. corrugata*, Sol. MSS. nec aliorum. *H. scabra*, Wood, Suppl. t. 8. f. 62, nec alior. *H. Groviana*, Fér. sec. Pf.

*Hab.* in Madera solum! vulgatiss.: nec alibi.

Species characteribus sat constans. Variat tamen valde magnitudine, necnon spira plus minus depressa. Testæ jun. v. pulli tenues fragillimæ umbilicatæ tenuiter fere striatæ, fascia carinali obscura mox evanida.

19. *H. VULCANIA*, Syn. Diagn. p. 4. no. 7. *T. imperf. subturninato-depressa transverse subdiscoidea vix angulato-subcarinata solidiuscula olivaceo-fulva virescens fusco supra bifasciata oblique crebristriata, striis æquis distinctis subundulatis; spira depressiuscula, apice obtusissimo lævigato sæpe carioso, sutura distincta; anfr. 5½ planiusculis, ult. depressiusculo obtusissime subangulato, subtus planiusculo, antice longe declivi; apert. transverse lunato-ovalis; perist. patulo subreflexo incrassato labiato, intus costa annulari marginato purpurascente, axin versus dilatato, labris conniventibus subapproximatis lamina tenui junctis.*

Diam. maj. 21–28, min. 17–23, alt. 13–17, axis 9½–12. mill. Anfr. 5½.

*Hab.* in Deserta majore et minore, rarior.

20. *H. LEONINA*, Syn. Diagn. p. 4. no. 8. *T. imperf. depresso-globosa orbiculata subinflata ecarinata tenuis fulvo-flavescens fusco supra bifasciata obsolete undulato-striata; spira convexiuscula apice obtuso lævigato, sutura distincta subimpressa; anfr. 6 convexiusculis, ult. inflato subtus convexo antice longe declivi; apert. lunato-rotundata; perist. recto simplici acuto purpurascente deorsum subpatulo vix reflexiusculo obtuso, axin versus dilatato, labris subremotis lamina tenui junctis.*

Diam. maj. 25-29, min. 22-25, alt. 20-22, axis 13-14 mill.  
Anfr. 6.

*Hab.* in Deserta Australi, rarior.

*Var.* forsan præcedentis dies docebit.

§ 5. *CAMPYLÆA*, (Beck) Alb. p. 81.

(Typ. *H. hispana*, L.)

*T. late umbilicata orbiculato-depressa subplanospira fusco sæpissime vittata, jun. sæpe velutina. Anfr. 5-6, ult. magno depresso antice valde deflexo. Apert. perobliqua rotundata, labris approximatis callo junctis interdum continuis. Perist. labiato-reflexum umbilicum raro subobtegens.*

21. *H. LOWEI*, Fér. (Bullet. de Zoolog. 1835, p. 89). *T. aperte umbilicata orbiculata e turbinato-globosa fere discoidea solidiuscula lineis duabus fulvis bicingulata oblique crebristriata lævigata, jun. (hispido-)granulata; spira plus minus elevata aliquando subplanato-depressa, apice lævi punctulato obtusissimo, sutura distincta; anfr. 5½ convexiusculis, ult. aliquando supra planato obtuse angulato-carinato antice declivi; umbil. mediocri pervio (spirali) aperto; apert. lunato-rotundata subcirculari; perist. reflexo-labiato expanso axin versus incrassato, labris subapproximatis callo junctis.*

Diam. maj. 45-50, min. 39-45, alt. 29-40 mill. Anfr. 5-5½.

*Varr.* adsunt duæ:  $\alpha$ , subglobosa lævigata spira altiore (*H. Lowei*, Fér. l. c.; Küst. M. et C. t. 156. f. 1, 2; *H. Porto-sanctana*  $\beta$ , *gigantea*, Prim. 46. t. 5. f. 16; Pf. i. 368),—et  $\beta$ , subdiscoidea striata et granulato-punctata subcarinata, spira depressa, anfr. supra planatis.

*Hab.* semifoss. ( $\alpha$ . aliquando fere quasi recens) in Portu S<sup>to</sup>.

22. *H. PORTO-SANCTANA*, Sow.

Tres adsunt varr.:  $\alpha$ , fulva, apert. purpurascente, umbil. subobtecto (*H. Porto-sanctana*  $\alpha$ , Prim. 46. t. 5. f. 15; Fér. i. p. 42. t. 67. f. 9, 10; Sow. in Zool. Journ. i. 57. t. 3. f. 5 sinistra; Küst. M. et C. p. 233. no. 696. t. 111. f. 17-19; Pf. i. 367):— $\beta$ , albida, apert. pallide carnea, umbil. submajore magis aperto (Sow. l. c. f. 5 media cum animali, et 5 dextra):— $\gamma$ , virescenti-albida efasciata.

*Hab.* in Portu S<sup>to</sup> ( $\alpha$ . vulgatissima,  $\beta$ . rarior,  $\gamma$ . rariss.).

§ 6. *XEROPHILA*, (Held) Alb. 74, pars.

*Theba*, Beck, pars.

(Typ. *H. caperata*, Mont.)

*T. umbilicata orbiculata globoso-depressa subdiscoidea raro subturbinata, statu saltem jun. angulato-carinata calcarea festiva s.*

*læte et distincte colorato-fasciatæ nitidiusculæ plerumque glabræ sæpe argute striatæ, apice lævi corneo. Anfr. 5-6 leniter crescentes, ult. antice non aut vix deflexo. Apert. rotundata, labris remotis. Perist. rectum acutum intus plerumque annulato-labiatum aliquando simplex.*

23. *H. ARMILLATA*, Syn. Diagn. 4. no. 9; Küst. M. et C. t. 155. f. 60-63. *T. aperte umbilicata orbiculata subtus convexa subgloboso-depressa subcarinata cinerea v. pallide ochracea albo fuscoque tessellatim fasciata et maculata arcte nitideque capillaceo-striata, striis creberrimis æquis transversis; spira convexo-depressa, apice lævi fusco-cærulescente, sutura distincta impressa profunda; anfr. 5 convexis tumidiusculis, ult. obtuse sed distincte angulato-carinato, antice haud deflexo; umbil. majusculo pervio aperto, pariete subabrupte declivi; apert. lunato-rotundata; perist. omnino simplici acuto, labris remotis.*

Diam. maj. 5-6, min.  $4\frac{1}{2}$ - $5\frac{1}{2}$ , alt.  $3\frac{1}{2}$ -4 mill. Anfr.  $4\frac{1}{2}$ -5.

*H. striata*, Drap.? Prim. 53. no. 44 (non Drap.).

*H. Loweii*, Pot. et Mich. Gal. des Moll. (1838) p. 91. no. 65; Pf. i. 149 (non Fér.).

*Hab.* in Madera prope urbem Funchal: haud infrequens.

## § 7. LEMNISCIA.

*Xerophilæ* sp. Albers 74.

(Typ. *H. Michaudi*, Desh.)

*T. rimato-perf. v. imperf. trochoidea v. globuloso-conoidea depressiuscula distincte angulata v. carinata læte colorata festiva seriatim maculata v. fasciata nitida omnino glabra. Anfr. 6-7 planati, ult. non deflexo. Apert. transverse lunato-ovalis subangulata subdepressa. Perist. rectum acutum simpliciusculum axin versus subincrassato-reflexum.*

*Obs.* Testæ parvulæ concinnæ.

24. *H. MICHAUDI*, Desh. (1830) Encycl. Méth. ii. p. 263. no. 144; Pot. et Mich. Gal. des Moll. p. 95. no. 74; Küst. M. et C. p. 257. no. 238. f. 27-29; Pf. i. 157. *H. bicolor*, Prim. (Nov. 15, 1830) p. 58. t. 6. f. 22.

*Hab.* inter Lichenes in cacuminibus summis Portûs S<sup>ui</sup> (Pico de Facho, P. Branco, &c.) rarior.

*Obs.* *H. Michaudi*, Desh. in Enc. Méth. l. c. diametro "7 millim.," procul dubio eadem ac nostra *H. bicolor*. Lineas ideoque pro millimetris postea a cl. Deshayes (forsan a fig. nostra in Primitiis t. 6. f. 22 *aucta* desumptas) lapsu v. errore scriptas fuisse (ut a cl. Pfeiffero l. c. citatas video) vix dubitandum. Vide Prim. et Novit. (1851) App. p. ix. An revera e "Teneriffa" provenit, quod valde dubito, ulterius inquirendum.

## § 8. EUPARYPHA, Hartm.

*Xerophilæ* sp. Alb. 74.*Theba*, Beck, sp.(Typ. *H. pisana*, Müll.)

*T. angustissime* v. *rimato-perf. globosa* v. *conoideo-globosa*, statu saltem jun. *angulato-carinata*, *cretaceo-candida festiva* s. *læte et distincte colorato-fasciata nitidiuscula omnino glabra*, apice *lævi corneo*. Anfr. 5-6 *leniter crescentes*, ult. *antice non aut vix deflexo*. Apert. *rotundata*, *labris remotis*. Perist. *rectum acutum simpliciusculum*.

25. *H. PISANA*, Müll. Verm. ii. p. 60; Prim. pp. 52, 53; Küst. M. et C. t. 22. f. 5, 6 (f. 1-4 in *Insulis Maderensibus* haud obvix); Ib. t. 37. f. 1-4; Pf. i. 152, 153. *H. rhodostoma*, Drap. 86. t. 5. f. 13-15. *H. cingenda*, Mont.

*Hab.* in Maderæ et Portûs S<sup>ti</sup> arena calcarea (nec alibi) vulgatiss.

*Obs.* Subvar. rarior notabilis *fusco-cornea fasciis coffæaceis confluentibus* adest. Var. *albida decolorata* (nec subfossilis) est *H. calcarea*, Pf. in Proceed. Zool. Soc. 1848, p. 110; Küst. M. et C. p. 275. no. 757. t. 123. f. 3, 4. (Ex autopsia exempl. in Mus. Cuming!)

26. *H. USTULATA*, Syn. Diagn. 4. no. 10. *T. subimperf. conoideo-globosa omnino ecarinata cretaceo-alba sæpe rosea fasciisque capillaribus fuscis lineata, subtilissime decussato-striata, striis spirilibus exilissimis confertis; spira elevato-conoidea subpyramidata, apice obtuso lævi plerumque roseo, sutura distincta subimpressa; anfr. 5 convexis, ult. subtus convexo subinflato-prominente antice vix descendente; perforatione clausa obvelata; apert. verticaliter lunato-rotundata plerumque rosea; perist. interrupto acuto simplicissimo (nec intus costato-labiato) ad columellam reflexo, perforationem fere penitus obtegente.*

Diam. maj. 13-18, min. 11-16, alt. 10-17 mill. Anfr. 4-5.

*Hab.* in Insulis "Salvages."

## § 9. POMATIA, Leach, Beck, Alb. 102.

(Typ. *H. pomatia*, L.)

*T. imperf. vel obtecte perf. subinflato-globosa* v. *oblique ovato-globosa, ventricosa, omnino ecarinata glabra, obsolete v. diffuse fasciata v. nebulata*. Anfr. 4-5 *rapide crescentes*, ult. *magno ventroso antice descendente*. Apert. *ampla ovato-rotundata*. Perist. *subpatulum subincrassatum v. obtusum ad axin dilatato-reflexum*.

*Obs.* Testæ majusculæ.

27. *H. SUBPLICATA*, Sow. in Zool. Journ. i. 56. t. 3. f. 1 (subfossilis decorticata); Prim. 41. t. 5. f. 4; Fér. i. 272. t. 9 B. f. 8, 9,

et t. 17 A. f. 14, 15; Küst. M. et C. p. 227. no. 198. t. 29. f. 1, 2; Pf. i. 24.

*Hab.* recens in insula Baxo solum, subfossilis vulg. in Portu S<sup>to</sup>.  
*Obs.* Testæ seniores forma obliquiore evadunt.

### § 10. HELICOMELA.

(Typ. *H. punctulata*, Sow.)

*T. rimato-subperf. pomiformi-globosa omnino ecarinata distincte fasciata scabra s. hispido-granulata. Anfr.* 5–6 subleniter crescentes, ult. magno antice descendente. *Apert.* lunato-rotundata. *Perist.* simplex rectum acutum v. obtusiusculum ad axin callosoreflexum.

28. *H. BOWDICHIANA*, Fér. Coll.

*H. punctulata*  $\gamma$ , Pf. i. 194; "A fossil Helix from Caniçal," Bowd. Exc. in Mad. f. 32. *H. punctulata*, (Sow.) Fér. i. 225. t. 28 B. f. 5, 6. *H. Vargasiana*, Pf. in Proceed. Zool. Soc. 1848, p. 109; Küst. M. et C. p. 274. no. 756. t. 123. f. 5, 6 (status varietasve nana minor).

*Hab.* semifoss. in Madera ad Caniçal et in Portu S<sup>to</sup> copiosissima: recens nondum lecta.

Peraffinis *H. punctulatæ*, cujus forsitan mera var. v. status. Differt testa omnino decolorata efasciata cretacea alba, magnitudine, soliditate (crassitudine et ponderositate), sculptura rudiore, numero anfr. in testis etiam ejusdem ad amussim magnitudinis semper majore, labro deorsum atque ad axin magis incrassato et reflexo, forma compactiore magis bulboso-pomiformi. Relatio fere eadem ad *H. punctulatam* ac illa *H. Lowei* ad *H. Porto-sanctanam*. Magnitudine vero admodum variabilis.

29. *H. PUNCTULATA*, Sow. in Zool. Journ. i. p. 56; Prim. p. 52.

*Var.  $\alpha$ . setulosa*; Sow. l. c. t. 3. f. 2; Prim. l. c. t. 6. f. 7. *H. punctulata*, (Sow.) Fér. i. 225. t. 28 B. f. 3; Küst. M. et C. p. 155. no. 594. t. 93. f. 14–16; Pf. i. 194.

*Var.  $\beta$ . avellana*; minor, magis conoideo-globosa, hispidior, spira altiore exserta.

*Var.  $\gamma$ . solida. H. punctulata  $\beta$* , Prim. l. c. t. 6. f. 8; Pf. i. 194. *H. punctulata*, (Sow.) Fér. l. c. f. 4.

*Hab.* in Portu S<sup>to</sup>;  $\beta$  quoque in Deserta Australi.

*Obs.* Sp. forma magis minusve globosa, spira magis minusve exserta, necnon magnitudine et soliditate v. tenuitate, in varr. subvarietatibusque omnibus perquam variabilis.

### § 11. PLEBECULA.

(Typ. *H. vulgata*, Lowe.)

*T. umbilicata depresso-turbinata ecarinata fasciata hispido-granulata nitidiuscula. Anfr.* 5–6 subleniter crescentes, ult. antice parum



*descendente. Apert. rotundata, labris subapproximatis. Perist. simplex acutum ad axin expansum.*

30. *H. VULGATA*, Syn. Diagn. 5. no. 12. *T. umbil. depressiusculo-globosa subconoidea solidiuscula sparsim obsolete granulata, granulis quasi derasis sæpe cariosis, plus minus hispido-setulosa lutosâ, sæpe depilata calva, nitidiuscula pallide subvirescenti-cornea, fusco trifasciata; spira exsertiuscula plus minus depressa, apice acutiuscula, sutura distincta impressiuscula; anfr. 5½-6 convexis, ult. antice vix descendente subventricoso subtus convexo; umbil. mediocri vix subspirali partim obvelato; apert. lunato-rotundata labris disjunctis; perist. simplici acuto intus ad axin incrassato reflexo umbilicum paullum obvelato-coarctante.*

*Var. α. trifasciata; minor pallida fasciis tribus æquis angustis distinctis æquidistantibus; umbil. subangustato.*

Diam. maj. 11-13, min. 9-11, alt. 8-10 mill. Anfr. 5½-6.

*H. nitidiuscula*, Prim. p. 52. t. 6. f. 6; Fér. i. 200. t. 28 B. f. 1; Küst. M. et C. p. 161. no. 604. t. 94. f. 5, 6; Pf. i. 196 (nec Sowerby).

*Hab.* in Madera ubique vulgatiss. In Desertis, ubi in var.  $\gamma$ . transit, minus frequens.

*Obs.* *H. nitidiuscula*, Sow. in Zool. Journ. i. p. 57. t. 3. f. 4, e Portu S<sup>to</sup>, mox a cl. auctore deinde a meipso aliisque cum testa Maderensi ubique obvia (*H. vulgata*  $\alpha$ ) confusa, ex icone et descriptione originali, necnon patria (Portu S<sup>to</sup>), ad *H. luridam* nostram procul dubio pertinet; cui forma (ex icone) magis depressa subdiscoidea, umbilico minore, etc., potius spectat. *H. nitidiuscula*, Sow. nempe, archetypa, revera in Portu S<sup>to</sup> reperta est; quo *H. lurida*, Lowe, nec alioqui, occurrit. *H. vulgata* contra in Portu S<sup>to</sup> omnino deest.

*Var. β. canicalensis; testa solidiore crassiore rudiore, spira plerumque prominentiore apice acutiore, anfr. convexioribus distinctioribus, sutura profundiore.*

Diam. maj. 11-14, min. 10-11, alt. 10-11 mill. Anfr. 6.

*H. canicalensis*, Syn. Diagn. p. 5. no. 13.

*Hab.* semifoss. in arena calcarea Canicalensi Maderæ.

*Obs.* Variat spira plus minus elevata, plerumque subturrita, sæpe vero æque ac in  $\alpha$ , depressa. Testæ plerumque decoloratæ omnino cretaceæ albæ; interdum fasciis vix evanescentibus.

*Var. γ. giramica; major largior magis depresso-rotundata v. minus compacto-globosa intensius colorata sæpissime (supra saltem) castanea, fasciis fuscis inæqualibus, duabus superioribus sæpissime confluentibus, tertia inferiore sæpe latiore, umbil. majore apertiore subpatulo.*

Diam. maj. 14-16, min. 12-14, alt. 10-12 mill. Anfr. 6.

*H. giramica*, Syn. Diagn. pp. 5, 6. no. 11.

*H. nitidiuscula*  $\beta$ , Major, Pf. i. 197; Küst. M. et C. p. 162. t. 94. f. 7, 8.

*Hab.* hinc inde in Madera fere seorsim, et in Ins. Deserta Minore cum  $\alpha$ . commixta.

*Obs.* Transitus inter  $\alpha$ . et  $\gamma$ . in Deserta Minore plures observantur.

31. *H. LURIDA*, Prim. 52. t. 6. f. 5; Küst. M. et C. t. 155. f. 31-33; Pf. i. 197. *H. nitidiuscula*, Sow. in Zool. Journ. i. 57. t. 3. f. 4, nec alior.

*Hab.* in Portu S<sup>to</sup> rariss.

*Obs.* Characteribus simul ac patria cum *H. nitidiuscula*, Sow., sicut a cl. auctore prius definita, necnon icone, omnino convenit. Nomen vero magna sine confusione haud restituendum. Apertura Ianthini-formi, labro sc. umbilicum versus recto verticali, ab *H. vulgata* imprimis distincta.

## § 12. IRUS.

(Typ. *H. depauperata*, Lowe.)

*T. umbilicata* turbinato-depressa subdiscoidea obsolete subcarinata solidiuscula strigosa v. granulata rudiuscula. Anfr. 5 leniter crescentes, ult. subtus convexo-rotundato antice deflexo. Apert. rotundata circinata, labris approximatis conjunctis. Perist. simplex subexpansum subincrassatum continuum subsolutum.

32. *H. LACINIOSA*, Syn. Diagn. 5. no. 14. *T. stricto-umbilicata* subturbinato-depressa v. depresso-globulosa solidiuscula tota membranaceo-lacinulata lutosa grisea fusco bifasciata arcte grosse plicato-striata, striis crebris inæqualibus quibusdam majoribus plicato-costatis, lacinulis membranaceis subtus præsertim lunatis crebro-quincuncialibus echinato-aculeatis aspera; spira convexo-depressa sæpe exsertiuscula plus minus elevata, apice calvo lævigato obtuso, sutura valde distincta; anfr. 5-5½ convexis prominentibus quasi carinato-angulatis, ultimo superne subangulato antice largiore abrupte deflexo; umbil. parvo stricto angusto parum profundo vix spirali aperto s. nudo; apert. subinæqualiter rotundata circinata labris fere relevatis conjunctis; perist. expanso subreflexo fusco-carneo intus costa annulari munito.

Diam. maj. 6-9, min. 5-7; alt. 4-6 mill. Anfr. 5-5½.

*H. laciniosa*, (Lowe) Küst. M. et C. t. 154. f. 23, 24 (male, exempl. defloccatis).

*Hab.* in Ins. Deserta Septentr. Minore.

*Obs.* Costis plicisve inæqualibus, quibusdam pallidis albis, spiram maculatam s. marmoratam reddentibus, aspectu quodammodo *H. arctæ*. Tota omnino egranulata.

33. *H. DEPAUPERATA*, Prim. 51. t. 6. f. 4; Küst. M. et C. p. 261. no. 244. t. 38. f. 16, 17; Pf. i. 166.

*Hab.* in Portu S<sup>to</sup> recens fossilisque vulg.

34. *H. SQUALIDA*, Syn. Diagn. 5. no. 15. *T. aperte umbilicata* convexo-depressa orbiculata subdiscoidea solidiuscula arcte et supra grossiuscule striata erosulo-scrobiculata tota subtilissime et confertissime reticulato-granulata calva fusco-cornea efasciata, supra sæpe lutosa terraque obducta; spira convexo-depressa obtusissima, apice depressiuscula, sutura distincta subimpressa; anfr. 5 distinctis planiusculis leniter et æque crescentibus, ult. penultimo vix

*latiore antice abrupte deflexo; umbil. sat magno spirali profundo aperto s. nudo; apert. lunato-rotundata subcircinata, labris lamina subcallosa junctis; perist. subexpanso reflexiusculo simpliciusculo tenui acuto pallidiusculo, intus costa annulari munito.*

*Recens.* Diam. maj. 6-7, min.  $5\frac{1}{2}$ -6, alt. 4- $4\frac{1}{2}$ . Anfr. 5.

*Hab.* in Madera; recens rariss.: fossilis sat vulg.

Differt ab *H. depauperata* testa minore intensius colorata fusca rudiore v. distinctius scrobiculata, anfr. lentius v. æquius crescentibus ult. angustiore, apice spiræ obtusissimo etiam depresso, umbil. majore largiore, anfr. subpaucioribus. Sculptura sub lente, nisi subtilior, eadem: sc. vel subtilissime granulata.

### § 13. SPIORBULA.

*Ochthephila* (Beck) sp. Alb. 88.

(Typ. *H. obtecta*, Lowe.)

*T. aperte umbilicata depresso-discoidea planorbiformis obtuse carinata v. angulata scrobiculato-rudiuscula quasi erosa v. cariota glabra plerumque decolorato-cretacea v. obscure fasciata terra limove obducta. Anfr. 4-5 leniter crescentes subsoluti planati, ult. subtus convexo, antice abrupte deflexo, ad aperturam aliquando constricto. Apert. rotundata circinata. Perist. solutum continuum simplex acutum intus aliquando quasi duplicatum et ad dextram unidentatum.*

35. *H. LATENS*, Syn. Diagn. 5. no. 16. *T. umbilicata supra planata infra inflato-convexa subcornuopieformis tenuissima membranacea flexilis inæqualiter et rudiuscule striata eroso-scrobiculata totaque subtilissime et confertissime quasi pulverulento-granulata, calva cornea efasciata terra limove obducta; spira planata apice depressa fere immersa, sutura distincta impressa; anfr. paucis  $3-3\frac{1}{2}$  distinctis planatis rapide crescentibus, ult. magno superne angulato subcarinato, inferne valde convexo, antice inflato-dilatato parum deflexo; umbil. subparvo angustato cylindrico vix spirali profundo aperto s. nudo; apert. lunato-ovali altiore quam lata, labris conniventibus approximatis; perist. simplici tenui acuto.*

Diam. maj. 5-6, min.  $4\frac{1}{4}$ -5, alt.  $3-3\frac{1}{2}$  mill. Anfr.  $3-3\frac{1}{2}$ .

*Hab.* in Madera, rariss.

36. *H. OBTECTA*, Prim. pp. 47, 48. t. 5. f. 20 *a, b*; Küst. M. et C. p. 143. no. 577. t. 91. f. 19-21; Pf. i. 188. (Var.  $\beta$ . quiddam diversum suspicor.)

*Hab.* in Portu S<sup>to</sup>.

37. *H. PAUPERCULA*, Prim. p. 47. t. 5. f. 19; Fér. Hist. i. p. 8. t. 69 D. f. 6; Küst. M. et C. p. 144. no. 579. t. 92. f. 3-8; Pf. i. 189.

*Hab.* in Madera, Portu S<sup>to</sup>, Insulisque Desertis.

## § 14. ZURAMA, Leach.

*Glaphyra*, Alb. 87. *Fallonina*, Risso.(Typ. *H. pulchella*, Müll.)

*T. aperte umbilicata pusilla orbiculata depressa discoidea omnino ecarinata lactea subopaca efasciata solidiuscula glabra. Anfr. 3-4 cito crescentes, ult. subtus convexo, antice haud deflexo. Apert. rotundata circinata. Perist. late reflexum subcontinuum labrisve approximatis callo junctis.*

*Obs.* Campylæis valde affines.

38. *H. PULCHELLA*, Müll. Pf. i. 365; Gray, Man. p. 141 (excl. var. 1); Prim. p. 45. no. 21; Küst. M. et C. p. 326. no. 829. t. 129. f. 48-52.

*H. pulchella* β, Drap. 112. t. 7. f. 33, 34; Rossm. vii. pp. 5, 6. f. 440.

In Madera sub lapidibus post pluvias hieme vulg. In Portu S<sup>to</sup> et Desertis nondum detecta.

*Obs.* *H. costata* Müll. nullibi exstat.

## § 15. EUROMPHALA, Beck.

*Patula*, (Held) Alb. 64.(Typ. *H. rotundata*, Müll.)

*T. late et perspective concavo-umbilicata axi plane nullo, orbiculata convexo-discoidea arctispira sericina nec lucido-nitida, supra costato-striata, tenuis glabra cornea saepe rufo-tessellata. Anfr. 4-6 lente crescentes, ult. subtus convexo, saepe angulato-carinato, antice haud deflexo. Apert. lunata labris disjunctis. Perist. simplex rectum tenue acutum.*

39. *H. PUSILLA*, Prim. p. 46. t. 5. f. 17; Küst. M. et C. p. 135. no. 565. t. 89. f. 28-31; Pf. i. 101.

*Hab.* in Madera et in Ins. Des. Majore.

Duæ adsunt varr.: α. *annulata*; subdiscoidea spira depressa, distincte v. remotiuscule plicato-costellata fusco-rufescens: et β. *sericina*; subturbinata, spira subpyramidato-exserta lævigata sericeo-nitidiuscula creberrime striata costellis obsoletis v. nullis pallidiuscula fusco-virescens; inter muscos ad truncos Laurorum in sylvis.

40. *H. GUERINIANA*, Syn. Diagn. 5. no. 17. *T. latissime et perspective concavo-umbilicata subtus excavata rotundato-discoidea convexo-planata lenticularis arctispira distincte angulato-carinata tenuis nitida pallide luteo-cornea, supra grossiuscule crebricostata rufoque pulchre tessellatim radiato-maculata saepe erosulo-cariosa decorticata, subtus pellucida lævigata s. obsolete substriata lucida nitens rufo pallide annulata; spira convexo-planata subtabellata apice obtusissima lævigata, sutura distincta impressa; anfr. 7*

*planatis lente crescentibus, ult. antice recto haud deflexo supra planato subtus infra carinam æqualiter convexo-rotundato; umbil. latissimo infundibuliformi pervio patulo profundo; apert. oblique lunato-ovali; perist. simplici recto tenui acuto.*

Diam. maj.  $6-6\frac{1}{2}$ , min.  $5\frac{1}{2}-6$ , alt.  $2-2\frac{1}{2}$  mill. Anfr. 7.

*Hab.* in declivibus graminosis inter sylvas Convallis Frigidi Maderæ, rariss. Prima invenit Jemima Carolina Guerin.

*Obs.* Inter *H. rotundatam* Müll. et *H. solariam* (Menke) Rossm. f. 453 media, huic proxima. Differt carina minus acuta nec expressa, anfr. ult. haud infra carinam excavato s. contracto, spira subconvexiore grosse costata nec "subtilissime costulato-striata," apertura oblique ovali nec "securiformi" s. ad carinam angulata, sutura forsan profundiore, numeroque anfractuum majore. Ab *H. rotundata* Müll. abundantius differt.

### § 16. LUCILLA.

*Hyalina*, Fér. Alb. 66.

(Typ. *H. cellaria*, Müll.)

*T. umblicata orbiculata convexo-depressa subdiscoidea nitida lævis pellucido-cornea efasciata subtus plerumque opaco-lactea. Anfr. 4-6 subrapide crescentes, ult. subdepresso subtus subplanato antice non deflexo. Apert. obliqua lunata, labris disjunctis. Perist. simplex rectum tenue acutum.*

41. *H. CELLARIA*, Müll.; Prim. 47. no. 25; Küst. M. et C. p. 102. no. 517. t. 84. f. 8-10; Pf. i. 111, 112. *H. nitida*, Drap. 117. t. 8. f. 23-25. *H. lucida*, Mont. *Zonites cellarius*, Gray, Man. 170. t. 4. f. 40.

*Hab.* in Madera, vulg.

42. *H. SCINTILLA*, Syn. Diagn. 6. no. 18. *T. minuta late et perspective umbilicata orbiculata discoidea depresso-planata vix convexiuscula sublenticularis ecarinata tenuis nitida lævigata utrinque hyalino-pellucida pallide virescens; spira vix convexiuscula plano-depressa, apice (animali facta) flavescens, sutura distincta impressa; anfr. 4 planatis lente et æque crescentibus; umbil. largo patulo profundo æqualiter spirali, usque ad apicem pervio; apert. lunata, labris disjunctis remotis; perist. simplici recto tenui acuto.*

Diam. 2 mill. v. vix 1 linea; alt.  $\frac{1}{2}$  mill. Anfr. 4.

*Hab.* sub lapidibus ad Levadam S<sup>tas</sup> Lucie prope urbem Funchal. Maderæ, rariss.

*Obs.* Cum *H. pulchella*, Mull., *H. radiatula*, Ald., et *H. crystallina*, Mull., quoad magnitudinem solum conferenda.

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## § 17. CRYSTALLUS.

*Hyalina*, Fér. sp. Alb. 66. *Discus*, Fitz. sp.

(Typ. *H. crystallina*, Müll.)

*T. perf. v. imperf. umbilico minimo v. nullo orbiculata convexo-depressa subdiscoidea arctispira nitida omnino lævis hyalina prætenuis fragillima parvula. Anfr. 4-6 leniter v. æque crescentes, ult. antice non deflexo. Apert. lunata labris disjunctis. Perist. simplex rectum tenue acutum.*

43. *H. CRYSTALLINA*, Müll. ; Prim. 47. no. 26 ; Drap. 118. t. 8. f. 13-18 ; Küst. M. et C. p. 128. no. 555. t. 88. f. 27-30 ; Pf. i. 59, 60. *Zonites crystallinus*, Gray, Man. 176. t. 4. f. 42.

*Hab.* in Madera, hieme vulg.

## § 18. JANULUS.

(Typ. *H. bifrons*, Lowe.)

*T. arcte v. cylindrico-umbilicata orbiculata convexo-depressa subdiscoidea arcti-multi-spira lucida bifrons s. supra costulato-striata, infra lævis, subopaco-cornea efasciata. Anfr. 7-9 leniter et æque crescentes, ult. antice non deflexo. Apert. lunata labris disjunctis. Perist. rectum tenue acutum, intus late albo incrassatum v. calloso-labiatum, labio vel simplici v. lamellato-plicato.*

44. *H. BIFRONS*, Prim. 46. t. 5. f. 18 ; Küst. M. et C. p. 234. no. 698. t. 111. f. 23-25 ; Pf. i. 144, 145.

*Hab.* in Madera, recens fossilisque vulg.

45. *H. CALATHUS*, Syn. Diagn. 6. no. 19. *T. umbilicata compacto-orbiculato-convexa subdiscoidea distincte angulato-carinata tenuis sericino-nitidiuscula rufo-cornea, infra lævis, supra eleganter costellata, costellis concinnis arctis crebris æquis expressis distinctis, tota exilissime creberrimeque spiraliter striolata ; spira rufo-tessellata v. maculata subconvexa, sutura distincta impressa ; anfr. 8-9 lentissime et æque crescentibus angustis planiusculis arcte et concinniter expressis, ult. distincte angulato v. carinato, infra carinam parum convexo subplanato lævigato, intus varicibus 3 annotinis remotis 3-4-plicatis subseptato ; umbil. mediocri subspirali profundo ; apert. lunata, labris valde remotis ; perist. tenui acuto, longe intus callo opaco-lacteo 3-4-plicato labiato.*

Diam. maj. 9-10, min. 8-9½, alt. 5-6 mill. Anfr. 8-9.

*Hab.* in Madera, recens fossilisque rariss.

## § 19. HISPIDELLA.

*Fruticicola*, (Held) sp. Alb. 71.

(Typ. *H. hispida*, L.)

*T. umbilicata v. perf. orbiculata convexo-depressa subcarinata pleurumque hispida tenuis persepe fragilis fusca v. rufo-cornea, sæpe*

*pallido obscure unifasciata. Anfr. 5-6 lente crescentes, ult. antice non aut vix subdeflexo. Apert. late lunata. Perist. acutum brevissime expansum, intus plerumque albo-labiato.*

*Obs.* Testæ subparvulæ hispidæ fuscæ.

46. *H. DEFLORATA. T. latiuscule umbilicata orbiculato-depressa discoidea supra fere planata obtuse subcarinata nitidiuscula pallide cornea subcarnea efasciata, subtus circa umbilicum pallescens, utrinque obsolete subgranulato-striolata rugosiuscula, striis confertis subundulatis connexivis interruptis inæqualibus; spira planato-depressa vix convexuscula, apice tabellata, sutura distincta impressa; anfr. 6 planatis subprominenti-expressis, ultimis vix lente crescentibus, 3-4 primoribus tabellatis, ultimo superne obtuse angulato depresso, infra angulum parum convexo, antice deflexo; umbil. largo spirali profundo subpatulo s. parietibus lente declivibus depressis; apert. lunato-ovali, labris convergentibus subapproximatis; perist. tenui acuto intus albo-labiato.*

Diam. maj. 11, min. 10, alt.  $5\frac{1}{2}$ , axis 4 mill. Anfr.  $5\frac{3}{4}$ .

*Hab.* in Madera, rariss. Exemplar junius spira confracta indeterminabile in Rib. de S<sup>ta</sup> Luzia Maderæ, A.D. 1848 primus invenit cl. T. V. Wollaston. Alterum adultum integrum, animalis expers, sed parum decoloratum, prope locum Arrebentão dictum, ad alt. circiter 3000 ped. supra urb. Funchal. a Rousset detectum, communicavit T. S. Leacock 1853.

*Obs.* Testa efasciata calva verosimiliter statu perfectiore v. jun. hispida; *H. rufescenti* Penn. proxima! Differt, (1) spira tabellata; (2) carina obtusiore minus distincta; (3) anfr. ult. antice deflexo; (4) labris convergentibus subapproximatis (nec parallelis remotis); (5) striatura peculiari obsolete sc. striis magis obsolete interruptis hinc inde sparsim subgranulatis v. subundulatis (nec strictis continuis rectis distinctis); (6) anfr. ult. infra carinam minus convexo (nec circa umbil. alto declivi); (7) umbilici parietibus lente declivibus depressis.

47. *H. ARMITAGEANA, Syn. Diagn. 6. no. 20; Küst. M. et C. t. 155. f. 57-59. T. perf. convexo-depressa orbiculata angulato-subcarinata tenuissima fragillima furfuraceo-pubescenti pellicide fusca virescens fusco bifasciata, striolis spiralibus subtilissimis flexuoso-capillaribus confertis ad interstitia strias furfuraceo-membranaceas transversas decussantibus; spira convexo-depressa, sutura distincta impressa; anfr.  $4\frac{1}{2}$ -5 convexusculis, ult. distincte subcarinato, antice non aut vix deflexo; perf. cylindrica parva; apert. lunata subdepressa, labris remotis; perist. expansiusculo acuto, juxta perf. reflexo, intra marginem sublabiato.*

Diam. maj. 7, min.  $6\frac{1}{2}$ , alt.  $4\frac{1}{2}$ , axis  $3\frac{1}{2}$  mill. Anfr.  $4\frac{1}{2}$ -5.

*Hab.* in montibus excelsioribus Maderæ.

## § 20. ACTINELLA.

(Typ. *H. lentiginosa*, Lowe.)

*T. aperte v. subobtectae umbilicata orbiculata depresso-discoidea acute carinata, plerumque tenuis pusilla fragilis, fusco-cornea saepe lentiginoso-maculata et fasciata, arcte tenuiter striolata v. lamellato-costellata, furfuraceo-scobinata v. membranaceo-squamulosa, carina lacinulato-calcarata. Anfr. 4-5 fere planati sublente crescentes, ult. depresso distincte carinato, antice deflexo. Umbilicus parvus fere apertus. Apert. depressa valde obliqua rotundato-ovalis v. circularis sublunata. Perist. subpatulum reflexum plerumque continuum circinatum, basale aliquando strictiusculum.*

48. *H. ACTINOPHORA*, Prim. 45. t. 5. f. 14; Pf. i. 146, 147.

*Hab.* in Madera recens fossilisque. In Insula Deserta Austr. recens semel occurrit.

49. *H. ARRIDENS*, Prim. 43. t. 5. f. 9; Küst. M. et C. p. 324. no. 827. t. 129. f. 40-42; Pf. i. 217.

*Hab.* in Madera.

50. *H. LENTIGINOSA*, Prim. 49. t. 5. f. 25; Küst. M. et C. t. 154. f. 32-35 (male); Pf. i. 145.

*Hab.* in Madera.

51. *H. STELLARIS*, Syn. Diagn. 9. no. 39; Küst. M. et C. t. 155. f. 48-52. *T. parvula umbilicata subcarinata orbiculata depressa subdiscoidea solidiuscula opaca vix substriata scobinata sublævigata subnitidiuscula intensius fusca v. subnigricans raro v. obscure albo marmorata terra limove arcte obducta; spira depressa vix convexiuscula, apice glabro distincto nitente, sutura distincta impressa; anfr. 4 distinctis vix convexiusculis, ult. depresso distincte subcarinato eximie et æqualiter membranaceo-calcarato, antice deflexo; umbil. majusculo patulo aperto subspirali; apert. valde obliqua ovali-rotundata, labris approximatis v. conjunctis; perist. rite circinato continuo v. paulisper interrupto undique incrassato-expanso deorsum reflexo, plica ventrali nulla.*

Diam. maj. 4, min.  $3\frac{1}{2}$ , alt. 2 mill. Anfr. 4.

*Hab.* in Madera.

*Obs.* Characteribus priori, magnitudine sequenti proxima.

52. *H. ARCTA*, Prim. 42. t. 5. f. 7; Küst. M. et C. p. 236. no. 701. t. 112. f. 5-8; Pf. i. 404.

*a.* major crassior rudior, plica ventrali valida prominula distincta, perist. late reflexo.

*β.* paullo minor subdepressior tenuior minus grosse costellata, plica ventrali obsoleta v. nulla, perist. minus reflexo, perforatione submajore.

*Hab.* in Madera.



## § 21. RIMULA.

*Conulus*, (Fitz.) sp. Alb. 72, 73. *Hyalostoma*, sp. Alb. 95.

(Typ. *H. cobresiana*, Alt.)

*T. obtecte v. rimato-perf. v. imperf. depresso-globulosa subconoideu carinata v. subcarinata multi- v. arcti-spira plerumque tenuis sæpe pubescens cornea obscure fasciata v. lentiginoso-maculata. Anfr. 5-7 lente crescentes, ult. distincte angulato-carinato subtus suburgido-convexo ampliato, antice subito deflexo subcoarctato constricto. Perf. minima omnino fere clausa. Apert. lunata obliqua coarctata, labris remotis, callo plicave ventrali sæpe interposito. Perist. interruptum albo-incrassatum subreflexum, basi strictiusculum intusque sæpe sinuato-sub-bipli-cato-callosum.*

53. *H. ARCINELLA. T. imperf. parvula convexo-depressa vic subglobulosa distincte carinata solidiuscula subcostulato-striata obsolete subscobinata; spira subconvexa, aliquando elevatiuscula subconoidea, sutura distincta impressa; anfr.  $4\frac{1}{2}$ -5 convexiusculis, ult. antice deflexo ad apert. constricto-scrobiculato; perf. minima subnulla lamina peristomatis expansa subproducta appresa fere v. omnino clausa; apert. valde depressa transversa oblique lunata edentula, callo ventrali costæformi distincto labro parallelo adscendente nec intrante, labris remotis subparallelis aliquando callo junctis nunquam circinatis; perist. interrupto late præsertim basi reflexo, intus basi vix subsinuato-callosa edentulo.*

*a. major, callo basali vix ullo.*

Diam. maj.  $4\frac{1}{2}$ -5, min.  $4-4\frac{1}{2}$ , alt.  $2\frac{1}{2}$ - $3\frac{1}{2}$  mill. Anfr.  $4\frac{1}{2}$ -5.

*H. fausta* β, minor, Prim. (ed. 1851) App. p. xiv.

β. minima, callo basali subdistinctiore.

Diam. maj.  $4-4\frac{1}{4}$ , min.  $3\frac{1}{2}$ - $3\frac{3}{4}$ , alt.  $2\frac{1}{2}$ -3 mill. Anfr.  $4\frac{1}{2}$ -5.

*H. fausta* γ, minima, Prim. l. c.

*Hab. a. et β. fossilis ad Caniçal Maderæ.*

*Obs.* Magnitudine *H. arctæ* proxima. Differt testa utrinque convexiore subglobulosa spira plerumque elevatiore, perf. lamina appressa (fere ut in *H. arridente*) producta fere v. omnino clausa, apert. depresso-lunata sæpe subquadrata (nec circulari), perist. interrupto labris semper remotis subparallelis (nec circinatis) basi sæpe strictiusculo (nec semper arcuato), callo ventrali costæformi adscendente v. subverticali (nec lunato-intrante v. nullo).

54. *H. CAPSELLA. T. subrimato-perf. v. imperf. distincte et acute carinata orbiculata convexo-depressa vix subconoideo-globulosa arctispira arcte tenuiter substriolata striolisque spiralibus vel subtilissimis alias decussantibus obsoletis, tenuis hispida fusco-rufescens supra fere immaculata subtus albo-lentiginosa et fusco obscure unifasciata; spira conoideo-depressa; sutura distincta impressa; anfr. 5 planiusculis, ult. abrupte deflexo ad aperturam*

*constricto-scrobiculato; perf. minima callo columellari reflexo sæpius vix, adulta omnino clausa; apert. valde depressa transversa lunata callo costave ventrali oblique intrante rarissime distincto plerumque nullo, labris remotis disjunctis subparallelis, basali strictiusculo; perist. interrupto expanso basi calloso-reflexo intus subsinuato vel obsoletissime sub-bicalloso edentulo.*

Diam. maj.  $5\frac{1}{2}$ – $5\frac{3}{4}$ , min.  $5\frac{1}{4}$ , alt. 4 mill. Anfr. 5.

*H. fausta*, Küst. M. et C. t. 156. f. 21–23.

*Hab.* in Madera.

*Obs.* 1. Species diu pro *H. fausta* degenerata supposita, rite distincta videtur. *H. faustæ* nempe et *H. arridenti* intermedia, huic propior; sed forma minus depressa (nec lenticulari) utrinque convexiore, perforatione omnino minore fere v. omnino clausa, apertura minus angustato-depressa intus ad axin minus (nec “quasi cum rictu”) producta, testa lætius colorata et maculata differt.

*Obs.* 2. Callus v. costa ventralis, nisi in exemplis peradultis, imo vetustioribus, omnino deest.

55. *H. FAUSTA*, Prim. 43. t. 5. f. 8; Pf. i. 422. *T. imperf. conoideo-globulosa subtus subinflato-convexa obtusiuscule subcarinata arctispira arcte et tenuiter substriolata tenuiuscula hispida fusco-cornea spira immaculata, anfr. ult. supra albo subtessellatim maculato, infra carinam fusco unifasciato et albo maculato, perist. extus late albo marginato; spira depresso-conoidea elevatiuscula, sutura distincta impressa; anfr.  $5\frac{1}{2}$ – $6\frac{1}{2}$  convexiusculis, ult. abrupte deflexo ad apert. constricto-scrobiculato; perf. nulla v. omnino obserata clausa; apert. valde depressa transversa anguste lunata, plica callove ventrali distincto diffuso coarctata, labris remotis subparallelis lamina junctis, basali strictiusculo; perist. interrupto expanso, basi calloso-reflexo, callo extrorsum distincte unidentato v. tuberculato sc. in dentem tuberculumve distinctum abrupte desinente.*

*T. recens (exempl. orig.):*

Diam. maj. 6, min.  $5\frac{1}{4}$ , alt. 4 mill. Anfr.  $5\frac{1}{2}$ .

*T. fossiles:*

Diam. maj.  $6\frac{1}{2}$ –7, min.  $6$ – $6\frac{3}{4}$ , alt.  $4\frac{3}{4}$ – $5\frac{3}{4}$  mill. Anfr.  $6$ – $6\frac{1}{2}$ .

*Hab.* in Madera recens fossilisque rariss.

*Obs.* Forma globuloso-conoidea, subtus valde convexa, necnon apert. unidentata cito dignoscitur. Recens semel occurrit. Descriptio ex exemplare originali adhuc unico recente in Primitiis olim picto et descripto denuo desumpta: comparatis exemplaribus XII fossilibus, omnino ad amussim illi congruentibus, præter “peristoma columellam versus” vix “subsinuatum sc. obsolete bidentatum” (Prim. l. c.). In omnibus, nempe, rite v. rectius unidentatum dicitur: quamvis in uno fossili, sicut in exempl. originali unico recente, tuberculi v. plicæ secundi remotiusculi interioris (sc. axin versus) vel obsoletissimi vestigia quædam adsunt.

56. *H. OBSERATA*, Syn. Diagn. 9. no. 40. *T. imperf. distincte et acute carinata orbiculato-discoidea lenticularis, subtus præsertim*

*convexior, utrinque arcte et æque striata, striis infra carinam subsinuatis sphinctro-radiantibus, striolis spiralibus vel subtilissimis alias decussantibus, tenuiuscula calva subnuda v. hinc inde minute membranaceo-scobinata lævigata nitidiuscula fusco-rufescens lentiginoso-maculata, supra carinam obscure, infra distincte fusco unifasciata, perist. extus late pallide ochraceo; spira convexo-depressa subplanata, sutura distincta; anfr. 5-5½ planatis, ult. antice breviter deflexo subscrobiculato-constrictiusculo; perf. omnino obserata; apert. valde depressa transversa angustato-lunata plica callove ventrali alba subcostæformi adscendente labro parallela subdistincta (raro nulla) coarctata, ad angulum inferiorem externum sub-biplicata, labris remotis lamina tenui junctis subparallelis, basali strictiusculo; perist. interrupto expanso, basali calloso-reflexo vix subsinuato, intus extrorsum leviter biplicato, plicis binatis approximatis, exteriore obliquissima fere horizontali intrante.*

α. recens, plicis binis obsoletis subæqualibus. *II. obserata*, Syn. Diagn. l. c.

Diam. maj. 6-7½, min. 5¾-7, alt. 3½-4¼ mill. Anfr. 5-5½.

*Hab.* in Maderæ convallibus, rariss.

β. fossilis, paullo minor, plica exteriore dentiformi distinctiore, ab interiore (callum basalem terminante) obsoletiore sinu distincto separata.

Diam. maj. 5½-6¼, min. 5-5¾, alt. 3½-4¼ mill. Anfr. 5-vix 5½.

*Hab.* in Madera ad Caniçal foss. rarior.

57. *H. CALVA*, Prim. 49, 50. t. 5. f. 26; Küst. M. et C. p. 324. no. 826. t. 129. f. 37-39; Pf. i. 289, 290.

*Hab.* in graminosis apricis excelsioribus montium Maderæ; etiam fossilis: sat vulg.

## § 22. CALLINA.

(Typ. *H. rotula*, Lowe.)

*T. vix rimato-subperf. v. imperf. trochoidea v. lenticularis angulato-carinata solida nuda granulata fulva v. rufo-cornea fasciata. Anfr. 7-8 lente crescentes plani, ult. acute carinato subtus planato, antice deflexo subcoarctato. Apert. lunata, labris subconvergentibus remotis, callo laminave tenui junctis, plica costave interna ventrali alba in jun. distincta, in adultis obsoletiore v. nulla. Perist. interruptum omnino arcuatum intus late albo-incrassatum expansum basi reflexum costaque interna relevata (in jun. distinctiore sub-biplicata v. medio emarginata) sinuato-callosum.*

58. *H. ROTULA*, Prim. 53. t. 6. f. 10; Küst. M. et C. t. 13. f. 11, 12; Pf. i. 216.

*Hab.* in Portu S<sup>to</sup> vulgatiss.

*Subvar.* 1, fasciata major; 2, fasciata minor; 3, efasciata cerina, 4, fasciata monstrosa, anfr. subsolutis, carina supra suturam prominente.

*Obs.* Spira nunc pyramidato-elevata nunc depressa sicut magnitudine admodum variabilis.

## § 23. CASEOLUS.

*Ochthephila*, Beck sp. Alb. 87.

(Typ. *H. compacta*, Lowe.)

*T. rimato-perf. subglobuloso-depressa v. globuloso-conoidea obtuse v. obsolete subcarinata solida crassa nuda granulata pallide cornea cinerascens obscure fasciata. Anfr. 6-7 lente crescentes convexiusculi, ult. antice deflexo. Apert. lunato-rotundata subcircinata, labris convergentibus approximatis subcontinuis. Perist. undique arcuatum fere circinatum simpliciusculum obtusum v. reflexum.*

59. *H. CONSORS*, Prim. 51. t. 6. f. 3; Küst. M. et C. p. 147. no. 582. t. 92. f. 1, 2 (male); Pf. i. 195.

*Hab.* in Portu S<sup>to</sup>.

*Var. a.* recens major, subtus lævigata (*H. consors*, Küst. l. c.);  $\beta$ . recens major, subtus sparsim subgranulata;  $\gamma$ . fossilis minor, subtus lævigata;  $\delta$ . fossilis minor, subtus sparsim subgranulata.

60. *H. CALCULUS. T. rimato-subperf. subecarinata orbiculato-convexa solida crassiuscula, tota subtiliter utrinque eleganter et confertim granulosa, supra inconspicue v. remote striata, subflavescenti-cinerea, apice levi fusco, fuscoque subindistincte bifasciata, aperturam versus pallide ochracea; spira convexa raro subconoidea, sutura distincta; anfr. 5½-6 convexis, ult. subtus convexo, antice deflexo, ad apert. vix subcontractiusculo; perf. subrimato-punctiformi coarctata minima; apert. obliqua rotundata fere circinata, labris approximatis subconjunctis; perist. subcontinuo simpliciusculo acuto undique expanso subreflexo.*

Diam. maj. 6½-8, min. 5¾-6¾, alt. 5-6 mill. Anfr. 5½-6.

*Hab.* in Portu S<sup>to</sup> rariss.

61. *H. COMPACTA*, Prim. 50, 51. t. 6. f. 2; Pot. et Mich. 79. no. 31; Küst. M. et C. p. 193. no. 645. t. 99. f. 25-27, 27\*; Pf. i. 198.

*Hab.* in Madera et Portu S<sup>to</sup> recens fossilisque.

*Char. essent.* *T.* subglobosa rimato-perf. supra grossiuscule subsparsim granulata, subtus egranulata lævis. Variat forma e conoideo-globulosa ad convexo-depressam.

*Varr. insigniores:*  $\alpha$ . *vulgaris*, subconoideo-globulosa, spira elevatiuscula sublævigata (Madera rec. et foss.);  $\beta$ . *major* (*H. consorti* accedens), cet. ut in  $\alpha$ . (Mad. foss.);  $\gamma$ . *Porto-sanctana* (*H. compacta*, Küst. l. c.), depressior rudior, magnitudine variabilis, umbil. sæpe subapertiore nec constricto-rimato (Portu S<sup>to</sup> rec. et foss.);  $\delta$ . *pusilla*, parvula, supra fere, subtus omnino egranulata, umbil. apertiore spirali nec rimato, cet. ut in  $\gamma$ . (Portu S<sup>to</sup> foss.).

62. *H. COMMIXTA. T. subaperte et spiraliter perf. v. umbil. distincte carinata orbiculato-depressiuscula subarctispira solida supra inæqualiter hinc inde subplicato-costata, utrinque subtiliter*

*arenulato-granulosa cinerea v. pallide fusco-cinerea; spira convexa sæpe depressa, sutura distincta; anfr. 5-6 planiusculis, ult. carinato, carina sæpe linea exarata expressa, antice valde deflexo, ad apert. scrobiculato-constricto contracto; umbil. spiraliter rotundato aperto nec contracto-rimæformi; apert. perobliqua rotundata v. oblique ovali circinata; perist. continuo relevato subsoluto undique reflexiusculo-expanso acuto.*

*α. major; subtilissime et confertim reticulato-granulata, carina linea subtus exarata prominente, umbil. latiusculo.*

Diam. maj.  $5\frac{1}{2}$ -6, min.  $4\frac{3}{4}$ - $5\frac{1}{2}$ , alt.  $3\frac{1}{2}$ -4 mill. Anfr. 5-6.

*Hab. recens in Portu S<sup>to</sup> rariss.*

*Obs. H. abjectæ γ. proxima; sed multo subtilius granulata, minus plicata v. costata, umbil. largiore, &c.*

*β. pusilla; minor v. parvula, minus plerumque subtiliter et confertim granulata, carina sæpe simplici.*

Diam. maj.  $4\frac{1}{4}$ -5, min.  $3\frac{3}{4}$ - $4\frac{1}{2}$ , alt. 3- $3\frac{1}{2}$  mill. Anfr. 5- $5\frac{1}{2}$ .

*Hab. foss. in Portu S<sup>to</sup> rariss.*

*Obs. H. compactæ δ. magnitudine habituque simillima. Differt testa subtus ut supra distincte granulata.*

63. *H. ABJECTA*, Prim. 50; Küst. M. et C. p. 144. no. 578. t. 91. f. 22-24; Pf. i. 188, 189. *H. candidata*, (Menke) Küst. M. et C. p. 193. no. 646. t. 99. f. 34-36; Pf. i. 198. (testa forsā jun. subincompleta).

*Hab. in Portu S<sup>to</sup>.*

*Varr. insigniores: α. conulus, major trochoidea conico-pyramidata, spira elevata, grosse granulata, carina simplici, Prim. l. c. t. 6. f. 1. β. conuloidea, minor: cet. ut in α. γ. subdepressa (H. abjecta, Küst. l. c.; H. candidata, Menke, ll. cc.), minor orbiculata, spira plus minus subdepressa: cet. ut in α. v. β. (status vulgatiss.). δ. bicin-gulata, carina duplicata, spira ut in α. β. γ. variante.*

64. *H. SPHÆRULA*, Syn. Diagn. p. 6. no. 21. *T. parvula minutissime perf. v. subimperf. subecarinata turbinato-globulosa v. sphæruleidea, aliquando conoidea v. trochoidea, arctispira solidula crassiuscula, utrinque grossiuscule sparsim granulata arcteq̄ tenuiterque substriata nitidiuscula apicem versus levi; spira semiglobosa v. conoidea plerumque obtusissima, sutura distincta impressa; anfr. 5-7 convexiusculis lente crescentibus, ult. obsolete subcarinato subtus planato, antice subito deflexo, ad apert. subcontractiusculo; perf. minutissima poriformi; apert. depressa transverse lunata subsinuato-triangulari, callo ventrali basalique coarctata, axin versus angustata, labris remotis subconvergentibus lamina junctis; perist. interrupto simpliciusculo s. rectiusculo subexpanso, intus basi distincte calloso, ad axin lamina reflexa subproducta perforationem partim obtegente.*

Diam. maj.  $4\frac{1}{2}$ -7, min.  $4\frac{1}{4}$ -6, alt.  $3\frac{1}{4}$ - $5\frac{1}{2}$  mill. Anfr. 5-7.

*Hab. in Madera fossilis; in Portu S<sup>to</sup> et fossilis et recens. Rariss.*

Tres adsunt status v. varietates: *α.* fossilis minor sphæruleidea (Syn. Diagn. l. c.), Maderæ; *β.* fossilis submajor trochoidea, Portu S<sup>to</sup>; *γ.* recens major trochoidea, Portu S<sup>to</sup>: utroque, præsertim recente, rariss.

## § 24. HYSTRICELLA.

*Ochthephila* (Beck) sp. Alb. 87.

(Typ. *H. bicarinata*, Sow.)

*T. perf. v. anguste umbil. conuloidea v. trochiformis, aliquando turrito-pyramidata acute v. distincte 1-2-carinata solidiuscula asperogranulata v. echinulata subfasciata. Anfr. 6-9 lente crescentes planiusculi, ult. valde carinato subtus planato, antice deflexo. Umbil. parvus anguste cylindricus v. subspiralis constrictus. Apert. circularis circinata labris connexis; perist. continuum solutum expanso-reflexiusculum tenue acutum.*

65. *H. BICARINATA*, Sow. in Zool. Journ. i. 58. t. 3. f. 7; Wood, Suppl. t. 8. f. 85; Küst. M. et C. pp. 141, 142. no. 574. t. 91. f. 8-11; Pf. i. 190. *H. duplicata*, Prim. 58. t. 6. f. 20; Pot. et Mich. Gal. p. 82. no. 40.

*Hab.* in Portu S<sup>to</sup>, vulg.

66. *H. ECHINULATA*, Prim. 57. t. 6. f. 19; Küst. M. et C. p. 140. no. 572. t. 91. f. 1-4; Pf. i. 189, 190.

*Hab.* in Portu S<sup>to</sup>.—Subvar. 1. infra bifasciata, vulg.; 2. infra late unifasciata s. fasciis confluentibus, rara.

*Obs.* Præcedenti nimis affinis et forsân mera var.

67. *H. OXYTROPIS*, Prim. 57. t. 6. f. 18; Küst. M. et C. p. 142. no. 575. t. 91. f. 12, 13; Pf. i. 190.

*Hab.* in Portu S<sup>to</sup>, rarior.

68. *H. TURRICULA*, Prim. 58. t. 6. f. 21; Küst. M. et C. p. 141. no. 573. t. 91. f. 5-7; Pf. i. 190, 191.

*Hab.* in Insula Superiore (Ilhé de Cima) juxta Portum S<sup>um</sup>, nec alibi.

69. *H. VERMETIFORMIS*. *T. anguste umbilicata distincte bicarinata pyramidato-conoidea solidula crassiuscula utrinque granulata; spira elevata anfractu ultimo quasi superimposita, carina inferiore suturæ distinctæ superincumbente; anfr. 7-7½ planiusculis conspicue bicarinatis, carina inf. prominente sulco infra exarata, ult. antice valde deflexo; umbil. parvo; apert. ovali-rotundata circinata, labris continuis conjunctis; perist. undique soluto relevato tenui acuto.*

Diam. maj.  $8\frac{1}{2}$ -9, min.  $8\frac{1}{4}$ - $8\frac{3}{4}$ , alt.  $7-8\frac{1}{2}$  mill. Anfr.  $7-7\frac{1}{2}$ .

*Hab.* fossilis in Portu S<sup>to</sup>, T. V. Wollaston.

*Obs.* Anfractibus primoribus *Vermeti* cujusdam (e. g. *V. lumbri-calis*, L.) simillima. Umbil. minor quam in *H. cheiranthicola*, fere ut in *H. oxytropide*; multo minor quam in *H. pulvinata*.

70. *H. MUSTELINA*. *T. perf. v. anguste umbilicata unicarinata obtuse conoidea subabbreviata solidiuscula undique grosse et confertim saccharato-granulata exasperata subechinulata cinereo-fuscescens v. columbina, fusco anguste fasciata; spira subabbreviato-conoidea apice peroblusa, sutura distincta subimpressa; anfr.*

7-7½ *planiusculis nec relevato-superimpositis nec supra suturam relevato-tumidis v. carinatis, ult. subobsolete carinato antice deflexo; umbil. parvo angusto subconstricto; apert. rotundata, labris subremotis convergentibus callo junctis; perist. interrupto expanso-reflexiusculo intus in angulum producto umbilicum coarctante.*

Diam. maj. 7-8, min.  $6\frac{1}{2}$ - $7\frac{1}{4}$ , alt.  $6\frac{1}{2}$ - $6\frac{3}{4}$  mill. Anfr. 7-7½.

*Hab.* in Portu S<sup>to</sup>, T. V. Wollaston, 1849.

*H. cheiranthicola*, cui proxima, minor.

71. *H. CHEIRANTHICOLA*, Prim. p. 57.

Var.  $\alpha$ . *spilospira*; spira maculata pallida, linea supra carinam fusca spirali. *H. cheiranthicola*, subvarr.: 2. *maculata*, et 3. *albida*, Prim. l. c.

Var.  $\beta$ . *tæniospira*; spira fascia unica lata nigricante, carina suturaeque pallidis. *H. cheiranthicola*, Subvar. 1. *zonata*, Prim. l. c. t. 6. f. 17; *H. cheiranthicola*, Küst. M. et C. p. 146. no. 581. t. 91. f. 31, 32; Pf. i. 212.

*Hab.* in Portu S<sup>to</sup>,  $\alpha$ . vulg.,  $\beta$ . rarior. Subvarr. in  $\alpha$ : 1, subtus fasciis binis distinctis; 2, iisdem fere v. omnino confluentibus; 3, fascia unica distincta superiore in fascias 2 v. 3 lineares secedente; 4 (Prim. l. c. Subv. 3, *albida*), albida, fasciis evanidis v. nullis. In  $\beta$ : 1 (Prim. l. c. t. 6. f. 17), 2, 3, ut in  $\alpha$ .

§ 25. DISCULA.

*Ochthephila* (Beck) sp. Alb. 88.

(Typ. *H. polymorpha*, Lowe.)

*T. umbilicata e trochiformi depresso-discoidea orbiculata distincte carinata solida crassiuscula scabro-granulata glabra albido-cinerea v. pallide cornea, fusco fasciata et maculata. Anfr. 7-8 lente crescentes plerumque attrito-planati, ult. acute carinato depresso, subtus planato, antice deflexo. Umbil. apertus patulus spiralis. Apert. depresso lunato-rotundata, labris subconvergentibus remotis interruptis callo junctis. Perist. simpliciusculum fere rectum subreflexum, intus late albo-incrassatum, basi subcallosum.*

72. *H. POLYMORPHA. T. subglobuloso-conoidea subtus convexa undique grosse saccharato-granulata scabra, carina obtusiuscula submedia, sæpe linea subtus exarata expressiuscula, spira plus minus elevata; anfr. 8 fere convexiusculis sutura subimpressa distincta; umbil. mediocri subspirali profundo, parietibus subdeclivibus abruptis.*

Diam. maj.  $9\frac{1}{2}$ -12, min. 9-11, alt. 7-8 v. 9 mill. Anfr. 7-8.

*H. polymorpha*  $\alpha$ . *irrasa*, Prim. 54. *H. saccharata*, MSS. olim.

*H. polymorpha*, Pf. i. 213; Küst. M. et C. p. 145. no. 580. t. 91. f. 28-30.

Var.  $\alpha$ . *pallescens*; spira maculato-pallida, linea supra carinam fusca spirali sæpe evanescente.

*Subvarr.* :—1, subtus distincte bifasciata ; 2, fasciis duabus subtus latissimis fere v. omnino in unam confluentibus ; 3, subtus unifasciata, fascia 2<sup>da</sup> exteriore evanescente (Prim. l. c. t. 6. f. 11) ; 4, fasciis omnibus utrinque evanidis sc. angustissimis v. nullis.

*Hab.* in Promont. S<sup>ti</sup> Laurentii Maderæ ; 1 et 3 vulgatiss., 4 rariore, 2 rariss.

*Var. β. nigricans* ; spira fasciato-nigricante, fascia unica lata nigro-coffæacea, carina modo suturaque pallidis.

*Subvarr.* 1, 2, 3 ut in *α* ; 4 deest.

*Hab.* præsertim in Insula quadam juxta Prom. S<sup>ti</sup> Laurentii, Ilheo de Fora dicta, rarior : Subv. 1 vulgatiore.

*Obs.* Spira altitudine admodum variat : nunc trochoideo-conoidea, nunc discoideo-depressa. Umbil. ut in *H. cheiranthicola*. Differt, testa grosse saccharato-granulata minus trochoidea, spira minus elevata, anfr. nec superimpositis nec carina supra suturam inciso-impresam prominente, sutura distincta sed minime inciso-impresata.

73. *H. PULVINATA*, Syn. Diagn. 6. no. 22. *T. albida depresso-conoidea undique subexquisite granulata subtus planiuscula s. plano-convexa, carina acutiuscula fere sed leviter expressa subinfera ; spira conoideo-elevata pulvinata sc. anfractui ult. subito latiori tumidulo quasi superimposita v. insidente, anfr. 7½ convexiusculis, inf. sæpe tumidulis, sutura impressa distincta ; umbil. patulo latiusculo spirali profundo ; apert. subangulata, perist. sinuato.*

*H. polymorpha ζ, pulvinata*, Prim. 56. t. 6. f. 16.

Diam. maj. 9–11, min. 8½–10, alt. 7–8 mill. Anfr. 7–8.

*Subvarr.* 1, spira vix submaculata, subtus efasciata ; 2 (Prim. l. c. t. 6. f. 16), spira maculata, subtus fasciis 1–2 plus minus continuis.

*Hab.* in Portu S<sup>to</sup> rarior.

*Obs.* Differt ab *H. polymorpha* testa pallescente albida, apice fusco-cærulescente, minus grosse granulata, subtus planiore, umbil. majore latiore nec parietibus adeo declivibus, carina subacutiore inferiore, sutura magis impressa, anfr. semetipsis v. ultimo abrupte latiori supra tumidulo quasi superimpositis.

74. *H. ATTRITA*, Syn. Diagn. 7. no. 23. *T. pallide cornea depresso-discoidea subtus convexa solida undique tenuiter et exquisite reticulato-granulata, carina supera acuta sæpe expressiuscula ; spira convexo-depressa, anfr. 7 planatis attritis, sutura obsoleta ; umbil. infundibuliformi, parietibus abrupte declivibus ; apert. angulata sæpe subtrigona, intus coarctata, perist. subsinuato intus valde incrassato-callosio subplicato calloque sæpe ventrali distincto.*

*H. polymorpha δ. attrita*, Prim. p. 55 ; *H. tectiformis*, Wood (nec Sowerby).

Diam. maj. 8½–10½, min. 8–10, alt. 5½–6 mill. Anfr. 6½–7.

*Subvarr.* : 1, pallida, supra maculato-variegata, subtus fusco anguste 1–2–3-fasciata (Prim. l. c. t. 6. f. 14 ; Wood, Suppl. t. 8. f. 83) ; 2, fusco-coffæacea, subtus circa umbil. pallida ; 3, tota variegata, fasciis evanescentibus.

*Hab.* in Portu S<sup>to</sup> vulg.



*Obs.* Forma et habitu peculiari ab affinibus omnino distincta statim dignoscitur. Anfr. ult. peristoma versus late ochraceo-albidus, fasciis evanescentibus.

75. H. TABELLATA, Syn. Diagn. 7. no. 24. *T. pallide cornea plano-discoidea supra planissima subtus convexa, tenuis, undique grossiuscule scabro-granulata, carina supera acuta; spira tabellatoplanata, anfr. 5½ planis attritis, sutura subobsoleta, umbil. patulo spirali.*

Diam. maj. 6-7½, min. 5½-7, alt. 3-3¼ mill. Anfr. 5-6.

*Hab.* in Madera, rara.

Species distinctissima, *H. maderensi*, Wood, quodammodo affinis. Carina distinctissima acuta, sed vix unquam expressa.

76. H. SENILIS. *T. grisea fusco lentiginosa et fasciata convexo-depressa v. depresso-discoidea plerumque limbato-carinata solida undique grosse albo-granulata scabra, carina acuta sæpissime expresso-prominente subsupera; spira plerumque depressa subplanata, anfr. planatis subattritis, sutura obsoleta; umbil. spirali, nunc minimo poriformi, nunc (in exemplis adultis majoribus vetustioribus) subpatulo majore.*

*H. senilis* et *poromphala*, Syn. Diagn. 7. nos. 25 et 26.

*Var. α. nebulata*; spira lentiginoso-maculata, fusco unilineata.

*Subvarr.*: 1, subtus fusco bifasciata; 2, fasciis subtus duabus fere v. omnino confluentibus; 3, subtus unifasciata; 4, omnino efasciata albidis.

Diam. maj. 7-13, min. 6½-11, alt. 4-6½ mill. Anfr. 6-7.

*Var. β. vittata*; spira late fusco unifasciata, carina suturaque pallidis.

*Subvarr.*: 1, 2, 3, 4 ut in *α*: 2 duas habet formas; *a*, spatio circa umbil. pallido sat largo; *b*, eodem angustissimo.

Diam. &c. ut in *α*.

*Var. γ. pusilla*; parvula subconoidea, spira elevatiore.

Diam. maj. 5½-6½, min. 5-6, alt. 4-4½ mill. Anfr. 6-6½.

*Hab.* in Ins. Desertis, *α* vulgatiss., *β* vulg., *γ* (in Ins. Des. Austr.) rariss., *α* etiam in Madera ad Caniçal foss.

*Obs.* Spira altitudine pervariabilis: nempe in Ins. Des. Austr. elevatior, anfr. distinctioribus imo convexiusculis; sutura subimpresiore, carina ob spiram altiorem media, testa lucidiuscula fere minore (diam. maj. 7-10 mill.) = *H. poromphala*, Syn. Diagn. 1. c.

77. H. LINCTA, Syn. Diagn. 7. no. 27. *T. cinerea, sæpe roseo-purpurascente suffusa, fusco-purpureo maculata et fasciata convexo-depressa orbiculato-discoidea obtuse carinata tenuiuscula, supra tenuiter, subtus obsolete granulata læviuscula lucida quasi lincta; carina obtusa exacte mediu nunquam expressa; spira convexo-depressa, anfr. 7 convexiusculis distinctis, sutura impressa; umbil. spirali subpatulo mediocri.*

*Var. α. rosea*; major roseo-purpurascens, spira fusco subtessellatim maculata, fascia lineari fusca supra, 1-2 infra carinam, exteriori sæpe in plures lineares soluta.

*H. polymorpha*  $\beta$ . *depressiuscula*, Prim. 54. t. 6. f. 12.

Diam. maj.  $9\frac{1}{2}$ – $11\frac{1}{2}$ , min.  $9$ – $10\frac{1}{2}$ , alt.  $5\frac{1}{2}$ – $6\frac{1}{2}$  mill. Anfr.  $6\frac{1}{2}$ – $7\frac{1}{2}$ .

*Hab.* in Madera Promont. Garajão versus.

*Var.*  $\beta$ . *cinerea*; minor pallida, spira fusco lentiginoso-maculata.

Diam. maj.  $7$ – $10$ , min.  $6\frac{1}{2}$ – $9$ , alt.  $5$ – $6$  mill. Anfr.  $6\frac{1}{2}$ – $7$ .

*Subvarr.*  $\beta$ : 1, supra carinam fusco lineari-unifasciata, infra fasciis 1–2, exteriore sæpe evanida v. soluta (*H. polymorpha*  $\gamma$ . *arenicola*, Subv. 1, Prim. 55. t. 6. f. 13; *H. polymorpha*, Küst. M. et C. t. 91. f. 25–27?); 2, *efasciata* (*H. pol.*  $\gamma$ , Subv. 2, Prim. p. 55).

*Hab.* recens ad Caniçal Maderæ.

*Obs.* Color roseo-purpurascens mox evanidus, in  $\beta$  inconspicuus.

78. *H. PAPILIO*, Syn. Diagn. 7. no. 28. *T. late porcellano-lactea*

*fulvo lentiginosa et fasciata convexo-depressa orbiculato-discoidea distincte carinata solidiuscula, supra subtiliter arenulato-granulata, subtus nitida lævis planiuscula sc. plano-convexa; carina subacuta exacte media nunquam expressa; spira convexiuscula subpulvinata sc. anfractui ult. antice subito latiori tumidulo insidente; anfr.  $7\frac{1}{2}$  planatis attritis, sutura (nisi antice) obsoleta; umbil. patulo spirali latiusculo; apert. subangulata.*

*H. polymorpha*  $\epsilon$ . *calcigena*, Prim. 56.

Diam. maj.  $10$ – $12$ , min.  $9\frac{1}{2}$ – $10\frac{1}{2}$ , alt.  $6$ – $6\frac{1}{2}$  mill. Anfr.  $7$ – $8$ .

*Subvarr.* 1, *efasciata* omnino fere candida, supra obscure maculata (Prim. l. c. t. 6. f. 15); 2, subtus 1–2-fasciata, fasciis sæpe interruptis, nunc distinctis, nunc confluentibus, fascia exteriore nunc in plures soluta, nunc evanescente, supra distinctius maculata.

*Hab.* in Ins. Infera (I. de Baxo) juxta Portum S<sup>um</sup> rarior.

*Obs.* Species inter *H. pulvinatam* et *discinam* media, utrique adeo affinis ut neutri magna sine perturbatione v. confusione conjungi potest. Ab utraque scilicet carina haud expressa testa que subtus nitida lævi i. e. fere (nisi interdum casu ut videtur quodam antice) egranulata differt. Testa subtus magis planata, spira minus elevata nec conoidea, carina magis acuta, umbil. minus profundo, quam in *H. pulvinata*: testa subtus minus planata, spira paullo magis elevata, carina minus acuta, umbil. subcontractiore subprofundiore quam in *H. discina*. Granulatio potius *H. discinæ* supra: sc. quodammodo subtilior obsoletiorque quam in *H. pulvinata*. Cuilibet eam pro forma *H. pulvinatæ* depressa habenti oppugnat, non modo forma depresso-discoidea spiraque minus alta minime conoidea, sed et anfr. planati attriti sutura que (nisi paullum antice) obsoleta, necnon carina acutior non expressa. Ab *H. discina* tamen spira subaltiore subpulvinata, sutura antice subimpressa, testa subtus convexiore, anfr. ult. minus depresso antice supra tumidulo, carina minus acuta nec limbata, umbil. subcontractiore parietibus fere declivioribus, apert. subangulata, quamvis ad illam habitu vel proxime accedens, *characteribus* magis recedit.

79. *H. DISCINA*, Syn. Diagn. 7. no. 29. *T. fulva v. cinereo-ful-*

*vlescens supra sublentiginosa subtus fusco-fasciata, orbiculato-discoidea utrinque subplanata acutissime carinata, supra subtiliter, subtus vel subtilissime et reticulatim obsolete granulata, subtus*

*praesertim nitidiuscula planata; carina peracuta expressiuscula sublimbata exacte media; spira convexo-depressa, anfr. 7 planatis attritis, ult. valde depresso complanato, sutura obsoleta; umbil. largo patulo spirali minime profundo.*

Diam. maj. 10–12½, min. 9–11, alt. 5½–7 mill. Anfr. 6½–7.

*Subvarr.* 1, supra fusca submaculata, infra pallida fusco fasciata, fascia plerumque unica distincta; 2, tota fusca subunicolor praeter spatium latum pallidum circa umbilicum; 3, tota pallida efasciata.

*Hab.* in Portu S<sup>to</sup> vulg.: 3 rariss.

80. *H. TESTUDINALIS*, Syn. Diagn. 7. no. 30; Küst. M. et C. t. 154. f. 36–38. *T. ochraceo- v. fulvo-cornea fusco-castaneo cinereoque lentiginosa et fasciata orbiculato-discoidea nitidiuscula obtuse carinata, subtus convexa laevis lucida, supra subtilissime granulata et arcte striata, carina obtusiuscula supera; spira depressa convexo-planata, anfr. 8 convexiusculis, sutura impressa; umbil. largo patulo spirali.*

Diam. maj. 17–19, min. 16–17, alt. 8–9 mill. Anfr. 7–8.

*Hab.* in Portu S<sup>to</sup>. Inv. T. V. Wollaston.

*Obs.* Testa ob magnitudinem inter affines insigniorem coloresque pulchre testudinales eximia. Linea spirali fusca distincta, supra carinam in medio anfractuum per spiram continuata, carina quasi duplicata videtur.

## § 26. TECTULA.

*Trochomorpha*, sp. Alb. 116.

(Typ. *H. Bulveriana*, Lowe.)

*T. umbilicata cupuloideo-trochiformis subdepressa acutissime limbato-carinata subtenuis glabra nitidiuscula granulata fasciata. Spira cupuloidea. Anfr. 7–8 lente crescentes planati attriti quasi confluentes, sutura obsoleta, ult. eximie carinato depresso subtus planato antice deflexo. Umbil. mediocris apertus spiralis. Apert. rotundata labris conniventibus interruptis, callo rectilineari raro subconjunctis. Perist. incrassato-subreflexum.*

81. *H. LYELLIANA*, Syn. Diagn. 8. no. 31; Küst. M. et C. t. 154. f. 39–41. *T. umbil. depresso-trochiformis laevis, supra omnino egranulata subtilissime spiraliter striata cinereo-fusca sublentiginosa obscure fasciata, subtus roseo-purpurascens, mox pallide cinnamomea, fusco distinctissime fasciata; spira obtuse subconoidea depressa, sutura ob carinam subprominulam distinctiuscula; anfr. 8, ult. sublimbato-carinato antice valde deflexo et infra carinam descendente; umbil. minime profundo; apert. rotundata; perist. incrassato-reflexo subexpanso aequali, extus ad carinam haud angulato, labris conniventibus interruptis, callo rectilineari aliquando junctis.*

Diam. maj. 13½–15½, min. 12–14, alt. 7–8 mill. Anfr. 8–8½.

*Hab.* in Ins. Des. Media s. Majore, in Promont. Occidentali alto graminoso.

*Subvarr.* 1, subtus bifasciata; 2, fasciis subtus duabus in unam latam fere v. omnino confluentibus; 3, subtus unifasciata, 2<sup>da</sup> exteriore evanescente.

*Obs.* T. supra oculo armato obsolete confertissime spiraliter striata; subtus paullo infra carinam obsolete subgranulata, medio (ut supra) omnino egranulato lævi.

82. H. ALBERSII, Syn. Diagn. 8. no. 32. *T. umblicata depresso-trochiformis utrinque subtiliter granulata cerino-cornea fusco fasciata, carina media, subtus convexiuscula; spira obtuse subconoidea depressa, sutura obsoleta; anfr. 8, ult. sublimbato-carinato antice deflexo et infra carinam paullum descendente; umbil. profundo; apert. transverse ovali depressa; perist. incrassato-reflexo æquali, extus ad carinam haud angulato, labris subconniventibus interruptis lamina tenuissima rectilineari aliquando junctis.*

Diam. maj. 14–16, min. 13–15, alt. 8–9 mill. Anfr. 7½–8.

*H. Bulveriana*, Küst. M. et C. t. 13. f. 9, 10.

*Hab.* in Portu S<sup>to</sup> cum *H. Bulveriana* vera commixta.

*Subvarr.* 1, fasciata; 2, virescenti-citrina v. pallide prasina, omnino efasciata et immaculata, rariss.

*Obs.* Striolarum spiraliū vestigia inter granulationes obsoletissima oculo armato sedulo scrutanti apparent.

83. H. BULVERIANA, Prim. 44. t. 5. f. 11; Pf. i. 208. *H. Bulverii*, Wood, Suppl. t. 8. f. 82. *H. rota* (Lowe ex fide Terver), Pot. et Mich. Gal. p. 106. no. 106. *H. Rota*, Lowe, MSS. olim.

*Hab.* in Portu S<sup>to</sup>.

Due adsunt varr. :  $\alpha$ , spira planata;  $\beta$ , subminor, spira elevatiore. *Subvarr.* utriusque var. etiam duæ: 1, subtus distincte fasciata (Prim. l. c. t. 5. f. 11); 2, fasciis confluentibus.

*Obs.* Differt ab *H. Albersii* testa (præsertim jun.) depressiore tenui subtus planata, spira obtusiore cupuloideo-rotundata, carina infera, late limbata, apert. angulari, peristomate recto simpliciusculo, anfr. ult. haud infra carinam descendente, colore. Striolarum spiraliū ne minima quidem vestigia detexi.

84. H. TECTIFORMIS, Sow. in Zool. Journ. i. p. 57; Prim. p. 45; Pf. i. 208; Küst. M. et C. p. 158. no. 599.

*Hab.* in Portu S<sup>to</sup> et in I. de Baxo juxta Portum S<sup>um</sup>.

*Subvarr.* tres: 1, tota cretaceo-candida (Sow. l. c. t. 3. f. 6; Prim. l. c. t. 5. f. 12; Küst. M. et C. l. c. t. 94. f. 13–15); 2, fusco supra 1-, subtus 2-fasciata; 3, fusco supra 1-fasciata, subtus fasciis confluentibus.

*Obs.* Umbil. magnitudine pervariabilis.

## § 27. CRASPEDARIA.

(Typ. *H. Delphinula*, Lowe.)

*T. perspective umblicata depresso-trochoidea obtusa latissime limbato-carinata cancellatim striolata subtus spiraliter costellata.*

*Anfr.* 7–8 *planati confluentes, carina plicato-dentata per spiram excurrente prominente imbricati, sutura obsoleta; ult. subtus infra carinam convexo semicylindrico, antice valde deflexo producto disjuncto. Umbil. amplius profundus eximie perspectivus. Apert. relevato-depressissima subquadrato-circularis. Perist. continuum omnino relevato-solutum fimbriato-expansum patulo-reflexum intus et extus ad carinam angulatum. Axis plane nullus.*

*Obs.* Sectio *Creneis* veris (*Creneæ*, Alb. pars) per *H. cariosam*, Oliv. subaffinis, carina quasi foliaceo-membranacea crispula subplicata v. sinuata erosulo-crenata, necnon umbilico Solariformi patulo perspectivo intus crenato-granuloso perquam mirabilis.

85. *H. DELPHINULA*, Prim. 64; Syn. Diagn. 8. no. 33. *T. latissime et perspective crenato-umbilicata depresso-trochoidea fanulo-sinensiformis apice obtusissima planata, latissime limbato-carinata subochraceo-cretacea decolorata, infra carinam spiraliter costellata et decussatim cancellata, supra tenuiter lineolis obliquis spiralibusve undatis arcte arenulato-reticulata; spira imbricato-carinata cupuloideo-tectiformi obtusissima apice plano-truncata; anfr. 7–8 subplanatis confluentibus infra suturam obsoletam carina latissima fimbriato-prominente quasi foliaceo-membranacea sinuato-erosula subundato-crispula conspicua imbricatis, ult. infra carinam semicylindrico distincte spiraliter costato et ruguloso-cancellato aspero, antice insigniter deflexo disjuncto producto; umbil. solariformi largo profundissime perspectivo intus crenato-rugoso cancellatim granuloso; apert. relevato-obliquissima subprona inæqualiter circulari subquadrato-rhombea intus et extus angulata; perist. circinato-producto undique relevato-disjuncto expanso-tubæformi late reflexo margine tenui acuto subplicato flexuoso biauriculato s. utrinque subcanaliculato-angulato.*

Diam. maj. 18–23, min.  $15\frac{1}{2}$ –21, alt. 10–11 mill. *Anfr.* 7–8.

*Delphinula*, Bowdich, Exc. in Mad. 140. f. 33 a, b.

*Hab.* fossilis ad Caniçal Maderæ vulgatiss.: nec alibi!

*Obs.* Umbil. magnitudine subvariabilis.

## § 28. CORONARIA.

*Ochthephila*, (Beck) sp. Alb. 87.

(Typ. *H. tiarella*, Webb.)

*T. pervio-umbilicata trochiformi-mamillata v. depresso-discoidea bicarinata eleganter costellata et sulcata, spira plicato-coronata. Anfr. 5–7 distincti, ult. subtus infra carinas convexo semicylindrico, antice valde deflexo, ad apert. constricto. Apert. circularis v. coarctato-triangularis relevato-depressissima. Umbil. apertus fere largus perspectivus. Perist. circinatum omnino solutum subproductum continuum sinuato-subexpansum acutum, nunc simplex, nunc quasi distorto-duplicatum margine intra stricturam aperturæ immerso, labroque intus tuberculo (ut in *H. pauperula*) unidentato.*

*Obs.* Sp. fere cretaceo-albidæ, omnes forsan subterraneæ.

86. *H. TIARELLA*, Webb, Syn. Moll. Can. p. 12. no. 18; Ejusd. Hist. Canar. T. ii. p. 62. t. 1. f. 26-28; Pot. et Mich. Gal. p. 114. no. 127; Küst. M. et C. p. 143. n. 576. t. 91. f. 14-16; Pf. i. 191; Prim. (Ed. 1851) App. p. xv.

*Hab.* ad Caniçal Maderæ vulgatiss. foss. nec recens. Prorsus errore inter species Canarienses enumeratam credo.

*Obs.* Umbil. magnitudine pervariabilis.

87. *H. CORONULA*, Syn. Diagn. 8. no. 34. *T. late umbilicata convexo-depressa subdiscoidea solidiuscula opaco-cretacea sub-bicarinata, subtus exquisite cancellatim costellata; spira convexo-depressa coronata; anfr. 5-6 contabulatis s. supra carinam superiorem prominentem sinuato-dentatam planatis et foveolatim tuberculato-plicatis, tuberculis æquidistantibus radiantibus, sutura distincta; umbil. largo patulo pervio profundo; apert. rotundata subtriangulari constricta; perist. undique soluto expanso sinuato acuto.*

Diam. maj.  $5\frac{1}{2}$ - $7\frac{1}{2}$ , min.  $5\frac{1}{4}$ - $6\frac{1}{2}$ , alt.  $3$ - $4\frac{1}{2}$  mill. Anfr. 5-6.

*Hab.* in summo jugo Ins. Des. Australis, statu semifossili, v. saltem emortua omnino ecolorata, hinc inde obvia.

*Obs.* Species elegantissima, subtus insigniter ac pulchre spiraliter costata et sulcata costellisque transversis decussantibus eximie cancellata; costis subseptenis exquisite expressis, superioribus subprominentioribus, summa carinam inferiorem subindistinctam formante.

88. *H. CORONATA*, Desh. *T. late umbil. orbiculato-discoidea planulata solidiuscula subhyalina bicarinata, supra pallide rufescens, subtus subopaco-lactea costisque ab umbilico divergentibus flexuosis remotis infra carinam inferiorem limbato-prominentem integram rotato-radiata; spira subconvexo-depressa subcoronata; anfr. 5, carina superiore oblique tuberculato-plicata distinctissimis, sutura excavata, carina inferiore simplici acuta limbata; umbil. largo patulo pervio profundo; apert. sinuato-triangulari constricta tuberculo maximo ad labrum intus prominente coarctata; perist. undique soluto expanso sinuato tenui acuto.*

Diam. maj.  $5\frac{1}{2}$ - $6\frac{1}{2}$ , min. 5-6, alt.  $3$ - $3\frac{1}{2}$  mill. Anfr. 5-6.

*H. coronata*, Desh. in Fér. Hist. i. 71. t. 69 K. f. 1-4 (statu fossili).

*H. juliformis*, Syn. Diagn. 8. no. 35 (Febr. 1852).

*Hab.* in Portu S<sup>to</sup>. Semifossilis in arena calcarea ipse A.D. 1828 sat abundanter legi. Recens in cacumine extremo orientali Insulæ A.D. 1848 rariss.: detexit Wollaston. In Madera nullibi extat.

## § 29. PLACENTULA.

*Ochthephila*, Beck, sp. Alb. 87.

(Typ. *H. maderensis*, Wood.)

*T. aperte plerumque late umbilicata orbiculata depresso-lenticularis angulato-carinata solidiuscula costellato-striata subtiliter granulata glabra nitidiuscula plerumque fasciata. Anfr. 5-7 leniter*

*crescentes subplanati, ult. subtus convexo, antice subito deflexo. Umbilicus apertus fere patulus spiralis. Apert. depressa valde obliqua circularis, labris conjunctis. Perist. circinatum continuum subsolutum subincrassatum vix subreflexum.*

*Obs. Disculæ proxima. Differt habitu, apertura circulari, labris conjunctis circinatis, testa subtiliter nec grosse granulata semper lenticulari. Granulæ nempe oculo armato tantum conspicuæ. Cam-pylææ, (Beck) Alb. 81, etiam affinis.*

89. H. COMPAR, Prim. 48. t. 5. f. 23; Pf. i. 214.

*Hab. in Madera.*

90. H. MADERENSIS, Wood, Suppl. t. 8. f. 84; Prim. 48. t. 5. f. 22; Küst. M. et C. pp. 147, 148. no. 583. t. 92. f. 9, 10; Pf. i. 213.

Status (vix var.) major: *H. tæniata*, Webb et Berth. Syn. Moll. App. p. 21. no. 2; Ejusd. Hist. Canar. T. ii. Pars ii. p. 63. t. 3. f. 18-20 (auctæ); Pf. i. 189.

*Hab. vulgatiss. in Madera, nec alibi! H. tæniata*, Webb, ex exemplaribus Maderensibus procul dubio orta.

*Subvarr. tres: 1, subtus fascia angusta distincta; 2, fascia lata infra carinam; 3, omnino efasciata; 1 vulgatiss.; 2 rarior; 3 vulg.*

*Diam. maj. fere 6, rariss. usque ad 9 v. 10 mill.*

91. H. SPIRORBIS, Syn. Diagn. 6. no. 36. *T. parvula latissime umbilicata depresso-lenticularis planiuscula subobtuse angulato-carinata tenuiuscula, supra tota granulata et confertim argute substriata, subtus læviuscula lucida aperturam versus subgranulata, utrinque obscure fusco unifasciata subunicolor fasciis evanescentibus; spira planato-depressa, apice obtusissima; anfr. 5 convexiusculis, sutura impressa distincta; umbil. amplo patulo profundo perspectivo, pariete planato; apert. rotundata oblique subovali; perist. undique soluto subexpanso albo.*

*Diam. maj. 5-5½, min. 4-4½, alt. 2¼-2½ mill. Anfr. 5.*

*Hab. in Madera rariss.*

92. H. LEPTOSTICTA, Prim. 49. t. 5. f. 24; Küst. M. et C. t. 152. f. 9, 10; Pf. i. 214.

*Hab. in Madera.*

*Subvarr. 1, cuprea v. purpureo-fusca, circa umbilicum lactescens, distinctius bifasciata; 2, pallida, cornea, fasciis evanidis. Nisi vero in exemplaribus recenter captis subvarr. ægre distinguuntur; colore purpureo v. roseo cito evanescente.*

93. H. MICROMPHALA, Syn. Diagn. 9. no. 38. *T. subrimato-umbilicata orbiculata subglobulosa depressa obtuse subcarinata tenuiuscula tota confertim et reticulatim arenulato-granulata, subtus sublævior lucida subpellucida aperturam versus opacolactescens, fusco infra carinam obscure unifasciata; spira convexa exsertiuscula, anfr. 6 convexiusculis, sutura distincta; umbil. perparvo subrimato-poriformi vix spirali; apert. oblique ovali*

*subcontracta*; *perist. vix undique soluto contractiusculo simplici acuto albo.*

Diam. maj. 7-8, min. 6-7 $\frac{1}{4}$ , alt. 4-5 mill. Anfr. 6.

*Hab.* in Insulis Des. Majore et Minore vulg.

94. *H. DEALBATA*, Prim. 48; Küst. M. et C. p. 262. no. 245. t. 38. f. 20, 21; Pf. i. 166.

*Hab.* in Portu S<sup>to</sup>.

*Var.  $\alpha$* , (Prim. l. c. t. 5. f. 21) tota distincte granulata;  $\beta$ , (*H. dealbata*  $\beta$ , Prim. l. c.; *H. fictilis*  $\beta$ , Syn. Diagn. 9. no. 37) granulis subobsoletis læviuscula;  $\gamma$ , fere minor obscure bifasciata, in *H. fictilem* quodammodo transiens.

95. *H. FICTILIS*, Syn. Diagn. 9. no. 37. *T. latiuscule umbilicata orbiculato-depressa planato-lenticularis subacute angulato-carinata solidiuscula lævigata obsolete v. indistincte hinc inde, præsertim supra, subgranulata, subtus nitida lævis ad carinam fusco sæpissime bifasciata, ore ochraceo; spira convexo-depressa anfractui ultimo antice tumidulo quasi superimposita; anfr. 5-5 $\frac{1}{2}$  subplanulatis hinc inde radiuscule oblique striatis l. subplicatis, sutura subindistincta antice impressa; umbil. latiusculo subspirali patulo, pariete planato; apert. rotundato-ovali; perist. undique soluto relevato, incrassato expansiusculo ochraceo.*

Diam. maj. 7-8, min. 6-6 $\frac{1}{2}$ , alt. 3 $\frac{1}{2}$ -4 mill. Anfr. 5-5 $\frac{1}{2}$ .

*Hab.* in Portu S<sup>to</sup> gregaria.

*Subvarr.* 1, plus minus fusco-castanea, fusco bifasciata; 2, pallescens, fusco bifasciata; 3, decolorata alba, fasciis evanidis v. nullis (*H. fictilis*, Küst. M. et C. t. 154. f. 29-31, opt.).

### § 30. CARACOLLINA, Beck.

*Gonostoma*, (Held) pars, Alb. 94.

(Typ. *H. barbula*, Charp.)

*T. aperte pervio-umbil. depresso-planata lenticularis acute angulato-carinata artispira sæpissime nuda sat firma pallide corneo-rufescens unicolor, supra arcte striolata v. costellata. Anfr. 5-7 æquiescentes plano-convexiusculi, ult. depresso acute carinato antice vix deflexo. Umbil. mediocris sat largus spiralis. Apert. subangularis anguste depresso-lunata coarctata, labris interruptis remotis. Perist. subflexuosum, nunc reflexo-labiatum dentato-sinuatum, nunc simplex acutum basi subreflexum.*

*Obs.* *Hispidellæ* (necnon *Euromphalæ*) per *H. actinophoram* in *Actinellis* huc quoque spectantibus affinis.

96. *H. LENTICULA*, Fér. Prodr. p. 37. no. 154; Hist. i. 361. t. 66\*. f. 1; Pot. et Mich. p. 91. no. 63; Rossm. vii. p. 12. f. 452; Küst. M. et C. t. 13. f. 20, 21; Pf. i. 211. *H. subtilis*, Prim. 45. t. 5. f. 13.

*Hab.* in Madera; et in Portu S<sup>to</sup>, T. V. Wollaston.



## § 31. CHEILO TREMA, Leach, Alb. 117.

*Latomus*, Fitz.(Typ. *H. lapicida*, L.)

*T. aperte pervio-umbil. depresso-planata lenticularis acute angulato-carinata granulata nuda firma nebulatim rufo-fusca efasciata. Anfr. 5 planati, sutura distincta marginata, ult. depresso acute carinato, antice valde deflexo. Umbil. largus perspectivus. Apert. obliquissima deflexa transverse ovalis. Perist. reflexo-labiatum circinatum utrinque angulatum, labris continuis conjunctis undique relevato-solutis.*

97. *H. LAPICIDA*, L. Drap. 111. t. 7. f. 35–37; Rossm. i. p. 63. t. 1. f. 11; Gray, Man. 140. t. 5. f. 51; Pf. i. 370. *Carocolla lapicida*, Lam. Hist. vi. 2. p. 99.

*Hab.* fossilis rariss. in Portu S<sup>to</sup>, quo exemplar unicum in arena calcarea Helicifera A.D. 1849 detexit oculatissimus Wollastonus. Viva nullibi in Ins. Maderensibus hodie extat.

*Obs.* Diu et sedulo scrutanti, ad amussim cum exemplaribus Britannicis recentibus exemplar vel optime conservatum fossile hoc pretiosissimum, mihi comparandi causa benignissime commissum, omnino congruere compertum est.

## § 32. LAMPADIA, Alb. MSS.

*Mitra*, Alb. 115.(Typ. *H. Webbia*, Lowe.)

*T. imperf. lampadiformis depressa limbato-carinata tenuis granulata fulva subvirescens efasciata concolor. Anfr. 3–4 cito crescentes, ult. subtus convexo antice deflexo. Apert. ampla patula transverse ovalis auriformis extus ad carinam angulata, labris conniventibus disjunctis. Perist. tenue patulum reflexo-expansum a carina usque ad axin arcuatum. Axis tenuis simplex verticalis intrans, labro arcuatim junctus.*

*Obs.* *Helicophantæ*, Beck, per *H. cornu giganteum*, Chemn., necnon *Corasiæ*, Alb. affinis. Nomen annuente cl. auctore mutandum, ob genus notissimum *Mitram*, Lam.

98. *H. WEBBIANA*, Prim. 44. t. 5. f. 10; Fér. Hist. i. 344. t. 28 A. f. 7, 8; Küst. M. et C. p. 306. no. 300. t. 52. f. 5, 6; Pf. i. 219.

*Hab.* in Portu S<sup>to</sup>.

## § 33. IBERUS, Montf.

*Crenea*, sp. Alb. 78.(Typ. *H. Gualteriana*, L.)

*T. imperf. vel obtecte perf. spiriplana subdiscoidea compresso-carinata subtus convexa solidiuscula subconcolor obscure fasciata fere*

*decolorata cretacea nuda plicato-striata granulata v. reticulata.*  
*Anfr.* 4–5 cito crescentes plani, ult. carina fere limbata et per  
 spiram ad suturam prominente, antice valde deflexo. *Apert.*  
 lunato-securiformis s. transverse ovato-rhombea subquadrangularis  
 ad carinam angulata, labris conniventibus callo laminave junctis.  
*Perist.* supra rectum simplex, infra carinam reflexiusculum, axin  
 versus calloso-incrassatum, arcuatim axi junctum.

*Obs.* Testæ majusculæ formaque sculpturaque inter insigniores.  
 Species certæ paucæ: sc. *H. scabriuscula*, Desh., *H. Gualteriana*,  
 L., et *H. Wollastoni*.

99. *H. WOLLASTONI*, Syn. Diagn. 9. no. 41. *T. omnino imperf.*  
*subdiscoideo-depressa utrinque convexiuscula medio-carinata soli-*  
*diuscula eleganter obliquissime crebriplicata, plicis undulatis con-*  
*cinnis, tota subtilissime et confertissime arenulata, nebulatim*  
*castaneo-virescens, fusco obscure bifasciata, fauce rosea; spira*  
*convexo-depressa, apice prominente lævi roseo, sutura distinctissima*  
*inciso-imprensa; anfr.* 5 planiusculis tumidiusculis, ult. valde  
 deflexo, carina compressa s. utrinque subexarata exacte media ad  
 suturam immersa nec per spiram continuato-prominente; *apert.*  
 valde obliqua depressa transverse ovali subquadrato-rhombea, intus  
 ad axin et extus ad carinam angulata, labris conniventibus lamina  
 callosa junctis; *perist.* roseo continuo supra recto simplici acuto  
 basi reflexiusculo axin versus incrassato dilatato-plano.

*Diam.* maj. 18–20, min. 16–18, alt. 10–12 mill. *Anfr.* 5–5½.

*H. Wollastoni*, (Lowe) Küst. M. et C. t. 152. f. 15, 16 (opt.).

*Hab.* in Portu S<sup>to</sup> recens fossilisque. Recens primus detexit  
 cl. Wollaston; cujus vigor conchologicus, ne dicam vis entomologica  
 (vide "*Insecta Maderensia*, auctore T. V. Wollaston, Londini 1854,"  
 opus eruditionis elegantissimæ ut curæ laborisque stupendæ), sum-  
 mum sibi parat honorem.

### Genus 3. BULIMUS, Scop.

#### § 1. ELISMA, Leach.

*Cochlicellus*, (Beck) Alb. 178 (nec Fér.).

(Typ. *B. acutus*, Müll.)

*T. anguste perf. conica v. conico-turrita jun. carinata, carina in*  
*adultis evanescente, pallida fusco fasciata v. strigato-maculata*  
*absque nitore. Anfr.* 6–10, ult. in statu saltem jun. subcarinato  
 v. obsolete angulato. *Apert.* rotundato-ovalis, spira multo brevior.  
*Perist.* simplex acutum ad perf. tenuiter reflexum.

100. *B. VENTROSUS*, Fér.; Prim. 62. no. 60; Pf. ii. 215. *B.*  
*ventricosus*, Drap. 78. t. 4. f. 31, 32; Rossm. vi. 41. f. 377. *Helix*  
*acuta*, Webb. et Berth. Syn. p. 13. no. 21 (nec Müll.).

*Hab.* in Madera vulg. in Portu S<sup>to</sup> rara.

Duo adsunt varr.:  $\alpha$ , ventricosior ovato-conica abbreviata efas-

ciata;  $\beta$ , gracilior ovato-turrita fasciata, figuris Drap. supra cit. omnino consimilis. *Obs.* *B. solitarius*, Poir. (*Helix conoidea*, Drap.) verus in Madera nondum detectus est.

§ 2. RUMINA, Risso, Alb. 176.

(Typ. *B. decollatus*, L.)

*T. subrimata cylindrico-elongata mox decollato-truncata lucidiuscula pallide rufo-cornea unicolor.* Anfr. 4-6, primoribus 8-10 amissis. *Apert.* ovata, spira multo brevior. *Perist. rectum simpliciusculum obtusum incrassatum, labris callo junctis.*

101. *B. DECOLLATUS*, L. Prim. 62. no. 61; Drap. 76. t. 4. f. 27, 28; Webb et Berth. Syn. p. 14. no. 1; Phil. i. 139. t. 8. f. 14; Rossm. vi. p. 45. f. 384; Gray, Man. 5. t. 6. f. 60; Pf. ii. 152, 153.

*Hab.* prope urbem Funchal: Maderæ.

Genus 4. ACHATINA, Lam.

DIV. *Lubricellæ* (GLANDINÆ, Schum. pars *Cionella*, Alb. 198, et AZECA, Leach, Alb. 199): testæ parvulæ læves lucido-nitentes pellucidæ unicolores pallide fulvo-corneæ: anfr. fere planati, sutura marginata, apice solidiuscula submamillari obtusa.

§ 1. ZUA, Leach.

*Cionella*, Jeffr. sp. Alb. 198.

(Typ. *A. lubrica*, Müll.)

*T. turrita oblonga valde obtusa, spira producta, anfr. 5-6 convexiusculis, sutura distincta vix marginata.* *Apert.* simpliciter obovata supra acuta spira multo brevior. *Perist. marginatum opaco-incrassatum obtusum.* *Colum. subcallosa basi attenuata simplex (nec prominulo-truncata) cum labro subcontinua, truncatura v. emarginatione obsoletissimis vix ullis.*

102. *A. MADERENSIS.* *T. minuscula pellucida splendide nitens angustato-oblonga graciliuscula ab anfr. ult. usque ad apicem subattenuata; anfr. 6 convexiusculis; apert. testæ latitudinem sc.  $\frac{2}{5}$ - $\frac{4}{11}$  longitudinis æquante; colum. distincte arcuata basi obsoletissime truncata v. emarginata in labrum attenuata.*

Longit.  $4\frac{3}{4}$ - $5\frac{3}{4}$ , diam.  $1\frac{3}{4}$ - $2\frac{1}{4}$  mill. *Apert.*  $1\frac{3}{4}$ - $2\frac{1}{4}$ , spira 3- $3\frac{1}{2}$  longa. Anfr. 6.

*Bulimus maderensis*, Syn. Diagn. 10. no. 42. *Helix C. lubrica*, var. Prim. 61. t. 6. f. 29 (nec Müll.). *Achatina lubrica*,  $\gamma$ . Pf. ii. 273.

*Hab.* in Madera vulg.

*Obs.* *T. corneo-umbrina*, animali foeta nigricans.

## § 2. FERUSSACIA, Risso.

*Cionella*, sp. Alb. 198.

(Typ. *A. folliculus*, Gron.)

*T. subturrita cylindraceo-elliptica* v. *fusiformis pellucido-tenuis*.  
*Apert. angustato-ovata supra acuminata spira fere brevior*.  
*Colum. basi obsoleta simpliciuscula* (sc. *obsoletissime* v. *promi-*  
*nula* v. *torta* v. *truncata* v. *plicata* v. *emarginata*) *in labrum*  
*attenuata*.

103. *A. FOLLICULUS*, (Gron.) Phil. i. 141. t. 8. f. 27; Rossm. ix., x. 34. f. 656; Pf. ii. 283; Fér. Hist. ii. 170. t. 134. f. 28-30. *A. follicula*, Pot. et Mich. 127. no. 4. *Ferussacia Gronoviana*, Risso, Hist. iv. 80. t. 3. f. 27.

Test. juv. (abbreviato-ventricosæ), Phil. loc. cit. f. 27a; *Physa scaturiginum*, Drap. 56. t. 3. f. 14, 15; *Vediantius eristalius* (cristallus?), Risso, l. c. 82. t. 3. f. 24.

*Hab.* rara in apricis ad terram inter dumeta *Opuntia Tunæ*, Dill. prope urbem Funchal. Maderæ. Primus detexit T. S. Leacock.

*Obs.* In exempl. Lusitanicis, a cl. Höll olim lectis, colum. basi magis quam in Maderensibus prominula.

104. *A. GRACILIS*. *T. minuscula angustata turrita splendide nitens pallide fulvo-cornea* v. *hyalina fusiformis utrinque attenuata gracilis*; *spira producta gracili-attenuata subacuminata minus obtusa, anfr. 7 æqualibus æquicrescentibus planatis*; *apert. spiram subæquante* v. *illa distincte brevior*; *labro strictiusculo vix convexo-arcuato*; *colum. basi obsoleta vix ac ne vix prominula* v. *truncata in labrum attenuata*.

Var.  $\alpha$ . *terebella*; major magis colorata fulvo-cornea subventricosuscula v. minus gracili-turrita, apert. spiram subæquante, labro subconvexo-arcuato.

Longit. 5—6 $\frac{2}{3}$ , diam. 2—2 $\frac{1}{2}$  mill. Apert. 2 $\frac{1}{2}$ —3 $\frac{1}{2}$ , spira 2 $\frac{1}{2}$ —3 $\frac{1}{4}$  longa. Anfr. 6 $\frac{1}{2}$ —7.

*A. Terebella*, Syn. Diagn. 11. no. 47.

*Hab.* in monte Pico Branco, et in jugo orientali Insulam Superam (I. de Cima) versus Portûs S<sup>ti</sup>, Wollaston.

Var.  $\beta$ . *subula*; minor pallidior gracilior v. magis angustato-turrita, apert. spira subproductiore distincte brevior, labro strictiusculo.

Longit. 5—6, diam. 1 $\frac{3}{4}$ —2 mill. Apert. 2 $\frac{1}{4}$ —2 $\frac{1}{2}$ , spira 2 $\frac{3}{4}$ —3 $\frac{1}{2}$  longa. Anfr. 6—7.

*Hab.* in Ins. Supera (I. de Cima), necnon in cacumine extremo orientali Portûs S<sup>ti</sup> adjacente, huic adverso.

Var.  $\gamma$ . *vitrea*; pusilla hyalina ecolorata splendide nitens tenuissima abbreviato-subcylindrica obtusissima, apert. spiram subæquante.

*Helix C. gracilis*, Prim. 61. t. 6. f. 28. *A. gracilis*, Pf. ii. 284; Reeve, Conch. Icon. Achat. t. 22. f. 117 (aucta)!

*Hab.* in monte Pico Branco, et in jugo inter Pico de Facho et P. de Castello Portûs S<sup>ti</sup>. Etiam in Ins. Des. Majore, Wollaston.

*Obs.* 1. Status potius  $\beta$  juvenilis pusillus quam var. vera distincta videtur. Testæ nimirum 2—4½ mill. (nec ultra) longæ lævissimæ splendide nitentes hyalinæ v. ecolorato-vitræ (emortuæ opaco-lactææ) tenuissimæ fragillimæ abbreviato-subcylindricæ v. angustato-pupæ-formes obtusissimæ subturritæ, diam. pro ratione majore, spiræ breviuscula obesiuscula (nec gracili-attenuata), anfr. 3—5 v. 5½ sæpe convexiusculis (nec omnino planis), apert. sæpe spiram subæquante vel paullum superante. Tales in jugo inter montes P. de Facho et P. de Castello, necnon in Ins. Des. Majore, a cl. Wollastono lectas, quales omnino in monte Pico Branco Portûs S<sup>ti</sup> A. D. 1828 et 1832 in Prim. l. c. scriptas et depictas ipse legi, pullos v. statum juvenilem testarum plurium (var.  $\beta$  supra) nuperius ab amiciss. auctore in Insula Supera (I. de Cima) et in jugo adjacente adverso Portûs S<sup>ti</sup>, Pico de Baxo versus, *necnon in eodem ipso Pico Branco* lectarum, exemplaribus permultis diu seduloque iterum iterumque scrutatis, potiusquam varietatem alteram distinctam constituentes, habemus. Testæ nempe omnes var.  $\beta$ , præter characteres in adultis notissimos, sc. testæ majoris coloratæ (pallide corneæ) firmioris acutioris v. gracilioris, aperturæque pro ratione brevioris, nihil constans distincti præbent. Sed vitandæ confusionis causa, testas sub  $\gamma$ . designatas in præsens pro varietate admisi.

*Obs.* 2. Ab *A. folliculo*, Gron., quacum a nonnullis confusa, species toto cælo distincta.

### § 3. ACICULA, Risso.

(Typ. *A. acicula*, Müll.)

*T. aciculari-turrita subulata gracilis attenuata pellucido-tenuissima laxè spirata, sutura valde obliqua. Apert. angustato-ovata supra acuminata, spiræ distincte brevior. Perist. simplex tenuè acutum. Colum. laxè arcuata basi prominula truncata subtorta.*

*Obs.* T. minutæ hyalino-tenuissimæ fragillimæ angustato-elongatæ. Facies *Eulimæ*.

105. A. ACICULA (*Buccinum*), Müll.; Rossm. x. p. 35. f. 658; Pf. ii. 274, 275. no. 90; Reeve, Conch. Icon. Achat. t. 20. f. 111; Forbes and Hanl. iv. 130. t. 128. f. 4. *Bulimus acicula*, (Brug.) Drap. 75. t. 4. f. 25, 26. *Helix C. acicula*, (Fér.) Prim. 59. no. 53.

Testa juven.: *A. acicula*, Nilss. Moll. Suec. p. 38; Lam. vi. 2. p. 183; Gray (Turton), Man. 191. t. vi. f. 71; “*A. acicula*, Turton,” Phil. i. 142. t. 8. f. 26.

*Hab.* in Madera recens (sub lapidibus post pluvias) vulg. et in Ins. Des. Majore (testa angustissima gracillima parvula), Wollaston.

106. A. EULIMA. *T. linearis v. angustissime cylindræa gracillima subcurvata; spiræ elongata, sutura obliquissima distincte marginata; apert. abbreviato-ovata sursum acuminata deorsum integra latiuscule arcuato-rotundata, spiræ multo brevior, pariete ventrali medio uniplicata, plica transversa intrante*

*distincta; lamina ventrali subcalloso-relevata cum colum. soluto-relevata subreflexa (vix truncata?) in labrum arcuato-attenuata continua.*

Longit. (spira diffracto-decollata) 4, diam.  $\frac{3}{4}$  mill. Apert.  $1\frac{1}{3}$  v.  $1\frac{1}{2}$ , spira  $2\frac{1}{2}$  longa. Anfr. superstites 4, (2 v. 3 forsan amissis).

*Hab.* in Portu S<sup>to</sup> subfoss. rariss. Exemplar unicum speciei distinctissimæ ac elegantissimæ, apice spiræ diffracto-amisso, ceterum optime conservatum nitens et subcoloratum pallide corneum v. testaceum (an vere extincta?) in arena calcarea ad Zimbral d'Aréa detexit cl. Wollaston.

*Obs.* An vere sectionis? An potius *A. cylichnæ* affinis? Cf. etiam *Tornatellina*, (Beck) Pf. ii. 391. De truncatura columellæ, sicut de labro intus simpliciter v. plicis instructo, ob aperturam in exempl. unico pretiosissimo fragillimo arena fere clausam v. obstructam nihil certi affirmare ausim. Habitus quidem omnino *Ach. aciculæ*, Müll. Facies *Eulimæ distortæ*, Dh.

#### § 4. HYPSELIA.

(Typ. *A. producta*.)

*T. turrita subcylindraceo-subulata solidiuscula subpellucida, sutura obliqua. Apert. angustato-elliptica, supra attenuato-acuminata v. postice oblique coarctato-producta spiræ subæquans. Perist. marginatum intus opaco-incrassatum. Colum. abbreviata basi prominula torta truncata.*

*Obs.* *T. majusculæ* sat firmæ subopacæ forma *Mitræ* cujusdam elongatæ.

107. *A. PRODUCTA*, Syn. Diagn. 11. no. 48. *T. majuscula sat firma subpellucida turrita subcylindraceo-subulata gracilis elongata, spira producta; anfr. 8 planis æquissimis, sutura subindistincta obliqua; apert. angustato-elliptica, supra attenuato-acuminata retroque oblique lineari-coarctato-producta, spiræ subæquali; perist. intus marginato s. opaco-ochraceo incrassato, labro medio arcuato-prominente; colum. abbreviata, basi abrupte prominula torta truncata.*

Longit.  $8\frac{1}{2}$ , diam.  $2\frac{1}{2}$  mill. Apert.  $4\frac{1}{8}$ , spira  $4\frac{3}{8}$  longa. Anfr. 8.

*Hab.* in Ins. Des. Austr. rariss.

#### § 5. AMPHORELLA.

(Typ. *A. tornatellina*.)

*T. majuscula abbreviata ovata v. ovato-fusififormis subopaco-solidiuscula, spira conoidea, anfr. planis, sutura parum impressa obsoleta. Apert. angustato-obovata, supra attenuato-acuminata v. postice oblique coarctato-producta, spira distincte longior. Perist. obtusum deorsum subexpansum. Colum. basi valde prominula abrupte torta subplicata truncata.*

*Obs.* Paries apert. ventralis sursum plica lamellata lineari minuta subverticali, medio intus tuberculo obscuro obsolete munitus.

108. *A. MITRIFORMIS*, Syn. Diagn. 11. no. 49. *T. mitriformis elliptico-fusoidea oblongiuscula pellucide fulvo-cornea; spira producta elongata latitudinem sæpissime excedente conoidea, sutura albo marginata; apert. angustato-elliptica supra acuminata retroque oblique coarctato-producta; perist. sinuato, labro medio arcuato-prominente subinflexo; colum. basi abrupte prominula torta truncata.*

Varr. duæ:

*α.* major gracilior.

Longit. 8—10 $\frac{1}{4}$ , diam. 3 $\frac{1}{4}$ —4 mill. Apert. 4 $\frac{3}{4}$ —6, spira 3 $\frac{1}{2}$ —4 $\frac{1}{4}$  longa. Anfr. 6 $\frac{1}{2}$ —7 $\frac{1}{2}$ .

*Hab.* in convallibus Maderæ rarior. Etiam in Ins. Des. Majore v. Media, Wollaston.

*β.* subminor paullo subventricosior, plica ventrali superiore magis expressa distinctius dentiformi.

Longit. 7—9, diam. 3—3 $\frac{2}{3}$  mill. Apert. 4—5 $\frac{1}{2}$ , spira 3—4 $\frac{1}{4}$  longa. Anfr. 6—7.

*Hab.* in Ins. Des. Minore (Septentrionali). In Portu S<sup>to</sup>, A.D. 1828, exemplar unicum subdecoloratum lacteum in monte Pico Branco ipse legi.

109. *A. TORNATELLINA* (*Helix C.*), Prim. pp. 59, 60.

Magnitudine admodum variabilis. Distinguuntur varr. duæ:

*α.* major fulvo-castanea v. castaneo-umbrina.

Longit. 7—10, diam. 3 $\frac{1}{4}$ —4 $\frac{1}{2}$  mill. Apert. 4 $\frac{1}{4}$ —6 $\frac{1}{2}$ , spira 3 v. 3 $\frac{1}{4}$ —4 longa. Anfr. 7—8.

*A. tornatellina*, Pf. ii. 277 (excl. var. *β.*).

*Hab.* recens in Maderæ sylvis convallibusque ubique; fossilisque ad Caniçal rara.

*Obs.* Exemplar insigne in Collect. ditissima lectissimaque Wollastoniana, magnitudine et pulchritudine superbiens, in sylvis convallis 'Boa Ventura,' legit cl. Insectorum Maderensium Indagator, cujus benevolentia scribendi copiam fecit. Hujusce

Longit. 11 $\frac{1}{2}$ , diam. 5 $\frac{1}{2}$  mill. Apert. 7 $\frac{1}{2}$ , spira 4 longa.

*β.* minor pusilla subpallidior subpaullulum minus ventricosa; apert. plica superiore magis abbreviato-expressa distinctius dentiformi, dente tuberculove medio ventrali subdistincto; colum. basi minus abrupte prominula.

Longit. 5—7, diam. 2 $\frac{1}{4}$ —3 $\frac{1}{4}$  mill. Apert. 3—4 $\frac{3}{4}$ , spira 2—2 $\frac{1}{2}$  v. 2 $\frac{3}{4}$  longa. Anfr. 6—7.

Icon. Prim. l. c. t. 6. f. 23 (aucta) opt.

*Hab.* recens in Maderæ apricis præsertim maritimis. Ad Caniçal recensque fossilisque vulg. In monte Pico Branco Portûs S<sup>ti</sup>, A.D. 1828, exempl. 3 recentia legi.

*Obs.* *A. mitriformi β*, accedit analoga, in illam subtransiens. Differt testa ventricosiore, spira brevior.

110. *A. MELAMPOIDES* (*Helix C.*), Prim. 60. no. 55. *T. auriculiformis ovato-oblonga, latitudine spiram excedente solida crassiuscula confertim obsoletissime et subtilissime spiraliter striata, pallide ochraceo-lactescens v. eburnea subopaca; spira abbreviata*

*conoidea*; *apert. obovata deorsum subeffusa supra acuminata vix retro producta, plica tuberculoque ventralibus obsoletissimis subnullis*; *perist. vix sinuato v. arcuato-prominente, strictiusculo deorsum expanso*; *colum. basi obsoletiuscula v. subprominula vix torta subobsolete s. obliquissime truncata.*

Longit. 10—11 $\frac{3}{4}$ , diam. 4 $\frac{1}{2}$ —5 $\frac{1}{4}$  mill. Apert. 6 $\frac{1}{2}$ —7 $\frac{1}{2}$ , spira 4—4 $\frac{3}{4}$  longa. Anfr. 6—7.

*Hab.* in Ins. Supera (Ilheo de Cima) juxta Portum S<sup>m</sup>, et in Portu S<sup>to</sup> ipso (nec alibi) recens fossilisque.

Speciei distinctissimæ duæ adsunt varr. v. subvarr. :

*a*; pallide ochraceo-carnea.

Prim. l. c. t. 6. f. 24 (magnit. natur.); Reeve, Conch. Icon. Achat. t. 22. f. 122 (aucta)!

*A. tornatellina*,  $\beta$ . Pf. ii. 277.

$\beta$ ; tota lactea eburnea.

## § 6. FUSILLUS.

(Typ. *A. oryza*.)

*T. abbreviata ovata v. ovato-fusififormis subopaco-solidiuscula, spira conoideo-exserta, anfr. planis, sutura obsoleta. Apert. angustato-obovata supra acuminata spiræ subæqualis (sc. illà sublongior raro subbrevior). Perist. simplex acutum. Colum. basi simpliciuscula intus subdilata vix prominula obsolete et obliquissime truncata in labrum subattenuata.*

111. *A. TUBERCULATA*, Syn. Diagn. 10. no. 46. *T. subornatelliformis abbreviato-ovata ventricosiuscula solidiuscula subopaca; spira latitudinem vix excedente, dimidio testæ haud v. raro æquante; apert. obovata supra acuminata spiram excedente, lamina ventrali obsolete calloso-plicata et tuberculata, sc. extus superne longitudinaliter 1-plicifera v. subvaricoso-callosa, intus medio obscure 1-2-tuberculata; colum. obsolete truncata intus subdilata nec prominula vix torta, in labrum simplex (nec arcuato-sinuatum nec inflexum) subattenuata.*

Longit. 6 $\frac{1}{2}$ —7 $\frac{3}{4}$ , diam. 3—3 $\frac{1}{3}$  mill. Apert. 3 $\frac{5}{4}$ —4 $\frac{1}{4}$ , spira 3—3 $\frac{1}{2}$  v. 3 $\frac{3}{4}$  longa. Anfr. 7—8.

*Hab.* in Portu S<sup>to</sup>.

*Varr. vel subvarr. duæ*: *a*, fusco cornea v. castanea;  $\beta$ , pallide ochraceo-lactea v. eburnea.

112. *A. ORYZA*, Syn. Diagn. 10. no. 45. *T. submitriformis elliptico-fusoidea subsolidiuscula subopaca; spira latitudinem paullo excedente, dimidio testæ subæquante, anfr. planatis; apert. obovatu supra acuminata spiram paullo excedente, lamina ventrali plerumque simplici lævi, intus aliquando medio obsolete subtuberculato, extus superne rarissime subvaricoso-callosa; colum. vix v. obsoletissime truncata in labrum simplex attenuata.*

Longit. 5—6, diam. 2 $\frac{1}{4}$ —2 $\frac{1}{2}$  mill. Apert. 2 $\frac{3}{4}$ —3 $\frac{1}{2}$ , spira 2 $\frac{1}{3}$  v. 2 $\frac{1}{2}$ —3 $\frac{1}{2}$  v. 3 $\frac{1}{4}$  longa. Anfr. 6—7.



*A. triticea*, Reeve, Conch. Icon. Achat. t. 22. f. 116 (aucta)!

*A. triticea*  $\beta$ , Pf. ii. 278.

*Helix C. triticea*  $\beta$ . *edentula*, Prim. 61. t. 6. f. 26 (aucta).

*Hab.* in Portu S<sup>to</sup> recens fossilisque.

*Varr.* v. *subvarr.* ut in *A. tuberculata*.

113. A. TRITICEA (*Helix C.*), Prim. pp. 60, 61 (excl. var.  $\beta$ . f. 26).

*T. mitriformis elliptico-fusoidea graciliuscula solidiuscula subopaca fulvo-cornea subfasciata, sutura albo-vittata marginata; spira subproducta latitudinemque dimidiumque testæ distincte excedente, anfr. planis; apert. obovata supra subacuminata spira paullo brevior subbiplicata, plica superiore conspicua transversa intrante ventrali medio, altera inferiore obscura obliqua interna columellari; colum. basi intus calloso-dilatata obsolete v. obliquissime late truncata, truncatura medio emarginata supra præsertim 1-plicata v. dentata, infra in labrum simplex subattenuata.*

Longit.  $5\frac{1}{2}$ — $6\frac{3}{4}$ , diam.  $2\frac{1}{2}$ — $2\frac{3}{4}$  mill. Apert.  $2\frac{3}{4}$ — $3\frac{1}{4}$ , spira 3— $3\frac{3}{4}$  longa. Anfr. 6—7.

*Helix C. triticea*,  $\alpha$ . *biplicata*, Prim. l. c. p. 61. t. 6. f. 25 (aucta).

*Ach. triticea*  $\alpha$ , Pf. ii. 278.

*Hab.* in Portu S<sup>to</sup> recens fossilisque.

*Obs.* Animale nimis incaute e testa extracta, plica sup. magna ventralis facillime diffracta deest. Talia exempla ab *A. oryza* caute distinguenda.

## § 7. PYRGELLA.

(Typ. *A. Leacociana*.)

*T. turrata oblonga obtusa tenuis pellucida subarctispira, spira producta, anfr. 5-6 convexiusculis, sutura subhorizontali distincta vix marginata. Apert. obovata supra acuminata, spira distincte brevior. Perist. simplex tenue acutum. Colum. abbreviata basi prominula torta truncata.*

*Obs.* *T. parvulæ* pellucido-tenues.

114. A. LEACOCIANA, Syn. Diagn. 10. no. 43. *T. minuta tenuis pellucida splendide nitens turrato-oblonga graciliuscula e basi ad apicem subattenuata utrinque valde obtusa subarctispira; anfr. 6 convexiusculis, sutura distincta subhorizontali; apert. oblongo-obovata supra angustata acuminata spira distincte brevior, labro leviter sursum arcuato-prominente; colum. abbreviata basi abrupte prominula torta truncata.*

Longit. 4— $4\frac{1}{2}$ , diam.  $1\frac{1}{4}$ — $1\frac{1}{2}$  mill. Apert.  $1\frac{3}{4}$ —2 longa. Anfr. 5—6.

*Hab.* in Madera rariss. (*T. S. Leacock*).

*Obs.* *T. facie Ach. maderensis* lucida corneo-umbrina, animali fœta nigricans.

## § 8. CYLICHNIDIA.

(Typ. *A. ovuliformis*.)

*T. abbreviata elliptico-oblonga pupæformis utrinque obtusa subtenuiuscula paucispira; spira abbreviata obtusissima. Anfr. 4—5 convexiusculi, sutura distincta. Apert. angustato-obovata supra acuminata plicis coarctata subringens spira subbrevior. Colum. basi prominula subdilata torta distincte et abrupte truncata.*

115. *A. OVULIFORMIS* (*Helix C.*), Prim. 61. t. 6. f. 27 (aucta); Pf. ii. 278. no. 98; Reeve, Conch. Icon. Achat. t. 22. f. 119 (aucta)!

*Hab.* in Portu S<sup>to</sup>.

116. *A. CYLICHNA*, Syn. Diagn. 10. no. 44. *T. cylindraceo-oblonga anguste pupæformis (porcellano-cretacea nitens) utrinque obtusissima; spira exsertiuscula dimidio testæ subæquante, anfr. 4 subplanatis, sutura distincta subimmarginata; apert. spiram subexcedente angustato-obovata sublineari-acuminata plicis coarctata ringente subquinqueplicata; plicis 2 ventralibus, inf. medio maximo, sup. tuberculiformi parvo obscuro; 3 palatalibus, inf. maximo infra inf. ventralem, 2 sup. denticuliformibus minutis inter 2 ventrales conferruminantibus; colum. undique relevato-callosa, basi abruptissime arcuato valde prominente torta distinctissime truncata et emarginata.*

Longit.  $2\frac{3}{4}$ —3, diam.  $1-1\frac{1}{4}$  mill. Apert.  $1\frac{1}{4}-1\frac{1}{3}$ , spira  $1\frac{1}{2}-1\frac{2}{3}$  longa. Anfr. 4.

*Hab.* fossilis ad Caniçal Maderæ.

## Genus 5. PUPA, Drap.

## § 1. PALUDINELLA.

(Typ. *P. edentula*, Drap.)

*T. cylindrico-ovata v. conico-ovata ventricosiuscula perf. v. umbil. nitens. Anfr. convexi lævigati obsolete substriati; sutura impressa. Apert. omnino edentula. Perist. simplex tenue acutum.*

117. *P. LIMNÆANA*, Syn. Diagn. 11. no. 50. *T. distincte umbil. bulimiformis subpyramidato-ovata v. ovato-turrita subventricosa obtusa arcte substriata tenuis fragilis pellucida pallide corneo-flavescens; anfr. 5 convexo-tumidulis, ult. ventricoso deorsum producto, sutura impressa; apert. oblique ovali longiore quam lata  $\frac{2}{5}-\frac{1}{2}$  longitudinis æquante omnino edentula; colum. lamina in umbilicum expanso-reflexa sinuata, medio convexiuscula; perist. angustissime expansiusculo subsimplici acuto, sursum subsinuato.*

Longit.  $2\frac{1}{2}$ — $2\frac{3}{4}$ , diam.  $1\frac{1}{2}-1\frac{3}{4}$  mill. Apert.  $1-1\frac{1}{4}$  longa. Anfr. 5. *Hab.* inter muscos in truncis Laurorum Maderæ rariss.

*Obs.* A *P. dilucida* (Ziegl.) Rossm. f. 326, cui proxima, præter magnitudinem, sat differt. Forma characteribusque magis ad *P. dilucidam*, Ziegl. affinis, magnitudine *P. edentulam*, Drap., refert.

118. *P. MICROSPORA*, Syn. Diagn. 11. no. 51. *T. minuta distincte perf. conico-ovata subtrochiformis v. turbinata abbreviata curta obtusissima obsolete substriata fusco-cornea; anfr. 5 convexo-tumidulis, ult. obtuse angulato basi abrupte truncato v. subplanato, sutura impressa; apert. depressa transverse semiovali latiore quam longa  $\frac{1}{3}$  longitudinis æquante omnino edentula; colum. lamina reflexa; perist. undique æqualiter arcuato-rotundato simplici acuto.*

Longit.  $1\frac{1}{4}$ — $1\frac{1}{2}$ , diam.  $1$ — $1\frac{1}{4}$  mill. Apert.  $\frac{1}{3}$ — $\frac{1}{2}$  longa. Anfr. 5.

*Hab.* in foliis culmisque paniculisque graminum, necnon in frondibus filicum, in excelsioribus herbis v. graminosis Maderæ rariss.

*Obs.* 1. Exempl. vix rite adulta; species vero cum nulla alia facile confundenda, forma *P. edentulæ*, Drap., simillima, sed duplo minor.

*Obs.* 2. *P. limnaeana* et *microspora*, Maderenses, *P. dilucida*, Ziegl., et *edentulæ*, Drap., Europæis, par consimile constant.

## § 2. TRUNCATELLINA.

(Typ. *P. minutissima*, Hartm.)

*T. cylindrica obtusissima rimato-perf. v. umbil. sericea absque nitore. Anfr. convexi distincte striati, sutura impressa. Apert. omnino edentula. Perist. subsimplex reflexiusculum.*

119. *P. LINEARIS*, Syn. Diagn. 11. no. 52. *T. minuta distincte umbil. anguste elongato-cylindrica v. lineari-oblonga utrinque obtusissima, apice quasi decollato-truncata, eleganter et concinne crebristriata; anfr. 6—7 convexo-tumidulis, 4—5 ult. æqualibus, sutura impressa; apert. latiuscule rotundato-ovali paullo longiore quam lata vix  $\frac{1}{4}$  longitudinis æquante; perist. simpliciusculo angustissime reflexiusculo, labro leviter sursum subsinuato.*

Longit.  $1\frac{1}{2}$ —2, diam.  $\frac{2}{3}$ — $\frac{3}{4}$  mill. Apert.  $\frac{1}{3}$ — $\frac{1}{2}$  mill. longa. Anfr. 6—7.

*Hab.* fossilis rarior ad Caniçal Maderæ.

*Obs.* *P. minutissimæ*, Hartm., proxima, nec forsan vere distincta.

## § 3. GASTRODON.

(Typ. *P. umbilicata*, Drap.)

*T. cylindrica v. ovato-cylindrica umbil. nitens. Anfr. convexi lævigati obsolete substriati. Apert. subuniplicata, plica ventrali distincta fere unica, columellaribus (1 v. 2) obsoletis subnullis, palatalibus s. labri plane nullis. Perist. marginato-reflexum superne subsinuatum.*

120. *P. FANALENSIS*, Syn. Diagn. 11. no. 53. *T. pupiformis aperte umbil. tenuis ovato-cylindrica abbreviata basi rotundata splendide nitens lævis arcte et tenuiter substriata fusco-cornea subfasciata, sæpe decorticata dealbata; anfr. 5—6 convexis subtumidis, sutura impressa; apert. basi late rotundata exangulata, carina umbilicali obsoleta; plica ventrali distincta, columellari subnulla; labro marginato plano-reflexo, denticulo superne cum sinu indentato obsoletissimo subnullo.*

Long.  $2\frac{1}{2}$ —3, diam.  $1\frac{1}{2}$ — $1\frac{3}{4}$  mill. Anfr.  $5\frac{1}{2}$ —6.

*Hab.* in truncis Laurorum Maderæ, rara.

121. *P. ANCONOSTOMA*,  $\alpha$  et  $\beta$ , Prim. 62. t. 6. f. 30 (quoad formam male); Pf. ii. 314.

*Hab.* in Madera vulg.

#### § 4. LEIOSTYLA.

(Typ. *P. anglica*, Fér.)

*T. umbil. cylindrica v. ovato-cylindrica, nitens. Anfr. planati lævigati obsolete substriati. Apert. multiplicosa fere ringens. Plicæ 2 ventrales: exteriore (plica angulari, Pf.) maxima, cum denticulo superne labri sinum pro orificio respirationis formante: 1—2 columellares: 1—3 et ultra palatales intra labrum subinternæ; denticulo marginali labri supra adjecto. Perist. marginato-reflexum superne sinuatum.*

122. *P. CHEILOGONA*, Prim. 63. t. 6. f. 31; Pf. ii. 327, 328.

*Hab.* in frondibus filicum (*Allantodiæ axillaris*, R. Br., *Pteridisque argutæ*, Vahl.) in adytis montium humidis obscuris umbrosis Maderæ, rariss.

123. *P. VINCTA*, Syn. Diagn. 12. no. 54. *T. oblongo-ovata subabbreviata obesiüscula apice obtusa splendide nitens lævis obsolete substriata læte colorato-fasciata; anfr. 6 subplanatis, sutura subimpressa; apert. rotundato-ovali haud ringente quadruplicata, plica 5<sup>ta</sup> rudimentali inconspicua punctiformi intus ad basin aperturæ adjecta; plicis 4 magnis, 2 ventralibus, 1 columellari, 1 palatali; ventrali interiore minore, plicæ columellari unicæ æquali; labro reflexo subsinuato, intus in medio uniplicato, denticulo superne obsoleto, sinu respir. patulo effuso.*

Long. 3— $3\frac{1}{4}$ , diam. 2— $2\frac{1}{8}$  mill. Anfr. 6.

*Hab.* in rupibus irriguis inter *Marchantiam polymorpham*, L. et gramina ad oram Septentrionalem Maderæ, rariss.

124. *P. IRRIGUA*, Syn. Diagn. 12. no. 55. *T. subovato-oblonga subcylindrica apice obtusissima splendide nitens lævis obsolete substriata fusca obscure fasciata, sæpe decorticata et tenuiter lineata; anfr. 7 planatis transverse obsolete striatis, sutura minus impressa; apert. subquadrangulari ringente sinuata quinqueplicata, plicis aliis duabus rudimentalibus in labro aliquando adjectis; plicis 5 magnis, 2 ventralibus, 2 columellaribus, 1 pa-*

*latali; ventrali exteriore maxima extrorsum deflexa, interiore minore columellari inferiori æquali; columellari superiore minore distincto; labro reflexo subsinuato intus in medio uniplicato, plica sexta et septima rudimentali punctiformi supra et infra aliquando adjecta; denticulo sinuque respir. completo distinctis.*

Long. 4, diam.  $2\frac{1}{4}$  mill. Anfr. 7.

*Hab.* in rupibus Convallium Maderæ irriguis inter gramina (*Deschampsia argentea*, Lowe) muscosque, rariss.

125. *P. LAURINEA*, Syn. Diagn. 12. no. 56. *T. umblicata obeso-cylindrica vel abbreviato-obesiuscula curta alveariformis, apice abrupte contracta subacutiuscula, tota splendide nitens lævis obsoletissime substriata corneo-fulva subolivaceo-nigrescens spadiceo distincte bifasciata; anfr. 7 planatis, sutura distincta; apert. subtrifoliato-auriformi, ad denticulum constrictiuscula, aperte quinqueplicata, plicis subcoloratis remotiusculis separatis, 4 majoribus, 1 tantum (ventrali ext.) prominente; 2 ventralibus, 1 columellari, 2 palatalibus; duabus ventral. inæqualibus, exteriore maxima, interiore cum plica columellari minore subinconspicua immersa; labro intus biplicato, plica sup. majuscula, inf. minuta punctiformi ad imum aperturæ immersa; perist. marginato-reflexo incrassato carneo v. fusco-purpureo ad denticulum distincte indentato v. sinuato-contracto; sinu respiratorio subincompleto deorsum subaperto, denticulo labri distincto intus prominente.*

Magnit. fere *P. sphinctostomatis*.

*Var. α*; testa subobesiore intensius colorata, plica columellari ventralique interiore subminoribus magis internis inconspicuis, cum peristomate intensius coloratis.

*Hab.* in Convalle Boa Ventura ad truncos Laurorum.

*Var. β*; plica columellari ventralique interiore submajoribus magis conspicuis.

*Hab.* in muscis ad truncos Laurorum (*L. canariensis*, L.) in Convalle Frigida (Rib. Frio) et ad S. Antonio da Serra.

*Obs.* Per *P. sphinctostoma β*, quacum in Rib. Frio commixta vivit, in *P. sphinctostoma α* fere transit. Variat nempe plus minus cylindrica; semper vero pro longitudine latior quam *P. sphinctostoma*.

126. *P. SPHINCTOSTOMA*, Prim. p. 63. no. 64; Pf. ii. 335. no. 86.

*Var. α, rupestris*; spira plerumque distinctius striata. Prim. l. c. t. 6. f. 32.

*Hab.* sub foliis *Sempervivi tabulæformis*, Haw. in rupibus maritimis atque convallium Maderæ.

*Var. β, arborea*; testa læviore nitidior obsoletius striatula.

*Hab.* inter muscos in truncis Laurorum in convallibus Maderæ.

*Obs.* Species variabilis, plicis columellaribus 1-3, labri (palatalibus 1-3, denticulis 1-2) 2-5; sed testa cylindrica, apertura ringente ovali, plicis 3 internis magnis æqualibus, cum unica opposita intermedia palatali magna labri internexantibus v. conferruminatis æquiprominentibus distinguenda.

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127. *P. LÆVIGATA*, Syn. Diagn. 12. no. 57. *T. pyramidato-cylindrica sursum sensim subattenuata splendide nitens lævis; spira substriata; apert. subeffusa patula haud coarctato-plicata; plicis quatuor remotis, duarum ventralium exteriori magna prominente, interiore parva immersa inconspicua plicæ unicæ columellari æquali; labro intus uniplicato.*

Long.  $3\frac{1}{2}$ — $4\frac{1}{4}$ , diam.  $1\frac{1}{2}$ — $1\frac{2}{3}$  mill. Anfr. 7—8.

*Hab.* rariss. cum *P. sphinctostomate*  $\alpha$ , cujus forsau modo var. vel status tantum degener, in rupibus Convallis S<sup>tae</sup> Luciae Maderæ.

Differt a *P. sphinctostomate* æque ac a *P. laurinea*, forma ab anfractu penultimo usque ad apicem sensim subattenuata.

128. *P. RECTA*, Syn. Diagn. 12. no. 58. *T. cylindrica elongata truncata sericeo-nitens lævigata obsolete substriata cornea, fusco distincte fasciata; anfr. 8 planatis transverse obsolete striatis, 5 ult. æqualibus, sutura subobsoleta; apert. subquadrangulari ovali subeffusa patula haud ringente quinqueplicata, plicis 5 (rariss. 6) remotis, quatuor conspicuis valde inæqualibus; 2 ventralibus, 1 (rariss. 2, sup. obsoleta) columellari, 2 (rariss. 1) palatalibus; 2 ventral. approximatis, exteriori magna, interiore minore plicæ columellari sæpissime unicæ remotiusculæ subæquali; labro reflexo-marginato æquali vix sursum sinuato, intus biplicato, plica superiore plicæ columellari subæquali, inferiore rudimentali punctiformi v. obsoleta; denticulo parum distincto, sinu respir. subincompleto apertiusculo.*

Long.  $4\frac{1}{2}$ —5, diam.  $1\frac{1}{2}$ —2 mill. Anfr. 8.

*Hab.* sub foliis *Sempervivi tabulæformis*, Haw. in rupibus maritimis ad oram Septentrionalem Maderæ.

129. *P. MACILENTA*, Syn. Diagn. 13. no. 59. *T. cylindrica elongata truncata sericeo-nitens distincte substriata pallida cornea, fusco distincte fasciata; anfr. 8 planatis transverse striatis, 5 ult. æqualibus, sutura subobsoleta; apert. subquadrangulari ovali subeffusa patula haud ringente quinqueplicata, plicis remotis, 4 conspicuis, 2 ventralibus, 1 columellari, 2 (rariss. 1) palatalibus; 3 internis (sc. 2 ventral. et 1 colum.) æqualibus æquiprominentibus æquidistantibus parallelis; labro reflexo-marginato æquali sursum vix sinuato intus subbiplicato, plica superiore subinconspicua immersa intrante, inf. rudimentali punctiformi obsoleta v. nulla; denticulo distinctiusculo, sinu respir. subcompleto.*

Long.  $3\frac{3}{4}$ — $4\frac{1}{4}$ , diam. 1— $1\frac{1}{2}$  mill. Anfr. 8.

*P. recta*  $\beta$ , MSS. olim.

*Hab.* in Ins. Des. Majore, Wollaston; etiam in Madera, Wollaston et Leacock, rariss.

## § 5. CRATICULA.

Orcula, Held?

(Typ. *P. substriata*, Jeffr.)

*Testa perf. v. umbil. cylindrica sericea absque nitore. Anfr. convexi distincte striati v. costellati. Apert. multiplicosa: plicis ut in Leiostylis. Umbil. parvus angustatus.*

130. *P. FUSCA*, Syn. Diagn. 13. no. 60. *T. cylindrica subelongata truncata striata fusca obscure fasciata; anfr. 7½ convexis transverse crebristriatis, sutura impressa; apert. subrotundata seaplicata haud ringente, plicis confertis conferruminatis s. alternantibus subimmersis fuscis, 2 ventralibus, 2 columellaribus, 2 palatalibus; plica interiore ventrali, inferiore columellari, et superiore palatali subæqualibus; columellari superiore palatalique inferiore rudimentalibus, aliquando obsoletis; labro reflexo-marginato haud sinuato, denticulo superne distincto intus prominente, sinu respir. completo.*

Long. 3—4, diam. 1½ mill. Anfr. 7—7½.

*Hab.* sub folia *Sempervivi tabulæformis*, Haw., ad oram Septentrionalem Maderæ.

131. *P. MILLEGRANA*, Syn. Diagn. 13. no. 61. *T. perpusilla cylindrica truncata striata fusca obscure fasciata; anfr. 6 convexis, striis validiusculis æquidistantibus subremotiusculis, sutura impressa; apert. ovali septemplicata haud ringente, plicis tubercularibus confertis, palatalibus internis oppositis (nec conferruminatis) faucem fere cludentibus; 2 ventralibus magnis æqualibus, 2 columellaribus, superiore minore immersa inconspicua; 3 palatalibus, superiore parva distincta, intermedia crassa, inferiore parva immersa obscura; labro reflexo continuo, denticulo distincto.*

Long. 2, diam. 1 mill. Anfr. 6.

*Hab.* in rupibus præsertim maritimis Maderæ; etiam in Ins. Des. Majore, Wollaston.

132. *P. FERRARIA*, Syn. Diagn. 13. no. 62. *T. cylindrica subelongata truncata crebriuscule striata fusco-nigricans, anfr. superne fascia distincta angusta pallida; anfr. 7 convexis, striis transversis rectiusculis capillaribus distinctis, sutura impressa; apert. ovali patula subeffusa 4-plicata; plicis lamellaribus inæqualibus remotis inconspicuis, 2 ventralibus, 1 columellari, 1 palatali; columellari 2<sup>a</sup> superiore nulla v. omnino obsoleta, palatalibusque 2<sup>a</sup> superiore et 3<sup>a</sup> inferiore vel minutis rudimentalibus vel plerumque obsoletis nullis; ventrali interna parva immersa; columellari palatalique media æqualibus; labro subreflexo continuo vix sinuato, denticulo obsoleto, sinuque respir. effuso aperto indistincto.*

Long. 3½—4, diam. 1½ mill. Anfr. 7.

*Hab.* in Portu S<sup>to</sup>, Wollaston.

133. *P. MONTICOLA*, Prim. 63. t. 6. f. 33; Pf. ii. 335.

*Hab.* in Portu S<sup>to</sup>.

*Obs.* Differt a *P. ferraria* testa minore abbreviata pallida fusco fasciata, anfr. 6 costulato-striatis s. striis validioribus remotioribus verticalibus flexuosis, plicisque aperturæ validioribus. *P. monticola* ad *P. calathiscum* ut *P. ferraria* ad *P. fuscam* vergit.

134. *P. CALATHISCUS*, Prim. 64. t. 6. f. 34; Pf. ii. 344. no. 104.

*Hab.* in Portu S<sup>to</sup>.

#### § 6. SCARABELLA.

(Typ. *P. cassida*, Lowe.)

*Testa subimperf. ovoidea utrinque subacuta solida figulina s. marmoreo-nitens. Anfr. planati sulcato-striati. Apert. auriformis antice producta multiplicosa ringens. Labrum callo intus incrassatum. Perforatio angustissima vix ulla.*

135. *P. CASSIDA*, Prim. 64. t. 6. f. 35 (male); Pf. ii. 344. no. 103. Küst. M. et C. p. 135. no. 142. t. 17. f. 15-17.

*Hab.* in Madera: recens rariss. nuperrime paulo abundantius a cl. Wollaston detecta. Fossilis sat frequens.

*Obs.* Species eximia notabilis, *Scarabum* vel *Tomogerem* referens. Testa recens pulcherrime brunneo tessellato-marmorata, nitore porcellano-figulino.

#### § 7. ALVEARELLA.

(Typ. *P. cassidula*.)

*Testa umbil. subovata obesuscula curta subnitens. Anfr. planati distincte striati. Apert. multiplicosa, plicis fere ut in Leiostylis. Umbil. largus infundibuliformis.*

136. *P. CASSIDULA*, Syn. Diagn. 13. no. 63. *T. subovata curta obesuscula utrinque obtusa apice contractiuscula substriata nitens tenuis subpellucida pallide flavescenti-cornea obscure fasciata; anfr. 7-8 planatis, superioribus arcte striatis, ult. lævi antice sulco pone labrum subspirali leviter exarato, sutura distincta; apert. semiovali subauriculata v. oblique deorsum producta ringente septemplexata, plicis 2 ventralibus, 2 columellaribus, 3 palatalibus; ventrali exteriori, columellari inferiori, mediaque palatali intus late dilatato-lamellata, conspicuis magnis; labro tenui reflexo superne ad denticulum subsinuato, extus pallide ochraceo-opaco, denticulo valde distincto intus prominente sinuque respir. completo.*

Long. 3, diam. 2 mill. Anfr. 7-8.

*Hab.* in Madera rariss., Wollaston.

137. *P. CONCINNA*, Syn. Diagn. 13. no. 64. *T. subcylindrica curta subobesuscula utrinque obtusa striata sericeo-subnitens spadiceo-fusca v. nigro-castanea fasciata, apice sæpe albo-de-*



*corticata*; anfr. 7-8 planatis arcte striatis, striis capillaribus flexuosis conspicuis subvalidis, sutura distincta; apert. haud ringente quinqueplicata, plicis 3 validis prominentibus, 2 inconspicuis parvis; 2 ventralibus magnis extrorsum deflexis, exteriore denticulum labri fere attingente; 1 columellari, interiori ventrali subæquante; 2 palatalibus immersis, inferiore ad basin columellæ punctiformi sæpe obsoleta; labro reflexo, denticulo superne valde distincto intus prominente, alio supra ad angulum sæpe adjecto, sinu respir. (ut in *P. sphinctostomate*) completo.

Longit. 3—3½, diam. 1¾—2 mill. Anfr. 7—8.

*Hab.* in Madera rariss. Primus inv. cl. Wollaston. *P. laurineæ* analoga, forsân affinis, simillima.

138. *P. ABBREVIATA*, Syn. Diagn. 13, 14. no. 65. *T. pusilla solidiuscula compacta curta abbreviato-oblonga, latitudine ⅔ longitudinis æquante, utrinque obtusissima crebri-costellato-striata subnitens*; anfr. 6-7 planatis arcte et æqualiter costellato-striatis, ult. antice sulco subspirali leviter exarato, striis validiusculis distinctis obliquis sæpe flexuosis, sutura distincta; apert. semi-ovali subtriangulari 4-plicata, plicis 2 ventralibus obliquis parallelis columellarique unica majusculis conspicuis, 1 palatali immersa obscura; labro latiuscule reflexo sursum (ad denticulum) inflexo-sinuato, denticulo distincto intus prominente, sinu respir. completo.

Longit. 2—2¼, diam. 1¼—1½ mill. Anfr. 6—7.

*Hab.* fossilis ad Caniçal Maderæ rariss. Primus inv. Wollaston.

139. *P. GIBBA*, Syn. Diagn. 14. no. 66. *T. pusilla solidiuscula compacta curta abbreviato-oblonga, latitudine ¾ longitudinis æquante, gibba utrinque obtusissima distincte costata nitens castaneo-fusca pallido fasciata*; anfr. 6 planatis, ult. antice ascendente subdistorto, costis remotiusculis æquidistantibus verticalibus transversis, sutura subobsoleta; apert. subtrilobato-auriformi ringente plicis 5, 3 internis prominentibus conspicuis magnis, 2 ventralibus, inferiore lamellata maxima latissima oblique valde prominula, exteriore crassa antice abrupte dilatata subbifida v. emarginata auriculato-lobata extrorsum valde deflexa; columellari 1 magna crassa horizontali, palatalibus 2 inconspicuis immersis; labro incrassato-reflexo sursum valde inflexo-sinuato, denticulo distincto valde prominente crasso, sinu respir. distinctissimo completo.

Longit. 1¾—2, diam. 1¼—1½ mill. Anfr. 6.

*Hab.* in Madera; fossilis ad Caniçal rariss. Exempla recentia duo, alterutrum cum animali jam vivente, in Convalle S<sup>te</sup> Lucie detexit oculatiss. Wollastonus.

#### § 8. MASTULA.

(Typ. *P. lamellosa*.)

*T. perf. abbreviato-cylindrica v. mammiformis subturbinata submembranacea absque nitore.* Anfr. convexi lamellato-striati v.

*membranaceo-costati, costellis sæpe spinelloso-productis. Apert. semi-ovalis subdepressa, plicis paucis distinctis.*

140. P. LAMELLOSA, Syn. Diagn. 14. no. 67. *T. pusilla abbreviato-cylindrica v. mammiformis curta subturbinata utrinque obtusissima tenuis submembranacea fusca efasciata lamellato-striata; anfr. 5 convexis tumidulis, lamellis medio foliaceo-dilatatis v. lacerato-aculeatis membranaceis æquidistantibus remotiusculis obliquis transversis costatis, sutura impressa profunda; apert. semi-ovali depressa largiore quam longa triplicifera; plica ventrali unica maxima, colum. unica minore infera, palatali huic opposita immersa obsoleta obscura inconspicua; labro expansiusculo vix subsinuato, denticulo minusculo obsoleto sinuque respir. aperto indistincto.*

Longit. 2, diam.  $1\frac{3}{4}$  mill. Anfr. 5.

*Hab.* fossilis ad Caniçal Maderæ rariss. Exempla quoque recentia paucissima inv. primi Wollaston, Armitage, deinde Leacock. *Habitus Helicis aculeatæ, Müll.*

### § 9. STAURODON.

(Typ. *P. pygmæa, Drap.*)

- T. pusilla v. minuta perf. v. umbil. tumidulo-cylindrica obesiuscula lævigata v. obsoletissime striolata nitens. Anfr. pauci convexi, sutura impressa. Apert. fere circularis 3-5 plicata, plicis sæpe 4 cruciatis. Perist. subcontinuum æquale; denticulo sinuque respir. distinctis nullis.*

141. P. SAXICOLA, Syn. Diagn. 14. no. 68. *T. minuta rimato-umbil. subovoideo-cylindracea v. subobesiusculo-oblonga utrinque subattenuata obtusa fulvo-fusca efasciata subopaca solidiuscula nitidula lævigata sc. obsoletissime striolata; anfr. 5 convexis minutissime (sub lente) confertim oblique striolatis, ult. omnino simplice (nec "antice tumido-subcristato," Pf. v. pone labrum callo pallido costato-subvaricoso), sutura distincta impressa; apert. æqualiter rotundato-ovali 5-dentata; dentibus 4 immersis cruciatis, 1 ventrali majore, 1 columellari, 2 palatalibus, 3 ult. æqualibus; 5<sup>to</sup> tuberculiformi distincto extus superne ad angulum labri adjecto; perist. undique continuo æquali (nec sinuato) subincrassato expansiusculo intus ad ventrem calloso-relevato.*

Longit.  $1\frac{1}{2}$ — $1\frac{3}{4}$  vix 2, diam.  $\frac{3}{4}$ — $\frac{7}{8}$  vix 1 mill. Anfr.  $4\frac{1}{2}$ — $5\frac{1}{2}$ .

*Hab.* in Madera recens sub lapidibus; fossilis ad Caniçal rariss.

142. P. SEMINULUM, Syn. Diagn. 14. no. 69. *T. minutissima rimato-umbil. ovoideo-cylindracea v. obesiusculo-oblonga subventricosiuscula utrinque subattenuata apice obtusissima fulvo-fusca efasciata subopaca solidiuscula nitidula lævigata sc. obsoletissime striolata; anfr.  $4\frac{1}{2}$  tumidulo-convexis minutissime (sub lente) confertim oblique striolatis, ult. omnino simplice (nec antice varicoso), sutura profunda; apert. subquadriden-*

*tata; dentibus 3 immersis (4<sup>to</sup> palatali superiore minuto obsoleto saepe deficiente) in triangulum dispositis, 1 ventrali majore, 1 columellari, 1 palatali, 2 ult. subæqualibus; 4<sup>to</sup> tuberculiformi distincto extus superne ad angulum labri adjecto; perist. continuo subincrassato expansiusculo, intus ad ventrem callosorelevato, extus sc. labro subangulari strictiusculo inflexo-sinuato, denticulo superne intus distinctiusculo.*

Longit.  $1\frac{1}{4}$ — $1\frac{1}{3}$ , diam.  $\frac{2}{3}$  mill. Anfr.  $4\frac{1}{2}$ .

*Hab.* recens in Madera rariss., T. S. Leacock.

*Obs.* Species subdubia, ulterius investiganda, quum exempla pauciora, eaque semel tantum, examinare contigit. *Pupæ saxicolæ* forsan mera var. statusve pusillus.

### Genus 6. BALEA, Pridx.

143. *B. PERVERSA*, (L.) Flem. Brit. Anim. 271. *Balea perversa*, Gray, Man. 207. t. 6. f. 70. *Pupa fragilis*, Drap. 68. t. 4. f. 4; Nilss. p. 48; Lam. vi. 2. p. 110. no. 24. *Balea fragilis*, Rossm. x. 24. f. 636; Forbes and Hanl. iv. 114. t. 128. f. 8, 9.

*Hab.* recens in Portu S<sup>to</sup> rariss., Wollaston.

*Obs.* Neque in Madera neque in Ins. Desertis adhuc obvenit. Testæ exemplis Britannicis graciliores, ad amussim ut in figuris Drap. et Rossm. citatis delineatæ: cetera omnino consimiles.

### Genus 7. CLAUSILIA, Drap.

144. *C. CRISPA*, Prim. 65. t. 6. f. 36 (aucta; e specim. manco decolorato nec rite adulto, perist. incompleto); Pf. ii. 484; Küst. M. et C. p. 118. no. 113. t. 13. f. 5-7 (opt.).

*Hab.* in truncis Laurorum Maderæ vulg. necnon fossilis ad Caniçal rara.

*Obs.* Sp. inter nobiliores generis eximia pulcherrima, læte picta s. albo (recens capta luteo) strigato-marmorata v. lentiginoso-maculata.

145. *C. DELTOSTOMA*, Prim. 65. no. 69.

*Var. α. raricosta*; T. solidiuscula ventricosiuscula testacea v. flavo-subrufescens pallida; anfr. 10- $11\frac{3}{4}$  vix 12 convexiusculis clathrato-costellatis, costellis rariusculis subremotis distinctis, sutura distincta impressa.

*Subv. 1. Porto-sanctana*; eximie clathrata costellata, costellis sat remotis grossiusculis.

*Cl. deltostoma α*, Prim. l. c. t. 6. f. 37 (aucta); Pf. ii. 410. *Cl. Loweii*, Alb. in litt. 1852; Küst. M. et C. t. 19. f. 23-26.

*Hab.* in Portu S<sup>to</sup>, recens vulg., foss. (Wollaston) rarior.

*Subv. 2. maritima*; subclathrato-costellata, costellis subapproximantibus tenuioribus.

Prim. l. c. t. 6. f. 38 (aucta; errore pro var β. e specimine Caniçalensi delineata!).

*Hab.* in Maderæ aridioribus maritimis, e. g. in Rancho prope Cam. de Lobos, ad Piedadem prope Caniçal, Paul do Mar, &c.

*Obs.* Var.  $\alpha$ . Subv. 1 per Subv. 2 in  $\beta$ , Subv. 1 per formas intermediarias innumeras transit.

*Var.*  $\beta$ . *crebristriata*; T. tenuiuscula graciliuscula fusco-cornea intensius colorata subcinereo-sericina; anfr. 8-11 planatis crebristriatis, striis confertis approximatis tenuibus albidis, interstitiis colorato-fuscis, sutura subobsoleta minus impressa.

*Cl. deltostoma*  $\beta$ , Prim. l. c. (sed non f. 38, vide supra); Pf. l. c.

*Subv.* 1. *normalis*; gracilis subelongata.

*Hab.* in Madera Insulisque Desertis vulgatiss. ubique: polymorpha. In submaritimis (e. g. in Rancho Insulisque Desertis) in  $\alpha$ , subv. 2 transiens: in editioribus aëre humidioribus montanis tenuior fere minor, striis creberrimis tenuissimis.

*Subv.* 2. *depauperata*; subabbreviata pusilla, ad *Cl. exiguam* accedens.

*Cl. deltostoma*, Küst. M. et C. p. 92. no. 87. t. 10. f. 21-24?

*Hab.* in collibus apricis submaritimis, 1500 fere ped. altis, editioribusque montanis Maderæ.

*Obs.* Interstitia costellarum v. striarum longitudinalium æque et in  $\alpha$  et  $\beta$ , plerumque striolis spiralibus confertis interruptis obsolete crenato-decussata. Striolæ vero aliquando, præsertim in  $\alpha$  1, omnino evanescent.

146. C. EXIGUA, Prim. 66. no. 70. t. 6. f. 39 (aucta); Pf. ii. 485; Küst. M. et C. 91. no. 85. t. 10. f. 12-15.

*Hab.* in rupibus Maderæ.

#### Family IV. CYCLOSTOMATIDÆ.

##### Genus CRASPEDOPOMA, Pf.

(*Cyclostoma*, § *Hygrobium*, Syn. Diagn.)

(Typ. *C. lucidum*.)

“*T. subturbinata rimata, anfr. ult. antice subcoarctato. Perist. continuum simplex, prominentiam internam operculi excipiens. Operc. corneum solidum arctissime spiratum, nucleo centrali, pagina externa plana, interna prominentia circulari in anfr. penult. munita, medio profunde concava.*” Pf.

*Obs.* T. lævigatæ lucido-nitentes.

147. C. LUCIDUM (*Cyclostoma*), Prim. 66. no. 71. t. 6. f. 40 (aucta); Küst. M. et C. t. 13. f. 26, 27; Pf. Mon. Pneum. p. 51. no. 88.

*Hab.* in umbrosis obscuris convallium irriguisque Maderæ ubique recens: etiam fossilis ad Caniçal: vulgatiss. In Portu S<sup>to</sup> tantum fossilis rariss. In Desertis omnino deest.

148. C. LYONNETIANUM (Cyclost.), Syn. Diagn. 15. no. 70 ;  
Pf. Mon. Pneum. p. 52. no. 89. *T. trochoidea exilissime spir-*  
*raliter striata* ; anfr. ult. *angulato-carinato*.

Diam. 3—3½, alt. 4—4½. Anfr. 5—5¾.

*Hab.* in convallibus Maderæ recens, fossilisque ad Caniçal rara, Wollaston.

## Division B. AMPHIBIÆ (Littorales).

### Family V. TRUNCATELLIDÆ.

(Operculatæ. Tentacula 2, oculis ad basin externam. Pes simplex.)

#### Genus 1. TRUNCATELLA, Risso.

(Typ. *T. truncatula*, Drap.)

149. T. TRUNCATULA, Drap. ; *T. truncatula* β. *costulata*, Zool. Journ. v. 302. t. xiii. f. 13—18. *T. costulata*, Risso, Hist. iv. 125. no. 301. f. 57. *Cyclostoma truncatulum* α, Drap. 40. no. 17. t. 1. f. 28, 29 ; Lam. vi. 2. p. 149. no. 28. *Rissoa truncata*, var. *major*, Phil. i. 151. Testa juv. *Paludina Desnoyersii*, Payraud. Catal. 116. no. 245. t. 5. f. 21, 22 ?

*Hab.* sub lapidibus magnis rotundatis, æstu maris quotidie submersis, siccisque deinde relictis, in littore septentrionali Promont. S<sup>i</sup> Laurentii Maderæ.

*Obs.* Experimentis in Zool. Journ. v. pp. 280—305 relatis non obstantibus, animalia *Truncatellæ Auriculæque* (Conovuli) *Pedipedisque* potius pulmonifera quam branchifera esse, perpensis diu undique argumentis, probabilius videtur.

### Family VI. AURICULIDÆ.

(Inoperculatæ. Tentac. 2, oculis ad basin internam.)

#### Genus 1. AURICULA, Lam. (Pes simplex.)

(Typ. *A. Midæ* (Argenv.) Lam.)

§ 1. T. ovata v. oblonga, spira exserta.

150. A. ÆQUALIS (*Melampus*), Zool. Journ. v. 288. no. 1. t. xiii. f. 1—5.

Varr. α, castanea, obscure subfasciata ; β, tota alba.

*Hab.* infra lapides littoris Septentr. Maderæ.

151. A. GRACILIS (*Melampus*), Zool. Journ. l. c. no. 2.

*Hab.* in fissuris rupium littoris Meridionalis Maderæ.

*Obs.* Prioris forsan mera var. v. status.

§ 2. *T. conoidea*, spira brevissima.

152. *A. EXIGUA* (*Melampus*), Zool. Journ. l. c. 291. t. xiii. f. 6, 7.

*Hab.* infra lapides in littore Septentr. Maderæ.

Genus 2. *PEDIPES*, Adans. (*Pes duplex*.)

153. *P. AFRA*, (Gm.) Zool. Journ. l. c. 296. t. xiii. f. 8-12; Fé-russ. Tabl. Syst. 109. no. 1. *Le Pietin*, *Pedipes*, Adans. Seneg. p. 11. t. 1. f. 4. *Tornatella pedipes*, Lam. vi. 2. 221. no. 6.

*Hab.* vulg. sub lapidibus littoris Septentr. Promont. S<sup>i</sup> Laurentii Maderæ, cum *Truncatella truncatula*  $\beta$ , *Auriculisque æquali* et *exigua* consociata.

Division C. *AQUATICÆ* (aquæ dulcis).Family VII. *LIMNÆIDÆ*.

(Inoperculatæ. Tentac. 2, oculis ad basin internam.)

Genus 1. *LIMNÆUS*, Drap.

154. *L. TRUNCATULUS* (*Buccinum*), Müll.; parvulus v. pusillus fere minutus distincte perforatus ovato-conicus; anfr. tumidis, sutura profunda impressa; apert. spiram subæquante. Gray, Man. 240. t. 7. f. 108; Forbes and Hanl. iv. 177. t. 124. f. 3. *Lymneus minutus*, Drap. 53. t. 3. f. 5, 6. *Lymnæa minuta*, Lam. vi. 2. p. 162. no. 12; Nilss. p. 72. *Limnæus minutus*, Rossm. i. p. 100. t. 2. f. 57.

*Var.*  $\beta$ . spira subbreviore aperturam vix æquante, perforatione subpatula; Phil. i. 147. t. 9. f. 2.

*Hab.* ( $\beta$ ) in irriguis Maderæ infra 1500 ped. vulg.

*Obs.* *T. Maderenses* minutæ 3-4, raro 5-6 mill. longæ; anfr. ult. aliquando obsolete subcarinato. Exemplis Sicilianis a cl. Philippi descriptis omnino consimiles videntur.

Genus 2. *ANCYLUS*, Geoffr.

155. *A. FLUVIATILIS*, Müll.; Drap. 48. t. 2. f. 23, 24; Nilss. p. 84; Gray, Man. 249. t. 10. f. 125; Phil. i. 120; Forbes and Hanl. iv. 187. t. 122. f. 4.

*Hab.* in rivulis convallium Maderæ supra 1000 ped. ubique.

*Obs.* Exemplis Maderensibus majuscula, striolis longitudinalibus plerumque distinctiusculis pectinato-radiata.

7. DESCRIPTIONS OF SOME SPECIES OF LEPIDOPTEROUS INSECTS  
 BELONGING TO THE GENUS OIKETICUS.  
 BY J. O. WESTWOOD, F.L.S.

(Annulosa, Pl. XXXIV.—XXXVII.)

It may probably be regarded as one of the settled axioms in natural history, that there is not a single character which has been employed to distinguish any group of considerable extent, which is not liable to be effaced or even contradicted by some one or more of the members thereof; thus, whilst we have quadrupeds without legs, and birds without wings, the great division of annulose animals characterized by the possession of articulated feet contains great numbers of species which are entirely destitute of those organs; and in like manner the secondary division of the Annulosa, distinguished by the possession of wings in the final state (or the Ptilota of Aristotle), exhibits to us many species which never gain instruments of flight. Instances, however, in which both these grand characteristics are absent, are of the greatest rarity. Of wingless Ptilota examples occur in most of the orders, as in the female glow-worm among the Coleoptera; the neuter ant and female *Mutilla* among the Hymenoptera; many of the smaller grasshoppers and locusts among the Orthoptera; some of the *Gerridæ* among the Hemiptera; the genera *Boreus* and *Termes* in the Neuroptera; the female *Coccus* among the Homoptera; the genera *Chionea* and *Borborus* among the Diptera; the *Stylopidæ*, in the order Strepsiptera, and the females of various moths, as in the genera *Orgyia* and *Cheimatobia*, as well as in *Oiketicus* of L. Guilding. Amongst these exceptions it will be remarked that the majority are cases in which only the females are wingless, whilst all except *Coccus*, *Stylops*, and *Oiketicus* possess articulated feet in the wingless state. These three genera would therefore be regarded, if we considered only the adult state of the females, as the most degraded instances of apiropodous Ptilota. But such an opinion cannot be maintained, since the early states of these insects exhibit as high an amount of organization as those of any of the other insects in the orders to which they respectively belong, their peculiar characteristic being, that, whilst in the great mass of winged insects there is always a gradual evolution of structure, by which at length wings and legs are developed, these particular individuals, destined ultimately to appear in such a degraded condition, not only gradually lose their powers of evolution, but are subjected to a power of absorption by which the limbs which they at first possessed are gradually reduced in size and ultimately entirely lost, till the animal retains only the appearance of a short sluggish vermiform animal, in which not only are the wings and legs but also the antennæ and the organs of the mouth almost or entirely obliterated, and even the articulated condition of the body nearly lost.

Such is the apparently helpless condition of the females of a rather extensive group of moths, which have been long well known to German entomologists under the name of Sackträger, of which the smaller species constitute the genus *Psyche*, whilst some of the larger were

formed by the late Rev. Lansdowne Guilding into the genus *Oiketicus*. The memoir on the two West Indian species observed by that author is contained in the volume of the Linnæan Transactions, and is one of the most valuable contributions to the science contained in the volumes published by that Society. Whilst the plates, however, which illustrate this memoir clearly prove the close affinity of the two insects, the males are very distinct in form from each other, and ought evidently to be regarded as types of separate subgenera. Of their intimate connexion with the smaller European species known under the generic name of *Psyche* (but which have lately been distributed by M. Bruand, in an excellent monograph on the group, into various subgenera), there can be no possible doubt; indeed the largest British species cannot be separated generically from *Oiketicus*.

*OIKETICUS NIGRICANS.* (Plate XXXIV. fig. 1 and details.)\*

Of this species males only were first captured in this country, which were illustrated by Mr. Curtis in his "British Entomology" under the name of *Penthopha nigricans*; its generical relation with *Penthopha* is, however, entirely unfounded, whilst even its family connexion therewith is at least questionable. By the kindness of F. Bond, Esq., I am enabled to exhibit at the present meeting of the Zoological Society living specimens of the females of this species, together with the male and the cases formed by the caterpillars, covered with small morsels of twigs and ling. From a comparison of the characters of this species as compared with the other British Psychides, I have considered the former as subgenerically different from them, and have applied to it the name of *Pachythelia*. The case of the larva affixed by its mouth to a twig of ling is represented in Plate XXXIV. fig. 1g. The caterpillar has habits similar to those of the larva of Mr. Guilding's *Oiketicus*, and like this has the head and thoracic segments of a pale buff colour dotted with black. Great numbers of the cases of this species were found in the New Forest by S. Stevens, Esq., F.L.S., &c., to whom I am indebted for the following note on the habits of the species:—

"I found the cases of this insect both at Ringwood and Lyndhurst in the New Forest, attached to the points of the heath and gorse, in the third and last week in May, and the perfect insect appeared a few days after, the females more like a maggot than a complete insect, having neither wings nor legs, or at least only the rudiments of the latter; they occasionally come out of their cases, but generally lay their eggs first; two of the males which I reared had not been out of the chrysalis above ten minutes ere they paired with the females, but did not remain in connection above a quarter of an hour, nothing but their head and wings being observable at the time. Whilst at Lyndhurst, I kept the box I had the cases in out of doors, and one evening, it appears, the garden was quite alive with them, the males flying round the box and settling on the top, no doubt attracted by a female; their scent must be very strong, as the heath was more than half a mile off. I, unfortunately, was not at home at the time, but the woman at the cottage secured a specimen in a pill-box. I afterwards kept watch for them, but they did not appear another evening, al-



though there were several unimpregnated females in the box : how is this to be accounted for? The males invariably emerge from the chrysalis between 5 and 7 in the afternoon ; but I have only, as yet, reared fourteen males and about two dozen females out of upwards of 100 cases ; I begin to fear the remainder must be dead."

The accompanying figure of the female of the British species was made from the living insect, specimens having been sent me from Scotland by Mr. Weaver in the middle of the month of June. The body has all the soft appearance of that of the larva of a wasp or bee, and is of a pale dirty whitish colour, except the upper side of the head and thoracic segments, which are brown; the first, fourth, fifth, sixth, seventh, eighth, ninth, tenth and eleventh segments of the body are furnished at the sides with a pair of spiracles, from which the tracheæ may be seen to radiate through the thin skin of the body ; on the underside of the body is a row of nine small brown spots in the middle of the segments, commencing on the segment next to the head, those on the thoracic segments being close together between the minute rudiments of legs. The head has three deep circular impressions in front, forming a triangle ; the eyes appear to be merely irregular black spots, with the surface continuous and destitute of facets ; the antennæ are rudimental, consisting of a minute exarticulated pair of appendages on the underside of the front of the head ; between the rudimental antennæ there is a transverse impression in the place of the mouth which is alternately puffed out and withdrawn, but no opening is visible ; the legs are minute tubercles ; the body is terminated by a small fleshy lobe or appendage, beneath which is a fleshy pro-leg or wart. The insect has a very strong vermicular motion, contracting segment after segment, considerably resembling in this respect the incipient pupa of some Hymenoptera. It twists the extremity of its body about in various directions, especially upwards, with considerable energy.

The winged male has the antennæ bipectinated to the tips ; the anterior legs are long and slender, the tibia being furnished with a long and slender spur arising from near the base, and the forewings are only furnished with eleven branches running to the margin of the wing. From a comparison of the figure of this wing with those of *O. Saundersii* (Pl. XXXV. fig. 2) and *O. Hübneri* (Pl. XXXVI. fig. 1*b*), it appears evident that the wanting branch is that analogous to the upper discoidal of Mr. Edward Doubleday.

The figures given by the Rev. L. Guilding of his two West Indian species of *Oiketicus* being deficient, from containing no representation of the veining of the wings, the structure of the legs, &c., I have endeavoured to supply these deficiencies by an examination of typical specimens, which are in fact requisite to enable us to establish satisfactory comparisons with the new species described in this paper.

*OIKETICUS KIRBII.* (Plate XXXIV. fig. 2 and details.)

Of the male of *O. Kirbii*, L. G., there is a typical specimen in the Kirbian cabinet of the Entomological Society, which has afforded the

accompanying figures. The antennæ consist of about forty joints, the third and eighteen or nineteen following bipectinated, the terminal pectinations being shorter on the underside, and the remaining joints simply serrated. The head has two minute slender rudimental exarticulate palpi, and the fore wings have the full complement of branches running to the margin of the wing, *i. e.* twelve; of these, however, that (*y*) which represents the lower discoidal of Mr. Edw. Doubleday is united into a fork with the third branch of the median vein as in *O. Saundersii*. The fore tibia has a long flattened appendage slightly notched at the base, arising near its base.

**OIKETICUS MACLEAII.** (Plate XXXIV. fig. 3.)

Of the male of *O. MacLeaii*, L. G., there is also a typical specimen in the cabinet of the British Museum.

In the fore wings of this species there are only ten terminal branches, the third branch of the subcostal and the upper discoidal being obsolete, and the lower discoidal (*y*) arises conjointly with the third branch of the median from the lower extremity of the discoidal cell. The fore legs are long and slender, with the fore tibiæ simple.

By the kindness of W. W. Saunders, Esq., I am also enabled to exhibit, describe, and figure several new species of these insects recently brought from New South Wales by Mr. W. Stephenson.

The cases of several of the Australian species of these insects are figured by Mrs. Meredith in her 'Notes and Sketches of New South Wales,' and noticed in the following terms:—"Some of the insect architects here are most extraordinary creatures; but I grieve to say I know comparatively little about them, my chief acquaintance being with their deserted houses, of which I have several kinds; some of these are formed of straight twigs, the sixth or eighth part of an inch thick, and from two to four inches long, placed side by side in a circular form and very strongly webbed together within, so that it is impossible to tear them asunder without breaking the twigs, the ends of which usually project beyond the closed portion of the cell, which is suspended by a strong web woven over the spray of a tree or shrub, so as to let it swing with the wind. I have sometimes seen a large white caterpillar inside an unfinished cell, and on one or two occasions have observed a bush or tree so full of these pendent berths as to give them the appearance of a good crop of some fruit or seed. How such a creature could cut off and carry to their destined place, pieces of twig four or five times its own weight, I cannot imagine; that they were cut expressly for the purpose is evident, from the neat manner in which the ends are rounded off; they are left of uneven lengths and not webbed on the outside; which together with their being hung so as to wave with the leaves of the tree, seem all precautions against discovery. Some are formed in the same manner of much smaller twigs, others are pointed bags of strong web, with small bits of stick fastened at intervals on the outside, and some are

formed of a webbed bag to which quantities of small dead leaves are attached by one end only, so as to cover it entirely and flutter like a withered bunch of leaves; but all are hung upon trees as much resembling the nests in colour and aspect as possible. Those I have opened are lined within with the smoothest white silken web, the outer portion being brown or ash-coloured to correspond with the tint of the twigs or leaves."

Mrs. Meredith gives five figures of these cases, two being cylindrical, covered with thick bits of stick of various lengths, arranged close together longitudinally round the case; a third is a large elongate ovate bag with short bits of stick worked into it irregularly; a fourth is a cone of web covered with small dry leaves attached to it in great numbers by the base of the leaf; and the fifth is a cone of web with small twigs and grass straws attached to it and arranged longitudinally. The first and second of these figures seem to represent the cases of the same species, of which I do not know the perfect insects; the third is a small case of *Oik. Saundersii*; the fourth appears to be a small case of leaves similar to that figured in Plate XXXIV. fig. 5, of which I am not acquainted with the perfect insects; and the fifth may be a small case of *Oik. Hübneri*.

#### OIKETICUS SAUNDERSII, Westw. (Plate XXXV.)

Mas. *Niger, capite dimidio antico, thoracis, pedibus anticis, incisuris apiceque abdominis fulvis, antennis brevibus nigris dimidiato-bipectinatis; alis fuliginosis, venis hyalinis, tarsis nigris.*

Expans. alar. antic. unc. 2.

Fem. *Cylindrica, luteo-albida vel fauicolor, capite segmentisque tribus anticis supra nudis, glabris, reliquis sericeis opacis, apicali tomento sericeo obscurius colorato omnino vestito; pedibus brevissimis, antennis obsoletis (oculo nudo haud detectis), oviductu elongato.*

Long. corp. unc.  $1\frac{3}{4}$ ; latit. unc.  $\frac{1}{2}$ .

*Hab.* In Nova Hollandia, prope Sydney. In Mus. W. W. Saunders, British Museum, &c.

Syn. *Oiketicus elongatus*, W. W. Saunders, Trans. Ent. Soc. vol. v. (1847), p. 43.

Considering it advisable to maintain for these curious insects the system of specific names commenced by the Rev. L. Guilding, I have altered that proposed for the present species by its first describer, it being moreover inappropriate as applicable to other species agreeing with the present in structure. The antennæ of the males of this species consist of about forty joints, of which the first and second are thickened, the second very short, the nineteen following bipectinated, and the eighteen or nineteen terminal ones only serrated, but of these a few towards the base have the serratures furcate, indicating the bipectination of the preceding joints. The fore wings are elongated and offer several peculiarities in the arrangement of their veins. From the accompanying figure (Pl. XXXV. fig. 2) it will be seen that there are twelve branches running to the margins of the wing (which is the

typical number in butterflies\*), and that of these, two ( $2c$  and  $2d$ ) are united into a fork near the tip of the wing, the base of which fork extends backward to the upper exterior angle of the discoidal cell, from which also a simple vein ( $2e$ ) extends to below the extremity of the wing; below these is another simple branch ( $x$ ) emitted from the middle of the extremity of the discoidal cell, then two others ( $y$  and  $3_3$ ) united into a fork with two simple branches beneath ( $3_2$  and  $3_1$ ). These letters indicate the analogies which I consider these various branches to possess with those of the butterflies, and adopting the nomenclature of Mr. Edward Doubleday, the fork ( $2c$  and  $2d$ ) must represent the third and fourth branches and  $2e$  the extremity of the subcostal vein,  $x$  the upper discoidal,  $y$  the lower discoidal, and  $3_1$ ,  $3_2$ ,  $3_3$ , the three branches of the median vein. Here however, as in so many places elsewhere, we are met by the difficulty presented by the two discoidals;  $y$  in the species before us, forming unquestionably (so far as function is concerned) a portion of the system of the median vein. The more I investigate this subject, the less do I feel convinced of the propriety of regarding these two discoidals as having a distinct system of their own, feeling on the other hand that the upper discoidal,  $x$ , belongs to that of the subcostal, and the lower discoidal,  $y$ , as here, to that of the median vein. In this point of view, the figure which Zeller has just published of the veins of the wings of *Auxocrossa Hopfferi*, from Para (Linn. Entomol. ix. tab. 3. fig. 25), is a perfect type of the system of the veins of the wings of Lepidopterous insects. Here are, as usual, twelve terminal branches, the costal and submedian simple, the postcostal with five simple branches and its own terminal portion, and the median with four simple branches, the two composite systems being quite separate from each other, there being no transverse veinlet to close the discoidal cell, which is consequently open as in many butterflies†; but in these latter we are met by the difficulty that the fourth or anterior branch of the median (or the lower discoidal of E. Doubleday,  $y$ ) is pushed forward and becomes, together with the upper discoidal,  $x$ , portion of the system of the subcostal vein. We may cut this knot either by supposing that these two contiguous branches belong to either one or other system (which accords with the views of Lefebvre), or by considering that sometimes one or other of these systems occasionally throws out another branch, the other system in such case being deficient in a branch, which is scarcely maintainable, seeing that out of the hundreds of Lepi-

\* It is astonishing, with so many examples before him in which this typical number is reproduced, that M. Alex. Lefebvre, in his imaginary type of a Lepidopterous fore wing (Ann. Soc. Ent. Fr. xi. pl. i.), should have given only eleven as the typical number.

† *Parasia Carlinella* (Stainton, Ins. Brit. Lep. pl. 4. fig. 6a) is another instance of the separation of the two systems of veins: the subcostal, consisting of five branches and a terminal portion; and the median of four branches, without any discoidal veinlet, but the cell is imperfectly closed. *Asychnia modestella* (ibid. pl. 8. fig. 1a) is another example of the separation of the two systems without any discoidal veinlet, but here the median has only two and the subcostal only four branches and a terminal portion.

diptera which I have examined, not one has possessed more than the ordinary twelve terminal branches.

The under wings are small and very acute at the outer angle, but have the anal portion considerably dilated into a rounded lobe. Here, as in the fore wings, the branch  $\gamma$ , which is the lower discoidal (or rather the only discoidal of the hind wings) of *E. Doubledayi*, is united with  $3_3$ , the third branch of the median vein, into a fork, thus transforming it into a portion of the median system.

The fore legs are rather long and slender, especially the tarsi; the large femur and tibia are very densely hairy, and the latter is short and furnished with a strong and long flat spine on its inside. The two hind legs are very short and thick, with the tarsal joints very short and the claws strong. This dissimilarity in the legs is a remarkable and unnoticed character.

The female is a thick short vermiform creature with short tufts of hair at the sides of the thoracic portion and terminal segments; the head is distinctly furnished with eyes, and on each side below the eyes with a very short and apparently exarticulated antenna; the six legs are present, but very short and thick, and terminated by a single-jointed short tarsus, with a pair of strong claws; it is this structure of the legs which at once distinguishes this unwieldy female imago from the larva; in this respect also the female differs from that of *Oiketiscus Kirbii*, which has only the very slightest rudiments of antennæ and unarticulated legs.

On the 30th August Mr. Stephenson first observed a yellowish-white substance protruding at the lower end of the largest cases, which upon close examination proved to be a portion of the females in the imago state, with one-third of their bodies exposed; about an hour afterwards, examining the cases again, he found the females had receded, and on opening a case, the female moth became evident within, and thus they emerge and recede as occasion may require. The female is a large apterous moth with very little of the ordinary appearance of an insect of the moth kind; its colour is yellowish-white, fawn or buff.

On the 5th September Mr. Stephenson examined some of the females, no males having yet appeared. Two or three were dead: one nearly so, having deposited a great number of ova within the pupa-cases, which were enveloped in a short silky material. When the female has deposited all her ova, she is literally nothing but thin skin, which soon desiccates, leaving room for the young larvæ to pass. Mr. Stephenson states that on the 20th September a male imago appeared; it had been in active operation a good while, as evinced by its wings being much broken at the tips and otherwise much abraded. It has the extraordinary power of extending the abdomen to two inches in length, and of turning and twisting it in all directions. When in this state it has alternate rings of black and yellow, with a curious appendage at the extremity. The male appears very eager to accomplish the grand object of nature, namely the continuation of its species, as its existence appears to be of short duration. The large fat or rather distended females

have not room to turn their bodies so as to present the generative organs conveniently to the male, consequently the immense development of the abdomen in the males is of the greatest importance; but it appears very extraordinary that the head of the female should be inverted, when it is known that she never emerges from the case, unless by accidentally falling therefrom, which position obliges the male, when in the act of coition, to stretch his abdomen all along the side of the female full  $1\frac{3}{4}$  inch. This peculiarity appears to be the design of the All-wise Creator in order to afford a secure shelter for the defenceless larvæ, viz. the pupa-case of their parent, from which they emerge after the disappearance of their mother's body, and immediately form for themselves silken cases, covered with small pieces of anything they can procure, arranged in every respect as in the large ones.

The curious larva of this species with its case was first figured in a little miscellaneous work on natural history published at the close of the last century, entitled 'The Naturalist's Pocket Magazine,' vol. i. (1799) pl. 18, under the name of the Porcupine Caterpillar of New South Wales, without however its transformations having been observed. In the accompanying account of its habits, drawn up by an observer at Port Jackson, it is stated, that when any accident happens to its case, the Caterpillar repairs with incredible expedition whatever damage may have been received, so that in a very few hours it fills up a large hole with the same silky substance, and this with an exactness so perfect, that the nicest eye cannot discern what was the extent of the injury. The bottom of the case resembles the finest fleecy hosiery, and it is of a sort of grey, ash, or mouse colour, and has the silky softness of a mole's skin. The three segments following the head of the caterpillar are of a fine yellow colour, beautifully marked with black or dusky oblong spots: the eight following segments are of a dirtyish pale yellow colour, but the upper part of the terminal segment has the appearance of being covered with a large scale, though it is, in fact, only a substance of the same beautiful spotted yellow as the head and first three segments.

The full-grown larva of the female is represented in Plate XXXV. fig. 12. The head is comparatively small and nearly horizontal, the anterior margin of the head rounded, the clypeus forming a distinct but continuous piece, behind which is a small triangular portion bearing two minute tubercles near the middle of the face, the upper side of the head is uniform fulvous-buff coloured, the labrum is deflexed and deeply notched in the middle, the mandibles are strong and black; on either side of the head beneath is a black patch, at the anterior margin of which is placed the small group of ocelli on either side, and between them and the base of the mandibles are the antennæ, which in the dried specimens appear to consist of a very short annuliform basal joint, within the membranous apex of which are sunk the terminal joints, of which only the minute apex of the apical one is visible. The thoracic segments gradually increase in width and thickness, as do also the three pairs of thoracic legs, of which the coxæ are soldered together and dilated into a broad horny

plate, giving great support to the articulated portion of the legs\*. The thoracic segments are of a rich fulvous colour, each with four longitudinal black streaks, the two hinder ones, as well as the abdominal segments, also with small distinct raised lateral fulvous pieces upon the dark ground; the first, fourth, and seven following segments respectively bear a pair of spiracles†.

The larvæ of the males are not so strongly characterized as those of the females, being nearly cylindrical, and the legs are less robust and raptorial, although the hind coxæ are developed into a conical plate behind the hind pair of legs. The cases of the full-grown male larvæ are not more than two-thirds of the length of those of the females. To one of the male cases I find the following note attached by Mr. Stephenson:—"Examined 12 June. White Caterpillar, head and first segment striped with brown. Head downwards, or the reverse way in which it feeds. Loose silk inside the case; ready to change. Examined June 27th, changed to pupa. October 1st, imago appeared."

This case, with the empty pupa skin, remaining, as is the usual custom with these insects, sticking out of the free extremity of the case, is represented in Pl. XXXV. fig. 6. It will be observed below that Mr. Stephenson noticed that this species was occasionally infested with Ichneumonideous parasites, as was also the case with Mr. L. Guilding's West Indian species; but in a specimen of the case of this species brought home by Mr. Edwards, which I examined and sketched twenty-five years since, I found the body of the larva shrivelled up within the case, in which were about thirty small, elongate, ovate, smooth, red-brown puparia of some parasitic species of Tachinideous Muscidæ, dispersed amongst the silken lining of the case, from all of which the flies had made their escape.

Like the pupæ of the Hepialidæ, the male pupæ have the power of stretching out the abdominal segments to a considerable extent, in which position they remain after the imago has made its escape; they are endowed with this power to enable them to work their way out of the extremity of their cases, in doing which they are moreover assisted by the transverse series of minute hooks on the dorsal surface of the abdominal portion of the body. These hooklets are of two kinds, each of the 2nd, 3rd, 4th and 5th segments having a row of fine recurved hooks or strong curved short bristles across their hinder extremity, whilst the 4th, 5th, 6th, 7th and 8th have a row of stronger spines directed backwards across the base. The pupæ are prevented from being forced entirely out of the cases by two strong hooks at the extremity of the body on the underside of the 8th segment, which appears to be composed of the rudiments of two

\* This peculiar strength of the legs, with their gradual increase in size, is well represented in the Rev. L. Guilding's figure of the larva of *Oiketiscus Kirbii* (Linn. Trans. xv. tab. 7, fig. 7), but he has not noticed the remarkable construction of the coxæ above described.

† I see nothing in this larva resembling the four spiracles represented by the Rev. L. Guilding, above the ventral pro-legs of the larva of *O. Kirbii* (tab. cit. fig. 7).

or three segments soldered together, having two pairs of small tubercles beneath, in addition to the two anal hooks; it is in this manner that the terminal abdominal segments of the larva become lost in the imago. The view of the anterior part of the body of the male pupa (fig. 8) well exhibits the broad cases of the antennæ as well as those of the thighs, *x*, and tibia and tarsus, *x*, *x*, of the fore leg, and those of the 2nd leg, *x*, *x*, *x*, the short hind leg being concealed by the wing-cases.

The following particulars relative to the economy of this species are given from the notes of Mr. Stephenson by Mr. W. W. Saunders. "The larvæ are enclosed in a silken case, fortified on the outside with pieces of stick of various lengths, generally about half an inch long in the main part, but towards the lower end there are usually a few from one to three inches in length, in the centre of which the lower end of the silken case protrudes, free from the sticks, and which is very flexible. Through this aperture the larva discharges its excrement and exuviae. The upper or head extremity of the case is a beautiful tissue of soft silk, forming a tube half an inch in width, through which the larva emerges to feed and change its position. It frequently comes out half its length, but most commonly only protrudes its six true feet and the first four segments of the body. It generally takes the precaution to attach a portion of the side of the mouth of the tube to the branch upon which it is feeding, and when anything touches it unexpectedly, it immediately and with great celerity recedes into the case, drawing in the flexible part of the tube after it, and contracting the aperture so as to exclude all enemies. The larvæ of the largest cases are about three inches in length and half an inch in diameter. The abdominal and anal feet are mere circles of small points or hooks with which it moves in the case, taking hold of the beautiful silken lining, to which it can adhere with great pertinacity. The cases are found suspended on various shrubs, such as the different kinds of *Leptospermum*, *Melaleuca*, &c. at all seasons, and are very conspicuous. Previous to changing into the pupa state, the larva firmly fixes itself with silken fibres to some branch or paling, drawing together and permanently closing the head opening. It then reverses its position in the case, and envelopes itself in a beautiful soft silken cocoon of a yellowish-white colour. On opening a considerable number of cases I found the insect in various stages of growth in June. The pupæ of the largest cases are about 2 inches in length and half an inch in diameter, and are of a dark chestnut colour; those of the smaller cases are darker, inclining to black, with the abdomen much attenuated, and about one inch and a half in length. The former are females, the latter males."

Notwithstanding the extraordinary care bestowed upon the larvæ to protect them from enemies, Mr. Stephenson observed many examples of the depredations of a parasite, and an *Ichneumon* had appeared in more than one instance.

*OIKETICUS HUBNERI*, Westw. (Pl. XXXVI. fig. 1 and details.)  
*Mas. Totus niger dense hirtus, antennis solis flavis, 48-articulatis,*



*ad apicem bipectinatis; alis subelongatis, hyalinis, venis luteis, nigro setosis, posticis subrotundatis, costa areaque nigro dense hirtis.*

Expans. alar. unc.  $1\frac{3}{8}$ .

*Larva obscura, capite segmentisque tribus anticis albidis, nigro punctatissimis, carinis lateralibus carnosis, propedibus dorsoque segmenti ultimi rufo-castaneis.*

*Habitaculum extus subcoriaceum, ramulis numerosissimis tenuibus obsitum, his basi tantum adfixis apicibus liberis.*

*Pupa maris elongata, nigra, nitida, segmentis abdominalibus 2, 3, et 4 ante apicem apiceque 5ti serie transversali dorsali spinularum curvatarum, recurvarum instructis, 6to inermi, 7mo et 8vo ad basin serie transversa spinarum rigidarum postice directa instructis; tribus ultimis subcoalitis, apicali hamulis duobus minutis, recurvis terminato.*

*Pupa feminae obesa, nigra, nitida, segmentis 4 anticis carinatis, capite parvo, utrinque ceratotheca brevi instructo, podothecis minutis, segmentis abdominalibus inermibus, apicali hamulis duobus minoribus recurvis terminato.*

*Hab.* in Nova Hollandia (*D. Stephenson*). In Mus. W. W. Saunders.

In addition to the materials received by Mr. Saunders, I am fortunately able to illustrate the history of this species by figures of the larva and its details, drawn by me twenty-six years since, and which have hitherto remained unpublished. In a case of this species, formerly in the collection of Mr. Edwards, I found a very well preserved larva which supplied these figures. The larva itself is represented in Pl. XXXVI. fig. 1 o; it agrees in general form with that of *O. Saundersii*, but is at once distinguished by the great maculation of the head and thoracic segments, which, as well as the legs, are pale buff dotted with black; the longitudinal fleshy ridges at the sides of the body, the pro-legs, and the upper side of the terminal segment, red-brown; the remainder of the body in the specimen examined had changed to a blackish colour. Figure 1 p represents the front view of the head, and fig. 1 q the eyes and antenna of the left side, and the upper lip and mandibles *in situ*. The head of this larva was towards the slender free extremity of its case, showing that it had turned itself therein in order to prepare for assuming the pupa state, and consequently that it had arrived at its full size, and had then died. The case also agreed in size with those brought from Australia by Mr. Stephenson, from which the perfect insects had made their escape. There is scarcely any difference in size between the cases of the male and female larvæ in this species. It will be observed that the case is covered with a vast number of very slender twigs, and these appear, from the different specimens brought home by Mr. Stephenson, to have been cut from different kinds of trees; hence it is evident that the species is not confined to a single tree; it will be moreover seen that these twigs are arranged somewhat systematically, the base of those nearest the narrow extremity lying beneath those nearer the wider aperture or mouth, which are thus perceived to have been added subsequently, proving, in fact, that the case is increased gra-

dually in size in the direction of its mouth, where the head of the larva emerges from the case; it is therefore easy enough for the caterpillar to extend its nest in this direction whilst remaining within it, just as a bricklayer builds the shaft of a manufactory chimney from within, but the caterpillar must protrude a considerable portion of its body in order to affix the twigs on the outside; and in this part of the business we also perceive an interesting piece of instinct, the loose points of the twigs being always directed backwards, so that in walking they oppose no resistance to the progress of the caterpillar, which they would do were they affixed either in the opposite direction or without any order.

The pupa of the male agrees for the most part with that of *Oiketicus Saundersii*. The 2nd, 3rd, 4th and 5th segments are armed on the back, along the hinder margin, with a transverse series of fine recurved hooklets. The 6th segment is destitute of any hooks or hooklets, and each of the 7th and 8th segments has a row of stronger sharp teeth directed backwards at its base. The correspondence of the abdominal segments of the pupa with those of the larva, is proved by the appearance in the former of traces of the ventral prolegs of the latter.

The pupa of the female is very robust and, of course, destitute of wing-cases, but with slight traces of leg-cases, and also with two elongated cases extending from each side of the head, of which it is not easy to understand the object; the thoracic segments are rather strongly ridged, and the abdominal segments have lateral spiracles, and are also provided on the underside with four pairs of deep impressions, indicating the position of the ventral pro-legs of the larva (a peculiarity which I have not elsewhere noticed in Lepidopterous pupæ); the body is terminated by two distinct hooks on the underside. In the opened case, represented in fig. 17, I found an empty female pupa-case with the head lying towards the narrow apical opening; near the anal extremity of its body the shell of the pupa-case had been burst through in several places, and behind it, lying among the soft woolly lining of the case, were four pupa-cases of a parasitic muscoid fly, of the subfamily Tachinides, which were also empty, the flies having made their escape; behind these, towards the base of the case, lay the skin of the larva, shed on assuming the chrysalis state.

The perfect male insect differs from *O. Saundersii* in its antennæ, which are bipectinated to the tip; they consist of forty-eight joints, and the two thick basal ones as well as the terminal joint are simple. The fore legs are slender, the tibia being destitute of the elongated spur observed in *O. Saundersii*. The two hind legs are short and thick, with very short robust tarsal joints and strong but simple ungues. The fore wings of the male are much shorter than in *O. Saundersii*, and they are traversed to the margins by only eleven branches of the veins. From a careful comparison of this wing with that of *O. Saundersii* (Pl. XXXV. fig. 2), it will be evident that the wanting branch is the lower discoidal (*y*), or in other words, that the two branches,  $\mathfrak{z}_3$  and *y*, of the fork in the middle of the apical margin of the fore wings of *O. Saundersii* are coalesced into the 3rd

branch of the median, 3<sub>3</sub>, of *O. Hübneri*, which also tends still more fully to prove that the lower discoidal, theoretically speaking, forms part of the system of the median vein. The costal area is furnished near the base beneath with a strong hirsute lobe, through which the long bristle or bridle at the base of the costa of the hind wings passes. These latter wings agree with the fore ones in being destitute of the upper branch of the fork, formed by the 3rd branch of the median vein in *O. Saundersii*. In all the wings, moreover, the discoidal cell is only traversed by a simple longitudinal veinlet, whereas this is forked in the last-named species.

**OIKETICUS LEWINII.** (Pl. XXXVII. fig. 1 and details.)

**Mas.** *Fuscus; capite antice, fasciis duabus longitudinalibus thoracis, squamulisque ad basin alarum griseo-hirtis; alis fuliginosis, venis, presertim anticarum, fusco-hirtis, pene fulvo; antennis ad apicem bipectinatis.*

**Expans. alar. antic.** unc.  $1\frac{1}{4}$ .

**Fœmina.** *Aptera, grossa, subalbida, obscura, segmentis thoracis glabris, fulvis, carinatis, 1mo subcucullato; antennis brevibus, exarticulatis, pedibus minimis, tuberculiformibus, (parte postica corporis deterita).*

*Habitaculum elongatum, subcylindricum, extus ramulis fere habitaculi longitudine, longitudinaliter omnino affixis, obtectum.*

**Hab.** in Australia (*D. Stephenson*). In Mus. D. W. W. Saunders.

The males of this species at once differ from those of the preceding by the dark smoky colour of the wings, and the still darker colour of their veins, as well as of the antennæ, which are bipectinated to the tip; they consist of thirty-nine joints, of which the two thickened basal ones and the two at the apex are simple, the pectinations gradually shortening to the thirty-seventh joint. The veining of the wings nearly accords with that of *O. Saundersii*, although they are of a shorter form, and the hind ones are not lobed at the anal angle. The fore legs are long and slender, the tibiæ furnished with an elongated spur at the base, and the hind legs are much shorter and thicker.

Figs. 1f & 1g represent the anterior portion of a specimen indicated as a "female which had deposited ova." The head is small, with two projections at the anterior angles, which do not appear to be either articulated at the base or along their length; on either side is a small dark spot representing the eyes; the thoracic segments are very glossy and produced into a sharp carina down the middle, the first segment behind the head being almost cucullated. The legs are very minute, rudimental, and apparently exarticulate.

The case is cylindrical, with twigs of various sizes, but generally nearly as long as the case, fastened throughout their whole length on the outside; these are not arranged with so much regularity as in the cases of some of the other species, and occasionally one of the little twigs extends considerably beyond the extremity of the case, as in figure 1e.

The pupa of the male is nearly black and glossy, the incisions of the abdominal segments paler coloured; the head-case between the eyes

is produced into a conical point, and the second abdominal segment (which extends to the extremity of the wing-cases), as well as the third, fourth and fifth, are furnished on the back with a transverse series of recurved hooklets close to the hind margin. Those on the fourth segment are finer than those on the preceding; moreover the fourth, fifth, sixth, seventh and eighth segments are armed on the back with a series of spines at the base of each, directed backwards, those of the fourth segment being the most slender.

**OIKETICUS BOISDUVALII.** (Pl. XXXVII. fig. 2 and details.)

Mas. *Omnino fulvo-hirtus, pedum anteriorum basi antennisque fuscis, alis pallide luteo-fuscis, costa anticarum ad basin obscuriori.*

Expans. alar. antic. unc.  $1\frac{1}{8}$ .

*Habitaculum elongatum, sensim attenuatum, extus ramulis brevissimis, numerosissimis, omnino affixis obtectum.*

*Hab.* in Australia (*D. Stephenson*). In Mus. D. W. W. Saunders.

Exclusive of the peculiar colour of the males, this sex is remarkable for the shortness of the wings, which gives the insect somewhat the appearance of the lackey moth (*Clisiocampa Neustria*). The antennæ consist of about forty joints, and they are bipectinated to the tip. The veining of the wings agrees almost precisely with that of *O. Saundersii*. The fore legs have the tibiæ furnished with the elongated spur at the base.

From a few fragments of the exuviae of the larva of the male in one of the cases, it is evident that the head and thoracic segments were maculated with yellow and black, but the pieces are so much injured that I cannot arrange them into segments.

The pupa of the male is of a light chestnut colour, with the wing-cases darker; the head-case is carinated above, and the dorsal portion of the abdominal segments is strongly striated or wrinkled transversely. The second and third segments are rugose at the base on the back, the fourth and four following are armed with a row of spines at the base, gradually becoming stronger on the hinder segments; the third, fourth and fifth have a transverse row of recurved hooklets on the hind part of the back of each. The fourth, fifth, and sixth beneath exhibit the appearance of a pair of pro-legs.

The female pupa is of a black colour, chestnut beneath and at the edges of the segments; it is elongate-ovate, the first segment behind the head slightly carinated; the abdominal segments are finely striated transversely, the base of each being rather rugose, and the extremity of the sixth and three following segments have a row of very fine recurved hooklets. The extremity of the body beneath is destitute of the two horny points observed in the pupa of the male.

**OIKETICUS HERRICHI.** (Pl. XXXVII. fig. 3 and details.)

Mas. *Niger, dense hirtus, capite colloque griseo-albidis; antennis obscure fuscis, ad apicem bipectinatis; alis hyalinis, venis pallide fusco-luteis, costa areaque anali omnium dense nigro-hirtis, pene aurantio.*

Expans. alar. antic. unc.  $\frac{1}{12}$ .

*Habitaculum ovale, coriaceum, extus ramulis nullis obtectum, carinis autem sex longitudinalibus elevatis; basi et apice tenuibus haud carinatis.*

*Hab.* in Australia (*D. Stephenson*). In Mus. D. W. W. Saunders.

The male of this species agrees with that of *O. Hübneri* in the beautiful hyaline texture of the wings, almost destitute of scales or hairs (except along the costa and anal area, which are black), but the black antennæ, as well as the remarkable structure of the case of the larva, at once remove it from that species, with which it moreover almost precisely agrees in the veining of the wings, except along the costal portion of the hind ones, in which the veins are more irregular. The antennæ consist of about forty-two joints, which are bipectinated, except the two at the base and the apical one. The anterior tibiæ are not furnished with the elongated spur at the base (a character which also occurs in *O. Hübneri*), the hind pair of legs are short and proportionately thicker than the fore ones.

The curious construction of the leather-like case, destitute of twigs or leaves on the outside, will not fail to attract notice: its formation must exhibit a curious modification of instinct.

The second and three following abdominal segments of the male pupa have the hinder margin furnished on the back with a row of fine short recurved bristles, and the sixth, seventh and eighth segments have a strong row of spines at the base of each, across the back; the third, fourth, fifth and sixth segments moreover have a pair of large oval impressions on each on the under-side, representing the pro-legs.

In addition to the preceding Australian species of this curious group, I have figured the cases of three other species from New Holland, of which the perfect insects have not hitherto been observed. Two of these were brought home by Mr. Stephenson, and are in the collection of Mr. Saunders, whilst the third is in my own collection.

The first of these cases (Pl. XXXIV. fig. 5) is of considerable size and covered externally with large pieces of leaves cut somewhat irregularly, but mostly of an oblong form, attached by one end only, the remainder being free. Within this case I found some fragments of the cast skin of the larva, the head being strongly maculated with black spots more or less confluent; six of these are arranged in pairs upon the triangular space above the labrum. The thoracic segments were much less strongly spotted. The case also contained a female pupa of an elongate-ovate form, much larger than that of *O. Hübneri*, having the dorsal surface of the thoracic segments keeled, and that of the middle segments of the body but slightly wrinkled, and the hinder ones smooth. It is of a chestnut colour, the hind part of the abdominal segments with a ring of black. The third and three following segments of the abdomen with a row of very fine recurved hooklets at the extremity of the upper surface, the sixth and seventh rather rugose at the base, and the eighth with a row of small spines at the base.

Pl. XXXIV. fig. 6 represents another case, armed beneath with very short thin twigs stuck on transversely, above which are narrow pieces of flattened lanceolated leaves ribbed down the centre, varying considerably in length, mixed near the apical end with bits of stick. In the only specimen of this case brought home by Mr. Stephenson, I found only some very slight remains of the cast skin of the larva, whence I infer it was a male case, and that the insect having undergone its transformations, the empty shell of the pupa had been blown out of the extremity of the case before it was found.

Plate XXXIV. fig. 7 is a case in my own collection, coated with great numbers of short bits of thin twigs entirely fixed in a *transverse* position, thus differing from all the other species described in this paper. It had been inhabited by a female larva which had commenced its transformation to the pupa state, the skin of the larva being slit and partially cast off, the upper hind part of the body of the female pupa being quite disengaged, but it had not power sufficient to throw off the head-case of the larva, which still remained entire, covering the head of the pupa. The head and thoracic segments of the larva were luteous, very much spotted with black.

The four following species are natives of Ceylon, and have been communicated to me by R. Templeton, Esq., by whom two of them were described and figured in the Transactions of the Entomological Society, vol. v. pl. 5.

OIKETICUS TEMPLETONII, Westw. (Plate XXXVI. fig. 2 and details.) (*O. tertius*, Templeton, Trans. Ent. Soc. v. pl. 5, fig. 1-4.)

The name proposed for this species by Mr. Templeton being incorrect as well as inappropriate, I propose to apply to the present species a name more in harmony with those of the remainder of the genus. The species is well distinguished by its long body and narrow pointed fore wings, which have a large patch at the extremity of the discoidal cell, and a cloud between its extremity and the apex of the wing, of black, and the antennæ are only semipectinated, thus resembling *O. Kirbii* and *Saundersii*. The male has the normal number of marginal branches (12), but the lower division (*2e* [5]) of the subcostal vein branches off at some distance from the extremity of the cell; and the lower discoidal (*y*) forms the upper part of a fork with the third branch (3,3) of the median vein. The discoidal cell, in all the wings, is traversed by a furcated veinlet. The antennæ consist of forty joints, of which the third to the twenty-fourth are bipectinated, twenty-fifth to twenty-seventh biserrated, and the remainder strongly uniserrated. The fore legs are long, with a strong sharp spur arising from the base of the tibia.

The male pupa is dark chestnut-coloured, with the abdominal segments strongly wrinkled transversely; the extremity of the body, in addition to the two terminal hooks, is furnished beneath with two prominent obtuse tubercles; the only row of recurved hooklets which it possesses is situated across the extremity of the third abdominal

segment, the fourth to the eighth segments having a row of spines at the base of each.

The Entomological Society of London have received specimens of this species with the larva-case, from Hong Kong, presented by J. C. Bowring, Esq. A careful comparison of the Chinese individuals with Mr. Templeton's typical specimen, leaves no doubt as to this remarkable geographical range of a species of this group.

*OIKETICUS CONSORTUS*, Templeton. (Pl. XXXVI. fig. 3, 1-4, details.)

This species was also described by Mr. Templeton in the 'Transactions of the Entomological Society,' vol. v. pl. 5. fig. 5-7, without any details being given. The species is at once distinguished from *O. Templetonii* by its broader and more obtuse wings, its antennæ bipectinated to the tip, thus more nearly resembling *O. MacLeaii*. The antennæ are thirty-seven-jointed, the third to the thirty-sixth joints bipectinated, the pectinations being longer and more slender than usual. The fore-legs are slender, the tibia with the long spur (finely setose on the outer edge) arising from its base. The hind femur is rather thicker and slightly shorter than the fore one; the hind tibia about as thick as, but shorter than, the fore one, and the hind tarsus is as long as the three terminal joints of the fore tarsus. The veins of the fore-wings are arranged nearly as in *O. Templetonii*, except that the terminal branch of the subcostal vein (2e) arises close beyond the discoidal cell. In the hind wings the third branch of the median vein is furcate.

In the larva-cases figured by Mr. Templeton the outer surface is naked, but in another case received from him, a few particles of twigs and bits of leaves were fastened on the outside, as represented in fig. 3, 1. In this case I found the cast skin of the larva, showing the head and thoracic segments to have been of a pale yellow colour very much dotted with black, there being a transverse row of black spots in front of the prothoracic segment. The pupa of the male has the second and third segments unfurnished with hooklets, the fourth with a row of very fine recurved setæ across the posterior margin, and the fifth with a row of recurved hooklets. The sixth segment is unarmed, and the seventh and eighth have a strong row of spines at the base; the abdominal segments being strongly wrinkled transversely, and the anal segment much incurved, with two strong hooks.

*OIKETICUS DOUBLEDAYI*, Westw. (Pl. XXXIV. fig. 4 and details.)

Mas. *Piceus, griseo-hirtus, antennis fuscis, pedibus obscure luteis, alis hyalinis, latis, abdomine brevi, gracili, dense hirsuto.*

Expans. alar. antic. unc.  $\frac{2}{3}$ .

*Habitaculum larvæ cylindricum, ramulis longitudine variis, parallelis, affixis. Pupa maris gracilis, castanea, segmentis abdominalibus 4-8 ad basin serie spinarum instructis.*

*Hab.* in Ceylon (*D. Templeton*).

This very distinct species may at once be known by the large

hyaline colourless wings of the males (with which sex alone I am acquainted); the body is pitchy, densely clothed with dark grey hairs; the antennæ are brown and only twenty-five-jointed, strongly bipectinated, the pectinations long and slender, extending to about the eighteenth joint, the two or three following joints slightly bipectinated, and the remainder biserrated, but gradually becoming almost simple. The lower part of the face is furnished with a transverse raised ridge, beneath which are two black impressed dots apparently indicating the position of the palpi. The legs are slender, the tibiæ and tarsi dirty luteous, the fore tibiæ are furnished with a long spur arising from the base. The hind pair of legs are shorter and thicker than the fore ones. The wings are large, the hind ones extending nearly to the extremity of the abdomen; the anterior have the normal number of branches running to the margin of the wings, but the discoidal cell is extended so far beyond the middle of the wing, that the branches are necessarily much shortened. The discoidal cell is traversed by one well-marked and one incomplete vein. In the hind wings the third branch of the median vein is simple.

The male pupa is slender and light chestnut-coloured; the antennæ-cases extend as far as the extremity of the cases of the second pair of legs; the third, fourth and fifth segments of the abdomen have a row of fine recurved setæ across the hind margin of the dorsal portion of each, and the fourth to the eighth segments have a row of spines across the base of each, those on the fourth segment being the smallest, and those on the eighth the largest, this last having only a semicoronet of about seven or eight spines; the base of the segments is rugose, but scarcely transversely wrinkled, and the two hooks at the extremity of the body are large.

**OIKETICUS CRAMERII**, Westw. (Plate XXXVII. fig. 4 and details.)

Mas. *Fuscus*; *alis brunneo-fuscis, posticis obscurioribus, disco antillarum brunneo, venis nigro-hirtis, striola subapicale, maculis duabus marginalibus nubilaque pone medium alarum griseo-albis*; *antennis usque ad apicem bipectinatis*.

Expans. alar. antic. unc. 1.

*Habitaculum larvæ cylindricum, extus ramulis longitudine æqualibus et parallelis arcte applicatis, obtectum.*

*Pupa maris obscure castanea, segmentis abdominalibus opacis, valde transverso-sulcatis.*

*Hab.* in Ceylon (*D. Templeton*).

This species differs from all the preceding in the more varied markings of the fore wings, which are moderately elongated and have the normal number of branches extending to the margin, the lower discoidal (*y*) forming the upper division of a fork with the third branch of the median. In the hind wings the third branch of the median is accompanied by a distinct discoidal vein arising separately from the extremity of the discoidal cell. The antennæ are moderately bipectinated and thirty-eight-jointed, the pectinations extending to the extremity, the terminal joint alone being simple. The fore legs are slender and



considerably longer than the hind ones, with a long spur arising near the base of the tibia.

From specimens contained in the Cabinet of the British Museum, I infer that this is the species of which Mr. Templeton figured the case in the 'Transactions of the Entomological Society,' copied in Pl. XXXVII. fig. 4*d*.

The male pupa is dark chestnut-coloured, with the abdominal segments not at all glossy like the fore part of the body, but very strongly sulcated transversely, except about one-third of the posterior part of each, which is smooth and paler coloured. The 2nd to the 5th segments have a row of recurved setæ across the hind margin of each, scarcely visible in the second and third segments, and the fifth to the eighth segments have a row of strong spines. The two anal hooks are strong.

The female of this species has not hitherto been observed.

In addition to the preceding species from Australia, Ceylon, and the West Indies, I am able to indicate the existence of the genus in the East Indies, although not in so precise a manner as I could have desired.

In Forbes's 'Memoirs on the East Indies,' pl. 22, there is the representation of the larva of one of these insects, described as the "Faggot Caterpillar, with its nest on the variegated Acacia or Bambal tree in Guzerat." The case is cylindrical, with a number of twigs about the length of the case placed close together side by side, nearly as in Pl. XXXVII. fig. 4*d*; the caterpillar is also represented partly protruded out of the mouth of the case, with the head and thoracic segments pale coloured with dark brown spots. The perfect insect does not appear to have been observed; but in a collection of drawings of Indian insects, made by Lady Gilbert, and placed in my hands by her ladyship, I find two distinct species of these insects; one of these has a case as large as, but shorter than, that of *O. Saundersii*, externally covered with long pieces of twigs laid closely together, which was found on the 10th of August on a branch of the Asseen tree. Round the entrance or upper part was an elastic web which the enclosed caterpillar had the power of contracting or lengthening; the former it always did when alarmed. It would then fix the extremity of the web to the twig and hang from it, as if nothing possessing life was within the case; when in search of food it only puts forth the head and fore feet, notwithstanding which it moved very nimbly, house and all, along the branches. After spinning itself up to undergo its transformations, it was accidentally destroyed.

The other species observed by Lady Gilbert was also found on the 10th of August. The cases are similar to that last above described, but much smaller, about  $1\frac{1}{4}$  inch in length, the twigs rather converging at the free extremity of the case. They were found on the palm tree, and fixed their cases to the frame in which they were enclosed, at the beginning of October, to undergo their transformations, appearing in the perfect state at the end of the following April, the male being small, with dark brown wings and antennæ bipectinated to the tips.

A number of specimens, apparently of this species, were lately sold by auction by Mr. Stevens in London, and I regret that I was not able to obtain a specimen for description. Major-General Hearsey also collected some of the cases of this species in Central India, without, however, obtaining the perfect insect; from these I find that the attenuated extremity of the cases arises from the fact of the larva employing the strong spines of the tree upon which it feeds for the defence of its case, the points being always directed backwards.

The minute analysis made in the foregoing pages, and the accompanying plates of twelve species of these case-bearing Moths, enables us to form an opinion as to the composition and affinities of the group in question, respecting which much diversity of opinion has prevailed. With the exception of the characters derived from the case-bearing habits of the larvæ, the wingless and unwieldy state of the female, and the more or less strongly pectinated antennæ of the males, we find no homogeneousness in the perfect state of the insects; indeed we could scarcely select three moths more unlike each other than *O. Saundersii*, *Boisduvalii*, and *Doubledaii*, and almost every modern lepidopterist would at once pronounce such variations of form to belong to as many different genera. The general shape of the body has been seen to vary from a greatly elongated to a short, robust, as well as to a short and slender form. The wings in like manner vary from the long pointed form to the very short broad proportions of *O. Boisduvalii*. They vary also in being either densely squamose or completely hyaline. Their veins also offer considerable variation both in situation and in the number of their branches, although we may affirm that the narrowness of the base of the discoidal cell, and its completely closed state by a vein which is always angulated in the middle, the apex of the angle being towards the base of the wing, and the cell itself traversed by one or two slender veinlets, often united together into a fork, appear constant characters of the group. The antennæ also vary in being only semipectinated, like those of the *Zeuzeræ*, whilst in others they are completely bipectinated to the tip; the number of joints also varies from twenty-five to upwards of forty; and lastly, the slenderness of the fore legs and the short robust form of the hind ones appear to be a good character of the group; but this portion of the body offers a striking variation, in consequence of the fore tibiæ being furnished with a long spine arising from its base, of which some of the species are destitute. The nature of the larvace even offers striking variations, since in *O. Templetonii* and *Herrichii* it is destitute of any extraneous matters fixed on its outside. The females also, in the few species in which they have been observed, are found to vary in the amount of development of their antennæ and legs, these organs being almost obsolete in *O. Kirbii*, whilst in *O. Saundersii* the legs are well articulated.

If, with the view of establishing sectional groups, we take the semipectinated character of the antennæ as a primary distinction, we find, that although the males of *O. Kirbii* and *O. Saundersii* agree well enough together, in general form, length and narrowness of the

wings, antennæ, and spurred fore tibiæ, the females differ in the amount of development of their legs; whilst the species with entirely pectinated antennæ offer still more numerous variations. If, again, we select the want of the spine of the fore tibiæ as a primary distinction, we find *O. Herrichii*, *Hübneri*, and *MacLeaii*, varying greatly in the form of the males, in the larva-cases, and the veining of the wings, although the latter have always a deficiency in the number of the branches of the veins of the fore-wings.

Bearing the foregoing observations in mind, the following distribution of the twelve species before us must be considered as an artificial or technical one:—

- A. Antennæ of the males semipectinated, body and wings greatly elongated.
  - a. Cases of the larva with twigs on the outside.
    - \* Females with articulated legs. Sp. 1. *O. Saundersii*.
    - \*\* Females with exarticulated tubercles in the place of the legs. Sp. 2. *O. Kirbii*.
  - aa. Case of the larva naked. Sp. 3. *O. Templetonii*.
- B. Antennæ of the males bipectinated to the tip, body and wings short or of moderate length.
  - a. Fore tibiæ of the males without an elongated spur.
    - \* Wings short, rounded, fore wings with only ten branches extending to the margins. Sp. 4. *O. MacLeaii*.
    - \*\* Fore wings elongate, triangular, with 11 branches extending to the margins.
      - † Case of larva densely covered with thin twigs. Sp. 5. *O. Hübneri*.
      - †† Case of larva naked, ribbed. Sp. 6. *O. Herrichii*.
  - aa. Fore tibiæ of the males with a long spur.
    - \* Fore wings with twelve branches extending to the margins.
      - † Third branch of the median vein of the hind wings accompanied by an extra branch.
        - ‡ Body robust, wings short, subtruncate. Sp. 7. *O. Boisduvalii*.
        - ‡‡ Body rather slender, wings more triangular. Sp. 8. *O. Cramerii*. Sp. 9. *O. Lewinii*. Sp. 10. *O. consortus*.
      - †† Third branch of the median vein of the hind wings unaccompanied by an extra branch. Sp. 11. *O. Doubledaii*.
    - \*\* Fore wings with only eleven branches, extending to the margins of the wing, the third branch of the median vein not united with the preceding branch into a fork. Sp. 12. *O. nigricans*.

The relationship of these insects with the families of Lepidoptera\*, involving their natural situation in the order, is one which would

\* The idea that *Psyche* is Trichopterous, and not Lepidopterous, does not merit refutation.

require a much more extended investigation than can be devoted to it on the present occasion. Their intimate allies are of course the *Sackträger*s of German entomologists, or the genus *Psyche*, some species of which cannot be generically separated from *O. nigricans*. The opinions of recent lepidopterists, as to the family to which they belong, have oscillated between the Bombycidæ and Tineidæ. The latter relationship is maintained by M. Bruand, in his elaborate monograph 'Sur la Tribu des Psychides,' published in the 'Comptes rendus de la Société libre d'Emulation du Doubs.' But nothing can be more inconclusive than the arguments by which this opinion is supported; since, because M. Bruand adds to his "tribu" other insects which are "tellement voisines des Tinéites que l'on ne peut les éloigner de ce dernier genre," and insists at the same time that "tous les Psychides doivent ne former qu'un seul groupe," he at once (without attempting any philosophical analysis either of the minute characters of his Psychides, or of those of the great families Bombycidæ and Tineidæ) arrives at the conclusion that "on ne doit plus hésiter à les placer dans les Tinéides."

Now the elaborate details given by Mr. Curtis in his 'British Entomology,' and especially by Mr. Stainton in his volume of the 'Insecta Britannica,' enable us to institute something like an effectual comparison between the relative characters of these two families, and to contrast them with those of the *Oiketici* illustrated in the present paper.

The size and general appearance of these *Oiketici* at once bring them into comparison with certain Bombycidæ (*sensu latiori*). The rudimental mouth is another character in common with the latter, whereas in the Tineidæ the palpi and spiral tongue are generally well developed. In the antennæ they also agree with the Bombycidæ, in which deep bipectination is the general character, whereas it is an exceptional character amongst the Tineidæ. In the Bombycidæ, the fore legs are often the longest and the hind ones the shortest, whereas it is generally contrary with the Tineidæ, in which the hind tibiæ are also strongly armed with two pairs of spurs. The long spine of the fore tibiæ appears also to be much more common among the Bombyces than in the Tineæ, whilst we also find the veins of the wings of *Oiketicus* arranged on a different plan from those of the Tineidæ; in these latter, the discoidal cell when closed is either rounded or truncate (obliquely or transversely) at its extremity, whereas in the *Oiketici* we have seen its termination angulated, the apex of the angle pointing towards the base of the wings. In the Tineidæ we also find it almost a constant character, that where one of the branches of the subcostal vein is forked, it is the fourth and fifth branches which form the fork, whereas in the *Oiketici* it is always the third and fourth, *Nemophora* (Staint. pl. 2. fig. 5) being the only exception throughout the whole of the Tineideous genera, and in this genus, as in a great many of the others, the discoidal cell of the fore wings is furnished with a cell at its anterior extremity, formed by the base of the sixth longitudinal branch, which runs to the margin of the wing (*i. e.* the fifth branch of the subcostal vein), extended backwards, and joining the subcostal vein between its first and





second branches. *Lampronia* and *Incurvaria* (Staint. pl. 2. figs. 1 & 3) are excellent examples of this arrangement. This character does not occur in the *Oiketici*, the veins of which, on the other hand, are more analogous to some of the Bombycidae, such as *Limacodes*.

These considerations are, I think, sufficient to disprove the relation of *Oiketicus* and *Psyche* with the Tineæ, and to establish their position among the Bombyces.

## DESCRIPTION OF THE PLATES.

### PLATE XXXIV.

#### *Oiketicus nigricans*. (Great Britain.)

- Fig. 1. Female magnified, seen sideways, drawn from living specimen.  
 Fig. 1a. Head and anterior segments of the body, seen from beneath, showing the rudimental eyes, antennæ, and legs.  
 Fig. 1b. The same, seen sideways.  
 Fig. 1c. The lower part of the face, showing the transverse membrane capable of alternate dilatation, and the small exarticulate antennæ.  
 Fig. 1d. The terminal segment of the body, showing the produced bilobed appendage and the central terminal elongated joint.  
 Fig. 1e. The same seen from beneath, the bilobed appendage seen almost vertically.  
 Fig. 1f. The same, seen sideways.  
 Fig. 1g. The case formed by the female larva.  
 Fig. 1h. The pupa case of the female; slit behind the head for the exit of the insect.  
 Fig. 1i. Fore wing of the male:—1, costal vein; 2a, 2b, 2c, 2d, 2e, branches of the subcostal; (x, upper discoidal, wanting) y, lower discoidal; 31, 32, 33, the branches of the median vein; 4, submedian vein. The same lettering is used throughout the wings represented in this and the three following plates (except that the branches of the subcostal have occasionally been numbered 21, 22, 23, 24, 25), occasionally one of them is wanting, or the lower discoidal is wanting, instead of the upper; in these cases the place of the wanting branch is indicated by a < and the indicatorial letter in the place which it ought normally to occupy.

#### *Details of Oiketicus Kirbii*, L. Guild. (West Indies.)

- Fig. 2a. Antenna of the male.  
 Fig. 2b. Fore leg of the male.  
 Fig. 2c. Fore wing of the male, with the normal number (12) of marginal branches.  
 Fig. 2d. Head of the male, seen in front.

#### *Detail of Oiketicus MacLeaii*, L. Guild. (West Indies.)

- Fig. 3. Fore wing of the male, with only ten terminal branches.

#### *Oiketicus Doubledaii*, Westw. (Ceylon.)

- Fig. 4. The male magnified.  
 Fig. 4a. Head of the male, seen from below, showing the transverse ridge and two spots indicating the palpi.  
 Fig. 4b. Fore wing of the male, with the normal number of marginal branches.  
 Fig. 4c. Hind wing of the male.  
 Fig. 4d. Fore leg, with spurred tibia, of the male.  
 Fig. 4e. Hind leg of the male.  
 Fig. 4f. Case of the male, with the empty puparium sticking out of its apical extremity.

#### *Oiketicus* —, —, and —. (Australia.)

- Figs. 5, 6, & 7. Cases of three Australian species in the Collections of Mr. Saunders and myself, of which the transformations have not yet been observed.

## PLATE XXXV.

*Oiketicus Saundersii*, Westw. (*elongatus*, Saund.) Australia.

- Fig. 1. The male, of the natural size.  
 Fig. 2. Fore wing of the male, with the normal number of marginal branches.  
 Fig. 3. Hind wing of the male.  
 Fig. 4. Fore leg of the male, showing the tibial spur.  
 Fig. 5. Hind leg of the male.  
 Fig. 6. Case formed by the male larva, with the cast skin of the pupa sticking out of its terminal extremity.  
 Fig. 7. The pupa of the male, seen sideways.  
 Fig. 8. Anterior part of the body of the pupa of the male, seen beneath, showing the short broad antenna-cases (*Ceratothecæ*), the two anterior pairs of legs, \*, anterior femur; \*\*, anterior tibia; \*\*\*, the intermediate tibia and the cases of the fore wings (*Pterothecæ*).  
 Fig. 9. Female of the natural size, seen sideways.  
 Fig. 10. Anterior part of the body of the female, seen from beneath, showing the very minute exarticulate antennæ and the three pairs of very short articulated legs.  
 Fig. 11. One of the legs of the female, showing the short exarticulate but bi-articulated tarsus.  
 Fig. 12. The case formed by the female larva, which is represented crawling, of the natural size in the upper part of the plate.  
 Fig. 13. Hind pair of feet of the female larva, with greatly enlarged united coxæ.

## PLATE XXXVI.

*Oiketicus Hübnerii*, Westw. (Australia).

- Fig. 1. The male, slightly magnified.  
 Fig. 1a. Antenna of the male.  
 Fig. 1b. Fore wing of the male, with only eleven marginal branches (the lower discoidal, *y*, being obsolete).  
 Fig. 1c. Hind wing of the male.  
 Fig. 1d. Fore leg of the male.  
 Fig. 1e. Hind tarsus of the male.  
 Fig. 1f. Hind leg of the male.  
 Fig. 1g. Case formed by the male larva, with the puparium sticking partly out of the apical extremity.  
 Fig. 1h. The male pupa, of the natural size.  
 Fig. 1i. Hind part of the male pupa, greatly magnified, showing part of the case of the fore wings, the hind wing case attached to the short metathoracic segment, the two short basal segments of the abdomen partly covered by the wing cases, the four central segments of the abdomen, with indications of the prolegs of the larva, the seventh segment of the full size, and the terminal segments coalesced together.  
 Fig. 1k. Portion of the row of shorter recurved hooklets at the hind margin of the basal segments of the abdomen of the male pupa.  
 Fig. 1l. Portion of the rows of longer ditto.  
 Fig. 1m. Portion of the rows of spines at the base of the terminal segments of the abdomen.  
 Fig. 1n. Line indicating the natural expanse of the wings of the male.  
 Fig. 1o. Larva full-grown but dried up, and consequently somewhat diminished in size.  
 Fig. 1p. Face of the larva.  
 Fig. 1q. Side of the head of the larva, showing the ocelli, antenna, upper lip, and mandibles.  
 Fig. 1r. Case formed by the female larva, opened, showing the exuviae of the larva, the pupa of the female pierced near its anal extremity by its dipterous parasites, the four oval puparia of which are seen lying within the case, the interior of which is densely lined with fine white cotton wool.  
 Fig. 1s. The pupa of the female, seen sideways.  
 Fig. 1t. Anterior part of the body of the pupa of the female, seen from beneath.

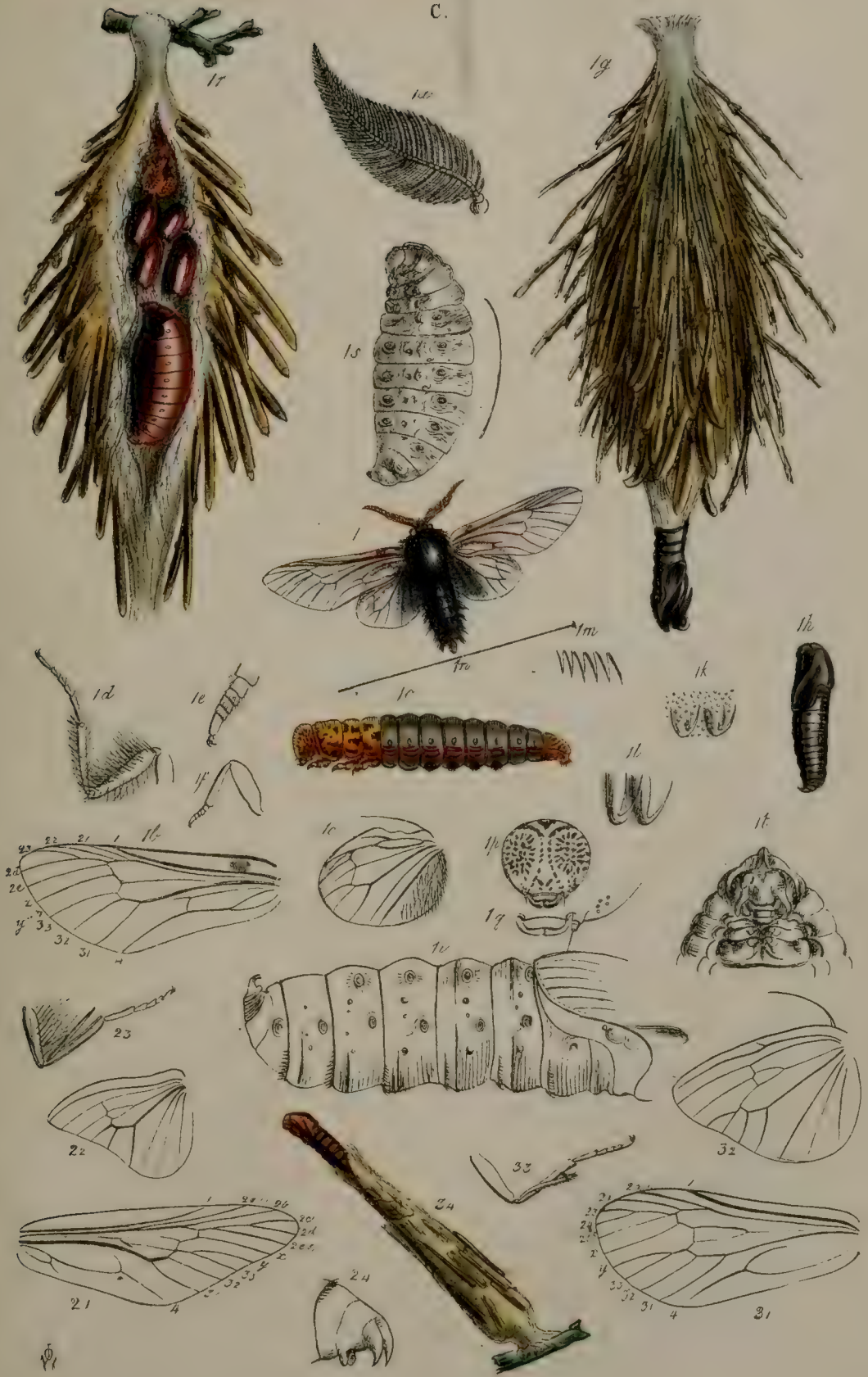


B





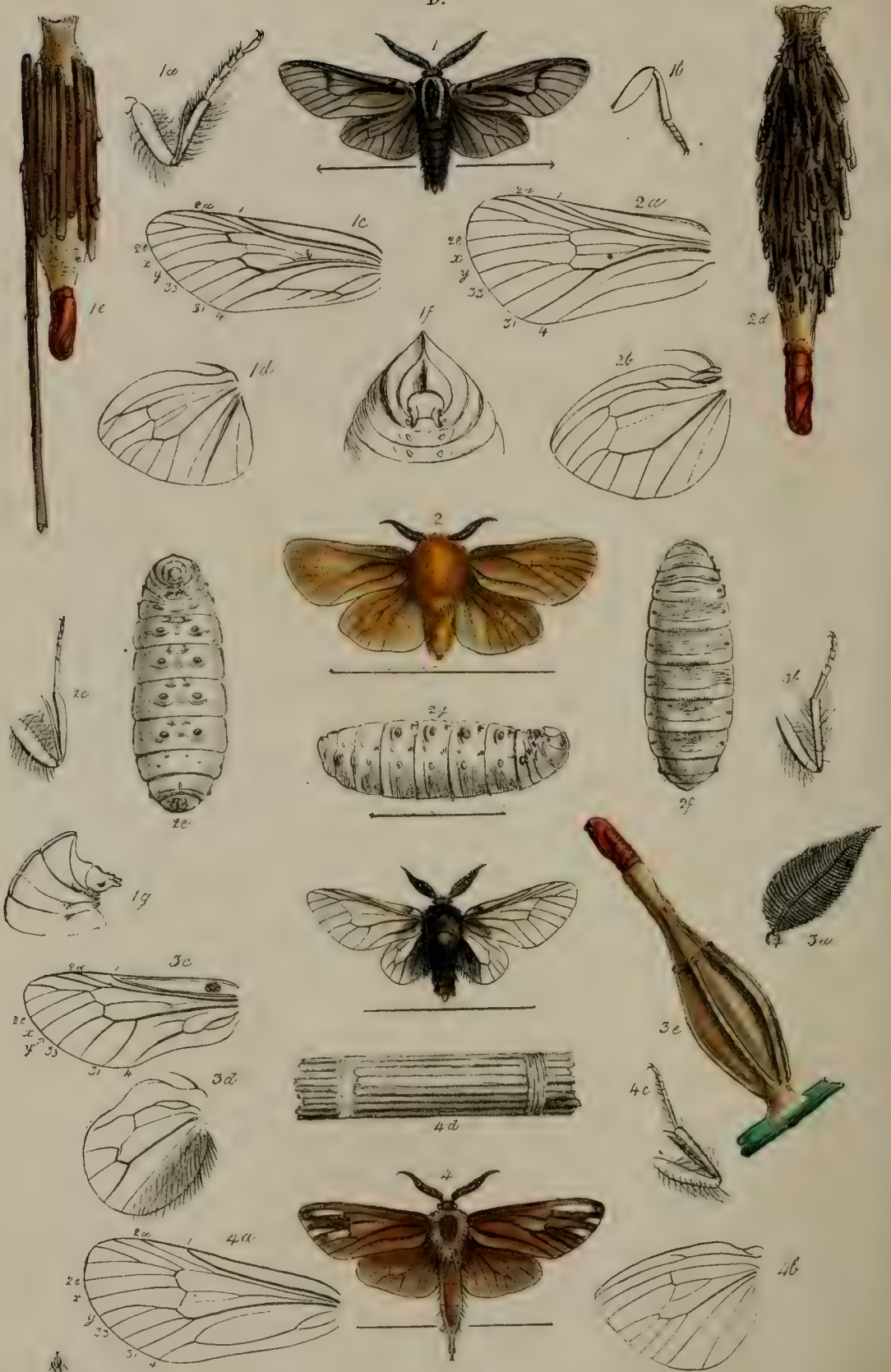
C.







D.



*Details of Oiketicus Templetonii*, Westw. (*tertius*, Templet.) Ceylon.

- Fig. 2,1. Fore wing of the male, with the normal number of marginal branches.  
 Fig. 2,2. Hind wing of the male.  
 Fig. 2,3. Fore leg of the male.  
 Fig. 2,4. Anal extremity of the body of the pupa of the male.

*Details of Oiketicus consortus*, Templet. (Ceylon.)

- Fig. 3,1. Fore wing of the male, with the normal number of marginal branches.  
 Fig. 3,2. Hind wing of the male.  
 Fig. 3,3. Fore leg of the male.  
 Fig. 4.4. Case formed by the male larva, with the empty pupa case partly sticking out of the apical extremity.

## PLATE XXXVII.

*Oiketicus Lewinii*, Westw. (Australia.)

- Fig. 1. Male, slightly magnified.  
 Fig. 1a. Fore leg of the male, with long tibial spur.  
 Fig. 1b. Hind leg of the male.  
 Fig. 1c. Fore wing of the male, with the normal number of marginal branches.  
 Fig. 1d. Hind wing of the male.  
 Fig. 1e. Case formed by the male larva, with the empty pupa case partly sticking out of the apical extremity.  
 Fig. 1f. Anterior portion of the body of the female, highly magnified and seen from beneath, showing the rudimental antennæ and legs.  
 Fig. 1g. The same, seen sideways, showing the subcucullated prothoracic segment.

*Oiketicus Boisduvalii*, Westw. (Australia.)

- Fig. 2. The male, slightly magnified.  
 Fig. 2a. Fore wing of the male, with the normal number of terminal branches.  
 Fig. 2b. Hind wing of the male.  
 Fig. 2c. Fore leg of the male.  
 Fig. 2d. Case formed by the male larva, with the empty pupa case of the male partly sticking out of the apical aperture.  
 Fig. 2e. Pupa of female, ventral view.  
 Fig. 2f. The same, dorsal view.  
 Fig. 2g. The same, lateral view.

*Oiketicus Herrichii*, Westw. (Australia.)

- Fig. 3. The male, slightly magnified.  
 Fig. 3a. Antenna of the male.  
 Fig. 3b. Fore leg of the male, destitute of the tibial spur.  
 Fig. 3c. Fore wing of the male, with only eleven marginal branches, the lower discoidal (*y*) being obsolete.  
 Fig. 3d. Hind wing of the male.  
 Fig. 3e. Case formed by the male larva, with the empty pupa case partly sticking out of the apical aperture.

*Oiketicus Cramerii*, Westw. (Ceylon.)

- Fig. 4. The male, slightly magnified.  
 Fig. 4a. The fore wing of the male, with the normal number of marginal branches.  
 Fig. 4b. The hind wing.  
 Fig. 4c. Fore leg of the male, with the long tibial spur.  
 Fig. 4d. Case, figured by Mr. Templeton, and considered to be that of this species, on the authority of specimens in the British Museum.

November 14, 1854.

John Gould, Esq., F.R.S., in the Chair.

The following papers were read :—

1. ON THE BONES OF THE LEG OF DINORNIS (PALAPTERYX)  
STRUTHIOIDES AND THE PALAPTERYX GRACILIS.  
By PROF. OWEN, F.R.S., F.Z.S. ETC.

In my memoir of 1843\*, I described two femora of birds from tertiary deposits in New Zealand, agreeing in size with that bone in the Ostrich, and referred them to a species called *Dinornis struthioides*; one of these specimens however consisted only of the shaft; the other and more perfect specimen, figured in pl. 21. fig. 3, was mutilated at both its extremities. I have since received, through the kindness of the Rev. Mr. Colenso, M.A.†, and the Rev. William Cotton, M.A., three entire specimens of femora, ranging between 11 and 12 inches in length, and the shaft of a fourth specimen, of the same species, confirming very satisfactorily that species, and completing our knowledge of the anatomical characters of the bone.

The head is rather more than a hemisphere, more prominent than in the Ostrich, and with a smaller proportion cut off, as it were, from the upper and outer part, and roughened for the attachment of the strong 'ligamentum rotundum.' From the upper part of the base of the head, an almost flat, slightly concave surface ascends, expanding, as it rises, to the broad semicircular ridge which crowns the great trochanter. In the Ostrich that process does not rise beyond the level of the head of the bone. In the *Din. struthioides* the upper trochanterian platform is broader proportionally than in the *Din. casuarinus*‡. The anterior surface of the trochanter is also extensive through the continuation outwards of the great process: it is slightly concave, sculptured by muscular impressions with intervening ridges, and by a defined oval rough tract between the head and the base of the trochanter. The outer convex expanded surface of the trochanter is more strongly marked by the insertions of powerful tendons, surrounding an irregular smooth tract near the centre of the surface. The back part of the upper end of the femur in two of the specimens presents two or three small holes leading into the superficial cancelli, by which it is possible a little air may have been admitted to these cavities; but this is a very feeble representation of the wide orifice and canal at the same part of the Ostrich's femur which conducts directly to the large air cavity in the body of that bone.

The shaft of the entire femur of the *Din. struthioides* repeats the characters described and figured in the memoir above cited. The fore-part of the external condyle begins to rise from the level of the

\* Zool. Trans. vol. iii. pp. 247, 249. pl. 21. fig. 3.

† The specimen contributed by this gentleman is cited in the table of admeasurements. Zool. Trans. vol. iii. p. 329.

‡ *Ibid.* pl. 46. fig. 2.



shaft, about one-third from the distal end of the bone, and bends outwards, forwards and downwards, increasing in breadth and convexity, and forming the outer boundary of the characteristic broad rotular surface. The convex fore-part of the inner condyle forming the inner boundary of that surface is shorter, and rises more abruptly. The deep oval fossa, above the vertical broad groove for the fibula, behind the outer condyle, is well marked. The orifice of the medullary artery is at the middle of the back part of the shaft of the femur in two of the specimens.

With regard to the metatarsus of the *Dinornis struthioides*, the same satisfactory confirmation of the species has been received, as in the case of the femur, by the addition of three specimens repeating the characters of the original bone described at p. 240, and figured in pl. 27. fig. 2. of my memoir of 1843. One of these specimens, kindly sent to me by J. R. Gowen, Esq., F.G.S., Sec. H.S., was discovered in the tertiary deposits at Waikawaite, Middle Island of New Zealand, and has the two extremities more entire than in the original specimen figured. The middle of the distal trochlea is impressed by a shallow groove running its whole length, and becoming more shallow as it approaches the contracted back part of the trochlea, which terminates abruptly, projecting beyond the level of the back part of the distal end of the bone.

A second of the additional specimens of the metatarsus of the *Din. struthioides* was obtained by the Rev. Wm. Cotton, M.A., at Tarawaite, in the North Island of New Zealand: a third specimen was discovered by Governor Sir George Grey, in a cave in the district which lies between the river Waikate and Mount Tongariro, in the North Island.

From the same cave Sir George Grey likewise obtained and very liberally transmitted to me, with a most valuable collection of other bones of *Dinornis* and *Palapteryx*, an entire tibia agreeing with the portion of shaft, which, from the dimensions given at vol. iii. p. 329, I was induced to refer to the *Dinornis struthioides*, differing in its size and proportions from all the tibiæ previously described and referred to other species, but presenting similar relations of size to the femur and metatarsus of the *Din. struthioides*, which the previously described tibiæ have presented to the other bones of the leg of the respective species to which those tibiæ have been referred.

I conclude, therefore, that in the tibia transmitted with the metatarsus of the *Din. struthioides* by Sir George Grey, I possess the bone, which I have been so long desirous to obtain in order to complete the leg of the *Din. struthioides*. Like the metatarsus above-cited, it is from the left side, and they appear to have belonged to the same individual bird.

	in.	lin.
The length of this bone is .....	22	0
The breadth of the proximal extremity .....	5	6
The breadth of the distal extremity .....	3	2
The circumference of the middle of the shaft ..	5	0
The fibular ridge extends down .....	10	0

This ridge begins, as in the tibiæ of other species of *Dinornis*, below the expanded end of the tibia near the middle of its back part, inclining to its outer side.

In its slender proportions, and the relative positions of the procnemial and ectocnemial ridges, the tibia of the *Dinornis struthioides* agrees with that of the *D. dromioides*.

*Description of the Bones of the Leg of the Dinornis gracilis.*

The advantage of additional specimens, as confirming, by the repetition of the same characters, a species previously defined, is still greater in respect of the ground which they afford for the discrimination of a distinct but nearly allied species. Notwithstanding the well-marked differences observable between the femur of the *Dinornis struthioides* and the *Dinornis gracilis*, I might have deemed them due to differences of sex or individuals, had I not had evidence of the fixity of the specific characters of the *Dinornis struthioides* by the successive arrivals of additional specimens of its bones. Attending the hoped-for confirmation from such arrivals, it appeared to be most prudent to refrain from announcing a new species of the rapidly increasing family of the great wingless birds of New Zealand until further confirmation might be obtained by corresponding differences in the tibiæ and metatarsi of the two species.

Having had the good fortune at length to obtain these additional illustrations of the *Din. gracilis*, I no longer delay communicating descriptions and figures of them to the learned Society, in whose Transactions my former Memoirs have appeared and have been so liberally illustrated.

*Femur.*

The following are the chief dimensions of this bone :—

	in.	lin.
Length .....	11	2
Breadth of proximal end in the axis of the neck .	3	10
Breadth transverse of distal end .....	4	0
Circumference of middle of shaft .....	4	8

A small portion of the upper ridge of the great trochanter has been broken off: when entire, the femur of the *Din. gracilis* presents the average length of that of the *Din. struthioides*, but it is more slender in proportion, the head is smaller, and is supported by a better-marked constriction or neck, especially at its under part. The upper platform of the trochanter is narrower, the anterior border of the trochanter not being extended so far forwards and outwards. The angle between the upper and fore surfaces of the trochanter is a right one, and they meet at a sharp ridge. The rough oval surface between the head of the femur and the base of the trochanter is smaller than that of the *Din. struthioides*. The outer irregular surface of the trochanter is of much less breadth in the *Din. gracilis*. The muscular impressions at the sides of the shaft meet and form a longitudinal ridge along the back part of the middle third of the

shaft: they are separated by a tract of half an inch in the *Dinornis struthioides*, and terminate below in two tuberosities. The corresponding ridge formed by the meeting of the vasti-muscles along the fore part of the shaft is shorter in *Din. gracilis* than in *Din. struthioides*.

The most marked distinction, however, is presented by the distal extremity of the bone, which is not only relatively less expanded in the *Din. gracilis*, but the rotular groove is narrower, and is bounded laterally by condyloid eminences of more nearly equal length; the external one not rising so high up, nor describing the sigmoid curve in descending, as in the *Din. struthioides*. The rotular groove in the *Din. gracilis* is impressed by a transversely oval rough depression, at its upper part, with sharp lateral borders; which depression does not appear in any of the femora of the *Din. struthioides*. The popliteal space is triangular and better defined in the *Din. gracilis*; the fibular groove is shorter and less angular, and the rough deep pit above it is smaller. The tibial surface on the inner condyle is relatively smaller.

#### *Tibia.*

The same character is repeated on the proximal end of this bone, where the surface applied to the inner condyle is absolutely smaller than in the *Din. struthioides*, although the entire bone, as shown in the subjoined admeasurements, is longer in the *Din. gracilis*: it is also, as the name of the species implies, more slender in proportion to its length.

	<i>D. gracilis.</i>	
	in.	lin.
The entire length of the bone is . . . . .	23	6
The transverse breadth of its proximal end . . . . .	5	2
The transverse breadth of its distal end . . . . .	2	10
The circumference of the middle of the shaft . . . . .	4	6
The fibular ridge extends down the shaft . . . . .	9	6

But this ridge commences nearly 3 inches below the back part of the proximal end of the bone, nearer the outer side than in the *D. struthioides*: it is interrupted by an oblique smooth tract at the point indicated in the admeasurement, where the medullary artery penetrates the bone; it then reappears about one inch and a half below the interruption, and soon gradually subsides. This second lower part of a fibular ridge is better marked than in the *Din. struthioides*. The relative size and position of the procnemial and ectocnemial ridges are much the same as in the tibia of the *Din. struthioides* and *Din. dromioides*.

#### *Metatarsus.*

The difference between the *Din. struthioides* and the *Din. gracilis* is more obvious at first glance in a comparison of their metatarsi than in that of the above described bones; especially to an eye accustomed to the comparison of the metatarsi of the different species. The superior length and slenderness of that bone in the *Din. gracilis*

would at once prevent its being confounded with the metatarsus of the *Din. struthioides*.

The following are the chief dimensions of the bone in question : those of the extremities being approximative by reason of their worn margins :—

	<i>D. gracilis.</i>	
	in.	lin.
Length of the tarso-metatarsus . . . . .	13	0
Circumference at the middle of the shaft . . . . .	4	3
Transverse breadth of proximal end . . . . .	3	4
Transverse breadth of the distal end . . . . .	4	3
Breadth of the middle of the shaft . . . . .	1	7
Thickness or antero-posterior diameter of ditto . . . . .	1	2

The depressed surface for the back toe is better marked than in the *Din. struthioides*.

This paper will appear in the Transactions of the Society, illustrated with figures of the bones.

## 2. DESCRIPTION OF A NEW Tanager OF THE GENUS CALLISTE. BY PHILIP LUTLEY SCLATER, M.A.

**CALLISTE VENUSTA**, Sclater. *C. late cæruleo-viridis* : interscapulio alis caudaque nigris, eodem viridi limbatis : fronte, loris, gula summa et auchenio nigris : pileo lateribusque capitatis flavis : ventre medio crissoque pallide ochraceis : rostro nigro : pedibus pallidis.

Long. tota 4·5 ; alæ 2·5 ; caudæ 1·5 poll. Angl.

*Hab.* In Nova Grenada et in rep. Equatoriana provincia Quixos.

I have been acquainted with this pretty *Calliste* for some time, but have always considered it as the *xanthocephala* of Tschudi, and have described it as such in my "Synopsis of the genus *Calliste*" in the Contributions to Ornithology. But having lately had the opportunity of examining Tschudi's type specimens in the Neuchâtel Museum, I find that his *Callospiza xanthocephala* is not this bird, but the same as my *Calliste lamprotis* (Cont. to Orn. 1851, p. 65). That species closely resembles the present, but may be distinguished by its orange cap and brilliant golden-yellow ear-coverts.

The extreme inaccuracy of Dr. Tschudi's figure, which looks more like this species than the other, must be my excuse for committing this error, in which however I am not alone, as even in the Berlin Museum (where Tschudi's types ought to be known) I have observed the present bird called *xanthocephala*.

Mr. Gould's collection from Quixos contained examples of this species. My own specimens are from Santa Fe di Bogota.

London, Nov. 1854.





PETROGALE XANTHOPUS. Gr.

3. DESCRIPTION OF A SECOND SPECIES OF THE GENUS *PROCNIAS*.  
 BY PHILIP LUTLEY SCLATER, M.A.

I have seen several examples of *Procnias* in collections from New Grenada, and have never doubted their being different from the Brazilian species. But being aware that a second member of the genus had been described by Dr. Cabanis in the *Museum Heineanum* under the appellation *Procnias Heinei*, I applied that name to these birds without much inquiry. Having lately however had the opportunity of examining the beautiful collection which contains the type of Dr. Cabanis' description, I find that I was in error in so doing. The specimen there designated *Procnias Heinei* is a female or young male of *Calliste atricapilla*, Lafr., and belongs therefore, according to my ideas, to a different family of birds.

I therefore propose the name *Procnias occidentalis* for this new species, which may be distinguished from the older one by its smaller size, the less amount of black on the throat, and by the white belly not extending nearly so high towards the breast.

*PROCNIAS OCCIDENTALIS*, Sclater. *P. læte viridis: fronte anguste et lateribus capitis cum mento gulaque nigris: ventre medio crissoque albis: lateribus nigro radiatis: alis caudaque intus nigricantibus.*

Long. tota 5·0; alæ 3·3; caudæ 2·9 poll. Angl.

*Hab.* in Nova Grenada.

London, Nov. 1854.

4. DESCRIPTION OF A NEW SPECIES OF *PETROGALE*.  
 BY DR. J. E. GRAY, F.R.S., V.P.Z.S., ETC.

(Mammalia, Pl. XXXIX.)

Yellow-legged Rock-Kangaroo, *Petrogale xanthopus*.

Pale brown, minutely grizzled; chin and beneath white: streak on side from the back of shoulder, and along the side of the face under the eye, whitish; dorsal streak narrow, brown; legs, feet, and tail bright yellow; end of tail more bushy and varied with brown.

Australia (Richmond River?)

This species has all the markings as in *Petrogale lateralis*, but differs in being of a much paler and yellower colour, and in the bright yellow colour of the legs and basal part of the tail. It is about the same size as *P. penicillatus*, or rather between it and *P. lateralis*.

There are two specimens of this species (male and female) procured by Mr. Strange.

55. 1. 12. 1                      2.

November 28, 1854.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. ON A NEW SPECIES OF RHINOCEROS.  
BY DR. J. E. GRAY, F.R.S., V.P.Z.S., ETC.

The late Mr. Cross, of Exeter Change and the Surrey Zoological Gardens, much prized a specimen of the horn of a Rhinoceros, which for many years formed part of his collection, and which he considered as indicating the existence of a hitherto unrecorded species of that genus.

At the distribution of his effects, it has become the property of the British Museum; and it is so unlike any other horn of a Rhinoceros that has come under my inspection, that I am induced to believe that Mr. Cross was probably right in his conjecture; and



Horn of Cross's Rhinoceros (*Rhinoceros Crossii*).

I am inclined to describe the horn, and name the species *Rhinoceros Crossii*, provisionally, after my late friend, an honour he well deserves, from the unvarying kindness which he showed to all who were willing to make use of the collection in his possession for scien-



tific purposes: this was the more liberal, when we consider that both these institutions entirely depended on public encouragement for their support. But he has yet a greater claim to respect; he was the most enterprising importer and purchaser of animals of modern times, and at the same time most successful in keeping them alive and in health.

*Rhinoceros Crossii.*

Horn black; trunk very slender, tapering, smooth, rather compressed at the end, curved nearly into a semicircle; base rather thick, subquadrangular, rugose.

Length of the horn along the curve alone . . . . .	31½ in.
——— of the cord from base to tip . . . . .	24
Circumference of base . . . . .	17¼
——— 6 inches above base . . . . .	7
——— in the middle of horn . . . . .	4¾
Longest diameter of base . . . . .	6½
Shortest diameter of base . . . . .	4¼
Thicker part of base 5½ in. high.	

2. ON TWO NEW SPECIES OF DACNIS, AND ON THE GENERAL ARRANGEMENT ON THE GENUS.

BY PHILIP LUTLEY SCLATER, M.A.

1. DACNIS HARTLAUBI, Sclater. *D. turcoso-cærulea*; *gula loris et fascia per oculos lata cum cervice laterali et dorso superiore velutino-nigris*; *alis caudaque minus splendide nigris*; *secundariorum marginibus externis cæruleis*; *rostro et pedibus nigris*.  
*Long. tota*, 4·5; *alæ* 2·6; *caudæ* 1·8; *poll. Angl.*

*Hab.* In Nova Grenada.

*Obs.* Similis *D. angelicæ*, sed major, gula nigra, ventre crissoque cæruleis concoloribus neque albis.

I have as yet seen only one example of this *Dacnis*, which is in the fine collection of birds in the Bremen Museum. In its upper colouring it resembles *D. angelica*, but wants the broad black front of that species. The lower plumage comes nearer that of *D. cayana*, but the black does not reach so far down the throat. It slightly exceeds the latter species in size. The bill and legs are black.

2. DACNIS EGREGIA, Sclater. *D. turcoso-cærulea*; *fronte gula loris et fascia per oculos lata cum cervice laterali, dorso superiore, alis caudaque nigris*; *tectricibus alarum minoribus et secundariorum marginibus externe cæruleis*; *tectricibus subalaribus et ventre medio crissoque cum tibiis flavis*.

*Hab.* In Nova Grenada.

*Obs.* Species *D. angelicæ* forma crassitie et coloribus fere æqualis, sed ventre crissoque et tectricibus subalaribus flavis nec albis.

I am indebted to Mr. G. R. Gray for allowing me to name this pretty *Dacnis*, of which one specimen was lately acquired by the British Museum from M. Parzudaki of Paris. In its plumage above

it resembles *D. angelica*. A glance, however, at its lower surface, where a bright yellow takes the place of the pure white belly and under wing-coverts of the other species, is sufficient to show its distinctness.

Since I wrote some papers on the genus *Dacnis* in Sir William Jardine's 'Contributions to Ornithology,' Professor Reichenbach of Dresden has treated of this family in his 'Handbuch der Speciellen Ornithologie,' part iv. Professor Reichenbach is unpleasantly surprised, he there says, to find that I have described a *Dacnis cayana*, which is by no means *cayana*, but no other than his third species, *D. cyanomelas*. Now, I admit that my *D. cayana* is nothing more than Prof. Reichenbach's third species, which he calls *cyanomelas*; but I maintain that this very bird is no other than the true *cayana* of Linnæus. There is no such bird in existence as that characterized by Prof. Reichenbach as *cayana*. Brisson's description, it is true, is bad, and Buffon's figure worse, but they can be respectively intended for no other bird than the common black and blue species which is called by Prof. Reichenbach *D. cyanomelas*.

I am in my turn unpleasantly surprised to find that Prof. Reichenbach has removed my *Dacnis cerebicolor* into his genus *Arbelorhina*, with which it has nothing to do; that he has made *Dacnis flaviventris* of D'Orbigny's Voyage a *Conirostrum*, which it certainly is not, and has unnaturally placed the hook-billed *Diglossæ* in the middle of the typical *Dacnidinæ*.

I subjoin a list of the nine species of the genus *Dacnis* with which I am now acquainted, excluding the *atricapilla* of my former synopsis, which Prof. Reichenbach has with some reason made the type of his new genus *Chlorophanes*.

1. DACNIS CAYANA (Lin.) Cont. to Orn. 1851. p. 106. sp. 1.—*D. cayana et cyanomelas*, Reich. Handb. d. Spec. Orn. p. 226 et 227. Ex ins. Trinitatis; Guiana; Cayenna; Brasilia orientali et interiore; Peruvia orientali et Bolivia.

2. DACNIS CÆREBICOLOR, Sclater. Cont. to Orn. 1851. p. 106. sp. 2.—*Arbelorhina* (!) *cerebicolor*, Reich. *l. c.* p. 236. Ex Nova Grenada.

3. DACNIS HARTLAUBI, Sclater. Ex Nova Grenada.

4. DACNIS ANGELICA, De Filippi. Cont. to Orn. 1851. p. 108. sp. 3.—Reich. p. 227. Ex Guiana; Cayenna; Nova Grenada; Peruvia Cisandean et Bolivia.

5. DACNIS EGREGIA, Sclater. Ex Nova Grenada.

6. DACNIS FLAVIVENTRIS, D'Orb. et Lafr. Cont. to Orn. 1851. p. 108. sp. 5.—*Conirostrum* (!) *flaviventre*, Reich. *l. c.* p. 229. Ex Bolivia et Peruvia Cisandean.

7. DACNIS PULCHERRIMA, Sclater. Rev. et Mag. de Zool. 1853. p. 479. Ex Nova Grenada.

8. DACNIS SPECIOSA (Pr. Max.). Cont. to Orn. 1852. p. 101. sp. 6. Reich. *l. c.* p. 228. Ex Brasilia et Bolivia.

9. DACNIS PLUMBEA (Latham). Cont. to Orn. 1852. p. 102. sp. 7. Reich. *l. c.* p. 228. Ex Guiana et Brasilia.









J. Wolf lith.

M & N. Hanhart, Imp<sup>t</sup>

MYRMECIZA MARGARITATA. *Scater.*





J. Wolf, lith

M. & N. Hanhart, Imp<sup>r</sup>

- (1) PITEUS LEUCOTRUPUS S. Selater.
- (2) HYPOCNEIS MELANOMA S. Selater.







J. Wolf. lith.

M & N Hanhart Imp<sup>r</sup>





J. Wolf. lith

M & N. Hanhart Imp<sup>t</sup>

FORMICIVORA CAUDATA

3. DESCRIPTIONS OF SIX NEW SPECIES OF BIRDS OF THE SUB-FAMILY FORMICARINÆ. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXX.—LXXIV.)

1. MYRMECIZA LEUCASPIS, Sclater. (Pl. LXX.)

*Supra cinnamomea, subtus alba; vitta laterali utrinque ab angulo oris ad ventrem descendente nigra; lateribus corporis cum ventre imo crissoque olivascenti-cinnamomeis; rostro nigro, mandibula inferiore, nisi basi, alba; pedibus pallidis; orbitis nudis.*

Long. tota 5·5; alæ, 2·8; caudæ 1·8.

*Hab.* In Peruvia, Chamicurros; in Nova Grenada; et Rio Negro, Cobati.

The first specimen of this bird that came into my possession seems by its make to be a Bogota skin. I have lately obtained a second from the MM. Verreaux of Paris, marked 'Peru.' But a more satisfactory locality is Chamicurros, on the Huallaga, one of the confluent of the Peruvian Amazon, whence Mr. Gould has lately received several examples, along with many other interesting birds. Mr. Gould's specimens were collected in the month of October, 1852. Male and female, so labeled, are coloured alike, and noted, "Irides red, skin around the eyes and legs light blue." My Bogota skin, and one in the MM. Verreaux's collection, have the base of the interscapularies light fawn-colour, forming a large blotch, which, however, as is often the case in the birds of this sub-family, is only to be seen when the feathers are raised.

A specimen of this bird in the British Museum is from Cobati, on the Rio Negro.

The upper plumage of the *Myrmeciza leucaspis* is wholly dark cinnamon-colour, and divided from the pure white of the lower surface by a black band. The wing-feathers are blackish within; the twelve rectrices are wholly darkish cinnamon-red. The white of the lower surface narrows as it descends, terminating in a point, and leaving the sides of the belly and crissum dusky olivaceous cinnamon-colour.

2. MYRMECIZA MARGARITATA, Sclater. (Pl. LXXI.)

♂ *Cinereus, subtus dilutior, ventre medio crissoque albescentibus; alis caudaque nigris, retricum apicibus albis; remigibus secundariis et alarum atque caudæ tectricibus superioribus omnibus maculis magnis, rotundis, albis terminatis.*

♀ *Fusco-brunnea; subtus pallide cervino-rufa; maculis alarum et caudæ clare cervinis neque albis.*

Long. tota 5·3; alæ 2·8; caudæ 1·8.

*Hab.* In Peruvia, Chamicurros.

My examples of this curiously marked bird were obtained from the MM. Verreaux, and are from the same locality as the preceding species. Mr. Gould's collection from Chamicurros likewise contains specimens of both sexes.

The round spots, which render this bird a very recognizable species, are placed in the wing-coverts at the apex of each feather. In the

secondaries they occupy the end of the outer web, being in the first six nearest the primaries rather small, in the three outer larger and squarer in form. The upper tail-coverts are much produced, and are conspicuously terminated with oval white spots. The tail-feathers are ended only with spots, which are larger on the outer rectrices.

3. *HYPOCNEMIS MELANOLÆMA*, Sclater. (Pl. LXXII. fig. 2.)  
*Cinereus, subtus valde dilutior; interscapularibus basi niveis; loris et oculorum ambitu cum cervice laterali et gutture toto nigris; linea superciliari indistincte albida; tectricibus alarum nigris, fascia terminali alba; remigibus et rectricibus fuscis, externe cinereis; rostro nigro, pedibus pallidis.*

Long. tota 5·0; alæ 2·5; caudæ 1·6.

*Hab.* In Peruvia, Chamicurros.

This species seems nearly allied in form to the bird named *Hypocnemis pæcilonota* by Dr. Cabanis (Orn. Not. in Wiegmann Archiv, f. Nat. 1847. p. 213), and I have therefore placed it temporarily in the same genus. My specimen comes, like those of the preceding species, from MM. Verreaux's Peruvian collection; and Mr. Gould has one example marked "*male, irides red,*" from Chamicurros, which agrees with mine. From the same Peruvian collection I have also *Hypocnemis pæcilonota* (Cab.) and *H. cantator* (Bodd.), the type of the genus, or a species hardly to be distinguished therefrom.

4. *HYPOCNEMIS MELANOSTICTA*, Sclater. (Pl. LXXIII.)

♂ *Ex cinereo olivascens; interscapularibus basi niveis; tectricibus alarum nigris, albo anguste terminatis; loris et regione auriculari nigris; subtus cinereus, gutture toto et ventre medio albis; punctis paucis rotundis in summo pectore nigris; rostro nigro, pedibus pallidis.*

♀ *Supra rufescenti-olivacea, alarum tectricum marginibus et abdomine toto pallide ochraceis; gutture, sicut in mari, albo; mandibula inferiore, nisi apice, alba.*

Long. tota 5·0; alæ 2·5; caudæ 1·6.

*Hab.* In Peruvia, Chamicurros.

The Peruvian collection of the MM. Verreaux contained several examples of this prettily marked Ant-Thrush, and Mr. Gould has also ♂ and ♀ from Chamicurros. Both sexes show the white blotch at the base of the interscapularies. In form they nearly resemble *H. melanolæma* and *pæcilonota*. Below the white throat, both in male and female, are eight or ten round blackish spots, forming a sort of collar, which renders this species easily recognizable.

5. *FORMICIVORA CAUDATA*, Sclater. (Pl. LXXIV.)

♂ *Supra niger albo-striatus; nucha nigra; dorso postico ferrugineo; alis caudaque nigris; tectricibus alarum albo, remigibus autem primariis et secundariis rufo limbatis; rectricum macula terminali alba; subtus albus, sparsius nigro-striatus; ventre crissoque clare ferrugineis.*

♀ *Striis corporis superioris et tectricum alarum marginibus sub-rufescentibus; dorso postico et ventre dilutius ferrugineis; striis pectoris sparsioribus, in gula fere evanescentibus.*

Long. tota 5·8; alæ 2·1; caudæ 3·1.

*Hab.* In Nova Grenada.

A close ally of *Formicivora ferruginea* (Temm.) and its affines, from all of which, however, it may be distinguished by its extremely lengthened tail. My specimens were purchased in Paris, and are Bogota skins.

6. PITHYS ERYTHROPHRYS, Sclater. (Pl. LXXII. fig. 1.)

*Olivaceo-brunneus, subtus medialiter albus; fronte loris et regione superciliari utrinque clare ferrugineis; loris et regione auriculari nigris; striis quibusdam indistinctis in lateribus pectoris cinereis; alis caudaque nigricanti-brunneis, illius remigibus clare rufo-brunneo limbatis et tectricibus omnibus maculis parvis terminalibus albis.*

Long. tota 4·5; alæ 2·7; caudæ 1·7.

*Hab.* In Nova Grenada.

This is not a true *Pithys*, I think, but I have placed it as such, as being allied to *Pithys leucophrys* ex Nova Grenada. But is the New Grenadian bird really identical with Tschudi's *Pithys leucophrys*?

4. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART VI.  
BY LIEUT. BURGESS.

Family FRINGILLIDÆ,

Sub-Family PYRRHULINÆ.

Genus PYRRHULAUDA.

PYRRHULAUDA CRUCIGER (Temm.).

BLACK-BELLIED FINCH LARK.

This little finch lark is common in Western India, on open plains and grassy plots of ground. It is remarkable for its habit of squatting close on the ground when approached, trusting most probably to the similarity in colour of the plumage of the wings and back with that of the burnt grass and dusty ground to escape notice. This little lark breeds during the months of January and February, building its nest, which is composed of grass, threads, &c., in a hollow in the grassy plains which it inhabits. A nest of this species which was brought to me at the end of January was composed chiefly of grass; it contained two small eggs, of a grey tint, speckled with brown. They have been unfortunately broken. Dr. Jerdon says: "I was fortunate enough to obtain the nest and eggs of this bird very lately (February). The nest is composed of woven thread mingled with some fibres of grass and one or two small fragments of cloth. The sides are hardly raised at all; it

was placed in a slight hollow on the open plain near a river, and contained two eggs, of a slight greenish-grey tint spotted with brown, chiefly at the larger end.”

Tribe SCANSORES.

Family PSITTACIDÆ.

Sub-family MACROCERCINÆ.

Genus PALÆORNIS.

PALÆORNIS TORQUATUS, Vigors.

The Red-ringed Parrakeet is by far the most common of its tribe throughout Western India, as probably throughout that continent. They associate in large flocks, doing much injury to fruit-trees and crops of grain. As the grain-crops ripen, they frequent the trees in the neighbourhood, whence they make descents on the fields, retiring to them with the heads of the grain plants, to eat at their leisure. As far as my observations go, they prefer carrying off the ears of the plant to eating the grain in the field. On the approach of night they retire in large flocks to the shelter of thick mango and other trees. This Parrakeet breeds during the month of March, in holes in buildings and trees, laying three or four eggs, of a pure white colour,  $1\frac{3}{10}$ ths of an inch in length by 1 inch in width.

PALÆORNIS ALEXANDRI. LARGE RED-RINGED PARRAKEET.

I have never met with this large species, but I see that Dr. Jerdon mentions having obtained four young ones from a hole in a tree, in the month of December.

PALÆORNIS BENGALENSIS. RED-HEADED OR PLUM-HEADED PARRAKEET.

I have had many opportunities of watching and closely observing the habits of these handsome little parrakeets, and am convinced that they are one and the same bird, the red-head being the mark of an advanced, if not mature plumage. In young birds, the plum-colour of the head is much mixed with green, the former colour becoming decided as the birds grow older, and this again giving way to the red head-dress. I have met with these birds in the woody ravines and recesses amongst the lower ranges of hills in the Deccan, also in the thickly-wooded garden-land near the cantonments of Ahmednuggur. In this latter spot I have often watched them in the hope of securing one of the richly-coloured red-headed birds. They fly in flocks like *Palæornis torquatus*, visiting the grain-fields, and carrying off the ears to the neighbouring trees. Their cry is not so loud and harsh as that of their larger brethren, and they may thus be distinguished when not seen. I scarcely ever saw more than two or three red-headed birds amongst a flock of plum-heads. I have not met with the nest or eggs of this species, but



from the very immature plumage of young birds which I shot in January, I should say that they breed in November and December.

### Family CUCULIDÆ.

#### Subfamily CUCULINÆ.

#### Genus EUDYNAMYS.

#### EUDYNAMYS MACULATUS. BLACK CUCKOO or KOWEEL.

Not having met with the nest and eggs of this cuckoo, I am indebted to Dr. Jerdon's catalogue for the following note on the subject:—"The koweel (as is well known in India) lays its eggs in the nest of the common crow (*C. splendens*), from which it dislodges the crows' eggs. It is said always to choose this crow's nest. On one occasion I obtained an egg from the female koweel; it was of a dirty blue colour, marked with some dusky spots."

#### Genus CENTROPUS.

#### CENTROPUS PHILIPPENSIS (Cuv.). LARK-HEELED CUCKOO.

This very common cuckoo, called by many Europeans in India "the Malabar Pheasant," is a bird remarkable for its appearance, and peculiarly loud cry. Its bright chestnut wings and long tail render it conspicuous, and from the length of the latter, the name of Pheasant has doubtless been applied to it. Like others of its kind, it is fond of thickets and hedges, under the latter of which it may often be observed walking about and picking up its food, which consists of lizards, seeds and insects. Though classed in the family of the *Cuculidæ*, this bird differs from *Cuculus canorus* and *Eudynamys maculatus* in one marked respect, viz. that it does not deposit its eggs in the nest of another bird. Like the yellow-billed American cuckoo, *Coccyzus Americanus* (Jenyns), it builds its own nest, but whether, as Mr. Yarrell mentions, in the case of the American bird, its egg is ever found in another bird's nest, I cannot say: I never heard of such a case.

The lark-heeled cuckoo breeds in the spring of the year, as early as January and as late as April. It builds its nest in hedges and trees; the nest is composed of grass and small twigs. The eggs, generally three in number, are of an opaque white,  $1\frac{1}{2}$  inch in length by 1 inch and  $\frac{2}{10}$ ths in width. The exterior of the shell is of a peculiarly soft, chalky texture, which soon becomes scratched and stained.

#### Tribe TENUIROSTRES.

#### Family CINNYRIDÆ.

#### CINNYRIS ORIENTALIS, Frankl. PURPLE HONEYSUCKER.

As I am anxious to make these papers as complete as possible on the nests and eggs of the birds of Western India, I have taken the No. CCLXXVI.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

liberty of transcribing some of the observations made by Dr. Jerdon of the Madras cavalry, in cases where I have not been able to obtain information. With regard to the nest and eggs of this honey-sucker he says: "I have lately (February) seen the nest of this pretty little bird close to a house in Jaulnat. It was commenced on a thick spider's web, by attaching to it various fragments of paper, cloth, straw, grass, and other substances, till it had secured a firm hold of the twig to which the web adhered, and the nest suspended on this was then completed by adding other fragments of the same materials. The hole is at one side near the top, and has a slight projecting roof or awning over it. The female laid two eggs, of a greenish-grey tinge, spotted with dusky. The first nest it made was accidentally destroyed after two eggs had been laid, and the couple immediately commenced building another in a small tree at the other side of the door, and, as in the first instance, commenced their operations on a fragment of a spider's web. They reared two young ones from the nest."

5. LIST OF MALAYAN BIRDS COLLECTED BY THEODORE CANTOR, ESQ., M.D.\*, WITH DESCRIPTIONS OF THE IMPERFECTLY KNOWN SPECIES. BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

1. GYPS BENGALENSIS.

*Vultur bengalensis*, Gmelin. (young).

*Vultur Changoun*, Daudin. (adult).

*Vultur leuconotus*, Gray and Hardw. Ill. Ind. Zool. i. t. 14 (adult).

*Gyps bengalensis*, Gray and Hardw. Ill. Ind. Zool. 1. 15 (young).

Gould, Birds of Asia, t. 35.

*Vultur indicus*, Scopoli. ? Sonn. Voy. t. 105?

A specimen agreeing with those collected in the Dukhun by Col. Sykes.

2. HIERAX CÆRULESCENS.

*Falco cærulescens*, Linn. Horsf. Temm. Pl. Col. 97.

*Falco fringillarius*, Drapiez, Dict. Class, t. 21.

*Hierax malayensis*, Strickland. (Edw. Birds, t. 108).

ALLAP OR ALLAP ALLAP of the Javanese (Horsf.).

SEEAP BELANG of the Malays in Penang (Cantor).

"The Indian species of these tiny Falcons (which weigh but a few ounces) are trained for hawking in the Upper Provinces, being flown at quails and other game of corresponding size, as I have been informed," remarks Mr. Blyth, "by different eye-witnesses of the sport." Captain Mundy, in his 'Sketches of a Tour in India,' ii. p. 25, thus describes it:—"We had also some amusing sport with another kind of falcon, a very small bird, perhaps barely so large as a thrush, and its prey was proportioned to its strength. It is flown

\* Presented to the Museum of the Honourable East India Company, April 1854.

at quails, sparrows, and others of the like calibre. The mode of starting it is different from that used with any other hawk. The falconer holds the little well-drilled savage within the grasp of his hand, the head and tail protruding at either end, and the plumage carefully smoothed down. When he arrives within twenty or thirty yards of the quarry the sportsman throws his hawk, much as he would a cricket-ball, in the direction of it. The little creature gains his wings in an instant, and strikes his game after the manner of the Bhause (*Astur palumbarius*)."

3. ELANUS MINOR, Bonap. C. G. Av. p. 22 (1849).

*Elanus melanopterus* of India and Malasia, Auctorum.

ANGKAL-ANGKAL of the Javanese (Horsf.).

KUPASEE and CHANWA of the Hindoos (Jerdon).

Mr. Hodgson gives the following notice of the habits of this bird. "The Chanwa, or Black-wing, quests chiefly in the morning and evening, feeding upon small birds, insects and mice. It does not usually seize upon the wing, though its hunting be, for the most part, by continuous questing. Commonly, it is seen skimming the cultivation like a *Circus*, occasionally poising itself on the wing for the purpose of getting a distincter view of some mouse, small bird, or insect which has stirred on his beat, and upon which, when clearly perceived, it stoops perpendicularly with the speed of lightning. After a while, it will resort to some low roost, and, when relieved, commence another excursion, or, perchance, sit and watch there for its prey. Its forward flight is easy, low, and silent, but very effective in evolution, when exertion is required to capture such nimble game as mice, which constitute its ordinary food. It frequently whips off insects from the stalks of standing grain, and this feat is, of course, accomplished on the wing. I have also seen it pursue cuckoos and sparrows with uncommon energy, but I never witnessed it strike a bird in the air. The Chanwa doubtless can, and sometimes does, seize its feathered prey on the wing."

4. MILVUS GOVINDA, Sykes, P. Z. S. 1832, p. 81.

*Milvus melanotis*, Temm. et Schleg., Faun. Jap., t. 5.

*Milvus cheele*, Jerdon, Madras Journ. x. p. 71.

*Haliaëtus lineatus*, Gray's Ill. Zool., i. t. 18.

*Milvus indicus* et *subhimalayanus*, Hodgson.

The Govinda kite.

CHEEL or CHIL of the Hindoos (Hamilton).

From Pinang.

5. SPIZAËTUS LIMNÆËTUS.

*Falco limnæëtus*, Horsfield. (Zool. Res. in Java).

*Limnæëtus Horsfieldii*, Vigors, Mem. Raffles App. p. 649.

*Astur unicolor*, Temminck, Pl. Col. 134.

WURU-KAWA of the Javanese (Horsf.).

6. SPIZAËTUS CIRRHATUS.

*Falco cirrhatus*, Gmelin.

*Falco caligatus*, Raffles, Trans. Linn. Soc. XIII. p. 278.

*Falco niveus*, Shaw. Temm., Pl. Col. 127.

*Nisaëtus nipalensis*, (crestless var.), Hodgson.

*Nisaëtus pallidus*, Hodgson. (jun.)

*Falco cristatellus*, Temminck, Pl. Col. 282.

*Falco Lathamii*, Tickell (nec Gray).

LANG TAMBİKAR of the Javanese. (Horsf.)

SHAL BAZ and SÀDÀL of the Hindoos. (Elliott.)

#### 7. ACCIPITER VIRGATUS.

*Falco virgatus*, Reinwardt. Temm., Pl. Col. 109.

*Accipiter besra* et *A. fringillarius*, Jerdon, Catal.

*Accipiter affinis*, Hodgson.

*Acc. Dussumieri*, Sykes (nec Temm.).

A single specimen, in the young state, was obtained at Pinang.

#### 8. HÆMATORNIS BACHA.

*Falco bacha*, Daudin. (Levaill., Ois. d'Afr., t. 15.)

*Spilornis bacha*, G. R. Gray.

*Falco bido*, Horsfield.

BIDO of the Javanese. (Horsf.)

I have compared specimens of Dr. Horsfield's *F. bido* with Levaillant's figure, and have found them to agree in every respect.

#### 9. PANDION ICHTHYAËTUS.

*Falco ichthyaëtus*, Horsfield. (Zool. Res. in Java, t. 34.)

*Haliaëtus plumbeus*, Hodgson.

*Ichthyaëtus bicolor*, G. R. Gray.

*Ichthyaëtus Horsfieldii* (Hodgs.), Blyth.

*Ichthyaëtus hucarius*, Hodgson.

The Marine Eagle.

JOKOWURU of the Javanese (Horsf.).

MADHUYA of the Hindoos (Hamilton).

MATCH MOROL (*i. e.* 'fish-tyrant') of the Bengalese (Blyth).

"This bird is found in Java near lakes, or on the banks of large rivers. It is by no means generally distributed. I met with it in two situations only, one near the banks of the river of Kediri, in the eastern district, and the other near the middle of the island, on the hills of Prowoto, about twenty miles south-east of Samarang. Here a pair of these birds had established themselves for several years near a village on the confines of an extensive lake formed by the accumulation of water during the period of rains, and distinguished by the name of Rawa (lake) of Damak. Their nest was built on the top of a large tree, and was constructed in a rude manner, of branches of trees; the branches which were placed on the exterior were more than an inch in diameter; the inside was lined with small twigs; it was irregularly round, and very slightly excavated. The birds were surprised during the period of incubation. The male bird, on being caught in a snare, permitted itself to be seized by the native without making any resistance. When brought to me, lying in the arms of

the man, apparently conscious of its situation, and without making use of its claws or bill, or exerting any effort to extricate itself, it suffered itself to be handled and examined very patiently. On being placed in a large cage, it made a few efforts in the beginning to set itself at liberty, but finding them ineffectual, it soon desisted, and by its calmness and dignity of manners, exhibited a resemblance to the more noble species of falcons. During the first days of its confinement it refused food altogether, but on becoming hungry, a fish was quietly placed in its bill, which was finally swallowed with great caution; and it soon took greedily the fishes which were liberally supplied. Its usual attitude was with the bill half open, and it appeared to have frequent thirst, and took up copious draughts of water. The pair of birds which I obtained on these hills had been carefully observed by the natives for several years. Their cry resembled that of the osprey. They lived exclusively on fishes. They never attacked fowls or other animals. They daily resorted to the lake above mentioned, over which, suspended in the air, or sailing slowly along, they watched their prey. On observing a fish, they darted on it with impetuous velocity; more rarely they pursued a more passive conduct, and watched the lake from the trees in its neighbourhood." (Horsfield.)

10. *PANDION HUMILIS*, Temminck et Müller, Verh. over de Nat. Gesch., &c., t. 6.

*Ichthyaëtus nanus*, Blyth, J. A. S. Beng. 1842, p. 202, 1843, p. 304.

"Allied to *P. ichthyaëtus*, but considerably smaller, being under 2 feet in length; the wings 14 inches, and tail, which is a little wedged,  $8\frac{1}{2}$  inches; bill over curve, including cere,  $1\frac{7}{8}$ ths; and  $1\frac{5}{8}$ ths from tip of upper mandible to gape; tarse  $2\frac{1}{4}$  inches; the talons large, and all (as in *P. ichthyaëtus*) completely rounded, with the exception of that of the middle toe; 4th and 5th primaries equal and longest, a little exceeding the 3rd and 6th."

#### 11. *HALIAËTUS LEUCOGASTER*.

*Falco leucogaster*, Gmelin.

*Falco blagrus*, Daudin.

*Falco dimidiatus*, Raffles.

*Haliaëtus sphenurus*, Gould. (young.)

*Ichthyaëtus cultrunguis*, Blyth. (the semi-adult.)

*Blagrus leucogaster*, Blyth.

*Falco maritimus*, Gmelin.

The Maritime Eagle, Latham. (the adult.)

Kampamaur Eagle, Latham. (the semi-adult.)

SAMP-MAR ('snake-killer') of the Hindoos (Blyth).

LANG-LAUT of the Malays of Sumatra (Raffles).

#### 12. *HALIASTUR INDUS*.

*Falco indus*, Boddaërt.

*Falco ponticerianus*, Gmelin.

*Dentiger ponticerianus*, Hodgson.

*Milvus rotundicaudus*, Hodgson.

Brahminy Kite of Europeans in India.

LANG BONDOL of the Malays of Sumatra (Raffles).

ULUNG of the Javanese (Horsf.).

“Europeans have given this bird the appellation of Brahminy Kite; which originates in having observed that the Hindoos attach superstitious ideas to it. Among the Mahomedans there is a prevalent notion that when two armies are about to engage, the appearance of one of these birds over either party prognosticates victory to that side.” (Pearson.)

### 13. ATHENE RADIATA.

*Strix radiata*, Tickell, J. A. S. Beng. 1833, p. 572.

*Strix erythroptera*, Gould, P. Z. S. 1837, p. 136.

*Noctua perlineata*, Hodgson, J. A. S. Beng. 1837, p. 369.

*Athene undulata*, Blyth, J. A. S. Beng. 1842, p. 457.

JUNGLEE CHOOGHD of the Hindoos (Jerdon).

A single specimen of this pretty little owl was obtained at Keddah (Malayan Peninsula), agreeing in every respect with those obtained from India. This is, I believe, the first indication of its having been found in the Malayan Peninsula.

### 14. NINOX SCUTULATUS.

*Strix scutulata*, Raffles, Trans. Linn. Soc. XIII. p. 280 (1821).

*Strix hirsuta*, Temminck, Pl. Col. 289.

*Strix lugubris*, Tickell, J. A. S. Beng. 1832, p. 457.

*Ninox nipalensis* et *N. Jeridius*, Hodgson.

*Athene malayensis*, Eyton.

*Strix hirsuta japonica*, Schlegel, Faun. Japon. t. 9 B.

*Strix infausta*, Hamilton, MSS.

KAL PECHAK of the Bengalese (Hamilton).

CHOOGHD BESRUH of the Hindoos (ditto).

KHENG-BOOP of the Arracanese (Blyth).

RAJA WALI of the Malays.

“Irides king’s-yellow; bill black; feet reddish.” (Cantor.) Also inhabits N. India and Tenasserim.

### 15. EPHIALTES LEMPIJI.

*Strix Lempiji*, Horsfield, Trans. Linn. Soc. XIII. p. 140.

*Strix noctula* (Reinw.), Temminck, Pl. Col. 99.

*Scops javanicus*, Lesson.

*Scops lettia*, Hodgson.

*Scops letooides*, Jerdon.

*Scops griseus*, Jerdon.

LEMPIJI of the Javanese (Horsf.).

THARKAVI CHOOGHD seu LATTYA CUDYAL of the Nepalese (Hodgs.).

### 16. BUBO ORIENTALIS.

*Strix orientalis*, Horsfield, Trans. Linn. Soc. XIII. p. 140.

*Strix sumatrana*, Raffles.

*Strix strepitans*, Temminck, Pl. Col. 174. 229. (*jun.*)

*Huhua nipalensis*, Hodgson.

*Huhua pectoralis*, Jerdon.

HUHU and HUHU CHIL of the Nepalese (Hodgs.).

OOMAN of the natives of Malabar (Jerdon).

“Iris dull brown; bill dull yellow; feet yellowish buff.” (Cantor.)

A single adult specimen of this rare species was obtained at Malacca.

17. KETUPA JAVANENSIS, Lesson, Trait. d’Orn. p. 114 (1831).

*Strix ketupa*, Horsfield, Trans. Linn. Soc. XIII. p. 141 (1821).

*Strix ceylonensis* apud Lath. et Temm., Pl. Col. 74.

BLO KETUPA of the Javanese (Horsf.).

TAMBA SEU KETOMBO RATANAPYE; HANTA; BURONG PELOW of the Malays (Blyth).

“Iris round, brilliant yellow.” (Cantor.)

Common at Pinang.

18. PHOLIDUS BADIUS.

*Strix badia*, Horsfield, Trans. Linn. Soc. XIII. p. 139 (Zool. Res. in Java, t. 36. Temm., Pl. Col. 318.).

WOWO WIWI or KALONG WIWI of the Javanese (Horsf.).

BURONG ANTOO, Pinang. Cantor.

“The WOWO-WIWI is rarely met with in Java. It never visits the villages, but resides in the closest forests, which are the usual resort of the tiger. The natives even assert that it approaches this animal with the same familiarity with which the Jallak (*Pastor Jalla*, Horsf.) approaches the buffalo, and that it has no dread to alight on the tiger’s back. It is never seen in confinement.” Horsfield. It also inhabits Nepal, Sikim, Assam and Arracan.

19. SYRNIUM SELO-PUTO.

*Strix Selo-puto*, Horsfield, Trans. Linn. Soc. XIII. p. 140.

*Strix pagodarum*, Temminck, Pl. Col. 230.

SELO-PUTO of the Javanese (Horsf.).

A single specimen obtained at Pinang.

20. MEROPS PHILIPPINUS, Linnæus.

*Merops javanicus*, Horsfield, Trans. Linn. Soc. XIII., p. 171.

*Merops Daudinii*, Cuvier, Règ. An. I. p. 442.

*Merops typicus*, Hodgson, Gray’s Zool. Misc. (1844) p. 82.

KACHANGAN of the Javanese (Horsf.).

BIRI BIRI of the Malays in Sumatra (Raffles).

21. MEROPS BADIUS, Gmelin.

*Merops castaneus*, Latham, Ind. Orn. i. p. 273.

*Merops bicolor*, Boddaërt.

*Merops sumatranus*, Raffles.

? *Merops Latreillei*, Vieillot (Levaill. Guep. t. 12).

? *Merops cyanopygius*, Lesson, Tr. d'Orn. p. 238.

The Chestnut Bee-eater.

22. *MEROPS QUINTICOLOR*, Vieillot, N. Dict. d'H. N. XIV. p. 20. (Levaill. Guep. t. 15.)

*Merops Leschenaulti*, Vieillot.

*Merops urica*, Horsfield, Trans. Linn. Soc. XIII. p. 172; Swains. Zool. Ill. n. s. t. 8.

PIRIK of the Javanese (Horsf.).

Found also in India and Ceylon.

23. *NYCTIORNIS AMICTA*.

*Merops amictus*, Temminck, Pl. Col. 310; Gould, Birds of Asia.

*Nyctiornis amicta*, Swainson, Zool. Ill., 2nd Ser. t. 56.

KAY CHUA of the Malays (Eyton).

24. *HIRUNDO PANAYANA*, Gmelin.

*H. gutturalis*, Scopoli.

*H. javanica*, Sparmann, Mus. Carls. IV. t. 100.

*H. jewan*, Sykes, P. Z. S. 1832, p. 83.

*H. rusticoides*, Kuhl.

*H. rustica*, Meyen. (Temm. Pl. Col. 83. f. 2.)

25. *HIRUNDO DOMICOLA*, Jerdon, Madras Journ. XIII. p. 173. (1844).

*Hirundo javanica* apud Shaw, Zool. X. p. 101; Lath. Gen. Hist. VII. p. 300.

Bungalow Swallow, of residents in the Neilgherries (Jerdon).

Forehead, chin, throat and upper part of breast deep rufous; plumage above glossy blue-black; beneath dusky cinereous; wings and tail dusky black, the latter with a white spot near the tip on all but the two centre feathers; under tail-coverts blackish, edged with white. Bill and legs black.

Length  $4\frac{3}{4}$  inches; of wing  $4\frac{2}{10}$ ths; tail (very slightly forked) 2; bill to front  $\frac{2\frac{1}{2}}{10}$ ths, to gape  $\frac{5}{10}$ ths; and tarsus  $\frac{3\frac{1}{2}}{10}$ ths of an inch.

"Common in the Neilgherries," remarks Mr. Jerdon, [and also in the Malay countries,] "and builds its nest in retired or deserted bungalows, out-houses, &c., making a small mud nest, quite open at the top, and profusely lined with feathers."

26. *CYPSELUS VITTATUS*, Jardine and Selby, Ill. Orn. 2nd Ser. t. 39.

*Cypselus australis* apud Blyth, Journ. As. Soc. Beng. XI. p. 886.

27. *CYPSELUS SUBFURCATUS*, Blyth, Journ. As. Soc. Beng. XVIII. p. 807. (1849.)

*Cypselus affinis* apud Strickl. P. Z. S., 1846, p. 99.

"Resembles *C. affinis*, but is larger, deeper coloured, with the tail-feathers conspicuously more pointed, and the outermost mea-



suring a quarter of an inch longer than the middle ones. Wing  $5\frac{1}{4}$  inches; tail  $2\frac{1}{8}$ th. General colour much blacker than in *C. affinis*, the upper and lower tail-covers being quite black; the white band on the rump is narrower and less purely white; and the white of the throat is also less pure."

"The nidification is also remarkably different," says Mr. Blyth; "several pairs inhabiting a continuous common nest, which is affixed to an eave in the manner of that of *Chelidon urbica*, or of *Cyp. affinis*; the latter species, however (so far as we have observed), so placing its nest as to be concealed, or at least rendered inconspicuous by a rafter or other object in front." According to the account received from Col. Low, a colony of *Cyp. subfurcatus* inhabited the verandah of a house in the island of Pinang. "They began with a pair, and now compose a harmonious family of about sixteen or eighteen. The nests are fastened to the beam much in the same way as the nest of the swallow (*Chelidon urbica*?), but their nidificatory habits differ from those of the latter birds by their running two, three, or more nests into one. There were about six or eight birds in one specimen of the nest, which had three apertures. They seem to keep a regular watch at night, for on the least noise the sentinel pipes a little, and is then followed by all the rest. They lay two eggs, and are not migratory,—at least my friends are not, for they have been domiciled upwards of a year where they are now. The nest above noticed is a beautiful fabric in its way, remarkably light and compact; being composed of feathers and other light substances firmly bound together by a good deal of the saliva-like gluten. Several shed primaries and other feathers of the birds themselves, doubtless cast within the nest, are thus fastened in to add to the lining. The only aperture visible, now that the nest has been cut away from its place of attachment, is a somewhat prolonged entrance at one extremity; and there appear to be but two depressions adapted for the reception of eggs, which renders it probable that several of its inhabitants were the young of a former brood, or perhaps broods. The total length of the interior is 12 inches, by nearly 5 inches where broadest; and this capacity would indicate that it is intended as much for a habitation for a number of the birds as for the ordinary purpose of incubation. Procuring some nests of *Cyp. affinis* for comparison, the size of these also indicates the fact that they are similarly inhabited; but it would appear that there is no convenience in them for more than one pair of birds to incubate. They consist of a much thicker and heavier mass of material than the nest of *C. subfurcatus*; but where two are built in contact, the wall of separation is thin, though we suspect it will be always found intact and completely separated. During the night *C. affinis* is equally vigilant with its Malayan representative. The latter would appear to be the common house Swift of the Malayan peninsula, taking the place of *C. affinis* of India; while *C. vittatus* would seem to be exclusively a mountain species, and which has been obtained by Capt. Hutton from the Tyne range of mountains near Simla."

Common at Pinang.—Cantor.

## 28. ACANTHYLIS GIGANTEUS.

*Cypselus giganteus*, Temminck, Pl. Col. 364.

*Acanthylis caudacuta*, apud Blyth. Catalogue.

“Iris blackish brown; bill black; feet dirty cobalt.”—Cantor.

Inhabits the Neilgherries, Ceylon, Arakan, and the Malayan peninsula.

## 29. BATRACHOSTOMUS AURITUS.

*Podargus auritus*, Vigors, Griff., transl. of Cuv. An. Kingd. 11. t. p. 114; Appendix to Mem. of Sir T. S. Raffles, p. 653.

*Batrachostomus auritus*, Gould, Icones Avium, t. 7.

*Bombycistomus Fullertonii*, Hay, Journ. A. S. Beng. X. p. 574 (1841).

## 30. BATRACHOSTOMUS STELLATUS.

*Podargus stellatus*, Gould, P. Z. S. 1837, p. 43, also, I believe, the *Podargus crinifrons*, Temminck, Mus. Ludg. Bonap. Consp. Gen. Av. p. 57.

I have compared the specimens of this bird in Mr. Gould's collection with those collected in Malacca by Dr. Cantor, with which they quite agree. This is quite distinct from *B. javanensis*, Horsf.; *P. cornutus*, Temm.

## 31. LYNCORNIS TEMMINCKI, Gould, Icones Avium, t. 6.

*Eurostopodus Temmincki*, G. R. Gray, Gen. of Birds.

*Caprimulgus pulcher*, Hay, Madr. Journ. XIII. pt. II. p. 161. (1844.)

*Caprimulgus imberbis*, Temm. MSS.

“Crown of the head greyish brown, minutely barred with black, many of the feathers having a black spot at the apex; throat barred with rich chestnut and black; round the neck a collar, which is white anteriorly, and buff posteriorly; egrets short and black; chest blackish, freckled with chestnut; back ornamented with tints of chestnut and fawn, spotted and irregularly freckled with black; quills blackish brown, with nearly obsolete bars of chestnut; under-surface pale buff mingled with black, which latter colour occupies the base of each feather; tail brownish black, with interrupted bars of chestnut. Bill and legs brown.”

Length 10 inches; of wing 8; tail  $5\frac{1}{2}$ ; bill to gape  $1\frac{1}{8}$ th, and tarsus  $\frac{1}{2}$  an inch.

## 32. CAPRIMULGUS MACROURUS, Horsfield, Trans. Linn. Soc. XIII. p. 142.

## 33. CAPRIMULGUS INDICUS, Latham. Jerdon, Ill. Ind. Orn. t. 24. Gray, Ill. Ind. Zool. I. t. 34. f. 1.

*Caprimulgus cinerascens*, Vieillot.

*Caprimulgus saturator*, Hodgson.

*Caprimulgus innotatus*, Hodgson (jun.).

Specimens from Malacca agreeing with those obtained at Nepal.

34. EURYLAIMUS JAVANICUS, Horsfield, Trans. Linn. Soc. XIII.  
p. 170. Zool. Res. in Java, t. 5. (Gould, Birds of Asia.)

*Eurylaimus Horsfieldii*, Temminck, Pl. Col. 130, 131.

TAMPLANA LILIN of the Malays. (Eyton.)

Common at Malacca.

35. EURYLAIMUS OCHROMALUS, Raffles, Trans. Linn. Soc. XIII.  
p. 297; Gould, Birds of Asia.

*Eurylaimus cucullatus*, Temminck, Pl. Col. 261.

*Eurylaimus Rafflesii*, Lesson.

TAMPLANA QILIN of the Malays. (Blyth.)

36. CORYDON SUMATRANUS.

*Coracias sumatranus*, Raffles, Trans. Linn. Soc. XIII. p. 303.

*Corydon sumatranus*, Strickland. (Gould, Birds of Asia.)

*Eurylaimus corydon*, Temminck, Pl. Col. 297.

*Corydon Temminckii*, Lesson, Man. d'Orn. i. p. 177.

KUNG-QUAIT of the Malays. (Blyth.)

37. CYMBIRHYNCHUS MACRORHYNCHUS.

*Todus macrorhynchus*, Gmelin. (Gould, Birds of Asia.)

*Todus nasutus*, Latham. (Temm. Pl. Col. 154.)

*Eurylaimus lemniscatus*, Raffles, Trans. Linn. Soc. XIII. p. 296.

BURONG PALANO or TAMPALANO of the Malays in Sumatra.  
(Raffles.)

BURONG UJUN. (Eyton.)

“This species,” says Sir Stamford Raffles, “is found in the interior of Sumatra, frequenting the banks of rivers and lakes, and feeding on insects and worms. It builds its nest pendent from the branch of a tree or bush which overhangs the water, and is said to lay two eggs.”

Mr. Blyth also remarks: “This bird is common in Tenasserim in watery situations, and suspends its nearly globular nest, which is constructed of small twigs, from the branches of trees growing directly out of the water. The eggs are four in number, and pale spotless blue. The beak and eyes are very fine blue, the former fading within a day or two after death.”

38. CALYPTOMENA VIRIDIS, Raffles. Horsf. Zool. Res. in Java.  
Temm. Pl. Col. 216.

*Calyptomena Rafflesii* et *C. caudacuta*, Swainson.

BURONG TAMPO of the Malays in Sumatra. (Raffles.)

SIEBO of the Malays. (Eyton.)

Not uncommon at Pinang.

39. EURYSTOMUS ORIENTALIS.

*Coracias orientalis*, Linnæus.

*Eurystomus cyanicollis* et *E. fuscicapillus*, Vieillot.

*Eurystomus calornyx*, Hodgson.

TIONG BATU of the Malays in Sumatra. (Raffles.)

TIONG LAMPAY of the Malays. (Eyton.)

40. DACELO PULCHELLA, Horsfield, Trans. Linn. Soc. XIII. p. 175. Zool. Res. in Java (with a figure of the male).

*Dacelo buccoïdes*, Temminck, Pl. Col. 277 ♂. 586 ♀.

TENGKE-WATU of the Javanese (Horsf.), and KAING KAING KIMBA of the Malays (Eyton).

“This is an extremely rare and local bird,” says Dr. Horsfield, “and I found it once only, in a low range of hills, about twenty miles south-east of Samarang, known in the central parts of the island (Java) by the name of the hills of Prowoto. Here a single [male] bird was obtained in the forest.”

Several examples of both sexes were collected at Malacca.

41. HALCYON LEUCOCEPHALUS.

*Alcedo leucocephala*, Gmelin.

*H. javanica*, Shaw.

*H. Gurial*, Pearson, J. A. S. Beng. X. p. 633.

*H. brunniceps*, Jerdon, Madr. Journ. Lit. and Sci. XIII. p. 143.

The white-headed and Gurial Kingfishers of Latham.

TENGKEBUTO of the Javanese (Horsf.).

BANG-KAKO of the Malays of Sumatra (Raffles).

BURONG-KAKA of the Malays (Eyton).

GURIAL of the Bengalese (Buch. Hamilt.).

MALAH-POYMAH, i. e. “jungle kingfisher,” of the inhabitants of Malabar (Jerdon).

I do not see sufficient distinction between the Malayan and Indian birds to warrant their separation.

42. HALCYON ATRICAPILLUS.

*Alcedo atricapilla*, Gmelin.

*H. pileata* (Bodd) apud G. R. Gray, Gen. of Birds, i. p. 79.

BURONG UDANG of the Malays of Sumatra (Raffles).

This would appear to be tolerably common at Pinang, at which place this species was collected. Also inhabits India.

43. HALCYON SMYRNENSIS.

*Alcedo smyrnensis*, Linnæus. Strickland, Ann. Nat. Hist. (1842), p. 443.

*Alcedo fusca*, Boddaërt.

Found at Pinang and Malacca.

44. TODIRAMPHUS VARIUS.

*Halcyon varia*, Eyton, P. Z. S., 1839, p. 101. Blyth, J. A. S. Beng. XV. p. 11.

“Adult male (and perhaps the adult of either sex) have the cap green, rufescent on the forehead, and margined posteriorly with verditer; a broad black stripe commences at the lores, and meets its opposite behind; above this is a very large rich purplish-blue moustache, commencing at the base of the lower mandible; the nape and breast are brilliant ferruginous, paling on the throat and belly, and the mantle, wings and tail, are deep purplish-blue, each feather touched with ultramarine-blue on the wings, while the rump and

upper tail-coverts are vivid verditer; bordering the ferruginous of the nape is a band of deep black. Bill dusky above, the rest apparently yellow; and less probably coral-red. The young have the mantle and wings dark-green, with a terminal pale fulvous spot on each feather, imparting a pretty speckled appearance."

Two examples of this fine kingfisher were collected at Malacca.

45. *TODIRAMPHUS COLLARIS*.

*Alcedo collaris*, Scopoli.

*Halcyon collaris*, Swainson, Zool. Ill. t. 577.

*Todiramphus collaris*, Blyth, Catal.

*Alcedo chlorocephala*, Gmelin.

*Alcedo chlorocephala* et *A. sacra*, Horsfield, Trans. Linn. Soc. XIII. p. 174.

*Todiramphus occipitalis*, Blyth, J. A. S. Beng. XV. pp. 23. 51.

The white-collared kingfisher.

TENGKE SEU TENGKE-CHEGER of the Javanese (Horsf.).

NAC-THA-CHÓP-FOU of the Siamese (Finlayson).

"Irides dark brown; legs shining greenish grey."—Cantor. A single specimen procured at Pinang.

46. *ALCEDO BENGALENSIS*, Gmelin.

RAJA-WHODAN of the Malays.

From Pinang.

47. *ALCEDO MENINTING*, Horsfield, Trans. Linn. Soc. XIII. p. 172. Temm. Pl. Col. 239. f. 2.

*Alcedo asiatica*, Swainson, Zool. Ill. n. s. t. 50.

MENINTING of the Javanese (Horsf.).

BINTI of the Malays of Sumatra (Raffles).

Three examples of this exceedingly beautiful species procured at Malacca.

48. *CERYLE RUDIS*.

*Alcedo rudis*, Linnæus.

*Ispida bicincta* et *I. bitorquata*, Swainson.

A single specimen from Keddah.

49. *CEYX TRIDACTYLA*.

*Alcedo trydactyla*, Linnæus, Mant. (1771), p. 524. Pallas, Spic. Zool. vi. t. 2. f. 1.

*Ceyx tridactyla*, Cuvier, Règ. Anim. (1817), p. 417. Jerdon, Ill. Ind. Orn. t. 25. Strickl. P. Z. S. (1846), p. 99.

*Alcedo purpurea*, Gmelin.

*Alcedo rubra*, Boddaërt.

*Alcedo erythaca*, var.  $\beta$ . Latham.

*Ceyx luzoniensis*, Stephens.

*Ceyx microsoma*, Burton.

Sonn. Voy. Ind. t. 32. Buff. Pl. Enl. 778, f. 2. Penn. Gen. Birds, t. 5.

RAJA WHODAN of the Malays (Eyton).

DEIN-NGYEEN of the Arracanese (Blyth).

This is a rare bird on the continent of India. It has been obtained in the Carnatic by Mr. Jerdon, and it has also been found, though rarely, on the west coast, and in the Deccan. A single specimen has been obtained in Nepal by Mr. Hodgson, which exactly agrees with Jerdon's figure and those obtained from Pinang by Dr. Cantor. It occurs in Arracan, where it appears to be not very uncommon.

50. CEYX RUFIDORSA, Strickland, P. Z. S. 1846, p. 99.

*Alcedo tridactyla* apud Horsfield et Raffles.

*Ceyx tridactyla* apud Jardine et Selby, Ill. Orn. t. 55. f. 2.

*Alcedo purpurea*, var. Shaw.

CHUCHACK-WRANG of the Javanese (Horsf.).

BINTI ARANG of the Malays in Sumatra (Raffles).

Distinguished from the last by having the whole back and wing-coverts, as well as the crown, rump and tail rufous, with a brilliant lilac tint. The dark blue spot on the front and ears is much less marked than in *C. tridactyla*. Lower parts orange-yellow, chin white.

51. TCHITREA AFFINIS, A. Hay, J. A. S. Beng. 1846, p. 292.

*Tchitrea paradisi* of Malasia, Auctorum.

? *Muscipeta castanea*, Temminck.

The Malayan Paradise Flycatcher.

The inferior size, and the much shorter and different-looking crest, afford invariable distinctions, by which this species may be recognized apart from *Tch. paradisi*.

52. PHILENTOMA VELATUM.

*Drymophila velata*, Temminck, Pl. Col. 334. (the male.)

*Monarcha velata*, G. R. Gray, Gen. of Birds, i. p. 260.

*Monarcha cæsia*, Lesson, Rev. Zool. (1839), p. 167. (the female.)

*Muscicapa pectoralis*, Hay, Madras Journ. XIII. pt. 2. p. 161.

*Myiagra pectoralis*, Strickland, P. Z. S. 1846, p. 101.

The general colour of this bird is dark indigo-blue; the male differing from the female in having a rich claret-coloured breast, black throat, cheeks, superciliary stripe and forehead, while in the female the whole plumage is uniform blue, though perhaps darkest on the throat and breast.

53. HEMICHELIDON LATIROSTRIS.

*Muscicapa latirostris*, Raffles, Trans. Linn. Soc. XIII. p. 312.

*Muscicapa poonensis*, Sykes, P. Z. S. 1832, p. 85.

“Colour, greyish-brown above, sometimes a little tinged with rufescent; throat, gorget, belly, and under tail-coverts white, with a slight fulvous tinge on the former; the breast and flanks dull ashy brown, as also the front of the neck contiguous to the ear-coverts, where but a narrow mesial line of fulvous-white passes from the

throat to the gorget; bend of the wing beneath, and axillaries, pale fulvous brown; a whitish streak from the nostril to the eye; bill horny black, basal half of the lower mandible yellow.

“Length,  $4\frac{7}{8}$ ths inches; of wing  $2\frac{3}{4}$ ths; tail  $1\frac{7}{8}$ ths; bill to forehead (through the feathers)  $\frac{1}{2}$  an inch, to gape  $\frac{3}{4}$ ths; tarse  $\frac{1}{2}$  an inch.”

I have carefully compared the specimens from Pinang with those collected in Dukhun by Colonel Sykes, and find they exactly agree in every character.

54. MYIAGRA AZUREA.

*Muscicapa azurea*, Boddaërt.

*Muscicapa cærulea*, Gmelin. (Raffles.)

*Muscicapa occipitalis*, Vigors, P. Z. S. 1831, p. 97.

*Muscicapa cæruleocephala*, Sykes, P. Z. S. 1832, p. 85 (the female).

Azure-headed flycatcher, Lath. LeVaill. Ois. d'Afr. t. 153.

55. RHIPIDURA JAVANICA.

*Muscicapa javanica*, Sparrmann, Mus. Carls. III. t. 75; Horsfield, Trans. Linn. Soc. XIII. p. 146.

*Platyrrhynchus perspicillatus*, Vieillot.

The Javan Flycatcher, Lath.

SIKATTAN of the Javanese (Horsf.).

MOORAI-KANDANG of the Malays in Sumatra (Raffles).

56. CRYPTOLOPHA CINEREOCAPILLA.

*Muscicapa cinereocapilla*, Vieillot.

*Platyrrhynchus ceylonensis* et *Cryptolopha poiocephala*, Swainson, Zool. Ill. n. s. t. 13. Nat. Lib. Flyc., p. 200. t. 23.

*Muscicapa nitida*, var. A. Latham.

I believe this bird has not hitherto been noticed as an inhabitant of the Islands; a single specimen, however, was obtained at Malacca.

57. PERICROCOTUS SPECIOSUS.

*Turdus speciosus*, Latham, Ind. Orn. i. p. 363.

*Muscipeta princeps*, Vigors. Gould, Century, t. 7.

A single male bird from Keddah.

58. CHAPTIA MALAYENSIS, Lord A. Hay, J. A. S. Beng. 1846, p. 294. Blyth's Catal. p. 200.

? *Drymonax niger*, Lesson, Rev. Zool. 1839, p. 167.

The Malayan Bronze Shrike.

Distinguished from *Ch. ænea* by its inferior size, much less deeply forked tail, shorter wing, and by its deeper bill.

59. DICRURUS BALICASSIUS.

*Corvus balicassius*, Linnæus.

*Dicrurus balicassius*, Blyth, J. A. S. Beng. XI. p. 800; XV. p. 298. Strickland, P. Z. S. 1846, p. 102.

*Oriolus furcatus*, Gmelin.

*Bhuchanga annectens*, Hodgson, Ind. Rev. 1. p. 326.

*Dicrurus affinis*, Blyth, J. A. S. Beng. XI. p. 174.

Specimens from Nepal and Dacca (the latter collected by Capt. R. C. Tytler), which I have examined, agree in every respect with those from Malacca.

60. DICRURUS MALABARICUS, Scopoli.

*Edolius malabaricus*, Horsfield. (Raffles).

*Edolius retifer*, Temminck, Texte de Pl. Col. 178.

*Edolius Rangoonensis*, Gould, P. Z. S. 1836, p. 5.

The Racquet-tailed Drongo.

BURONG SAWEH of the Malays in Sumatra (Raffles).

CHANWI of the Malays (Eyton).

Has a very short erect frontal crest.

61. ENNEOCTONUS CRISTATUS, founded on Edward's B. t. 54.  
(but the species is not crested).

*Lanius cristatus*, Linnæus.

? *L. lucionensis*, Linnæus.

*L. phœnicurus*, Pallas.

*L. rutilus*, var. A. Latham.

*L. superciliosus*, var. A. Latham, Hist. ii. p. 37.

*L. melanotis*, Valenc.

*L. ferrugiceps*, Hodgson, Ind. Rev. i. p. 446.

A specimen from Pinang agreeing exactly with those from India.

62. ENNEOCTONUS SUPERCILIOSUS.

*Lanius superciliosus*, Latham, Ind. Orn. Suppl. p. 20 ; Gen. Hist. ii. p. 36.

This I believe to be a distinct species from the last, contrary to the opinion formed by the late Mr. Strickland and others. Several specimens were collected at Pinang.

63. ENNEOCTONUS TIGRINUS.

*Lanius tigrinus*, Drapiez, Dict. Class. d'Hist. Nat.

*L. magnirostris*, Lesson, in Belanger's Voyage.

*L. strigatus*, Eyton, P. Z. S. 1839, p. 103.

? *L. ferox*, Drapiez.

SERARA of the Malays (Eyton).

64. TEPHRODORNIS GULARIS.

*Lanius gularis*, Raffles, Trans. Linn. Soc. XIII. p. 304.

*L. virgatus*, Temminck, Pl. Col. 256. f. 1.

BAROU BAROU of the Malays in Sumatra (Raffles).

BURONG TANA of the Malays (Eyton).

65. LALAGE ORIENTALIS.

*Turdus orientalis*, Gmelin.

*Ceblepyris striga*, Horsfield.

*Pycnonotus humeraloides*, Lesson.

*Sylvia leucophæa*, Vieillot (nec Latham).

*Saxicola orientalis*, Vieillot.



LENJETTAN of the Javanese (Horsf.).

KRAS of the Malays (Eyton).

Lord Arthur Hay has described\* a species of this genus from Malacca, under the name of *Ceblepyris culminatus*.

66. EUPETES MACROCERCUS, Temm. Pl. Col. 516; Strickl. P.Z.S. 1846, p. 102.

BURONG TANA RIMBA of the Malays (Cantor).

This form appears to belong to the subfamily *Myiotherina*, a group which includes the following genera, viz. :

*Eupetes*, *Hodgsonius*, *Callene*, *Drymocataphus*, *Brachypteryx*, *Tesia*, *Troglodytes*, *Pitta*, and others.

Three specimens of this curious bird were obtained at Malacca.

67. DRYMOCATAPHUS NIGROCAPITATUS.

*Brachypteryx nigrocapitata*, Eyton, P. Z. S. 1839, p. 103.

*Drymocataphus nigrocapitatus*, Blyth, Journ. A. S. Beng. 1849, p. 815.

Colour of the upper parts rufous brown, of the under bright ferruginous; throat white, flanked by a black streak; cap black, bordered by a white superciliary streak and loreal feathers; ear-coverts dusky, minutely lineated with white, and posteriorly with rufous; sides of the head ashy; bill horny black above, yellow beneath; legs brownish.

Length  $6\frac{1}{4}$  inches; of wing,  $2\frac{5}{8}$ ths, and tail the same, its outermost feather  $\frac{5}{8}$ ths shorter; bill to forehead, through the feathers,  $\frac{1\frac{1}{8}}$ ths; to gape,  $\frac{7}{8}$ ths; and tarse,  $1\frac{1}{8}$ th of an inch. Malacca.

68. PITTA CÆRULEA.

*Myiothera cærulea*, Raffles, Trans. Linn. Soc. xiii. p. 301.

*Pitta gigas*, Temm. Pl. Col. 217.

Both sexes of this large species were obtained at Malacca.

69. PITTA BOSCHI, Müller et Schlegel, Verh. Nat. Gesch. Ned. Ind. Av. pp. 5, 16. t. 1.

*Pitta elegans*, Less. Voy. de la Bon. Ois. t. 3 (nec Temm. Pl. Col.).

*Pitta elegans* of Temm. apud Bonap. Consp. Gen. Av. p. 256.

*Pitta affinis* apud Raffles.

SINTAR of the Malays in Sumatra (Raffles).

Distinguished from *P. cyanura* by its smaller size, and by the yellow superciliary streak extending round the black of the crown, and brightening to fiery-red on the nape; the white on the wings is broader, and the male has the breast and abdomen of a beautiful smalt-blue, crossed transversely on the sides of the former with a number of fiery-red narrow bars, and more sparingly so on the centre. In the female the breast and abdomen is marked throughout with numerous narrow bluish-black bars, nearly as in *P. cyanura*, and tinged with red between the bars on the sides.

\* Madras Journal, xiii. p. 157, 1844.

Three specimens, two males and a female, of this beautiful species, were obtained at Malacca.

70. *PITTA CUCULLATA*, Hartlaub, Rev. Zool. 1843, p. 65; Strickl. Ann. N. H. xiii. p. 410. t. 20.

*Pitta nigricollis*, Blyth, J. A. S. Beng. xii. p. 960.

*Pitta rhodogaster*, Hodgson (the young).

*Pitta Schlegeli*, Bonap.

*Pitta malaccensis* apud Schlegel.

Distinguished by its rufous-brown crown; throat, sides of the head and neck all round being black; upper parts and wings darkish green, paler below; the lesser wing-coverts and rump bright glossy azure; middle of belly, vent and under tail-coverts, crimson.

This species is also found in Nepal and Assam.

71. *PITTA CYANOPTERA*, Temminck, Pl. Col. 218.

*Myiothera brachyura* apud Raffles, Trans. Linn. Soc. xiii. p. 300.

*Pitta malaccensis* apud Blyth, J. A. S. Beng. xii. p. 960.

Common in the countries eastward of the Bay of Bengal, from Arracan to Malacca. This would appear to be common in the neighbourhood of Pinang, at which place Dr. Cantor obtained several examples.

72. *PITTA GRANATINA*, Temminck, Pl. Col. 506.

*Pitta coccinea*, Eyton, P. Z. S. 1839, p. 104; Blyth, J. A. S. Beng. xii. p. 961.

*MORTUA PLANDO* of the Malays (Eyton).

*ALLO ALLO*, ditto (Cantor).

A number of specimens of this fine species was obtained at Malacca.

73. *GEOCICHLA INNOTATA*, Blyth, Journ. As. Soc. Beng. xv. p. 370 (1846); xvi. p. 146.

*Geocichla albogularis*, Blyth (? the female).

Resembles *G. citrina*, but has the ferruginous colour of the head and under parts, and the ash colour of its upper parts, much more intense; no white upon the wings; and the lower tail-coverts only (not the vent) are white. The female is smaller and has the throat white, and some white at the sides of the vent; the wings, rump and tail, only, are deep ashy, the back and scapularies being olive-green, much as in the female of *G. citrina*.

74. *TURDUS RUFULUS*, Drapiez, Dict. Class. d'Hist. Nat. x. p. 443; Blyth, Journ. A. S. Beng. xvi. p. 143.

*Turdus modestus*, Eyton, P. Z. S. 1839, p. 103.

*Turdus javanicus* apud Blyth, Catalogue.

*STRIÉE* of the Javanese (Drapiez).

*KWARAN* of the Malays (Eyton).

*MYAI-BOO-NGHET* of the Arracanese (Phayre).

“Upper parts greenish olive-brown, with a dull white supercilium;

chin, and generally the median portion of the throat, with the belly and lower tail-coverts white; breast and flanks brownish-fulvous, brighter in old males; the throat and fore-neck streaked laterally with olivaceous, which in some specimens crosses the breast above the fulvous hue, and is more or less ashy; others again, evidently the old males, have the entire crown and neck all round, of a dusky ash colour, mingled with white on the middle of the throat. Bill dusky above, the basal two-thirds of the lower mandible yellow; legs pale brown."

Length,  $8\frac{1}{2}$  to 9 inches; of wing,  $4\frac{1}{2}$  to 5; tail,  $3\frac{1}{2}$ .

"Inhabits the eastern coast of the Bay of Bengal," says Mr. Blyth, "from Arracan to the Straits of Malacca, becoming more numerous southward;" and M. Drapiez mentions having received it from Java, where it is a periodical visitant.

#### 75. TURDINUS MACRODACTYLUS.

*Malacopteron macrodactylum*, Strickl. P. Z. S. 1846, p. 103.

*Turdinus macrodactylus*, Blyth, Journ. A. S. Beng. xiii. p. 382.

*Brachypteryx albogularis*, Hartlaub, Rev. Zool. 1844, p. 401.

TANA of the Malays, Eyton.

Common at Malacca.

#### 76. TRICHIXOS PYRRHOPYGA, Lesson, Rev. Zool. 1839, p. 167.

*Turdirostris superciliaris*, A. Hay, Madr. Journ. xiii. pt. 11. p. 163 (1844).

*Napothera pyrrhomelanura*, Müller.

Male—colour of the head, nape, back, chin, throat, breast, and shoulders ashy-black, deepest above; a white superciliary streak above but not beyond the eye; rump, upper tail-coverts and tail bright rufous, the latter tipped with a broad deep brown-black band; wings brown, margined with ashy; flanks and under tail-coverts rufous, belly and vent whitish, washed with rufous; bill black; legs pale yellow.

Length,  $8\frac{1}{2}$  inches; of wing, 4; tail, 4, its outermost feathers shorter; bill to front (through the feathers)  $1\frac{1}{10}$ th; to gape,  $1\frac{2}{8}$ ths; tarse,  $1\frac{1}{10}$ th.

In the young or female the plumage above is brown mixed with rufous; the forehead, round the eyes, chin, throat, breast, flanks, and under tail-coverts dusky rufous, whitish on the middle of the belly and vent; the wings brown, the coverts tipped with rufous; the bill is rather shorter and thicker, and is of a horny colour above, yellowish below at base.

#### 77. MACRONUS PTILOSUS, Jard. et Selby, Ill. Orn. t. 150 (1835).

*Timalia trichorros*, Temm. Pl. Col. 594. f. 1 (1836).

BURONG TANAL-UBAN of the Malays, Blyth.

#### 78. MALACOPTERON CORONATUM.

*Napothera coronata*, Müller, Mus. Lugd.; Bonap. Consp. Gen. Av. p. 358.

*Malacopteron magnum* apud Blyth, J. A. S. Beng. xvi. p. 461.

Colour olive-brown above, greyish towards the neck, more rufous over the rump, and the tail brownish ferruginous; forehead and vertex bright rufous, the feathers narrow-spatulate, of rigid texture, and tipped with black; occiput black; the small feathers around the eye white-centred: lower parts white, slightly tinged with brown, more especially on the sides of the breast. Bill and feet pale, the former darker above.

Length, nearly 6 inches; of wing,  $2\frac{7}{8}$ ths; tail,  $2\frac{3}{4}$ ths; bill to gape,  $\frac{3}{4}$ ths; and tarse,  $\frac{3}{4}$ ths of an inch.

Not uncommon at Malacca.

79. *TIMALIA MACULATA*, Temminck, Pl. Col. 593. f. 1.

*Timalia pectoralis*, Blyth, J. A. S. Beng. xi. p. 793.

*Malacopteron squamatum*, Eyton.

PAMPANG of the Malays, Eyton.

80. *TIMALIA NIGRICOLLIS*, Temminck, Pl. Col. 594. f. 2.

*Timalia erythronota*, Blyth, J. A. S. Beng. xi. p. 793.

*Brachypteryx nigrogularis*, Eyton.

BURONG TANAH of the Malays, Eyton.

81. *TIMALIA ERYTHROPTERA*, Blyth, J. A. S. Beng. xi. p. 794 (1842).

*Timalia pyrrhophæa*, Hartlaub.

*Brachypteryx acutirostris*, Eyton.

Upper parts rufous olive-brown, darker on the head; the wings bright rufo-ferruginous; forehead, sides of head, throat, fore-neck and breast, ash-colour, becoming paler towards the belly; flanks pale fulvous-brown; bill dusky, and legs yellowish.

Length, 5 inches; of wing,  $2\frac{1}{4}$ ; tail, 2; its outermost feather  $\frac{3}{4}$  of an inch shorter than the middle ones; bill to forehead,  $\frac{5}{8}$ ths; to gape,  $\frac{3}{4}$ ths; tarse,  $\frac{3}{4}$ ths of an inch.

82. *TRICHASTOMA ROSTRATUM*, Blyth, Journ. A. S. Beng. xi. p. 795 (1842).

Colour of the upper parts uniform olive-brown, somewhat darker on the crown, and having a slight ruddy tinge on the rump and tail; the whole under part pure white, a little sullied on the breast and lower tail-coverts; lores and sides of the head pale fulvescent-brown, and sides of the neck to the breast ashy; upper mandible horny-black, lower yellowish-white, except at its extreme tip; legs deeply tinged with yellowish-brown.

Length, about 6 inches; of wing,  $2\frac{3}{4}$ ths; tail, 2, its outermost feather,  $\frac{3}{8}$ ths shorter: bill to forehead (through the feathers),  $\frac{3}{4}$ ths; to gape,  $\frac{1}{16}$ ths; tarse the same.

83. *ALCIPPE CINEREA*.

*Malacopteron cinereum*, Eyton, P. Z. S. 1839, p. 103.

*Alcippe cinerea*, Blyth, J. A. S. Beng. xiii. p. 384.

“Irides grey; bill blackish; feet reddish-grey, soles dirty orange. Food, seeds and insects.”—Dr. Cantor’s Notes.

84. *ALCIPPE AFFINIS*, Blyth, J. A. S. Beng. xi. p. 795 (1842),  
xiii. p. 384.

*Napothera atricapilla*, Müller, Mus. Lugd. ; Bonap. Consp. Gen.  
Av. p. 359.

BURONG NIPA of the Malays (Cantor).

Distinguished by its dark crown, pale nape, rufescent hue of the back and rump, and deep ferruginous tail-feathers, white under parts, and distinct brownish-grey band crossing the breast.

Length,  $5\frac{3}{4}$  inches ; of wing,  $2\frac{5}{8}$ ths ; tail,  $2\frac{1}{2}$ , its outermost feather,  $\frac{5}{8}$ ths shorter ; bill to forehead (through the feathers),  $\frac{5}{8}$ ths ; to gape,  $\frac{1}{10}$ ths ; and tarse,  $\frac{3}{4}$ ths of an inch.

85. *ALCIPPE CANTORI*, Moore, n. sp.

Upper parts olive-brown, tinged with rufous on the rump ; crown ash-brown, much lighter than in *A. affinis*, nape paler ; lores, above and behind the eyes, with the ear-coverts, ashy-white ; throat, belly, vent and under tail-coverts white, breast mingled white and ash ; wings rufescent-brown, the remiges with brighter margins ; upper tail-coverts and tail deep rufo-ferruginous, darkening towards the tip ; bill horny above, pale below ; feet greenish.

Length, nearly  $7\frac{1}{2}$  inches ; of wing, 3 ; tail,  $3\frac{1}{8}$ th ; bill to frontal plumes,  $\frac{1}{2}$  an inch ; to gape,  $\frac{3}{4}$ ths ; and tarse,  $\frac{1}{10}$ ths of an inch.

Distinguished from *A. affinis* and *A. albogularis*, Blyth, by its larger size, and longer wings and tail. Malacca.

86. *ALCIPPE MAGNIROSTRIS*, Moore, n. sp.

Upper parts olive-brown, darkest on the crown and palest on the nape, and tinged with rufous on the rump, the feathers of the crown spatulate, and with a perceptibly darker shaft and margin ; lores and streak over, but not beyond the eye, whitish ; base of the lower mandible down the sides of the throat, with the tips of some of the feathers of the cheeks dark-ash ; throat, belly, vent and under tail-coverts white ; sides of the breast ashy-olive, the centre more ashy ; wings rufescent-brown ; upper tail-coverts and tail deep rufo-ferruginous ; bill horny above, paler below ; feet greenish.

Length, 6 inches ; of wing, 3 ; tail,  $2\frac{3}{4}$ ths ; bill to frontal plumes,  $\frac{6}{10}$ ths ; to gape,  $\frac{9}{10}$ ths ; tarse,  $\frac{1}{12}$ ths of an inch.

May be known from the other described species by its larger and more robust bill, and by the dark-ash streak down the sides of the throat. Malacca.

87. *ALCIPPE STRIATA*, Blyth, J. A. S. Beng. xi. p. 793 (1842).

? *Myiothera epilepidota*, Temm. Pl. Col. 448. f. 2.

Head and neck above black, or rather brown-black, the feathers of the mesial line white about the shaft, forming a streak of this colour along the middle of the head, besides which there are two slight lateral streaks not observable in every specimen, in addition to a superciliary line of the same ; on the nape the white centres of the feathers are broader and more irregularly disposed, while on the back they become much narrower again, more or less so in different

specimens, and wholly disappear on the rump; the ground hue of the back and rump is rich fulvous brown, brightening on the latter, and tending to rufous on the upper tail-coverts; lores conspicuously pale fulvous; throat and fore-neck fulvous white, the ear-coverts margined with black; sides of the breast white, handsomely bordered with black, and with a very slight margin of the same on the medial pectoral feathers; rest of the under parts white, the flanks bordered with fulvous brown, which spreads nearly over the whole feather posteriorly; lower tail-coverts more or less tinged with the same; wing feathers dusky interiorly, the coverts having terminal longitudinal white spots; tail ruddy brown, margined with more rufous brown at base; bill black; legs yellowish.

Length,  $5\frac{1}{2}$  inches; of wing,  $2\frac{1}{2}$  to  $2\frac{5}{8}$ ths; tail, 2; bill to forehead (through the feathers),  $\frac{5}{8}$ ths; to gape,  $\frac{7}{8}$ ths; and tarse,  $\frac{3}{4}$ ths of an inch.

#### 88. PYCNONOTUS JOCOSUS.

*Lanius jocosus*, Linnæus.

*Ixos monticolus*, McClelland.

*Ixos pyrrhotis*, Hodgson.

*Ixos erythrotis*, Bonap. Consp. Gen. Av. p. 265.

*Otocompsa jocosus*, Cabanis, Cat. B. Mus. Heine, p. 109 (1851).

Differs from the Indian examples only in having a much shorter sub-ocular tuft of a deeper crimson colour.

“In fine examples of Indian specimens,” remarks Mr. Blyth, “the longest of the hair-like plumes composing this ornamental tuft measures above  $\frac{5}{8}$ ths of an inch, passing considerably beyond the extremities of the white ear-coverts, and impending their upper half; while in equally fine specimens from Malacca, they appear as if truncated, and impend only the basal third of the white ear-coverts: in other respects the two birds are exactly similar.”

#### 89. PYCNONOTUS GOIAVIER.

*Muscicapa goiavier*, Scopoli.

*Muscicapa Psidii*, Gmel.

*Turdus analis*, Horsfield.

*Loedorusa goiavier*, Reichenb. (1850) Cat. B. Mus. Heine, p. 109.

*Guava Flycatcher*, Latham.

CHUCHAK of the Javanese (Horsf.).

BIRIBBA of the Malays in Sumatra (Raffles).

This species is extremely common at Pinang.

#### 90. IXIDIA CYANIVENTRIS, Blyth, J. A. S. Beng. xi. p. 792 (1841).

*Malacopteron aureum*, Eyton, Ann. Nat. Hist. xvi. p. 228.

*Turdus*, No. 6. Raffles, Trans. Linn. Soc. xiii. p. 311.

Common in the vicinity of the Straits of Malacca.

#### 91. BRACHYPODIUS MELANOCEPHALUS.

*Lanius melanocephalus*, Gmelin.

*Brachypodius melanocephalus*, Blyth, J. A. S. Beng. xiv. p. 576.

*Ixos atriceps*, Temm. Pl. Col. 147.

*Ixos metallicus*, Eyton, Ann. Nat. Hist. xiv. p. 228.

BURONG LILIN of the Malays in Sumatra (Raffles).

BOK-WA of the Arracanese (Phayre).

92. *MICROTARSUS MELANOLEUCOS*, Eyton, P. Z. S. 1839, p. 102 (male).

*Brachypodius tristis*, Blyth, J. A. S. Beng. 1845, p. 576 (female).

*Ixos vidua*, Temm. Mus. Lugd. ; Bonap. Consp. Gen. Av. p. 264 (1850).

Several specimens of this species, in various states of plumage, were obtained at Malacca, where it is not very uncommon. The adult male may be distinguished by its uniform sooty-black appearance, the wing-coverts being white with blackish tips; whereas, in the young, the whole upper plumage is of a plain brown, under parts paler, especially on the abdomen and throat; the rump of a dusky colour, with dull yellowish-brown terminal fringes, and having no trace of the white on the wing-coverts.

A specimen of what may possibly be a state of plumage, or the female of this bird, has the head, back, rump and shoulders of an olive-green colour; wings dusky, ferruginous on the outer webs, and margined with olive-green; coverts rufous olive-green; tail rufous, paler below, the feathers of the rump copious; flanks dusky, with a broad yellowish-white tip to most of the feathers; throat white, the breast brownish-grey; fore part of abdomen white tinged with yellow, the latter colour becoming brighter on the vent and under tail-coverts. Bill and feet dark horn colour.

Length,  $7\frac{1}{4}$  inches; of wing,  $3\frac{5}{8}$ ths; tail,  $3\frac{3}{4}$ ths; bill to gape,  $\frac{7}{8}$ ths; and tarse, rather more than  $\frac{1}{2}$  an inch.

If new, *M. Cantori*, Moore.

93. *CRINIGER CANTORI*, Moore, n. sp.

Crown deep ash, the feathers brown at base, becoming paler on the nape, and passing to yellowish olive-green on the back, rump and shoulders; wings rufous-brown, edged with olive-green; tail rufous-brown, edged with paler; lores, ear-coverts and sides of neck pale-ash; base of lower mandible and throat white; rest of the under parts bright yellow; bill horn-colour above, paler below; feet yellowish.

Length,  $7\frac{1}{4}$  inches; of wing,  $3\frac{1}{2}$ ; tail,  $3\frac{1}{4}$ ; bill to gape,  $\frac{9}{10}$ ths; and tarse,  $\frac{1}{2}$  an inch.

The nuchal hair-like barbs are well developed in this species. Like *C. gularis*, Horsfield, it is not crested. Malacca.

94. *TRACHYCOMUS OCHROCEPHALUS*.

*Turdus ochrocephalus*, Gmelin; Horsf.; Temm. Pl. Col. 136.

*Trichophorus crispiceps*, Blyth, J. A. S. Beng. xi. pp. 186, 204.

*Trachycomus ochrocephalus*, Cabanis, Cat. B. Mus. Heine, p. 109 (1851).

CHUCHAK-RAWA of the Javanese (Horsf.).

BAROU BAROU of the Malays (Eyton).

“Irides dark brown, bill and feet black. Very loquacious.”—Cantor.

95. *HYPSSIPETES MALACCENSIS*, Blyth, J. A. S. Beng. (1845) p. 574.

CHITAP of the Malays (Blyth).

Upper parts dull olive-green; the wings and tail brownish dusky, margined with the colour of the back; throat and breast ashy, with whitish centres to the feathers; the abdomen and lower tail-coverts dull white; bend of the wing beneath, and the axillaries pale yellow; bill and feet horn colour; feathers of the crown pointed.

Length,  $8\frac{1}{2}$  inches; of wing, 4; tail,  $3\frac{1}{2}$ , its outermost feather  $\frac{1}{4}$  inch less; bill to gape,  $1\frac{1}{8}$ th; and tarse,  $\frac{3}{4}$ ths of an inch.

96. *PHYLLORNIS JAVENSIS*.

*Meliphaga javensis*, Horsfield, Trans. Linn. Soc. xiii. p. 152. ♂. (1820).

*Chloropsis Sonneratii*, Jard. et Selby, Ill. Orn. text to t. 7 (1826) et t. 100.

*Phyllornis Müllerii*, Temm. Texte de Pl. Col.

*Turdus viridis*, Horsf. (jun. ♀).

*Chloropsis gampsorhynchus*, Jard. et Selby, Ill. Orn. t. 7 (jun.).

*Chloropsis zosterops*, Vigors, App. Mem. Raffles, p. 674.

CHUCHACK-IJU (♂), IJOAN (♀) of the Javanese (Horsf.).

DAUN or DAWOUN of the Malays (Eyton).

97. *PHYLLORNIS CYANOPOGON*, Temminck, Pl. Col. 512. f. 1.

*Phyllornis molluccensis*, J. E. Gray, Zool. Misc. 1832, p. 33 (adult male); Strickl. P. Z. S. 1846, p. 100.

*Phyllornis malabaricus* apud Blyth, J. A. S. Beng. xii. p. 957.

*Phyllornis cochinchinensis* apud Raffles, Trans. Linn. Soc. xiii. p. 309; Blyth, J. A. S. Beng. xiv. p. 565; Moore, Catal. Birds Mus. E. I. Comp. p. 260.

BURONG DAUN of the Malays in Sumatra (Raffles).

The adult male of this species is well figured by Temm. Pl. Col. 512. f. 1, and may be distinguished by having the lores, base of bill, chin, throat and fore-neck black; the head, neck, and surrounding the black of the throat light yellow, somewhat rufescent on the neck; a small short moustachial streak of brilliant smalt-blue at the base of the lower mandible; wings and tail tinged with fine blue, with a verdigris patch on the shoulder of the wing. The young, or female, has the forehead, throat, and region of the eyes green, and a fulvous tinge on the crown only, the wings having the verdigris wing-patch, and, together with the tail, tinged with blue.

98. *PHYLLORNIS MYSTACALIS*, Swainson, 2 $\frac{1}{4}$  Cent. p. 296 (1818) (young).

*Phyllornis malabaricus*, Temm. (nec Gmel.) Pl. Col. 512. f. 2.



*Phyllornis cyanopogon*, apud Blyth, J. A. S. Beng. xiv. p. 564.

*Phyllornis icterocephalus* (Temm.), Bonap. C. G. Av. p. 396.

Lores, base of bill, chin and throat black, with a faint tinge of yellow around them, and having a small-blue moustachial streak; the crown slightly tinged with fulvescent, the rest of the upper parts, with the wings and tail, wholly green, paler beneath. The young or female has the whole upper parts wholly green, the lower pale greenish-yellow, and the moustachial streak light blue.

Query.—Is the bird in Temm. Pl. Col. 484. f. 2. the true *Cochinchinensis*, Gmel.?

99. *IORA SCAPULARIS*, Horsf. Zool. Res. in Java (the female).

*Iora viridissima*, Temm. Bonap. Consp. Gen. Av. p. 397 (the male).

CHITO of the Javanese (Horsf.).

BURONG CAPAS of the Malays (Eyton).

“The male of this species,” according to Mr. Blyth, “has the throat and fore-neck dark green, uniform with the upper parts, and no yellow except on the orbital feathers.”

“This is a bird of social habits, and resorts to the vicinity of human dwellings; indeed, it appears to have retired from the forests, and established itself in the trees and hedges which surround the villages and plantations. The structure of its wings does not enable it to take long-continued excursions, but it shows itself by short and frequent flights between the trees and branches. It is most lively in the middle of the day, when, under a burning sun, the inhabitants uniformly retire to rest; early in the morning, and towards the approach of night, it is rarely perceived; but during the silence prevailing at noon it enlivens the village with the song of *Cheetoo*, *Cheetoo*, which it repeats at short intervals during its sportive sallies between the branches. It feeds on small insects, and its economy is in some measure illustrated by the comparative length and sharpness of the bill, and by the broken and splintery state in which the claws are frequently found. The laminæ, or plates which compose them, are separated, and the sides are marked with small fissures, which appear to be occasioned by incessant use in scraping the bark off trees.”—*Horsfield*.

Obtained at Pinang and Malacca, and those all females.

100. *IORA TYPHIA*.

*Motacilla typhia*, Linnæus (Edw. B. t. 79).

*Ficedula bengalensis*, Briss.

*Motacilla subviridis*, Tickell, J. A. S. Beng. ii. p. 577.

CHAHTUCK of the Bengalese (Hamilton).

101. *ORIOLOUS INDICUS*, Brisson; Jerdon, Ill. Ind. Orn. t. 15; Blyth, J. A. S. Beng. xv. p. 47.

*Oriolus chinensis* et *O. cochinchinensis* of India, Auctorum.

*Oriolus chinensis* apud Raffles.

TIONG ALOU or PUNTING ALOU of the Malays in Sumatra (Raffles).

“Iris greyish-rose; bill reddish-buff; feet greenish-grey.”—*Cantor*.

“Rather a rare bird in India generally, but in the countries eastward of the Bay of Bengal it is generally common; as in Arracan, the Tenasserim provinces, and Malayan peninsula; also in China.”—*Blyth*.

102. *ORIOLOUS XANTHONOTUS*, Horsf. Trans. Linn. Soc. xiii. p. 152 (Zool. Res. in Java).

*Oriolus leucogaster*, Reinw. Temm. Pl. Col. 214 ♂ ♀.

*Oriolus castanopterus*, Blyth, J. A. S. Beng. xi. p. 796 ♀.

ATTAT of the Javanese (Horsf.).

SEPONG RAYATE or SIMPELONG RAIT of the Malays (Eyton).

103. *IRENA MALAYANA*, Moore, Catal. Birds Mus. E. I. Comp. p. 274.

*Irena puella* of the Malay countries, Auctorum. (Horsf. Zool. Res. in Java, ♂ ♀; Temm. Pl. Col. 70. 225. 476.)

BRESSI of the Javanese (Horsf.).

BIANG KAPOOR of the Malays in Sumatra (Raffles).

QUAYANG or KROUING of the Malays (Eyton).

The distinction between the Indian and Malayan *Irena* was first pointed out by Lord Arthur Hay; to the former he gave the name of *I. indica*, but as the specimen described by Latham was from India, the name *puella* will apply to those from the Continent only; the Malayan species is consequently without a name, and the name *malayana* is proposed for it. In the *I. malayana* the under tail-coverts reach quite to the end of the tail; while in *I. puella*, Lath., they are never less than an inch and a quarter short of the tail-tip in the males, and generally an inch and a half in the females.

“In Java,” remarks Dr. Horsfield, “this species inhabits woods and forests, feeding on fruits and wild grains. It is a very rare bird, and confined to a few districts, where it conceals itself on solitary hills, distant from the habitations of man, preferring rather elevated and cool situations. I met with it only in the western parts of the island; once in the province of Banyumas, and a second time on the ridges of hills situated south-west from Buitenzorg. It is also found in the interior of Sumatra and the adjacent islands.”

104. *COPSYCHUS MINDANENSIS*\*.

*Turdus mindanensis*, Gmelin.

*Lanius musicus*, Raffles (excl. syn.).

*Gryllivora magnirostra*, *G. rosea*, et *G. brevirostra*, Swains.

MOORAI or MOORAI KICHOU of the Malays in Sumatra (Raffles).  
Common at Pinang and Malacca.

\* *Copsychus amœnus*, Horsfield, differs from this in having the whole under parts entirely black in the male, and slaty-grey in the female.

## 105. KITTACINCLA MACROURA.

*Turdus macrourus*, Gmel. (Lath. Syn. 111. t. 39; Levaill. Ois. d'Afr. t. 114; Kittl. Kupf. Væg. t. 11. f. 1.)

*Turdus tricolor*, Vieill.

*Grillivora longicauda*, Swains.

*Kittacincla macroura*, Gould, P. Z. S. 1836, p. 7.

SHAMA of the Bengalese (Hamilton).

LARWA of the Javanese (Horsf.).

MURABUTA of the Malays (Eyton).

CHANGCHOOI of the Malays in Sumatra (Raffles).

“The *Shámá* is reputed to be the finest of oriental songsters; besides which it has a considerable propensity to imitation, and one in my possession learned to give the crow of a cock to perfection, also the notes of the *Coël* (*Eudynamis orientalis*), the chatter of a troop of *Saat Bhyes* (*Malacocircus canorus*), &c. Many thousands of these elegant birds are kept in cages in Calcutta, and the universally absurd practice is to darken their cages by wrapping them with several folds of cloth, enough to stifle the luckless captives in this climate, though it must be confessed they sing most vigorously while thus circumstanced, but certainly not more so than mine, which were exposed to the light and air. It is a practice of the rich natives to employ servants to carry about their *Shámás* and other birds, and the number which are thus borne about the streets of Calcutta is astonishing; the poor birds are shut out from all light and air, like Mahomedan ladies enjoying (?) their evening drive, but they nevertheless (*i. e.* the birds) sing forth most lustily and melodiously.”—*Blyth*.

## 106. ZANTHOPYGIA TRICOLOR.

*Muscicapa zanthopygia*, Hay, Madras Journ. (1844) p. 162.

*Muscicapa tricolor*, Hartlaub, Rev. Zool. (1845) p. 406.

*Zanthopygia leucophrys*, Blyth, J. A. S. Beng. (1847) p. 123.

“Colour of the male, deep black above, bright yellow below and on the rump; a large wing-spot, continued along two-thirds of the outer edge of the largest tertiary, also a spot before and over the eye, and the lower tail-coverts pure white; bill dusky-horn or blackish; legs brown. The female differs widely in being of a light olive-green above, tinged with grey, especially on the head; below yellowish-albescent, the feathers of the fore-neck and breast margined with the hue of the upper parts; rump, towards the tail, bright and pure light-yellow; the two great ranges of wing-coverts tipped, and the tertiaries externally margined with white; loreal streak and the lower tail-coverts dull-white; bill dusky above, pale below, and legs pale.

“Length, 5 inches; of wing,  $2\frac{3}{4}$ ths; tail,  $1\frac{3}{4}$ ths; bill to gape,  $\frac{5}{8}$ ths; and tarse, barely  $\frac{5}{8}$ ths of an inch.”

A female only was obtained at Pinang.

107. ERYTHROSTERNA ERYTHACA, Blyth, J. A. S. Beng. 1847, p. 126.

“Closely allied in form and structure to *E. leucura*, Gmel.; *Musc.*

*parva* of India; but the whole throat, breast, and fore-part of the abdomen bright yellowish-ferruginous; two narrow whitish bands across the wing, formed by the tips of the coverts; and the white on the sides of the base of the tail much reduced (as compared with *E. leucura*), occupying only the extreme base of the outermost tail-feathers, and successively increasing in quantity upon the next four; belly and lower tail-coverts pure white; the flanks fulvous-brown; behind the eye a whitish spot; a slight olivaceous tinge on the upper-parts generally, and the tertials margined with whitish.

“Length, nearly 5 inches; of wing  $2\frac{3}{8}$ ths; tail  $1\frac{7}{8}$ ths; bill to gape  $\frac{9}{16}$ ths, and tarse the same.

“The female is probably without the rufous on the under-parts, but would be distinguished from that of *E. leucura* by the narrow whitish bands on the wing, and also by the reduced quantity of white at the base of the tail.”

From Malacca.

#### 108. ORTHOTOMUS LONGICAUDA.

*Motacilla longicauda* et *M. sutoria*, Gmelin; Pennant, Ind. Zool. i. p. 44.

*Sylvia guzuratta*, Lath.

*Orthotomus Bennetti* et *O. lingoo*, Sykes, P. Z. S. 1832, p. 90.

*Orthotomus ruficapilla*, Hutton, J. A. S. Beng. 1833, p. 504.

*Orthotomus sphenurus*, Swains. 2 $\frac{1}{4}$  Cent. p. 343 (1838).

*Orthotomus patia*, Hodgson, Gray's Zool. Misc. 1844, p. 82.

*Sutoria agilis*, Nicholson, P. Z. S. 1851, p. 194.

The Tailor Bird.

TUNTUNI of the Hindoos (Hamilton). PHUTKI, Jerdon.

PATIA (i. e. Leaf-bird), Nepalesé (Hodgs.).

For observations on the habits of this interesting little bird, I must refer the reader to the ‘Catalogue of Birds in the Museum of the East India Company,’ p. 316.

#### 109. ENICURUS FRONTALIS, Blyth, J. A. S. Beng. (1847) p. 156.

“Plumage black, with white lower abdomen, wing-band, rump, and two outermost tail-feathers on each side, the other tail-feathers white-tipped; a triangular frontal crest of white feathers, evidently erectile, those forming the apex being longer than the black coronal feathers they impend. The young have the frontal crest much reduced.” Bill black, legs yellow.

Length, about 7 inches; of wing  $3\frac{1}{2}$ ; tail  $3\frac{5}{8}$ ths; bill to frontal plumes  $\frac{5}{8}$ ths, to gape  $\frac{7}{8}$ ths; tarse 1 inch.

Distinguished from *E. Leschenaulti* by its smaller size, less developed white frontal crest, shorter wings and tail, and smaller feet.

#### 110. CALOBATES SULPHUREA.

*Motacilla sulphurea*, Bechstein.

*Motacilla boarula*, Pennant (nec Linn.).

*Motacilla bistrigata*, Raffles, Trans. Linn. Soc. xiii. p. 312.

*Motacilla xanthoschistos*, Hodgson, Gray's Zool. Misc. (1844) p. 83.





J. Wolf, lith

M & N. Hanhart. Imp<sup>t</sup>

MALACOCICHLA DRYAS. *Gould.*

*Pallenura javensis*, Bonap. C. G. Av. p. 250 (1850).

The Grey Wagtail.

LETTI LETTI of the Malays in Sumatra (Raffles).

111. BUDYTES VIRIDIS.

*Motacilla viridis*, Linn.

*Budytes Beema*, Sykes, P. Z. S. 1832, p. 90.

*Budytes neglecta* et *B. flava*, Jerdon, Madras Journ. xi. p. 9.

*Budytes dubius*, v. *anthoides*, Hodgson, Gray's Zool. Misc. (1844)  
p. 83.

*Budytes fulviventis* et *B. schisticeps*, Hodgson, Gray's Zool. Misc.  
(1844) p. 83.

PILKYA of the Hindoos (Hamilton).

BESSIT of the Javanese (Horsf.).

112. ANTHUS MALAYENSIS, Eyton, P. Z. S. 1839, p. 104.

*Alauda pratensis*, apud Raffles.

*Anthus euonyx*, Cabanis, Cat. Birds Mus. Heine, p. 14 (1850).

The Malayan Pipit.

LANCHA LANCHA or HAMBA PUYU of the Malays in Sumatra  
(Raffles).

Certainly a distinct species from the common *A. rufulus*, Vieill.

[To be continued.]

6. DESCRIPTION OF A NEW BIRD FROM GUATEMALA,  
FORMING THE TYPE OF A NEW GENUS.

BY JOHN GOULD, F.R.S. ETC.

(Aves, Pl. LXXV.)

Genus MALACOCICHLA, Gould.

*Gen. Char.* Bill straight, shorter than the head; culmen keeled, and slightly descending from the middle to the point; tomiae nearly straight; upper mandible slightly notched at the tip; nostrils placed in a deep depression on each side of the base of the bill; rictus destitute of vibrissae; wings semiconcave, moderately long and slightly rounded; first quill very short, the fourth the longest; tarsi somewhat lengthened and with slight or delicate scutellations; middle and hind toes very long; tail moderately long, somewhat concave, and soft to the touch.

This form is closely allied to *Grallaria* and *Chamaeza*, and would appear to unite the members of those genera to those of *Turdus*. It is very elegant, all the parts being admirably proportioned; and the colours harmoniously arranged.

MALACOCICHLA DRYAS. (Pl. LXXV.)

Head, cheeks and ear-coverts jet-black, the feathers of the crown somewhat lengthened; back, wings and tail dark greenish-olive; centre of the throat and under surface pale buffy-yellow, blending

into the olive of the upper surface on the flanks ; the feathers of the breast and upper part of the abdomen tipped with olive ; bill and eyelash orange-red ; legs and feet orange-yellow.

Total length 7 inches ; bill  $\frac{7}{8}$  ; wing  $3\frac{3}{4}$  ; tail  $2\frac{7}{8}$  ; tarsi  $1\frac{1}{2}$  ; middle toe and nail  $1\frac{1}{16}$  ; hind-toe and nail  $\frac{3}{4}$ .

*Hab.* Guatemala.

*Remark.*—In size this bird is rather smaller than the European Redwing, *Turdus Iliacus*.

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December 12, 1854.

R. C. Griffith, Esq. in the Chair.

The following papers were read :—

I. DESCRIPTIONS OF FIFTY-SEVEN NEW SPECIES OF HELICEA,  
FROM MR. CUMING'S COLLECTION.

BY DR. L. PFEIFFER.

1. *HELIX AMAZONICA*, Pfr. *H. testa umbilicata, depressa, solida, superne confertim undulato-plicata et subgranulata, fulva, ad suturam et carinam rufo-maculata ; spira vix elevata, obtusa ; anfract. 5½ parum convexis, regulariter accrescentibus, ultimo non descendente, periphæria subacute carinato, basi inflato, confertim radiato-striato, flavescenti-albido, rufo-multi-fasciato ; umbilico angusto, pervio ; apertura parum obliqua, angulato-lunari, intus margaritacea ; perist. breviter reflexo, margine supero fere horizontaliter patente, basali arcuato, columellari in laminam triangularem, fornicatam expanso.*

Diam. maj. 51, min. 43, alt. 21 mill.

*Hab.* Banks of the Amazon.

2. *HELIX AURIS*, Pfr. *H. testa sinistrorsa, umbilicata, depressa, ambitu subauriformi, tenui, oblique confertim striatula, superne vix nitidula, isabellina ; spira vix elevata, obtusa ; sutura lineari, minutissime crenulata ; anfract. 4½ vix convexis, rapide accrescentibus, ultimo non descendente, periphæria subangulato, basi tumido, nitidiorè ; apertura diagonali, subtetragono-rotundata ; perist. simplice, marginibus subconniventibus, externo recto, basali subincrassato, albo, juxta umbilicum angustum, pervium triangulatim reflexo.*

Diam. maj. 47, min. 37, alt. 22 mill.

*Hab.* Koondah Mountains near Calicut (*Pirrie*).

3. *HELIX INÆQUALIS*, Pfr. *H. testa late umbilicata, depressa, solida, oblique rugoso-plicatula, lineis spiralibus impresso-punctatis, distantibus sculpta, nitidula, fusco-lutea, castaneo irregulariter strigata, interdum fascia 1 latiuscula nigra infra*



*medium ornata; spira vix elevata; anfract. 5 parum convexis, sensim accrescentibus, ultimo non descendente, peripheria subangulato, basi subplanato, nitidior, radiato-striato; umbilico conico,  $\frac{1}{4}$  diametri subæquante; apertura parum obliqua, lunato-rotundata, intus albo-callosa; perist. recto, marginibus subconvergentibus; dextro simplice, leviter antrorsum arcuato, basali et columellari subincrassatis.*

Diam. maj. 22, min.  $19\frac{1}{2}$ , alt. 9 mill.

*Hab.* Isle of Pines, Australian Seas (*Macgillivray*).

4. *HELIX COSTULIFERA*, Pfr. *H. testa umbilicata, depressa, tenui, subconferte arcuato-costata, diaphana, pallide cornea, ad suturam castaneo-maculata, cæterum oblique rufo-strigata; spira vix elevata; sutura profunda; anfract. 5 parum convexis, sensim accrescentibus, ultimo non descendente, depresso, peripheria obsolete subangulato, basi planiusculo; umbilico conico,  $\frac{1}{4}$  diametri subæquante; apertura diagonali, subquadrato-rotundata; perist. simplice, recto, marginibus subconvergentibus, dextro antrorsum arcuato, columellari brevi, subverticali.*

Diam. maj.  $6\frac{1}{2}$ , min. 5, alt. 2 mill.

*Hab.* Isle of Pines, Australian Seas (*Macgillivray*).

5. *HELIX PINICOLA*, Pfr. *H. testa umbilicata, depressa, tenui, confertim arcuato-plicata, haud nitente, corneo-lutea, ad suturam castaneo-maculata, cæterum strigis angulosis picta; spira plana; anfract. 5 convexis, sensim accrescentibus, ultimo non descendente, terete; umbilico  $\frac{1}{3}$  diametri æquante, cyathiformi; apertura parum obliqua, lunari; perist. simplice, recto, marginibus vix convergentibus, dextro arcuatim introrsum dilatato, columellari vix patente.*

Diam. maj.  $7\frac{1}{2}$ , min.  $6\frac{1}{2}$ , alt. 3 mill.

*Hab.* Isle of Pines, Australian Seas (*Macgillivray*).

6. *HELIX SUBRUDIS*, Pfr. *H. testa umbilicata, depressa, solidula, oblique subruditer striata striisque spiralibus confertis, sub lente decussata, opaca, albida, fascia lata violaceo-fusca ad suturam, nonnullisque obsolete cincta; spira depresso conoidea, apice obtusula, cornea; anfract. 5 convexiusculis, sensim accrescentibus, ultimo terete, non descendente; umbilico mediocri, fere  $\frac{1}{4}$  diametri æquante; apertura parum obliqua, lunato-rotundata; perist. simplice, recto, marginibus convergentibus, columellari breviter patente.*

Diam. maj.  $17\frac{1}{2}$ , min. 15, alt. 9 mill.

*Hab.* — ?

7. *HELIX LÆTA*, Pfr. *H. testa angustissime sed pervie umbilicata, subturbinata, solidiuscula, striolis irregularibus obliquis subgranulata, parum nitente, lutescenti-alabastrina; spira conoidea, apice acutiuscula; sutura marginata; anfract. 6 vix convexiusculis, lente accrescentibus, ultimo non descendente, subacute ruguloso-carinato, basi inflato; apertura parum obliqua,*

*angulato-lunari, intus margaritacea; perist. recto, obtuso, marginibus remotis, columellari superne in laminam brevem triangularem dilatato.*

Diam. maj. 35, min. 29, alt. 18 mill.

*Hab.* —? ?

8. **HELIX BOGOTENSIS**, Pfr. *H. testa umbilicata, sublenticiformi, solida, acute carinata, striata, sub lente minutissime granulata, nigro-castanea; spira brevissima, obtusa; sutura lineari, submarginata; anfract.  $4\frac{1}{2}$  planulatis, ultimo antice tumido, fere rectangule deflexo, supra et infra carinam profunde scrobiculato, basi circa umbilicum angustum, pervium convexo; apertura perobliqua, rhombeo-auriformi; perist. continuo, albo, crasso, undique soluto et reflexo, margine supero arcuato, intus tuberculo triangulari munito, parietali flexuoso, laminam validam linguæformem emittente, basali medio subangulatim descendente, latere sinistro tuberculis 2 inæqualibus, dextro plicis 2 inæqualibus, in tuberculo elevato positus munito.*

Diam. maj. 37, min. 33, alt. 14 mill.

*Hab.* Santa Fé de Bogota.

9. **HELIX ELLIPSOSTOMA**, Pfr. *H. testa anguste et semiobtecte umbilicata, conoidea, tenui, striata et sub lente minutissime granulata, fusca; spira conoidea, subacuminata; sutura lineari, submarginata; anfract. 5 planiusculis, sensim accrescentibus, ultimo acute carinato, antice subito deflexo, basi parum convexo, antice triscrobiculato; apertura fere horizontali, elliptico-rhombea, dente lamellæformi, libero, longe intrante coarctata; perist. continuo, albo, margine parietali erecto, supero breviter expanso, basali reflexo, medio subangulatim descendente, parte sinistra tuberculo unico, dextra plicis 2 divergentibus, basi junctis munito.*

Diam. maj. 20, min.  $17\frac{1}{2}$ , alt. 9 mill.

*Hab.* Santa Fé de Bogota.

10. **HELIX ANNATONENSIS**, Pfr. *H. testa umbilicata, depressa, tenuiuscula, sublævigata, nitida, pellucida, corneo-cerea; spira vix elevata; sutura impressa; anfract. 5 convexiusculis, regulariter accrescentibus, ultimo non descendente, peripheria rotundato, basi parum convexo; umbilico conico,  $\frac{1}{4}$  diametri paulo superante; apertura obliqua, lunari; perist. simplice, recto, margine dextro antrorsum subdilatato, columellari leviter arcuato.*

Diam. maj.  $10\frac{1}{2}$ , min. 9, alt. 4 mill.

*Hab.* Isle of Annaton or Aneiteum, New Hebrides (*Macgillivray*).

11. **HELIX CIMEX**, Pfr. *H. testa umbilicata, discoidea, tenui, subtiliter capillaceo-striata, haud nitente, pallide cornea; spira planiuscula; anfract. 5 convexiusculis, lente accrescentibus, ultimo non descendente, terete; umbilico perspectivo,  $\frac{1}{3}$*

*diametri subæquante; apertura parum obliqua, parva, rotundato-lunari; perist. simplice, recto, marginibus convergentibus.*  
 Diam. maj. 3, min.  $2\frac{1}{2}$ , alt.  $1\frac{1}{3}$  mill.  
*Hab.* Lord Howe's Island. (*Macgillivray.*)

12. *HELIX SINGULARIS*, Pfr. *H. testa sinistrorsa, perforata, trochiformi, solidiuscula, peroblique striata, epidermide fulvofusca induta; spira subconcavo-conica, apice acutiuscula; anfract.  $6\frac{1}{2}$  convexiusculis, ultimo subacute carinato, antice vix descendente, basi convexiore; apertura perobliqua, transverse truncato-ovali; perist. albo, marginibus vix convergentibus, externo expanso, columellari superne in laminam triangularem reflexo.*

Diam. maj. 9, min. 7, alt. 7 mill.

*Hab.* Isle of Aneiteum, New Hebrides. (*Macgillivray.*)

13. *HELIX VALLICOLA*, Pfr. *H. testa perforata, depressa, lævigata, nitida, pellucida, fusco-cornea; spira vix elevata; sutura impressa, submarginata; anfract. 5 vix convexiusculis, sensim accrescentibus, ad suturam striatulis, ultimo non descendente, periphæria rotundato, basi albido; apertura subverticali, lunari; perist. simplice, recto, marginibus vix convergentibus, columellari declivi, superne reflexo.*

Diam. maj. 12, min.  $10\frac{1}{2}$ , alt. 5 mill.

*Hab.* Koondah Mountains, India. (*Pirrie.*)

14. *HELIX CONSUL*, Pfr. *H. testa subclausæ perforata, depressa, tenui, levissime striatula et sub lente striis confertis spiralibus sculpta, lucida, fusco-cornea; spira brevissime conoideo-elevata; sutura marginata; anfract. 6 convexiusculis, regulariter accrescentibus, ultimo non descendente, rotundato, basi medio subexcavato; apertura subverticali, rotundato-lunari; perist. simplice, recto, marginibus vix convergentibus, dextro perarcuato, columellari declivi, superne anguste reflexo.*

Diam. maj.  $20\frac{1}{2}$ , min. 18, alt. 10 mill.

*Hab.* Sarawak, Borneo.

15. *HELIX AGLAIA*, Pfr. *H. testa subclausæ perforata, depressa, tenui, lævigata, nitidissima, pellucida, fulvo-succinea; spira vix elevata, vertice subtili; sutura linea rufescente marginata; anfract. 6 convexiusculis, lente accrescentibus, ad suturam plicatulis, ultimo non descendente, rotundato, basi medio excavato; apertura parum obliqua, regulariter lunari; perist. simplice, recto, marginibus distantibus, columellari superne subcalloso, anguste reflexo.*

Diam. maj. 13, min. 11, alt. 6 mill.

*Hab.* Sarawak, Borneo.

16. *HELIX TOMENTOSA*, Pfr. *H. testa umbilicata, globoso-depressa, tenui, superficie quasi tomentosa, cinnamomea; spira brevissime conoidea, vertice obtuso; anfract. 5 convexis, cele-*

*riter accrescentibus, ultimo non descendente, basi inflato, circa umbilicum angustum, pervium compresso; apertura vix obliqua, irregulariter rotundato-lunari, intus pallidior, nitida; perist. carneo-labiato, expanso et reflexiusculo, marginibus convergentibus, dextro regulariter arcuato, subangulatim cum columellari fornicato-reflexo juncto.*

Diam. maj. 16, min.  $13\frac{1}{2}$ , alt. 9 mill.

*Hab.* Sarawak, Borneo.

17. *HELIX INFANS*, Pfr. *H. testa subperforata, conoideo-depressa, solidula, lævigata, nitida, albida; spira brevissime conoidea; sutura impressa, distincte marginata; anfract. 5 convexiusculis, sensim accrescentibus, ultimo non descendente, convexiore; apertura obliqua, irregulariter lunari; perist. simplice, recto, rufulo-limbato, marginibus remotis, columellari declivi, superne subincrassato.*

Diam. maj.  $5\frac{2}{3}$ , min. 5, alt. 3 mill.

*Hab.* Sarawak, Borneo.

18. *BULIMUS SPECIOSUS*, Pfr. *B. testa anguste perforata, ovata, solidula, longitudinaliter plicata, minutissime granulata et oblique malleata, olivaceo-fusca, maculis rufis adspersa; spira brevi, conica, obtusula; sutura subrenulata, pallida; anfract. 4 modice convexis, ultimo  $\frac{2}{3}$  longitudinis fere formante, basi rotundato; columella leviter plicata, albida; apertura parum obliqua, acuminato-ovali, intus plicata, cærulescente, nitidissima; perist. fusco-aurantiaco, undique subincrassato, expanso et revoluto, marginibus callo pellucido junctis, columellari dilatato.*

Long. 38, diam. 30 mill.

*Hab.* Sierra Nevada de S. Marta. (Schlim.)

19. *BULIMUS JUCUNDUS*, Pfr. *B. testa subrimata, ovato-conica, tenui, plicatula et undique granulata, diaphana, parum nitente, fulva, saturatius strigata, ad suturam maculis castaneis et luteis alternantibus picta; spira conica, obtusula; anfract.  $4\frac{1}{2}$  convexiusculis, ultimo descendente, spiram vix superante, basi rotundato; columella albida, compresse torto-plicata; apertura parum obliqua, ovali, intus carnea, nitida; perist. breviter expanso, obtuso, pallide roseo, margine columellari superne subdilatato, appresso.*

Long. 31, diam. 15 mill.

*Hab.* Antioquia, New Granada. (Schlim.)

20. *BULIMUS TAQUINENSIS*, Pfr. *B. testa subperforata, ovato-oblonga, solidula, longitudinaliter minute striata et malleata, sub epidermide fusco-olivacea strigis obliquis indistinctis rufis picta; spira convexo-conica, obtusula; anfract. 4 modice convexis, ultimo spira paulo longiore, basi rotundato; columella leviter plicata; apertura subverticali, acuminato-ovali, intus*

*margaritacea*; *perist. subincrassato, carneo, margine dextro revoluto, columellari subdilatato, horizontaliter patente et reflexo.*

Long. 40, diam. 18 mill.

*Hab.* Taquina, Sierra Nevada de S. Marta; 9000' elevation. (Schlim.)

21. *BULIMUS OTOSTOMUS*, Pfr. *B. testa perforata, oblongo-subfusiformi, solidula, longitudinaliter plicato-striata, alba, strigis latis, nigricanti-castaneis, interruptis et confluentibus variegata; spira conica, obtusa; sutura substrangulata; anfract. 5 convexiusculis, ultimo spira brevior, basi attenuato, subcompresso; columella valide et prominenter torto-plicata, atroviolacea; apertura subverticali, auriformi, basi subangulata, effusa; perist. albo, reflexo, margine dextro superne perarcuato, recedente, columellari superne dilatato, subappresso.*

Long. 31, diam. 13 mill.

*Hab.* Venezuela.

22. *BULIMUS INTERMEDIUS*, Pfr. *B. testa perforata, elongato-conica, solidula, oblique striatula et puncturata, nitida, alba; spira conica, obtusula; sutura levi, simplice; anfract. 6 planiusculis, ultimo  $\frac{3}{4}$  longitudinis subæquante, infra medium subangulato, basi turgido; columella leviter plicata, subrecedente; apertura obliqua, truncato-ovali; perist. sublato expanso, reflexiusculo, marginibus callo tenui junctis, columellari plano, dilatato, triangulati.*

Long. 34, diam. 16 mill.

*Hab.* Ceylon. (Thwaites.)

23. *BULIMUS LUSORIUS*, Pfr. *B. testa vix perforata, subfusiformi-oblonga, tenui, lævigata, carneo-albida, strigis sparsis undulatis castaneis ornata; spira convexo-conica, acutiuscula; sutura indistincte marginata; anfract. 5½ convexiusculis, ultimo spira paulo brevior, basi attenuato; columella subcompressa, torto-plicata, recedente; apertura parum obliqua, ovali, strigis intus intensioribus; perist. tenui, margine dextro superne curvato, tum late expanso, columellari reflexiusculo.*

Long. 25, diam. 10 mill.

*Hab.* Banks of Amazon, Brazils.

24. *BULIMUS ANTIOQUIENSIS*, Pfr. *B. testa breviter et profunde rimata, ovato-pyramidata, solidula, minute malleata, nitidula, alba, strigis irregularibus pallide violaceis, rectis vel angulosis ornata; spira elongato-conica, apice lutescente, acutiuscula; anfract. 6 convexiusculis, ultimo spiram vix superante, rotundato; columella superne subplicata, rubella; apertura vix obliqua, oblique truncato-oblonga; perist. tenui, pallide vitellino, undique subæqualiter late expanso.*

Long. 30, diam. 13 mill.

*Hab.* Province of Antioquia, New Granada. (Schlim.)

25. *BULIMUS ADUMBRATUS*, Pfr. *B. testa subobtectè perforata,*

*ovato-conica, solidula, lævigata, albido et roseo adumbrata, strigis distantibus roseo-fuscis et punctis sparsis pellucidis signata; spira conica, apice acuta, nigra; anfract. 6 vix convexiusculis, ultimo spira paulo brevior, basi rotundato, fascia 1 castanea notato; columella subverticali; apertura obliqua, oblongo-ovali; perist. simplice, recto, margine columellari papyraceo, fornicatim reflexo, subadnato.*

Long. 20, diam.  $9\frac{1}{2}$  mill.

*Hab.* Ceylon.

26. *BULIMUS PROLETARIUS*, Pfr. *B. testa compresse umbilicata, oblongo-turrita, solidula, sub lente minutissime granulata, nitidula, corneo-fusca; spira elongata, obtusula; anfract. 7 convexis, ultimo  $\frac{1}{3}$  longitudinis vix superante, antice subascendente, basi subcompressa; apertura vix obliqua, oblonga; perist. albo-labiato, marginibus approximatis, dextro expanso, superne perarcuato, columellari dilatato, patente.*

Long. 15, diam. 6 mill.

*Hab.* Ceylon.

27. *BULIMUS LANCEOLATUS*, Pfr. *B. testa imperforata, turrita, solidula, longitudinaliter subarcuato-striata, diaphana, albido-straminea; spira elongata, acutiuscula; sutura levi, crenulata; anfract. 13 subplanis, ultimo  $\frac{2}{7}$  longitudinis formante, basi vix attenuato; columella superne subtorta, tum stricta; apertura parum obliqua, acuminato-ovali, basi subangulata; perist. simplice, recto, margine columellari brevissime reflexo.*

Long. 52, diam. 14 mill.

*Hab.* Natal. (*Plant.*)

28. *BULIMUS HYALOIDEUS*, Pfr. *B. testa anguste umbilicata, ovato-conica, tenui, irregulariter striatula, subhyalina; spira regulariter conica, apice acutiuscula; anfract. 5 convexis, ultimo spira paulo brevior, basi rotundato; apertura parum obliqua, rotundato-ovali; perist. simplice, acuto, marginibus conniventibus, dextro recto, perarcuato, columellari arcuato, subpatente.*

Long.  $12\frac{1}{2}$ , diam.  $7\frac{1}{2}$  mill.

*Hab.* Mendez, Andes of New Granada.

29. *BULIMUS PRINGI*, Pfr. *B. testa anguste umbilicata, conica, solida, irregulariter striata et punctata, cretacea, fascia fusca basali plerumque ornata, vel corneo-marmorata; spira regulariter conica, acutiuscula; anfract. 7 convexis, ultimo  $\frac{1}{3}$  longitudinis non attingente, rotundato, peripheria obsolete angulato; apertura obliqua, fere circulari; perist. simplice, marginibus conniventibus, dextro perarcuato, columellari substricto, superne dilatato, patente.*

Long. 8, diam. 5 mill.

*Hab.* Peniche. (*Pring.*)

30. **BULIMUS LORICATUS**, Pfr. *B. testa sinistrorsa, subimperfurata, ovato-pyramidata, solida, confertim striata, albido-fulva, strigis et maculis fuscis marmorata; spira convexo-conica, acutiuscula; anfract. 7-8 convexiusculis, ultimo  $\frac{2}{5}$  longitudinis subæquante, leviter malleato; columella subverticali, superne subplicata; apertura obliqua, sinuato-semiovali, intus nitida, pallide rosea; perist. incrassato et breviter expanso, albo, marginibus callo crasso, albo junctis, externo subsinuato, columellari dilatato, reflexo, subadnato.*

Long. 62, diam. 26 mill.

Hab. — ?

31. **BULIMUS CÆSAR**, Pfr. *B. testa imperforata, globoso-conica, tenui, sublævigata, sub epidermide decidua, fulva alba; spira conoidea, apice obtusula; anfract.  $5\frac{1}{2}$  modice convexis, ultimo spiram subæquante; columella fere verticali, plana, alba, truncato-dentata; apertura subdiagonali, lunato-rotundata, intus alba; perist. albo, breviter expanso, margine dextro superne antrosum dilatato.*

Long. 46, diam. 33 mill.

Hab. Philippine Islands.

32. **PARTULA NITENS**, Pfr. *P. testa subperforata, conico-ovata, ventrosa, tenuiuscula, longitudinaliter subtilissime striata, nitente, diaphana, fulvo-fusca, superne obsolete, basi late luteo-fasciata; spira conica, acutiuscula; sutura levi, albida; anfract. 5 vix convexiusculis, ultimo spiram subæquante, basi rotundato; apertura vix obliqua, acuminato-ovali; perist. albo, margine dextro superne subrepando, mediocriter expanso, columellari dilatato, subformicatum patente.*

Long. 17, diam. 10 mill.

Hab. — ?

33. **SPIRAXIS BISTORTA**, Pfr. *Sp. testa imperforata, turrata, tenuiuscula, leviter arcuato-striata, nitida, pellucida, olivaceo-cornea; spira elongata, subrectilineari, obtusa; sutura levi, obsolete crenulata; anfract. 11 planiusculis, ultimo  $\frac{1}{4}$  longitudinis formante, basi attenuato, pallido; columella plicis 2 filiformibus, tortis munita; apertura obliqua, ovali-oblonga; perist. simplice, recto.*

Long. 38, diam. 8 mill.

Hab. — ?

34. **ACHATINA VESTITA**, Pfr. *A. testa subfusiformi-turrata, tenui, longitudinaliter confertim plicato-striata, alba, epidermide fulvida, squamosa vestita; spira turrata, superne nuda, obtusa; sutura levi, dense crenulata; anfract. 8 planiusculis, ultimo spira paulo brevior, basi subattenuato; columella arcuata, subtorta, transverse truncata; apertura parum obliqua,*

*acuminato-ovali, intus albida; perist. simplice, margine dextro leviter arcuato.*

Long. 75, diam. 31 mill.

*Hab.* Natal (*Plant*).

35. *ACHATINA NATALENSIS*, Pfr. *A. testa ovato-conica, solidula, albida, epidermide straminea induta; spira regulariter conica, obtusa; anfr. 7½ convexiusculis, summis minutissime, sequentibus distinctius undulato-granulatis, ultimo spiram subæquante, striato, prope suturam striis paucis spiralibus decussato; columella arcuata, subtorta, inflata, anguste truncata; apertura vix obliqua, acuminato-ovali; perist. simplice, tenui.*

Long. 62, diam. 28 mill.

*Hab.* Natal (*Plant*).

36. *ACHATINA AURORA*, Pfr. *A. testa oblongo-ovata, solida, sublævigata, fulvida, strigis sparsis, saturate castaneis variegata; spira conica, obtusa; sutura marginata; anfract. 6 convexiusculis, ultimo spiram subæquante; columella perarcuata, purpurea, basi late truncata; apertura parum obliqua, sinuato-ovali, intus lilaceo-rosea, nitida; perist. simplice, fusco-limbato, marginibus callo roseo intrante junctis.*

Long. 59, diam. 28 mill.

*Hab.* Natal.

37. *ACHATINA LÆVIGATA*, Pfr. *A. testa turrito-oblonga, solidula, lævigata, nitida, lutescenti-cerea; spira elongata, apice obtusa; anfract. 6 vix convexiusculis, sensim accrescentibus, ultimo ⅓ longitudinis subæquante, basi rotundato, antice striolato; columella callosa, subtorta, oblique truncata; apertura obliqua, acuminato-ovali, intus margaritacea; perist. simplice, acuto.*

Long. 17, diam. 6 mill.

*Hab.* — ?

38. *ACHATINA CAPILLACEA*, Pfr. *A. testa turrita, tenui, sub lente capillaceo-striata, nitida, pellucida, virenti-cornea; spira elongata, apice obtusula; anfract. 7½ convexis, ultimo ⅓ longitudinis vix æquante, periphæria obsolete angulato; apertura vix obliqua, sinuato-ovali; columella arcuata, oblique truncata; perist. simplice.*

Long. 9, diam. 4 mill.

*Hab.* Ceylon (*Thwaites*).

39. *ACHATINA CHINENSIS*, Pfr. *A. testa oblongo-turrita, tenui, sub lente capillaceo-striata, nitida, pellucida, cerceo-hyalina; spira elongata, apice obtusula; anfract. 6 modice convexis, ultimo ⅓ longitudinis æquante, basi subattenuato; apertura subverticali, oblonga; columella callosa, subtorta, basi fere verticaliter truncata; perist. simplice.*

Long. 7, diam. 2½ mill.

*Hab.* Shang Hai, China (*Fortune*).



40. ACHATINA ALBERSI (GLANDINA), Pfr. *A. testa ovato-oblonga, tenui, longitudinaliter confertim striata, pellucida, pallide carnea; spira mediocri, conica, obtusa; sutura subsimplice; anfract. 5½-6 convexiusculis, ad suturam distinctius striatis, ultimo spira paulo longiore, basi attenuato; columella substricte descendente, abrupte truncata; apertura subverticali, sinuato-semiovali; perist. simplice, acuto, margine dextro leviter arcuato.*

Long. 30, diam. 12 mill.

Hab. Gulf of California.

41. PUPA PIRRIEI, Pfr. *P. testa flexuose rimata, subcylindrica, solidula, nitidula, diaphana, albido-cerea; spira elongata, sursum vix attenuata, apice obtusa; anfract. 7½ lente accrescentibus, vix convexiusculis, hinc inde varicosis, superioribus levigatis, 2 ultimis capillaceo-striatis, ultimo ¼ longitudinis subæquante, basi gibboso-compresso et leviter scrobiculato; apertura verticali, truncato-oblonga, plicis 2 columellaribus profundis tertiaque bicruri magna, longe intrante, margines peristomatis jungente coarctata; perist. albo, expanso, intus calloso, margine dextro intus subtuberculifero.*

Long. 10, diam. 3 mill.

Hab. Koondah Mountains, near Calicut (Pirrie).

42. PUPA ALBERSI, Pfr. *P. testa flexuose rimata, subperforata, oblonga, solidula, suboblique confertim costulata, opaca, alba; spira sursum dilatata, in conum brevem desinente; sutura crenulata; anfract. 9 planiusculis, ultimo non ascendente, ⅓ longitudinis subæquante, basi subattenuato, biscrobiculato; apertura verticali, plicis 5 coarctata: prima lingueformi juxta insertionem marginis dextri, secunda compressa, prominentiæ umbilicali transverse imposita, tertia dentiformi ad basin, quarta majore et quinta supra illam in margine dextro; perist. albo, sinuoso, undique expanso-reflexiusculo.*

Long. 15, diam. 7 mill.

Hab. Port Natal (Stanger).

43. PUPA INDICA, Pfr. *P. testa breviter rimata, cylindræo-ovata, tenui, levissime striatula, oleoso-micante, fulvo-cornea; spira apice conoideo-rotundata; anfract. 5, superis 3 convexis, penultimo planiore, ultimo ⅓ longitudinis formante, basi compresso, antice biscrobiculato; apertura vix obliqua, oblonga, dentibus 4 coarctata: 1 plicæformi parietali, 1 columellari, 2 profundis, brevibus palatalibus; perist. albido, breviter expanso.*

Long. 2, diam. 1 mill.

Hab. Barrakpore, India.

44. TORNATELLINA KÜSTERI, Pfr. *T. testa subperforata, ovato-turrata, solidula, levissime striatula, subopaca, pallide virente; spira regulariter elongato-conica, apice obtusula; sutura lineari, marginata; anfract. 6 subplanis, ultimo ⅔ longitudinis paulo superante, basi rotundato; apertura obliqua, semiovali; lamella*

*parietali compressa, obliqua, longe intrante; columella acute dentata; perist. simplice, acuto, margine columellari reflexo, patente.*  
 Long. 8 diam. 4 mill.

*Hab.* — ?

45. *CLAUSILIA BORNEENSIS*, Pfr. *Cl. testa subrimata, turrata, solidula, oblique capillaceo-striata, sericea, fusco-cornea; spira regulariter attenuata, apice acutiuscula; sutura profunda; anfract. 11½ convexis, ultimo angustiore, basi rotundato, leviter sulcato; apertura pyriformi, intus fulva; lamellis mediocribus, convergentibus, infera arcuatim ascendente; lunella imperfecta, e pliculis nonnullis brevibus composita; plica palatali 1 supera, subcolumellari inconspicua; perist. continuo, soluto, albo, undique expanso et reflexiusculo.*

Long. 22, diam. 4½ mill.

*Hab.* Sarawak, Borneo.

46. *CLAUSILIA EBURNEA*, Pfr. *Cl. testu profunde rimata, fusiformi-turrata, solida, lævigata, vix nitidula, candida; spira gracili, apice cornea, acutiuscula; anfract. 11½ planiusculis, ultimo antice tumido, juxta rimam gibboso-cristato; apertura subobliqua, rotundato-ovali, intus fulva; lamellis subæqualibus, infera oblique ascendente, simplice; lunella et plica subcolumellari inconspicuis; plica palatali 1 supera; perist. carneo, continuo, libero, undique breviter reflexo.*

Long. 18, diam. 4 mill.

*Hab.* White Mountains, Crete (Spratt).

47. *CLAUSILIA NIVEA*, Pfr. *Cl. testa profunde rimata, ventrosifusiformi, solida, lævigata, alba; spira apice attenuata, cornea, obtusula; anfract. 11 convexiusculis, ultimo juxta suturam subsulcato, antice costulato-striato, basi tumido, juxta rimam arcuato-cristato; apertura vix obliqua, pyriformi-oblonga, intus fulvida; lamella supera compressa, altera callosa, obliqua, dentiformi; lunella et plica subcolumellari inconspicuis; plica palatali 1 supera; perist. continuo, breviter soluto, expanso, margine externo subsinuato, intus subdentato.*

Long. 15, diam. 5 mill.

*Hab.* Eubœa (Spratt).

48. *VITRINA HELICIFORMIS*, Pfr. *V. testa subperforata, depressoglobosa, subheliciformi, tenuissima, membranacea, radiato-rugata et striis spiralibus minutissimis sub lente sculpta, pellucida, virenti-cornea; spira subconoidea, superne erosa, alba; anfract. 5 vix convexiusculis, sensim accrescentibus, ultimo peripheria subangulato, basi inflato; apertura fere diagonali, rotundato-lunari; perist. simplice, marginibus dextro et basali subinflexis, columellari fere verticali, superne subreflexo.*

Diam. maj. 17, min. 14, alt. 10.

*Hab.* Mount Ophir (Dr. Traill).

49. *VITRINA HYALINA*, Pfr. *V. testa depressoglobosa, tenuissima,*

*laevigata, pellucida, virenti-hyalina; spira parum elevata, obtusula; anfract. fere 4 convexiusculis, ultimo ad suturam levem, marginatam distanter radiato-striato, basi rotundato, latiusculo; apertura diagonali, lunato-rotundata; perist. simplice, margine dextro antrorsum subdilatato, columellari perarcuato.*

Diam. maj. 7, min.  $5\frac{1}{2}$ , alt.  $3\frac{1}{2}$  mill.

*Hab.* Moreton Bay, Australia (*Strange*).

50. *SUCCINEA STRIGATA*, Pfr. *S. testa ovato-acuminata, tenui, longitudinaliter striata, vix nitidula, rufo-cornea, strigis angustis pallidis ornata; spira conica, acutiuscula; anfract. 3 convexis, ultimo  $\frac{3}{5}$  longitudinis subæquante, inflato; columella callosa, substricta, parum recedente; apertura obliqua, subregulariter ovuli, vix angulata, præter partem supremam incumbente; perist. simplice, marginibus callo junctis, subæqualiter arcuatis.*

Long.  $9\frac{1}{2}$ , lat.  $6\frac{1}{2}$ , alt. 4 mill.

*Hab.* Port Clarence, Behring's Straits.

51. *SUCCINEA PUNCTATA*, Pfr. *S. testa depresso ovata, longitudinaliter regulariter striata, rugis nonnullis elevatioribus, nitida, pellucida, virenti- vel rufo-fusca, seriebus arcuatis punctorum luteorum ornata; spira brevi, conica; anfract.  $2\frac{1}{2}$ , penultimo convexo, ultimo magno, dilatato; columella subcallosa, leviter arcuata, angulum obtusum formante; apertura obliqua, ovali, incumbente, superne subangulata, intus concolore, punctis pellucetibus; perist. simplice, levissime expansiusculo.*

Long. 17, lat.  $11\frac{1}{2}$ , alt. 7 mill.

*Hab.* Hawaii, Sandwich Islands (*Newcomb*).

52. *SUCCINEA NEWCOMBI*, Pfr. *S. testa subsemiovali, tenui, striis incrementi confertis et rugis nonnullis fortioribus, lineisque spirilibus irregularibus, minutis sculpta, parum nitida, corneo-rubella vel pallide cornea; spira minuta, papillata; anfract. 2, ultimo magno, subinflato, fere totam testam formante; columella subcallosa, regulariter arcuata; apertura parum obliqua, rotundato-ovalis, non omnino incumbente, intus submargaritacea; perist. simplice, marginibus fere symmetricis.*

Long. 12, lat. 10, alt. 6 mill.

*Hab.* Molokai, Sandwich Islands (*Newcomb*).

53. *SUCCINEA TOMENTOSA*, Pfr. *S. testa oblongo-conica, tenui, pilis brevibus tomentosa, non nitente, pellucida, pallide cornea; spira conica, acuta; anfract. 3, secundo convexo, ultimo  $\frac{3}{4}$  longitudinis formante, basi attenuato; columella subcallosa, levissime plicata, arcuata; apertura parum obliqua, acuminato-ovalis, subincumbente; perist. simplice, expansiusculo.*

Long. 8, lat. 5, alt.  $3\frac{2}{3}$  mill.

*Hab.* New Zealand (*Strange*).

54. *SUCCINEA CEYLANICA*, Pfr. *S. testa ovato-conica, solidula, distincte striata, diaphana, hyalino-albida, plerumque luto obducta;*

*spira conica, submucronata; anfract. 3 cum apice punctiformi, superis convexis, ultimo  $\frac{2}{5}$  longitudinis formante, basi parum attenuato; columella angulatim a ventre anfractus penultimi recedente, substricta; apertura obliqua, angulato-ovali; perist. simplice, margine dextro regulariter arcuato.*

Long.  $7\frac{1}{2}$ , lat. 4, alt.  $3\frac{1}{2}$  mill.

Hab. Ceylon (Layard).

55. *SUCCINEA BACONI*, Pfr. *S. testa semiovato-acuminata, tenuissima, longitudinaliter subundulato-plicata, pellucida, nitida, pallide cornea; spira parvula, submucronata; anfract. 2 cum apiculo punctiformi, penultimo convexo, ultimo  $\frac{5}{8}$  longitudinis formante, basi subattenuato; columella filosa, superne subplicata; apertura obliqua, subregulariter acuminato-ovali, non incumbente; perist. simplice, margine dextro antrorsum arcuato.*

Long. 15, lat. 10, alt. 6 mill.

Hab. Calcutta (Bacon).

56. *SUCCINEA VITREA*, Pfr. *S. testa ovato-conica, tenuiuscula, confertim plicato-striata, nitida, albo-hyalina; spira conica, subpapillata; anfract. 3 convexis, ultimo  $\frac{2}{3}$  longitudinis formante, inflato, basi attenuato; columella filosa, arcuata; apertura parum obliqua, incumbente, ovali, superne vix angulata; perist. simplice, marginibus callo opaco junctis, subsymmetricis.*

Long. 12, lat. 8, alt. 5 mill.

Hab. Calcutta (Bacon).

57. *SUCCINEA DAUCINA*, Pfr. *S. testa ovato-conica, solidula, leviter striatula, oleoso-micante, lutescenti-rubella; spira conica, apice subpapillata; anfract. 3, penultimo convexo, ultimo  $\frac{3}{5}$  longitudinis formante, basi parum attenuato; columella filari, leviter arcuata; apertura obliqua, incumbente, acuminato-ovali, basi lata; perist. simplice, marginibus subsymmetricis.*

Long.  $9\frac{2}{3}$ , lat. 6, alt.  $4\frac{1}{2}$  mill.

Hab. Calcutta (Bacon).

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## 2. DESCRIPTIONS OF THREE NEW SPECIES OF PYTHIA.

BY DR. L. PFEIFFER.

1. *PYTHIA MACGILLIVRAYI*, Pfr. *P. testa subperforata, elliptico-acuminata, tenuiuscula, sublævigata, nigra; spira elongata, concaviusculo-conica, acuta; varicibus albis, castaneo submaculatis; anfract. 9 planis, ad suturam arcuato-striatis, antice valde descendentibus, ultimo spira vix longiore, basi attenuato; apertura subverticali, angustissima; dentibus parietalibus 2, superiore parvo, trigono, altero compresso, intrante, simplice; plica columellari tenui, compressa, arcuatim ascendente; perist. acuto, margine dextro superne recto, infra medium expansiusculo, intus*

*dentibus 2 subæqualibus munito, columellari dilatato, umbilicum fere vel omnino claudente.*

Long. 24, diam. max. 11, min. 9 mill.

*Hab.* Isle of Aneiteum, New Hebrides (*Macgillivray*).

2. *PYTHIA OVATA*, Pfr. *P. testa profunde rimata vel aperte umbilicata, compresse ovato-acuminata, solidula, striatula, pallida, livido-nebulosa et maculis castaneis marmorata; spira convexiusculo-conica, acuta; varicibus albis, macula æquilata nigro-castanea, suturam non attingente, marginatis; anfract. 10 planiusculis, antice descendentibus, ad suturam arcuato-plicatis, ultimo spira paulo longiore, basi subcompresso; apertura verticali, intus albida; dentibus parietalibus 2, superiore triangulari, bicruri, altero valido, simplice, oblique descendente; plica columellari compressa, obliqua; perist. pallide livido, marginibus callo tenui, nitido junctis, dextro superne subsimplice, tum incrassato, reflexo, intus callo albo, inæqualiter 5-dentato munito, columellari per-dilatato, patente.*

Long. 31, diam. max. 26, min.  $23\frac{1}{2}$  mill.

*Hab.* — ?

3. *PYTHIA CELEBENSIS*, Pfr. *P. testa anguste umbilicata, ovato-conica, solida, irregulariter striata, subunicolore saturate fulva; spira conica, acuta; varicibus fulvo-luteis; anfract. 10 planiusculis, antice descendentibus, ad suturam valide arcuato-plicatis, ultimo spiram subæquante, basi subcompresso; apertura sub-obliqua, intus livido-carnea, nitida; dentibus parietalibus 2, superiore subtrigono, altero valido, compresso, subobliquo; plica columellari parvula, dentiformi, arcuatim ascendente; perist. livido-limbato, marginibus callo tenuissimo junctis, dextro superne subsimplice, tum breviter expanso et reflexiusculo, intus callo lato, carneo, inæqualiter 5-dentato munito, columellari crasso, sinuoso-patente.*

Long. 33, diam. max. 18, min. 15 mill.

*Hab.* Celebes.

### 3. DESCRIPTIONS OF EIGHTEEN NEW SPECIES OF CYCLOSTOMACEA, FROM MR. CUMING'S COLLECTION.

BY DR. L. PFEIFFER.

1. *CYCLOSTOMA CHINENSE* (CYCLOTUS?), Pfr. *C. testu umbilicata, convexo-depressa, solida, striata, sub epidermide fusciscenti-fulva alba, obsolete fasciata; spira convexa, vix conoidea, apice subtili; anfract. 4 convexis, rapide accrescentibus, ultimo terete; umbilico conico,  $\frac{1}{5}$  diametri occupante; apertura subverticali, circulari, intus margaritacea; perist. continuo, breviter adnato, duplice: interno haud porrecto, externo breviter patente, obtuso.—Operc. — ?*

Diam. maj. 14, min.  $11\frac{1}{2}$ , alt. 8 mill.

*Hab.* Hong Kong, China (*Mr. Fortune*).

2. *CYCLOSTOMA MONTANUM* (CYCLOTUS?), Pfr. *C. testa umbilicata, turbinato-depressa, solida, superne confertim spiraliter lirata, alba, fuscule obsolete maculata et fasciata; spira turbinata, acutiuscula; anfract. 4 convexis, rapide accrescentibus, ultimo non descendente, subtus levigato, in umbilico mediocri, profundo, spiraliter striato; apertura parum obliqua, angulato-rotundata; perist. simplice, recto, breviter adnato, margine columellari reflexiusculo.—Operc. —?*

Diam. maj.  $12\frac{1}{2}$ , min. 10, alt. 8 mill.

*Hab.* Neilgherries.

3. *CYCLOSTOMA BIROSTRE* (CYCLOTUS), Pfr. *C. testa umbilicata, depressa, subdiscoidea, solidula, irregulariter striata, fulvo-lutea, fascia peripherica castanea et superne strigis latis angulatis ornata; spira plana, vertice subtili, vix prominulo; anfract. fere 5 convexiusculis, rapide accrescentibus, ultimo terete, subtus obsolete maculato, antice soluto et tubulo antrorsum curvato munito; umbilico lato, anfractus omnes latiores et convexiores monstrante quam superne; apertura diagonali, circulari; perist. duplice, interno brevi, recto, externo expanso et inflexo, superne in rostrum apertum, anfractus ultimum tangentem, producto.—Operc. album, arctispirum, extus concavum.*

Diam. maj. 26, min. 19, alt. 7 mill.

*Hab.* Sarawak, Borneo.

4. *CYCLOSTOMA PTEROCYCLOIDES* (CYCLOTUS), Pfr. *C. testa umbilicata, depressa, subdiscoidea, solidula, striatula et striis spiralibus sub lente decussata, lutea, strigis angulatis castaneis picta; spira plana, vertice mucronatim prominulo; anfract. 5 rapide accrescentibus, parum convexis, ultimo depresso-rotundato, antice soluto et spiraculo antrorsum vix ascendente munito; umbilico profundo,  $\frac{1}{3}$  diametri superante; apertura diagonali, circulari; perist. duplice, interno vix porrecto, superne leviter emarginato, externo dilatato, rectangule patente, limbo subinflexo, superne subangulatim producto.—Operc. —?*

Diam. maj. 25, min. 19, alt. 7 mill.

*Hab.* —?

5. *CYCLOSTOMA FLORIDUM* (CYCLOPHORUS), Pfr. *C. testa anguste umbilicata, globoso-turbinata, tenuiuscula, oblique levissime striatula, albida, maculis sagittæformibus fuscis, interdum in strigas angulosas confluentibus, conspersa; spira turbinata, acutiuscula, apice sæpe nigro-cornea; anfract. 5 convexis, ultimo rotundato, infra peripheriam fascia castanea, deorsum dissoluta, tæniato; apertura obliqua, subcirculari; perist. simplice, breviter expanso, marginibus callo brevi junctis, sinistro subreflexo.—Operc. —?*

Diam. maj. 30, min. 24, alt. 20 mill.

*Hab.* —?

6. *CYCLOSTOMA EXALTATUM* (CYCLOPHORUS), Pfr. *C. testa*

*umbilicata, globoso-turbinata, tenuiuscula, oblique striata, nigro-castanea, strigis angulosis pallidis notata; spira elevato-turbinata, acutiuscula; anfract. 5 regulariter accrescentibus, convexis, ultimo rotundato, peripheria pallide subfasciato; apertura vix obliqua, subcirculari, intus caeruleo-albida; perist. simplice, albo, marginibus callo brevi junctis, dextro perarcuato, breviter expanso, sinistro supra partem umbilici perangusti fornicatim patente.—Operc. — ?*

Diam. maj. 25, min. 21, alt. 19 mill.

Hab. Hong Kong, China (*Mr. Fortune*).

7. *CYCLOSTOMA SUMATRENSE (CYCLOPHORUS)*, Pfr. *C. testa umbilicata, depresso-turbinata, tenui, spiruliter tenuissime striata, nitidula, fusca, ad suturam maculis alternis castaneis et pallidis tæniata, infra peripheriam fasciis 2 articulatis ornata; spira breviter turbinata, acutiuscula; anfract. 5 rapide accrescentibus, superis convexiusculis, ultimo turgido, peripheria subcarinato; umbilico mediocri, infundibuliformi; apertura obliqua, subcirculari, intus margaritacea; perist. albo, simplice, subcontinuo, breviter adnato, superne et ad dextram late expanso et revoluto, margine sinistro minus dilatato.—Operc. fulvum.*

Diam. maj. 45, min. 34, alt. 23 mill.

Hab. Pedang, Island of Sumatra (*Capt. A. Martin*).

8. *CYCLOSTOMA TÆNIATUM (CYCLOPHORUS)*, Pfr. *C. testa umbilicata, globoso-turbinata, solida, oblique confertim striata, parum nitente, albida, fasciis variis atrofusis interruptis et maculatis tæniata; spira turbinata, acutiuscula; anfract. 5 convexis, ad suturam complanatis, minute maculatis, ultimo turgido, infra peripheriam carina funiformi, nonnullisque fasciis latioribus cincto, basi planiore; umbilico angusto, pervio; apertura obliqua, subcirculari, intus albida, fasciis perlucetibus; perist. simplice, recto, continuo, breviter adnato, superne subangulato, margine dextro antrorsum dilatato, sinistro incrassato, subpatente.—Operc. rubello-fulvum.*

Diam. maj. 28, min. 24, alt. 18 mill.

Hab. Sumatra.

9. *CYCLOSTOMA CEREUM (CYCLOPHORUS ?)*, Pfr. *C. testa perforata, conoideo-globosa, solidula, leviter striata, parum nitente, virenti-cerea; spira conoidea, obtusula; anfract. 4 convexis, ultimo rotundato; apertura parum obliqua, subangulato-circulari; perist. continuo, breviter adnato, margine dextro recto, columellari subincrassato.—Operc. — ?*

Diam. maj.  $6\frac{2}{3}$ , min. 6, alt. 5 mill.

Hab. — ?

10. *CYCLOSTOMA DEPLANATUM (CYCLOPHORUS ?)*, Pfr. *C. testa late umbilicata, depressa, subdiscoidea, solida, confertim striatula, nitida, fusco-lutea vel castanea, fascia unica peripherica, lutea cincta; spira vix prominula, vertice subtili; sutura profunda;*

*anfract. 5 rotundatis, ultimo terete, antice sensim descendente; apertura obliqua, subcirculari, intus alba; perist. continuo, incrassato, expansiusculo, subduplicato, breviter adnato, margine columellari regulariter arcuato.—Operc. —?*

Diam. maj.  $27\frac{1}{2}$ , min. 23, alt. 8 mill.

*Hab.* Koondah mountains, India (*Mr. Pirrie*).

11. *CYCLOSTOMA SEMICLAUSUM (LEPTOPOMA)*, Pfr. *C. testa perforata, globoso-turbinata, tenuiuscula, striis obliquis et spiralibus minute decussata, albida, flammis latis angulosis fusco-viridibus et fasciis inframedianis nonnullis saturatoribus picta; spira elata, turbinata, acutiuscula; anfract. 5 convexis, rapide accrescentibus; apertura obliqua, fere circulari; perist. duplice: interno expansiusculo, incumbente, externo rectangule patente, ad perforationem reflexo, eam fere claudente.—Operc. virentifulum.*

Diam. maj. 13, min. 10, alt. 10 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

12. *CYCLOSTOMA SEHELLARUM (LEPTOPOMA ?)*, Pfr. *C. testa anguste umbilicata, globoso-conica, tenuiuscula, radiato-striata, pluricarinata, fusciscenti-albida; spira turbinata, acutiuscula; anfract. 5 convexis, rapide accrescentibus, ultimo carinis 2-3 majoribus (maxima peripherica, aliis superis) lirisque spiralibus basi confertioribus munito; apertura vix obliqua, subcirculari; perist. simplice, breviter expanso, marginibus approximatis.—Operc. —?*

Diam. maj. 12, min. 10, alt. 10 mill.

*Hab.* Seychelles Islands.

13. *CYCLOSTOMA PÆCILUM (LEPTOPOMA)*, Pfr. *C. testa perforata, turbinata, tenuiuscula, oblique striata, virenti-lutea, flammis albidis et lineis spiralibus nigricantibus ornata; spira turbinata, apice acutiuscula, nigricante; anfract. 5 convexis, sensim accrescentibus, ultimo periphèria rotundato, basi planiusculo, circa perforationem punctiformem excavato; apertura parum obliqua, subcirculari; perist. simplice, recto, marginibus approximatis.—Operc. corneum.*

Diam. maj. 8, min.  $6\frac{2}{3}$ , alt. 6 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

14. *CYCLOSTOMA KIENERI (CYCLOSTOMUS ?)*, Pfr. *C. testa umbilicata, depressa, solida, radiatim conferte striata, superne liris sub 5 carinaformibus munita, parum nitida, rufa, albido-marmorata; spira brevi, subturbinata, apice nigra, acutiuscula; anfract. 5 convexis, celeriter accrescentibus, ultimo antice descendente, juxta suturam subexcavato, periphèria subobtusè carinato, basi lævigato; umbilico profundo,  $\frac{1}{3}$  diametri subæquante; apertura perobliqua, angulato-rotundata, intus ignea; perist. continuo,*



*subrecto, crasso, obtuso, superne angulatim producto, adnato.—*  
*Operc. —?*

Diam. maj.  $19\frac{1}{2}$ , min. 16, alt. 9 mill.

*Hab.* Madagascar.

15. *CYCLOSTOMA GRADATUM* (*CYCLOSTOMUS* ?), Pfr. *C. testa perforata, globoso-conica, solidula, radiato-striata et spiraliter lirata (liris inæqualibus, juxta suturam subtilibus, tum 1-3 validis carinæformibus, reliquis obtusis), pallide lutescente; spira turbinata, gradata, acutiuscula; anfract. 5 angulato-convexis, ultimo basi inflato; apertura parum obliqua, subangulato-circulari; perist. albo, subincrassato, continuo, breviter adnato, vix expansiusculo.—Operc. —?*

Long. 7, diam. 5 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

16. *CATAULUS DUPLICATUS*, Pfr. *C. testa subperforata, fusi-formi-ovata, solida, striata striisque spiralibus obsolete decussata, virescenti-fusca, pallide nebulosa; spira curvilinearis, elongata, apice acutiuscula; sutura levi, marginata; anfract.  $7\frac{1}{2}$  vix convexiusculis, ultimo attenuato, antice subascendente; carina basali compressa, antrorsum vix dilatata; apertura circulari, basi axin vix excedente; perist. aurantiaco, duplice: interno breviter porrecto, basi profunde inciso, externo rectangule patente, basi ad canalem angustum vix protracto.*

Long. 18; diam. 7 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

17. *DIPLOMMATINA MACGILLIVRAYI*, Pfr. *D. testa sinistrorsa, breviter rimata, oblongo-ovata, tenui, diaphana, pallide cornea; spira turgida; anfract. 6 convexis, superis 2 apicem subpapillatum formantibus, sequentibus 2 distanter cordato-costulatis, penultimo latissimo, confertius costulato, ultimo antice ascendente,  $\frac{1}{3}$  longitudinis paulo superante, confertissime costulato, basi rotundato; apertura vix obliqua, subcirculari; perist. duplice: interno appresso, externo breviter et æqualiter expanso.*

Long. 6, diam. 3 mill.

*β. Violaceo-fusca, anfr. ultimo pallide unifasciato.*

*Hab.* Lord Howe's Island, Australian seas (*Mr. Macgillivray*).

18. *DIPLOMMATINA CAPILLACEA*, Pfr. *D. testa sinistrorsa, breviter rimata, ovato-conica, tenui, capillaceo-striata, pellucida, haud nitente, pallide cornea; spira turgida, sursum conica, apice acutiuscula; anfract. 6 convexiusculis, penultimo latissimo, ultimo antice ascendente,  $\frac{1}{3}$  longitudinis paulo superante, basi rotundato; apertura subverticali, circulari; perist. albo, expanso, indistincte duplicato, marginibus callo junctis.*

Long. 5, diam.  $2\frac{2}{3}$  mill.

*Hab.* Lord Howe's Island, Australian seas (*Mr. Macgillivray*).

4. A MONOGRAPH OF THE GENERA REALIA AND HYDROCENA.  
BY DR. L. PFEIFFER.

These two genera are closely allied by the common character of the *ovate, few-whorled, horny operculum*, but they may be separated by the characters of the mouth and columella.

I. REALIA.

Gray, in Proc. Z. S. 1847, p. 182; & 1849, p. 167; Pfr. Consp. Cycl. p. 47; Mon. Pneumonoph. p. 305.

*Liarea*, Gray, Cat. Phaneropneum. Br. Mus. p. 217.

Shell turreted, rather smooth or striated; aperture ovate; peristome continuous, double.

1. REALIA EGEEA, Gray, 1849; Pfr. Mon. Pneum. p. 305.

*Liarea Egea*, Gray, 1852. (New Zealand.)

2. REALIA TURRICULATA, Pfr. *R. testa subperforata, gracili, turrata, solidula, striatula, parum nitente, nigricante, fascia pallida basali notata vel strigis angulosis nigro-castaneis et luteo-albis alternantibus ornata, basi nigricante; spira elongata, apice obtusula; anfract. 7-7½ modice convexis, ultimo ⅓ longitudinis subæquante, basi obsolete subangulato; apertura verticali, angulato-ovali; perist. continuo, duplice: interno breviter porrecto, externo anguste expanso, inflexo.*

Long. 9, diam. 3⅔ mill.

*Hab.* New Zealand.

3. REALIA VENTRICOSA, Hombr. and Jacq. (*Cyclostoma ventricosum*, H. et J. Voy. Pole Sud, Atl. t. 12. f. 34-36?) *R. testa subperforata, turrato-oblonga, tenuiuscula, sub lente confertissime striata, vix nitidula, fusca vel cornea; spira elongata, subventricosa, apice acutiuscula; anfract. 7 convexis, ultimo ⅓ longitudinis subæquante, infra medium obsolete angulato; apertura parum obliqua, ovali; perist. continuo, indistincte duplicato, margine dextro expansiusculo, sinistro strictiusculo, adnato.*

Long. 7, diam. 3 mill.

*Hab.* Taiti (Jacq.); Marquesas Islands (*H. Cuming*).

4. REALIA RUBELLA, Pfr. *R. testa subperforata, turrato-oblonga, solida, lævigata, pallide rubella; spira elongata, superne attenuata, acuminata, sutura profunda; anfract. 8 convexis, quasi strangulatis, ultimo ⅓ longitudinis non attingente, obsolete angulato; apertura vix obliqua, angulato-ovali; perist. continuo, breviter adnato, duplicato: externo subincrassato, patente.*

Long. 8, diam. 3 mill.

*Hab.* Marquesas Islands (*H. Cuming*).

## II. HYDROCENA.

Pfr. in Zeitschr. f. Malak. 1847, p. 112.

*Realia*, Gray, *Cycloph.* Brit. Mus. 1850 (part).

*Hydrocæna*, Shuttl. Diagn. Moll. Nr. 1. p. 11.

Shell imperforate or umbilicate, globose-turbinata, ovate or turreted; aperture ovate or semicircular; peristome simple, straight or expanded, with disjoined margins.

## A. HYDROCENA, Parr.

(Shell imperforate or subperforate; base of the last whorl not keeled; columellar margin rather callous.)

1. HYDROCENA MINUTISSIMA, Sow.; Pfr. in Z. f. M. 1847, p. 112.

*Cyclostoma minutissimum*, Sow.

*Realia minutissima*, Gray.

*Leptopoma?* *minutissimum*, Pfr. Mon. Pneum. p. 118 (Pitcairn Islands).

2. HYDROCENA GUTTA, Shuttl. Diagn. p. 11.

*Realia?* *gutta*, Pfr. Mon. Pneum. p. 305 (Teneriffe).

3. HYDROCENA CATTAROENSIS, Pfr. in Z. f. M. 1847, p. 112.

*Cyclostoma Cattaroense*, Pfr. in Wieg. Arch. 1841, i. p. 225.

*Hydrocena Sirkii*, Parr. in sched.

*Realia Cattaroensis*, Gray, 1850 (Dalmatia).

4. HYDROCENA BRIDGESI, Pfr. *H. testa vix subperforata, ovato-conica, solida, lævigata, daucino-rubra; spira conica, apice acuta; sutura lineari; anfract. 7 planis, ultimo spiram æquante, basi rotundato; apertura vix obliqua, acuminato-ovali, basi subeffusa; perist. simplice, recto, marginibus callo tenuissimo junctis, columellari subreflexo.*

Long.  $10\frac{1}{2}$ , diam. 6 mill.

*Hab.* under stones in damp places, Valdivia (*Bridges*).

5. HYDROCENA SOLIDULA, Pfr. *H. testa subperforata, ovato-conica, solidula, sublævigata, irregulariter erosa, haud nitente, cerea; spira convexo-conica, apice acuta; anfract. 6 subplanis, ultimo spira paulo brevior, obsolete angulato, basi convexiusculo; apertura verticali, angulato-ovali; perist. simplice, recto, margine columellari subincrassato.*

Long. 6, diam. 4 mill.

*Hab.* Lord Hood's Island.

6. HYDROCENA OBLONGA, Pfr. *H. testa subperforata, oblongo-conica, solida, striatula, opaca, fulvo-albida; spira ovato-conica, apice acuta; sutura marginata; anfract. 6 convexiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, convexiore, peripheria filocarinato, juxta perforationem punctiformem subcompressa; apertura verti-*

*cali, angulato-rotundata, intus aurantiaca; perist. simplice, recto, margine columellari calloso, subpatente.*

Long.  $6\frac{1}{2}$ , diam. 3 mill.

*Hab.* Marquesas Islands.

7. HYDROCENA CORNEA, Pfr. *H. testa subperforata, ovato-conica, solidula, lævigata, nitida, fulvo-cornea; spira conica, apice acuta; sutura impressa, submarginata; anfract.  $6\frac{1}{2}$  convexiusculis, ultimo spira paulo brevior, periphæria obsolete angulato, juxta perforationem punctiformem vel clausam subcompresso; apertura obliqua, angulato-ovali, basi subeffusa; perist. subsimplice, margine dextro recto, columellari calloso, subappresso.*

Long. 10, diam. 5 mill.

*Hab.* Borneo and Bashee Island (*Sir E. Belcher*).

8. HYDROCENA ALBESCENS, Pfr. *H. testa subperforata, ovato-conica, solidula, sublævigata, albida vel pallide lutescente; spira convexo-conica, apice acuta; anfract. 6 convexiusculis, ultimo spira paulo brevior, infra medium obsolete subangulato, basi rotundato; apertura subverticali, angulato-ovali; perist. simplice, recto, margine columellari calloso, subappresso.*

Long. 7, diam. 4 mill.

*Hab.* Island of Opara.

9. HYDROCENA OBTUSA, Pfr. *H. testa imperforata, conico-ovata, tenuiuscula, striatula, nitida, fulvo-cornea; spira conica, obtusa; sutura marginata; anfract. 5 planiusculis, ultimo spira paulo longior, ventroso; apertura subverticali, angulato-semiovali; perist. simplice, recto, margine columellari calloso, reflexo, appresso.*

Long.  $6\frac{1}{2}$ , diam. 4 mill.

*Hab.* — ?

10. HYDROCENA BREVICULA, Pfr. *H. testa subimperfecta, globoso-conica, solidula, sublævigata, corneo-fulva; spira convexo-conoidea, acutiuscula; sutura sulco profundo marginata; anfract. sub 6, superis planis, plerumque erosis, penultimo convexo, ultimo spira longior, inflato; apertura subverticali, angulato-semiovali; perist. recto, margine columellari calloso, appresso.*

Long.  $8\frac{1}{2}$ , diam.  $5\frac{1}{2}$  mill.

*Hab.* Singapore.

11. HYDROCENA PYRAMIS, Pfr. *H. testa subperforata, oblongo-conica, solidula, irregulariter rugata, epidermide fulva obducta; spira convexo-conica, acuta; anfract.  $5\frac{1}{2}$  convexiusculis, ultimo  $\frac{2}{5}$  longitudinis subæquante, obsolete angulato, basi planiusculo; apertura vix obliqua, angulato-ovali; perist. simplice, recto, margine columellari recedente, calloso, subappresso.*

Long. 6, diam. 4 mill.

*Hab.* Singapore.

12. HYDROCENA EXSERTA, Pfr. *H. testa subperforata, ovato-*

*turrata, solida, confertim striata, fusculo-cornea; spira elongato-conica, apice acuta; anfract. 6 convexiusculis, subcarinatis (carina ad suturam subeaserta), ultimo  $\frac{2}{5}$  longitudinis formante, periphæria angulato, basi compressiusculo; apertura vix obliqua, acuminato-rotundata; perist. subsimplice, margine dextro expansiusculo, superne leviter repando, columellari calloso, subreflexo.*

Long. 7, diam. 4 mill.

*Hab.* Shanghai, China.

## B. OMPHALOTROPIS, Pfr.

(*Realia*, Gray, 1852.)

(Shell perforated or umbilicated, with a keel round the umbilicus; peristome straight or expanded.)

### 13. HYDROCENA HIEROGLYPHICA, Fér.

*Omphalotropis hieroglyphica*, Pfr. Mon. Pneum. p. 306.

*Hab.* —?

### 14. HYDROCENA PUPOIDES, Ant.

*Omphalotropis pupoides*, Pfr. Mon. p. 307. (Opara.)

### 15. HYDROCENA TEREBRALIS, Gould.

*Omphalotropis terebralis*, Pfr. Mon. p. 307. (Tahiti and Eimeo.)

### 16. HYDROCENA ROSEA, Gould.

*Omphalotropis rosea*, Pfr. Mon. p. 308. (Feejee Islands.)

### 17. HYDROCENA VALLATA, Gould.

*Omphalotropis vallata*, Pfr. Mon. p. 308. (Tonga Tabou.)

### 18. HYDROCENA SCITULA, Gould.

*Omphalotropis scitula*, Pfr. Mon. p. 308. (Tahiti, Eimeo, Manua.)

### 19. HYDROCENA AURANTIACA, Desh.

*Omphalotropis aurantiaca*, Pfr. Mon. p. 309. (Pondicherry.)

20. HYDROCENA EXQUISITA, Pfr. *H. testa perforata, conica, tenui, confertim striata, vix nitidula, sordide fulva; spira elongata, concavo-conica, apice acuta; sutura submarginata; anfract.  $6\frac{1}{2}$  convexiusculis, ultimo spira brevior, periphæria magis minusve distincte carinato, basi acute filocarinato; apertura obliqua, sub-ovali, superne et latere sinistro angulata, basi subeffusa; perist. simplice, recto, margine columellari sinuoso-patente.*

Long. 9, diam. 5 mill.

*Hab.* Lord Howe's Island, Australian Seas (*Macgillivray*).

### 21. HYDROCENA RUBENS, Quoy.

*Omphalotropis rubens*, Pfr. Mon. p. 309. (Isle of France.)

### 22. HYDROCENA EROSA, Quoy.

*Omphalotropis erosa*, Pfr. Mon. p. 310. (Guam.)

23. *HYDROCENA HUAHEINENSIS*, Pfr. *H. testa perforata, elongato-conica, solida, striatula et irregulariter pustulato-punctata, opaca, flavida vel fulvida; spira conica, apice acuta; anfract. 6½, superis planis, penultimo convexiusculo, ultimo 2/5 longitudinis subæquante, basi rotundato, juxta perforationem punctiformem carinato; apertura verticali, angulato-ovali; perist. tenui, margine dextro arcuato, recto, columellari minus arcuato, subpatente.*

Long.  $9\frac{1}{2}$ , diam. 5 mill.

*Hab.* Island of Huaheine.

24. *HYDROCENA DUBIA*, Pfr.

*Omphalotropis dubia*, Pfr. Mon. p. 310. (Opara, Real Llajos.)

25. *HYDROCENA RADIATA*, Pfr. *H. testa perforata, ovato-conica, tenuiuscula, sublævigata, nitida, diaphana, albida, fulvo irregulariter radiata; spira conica, apice acuta; sutura submarginata; anfract. 7 planiusculis, ultimo 2/5 longitudinis subæquante, ventroso, periphæria subangulato, juxta perforationem apertam carinato-compresso; apertura verticali, acuminato-ovali, basi subeffusa; perist. simplice, recto, margine columellari superne subdilato.*

Long.  $7\frac{1}{2}$ , diam. 4 mill.

*Hab.* Borneo.

26. *HYDROCENA MULTILIRATA*, Pfr.

*Omphalotropis multilirata*, Pfr. Mon. p. 311. (Mauritius.)

27. *HYDROCENA GLOBOSA*, Bens.

*Omphalotropis globosa*, Pfr. Mon. p. 311. (Mauritius.)

28. *HYDROCENA MALLEATA*, Pfr. *H. testa subperforata, ovato-conica, solida, irregulariter malleata, carneo et albido variegata; spira conica, acuta; anfract. 6 planiusculis, ultimo spiram subæquante, ventroso, ad periomphalum carina funiformi munito; apertura parum obliqua, angulato-ovali, intus aurantiaca vel fulva; perist. subcalloso, margine dextro recto, basali subangulatim producto, columellari subpatulo.*

Long. 7, diam.  $4\frac{1}{2}$  mill.

*Hab.* Australia.

29. *HYDROCENA GLABRATA*, Pfr. *H. testa perforata, ovato-conica, tenuiuscula, glabra, nitida, fulvo-cornea; spira convexo-conica, apice acuta; anfract. 7 convexis, ultimo spira brevior, rotundato, circa perforationem punctiformem filocarinato; apertura vix obliqua, ovali, superne vix angulata; perist. simplice, recto, margine columellari subdilato, patente.*

Long.  $6\frac{1}{2}$ , diam. 4 mill.

*Hab.* Island of Borneo.

30. *HYDROCENA PLICOSA*, Pfr.

*Omphalotropis plicosa*, Pfr. Mon. p. 311. (*Hab.* ——?)

31. *HYDROCENA GRANUM*, Pfr. *H. testa vix perforata, conico-*





J. Wolf, lith.

M & N. Hanhart. Imp<sup>t</sup>.

ORTHOTOMUS DERBIANUS *Moore*



*ovata, solidula, sublaevigata, sordide fulva vel albido et fulvo zonata; spira conoidea, apice obtusula; anfract. 5 perconvexis, ultimo spira vix brevior, circa perforationem punctiformem distincte carinato; apertura subobliqua, ovali; perist. simplice, recto, margine columellari recedente, subpatulo.*

Long. 5, diam. 3 mill.

*Hab.* Isle of Pines, Australian Seas (*Macgillivray*).

### 32. HYDROCENA EXPANSILABRIS, Pfr.

*Omphalotropis expansilabris*, Pfr. Mon. Pneum. p. 312. (Mauritius.)

## 5. DESCRIPTIONS OF TWO NEW SPECIES OF THE GENUS ORTHOTOMUS.

BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

(Aves, Pl. LXXVI.)

At a Meeting held in the early part of the present year, I had the honour of laying before this Society a monograph of this interesting genus, and since that time I have been favoured by my brother with a search, through the birds contained in the Derby Museum, which has resulted in the discovery of two additional undescribed species. These I now proceed to characterize.

### ORTHOTOMUS DERBIANUS, Moore. (Pl. LXXVI.)

Forehead, crown and occiput dark ferruginous; back, rump and sides of neck ash-colour; ear-coverts, throat and breast pale ash, with the centre of the feathers whitish; flanks ashy-white; belly and vent dull white; wings brown, broadly margined throughout with yellowish-green; edge of shoulder pale brown; under wing-coverts rufescent-white; tail much graduated, ferruginous-brown above, dusky at base, paler beneath, and without discernible terminal spots or band; thighs ferruginous; upper mandible horn-colour, lower mandible and legs pale.

Length,  $5\frac{1}{2}$  inches; of wing 2 inches; tail  $2\frac{1}{2}$  inches; bill from frontal plumes  $\frac{5}{8}$ ths inch, to gape  $\frac{1}{12}$ ths inch, and tarsus  $\frac{3}{10}$ ths of an inch.

*Hab.* Philippines? (H. Cuming). In Derby Museum, Liverpool.

*Remark.*—May be distinguished from all the previously known species by its greater size, and in having the ear-coverts, throat and breast ash-colour, with the centres of the feathers whitish.

### ORTHOTOMUS MACULICOLLIS, Moore.

Forehead ferruginous, becoming dull on crown; feathers of the occiput greenish-brown, faintly edged with black; nares, behind the eyes, a line under, with the ear-coverts and sides of neck ferruginous-white, each feather being edged with black; back and rump

greenish; throat white; breast, belly and vent ferruginous-white; sides of breast black, and flanks light greenish; wings brown, edged exteriorly with greenish-ferruginous-brown; edge of shoulder and under wing-coverts pale rufescent-white; tail brown above on the inner webs, and yellowish on the outer, beneath pale ashy-brown, having indistinct dusky spots towards the end, and pale at the tips and inner margins of the feathers; thighs pale ferruginous. Bill, darkish horn above, paler beneath; legs yellowish.

Length,  $4\frac{3}{10}$  inches; of wing  $1\frac{8}{10}$  in.; tail  $1\frac{8}{10}$  in.; bill to gape  $\frac{5}{8}$ , and tarsus  $\frac{6}{10}$  of an inch.

*Hab.* Malacca. In Derby Museum, Liverpool.

*Remark.*—Allied to, but distinguished from *O. longicauda* by having the sides of the head and neck ferruginous-white, each feather being edged with black.

6. ABSTRACT OF DESCRIPTIONS OF SOME ANIMALS OF ACHATINELLA, AND OTHER REMARKS.  
BY DR. NEWCOMB.

ACHATINELLA VIRIDANS, Mighels. Colour light grey, with two stripes of dark slate, extending back from the base of the superior tentacles. Tentacles strongly clubbed, rather short and robust; mantle thick, of a yellowish-brown colour. When in motion longer than the shell.

(Shell always dextral. *Hab.* E. end of Oahu.)

ACHATINELLA DECIPIENS, Nob. Animal slate colour; upper portion of tentacles intensely black; mantle and bottom of foot light slate.

(Shell often reversed. *Hab.* S.W. side of Oahu.)

ACHATINELLA RUTILA, Nob. Animal small for the size of the shell, with long filiform tentacles, but slightly clubbed; colour *light flesh*.

ACHATINELLA SUBVIRENS. Animal not observed.

ACHATINELLA RADIATA, Gould. Resides more than 100 miles from *A. grisea*, and on a different island. The former is *terrestrial*, the latter *arboreal* in its habits. The first is usually dextral, the latter *always* sinistral. No comparison of the animals was made.

ACHATINELLA RUBIGINOSA, Nob. Has the mantle uniformly of a light flesh colour, &c. *A. tæniolata*, Pfeiffer, has the mantle always of a *dark brown* or *black*.

ACHATINELLA GLABRA. No description, but is a very distinct species from *A. elegans*, never being found associated in the same localities; the first is always dextral, the latter as often sinistral as dextral.

ACHATINELLA RUBENS, Gould. Animal slate-coloured, traversed

when extended by numerous light-coloured lines; tentacles black; bottom of foot and mantle brown. Motions slow and timid.

*Hab.* Oahu.

ACHATINELLA MASTERSI (var. from Molokai). Animal longer than the shell; of a light flesh-colour, covered with minute granulations, tipped with carmine; tentacles dark brown or black.

This animal is the most beautiful of the genus. Motions bold and lively. Lives on the *Olova*, or native hemp, a large shrub. *A. rubens* is found only on the ground.

ACHATINELLA PERDIX, Reeve. An arboreal species, often sinistral; inhabits West Mani. *A. Adamsi* is usually found on the ground; only a single specimen out of five hundred is sinistral, and this shows a greater variation from *perdix* than the dextral shells; six or seven varieties of *perdix* do not in any way identify the two species.

ACHATINELLA PICTA, Mighels. Animal densely black; tentacles long, slate-coloured; mantle and foot brownish-black.

*Hab.* Mani.

ACHATINELLA TETRAO, Nob. Animal tessellated above with brown and white; mantle dirty yellow; bottom of foot of same colour, margined with white. Tentacles light brown.

*Hab.* Ranai. (Not published.)

ACHATINELLA HELENA, Nob., is extremely limited in its locality, which has been twice carefully searched by myself, without discovering larger specimens, dead or alive, that approach it in form. Several of the specimens contained the young in the oviducts.

ACHATINELLA PHYSA, Nob. No opportunity has occurred for examining the animal, but it is probably adult.

ACHATINELLA VIRGULATA, Mighels. Animal, including mantle and tentacles, varying from bluish to yellowish-white.

ACHATINELLA REDFIELDI, Nob. Animal light flesh-colour; mantle dark slate.

ACHATINELLA TESSELLATA, Nob. Animal very large, dark slate, with a black mantle.

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7. DESCRIPTIONS OF TWENTY-SEVEN NEW SPECIES OF SHELLS  
FROM THE COLLECTION OF HUGH CUMING, ESQ.  
BY ARTHUR ADAMS, F.L.S.

1. TRITON (CABESTANA) BOLTENIANUS, A. Adams. *T. testa ovato-ventricosa, subumbilicata, cinereo-fulvicante, epidermide fusca obtecta; anfractibus plicato-nodosis, lineis elevatis, corrugatis, transversim livatis, liris inæqualibus; apertura ovata,*

*labio corrugato-plicato, canali brevi aperto, labro expanso fimbriato, intus dentato-plicato.*

*Hab.* Australia. (Mus. Cuming.)

The whorls in this species are nodosely plicate in the middle, and the surface of the shell throughout is corrugated longitudinally.

2. TRITON (CABESTANA) AFRICANUS, A. Adams. *T. testa ovato-ventricosa, umbilicata, albido-cinerascente, rufo fuscoque variegata, anfractibus spiratis, supremis liris tribus elevatis, nodulosis, spiralibus cinctis, ultimo sublævigato, cingulis transversis, subobsoletis ornato, dorso nodoso, latere sinistro longitudinaliter varicoso, varice nodoso, fusco alboque articulado; apertura ovali, labio lævi, labro margine extus varicoso ac nodoso-lirato, intus plicato.*

*Hab.* Ichaboe; South Africa. (Mus. Cuming.)

A remarkable-looking shell, with the last whorl nearly smooth, and the upper whorls with spiral elevated ridges.

3. TRITON PYRIFORMIS, A. Adams. *T. testa pyriformi, straminea, albo rufoque variegata, spira brevi, obtusa, anfractibus quinque, transversim liratis, in medio serie duplicata tuberculorum instructis, anfractu ultimo longitudinaliter subplicato; apertura ovata, labio transversim corrugato, canali mediocri, recurvo, aperto, labro extus varicoso, intus plicato-lirato.*

*Hab.* China. (Mus. Cuming.)

This species is pyriform, with a double row of compressed tubercles in the middle of each whorl. There are no regular varices, and the canal is recurved.

4. TRITON COMPTUS, A. Adams. *T. testa fusiformi, sordide carnea, varicibus albo rufoque variegatis; spira elevata, anfractibus rotundatis, transversim crebre liratis, valde nodosoplicatis, varice unico instructis; anfractu ultimo nodulis duobus elevatis ad dorsum ornato; apertura ovata, labio transversim corrugato, canali longo, tenui, recurvo, labro extus varicoso, intus dentato-lirato.*

*Hab.* China. (Mus. Cuming.)

This species is of a dirty flesh-colour, with the varices variegated with white and fuscous; the canal is slender, and recurved, and there are two elevated nodules on the back of the last whorl.

5. TRITON OBSCURUS, A. Adams. *T. testa fusiformi, fusca, nigro-fusco variegata, epidermide pilosa oblecta; spira acuminata, anfractibus transversim liratis ac longitudinaliter plicatis, varice unico instructis; apertura ovata, labio intus valde transversim plicata, labro extus varicoso, intus dentato-plicato.*

*Hab.* South coast of Africa. (Mus. Cuming.)

This is an ovately fusiform species, covered with a brown pilose epidermis, with a single varix on each whorl, and with both lips of the aperture corrugately plicated, the plaits in the inside of the outer lip being almost dentiform.

6. *PISANIA FILARIS*, A. Adams. *P. testa ovato-acuminata, testacea, spira producta, superne subcylindracea, apice obtusa; anfractibus septem, convexiusculis, longitudinaliter substriatis, transversim liratis; apertura ovali, columella incurva, antice uniplicata, oblique truncata, labro extus varicoso, intus sulcato, margine acuto.*

*Hab.* China. (Mus. Cuming.)

A very simple and elegant species, with a subcylindrical apex, and possessing many of the characters of *Metula* and *Truncaria*.

7. *COMINELLA MAURA*, A. Adams. *C. testa ovato-fusiformi, nigro-fusca, albo lineata; anfractibus planiusculis, transversim valde sulcatis, sulcis distantibus æqualibus; apertura ovali, columella simplice, labro intus sulcato.*

*Hab.* Darnley's Island, *Capt. Ince.* (Mus. Cuming.)

This is a blackish-brown shell, in some specimens lineated with white; the whorls are constricted just below the sutures, and the upper ones are longitudinally plicate and somewhat eroded.

8. *COMINELLA QUOYANA*, A. Adams. *C. testa fusiformi, spira acuminata, albida, rufo-fusco maculata; anfractibus octo, longitudinaliter oblique plicatis, plicis superne subnodulosis, transversim sulcatis; apertura ovali, columella antice uniplicata, labro intus lirato.*

*Hab.* New Zealand. (Mus. Cuming.)

This shell is possibly a variety of the *Buccinum costatum*, Quoy and Gaimard, which appears to be a very variable species; it has, however, well-marked characters of its own.

9. *PERISTERIA STIGMATARIA*, A. Adams. *P. testa ovato-fusiformi, alba, maculis nigro-fuscis ornata, transversim lirata, longitudinaliter plicata, plicis rotundis, spira acuminata, apice atro-purpurea; anfractibus convexiusculis, ad suturas maculis nigro-fuscis cinctis, ultimo maculis castaneis cincto, antice nigro-fusco tincto; apertura ovali, columella antice plicis quatuor instructa, canali brevi, labro intus lirato.*

*Hab.* Sandwich Islands, *Dr. Newcomb.* (Mus. Cuming.)

A handsome species, with a zone of black-brown spots at the sutures, and another series in the middle of the last whorl; the beak stained with brown-black.

10. *PERISTERIA NODULOSA*, A. Adams. *P. testa ovato-fusiformi, umbilicata, albicante, cerina, subglabra, transversim obsolete sulcata, longitudinaliter nodoso-plicata, spira pyramidalis, ad suturas serie nodulorum cincta; anfractu ultimo in medio obtuse angulato; apertura ovali, columella antice plicis obsoletis instructa, labro intus valde lirato, margine antice angulato, canali brevi, recurvo.*

*Hab.* Australia. (Mus. Cuming.)

A peculiar whitish waxy-looking shell, with smooth nodulous whorls.

11. *LATIRUS ARMATUS*, A. Adams. *L. testa ovato-fusifor-  
mi, umbilicata, spira apertura brevior, fulva, epidermide fusca  
obtecta; anfractibus longitudinaliter plicatis, lira prominenti  
transversa (muricata ad plicas) in medio anfractuum ornatis,  
ultimo liris minoribus instructo; apertura ovali, canali recto,  
aperto, columella obsolete plicata, plicis quinque, labro intus  
sulcato, margine crenato.*

*Hab.* California. (Mus. Cuming.)

This is an ovately fusiform shell, with a muricated transverse ridge in the middle of the whorls, which are covered with a brown epidermis.

12. *LATIRUS NEWCOMBII*, A. Adams. *L. testa ovato-fusifor-  
mi, spira aperturam æquante, alba, apice basique atro-purpureo  
tincta, serie macularum atro-purpurearum in medio anfrac-  
tuum, et altera serie ad suturas ornata; anfractibus longitudi-  
naliter plicatis, transversim liratis; apertura ovali, columella  
plicis paucis obsolete instructa, labro intus sulcato.*

*Hab.* Sandwich Islands, *Dr. Newcomb.* (Mus. Cuming.)

This is a very pretty little species, of a white colour, stained at the apex and base with blackish-purple, with a transverse row of blackish-purple spots in the middle of the whorls and another row at the sutures.

13. *LATIRUS FLAVIDUS*, A. Adams. *L. testa fusiformi, imper-  
forata, pallide flava, spira aperturam æquante; anfractibus  
longitudinaliter plicatis, plicis distantibus, rotundatis, trans-  
versim crebre liratis, linea elevata transversa ad partem anti-  
cam et liris verrucosis transversis ornata; apertura ovato-qua-  
drata, canali mediocri, aperto, labro intus sulcato, columella  
plicis paucis obsolete instructa.*

*Hab.* Philippines. (Mus. Cuming.)

This is a simple yellow, somewhat smooth species, with a number of transverse verrucose liræ at the fore part of the last whorl.

14. *LATIRUS NEGLECTUS*, A. Adams. *L. testa turbinato-fusi-  
formi, umbilicata, spira apertura longiore, sordide alba, fusco  
tincta; anfractibus convexusculis, longitudinaliter plicatis,  
plicis distantibus, crassis, rotundatis, transversim liratis, liris  
inæqualibus, ad plicas elevatis; apertura ovata, intus carnea,  
canali brevi subrecurso, columella antice obsolete plicata, labro  
intus sulcato.*

*Hab.* China. (Mus. Cuming.)

An umbilicated, turbinately-fusiform species, with the interior of the aperture pink, and with a short, somewhat recurved canal.

15. *LATIRUS DISTINCTUS*, A. Adams. *L. testa fusiformi, spira  
aperturam magis æquante, alba; anfractibus longitudinaliter  
plicatis, interstitiis atro-purpureo tinctis, liris duabus elevatis,*

*nodulosis ad plicas, et linea transversa elevata ad suturas instructis; anfractu ultimo antice constricto; apertura subquadrata, columella plicis quatuor instructa, canali aperto, labro intus plicato.*

*Hab.* — ? (Mus. Cuming.)

This is a handsome white shell, with the interstices between the longitudinal plicæ stained of a dark purple colour.

16. *LATIRUS MARQUESANUS*, A. Adams. *L. testa fusiformi, umbilicata, sordide alba, rufo tincta, apice purpureo, spira apertura longiore; anfractibus septem, longitudinaliter plicatis, transversim liratis, liris asperis; anfractu ultimo antice atro-purpureo tincto; apertura ovali, canali mediocri, columella plicata, labro margine crenato.*

*Hab.* Marquesas. (Mus. Cuming.)

The base of the last whorl is stained with purplish-black, as is also the apex; the shell is umbilicated, and the plicæ are rough, with minute imbricate scales.

17. *LATIRUS DESPECTUS*, A. Adams. *L. testa ovato-fusiformi, umbilicata, spira aperturam æquante, fusca, lineis albis transversis ornata, antice atro-purpureo tincta; anfractibus planiusculis, longitudinaliter plicatis, plicis distantibus, rotundatis, transversim liratis, liris subæqualibus, confertis, supremis ad suturas crenato-dentatis, suturis impressis; apertura ovata, columella plicis quatuor subobsoletis instructa, canali brevi, labro intus sulcato.*

*Hab.* Chinese Seas. (Mus. Cuming.)

A small fusiform fuscous species, transversely lineated with white, and stained at the fore part with blackish-violet.

18. *LATIRUS ELEGANS*, A. Adams. *L. testa fusiformi, albida, spira aperturam æquante; anfractibus convexiusculis, longitudinaliter plicatis, plicis validis, rotundis, transversim liratis, interstitiis clathratis; apertura ovali, columella triplicata, canali subproducto, labro intus sulcato.*

*Hab.* — ? (Mus. Cuming.)

This is an elegant fusiform species, of a white colour, with rounded plicate whorls, neatly clathrate in the interstices.

19. *LATIRUS CONTEMPTUS*, A. Adams. *L. testa ovato-fusiformi, spira aperturam æquante, pallide fusca, lineis elevatis, transversis, rufo-fuscis ornata, longitudinaliter plicata; apertura ovata, columella plicis tribus subnodulosis instructa, labro postice sinuato, margine crenulato, intus liris elevatis instructo.*

*Hab.* West Indies. (Mus. Cuming.)

A small brown species, ornamented with transverse red-brown lines, and with the outer lip sinuated at the hind part; the plicæ are rib-like, and rather nodulous at the transverse elevated lines.

20. *LATIRUS DECORATUS*, A. Adams. *L. testa ovato-fusifor-  
mi, alba, castaneo varie tincta, longitudinaliter plicata, transversim  
lirata, liris majoribus cum minoribus alternantibus, duabus ad  
suturas moniliformibus; apertura ovali, canali brevi, columella  
plicis tribus instructa, labro intus sulcato.*

*Hab.* New Zealand. (Mus. Cuming.)

This is a pretty little species; white, with chestnut markings, and with a double series of granules encircling the whorls at the sutures.

21. *LATIRUS STRANGEI*, A. Adams. *L. testa fusiformi, umbili-  
cata, flavida, spira aperturam æquante, anfractibus longitudi-  
naliter plicatis et lineis transversis, elevatis, subnodulosis cincta,  
suturis impressis; anfractu ultimo antice coarctato; apertura  
ovalis, columella antice plicata, canali mediocri, labro intus  
lirato.*

*Hab.* Sydney, Mr. Strange. (Mus. Cuming.)

This species is of a pale yellow colour, ornamented with transverse red-brown lines, and with the canal moderate and turned to the left. Some varieties are straw-coloured without the lines, and tinged with blackish-violet at the fore part.

22. *EUCHELUS PROXIMUS*, A. Adams. *E. testa globoso-conica,  
anguste umbilicata, albida, nigro punctata, anfractibus rotun-  
datis, suturis impressis, cingulis asperulatis, æqualibus, trans-  
versis, interstitiis clathratis ornatis; columella tuberculo parvo  
terminata; labro intus sulcato.*

*Hab.* Moluccas. (Mus. Cuming.)

In colour and markings this species somewhat resembles *E. asper*, but it is narrowly umbilicated, and there is a distinct tubercular tooth at the fore part of the columella.

23. *EUCHELUS INDICUS*, A. Adams. *E. testa globoso-conica,  
imperforata, grisea, cingulis transversis, inæqualibus, con-  
fertis, moniliformi ornata, anfractibus rotundis; columella ad  
basin tuberculo acuto instructa; labro expanso, intus valde  
lirato.*

*Hab.* Bombay. (Mus. Cuming.)

This is a solid, imperforate, grey-coloured species, of the same dimensions and style of sculpture as *E. denigratus*, Chemn., but quite distinct specifically.

24. *CLANCULUS DEPICTUS*, A. Adams. *C. testa conoidea, pseudo-  
umbilicata, albida, viridi fuscoque radiatim picta, cingulis  
subgranosis, inæqualibus ornata, anfractibus planis, ultimo ad  
peripheriam angulato; margine umbilici simplice; columella su-  
perne uniplicata, inferne tuberculis tribus parvis instructa;  
intus lirato, margine lævi.*

*Hab.* Bombay. (Mus. Cuming.)

A prettily variegated, conical species, somewhat resembling a *Polydonta* in appearance.

25. *CHLOROSTOMA FUNEBRALE*, A. Adams. *C. testa turbinata,*



*imperforata, nigra, glabra, longitudinaliter oblique striata, ad suturas crenulata, anfractibus convexiusculis, ultimo rotundato, basi planiusculo, regione umbilicali valde impressa, callo albo obtecta; columella superne sinuata, antice bituberculata, tuberculo supremo prominente; labro nigro marginato.*

*Hab.* California. (Mus. Cuming.)

This species is somewhat like *C. mæstum*, Jonas, but the spiral callus surrounding the umbilicus is not prominent as in that species.

26. PHILIPPIA LAYARDI, A. Adams. *P. testa depresso-conica, late umbilicata, fulva, albido maculata, anfractibus planiusculis, lævigatis, ad suturas cingulis duabus instructis, anfractu ultimo ad peripheriam angulato, cingulis tribus ornato, basi planiusculo, cingulis granorum (circa regione umbilicali) instructo, margine umbilici crenulato.*

*Hab.* Ceylon, Mr. Layard. (Mus. Cuming.)

A brownish-yellow species, with the margin keeled, and with the surface of the valves smooth.

27. PHILIPPIA OXYTROPIS, A. Adams. *P. testa conico-depressa, discoidea, late umbilicata, albida, luteo fuscoque variegatim picta, nucleo magno, albido, vitreo, anfractibus planiusculis, transversim lineatis, ad suturas cingulis duobus elevatis instructis; ad peripheriam acute angulata, cingulis duobus cincta, basi convexiuscula; margine umbilici crenato, corrugato.*

*Hab.* New Caledonia. (Mus. Cuming.)

A pretty variegated species, with a large smooth glassy nucleus, and with the periphery acutely keeled.

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## 8. DESCRIPTIONS OF NEW SHELLS FROM THE COLLECTION OF HUGH CUMING, ESQ. BY M. G. P. DESHAYES.

1. PSAMMOBIA MAXIMA, Desh. *P. testa magna, ovato-transversa, compressiuscula, solida, valde inæquilaterali, utroque latere hiante, transversim inæqualiter et obsolete striata, postice subundulata, ad margines epidermide fusca vestita, albo-lutescente, roseo radiata, intus alba, vel flavido tincta; latere antico brevi, late rotundato, tantummodo attenuato; latere postico oblique rotundato, subangulato; umbonibus depressis, latis, obliquis, vix prominentibus; cardine dextro unidentato, dente compresso acuminato, sinistro sub-bidentato, dentibus angustissimis, parum prominentibus; nymphis maximis, prominentibus, latis; sinu pallii magno, profundo, latissimo.*

*Hab.* —? Coll. Cuming.

2. PSAMMOBIA NIVOSA, Desh. *P. testa ovato-transversa, solidula, compressiuscula, utroque latere hiante, inæquilaterali, transversim*

*substriata, roseo-purpurascente, maculis sparsis, niveis irrorata, intus albo-rosea, superne purpurea, flavescenti-bimaculata; latere antico brevior, late rotundato, postico latiore, superne recto, non declivi, horizontali, late obtuse truncato; umbonibus minimis, depressis, latis, vix prominentibus; cardine inæqualiter bidentato, altero unidentato; sinu pallii profundo, apice latiore, truncato.*

*Hab.* Philippine Islands (Negros). Coll. Cuming.

3. *PSAMMOBIA ORIENS*, Desh. *P. testa ovato-transversa, satis lata, nitida, solidula, inæquilaterali, transversim substriata, in latere postico inæqualiter sulcata, pallide rosea, roseo-purpurascente eleganter radiata et lineolis angulosis, irregularibus ornata, intus albo-rosea; latere antico brevior, superne subrecto, parum declivi, late obtuso; latere postico late et oblique truncato; nymphis magnis, latis, prominentibus; cardine bidentato, altero unidentato; dentibus angustis, valde prominentibus; sinu pallii profundo, digitiformi.*

Var.  $\beta$ . *Testa ad apices violacea, lineolis angulosis destituta.*

*Hab.* Sea of Japan. Coll. Cuming.

4. *PSAMMOBIA LATA*, Desh. *P. testa ovato-transversa, lata, depressa, solida, inæquilaterali, inæqualiter transversim striata, epidermide fusciscente, postice irregulariter semiplicata vestita, ad umbones roseo-purpurascente, ad margines albo-flavescente; lateribus æqualiter rotundatis, superne convexo-declivibus; margine inferiore convexiusculo; cardine angusto, in utraque valva bidentato, dentibus angustis, prominentibus; sinu pallii lato, profundo, apice obtusissimo; valvis intus albo pallide violascentibus.*

*Hab.* Central America; Sancta Elena. Coll. Cuming.

5. *PSAMMOBIA TOGATA*, Desh. *P. testa ovato-transversa, tumidula, inæquilaterali, extremitatibus sensim attenuata, attamen antice rotundata et brevior, postice oblique truncata, epidermide fusco-virente, margines superante, vestita, ad umbones decidua vel erosa; valvis intus extusque albis; cardine angusto, bidentato, altero unidentato, dentibus compressis, approximatis, acuminatis; sinu pallii magno, oblique ascendente, dilatato.*

*Hab.* Philippine Islands. Coll. Cuming.

6. *PSAMMOBIA TRISTIS*, Desh. *P. testa ovato-transversa, depressiuscula, solidula, subæquilaterali, transversim inæqualiter substriata, albo-grisea, obscure violaceo radiata, intus pallide violacea; latere antico paulo longiore, lateribus superne atque postice æqualiter declivibus, antico late obtuso, postico late obtuse truncato, subangulato; cardine angusto, bidentato, altero unidentato, dentibus apice bifidis; sinu pallii profundo, lato, apice obtuso, marginibus parallelis.*

*Hab.* Amboina. Coll. Cuming.

7. *PSAMMOBIA GRATA*, Desh. *P. testa ovato-transversa, subæquilaterali, solidula, tumidula, antice obtusa, brevior, postice*

*subtruncata, transversim obsolete striata, alba, pallide violaceo multiradiata, radiis albo maculatis, lineolis longitudinalibus, irregularibus, notatis, intus alba; cardine unidentato, altero bidentato, dentibus obtusis, apice bifidis; sinu pallii lato, profundo, apice obtuso, marginibus parallelis.*

*Hab.* Amboina. Coll. Cuming.

8. *PSAMMOBIA ZELANDICA*, Desh. *P. testa ovato-transversa, æquilaterali, breviuscula, utroque latere rotundata, compressa, transversim obsolete et irregulariter striata, alba, radiis rubro-purpureis, interruptis seu maculatis ornata, intus alba, radiis pallidioribus; sinu pallii magno, lato, profundo, elliptico.*

*Hab.* New Zealand.

9. *PSAMMOBIA INTERMEDIA*, Desh. *P. testa ovato-transversa, convexiuscula, solida, æquilaterali, albida, roseo grate radiata, transversim rugosa, rugis profundis, paulisper undulatis, postice crassioribus, latioribus, irregularibus; latere antico late rotundato, semi-elliptico, postico declivi, paululum attenuato, oblique extremitate truncato; cardine bidentato, altero unidentato; sinu pallii profundo, lato, ad apicem subsinuoso; valvis intus pallide violaceis.*

*Hab.* Coast of Portugal.

10. *PSAMMOBIA MODESTA*, Desh. *P. testa elongato-transversa, angusta, solida, convexiuscula, subæquilaterali, transversim satis regulariter striata, striis ad umbones et latus posticum evanescentibus, albida, roseo-purpurascente pauci-radiata; latere antico paulo longiore, obtuso, superne fere recto, inferne magis arcuato, postico superne recto, subangulato; cardine angusto, maculis duabus vivide violaceis notato, bidentato, altero unidentato; valvulis intus albo-violascentibus; sinu pallii profundo, superne declivi, extremitate attenuato.*

*Hab.* Moreton Bay. Coll. Cuming.

11. *PSAMMOBIA CANDIDULA*, Desh. *P. testa elongato-transversa, tumidula, crassiuscula, subæquilaterali, lævigata, irregulariter incremento interrupta, albido pallide flavescente; latere antico paulo longiore, superne fere recto, paulo declivi, obtuso; latere postico paulo latiore, obtuse subangulato; umbonibus minimis, prominulis; valvis intus albis; sinu pallii profundo, angusto, horizontali, marginibus parallelis.*

*Hab.* Philippine Islands. Coll. Cuming.

12. *PSAMMOBIA MENKEANA*, Desh. *P. testa elongato-transversa, angusta, depressiuscula, tenui, fragili, æquilaterali, albo-flavescente, vel pallide violascente, intus saturatiore violacea; latere antico late rotundato, postico obtuse truncato, obtusissime angulato; cardine solidiusculo, bidentato, altero unidentato, dentibus inæqualiter bifidis; sinu pallii profundo, subtriangulari, apice*

*obtusum, superne valde declivi et convexiusculo; valvis inæqualiter extus striatis, striis ad latus posticum interruptis.*

*Hab.* East coast of Australia. Coll. Cuming.

13. *PSAMMOBIA ANGUSTA*, Desh. *P. testa elongato-transversa, angusta, longe ellipsoidea, æquilaterali, tenui, fragili, convexiuscula, transversim obsolete et inæqualiter striata, candida, aliquando posterius flavescente, intus pallide violascente vel alba, extremitatibus æqualiter obtusis, margine superiore inferiori parallelo; cardine angustissimo, bidentato, altero unidentato, dentibus apice bifidis; sinu pallii elongato, apice angusto, attenuato, superne declivi, basi dilatato.*

*Hab.* Senegal. Coll. Cuming.

14. *PSAMMOBIA PUELLA*, Desh. *P. testa elongato-transversa, tenui, depressa, inæquilaterali, nitida, tenui regulariter transversim striata, striis depressis, in latere postico latioribus, rugæformibus, alba, ad umbones nitide violacea, roseo eleganter radiata, intus pallide violascente; latere antico longiore, obtuso, superne convexiusculo, rotundato; latere postico unguatiore, convexiusculo, obtuse subangulato; linea impressa pallii antice margine valde remota, sinu profundo, ad extremitatem superne declivi, attenuato.*

*Hab.* Australia. Coll. Cuming.

15. *PSAMMOBIA ANOMALA*, Desh. *P. testa elongato-transversa, tenui, fragili, tumidula, subæquilaterali, nitida, aliquantisper hyalina, roseo-purpurascente vel violascente obsolete radiata, transversim oblique minute striata, striis ad latus posticum evanidis; latere antico paulo attenuato, obtuso, postico paulo latiore, truncato, angulo oblique decurrente distincto; valvis intus pallide roseo-violaceis; cardine angusto, bidentato, altero unidentato, dentibus lateralibus subæqualibus, prominulis, elongatis, angustis; sinu pallii lato, profundo, late obtuso.*

*Hab.* Philippine Islands, Zebu. Coll. Cuming.

16. *PSAMMOBIA TENUIS*, Desh. *P. testa elongato-transversa, convexiuscula, tenui, hyalina, fragili, inæquilaterali, pallide rosea, oblique tenuissime et regulariter striata, striis ad latus posticum abrupte terminatis; latere antico longiore, paulo attenuato, superne vix convexo; latere postico latiore, late truncato, superne recto; nymphis brevibus, angustis, vix prominentibus; cardine angustissimo, inæqualiter bidentato, dentibus minimis, majoribus bifidis; sinu pallii latissimo, profundo, late obtuso.*

*Var. β.* *Testa paulo solidiore, rosea, eleganter pallide purpurascente radiata.*

*Hab.* Philippine Islands. *Var.* Chinese Seas. Coll. Cuming.

17. *PSAMMOBIA PETALINA*, Desh. *P. testa minima, compressa, tenui, pellucida, fragili, inæquilaterali, nitida, obsolete transversim striata, pallide albo-violascente, violaceo quinqueradiata, radiis*

*inæqualibus, medianis sæpius latioribus; latere antico elongato, obtuso, margine superiore recto, inferiore parallelo; latere postico brevi, angustiore, rotundato; ligamento brevi, prominente; valvis intus pallide violaceis; sinu pallii lato, profundo, horizontali, marginibus parallelis.*

*Hab.* Chinese Seas. Coll. Cuming.

18. *PSAMMOBIA COMPTA*, Desh. *P. testa elongato-transversa, æquilaterali, compressa, tenui, fragili, lævigata substriatave, latere postico valvæ dextræ regulariter tenue plicato, plicis subimbricatis, pallide griseo-violacea, violaceo-rufescente eleganter radiata, lineolis interruptis, confertis, irregulariter reticulata; latere antico semi-elliptico, obtuso, postico oblique truncato, subflexo, angulo obtuso, oblique decurrente partito; cardine angustissimo; nymphis callosis, prominentibus, intus vivide purpureo-violaceis; sinu pallii profundo, lato, horizontali, ad apicem superne declivi; valvis intus pallide purpureo-violaceis, radiis saturatioribus eleganter pictis.*

*Hab.* Van Diemen's Land.

19. *PSAMMOBIA OBLONGA*, Desh. *P. testa ovato-transversa, depressa, tenui, æquilaterali, extremitatibus æqualiter obtusa, obsolete striata, nitida, albo-violascente, minute violaceo radiata, ad umbones atro-violacea, lineis tenuissimis, irregularibus, interruptis, longitudinalibus quasi fissurata; latere postico oblique et obtusissime angulato, supra angulum valvulæ dextræ striis undulato-imbricatis notato; valvulis intus vivide violaceis; sinu pallii profundo, lato, superne ad extremitatem declivi, attenuato.*

*Hab.* —?

20. *PSAMMOBIA STRIATA*, Desh. *P. testa ovato-transversa, depressa, solidula, inæquilaterali, transversim tenue et regulariter striata, striis ad latus posticum in zonula obliqui minus numerosis, inter se confluentibus, in latere postico tenuibus et regularibus; latere antico longiore, obtuso, superne paululum declivi et convexiusculo, postico obtuso, subangulato, oblique subtruncato; cardine angusto, bidentato, altero unidentato, dente antico valvulæ dextræ apice fisso et dilatato; nymphis brevibus, angustis; sinu pallii lato, profundo, late obtuso; valvis albo-griseis, aliquantisper violaceo-rufescente radiatis, intus pallide violaceo-purpureis.*

*Hab.* Van Diemen's Land.

21. *PSAMMOBIA TRIPARTITA*, Desh. *P. testa elongato-transversa, anguste ellipsoidea, compressa, æquilaterali, violacea, maculis minimis, albis, confluentibus, irregulariter sparsis notata, seu obscure albido radiata, transversim striata, striis antice latis et planis, in medio bipartitis, duplo numerosioribus, in latere postico subito lamellosis, imbricatis, acutis; latere antico semi-elliptico, superne inferneque fere æqualiter convexiusculo, obtuso; latere postico paulo latiore, oblique truncato, angulo acutiusculo inferne terminato, angulo obtuso, obsoleto ab umbone decurrente; liga-*

mento magno, cylindraceo, prominente; valvis intus violaceis; sinu pallii profundo, lato, subtriangulari, inferne obliquo.

Var.  $\beta$ . Testa minore, angustiore, violaceo-rubescente.

Hab. Philippines. Coll. Cuming.

22. PSAMMOBIA INSIGNIS, Desh. *P. testa magna, elongato-transversa, compressa, subæquilaterali, solidiuscula, violaceo-rubescente, rubro-purpurascente pauci-radiata, radiis maculis irregularibus, interruptis formatis, transversim tenue sulcato-striata, striis ad apices tenuibus, ad margines crassioribus et profundioribus; latere antico semi-elliptico, obtuso, superne inferneque æqualiter convexiusculo; latere postico superne recto, paululum declivi, angulo carinato distincto, supra angulum latere postico carina altera seriatim granulosa bipartito; striis in latere postico sublamellosis, in carinis prominentioribus, margine postico oblique truncato, inferne acute angulato; valvis intus vivide violaceis.*

Hab. — ? Coll. Cuming.

23. PSAMMOBIA BICARINATA, Desh. *P. testa transversa, elongata, angusta, depressa, solidula, æquilaterali, atro-violacea vel purpureo-violascente, violaceo saturatiore obsolete radiata, transversim sulcata, sulcis aliquantisper ad marginem inferiorem obliquatis; latere antico semi-elliptico, postico oblique recteque truncato, vivide angulato, carinis duabus acutis, divergentibus separato, area profunda, angusta, angulo arcuato distincta, lunula elongata, angustissima; latere postico valvulæ dextræ eleganter clathrato; dentibus lateralibus remotis, obsolete, attamen perspicuis; valvis intus violaceis vel purpureis.*

Hab. Madagascar, Zanzibar.

24. PSAMMOBIA ELEGANS, Desh. *P. testa elongato-transversa, angusta, compressa, æquilaterali, transversim rugoso-plicata, rugis convexis, approximatis, depressis, sæpius paulo undulatis; latere antico obtuso, semi-elliptico, postico oblique truncato, carinis duabus acutis, crenulatis notato, supra carinam in valva dextra eleganter clathrato, in sinistra simpliciter plicato, margine superiore postico recto, ad umbones concaviusculo; cardine angusto, bidentato, altero unidentato, dentibus minimis, majoribus bifidis; sinu pallii lato, profundo, horizontali, acuminato, superne declivi; valvis tenuibus, albis, eleganter intus extusque violaceo radiatis.*

Hab. — ?

25. PSAMMOBIA PRÆSTANS, Desh. *P. testa elongato-transversa, convexiuscula, tenui, inæquilaterali, transversim et oblique minute et regulariter striata, ad latus posticum striis subito interruptis; latere antico brevior, superne convexiusculo, obtuso; latere postico latiore, angulo obtuso oblique decurrente separato, striis radiantibus, parum elevatis ornato, prope umbones tenuissime decussato; sinu pallii profundo, lato, apice late obtuso; colore variabil.*

Var.  $\beta$ . *Testa atro-violacea, maculis nivosis irregulariter sparsis. intus violaceo-alba.*

Var.  $\gamma$ . *Testa roseo-purpurascente, fusco eleganter pauci-radiata, maculis albis nubeculata, intus albo-purpurascente.*

*Hab.* Moluccas. Coll. Cuming.

26. *PSAMMOBIA LAYARDI*, Desh. *P. testa elongato-transversa, depressa, æquilaterali, transversim oblique et minute striata, striis ad latus posticum valvæ sinistræ abrupte terminatis, in valva dextra continuis, et supra angulum obtusum lineis tenuibus longitudinalibus decussatis; latere antico semi-elliptico, superne convexiusculo; latere postico angulo subcarinato distincto, superne recto, non declivi, paulo angustiore, extremitate obtuso; valvis solidiusculis, extus pallide roseo-violaceis, albo irregulariter maculatis et fusco subradiatis, intus albo-purpurascensibus, nymphis obscure violaceo tinctis.*

*Hab.* Philippines.

27. *PSAMMOBIA ORNATA*, Desh. *P. testa ovato-transversa, subventricosa, solida, inæquilaterali, elliptica, albo pallide violascente, violaceo pallido marmorata, albo maculata, et rubro-castaneo interruptim radiata, ad umbones rufa, intus albo-violacea, in medio macula rufa notata; latere antico paulo longiore, late obtuso, postico æqualiter lato, obtuso, transversim et oblique tenue striato, striis in valva sinistra ad latus posticum, lævigatum interruptis, in valva dextra cum rugis posticalibus undulatis continuis; nymphis brevibus, violaceis; sinu pallii magno, profundo, late obtuso.*

Var.  $\beta$ . *Testa depressiore, pallidior, striis rugisque crassioribus.*

*Hab.* Philippines, Ticao. Coll. Cuming.

28. *PSAMMOBIA AMÆNA*, Desh. *P. testa elongato-transversa, angusta, depressa, tenui, pellucida, æquilaterali, transversim regulariter striata, striis antice latioribus, in medio furcatis, postice in valva dextra evanescentibus, subobsoletis, in valva sinistra continuis, striis octo radiantibus decussatis, alba, pallidissime violascente, violaceo pallido tenue maculata et obsolete radiata; latere antico superne fere recto, paululum declivi, sensim attenuato, postico paulo latiore, oblique truncato, superne recto, vix declivi, angulo obtusissimo ab umbonibus decurrente distincto, margine inferiore fere recto; ligamento prominente, cylindræo; valvis intus albis, nymphis violaceis.*

*Hab.* —? Coll. Cuming.

29. *PSAMMOBIA PALLIDA*, Desh. *P. testa transversa, compressiuscula, tenui, hyalina, subæquilaterali, pallide sulphurea vel violascente, obscure violaceo pallido radiata, latere antico paulo brevior, attenuato, superne paulo declivi, postico latiore, subflexuoso, oblique truncato, lævigato; cardine angusto; nymphis elongatis, angustis, violaceo-roseis; sinu pallii subtrigono, horizontali, apice acuminato, superne declivi; valvis oblique eleganter striatis, striis*

*confertis, transversalibus, decussantibus, ad latus posticum interruptis, lineolis irregularibus, longitudinalibus, undulatis, interruptis reticulatis.*

*Hab.* Red Sea.

30. *PSAMMOBIA RUBICUNDA*, Desh. *P. testa pulcherrima, ovato-transversa, tenui, utroque latere paululum hiante, subæquilaterali, tenue et regulariter oblique striata, striis confertis, acutiusculis, ad latus posticum valvula sinistra abrupte interruptis, latere postico late plicato, in valva dextra striis cum posticalibus continuis, non interruptis, vivide purpureo-rubente, maculis minimis, albis, irregulariter sparsis, radiisque angustis, violascentibus in latere postico divergentibus; latere antico brevior, obtuso, postico paulo latiore, oblique truncato et obtuso; cardine angusto, nymphis brevibus, intus callosis, callo vivide purpureo; valvis tenuibus, intus purpureis, albo nubeculatis.*

*Var. β.* *Testa magis rubra, maculis albis, majoribus, minus numerosis.*

*Hab.* Philippines, Ticao. Coll. Cuming.

31. *PSAMMOBIA CORRUGATA*, Desh. *P. testa ovato-transversa, convexiuscula, inæquilaterali, rubro-violascente, albo irregulariter maculata et rubro-violaceo saturatiore subradiata, transversim oblique dense striata, in latere postico late et irregulariter rugosa, rugis cum striis continuis; latere antico brevior, late rotundato, postico parum dilatato, superne recto; cardine bidentato, altero unidentato, nymphis violaceis; sinu pallii profundo, obtuse trigono, superne declivi, basi dilatato.*

*Var. β.* *Testa omnino candida.*

*Hab.* Philippines, Zebu. Coll. Cuming.

32. *PSAMMOBIA MARMOREA*, Desh. *P. testa ovato-transversa, compressiuscula, solidula, subæquilaterali, transversim regulariter et oblique striata, striis acutiusculis, ad latus posticum interruptis, sub epidermide tenui, albo-violascente, rubro-purpurascente fusco et albo marmorata, maculis albis, minimis, sæpius transversis, maculis rubro-purpureis, elongatis, radiis interruptis simulantibus; latere antico brevior, paulo angustior, obtuso, postico subtruncato, obsolete oblique bifexo, plicis latis, depressis, subimbricatis notato; cardine angusto, nymphis intus callosis, roseo-purpureis; sinu pallii lato, profundo, obtuso.*

*Var. β.* *Testa latiore, pallidior, inæqualiter radiata.*

*Hab.* Darnley Island.

*Var. β.* New Holland (Sydney); Moluccas.

33. *PSAMMOBIA ABRUPTA*, Desh. *P. testa elongato-angusta, transversa, tenui, pellucida, æquilaterali, compressa, lutea, obsolete rubescente pauci-maculata, transversim regulariter costulata, costulis obtusis, vix obliquis, postice abrupte interruptis; latere postico compresso, costulis radiantibus, simplicibus, latis*



*ornato, superne recto, ad extremitatem rotundatim truncato, margine inferiore fere recto.*

*Hab.* Philippines. Coll. Cuming.

34. *PSAMMOBIA PULCHERRIMA*, Desh. *P. testa minima, elongato-angusta, transversa, subæquilaterali, compressa, tenui, fragili, roseo-violascente, obsolete albo radiata, intus pallide purpurascente, oblique transversim costata, costis simplicibus, depressis, superne acutiusculis, ad latus posticum subito interruptis; latere postico costulis radiantibus, squamoso-scabris ornato, marginibus parumper hiantibus, denticulatis; latere antico paulo longiore, superne recto, parum declivi, postico latiore truncato; sinu pallii lato, profundo, tenui, ovali.*

*Hab.* — ? Coll. Cuming.

35. *PSAMMOBIA PENNATA*, Desh. *P. testa ovato-transversa, compressiuscula, subæquilaterali, satis lata, albo-grisea, albo et rufo-rubescente irregulariter minute maculata, latere antico late rotundato, striis tenuissimis, perobliquis, regularibus abrupte terminatis, ornato; latere postico depressiusculo, angulo obtuso bipartito, striis distantioribus, in angulo regulariter divaricatis notato, parte superiore striarum ad marginem superiorem ascendentibus, parte altera ad marginem inferiorem incumbentibus, cum prioribus angulum acutum formantibus; cardine bidentato, altero unidentato.*

*Hab.* — ? Coll. Cuming.

36. *PSAMMOBIA DISPAR*, Desh. *P. testa ovato-transversa, depressa, tenui, fragili, inæquilaterali, pallide lutea, aliquantisper rufo irregulariter marmorata; latere antico longiore, lato, inferne convexo, striis tenuissimis, confertissimis, perobliquis ornato, ad latus posticum striis aliquibus acutissime angulosis, interruptis; latere postico brevi, attenuato, superne recto, parum declivi, costis decem divergentibus, crassis, latis, fere horizontalibus ornato, angulum acutum cum striis posticalibus primis formantibus; cardine bidentato, altero unidentato, nymphis minimis, violaceis.*

*Hab.* Philippines. Coll. Cuming.

37. *PSAMMOBIA PALMULA*, Desh. *P. testa elongato-transversa, angusta, depressa, arcuata, inæquilaterali, tenui, fragili, oblique costulata, costulis antice minimis, postice latioribus, continuis, prominentibus, rotundatis, radiantibus, albo-lutescente, maculis minimis aliquibus rubris, sparsis; latere antico brevior, superne recto, antice obtuso, inferne arcuato; latere postico attenuato, oblique truncato, margine postico hiante, plicato, subdenticulato; nymphis intus violaceo maculatis; sinu pallii lato, apice late obtuso.*

*Var. β.* *Testa angustiore, costulis postice interruptis, postica-*

*libus subsquamosis; striis lirisve longitudinalibus in latere antico divergentibus.*

*Hab.* New Holland, Sydney.

38. *SANGUINOLARIA VITREA*, Desh. *S. testa ovato-transversa, convexiuscula, inæquilaterali, tenui, candida, vitrea, nitida, tenuissime et irregulariter striata; latere antico brevior, regulariter semicirculari; latere postico superne recto, vix declivi, extremitate angustato, margine inferiore valde convexo, late semicirculari; cardine angusto, in utraque valva inæqualiter bidentato, dentibus majoribus apice bifidis; sinu pallii superne valde producto, acute angulato, oblique descendente, et triangulum æquilateralem formante.*

*Hab.* — ? Coll. Cuming.

39. *GASTROCHÆNA PUPINA*, Desh. *G. vagina crassa, brevi, clavata, transversim articulata, lævigata, nulla corpora aliena agglutinante, in cavitate valvulæ affixa. Testa minima, tenui, alba, hyalina, hiantissima, hiatu amplissimo quasi testæ per mediam partem resecto, oblique inæqualiter bipartita, coarctata, extremitate postica clausa, obtusa, attenuata; latere antico satis longo, incumbente, cucullato; umbonibus prominulis, oblique terminalibus; valvis lævigatis, postice sutura brevi, carinata; margine aperturæ dorsali, parallelo.*

*Hab.* Moreton Bay. Coll. Cuming.

40. *GASTROCHÆNA APERTISSIMA*, Desh. *G. testa elongata, cuneiformi, inflata, tenui, fragili, per totam altitudinem testæ antice inferneque hiantissima, alba, tenui, pellucida, antice brevissima, margine inferiore fere recto, posteriore obtuso, convexo, superiore paulo obliquo; valvis tenuissime striatis, striis in latere antico transversalibus, in medio secundum lineam obliquam fractis, in area superiore armatis, pluribus majoribus, subæquidistantibus; ligamento angusto, elongato, nigrescente.*

*Hab.* Philippines. Coll. Cuming.

41. *GASTROCHÆNA MACROSCHISMA*, Desh. *G. testa ovata, brevi, ventricosa, tenui, fragili, candida, antice hiantissima, hiatu subcordiformi, lato, obliquo, et fere totam altitudinem testæ æquante; valvis trapezoidalibus, tenuissime striatis, striis in latere antico tenuissimis, appressis, in medio distantioribus, erectis, sublamellosis; latere postico obtuso, superne in sutura cristato; umbonibus tumidis, postice depressiusculis; latere antico brevi, recto; sinu pallii parum profundo, apice acuto, triangulari, subæquilaterali.*

*Hab.* — ? Coll. Cuming.

42. *GASTROCHÆNA LÆVIGATA*, Desh. *G. testa ovato-cuneiformi, tenui, pellucida, fragili, candidissima, ventricosa, late hiante, hiatu cordiformi, dimidiam partem testæ paulo superante; valvis lævigatis; latere antico striis aliquibus regularibus, ad mediam*

*partem arcuatis et evanescentibus; umbonibus minimis, obliquis, approximatis; latere antico brevissimo, recto.*

*Hab.* — ? Coll. Cuming.

43. *GASTROCHÆNA TENERA*, Desh. *G. testa elongato-angusta, tenui, pellucida, compressiuscula, antice angusta, postice paulo latiore, subdilatata, antice apertissima, hiatu totam altitudinem æquante, lateraliter paulo sinuoso; valvis antice inæqualiter tenue striatis, in medio distanter arcuato-subplicatis; umbonibus tumidulis, subterminalibus; latere antico brevi, subhorizontali, in sutura cristato, et emarginato; sinu pallii magno, profundo, triangulari, apice acutissimo, basi lato.*

*Hab.* Philippines. Coll. Cuming.

44. *GASTROCHÆNA HUMILIS*, Desh. *G. testa parva, elongato-ovata, tumida, tenui, alba, hyalina, fragili, apertura antica ovato-acuminata, dimidiam partem testæ vix æquante, oblique secta et rectilinea; valvis subtrapezoidalibus, regulariter striato-sublamellosis, striis continuis, antice approximatis, in medio paulo distantioribus et prominentioribus; umbonibus tumidulis, approximatis; latere antico brevissimo, in sutura cristato, parum obliquo; ligamento angusto, elongato, nigro.*

*Hab.* Philippines, Zebu (Cuming). West Indies (Mus. Brit.).

45. *GASTROCHÆNA INTERSECTA*, Desh. *G. testa ovato-oblonga, brevi, cuneiformi, tenui, fragili, candida, oblique hiante, hiatu ovato, acuminato, dimidiam partem testæ æquante, valvis subspathulatis, antice angustis, postice dilatatis, striatis, striis anticis regularibus, extremitate detectis, æquidistantibus, arcuatis et in medio evanescentibus et medianis interpositis, striis medianis inæqualibus, majoribus distantibus; latere antico brevissimo, fere nullo; umbonibus minimis, subterminalibus.*

*Hab.* — ? Coll. Cuming.

46. *GASTROCHÆNA IMPRESSA*, Desh. *G. testa elongato-cuneiformi, subovata, inflata, antice inferneque amplissime aperta; hiatu totam longitudinem testæ æquante, margine lateraliter oblique arcuato, antice angusto; valvis tenuibus, subtrapezoidalibus, in medio sulco vix impresso bipartitis, parte antica tenue transversim striata, striis in sulco subfractis, parte postica arcuatim et irregulariter sulcato-striata, in latere postico striis oblique ascendentibus; umbonibus tumidulis, postice obtuse subangulatis, fere terminalibus; ligamento angustissime elongato, partim immerso.*

*Hab.* — ? Coll. Cuming.

47. *GASTROCHÆNA DENTICULATA*, Desh. *G. testa ovato-ventricosa, brevi, solidula, lata, hiantissima, hiatu ovato, lato, inferne attenuato et tertiam partem posticam testæ attingente; valvis subtrapezoidalibus, transversim striato-lamellosis, in latere antico striis imbricatis, crispato-denticulatis, in latere postico*

*erectis, distantioribus; latere antico satis elongato, recto, in sutura cristato; umbonibus tumidulis, subumbilicatis; ligamento angusto, elongato, fulvo.*

*Hab.* Columbia. Coll. Cuming.

48. *GASTROCHÆNA DIFFICILIS*, Desh. *G. testa elongato-transversa, ovata, cuneiformi, compressiuscula, oblique longe hiante, hiatu ovato-oblongo, inferne attenuato, fere totam longitudinem testæ æquante; valvis trapezoidalibus, tenue striatis; striis tenuissimis, erectis, angustissimis, in latere antico confertioribus; umbonibus minimis; latere antico brevissimo, recto; ligamento elongato, rufo, angusto.*

*Hab.* Western India. Coll. Cuming.

49. *GASTROCHÆNA LAMELLOSA*, Desh. *G. testa elongato-angusta, tenui, fragili, candida, hyalina, compressiuscula, longe hiante, margine antice paululum excavato, in medio convexo, hiatu longissimo, inferne valde attenuato, fere totam altitudinem testæ æquante; valvis antice valde attenuatis, rostratis, postice obtusis, rotundatis, antice tenuissime striatis, striis erectis, appressis, in medio distantioribus, breviter lamellosis, eleganter armatis, regularibus; umbonibus minimis, approximatis, subumbilicatis; latere antico brevissimo, subrostrato; ligamento angustissimo, nigro.*

*Hab.* Philippines, Zebu. Coll. Cuming.

50. *GASTROCHÆNA PHILIPPINENSIS*, Desh. *G. testa elongato-angusta, subovata, compressiuscula, tenui, alba, antice inferneque oblique hiante, hiatu ovato, inferne acuminato, dimidiam partem testæ paulo superante; valvis tenue striato-lamellosis, striis arcuatis secundum peripheriam valvarum antice tenuibus, approximatis, in medio latioribus, sublamellosis; margine superiore postico paulo carinato; umbonibus minimis; latere antico brevi, recto, subrostrato.*

*Hab.* Philippines, Zebu. Coll. Cuming.

51. *GASTROCHÆNA INDISTINCTA*, Desh. *G. testa ovato-elongata, angusta, cuneiformi, tenui, alba, oblique truncata, elongato-hiante, hiatu elongato, acuminato, angustiusculo, usque ad tertiam partem posticam testæ attingente, transversim striata, striis antice tenuibus, regularibus, sublamellosis, erectis, in medio paulo distantioribus, et minus regularibus, in area postica tenuissimis; area postica elongato-angusta, angulo obtuso distincta; latere antico brevissimo; ligamento angustissimo, partim infosso, breviusculo.*

*Hab.* Singapore. Coll. Cuming.

52. *GASTROCHÆNA RUPPELLII*, Desh. *G. testa elongato-ovata, solidula, turgidula, candida, antice oblique hiante; hiatu ovato, lato, inferne attenuato, fere totam altitudinem testæ æquante; valvis dense striatis, striis obtusis, antice satis regularibus,*

*appressis, in medio et latere postico distantioribus, irregularibus, obtusis; umbonibus tumidulis; latere antico brevi, recto, antice parum inflexo; ligamento prælongo, angusto.*

*Hab.* Red Sea (Ruppell). Coll. Cuming.

53. *GASTROCHÆNA INTERRUPTA*, Desh. *G. testa elongato-angusta, convexiuscula, extremitatibus fere æqualiter lata, per longitudinem quasi excisa, late aperta; hiatus longissimo, ovato, oblongo, inferne vix acuto, et fere totam longitudinem testæ æquante; valvis oculo nudo lævigatis, sub lente argutissime striatis, striis obsoletis, distantibus, incrementi distantibus, subcontabulatis, interruptis; margine inferiore recto, superiore fere parallelo; umbonibus minimis, subterminalibus; latere antico brevi, inclinato; ligamento angustissimo, brevi.*

*Hab.* Philippines. Coll. Cuming.

54. *GASTROCHÆNA SPATHULATA*, Desh. *G. testa elongato-angusta, cuneiformi, compressiuscula, tenui, fragili, alba, antice longe hiante, hiatus fere totam longitudinem testæ æquante, inferne sensim attenuata; valvis antice angustis, postice latioribus, spathulatis, irregulariter striatis, striis lateris antici tenuioribus, magis regularibus, rectis, in medio rugulosis, arcuatis, inæqualibus; umbonibus minimis, acutis, fere terminalibus; latere antico brevissimo; ligamento elongato, angusto, fuscescente; sinu pallii angustissimo, acuto, profundissimo, usque umbones versus ascendente.*

*Hab.* Philippines, Bohol. Coll. Cuming.

55. *GASTROCHÆNA CUCULLATA*, Desh. *G. testa elongato-cuneiformi, tenui, alba, fragili, subcretacea, extremitate antica brevissima, postica compressa, dilatata, spathuliformi, antice inferneque oblique hiante, apertura lateraliter coarctata, fere totam longitudinem testæ æquante, latere antico angusto, incumbente, cucullato; valvis extus in tres areas divisas, prima antica obsolete striata, mediana latiore, irregulariter arcuatim striato-rugosa, tertia circa ligamentum angustiore, lævigata; umbonibus tumidulis, terminalibus; ligamento satis prominulo, elongato, fusco.*

*Hab.* West Indies. Coll. Cuming.

56. *GASTROCHÆNA PLICATILIS*, Desh. *G. testa elongato-ovata, tenui, fragili, pellucida, compressiuscula, longe hiante, postice truncata, hiatus maximo, elongato, totam altitudinem testæ æquante, inferne sensim attenuata; valvis in tres areas divisas, una antica lata, transversim regulariter striata, striis tenuissimis, oblique sub lente striolatis, parte secunda oblique mediana, angusta, lævigata, postica pyramidata, prominentiore, sulcis depressiusculis circumdata, transversim profunde sulcata, quasi scalariformi; area circa ligamentum planulata, elongato-lanceolata, ligamento crasso, elongato.*

*Hab.* Philippines, Zebu.

57. *CHÆNA AGGLUTINANS*, Desh. *C. vagina minima, elongato-clavata, postice valde attenuata, cortice valde et irregulariter transversim plicato, corpora aliena agglutinante. Testa elongato-angustissima, tenui, fragili, hiantissima, ad latus posticum vix paulo latiore, extus ut in Solenibus bipartita, parte altera subplana, arcuatim striata, altera longitudinaliter tenuissime striata; latere antico brevissimo, abrupte truncato, cucullato, angulo acuto circumscripto, radiatim tenue lirato, liris subgranosis; impressione musculari postica paulo post mediana, minima; sinu pallii profundo, acutissimo.*

*Hab.* Philippines, Zebu. Coll. Cuming.

58. *CHÆNA GRANDIS*, Desh. *C. vagina elongato-clavata, regulari, recta, transversim rugata, postice attenuata, sabuletis in cortice agglutinante. Testa elongato-angusta, hiantissima, postice latiore, spathulata, ad latus anticum sensim attenuata; latere antico brevissimo, subito truncato et angulo acuto distincto, in medio valde carinato vel cristato, radiatim inæqualiter sulcato, sulcis inæqualibus novem ad decem, quinque majoribus denticulo acuto terminatis; cardine lineari, simplice; impressione musculari postica in medio longitudinis posita; sinu pallii profundo, acutissimo.*

*Hab.* Philippines, Zebu. Coll. Cuming.

59. *CARDIUM SERRULATUM*. *C. testa suborbiculari, postice subangulata, æquilaterali, convexiuscula, tenui, fragili, alba, rufo irregulariter maculata, umbonibus acutis, oppositis, minimis, lævigatis, violaceis, longitudinaliter tenue costata, costis quinque et quinquaginta, oblique denticulis brevibus, acutis, lateraliter serrulatis, in latere postico denticulis longioribus, marginibus tenue crenulatis; valvis intus albis, sub apice purpureo maculatis.*

*Hab.* Guinea. Coll. Cuming.

60. *CARDIUM GOSSEI*, Desh. *C. testa orbiculari, turgida, spheroidæa, æquilaterali, crocea, ad apices alba, longitudinaliter costellata, costis angustis, rotundatis, anticis unico ordine tuberculorum muricatis, medianis lævibus, postremis depressis, muricato-duplicatis; umbonibus prominentibus, oppositis; valvis intus albis, aliquidisper vivide in medio croceis; marginibus lunula superne reflexis.*

*Hab.* West Indies. Coll. Cuming.

61. *CARDIUM BICOLOR*, Desh. *C. testa ovato-transversa, ventricosa, cordiformi, subæquilaterali, alba, latere postico subito castaneo nitente picto, latere antico dilute fusciscente, longitudinaliter costata, costis sex et viginti, planulatis, posticis lævigatis, latioribus, anticis crenulatis, sequentibus liris obliquis, rugosiusculis; umbonibus obliquis, prominentibus, acutis.*

*Hab.* — ? Coll. Cuming.

62. *CARDIUM HUDSONIENSE*, Desh. *C. testa parva, rotundato-subtrigona, oblique inæquilaterali, compressiuscula, tenui, fragili, squalide grisea, longitudinaliter costata, costis septem et viginti, anticis transversim crenatis, medianis planis, fere obsolete, posterioribus acutioribus, muricatis; umbonibus minimis, parum obliquis; latere antico obtuso, rotundato, postico obtuse oblique subtruncato.*

*Hab.* Hudson's Bay. Coll. Cuming.

63. *CARDIUM CYGNORUM*, Desh. *C. testa longitudinaliter ovata, depressiuscula, parum obliqua, subæquilaterali, albida, ad margines lutea, ochraceo pallido irregulariter maculata, longitudinaliter costata, costis quadraginta duo, convexis, approximatis, anterioribus crenulatis, medianis utroque latere impresso-crenatis, posterioribus minoribus, planulatis, crenato-duplicatis; umbonibus acutis, oppositis; lunula lanceolata, rubescente, impressa; valvis intus albis; costis circa ligamentum luteis, serratis, interstitiis rosaceis.*

*Hab.* Swan River. Coll. Cuming.

64. *CARDIUM TUMIDUM*, Desh. *C. testa longitudinaliter ovata, parum obliqua et inæquilaterali, turgida, cordiformi, crassa, solida, sub epidermide squalide fusca alba, intus dilute lutea, ad margines alba, longitudinaliter costata, costis ad triginta, crassis, anticis depressioribus, regulariter liris arcuatis, crenulatis, medianis crassioribus, subangulatis, lateraliter oblique striatis, posticalibus obsolete, planis, lineis impressis notatis; umbonibus magnis, prominentibus, oppositis, lunula magna, ovato-lanceolata, lævigata, excavata.*

*Hab.* Moluccas. Coll. Cuming.

65. *CARDIUM GRATIOSUM*, Desh. *C. testa longitudinaliter ovata, tumida, cordiformi, crassa, solida, subæquilaterali, parum obliqua, purpurascete, fasciis irregularibus, transversis, saturatoribus ornata; latere postico albo, longitudinaliter costato, costis convexis, ad apices subangulatis, depressiusculis, anticis medianisque transversim crenatis, vel subplicatis, posterioribus depressis, planis, linea impressa separatis; umbonibus acutis, brevibus, oppositis; lunula elongata, lanceolata, lævigata, concava, purpurea.*

*Var. β.* *Testa omnino simili sed luteo colore picta.*

*Hab.* Moluccas. Coll. Cuming.

66. *CARDIUM MAURITIANUM*, Desh. *C. testa longitudinaliter ovata, æquilaterali, non obliqua, convexa, cordiformi, alba vel flavescete, roseo-purpurascete gratissime et irregulariter maculata, intus alba, obsolete purpureo maculata, marginibus vivide purpureo maculatis, longitudinaliter costata, costis quatuor et quadraginta, convexis, depressiusculis, approximatis, primis anterioribus tuberculatis, sequentibus crenulatis, medianis utroque latere punctato-crenatis, posterioribus subimbricatis, spinulis brevibus obliquis arcuatis.*

*Hab.* Mauritius. Coll. Cuming.

67. **CARDIUM FESTIVUM.** *C. testa rotundato-trigonoide, turgidula, crassa, æquilaterali, alba, nitida, eleganter sparsim lineata et maculata, roseo-purpurascente antice posticeque maculis majoribus alternatim picta, longitudinaliter costulata, costulis obtusis, fere planis, simplicibus; latere antico declivi, obtuso, inferiore parum convexo, postico declivi, subtruncato; umbonibus parvis, oppositis; epidermide peculiari vestita, cornea, transversim tenuissime et eleganter striata, striis arcuatis; valvis intus vivide aurantio-purpureis.*

*Hab.* New Ireland. Coll. Cuming.

68. **CARDIUM LOBULATUM,** Desh. *C. testa longitudinaliter oblique ovata, depressiuscula, grisea, pallide rufo irregulariter lineata et maculata, nitide lævigata; latere postico obsolete sulcato, sulco ultimo profundiore et latiore, lobulo distincto; umbonibus parvis, violascentibus; valvis tenuibus, intus rubro-purpureis; marginibus tenuissime crenulatis.*

*Hab.* Philippines. Coll. Cuming.

69. **CARDIUM MIRABILE,** Desh. *C. testa orbiculari, tumido-sphæroidali, æquilaterali, vix oblique cordiformi, albo-rufescente, ad margines incarnata, longitudinaliter costata, costis sex et viginti, crassis, rotundatis, lateraliter convexis, et interstitiis profundis partim obtegentibus; costis anticis spinis erectis, longiusculis asperatis; in costis medianis spinis in latere postico oblique ordinatis, in posticalibus spinis inter se confluentibus et laminam serratam formantibus; lunula magna, plana, alba, ovata; area convexiuscula, elongata, inferne roseo tincta; latere postico ringente, modice hiante.*

*Hab.* Philippines. Coll. Cuming.

70. **CARDIUM ÆQUALE,** Desh. *C. testa cordiformi, lateraliter compressa, carina acuta, inferne simplice, obtusa, superne acuta, brevi, denticulata, æqualiter bipartita, albo-lutescente, postica pallide aurantia, intus eodem colore tincta, longitudinaliter costata, costis in latere antico æqualibus, parum prominentibus, superne obsolete tuberculosis, in latere postico inæqualibus; umbonibus valde carinatis, revolutis, oppositis; lunula ovata, lævigata; area ligamenti subcordata, elongata, effossa.*

*Hab.* — ?

71. **CARDIUM DEBILE,** Desh. *C. testa ovato-transversa, compressa, fragili, sublenticulari, inæquilaterali, longitudinaliter tenuissime costata, costis tribus et quadraginta, albicante, pallide aurantio irregulariter maculata; latere antico semicirculari, postico paulo longiore et latiore, costis anticis et medianis tenuissimis, planulatis, posticalibus duabus latissimis, planis, alteris elatioribus, squamoso-spinosis; costis anticis tenue crenulatis, medianis lævigatis; marginibus antice posticeque hiantibus.*

*Hab.* Chinese Seas. Coll. Cuming.



72. **CARDIUM TRANSVERSALE**, Desh. *C. testa minima, ovato transversa, valde inæquilaterali, convexiuscula, longitudinaliter costata, costis 23, antice et in medio angustis, planiusculis, simplicibus, argutissime transversim striatis, posticis multo majoribus, convexis, ultimis superioribus tribus squamulis erectis armatis; latere antico albo, postico castaneo, costis albo-subarticulatis; colore intus repetito.*

*Hab.* Alboran.

73. **CARDIUM FABRICII**, Desh. *C. testa ovato-transversa, oblique cordiformi, turgida, tenui, lævigata, antice posticeque obsolete impresso-sulcata, squalide grisea, ochraceo maculata; latere antico brevi, lato, semicirculari, postico superne declivi; umbonibus prominentibus, obtusis, oppositis; valvis tenuibus, intus albis, squalide lutescentibus; cardine angusto, dentibus cardinalibus laterali-busque validioribus quam in Cardio Grœnlandico.*

*Cardium Grœnlandicum var.*, Middendorff, Malac. Rossic. part 3.

p. 41. pl. 16. f. 6, 7.

*Hab.* Greenland. -

74. **CARDIUM PRODUCTUM**, Desh. *C. testa lateraliter cordiformi, oblonga, latere postico plano, concaviusculo, in medio prominente; latere antico conoideo, producto, infra lunulam altiore, albo-lutescente, maculis albis, præcipue in latere postico eburneis, satis regulariter marmorata; carina marginali acuta, denticulis brevibus, regularibus armata; costis longitudinalibus decem in latere antico, superne granulis acutiusculis armatis, undecim in latere postico inæqualibus, quorum duo tresve superioribus squamosis; umbonibus acute carinatis, oppositis, revolutis.*

*Hab.* Torres Straits. Coll. Cuming.

75. **CARDIUM SCRUPOSUM**, Desh. *C. testa parva, subquadrangulâri, subæquilaterali, turgida, cordiformi, candidissima, angulo acuto, obliquo inæqualiter bipartita; latere antico longiore, rotundato, margine inferiore subrecto, posteriore alto, rectilineari, cum inferiore angulum subrectum formante, margine superiore postico recto; longitudinaliter costata, costis crassis, nodosis, quatuor et viginti, quorum quindecim in latere postico, nodulis per ordines transversales digestis; costulis posterioribus paululum minoribus.*

*Hab.* Malacca. Coll. Cuming.

76. **CÆCELLA TURGIDA**, Desh. *C. testa ovato-transversa, subæquilaterali, turgida, inflata, tenuissime obsolete striata, epidermide pallide flavescente, postice irregulariter plicata vestita, albo flavescente, intus candida; latere antico paulo brevior, late rotundato, postico paulo attenuato, subtruncato; umbonibus latis, depressiusculis, oppositis, approximatis, apice acutis; cardine angustissimo; fossula minima, brevi, angusta, non obliqua; dente cardinali parvo, acuminato, lateralibus brevibus, marginalibus fere obsolete; sinu pallii brevi, triangulari, apice obtuso.*

*Hab.* Philippines. Coll. Cuming.

77. *CÆCELLA ZEBUENSIS*, Desh. *C. testa ovato-subtrigona, compressiuscula, tenui, subæquilaterali, transversim obsolete et irregulariter striata, alba, epidermide flavicante vestita; latere antico brevior, late obtuso, non declivi, latere postico æqualiter obtuso, margine inferiore regulariter arcuato; cardine solidulo, satis lato, fossula parum obliqua, acuminata, paulo prominente, dente cardinali compresso, acuminato, apice canaliculato, dentibus lateralibus inæqualibus, antico valvæ sinistræ obsoleto; sinu pallii lato, brevi, subtrigono.*

*Hab.* Philippines, Zebu. Coll. Cuming.

78. *CÆCELLA CUMINGIANA*, Desh. *C. testu ovato-transversa, turgida, inæquilaterali, transversim inæqualiter striata, alba, sub epidermide flavescente irregulariter striata, crispa, postice sublamellosa; latere antico brevior, obtuso, superne declivi, postico paulo magis attenuato, æqualiter declivi, margine inferiore regulariter arcuato; umbonibus prominentibus, acuminatis, oppositis, acutis; fossula valde basi producta, postice obliquata, acuminata; dente cardinali depresso, dentibus lateralibus fere nullis; sinu pallii lato, apice obtuso, subtrigono.*

*Hab.* Philippines, Luzon. Coll. Cuming.

79. *CÆCELLA CHINENSIS*, Desh. *C. testa ovato-transversa, convexiuscula, solida, æquilaterali, epidermide fuscescente, decidua vestita, albo-cornea, transversim inæqualiter striata; latere antico paululum longior, declivi, obtuso, postico superne convexiusculo, latiore, obtuso, margine inferiore fere recto; umbonibus minimis, vix prominentibus, acutiusculis; cardine crasso, satis lato, dente cardinali compressissimo, lamellari, fossula profunda, vix obliqua, basi oblique truncata; dentibus lateralibus angustis, acutis, antico brevi; sinu pallii brevissimo, angusto, triangulari.*

*Hab.* Chinese Seas. Coll. Cuming.

80. *CÆCELLA CONVEXA*, Desh. *C. testa ovato-transversa, convexa, crassa, solida, æquilaterali, subsymmetrica, transversim obsolete inæqualiter striata, albo flavidula, sub epidermide decidua, tenui, pallide flavescente; latere antico superne paululum declivi, late obtuso, postico superne convexiusculo; margine inferiore regulariter arcuato; cardine crasso, lato; fossula basi acuminata, producta; dente cardinali compresso, apice sulco impresso bipartito, dentibus lateralibus inæqualibus, parum obliquis, antico minore, brevi; sinu pallii minimo, angusto, brevi, semielliptico.*

*Hab.* — ? Coll. Cuming.

81. *CÆCELLA LATA*, Desh. *C. testa ovato-subtrigona, convexiuscula, solida, æquilaterali, subsymmetrica, alba, sub epidermide tenui, flavescente, transversim tenui, obsolete et inæqualiter striata; latere antico et postico æqualiter declivibus, obtusis, margine inferiore regulariter arcuato; umbonibus minimis, acutis, oppositis, approximatis; cardine lato, crasso, fossula ad latus posticum parum obliquata, profunda, basi producta, acuminata, dente cardinali*

*compresso, apice leviter sulcato, dentibus lateralibus inæqualibus, parum obliquis, antico minore, cardine adnato; sinu pallii minimo, brevi, angusto, subtriangulari.*

*Hab.* Chinese Seas. Coll. Cuming.

82. *CÆCELLA HORSFIELDII*, Gray. *C. testa transversa, ovato-subtrigona, turgidula, tenui, fragili, æquilaterali, transversim inæqualiter tenue striata, epidermide flavo-rufescente vestita, alba; latere antico lato, superne recto, margine inferiore fere parallelo, late obtuso; latere postico attenuato, superne declivi, extremitate obtuso; umbonibus minimis, acutis, oppositis; dente cardinali angusto, compresso, sulco longitudinali partito, dentibus lateralibus minimis, angustis, brevibus, subæqualibus; fossula profunda in cavitate valvarum deflexa, basi valde prominente et acuta; sinu pallii angusto, obtuso, profundo, horizontali.*

*Hab.* Madras.

83. *CÆCELLA TRANSVERSALIS*, Desh. *C. testa elongato-transversa, ovato-acuminata, æquilaterali, compressiuscula, irregulariter obsolete transversim striato-sulcata, squalide alba, sub epidermide rufescente, postice irregulariter plicata; latere antico elongato, obtuso, margine superiore recto, inferiori parallelo; latere postico attenuato, superne declivi, margine inferiore fere recto; cardine angusto, fossula paulo obliqua, valde basi prominente et acuta, angusta, profunda, dente cardinali compresso, acuto, canaliculato, dentibus lateralibus divaricatis, marginalibus antico minore; sinu pallii angusto, profundo, semielliptico.*

*Hab.* — ? Coll. Cuming.

84. *CÆCELLA OBLONGA*, Desh. *C. testa ovato-transversa, convexiuscula, elliptica, inæquilaterali, tenui, fragili, transversim tenue striata, alba, sub epidermide fulva, irregulariter tenue striata, in latere postico tenue plicata; latere antico paulo brevior, atque postico æqualiter obtusis, superne declivibus; margine inferiore fere recto; cardine angusto, fossula angusta, profunda, basi producta, oblique truncata, dente cardinali apice bifido, dentibus lateralibus submarginalibus, brevibus, angustis, antico vix perspicuo; sinu pallii angusto, satis profundo, obtuso, horizontali.*

*Hab.* Chinese Seas. Coll. Cuming.

85. *CÆCELLA ZELANDICA*, Desh. *C. testa elongato-transversa, elliptica, convexiuscula, solidula, inæquilaterali, transversim striata, epidermide flavescente vestita, albo-pellucida, utroque latere æqualiter obtusa et declivi; latere antico brevior; margine inferiore paululum arcuato; dente cardinali compresso, triangulari, acuminato, prominente; fossula angusta, profunda, obliqua, basi acuminata; dentibus lateralibus angustis, inæqualibus, antico brevi; sinu pallii profundo, lato, subtrigono, apice obtuso.*

*Hab.* New Zealand. Coll. Cuming.

86. *CÆCELLA TENUIS*, Desh. *C. testa ovato-transversa, elliptica, subæquilaterali, convexiuscula, tenui, transversim tenuissime striata, alba, hyalina, epidermide flavescente vestita, extremitatibus æqualiter obtusa; latere antico paulo brevior et angustior, postico superne convexiusculo; margine inferiore recto; cardine angusto, fossula minima, obliqua, angusta, basi parum prominente, dente cardinali angusto, triangulari, apice bifido, dentibus lateralibus marginalibus compressis, inæqualibus, antico parvulo, brevi; sinu pallii lato, non profundo, obtuso.*

*Hab.* Philippines, Bohol. Coll. Cuming.

87. *MESODESMA CRASSULA*, Desh. *M. testa orbiculato-trigona, compressa, valde inæquilaterali, inæqualiter substriata, sub epidermide nitente, pallide flavescente alba; latere antico lato, elongato, obtuso, superne convexiusculo, declivi; latere postico brevi, lato, obtusissimo, semicirculari; umbonibus minimis, acutis, prominentibus; cardine brevi, lato, solido, fossula angusta, profunda, basi vix prominente, dente cardinali oblongo, in utroque latere fossulæ dentibus lateralibus validis, antico longiore, postico valvulæ dextræ conico, crasso, pyramidalis, acuminato; impressione pallii simplice.*

*Hab.* Philippines. Coll. Cuming.

88. *MESODESMA OVALIS*, Desh. *M. testa transversa, regulariter elliptica, æquilaterali, compressa, ad margines acuta, lævigata, nitida, alba, sub epidermide stramineo-viridescente, zonula ad peripheriam nigra, infucata; latere antico et postico æqualiter obtusis, superne paululum declivibus; cardine angusto, fossula lata, profundaque, dentibus lateralibus valde divaricatis, fere marginalibus; sinu pallii brevissimo, vix inflexo, superne abrupte arcuato.*

*Hab.* New Zealand. Coll. Cuming.

89. *MESODESMA MACTROIDES*, Desh. *M. testa elongato-transversa, ovato-trigona, inæquilaterali, alba, hyalina, tenui, nitidissima, utroque latere hiante, transversim tenuissime inæqualiter striata; latere antico multo longiore, semielliptico, obtuso, attamen sensim attenuato, superne inferneque æqualiter convexiusculo; latere postico oblique declivi, subtruncato; cardine angusto, fossula mediana, lata, parum profunda, basi prominente, dentibus lateralibus valde divergentibus, marginalibus compressis, lamellosis, triangularibus, acuminatis; sinu pallii profundo, angusto, apice obtuse acuminato.*

*Hab.* — ? Coll. Cuming.

90. *MESODESMA TRANSVERSA*, Desh. *M. testa transversa, elongata, subæquilaterali, cuneata, lævigata, compressa, utraque extremitate obtusa, carneo-flavescente, transversim obsolete striata; latere antico paulo longiore, superne declivi, postico convexo, declivi, obtuso, margine inferiore fere recto; umbonibus minimis, productiusculis, acutis; cardine crasso, lato, dentibus*

*validis tribus, altero duobus, laterali antico elongato, fossula profundissima, angusta, basi non producta; sinu pallii angusto, satis profundo, semiovali, horizontali.*

Var.  $\beta$ . *Testa minore, corneo-fusca.*

*Hab.* — ? Coll. Cuming.

91. *MESODESMA ANGULUM*, Desh. *M. testa elongato-trigona, compressa, cuneiformi, maxime inæquilaterali, nitidissima, alba, eburnea; latere antico prælongo, late obtuso, superne recto, vix declivi, cum postico brevissimo angulum acutum formante; umbonibus minimis, acutis, terminalibus; cardine crassiusculo, postice brevissimo, fossula angustissima, profunda, basi producta, parum obliqua; dente laterali antico elongato, crasso, postico brevi, acuminato, angusto; sinu pallii lato, oblique semicirculari.*

*Hab.* Philippines. Coll. Cuming.

92. *MESODESMA LANCEOLATA*, Desh. *M. testa valde transversa, elongato-trigona, maxime inæquilaterali, cuneata, lanceolata; latere antico maximo, acuminato, superne concaviusculo, inferne vix convexiusculo; latere postico crassiore, sub angulo fere recto subito truncato, ad umbones angulato, angulo inferne evanescente; umbonibus acutis, angustis, subterminalibus, oppositis; latere postico irregulariter plicato; fossula cardinali brevi, late trigona, antice obliquata; dentibus lateralibus inæqualibus; antico elongato, compresso, cardine remoto; sinu pallii lato, profundo, semielliptico; valvis albo-flavis, nitidissimis.*

*Hab.* Western Australia. Coll. Cuming.

93. *MESODESMA HETERODON*, Desh. *M. testa transversa, trigona, compressa, inæquilaterali, nitida, obsoletissime striata, corneo-fuscescente; latere antico elongato, obtuso, superne convexiusculo, postico brevi, acuminato, declivi, truncato, sæpius irregulariter plicato; cardine angusto, tridentato in valvula sinistra, bidentato in altera, fossula angusta, profunda, antice obliquata, dente laterali antico elongato, cardine remoto, postico magno, conico, acuto, trigono, acuminato; sinu pallii brevissimo, angustissimo, semiovali.*

*Hab.* Western Australia. Coll. Cuming.

94. *MESODESMA ELONGATA*, Desh. *M. testa elongato-transversa, compressa, nitida, cuneiformi, valde inæquilaterali, corneo-flavescente, zonulis saturatioribus angustis interrupta; latere antico prælongo, late obtuso, superne recto, vix declivi, margine inferiore parum convexo; latere postico obtuso, oblique declivi, brevi, inferne angulato; umbonibus minimis, oppositis, fere nullis; cardine solidulo, fossula angusta, profunda, ad latus anticum obliquata; sinu pallii lato, brevissimo, subsemicirculari.*

*Hab.* Torres Straits. Coll. Cuming.

95. *MESODESMA ANGUSTA*, Desh. *M. testa elongato-angusta, compressa, cuneiformi, valde inæquilaterali, polita, nitida, corneo-fusca; latere antico longissimo obtuso, superne lente declivi; latere postico brevissimo, obtuso, truncato, inferne subangulato; cardine angustissimo, fossula angusta profundaque, antice valde obliquata, dente laterali antico angusto, prælongo, postico brevi, conico, acuto; sinu pallii brevi, lato, semicirculari; valvis tenuibus, fragilibus.*

*Hab.* Northern Australia. Coll. Cuming.

96. *MESODESMA NITIDA*, Desh. *M. testa transversa, subtrigona, valde inæquilaterali, compressa, cuneiformi, lævigata, epidermide cornea, nitente vestita, intus alba; latere antico longissimo, obtuso, parum attenuato, antice inferneque acuto; latere postico brevi, oblique truncato, ad extremitatem inferiorem angulato, area lunulaque nullis; cardine angusto; fossula angusta, profunda, antice obliquata, basi prominente, truncata, dente laterali antico elongato, angusto, cardine satis remoto; impressione pallii brevi, sinu brevi, angusto, oblique semicirculari.*

*Hab.* New Holland, Sydney, and Swan River. Coll. Cuming.

97. *MESODESMA PRÆCISA*, Desh. *M. testa transversa, subtrigona, crassa, solida, valde inæquilaterali, alba, nitente, ochraceo dilute tincta, inæqualiter obsolete striata; latere antico prælongo, late obtuso, margine superiore inferioreque fere parallelis; latere postico oblique truncato, obtuso; umbonibus minimis, acutis, vix prominentibus; cardine lato, crasso, solido, fossula angusta, profunda, basi prominente, dentibus lateralibus crassis, latis, depressis, obtusis; sinu pallii minimo, angusto, brevi, subtrigono.*

*Hab.* Van Diemen's Land. Coll. Cuming.

98. *MESODESMA RETUSA*, Desh. *M. testa brevi, transversa, compressa, maxime inæquilaterali, transversim minutissime striata, albo-flavescente, sub epidermide squalide fusciscente; latere antico prælongo, obtusissimo, margine superiore inferioreque rectis, parallelis; latere postico obtuso, perpendiculariter truncato, tantisper convexo; cardine angustissimo, fossula minima, angusta, basi acuto-prominente, dente cardinali obsolete, dentibus lateralibus æqualibus, in valvula dextra prominentioribus; musculorum cicatriculis minimis; impressione pallii simplice.*

*Hab.* — ? Coll. Cuming.

99. *MESODESMA INTERMEDIA*, Desh. *M. testa ovato-trigona, subtransversa, crassa, solida, valde inæquilaterali, postice oblique truncata, squalide albo-flavida, transversim irregulariter striata, striis paululum undulatis, in latere postico profundioribus; latere antico obtuso, superne convexiusculo, declivi, postico brevissimo, oblique truncato, inferne subangulato; car-*

dine lato, crasso, fossula angusta, profunda; dentibus lateralibus crassis, subæqualibus, prominentibus, acuminatis; sinu pallii parvulo, angusto, brevi, oblique semicirculari.

Hab. — ? Coll. Cuming.

100. MESODESMA MACRODON, Desh. *M. testa minima, trigona, subtransversa, inæquilaterali, depressa, in medio convexiuscula, squalide albo-flavescente, transversim sulcata, sulcis irregularibus, approximatis, convexis, antice attenuatis, postice paulo eminentioribus; latere antico longiore, obtuso, superne declivi, postico obtuso, brevi, declivi; umbonibus minimis, acutis, brevibus; cardine lato, crasso; fossula sulciformi, profunda; dentibus lateralibus validis, subæqualibus, in utraque valva prominentibus; sinu pallii brevissimo, minimo, oblique subsemicirculari.*

Hab. — ? Coll. Cuming.

101. MESODESMA LAYARDI, Desh. *M. testa trigona, crassa, turgida, inæquilaterali, ad umbones pallide violacea, zonulis angustis aliquibus saturatioribus, valvis intus nitide pallideque violaceis, transversim obsolete striato-rugata, postice irregulariter plicata; latere antico paulo longiore, superne convexiusculo, declivi, inferne convexo, extremitate obtuso; latere postico obtuso, depresso, subplano, recto, valde declivi, inferne subangulato; cardine lato et crasso, dentibus, præcipue anticis, prominentibus, compressis, fossula angusta, profunda; sinu pallii minimo, angusto, obtuse triangulari.*

Hab. Ceylon.

102. MESODESMA MITIS, Desh. *M. testa ovato-trigona, transversa, turgidula, crassa, solida, subæquilaterali, transversim obsolete et inæqualiter striata, nitida; latere antico paulo longiore posticoque rectis, declivibus, æqualiter obtusis, margine inferiore regulariter convexo; cardine crasso, fossula profunda, basi non prominente, dentibus validis, postico valvæ dextræ majore, valde prominente, trigono, compressiusculo; sinu pallii minimo, brevissimo, trigono, apice acuto.*

Hab. Australia. Coll. Cuming.

103. MESODESMA SULCATA, Desh. *M. testa trigona, subtransversa, subæquilaterali, crassa, solida, in medio convexiuscula, apice acuminata, squalide albo-flavicante, transversim regulariter sulcata, sulcis latis, convexis, depressis, approximatis, ad apicem evanescentibus, postice alternatim interruptis; latere antico obtuso, atque postico æqualiter rectis et declivibus, margine inferiore parum convexo; latere postico parum convexo, sulcis minus regularibus; cardine crasso, fossula angusta, profunda; dentibus lateralibus crassis, postico maximo, triangulari, valde prominente; sinu pallii satis lato, brevissimo, ovato-triangulari.*

Hab. — ? Coll. Cuming.

104. HETEROCARDIA CUMINGII, Desh. *H. testa ovato-trans-*

*versa, compressa, tenui, fragili, subæquilaterali, in medio convexiuscula, alba, transversim inæqualiter striata; latere antico paulo longiore, late rotundato, margine superiore antico recto, horizontali, inferiori parallelo; latere postico arcuatim truncato, hiante, inferne subangulato; umbonibus minimis, vix prominentibus; cardine angusto, fossula non obliqua, mediana, parum basi prominente, lamina cardinali angusta, canaliculata.*

*Hab.* Manilla. Coll. Cuming.

105. HETEROCARDIA GIBBOSULA, Desh. *H. testa ovato-transversa, subtrigona, convexiuscula, subæquilaterali, omnino alba, transversim inæqualiter striata, in medio turgidior, postice compressa, subito arcuatim truncata, hiante, superne gibbosula; latere antico angustiore, paulo longiore, superne declivi, antice obtuso, margine inferiore recto; fossula magna, non obliqua, valde prominente; lamella cardinali antice posticeque profunde canaliculata; sinu pallii profundo, superne latiore.*

*Hab.* Manilla. Coll. Cuming.

106. HETEROCARDIA FABAGELLA, Desh. *H. testa minima, ovato-transversa, convexiuscula, æquilaterali, in medio convexa, gibbosula, postice depressiuscula, omnino alba, transversim irregulariter striata; latere antico lato, obtuso, superne parumper declivi; latere postico arcuatim truncato, hiante, inferne obtuse subangulato; margine inferiore recto; cardine angusto, fossula non obliqua, profundiuscula, basi parum prominente; lamina cardinali angusta, canaliculata, angulum inferiorem versus prolongata; sinu pallii profundissimo, usque impressionem muscularem anticam attingente; umbonibus minimis, depressis, vix prominentibus.*

*Hab.* Philippines. Coll. Cuming.

107. CYRENELLA SPHÆRICULA, Desh. *C. testa orbiculari, globosa, subsphærica, inæquilaterali, tenui, fragili, sub lente tenuissime striata, alba, sub epidermide griseo-lutescente, tenuissima, striato-reticulata; latere antico brevi, obtuso, postico rotundato; umbonibus tumidis, approximatis; valvis tenuibus, intus albis; cardine angustissimo, utroque latere bidentato, dente antico valvulæ sinistrae porrecto, profunde fisso; impressionibus muscularibus angustis, marginalibus.*

*Hab.* Moreton Bay.

108. CYRENELLA PHILIPPINARUM, Sow. MSS. *C. testa suborbiculari, turgida, cordiformi, tenui, inæquilaterali, epidermide decidua, tenui, flavescente vestita, in latere postico fusciscente, albo irregulariter striata; latere antico brevior, superne declivi, in medio obtuso, parumper attenuato; latere postico multo latiore, angulato; area magna, in medio prominente, angulo circumdata; umbonibus tumidis, prominentibus, cordatis, approximatis; ligamento angusto immerso; cardine obliquo, angusto, inæqualiter bidentato, dente postico valvulæ dextræ lato, bilobato.*

*Hab.* Philippines. Coll. Cuming.



109. *CYRENELLA MORETONENSIS*, Desh. *C. testa orbiculato-ovata, tumida, cordiformi, inæquilaterali, transversim inæqualiter striata, incrementi irregulariter contabulata, epidermide squalide fusca, striata, decidua vestita; latere antico paulo brevior, obtuso, superne declivi, attenuato, postico latiore, obtuse angulato; area lata, angulo obtuso circumscripta; umbonibus tumidis, oppositis, prominentibus; cardine angusto inæqualiter bidentato; valvis tenuibus, intus lutescentibus.*

*Hab.* Moreton Bay. Coll. Cuming.

110. *CYRENELLA OBLONGA*, Sow. MSS. *C. testa ovato-transversa, turgida, inæquilaterali, albo-flavescente, sub epidermide decidua, tenui, flavescente, transversim striato-sulcata, sulcis inæqualibus, obsoletissimis; latere postico obtuse angulato, area magna, angulo circumscripta, in medio carinato-elevata; umbonibus brevibus, obliquis, approximatis; ligamento angusto, infosso; latere antico paulo angustiore, brevior, obtuso, postico late truncato; cardine angustissimo dentibus primariis minimis, inæqualibus, in utraque valva majoribus, bifidis.*

*Hab.* Philippines. Coll. Cuming.

111. *CYRENELLA SENEGALENSIS*. *C. testa orbiculari, depressiuscula, lenticulari, tenui, fragili, irregulariter et dense striata, sub epidermide virescente, lamellosa et reticulata squalide fuscescente; umbonibus tumidis, acutis, approximatis; latere antico late obtuso, semicirculari, brevior, postico paulo angustiore; cardine angusto, in valva dextra dentibus tribus, divergentibus, mediano interposito, in valva sinistra dente unico angustissimo, lamelloso, elongato, adjecto altero posticali, brevissimo; valvis intus albocæruleis.*

*Hab.* Senegal. Coll. Cuming.

112. *CYRENELLA LENTICULARIS*. *C. testa orbiculari, convexiuscula, tenui, fragili, inæquilaterali, lenticulari, sub epidermide viridi-fuscescente transversim lamelloso-reticulato, albo-cærulescente; latere antico brevior; lunula magna, linea albescente, obsolete prominente circumscripta; cardine angustissimo, dentibus cardinalibus duobus in valva dextra, unico in sinistra; dentibus compressis, minimis, obliquis; ligamento angusto, elongato, partim immerso.*

*Hab.* —? Coll. Cuming.

113. *CYRENELLA PISIFORMIS*. *C. testa orbiculari, inflata, sphaeroidali, tenui, fragili, subæquilaterali, sub lente tenuissime striata, sub epidermide pallide straminea alba, latere antico angustiore, brevior, rotundato, postico late rotundato; cardine angusto, bidentato, dentibus inæqualibus, majoribus bifidis; cicatriculis musculorum longissimis, submarginalibus; umbonibus tumidis, prominulis, obtusis, fere oppositis.*

*Hab.* Philippines. Coll. Cuming.

114. SPHÆRIUM NOVÆ-ZELANDIÆ. *S. testa ovato-transversa, æquilaterali, compressa, nitidissima, pellucida, griseo-cærulescente, saturatiore irregulariter transversim zonata; latere antico obtuso, parum declivi, postico latiore, rotundato, margine inferiore convexo; umbonibus minimis, obtusis, vix prominentibus; ligamento minimo, inconspicuo; cardine angustissimo, bidentato, dentibus exiguis, lateralibus parvis, antico paulo majore.*

*Hab.* New Zealand; New Holland.

115. SPHÆRIUM INDICUM, Desh. *S. testa ovato-rhomboida, tumidula, æquilaterali, tenui, pellucida, albo-grisea; latere antico late rotundato, postico obtuse truncato; umbonibus tumidis, parum prominentibus; cardine obsolete bidentato, dentibus lateralibus candidis, antico majore, trigono, acuto, postico paulo brevior; valvis sub lente tenuissime striatis.*

*Hab.* Indian rivers.

116. CORBICULA SQUALIDA, Desh. *C. testa ovato-transversa, subtrigona, subæquilaterali, tenui, turgidula, utraque extremitate obtusa, transversim sulcata, sulcis irregularibus, distantibus, aliquando interruptis, postice anticeque sæpius evanidis, epidermide viridi, fusco-atrata, squalide irregulariter maculata, lineolis capillaceis, undulatis, longitudinalibus ornata; umbonibus tumidis, integris, lævigatis; valvis intus violaceo-vinosis; cardine angusto, tridentato, altero bidentato; dentibus exiguis, lateralibus angustis, æqualibus, striato-serrulatis.*

*Hab.* —? Coll. Cuming.

117. CORBICULA INCRASSATA, Desh. *C. testa ovato-trigona, valde inæquilaterali, crassa, solida, cuneiformi, transversim dense striata, epidermide atro-viridi vestita; latere antico brevi, valde declivi, obtuso, postico subangulato; margine inferiore parum arcuato; umbonibus tumidis, oppositis, sæpius erosis; cardine incrassato, tridentato, dentibus cardinalibus subparallelis, lateralibus densissime et argute striatis, antico paulo brevior.*

*Hab.* —? Coll. Cuming.

118. CORBICULA OBSCURA, Desh. *C. testa ovato-suborbiculari, depressiuscula, subæquilaterali, extremitatibus æqualiter obtusa, transversim irregulariter striata, striis antice profundioribus, epidermide atro-virescente vestita; cardine tridentato, dentibus æqualibus, divergentibus, lateralibus brevibus, angustis, antico paulo longiore; impressione pallii postice sinuosa, sinu brevissimo, lato.*

*Hab.* —? Coll. Cuming.

119. CORBICULA CONVEXA, Desh. *C. testa orbiculato-cordiformi, globulosa, inæquilaterali, crassa, solida, viridi-olivacea, tenuissime et irregulariter striata, ad umbones lævigata, antice brevior; umbonibus tumidis obtusis, oppositis; valvis solidiusculis, intus albis; cardine inæqualiter tridentato, dente mediano valvulæ dextræ bifido, dentibus lateralibus subæqualibus, angustis, tenue*

*et breviter crenulatis; impressione pallii postice sinu parvulo, trigono terminata.*

*Hab.* Central America.

120. CORBICULA OBSOLETA, Desh. *C. testa ovato-trigona, obliqua, tumidula, inæquilaterali, solidiuscula, transversim irregulariter striato-sulcata, epidermide olivacea vestita, zonulis obscurioribus interrupta, utroque latere declivi, antice lata, brevior, obtusa, postice subangulata; umbonibus prominentibus, obliquis; cardine angusto, dentibus cardinalibus tribus, minimis, subparallelis, dentibus lateralibus angustis, æqualibus, antico arcuato; valvis intus vivide violaceis.*

*Hab.* Uruguay. Coll. Cuming.

121. CORBICULA SEMISULCATA, Desh. *C. testa transversa, ovato-subtrigona, inæquilaterali, tumidula, solidiuscula, transversim incremento irregulariter substriata, antice regulariter sulcata, epidermide squalide virescente vestita, aliquando zonulis transversis nigrescentibus interrupta, intus profunde violacea; cardine tridentato, dentibus fere æqualibus, lateralibus validis, brevibus, postico cardine remoto; sinu pallii postico brevi, angusto, triangulari, acuto.*

*Hab.* Victoria River, Australia. Coll. Cuming.

122. CORBICULA OVALINA, Desh. *C. testa ovato-transversa, subæquilaterali, tenui, subventricosa, epidermide viridi vel nigrescente vestita, sulcis latis, ad latus posticum evanescentibus exarata; latere postico paulo longiore; cardine angusto, dentibus cardinalibus valde divaricatis, inæqualibus, lateralibus brevibus, antico paulo longiore, postico in medio prominentiore, utroque latere dense striato; cardine remoto.*

*Hab.* Port Essington. Coll. Cuming.

123. CORBICULA TUMIDA, Desh. *C. testa regulariter ovato-transversa, tumida, tenui, subæquilaterali, postice paulo longiore, utraque extremitate æqualiter obtusa, epidermide viridi, nitente vestita, transversim sulcata, sulcis valde distantibus; umbonibus parvis, turgidulis, integris; cardine angustissimo, dentibus cardinalibus tribus, angustis, inæqualibus, valde divergentibus, lateralibus angustissimis, arcuatis, argute crenulato-striatis.*

Var.  $\beta$ . *Testa juniore, epidermide glaucescente, valvulis intus extusque fusco trimaculatis.*

*Hab.* Borneo. Coll. Cuming.

124. CORBICULA MALACCENSIS, Desh. *C. testa ovato-transversa, subtrigona, inæquilaterali, turgidula, solidula, epidermide glaucescente vestita, transversim regulariter et tenue sulcata, extremitatibus obtusa, latere antico longiore; cardine angusto, tridentato, altero bidentato; dentibus lateralibus angustis, tenuissime striatis, antico longiore; valvis intus albis, vel pallide violaceo tinctis.*

*Hab.* Malacca. Coll. Cuming.

125. CORBICULA GRANDIS, Desh. *C. testa orbiculato-trigona, solida, tumidula, inæquilaterali, transversim irregulariter rugosa, antice sulcis magis regularibus exarata, latere antico brevior, late arcuato, postico magis attenuato, epidermide nitidissimo, nigrescente vestita, ad margines flavescente, postice squamosa; valvis intus pallide flavis; cardine incrassato, tridentato, dentibus approximatis, lateralibus brevibus, crassis, irregulariter striato-denticulatis.*

*Hab.* China. Coll. Cuming.

126. CORBICULA CASHMIRIENSIS, Desh. *C. testa ovato-transversa, subtrigona, æquilaterali, tumidula, transversim tenue et regulariter striata, striis postice evanescentibus, epidermide nitida, atro-virescente, in latere postico tenuissime striata vestita; umbonibus tumidis, prominentibus, profunde erosis, violaceis; cardine angusto, in valva dextra bidentato, in altera tridentato, valvulæ dextræ dente antico laterali adnato, dentibus primariis divergentibus, simplicibus, lateralibus longis, angustis, antico longiore, cardine proximo; valvis intus violaceis, impressione pallii margine valde remota.*

*Hab.* Cashmere. Coll. Cuming.

127. CORBICULA TRIGONA, Desh. *C. testa trigona, æquilaterali, compressiuscula, antice paulo latiore et obtusior, utroque latere æqualiter declivi, transversim tenue et regulariter striata, epidermide viridi, nitente induta, intus pallide violacea; umbonibus minimis, brevibus, acutis; lunula ovata, angulo obsolete circumscripta, pallida, lævigata; cardine angusto, bidentato, altero tridentato; dentibus lateralibus æqualibus, tenuissime striatis, antico leviter arcuato.*

*Hab.* Pondicherry. Coll. Cuming.

128. CORBICULA STRIATELLA, Desh. *C. testa ovato-transversa, depressiuscula, subæquilaterali, extremitatibus æqualiter obtusa, transversim regulariter lirata, liris ad latus posticum evanescentibus, epidermide pallide virescente, nitida vestita, intus atro-violacea; umbonibus brevibus, atro-violascentibus, pallidior biradiatis; cardine angusto, tridentato, dentibus inæqualibus, divaricatis, postico longiore et angustior, dentibus lateralibus elongatis, angustis, subæqualibus, arcuatis, tenuissime striatis.*

*Hab.* Pondicherry. Coll. Cuming.

129. CORBICULA BENGALENSIS, Desh. *C. testa ovato-subtrigona, depressiuscula, tenui, subæquilaterali, obsolete transversim striata, striis regularibus, distantibus, epidermide flavescente, nitidissima, intus alba, in medio macula rubescente notata; umbonibus minimis, acutis; cardine angusto, tridentato, altero bidentato; dentibus lateralibus angustissimis, argute striatis.*

*Hab.* Bengal. Coll. Cuming.

130. CORBICULA BENSONI, Desh. *C. testa ovato-transversa, subtrigona, æquilaterali, lævigata, nitida, depressiuscula, extremitatibus obtusa, utroque latere æqualiter declivi, epidermide tenui, nitente, virescente vel flavescete induta, aliquantisper lineis interruptis, fuscis radiata, intus alba, vel pallide violascente; cardine angusto, tridentato, dentibus inæqualibus valde divaricatis, dentibus lateralibus prælongis, angustissimis, tenuissime striato-crenatis, antico paullo longiore.*

*Hab.* Bengal (Benson). Coll. Cuming.

131. CORBICULA AMBIGUA, Desh. *C. testa ovato-trigona, æquilaterali, subcordiformi, transversim dense striato-sulcata, striis regularibus, antice posticeque evanescentibus, epidermidenitente, nigro-virescente vestita, in latere postico tenuissime striato-lamellosa, intus violacea; umbonibus angustis, prominentibus, antice obliquatis; latere antico atque postico æqualiter convexiusculis, declivibus, obtusis; cardine angusto, dentibus tribus primariis inæqualibus, brevibus, simplicibus, antico valvæ dextræ dente laterali adnato, dentibus lateralibus æqualibus, longis, extremitate inferiore leviter arcuatis, crenulato-striatis.*

*Hab.* Euphrates.

132. CORBICULA TRIANGULARIS, Desh. *C. testa trigona, æquilaterali, alta, tumidula, solida, epidermide fusciscente vestita, transversim irregulariter striato-rugosa, utroque latere æqualiter declivi; umbonibus prominentibus, violaceo-lividis vel roseis, violaceo subradiatis; valvis intus superne rubescentibus, ad margines violaceis; cardine incrassato, inæqualiter tridentato; dentibus lateralibus crassis, prælongis, tenuissime striatis.*

*Hab.* — ? Coll. Cuming.

133. CORBICULA SULCATINA, Desh. *C. testa ovato-trigona, turgidula, cordiformi, subæquilaterali, obliqua, transversim dense et tenue sulcata, sulcis postice evanescentibus; lunula depressa, lævigata; epidermide viridi-flavescente, ad umbones decorticata; umbonibus lævigatis, prominentibus, obliquis; intus candida, ad margines pallide castanea; cardine angusto, utroque latere bidentato, dentibus lateralibus æqualibus, brevibus, striatis.*

*Hab.* — ? Coll. Cuming.

134. CYRENA (ANOMALA) MARITIMA, C. B. Adams. *C. testa orbiculato-cordiformi, subæquilaterali, turgida, tenui, transversim irregulariter et dense striata, epidermide viridi-fusciscente induta; umbonibus magnis, parum obliquis, approximatis, acutis, lævigatis; latere antico superne declivi, convexiusculo, in medio parumper attenuato et obtuso, postico brevi, truncato, area magna, convexa, ovata, angulo obtuso, decurrente circumdata; cardine angusto, dentibus primariis tribus, minimis, subæqualibus, approximatis, apice bifidis, divergentibus,*

*lateralibus æqualiter remotis, in valva dextra duplicatis, antico usque ad cardinem canaliculato.*

*Cyrena maritima*, C. B. Adams, Panama Shells.

*Hab.* Panama. Coll. Cuming.

135. CLEMENTIA CUMINGII, Desh. *C. testa ovato-transversa, tenui, turgida, valde inæquilaterali, alba, transversim late plicata et inæqualiter striata, irregulariter et dense punctato-rugosa, ad margines plicis depressioribus; latere antico brevissimo, declivi, obtuse attenuato, inferne convexo, lunula ovata, superne impressa notato; latere postico ellipsoideo, superne convexiusculo, late obtuso, area elongato-lanceolata, excavata, angulo acuto circumdata; cardine angusto, dentibus tribus in valva dextra, duobus in altera, dentibus duobus anticis approximatis in valva dextra; sinu pallii profundo, triangulari, peroblique ascendente.*

*Hab.* Red Sea. Coll. Cuming.

136. BATISSA AUSTRALIS, Desh. *B. testa ovato-subrhomboidali, convexa, crassa, solida, inæquilaterali, subgibbosa, epidermide atro-virescente, nitente vestita, transversim, præcipue antice, sulcata, sulcis irregularibus, postice evanescentibus; latere antico brevior, obtuso, superne subrecto et declivi; latere postico lato, rotundato, obtusissime biangulato; umbonibus obliquatis, profunde erosis; cardine lato, incrassato, dentibus primariis tribus in unaquaque valva, validis, crassis, mediano valvæ dextræ majore, apice bifido, lateralibus inæqualibus, postico longiore, angustiore, antico crasso, brevi; valvis intus ad margines violaceis.*

*Hab.* Australia. Coll. Cuming.

137. SANGUINOLARIA PURPUREA, Desh. *S. testa ovato-transversa, tenui, fragili, pellucida, convexiuscula, inæquilaterali, omnino intus extusque purpureo-sanguinea, transversim obsolete et irregulariter striata; latere antico brevior, lato, semielliptico, superne inferneque convexiusculo; latere postico attenuato, superne recto, declivi, obtuso, hiante; cardine in unaquaque valva inæqualiter bidentato; sinu pallii triangulari, superne angulato, antice oblique truncato, impressionem muscularem posticam versus longe strangulato.*

*Hab.* — ? Coll. Cuming.

138. IPHIGENIA PSAMMOBIALIS, Desh. *I. testa ovato-transversa, turgida, tenui, fragili, æquilaterali, transversim tenue et obsolete striata, sub epidermide squalide fuscescente, decidua albo-lutescente, intus violaceo-pallido tineta; latere antico semi-ovali, obtuso, superne inferneque convexiusculo; latere postico paulo attenuato, superne subrecto et paulo declivi, extremitate truncato; cardine angustissimo, dentibus duobus primariis angustis, valde divaricatis in valva sinistra, dente unico crasso,*

*obtusum, bipartitum in valva dextra; sinu pallii elongato, angusto, obtuso, horizontali.*

*Hab.* — ?

139. *MACTRA ALTA*, Desh. *M. testa trigona, alta, subæquilaterali, turgida, convexa, tenue transversim irregulariter striata, epidermide squalide fusca vestita, omnino alba; latere antico paulo brevior, superne convexo, deinde recto et declivi; margine postico æqualiter superne convexo, deinde declivi, recto, attenuato, brevi, truncato, in truncatura hiante; latere postico obtuse biangulato; umbonibus tumidis, acutis, oppositis; cardine angusto, dente cardinali submarginali, fossula angusta, profunda, sub cardine canaliculata; dentibus lateralibus magnis, compressis, triangularibus, valde prominentibus; sinu pallii minimo, trigono, obtuso.*

*Hab.* Australia.

140. *CAPSA (CAPSELLA) MINOR*, Desh. *C. testa ovato-transversa, compressa, tenui, fragili, subæquilaterali, irregulariter striato-sulcata, epidermide flavescente vestita, albo-violacea, ad umbones alba, violaceo-radiata, intus rubro-violacea, in medio albida; latere antico obtuso, parum attenuato, superne convexiusculo, declivi; latere postico angustiore, attenuato, perpendiculariter subtruncato, flexura vix manifesta bipartito; cardine bidentato, altero unidentato, dentibus crassiusculis, bifidis, nymphis intus callosis, brevibus, prominentibus; sinu pallii profundo, horizontali, linea superiore inferiori parallela.*

*Hab.* Philippines, Manilla. Coll. Cuming.

141. *CAPSA (CAPSELLA) DIFFICILIS*, Desh. *C. testa elongato-transversa, tumidula, tenui, æquilaterali, transversim substriata, epidermide viridi aut flavescente vestita, griseo-violacea vel pallide violaceo-flavescente, intus purpurascens aliquantisper subradiata, ad latus posticum saturatiore purpureo-violacea; latere antico obtuso, superne recto, aliquando parum declivi, postico oblique truncato, angulo obtusissimo, oblique decurrente distincto, in medio linea impressa bipartito, irregulariter rugoso; area postica minima, plana, angulo obtuso separata; cardine angusto, dentibus primariis minimis, obtusis, in valvula dextra duobus, in altera unico; sinu pallii elongato, sub angulo obtuso oblique parumper ascendente.*

*Var. β. Testa omnino violacea.*

*Var. γ. Testa superne paululum declivi, griseo-violacea.*

*Var. δ. Testa fere albida, in latere postico violacea.*

*Hab.* Philippines. Coll. Cuming.

142. *CAPSA (CAPSELLA) RUFA*, Desh. *C. testa elongato-transversa, tenui, fragili, compressiuscula, subæquilaterali, transversim irregulariter striata, vel obsolete sulcata, epidermide rufescente vestita, ad umbones decorticata, latus posticum versus fusca, intus roseo-purpurascens, in latere postico vivide violacea; cardine*

*angustissimo, fere edentulo, nymphis angustis, brevibus; sinu pallii profundo, lato, subovali, horizontali.*  
*Hab.* Philippines, Manilla. Coll. Cuming.

143. CAPSA (CAPSELLA) RADIATA, Desh. *C. testa ovato-transversa, tenui, turgidula, paulo hiante, utroque latere subæquilaterali, transversim obsolete et inæqualiter striata, epidermide tenui, pallide straminea vestita, pallide-albo violascente, violaceo multi-radiata, intus purpurascente, violaceo-radiata; latere antico superne paulo declivi et convexiusculo, extremitate attenuato; latere postico paulo longiore, latiore, superne recto, oblique et obtuse truncato, angulo obtuso, decurrente separato, transversim satis regulariter striato; cardine angusto, bidentato, altero unidentato, dentibus obtusis, in valva dextra æqualiter divaricatis; sinu pallii lato, profundo, apice obtuso.*

Var.  $\beta$ . *Testa paulo angustiore rosea, vix radiata.*

Var.  $\gamma$ . *Testa omnino candida.*

*Hab.* Philippines. Coll. Cuming.

144. CAPSA (CAPSELLA) ROSACEA, Desh. *C. testa elongato-transversa, depressiuscula, tenui, subæquilaterali, substriata, epidermide straminea vestita, pallide violaceo obscure pauci-radiata, intus pallide rubescente, violaceo-maculata et subradiata; latere antico paulo brevior, obtuso, paulo attenuato, postico superne recto, paulo declivi, angustato, oblique truncato, angulo obtusissimo distincto, margine inferiore paulo convexo, fere recto; dentibus cardinalibus parvis, obtusis; sinu pallii elongato, lato, horizontali.*

*Hab.* Philippines. Coll. Cuming.

145. CAPSA (CAPSELLA) CHINENSIS, Desh. *C. testa elongato-transversa, tenui, convexiuscula, inæquilaterali, epidermide corneo-fuscescente, nitente, peripheriam superante vestita, transversim obsolete striato-rugosa, alba, in impressione musculari postica violaceo-maculata; latere antico paulo longiore, obtuso, superne recto, paulo declivi; latere postico depressiusculo, oblique truncato, superne declivi, cardine angusto, bidentato, altero unidentato, dentibus minimis, brevibus, nymphis callosis; sinu pallii profundissimo, angusto, obtuso, horizontali, marginibus parallelis.*

*Hab.* Chinese Seas. Coll. Cuming.

146. CAPSA (CAPSELLA) LAYARDI, Desh. *C. testa ovato-transversa, tenui, fragili, convexiuscula, subæquilaterali, transversim inæqualiter striata, epidermide corneo-viridi vestita, intus alba, ad impressionem muscularem posticam fusco unimaculata; latere antico paulo longiore atque postico æqualiter obtusis, superne convexiusculis; cardine angustissimo, bidentato, altero unidentato, dentibus minimis, brevibus, fere obsolete, nymphis elongatis, triangularibus, prominentibus; impressione pallii margine remota, sinu profundo, horizontali, satis lato, ellipsoideo, apice obtuso.*

*Hab.* Ceylon. Coll. Cuming.



147. CAPSA (CAPSELLA) TENUIS, Desh. *C. testa elongato-transversa, ellipsoidea, compressiuscula, inæquilaterali, tenui, fragili, utraque extremitate æqualiter obtusa, transversim obsolete striata, epidermide viridi, nitente vestita, pallide violaceo-obscure et pauci-radiata, intus violacea, aut albida et violaceo-maculata; latere antico longiore, margine superiore recto, inferiori fere parallelo, postico compressiusculo, superne paulo declivi; cardine angustissimo, bidentato, altero unidentato, dentibus minutissimis, sinu pallii profundo, lato, apice obtuso, horizontali, a margine remoto.*

*Hab.* Philippines. Coll. Cuming.

148. CAPSA (CAPSELLA) CRASSULA, Desh. *C. testa ovato-transversa, paulo subtriangulari, æquilaterali, transversim inæqualiter striato-sulcata, epidermide flavescente vel fusciscente vestita, ad umbones decorticata, intus purpurea; latere antico obtuso, semi-elliptico, postico late subtruncato, flexura obliqua bipartito, hiatus duplici terminato; cardine angusto, bidentato, altero unidentato, nymphis elongatis, crassis, callosis, prominentibus; sinu pallii lato, profundo, dilatato, apice obtuso.*

*Hab.* Philippines.

149. CAPSA (CAPSELLA) VIRESCENS, Desh. *C. testa elongato-transversa, tenui, tumida, subæquilaterali, nitida, obsolete transversim substriata, sub epidermide flavo-virente alba, aliquantisper violaceo-rubente longitudinaliter strigata; latere antico obtuso, postico oblique truncato; nymphis brevibus, prominentibus, crassis; cardine angusto, in utraque valva unidentato; sinu pallii oblongo, profundissimo, marginibus parallelis, superiore ad extremitatem paulo declivi.*

*Hab.* — ?

150. CAPSA (CAPSELLA) LUNULATA, Desh. *C. testa elongato-transversa, subtrigona, æquilaterali, tenui, translucida, tenue et irregulariter transversim striata, epidermide corneo-flavescente vel fusciscente, nitente vestita, intus albo-cærulescente, submargaritacea, margine superiore utroque latere æqualiter declivi, margine inferiore regulariter arcuato; latere antico obtuso, parum attenuato, postico oblique et obtuse truncato, angustato; cardine angusto, bidentato, altero unidentato, dentibus minimis; nymphis brevibus, triangularibus, acutis, prominentibus; sinu pallii elongato, angusto, horizontali, in medio paulo latiore, apice obtuso; in latere antico lunula impressa, elongato-lanceolata.*

Var.  $\beta$ . *Testa intus violacea, extus fusca.*

Var.  $\gamma$ . *Testa minore, depressiuscula, zonulis aliquibus atratis, transversalibus interrupta.*

*Hab.* Philippines; var.  $\beta$ . Ceylon.

151. CAPSA (CAPSELLA) SOLENELLA, Desh. *C. testa elongato-transversa, elliptica, tumidula, subæquilaterali, transversim tenue striata, superne in latere postico tenue sulcata, epidermide tenui*

*vestita, ad umbones violacea, margines versus pallidior; latere antico obtuso, superne concaviusculo ad extremitatem depresso; latere postico subgibboso, angulo obtuso, obliquo separato, superne parum declivi, oblique late truncato; cardine angustissimo, fere edentulo, nymphis angustis, elongatis, intus callosis; sinu pallii latissimo, oblique ascendente, subspathulato.*

*Hab.* Manilla. Coll. Cuming.

152. *DONAX ACUTANGULA*, Desh. *D. testa elongato-transversa, angusta, tenui, fragili, convexiuscula, valde inæquilaterali, polita, nitida, pallida, albo-flavescente transversim anguste et irregulariter zonata, intus albo-lutescente; latere antico prælongo, parum arcuato, extremitate obtuso et paulo hiante, margine inferiore regulariter arcuato, antice paulo ascendente; latere postico oblique abrupte truncato, hiante, in medio subcarinato, inferne angulo acutissimo terminato, angulo carinato, obliquo circumscripto, transversim eleganter undato-striato, striis sublamellosis, tenuibus, marginibus integerrimis.*

*Hab.* Saboon, West Africa. Coll. Cuming.

153. *DONAX NITIDA*, Desh. *D. testa elongato-transversa, angusta, valde inæquilaterali, solidula, convexa, subcylindracea, utraque extremitate attenuata, lævigatissima, polita; latere antico elongato, superne inferneque paulo convexiusculo, extremitate attenuato; latere postico brevi, oblique truncato, obtuse angulato, inferne acuminato, plicis obliquis, profundis, arcuatis ornato; lunula elongato-lanceolata, pallide violaceo-carnea; valvis intus extusque albis.*

*Hab.* Moreton Bay. Coll. Cuming.

154. *DONAX PETALINA*, Desh. *D. testa elongato-transversa, angusta, subæquilaterali, tenui, pellucida, fragili, nitida, in latere antico albo-opaca, in medio posticeque translucida, violaceo late biradiata, longitudinaliter tenuissime antice posticeque striata; latere antico paulo longiore, angustiore, attenuato, obtuso, superne parum declivi; latere postico latiore, non angulato, obtuso, margine superiore recto, inferiori parallelo; cardine angusto, dente laterali antico brevi, crassiusculo, approximato, postico elongato, angusto, remoto, marginibus tenuissime crenulatis, antice crenulis intus sulciformibus; sinu pallii elongato, angusto, obtuso, horizontali.*

*Hab.* —? Coll. Cuming.

155. *DONAX ÆNEA*, Mörch MSS. *D. testa elongato-angusta, minima, tenui, pellucida, valde inæquilaterali, iridisciente omnino lævigata, pallide straminea; latere antico longiore obtuso, paulo attenuato, postico non angulato, obtuso, inferne acuminato; marginibus minutissime et regulariter crenulatis.*

*Hab.* Tranquebar? Coll. Cuming.

156. *DONAX PERUVIANA*, Desh. *D. testa elongato-subtrigona, valde inæquilaterali, crassa, solida, convexiuscula, omnino alba,*

*radiatim tenue striata, striis angustissimis, parum elevatis; latere antico multo longiore, superne recto, inferne convexo, regulariter arcuato, extremitate attenuato; latere postico obtuso, vix obtusissime angulato, striis tenuioribus impressis donato, sub ligamento paulo prominente; cardine bidentato, dentibus lateralibus validis, in valva dextra parum dilatatis; sinu pallii profundo, ovali, obtuso, oblique ascendente, marginibus regulariter profundeque crenatis.*

*Hab.* Peru.

157. *DONAX BELLA*, Desh. *D. testa elongato-transversa, tenui, compressiuscula, valde inæquilaterali, pallide albo-straminea, eleganter roseo-purpurascente pauci-radiata, longitudinaliter striata, striis tenuissimis, in latere postico profundioribus; latere antico prælongo, obtuso, compresso, superne recto, margine inferiore parallelo; latere postico oblique truncato, inferne acuminato, non angulato; cardine angusto, dentibus primariis minimis, lateralibus subæqualibus, elongatis, cardine remotis; sinu pallii lato, ovato, in medio dilatato, marginibus tenuissime crenulatis.*

*Hab.* Acapulco. Coll. Cuming.

158. *DONAX CONRADI*, Desh. *D. testa elongato-transversa, subtrigona, solidula, compressa, inæquilaterali, radiatim tenue striata, grisea, fusco dilute picta, postice violascente, aliquantisper albo-grisea vel rufescente, striis impressis in medio simplicibus, antice posticeque punctatis; umbonibus minimis, albis, violaceo breviter biradiatis; latere antico elongato, attenuato, cuneiformi, superne recto, declivi, postico oblique truncato, obtuso, inferne subangulato, striis multo tenuioribus; lunula elongato-lanceolata, angusta, impressa, violacea, angulo marginata; valvis intus violaceis; cardine albo; sinu pallii elongato, horizontali, obtuso, marginibus parallelis; marginibus tenue crenulatis.*

*Hab.* California.

159. *DONAX AFFINIS*, Desh. *D. testa elongato-transversa, compressiuscula, lævigata, nitida, inæquilaterali, sub epidermide flavicante pallide flavida vel violascente; latere antico prælongo, late obtuso, superne recto, vix declivi, margine inferiore fere recto, superiori parallelo; latere postico obtuso, declivi, non angulato, inferne attenuato, lunula angusta, lanceolata, ad umbones canaliculata; cardine angusto, in utraque valva inæqualiter bidentato, dente majore valvulæ dextræ lato, bifido, dentibus lateralibus obsoletissimis; sinu pallii profundo, ovato, obtusissimo, marginibus tenue denticulatis; valvis intus violaceis, in medio radio lato, albo notatis.*

*Hab.* Red Sea. Coll. Cuming.

*Obs.* Species forma et facie *Donaci truncato* Lamk. simillima, sed distincta colore magis albido, lunula minus carinata, et præcipue sinu pallii majore atque profundiore.

160. DONAX LÆVIGATA, Desh. *D. testa elongato-transversa, oblongo-triangulari, valde inæquilaterali, crassa, solida, convexiuscula, polita, nitente, obsoletissime radiatim striata, pallide fuscescente, vel grisea, vel violascente late uni- vel biradiata, latere antico prælongo vix attenuato, obtuso, superne inferneque fere recto; latere postico obtuse angulato, truncato, plano, tenue striato, inferne subangulato, marginibus crenulatis; cardine crasso, bidentato, dentibus lateralibus validis, inæqualibus, antico longiore, in valva dextra dilatatis; sinu pallii magno, oblique ascendente, ovali, obtuso.*

*Hab.* North America. Coll. Cuming.

161. DONAX ACUMINATA, Desh. *D. testa elongato-trigona, crassa, tumida, solida, valde inæquilaterali, alba, pallide violacea in latere postico, longitudinaliter striata, striis minutissime impresso-punctatis; latere antico prælongo, valde attenuato, acuminato, superne recto, declivi, inferne paulo convexo; latere postico brevissimo, truncato, plano, angulo obtuso circumscripto, striis tenuioribus, profundioribus, simplicibus; valvis intus albis, in latere postico violaceo maculatis; cardine crassiusculo, dentibus lateralibus subæqualibus, æquidistantibus, in valva dextra validioribus; sinu pallii profundissimo, ovato, in medio dilatato; marginibus tenue crenulatis.*

*Hab.* —? Coll. Cuming.

162. DONAX OBESULA, Desh. *D. testa trigona, brevi, inæquilaterali, solida, turgida, albo-grisea vel pallide violascente, intus violacea, longitudinaliter impresso-striata, striis in medio simplicibus, antice transversim punctato-lineatis; latere antico trigono, superne recto, valde declivi, inferne convexiusculo, extremitate attenuato, subrostrato; latere postico brevi, subcordiformi, oblique truncato, plano, angulo obtuso distincto, longitudinaliter tenuissime striato, transversim striis undato-punctatis; lunula elongato-lanceolata, satis lata, superne excavata; marginibus tenue denticulatis; cardine angusto, bidentato, altero unidentato, dentibus lateralibus in valva dextra majoribus.*

*Hab.* Central America.

163. DONAX OVALINA, Desh. *D. testa ovato-transversa, compressa, solidula, inæquilaterali, utroque latere obtusa, alba, transversim inæqualiter striata; latere antico paulo longiore, superne recto, declivi, postico æqualiter declivi, non angulato, obtuso, striis paulo profundioribus; margine inferiore regulariter arcuato, convexo; cardine crassiusculo, inæqualiter bidentato, altero unidentato, et valvulæ dextræ dente unico crasso, obtuso; dentibus lateralibus inæqualibus, magnis, postico brevioribus, antico longo, angusto; sinu pallii angustiusculo, obtuso, oblique ascendente, marginibus parallelis; marginibus integerrimis.*

*Hab.* Central America. Coll. Cuming.

164. DONAX STRIATELLA, Desh. *D. testa elongato-transversa,*

*triangulari, inæquilaterali, solida, turgidula, in medio dilatata, subventricosa, longitudinaliter tenuissime striata, albo pallide rosea, ad umbones incarnata; latere antico longiore, superne recto, in sutura canaliculato, extremitate attenuato, inferne convexo, ascendente; latere postico planissimo, angulo obliquo, acuto separato, inferne attenuato et acuto, striis in latere postico tenuioribus; cardine bidentato, dentibus lateralibus æqualibus, æquidistantibus, in valvula sinistra dilatatis; sinu pallii elongato, horizontali, obtuso, marginibus parallelis; marginibus tenue crenulatis.*

*Hab.* Australia.

165. *DONAX GRANIFERA*, Desh. *D. testa trigona, brevi, crassa, solida, ventricosa, valde inæquilaterali, albo-grisea aliquando ad umbones et latus posticum violaceo tincta, intus alba, ad margines violacea, umbonibus maculis duabus violaceis, angustis notatis, longitudinaliter striata, striis tenuissimis, regularibus, impressis, ad latus posticum sensim latioribus, profundioribus et granosis; latere antico elongato, obtuso, superne recto et declivi, inferne recto et horizontali; latere postico abrupte truncato, angulo acuto separato, plano, striis transversis et longitudinalibus decussato, granoso; umbonibus prominentibus; lunula lanceolata, sæpius violaceo-tincta; marginibus tenue denticulatis.*

*Hab.* Columbia. Coll. Cuming.

166. *DONAX INTERRUPTA*, Desh. *D. testa trigona, cuneiformi, brevicula, solida, convexiuscula, postice abrupta et planata, albo-grisea, vel pallide violascente, intus pallide violacea; latere antico elongato, superne recto, declivi, inferne in medio recto, antice ascendente, extremitate attenuato, radiatim striato, striis antice simplicibus, fere nullis, sensim profundioribus, ante angulum posticum profundis, in sulcos mutatis; latere postico angulo acuto abrupto distincto, plano, striis tenuibus longitudinalibus, transversalibus undatis, punctato-granosis, clathratis vel textiliosis, umbonibus parvis, obscure violaceo pallido quadriradiatis; marginibus tenue denticulatis.*

*Hab.* West Africa.

167. *DONAX DYSONI*, Desh. *D. testa trigona, alta, brevi, compressa, solidula, valde inæquilaterali, fere perpendiculariter truncata, albo-grisea, ad umbones breviter violaceo triradiata, intus violaceo dilute bimaculata, in medio et in latere postico antice levigatissima, sub lente obsolete transversim striata, in latere postico transversim rugata et interstitiis longitudinaliter striatis; latere antico trigono, superne recto, declivi, inferne recto, horizontali, extremitate obtuso; latere postico obtuso, non carinato, marginibus creberrime denticulatis; sinu pallii profundo, subtrigono, obtuso, postice dilatato; dentibus lateralibus validis, obliquis, sub-æqualibus.*

*Hab.* Indian Ocean. Coll. Cuming.

168. **DONAX CLATHRATA**, Desh. *D. testa minima, trigona, turgida, crassa, solida, brevi, abrupte truncata, angulata, albo-flava vel violascente, longitudinaliter argute transversim costellata, lamellis brevibus, numerosis, erectis eleganter decussata, costulis ad angulum posticum duabus tribusve distantioribus; latere postico brevissimo, sulco lato, sub angulo circumscripto, costellis granosis ornato; lunula impressa, elongato-lanceolata, minutissime transversim striata.*

*Hab.* — ? Coll. Cuming.

169. **TELLINA CRASSULA**. *T. testa ovato-transversa, solidula, compressa, opaca, valde inæquilaterali, sub epidermide griseo-flavicante albo-cretacea, inæqualiter obsolete transversim striata; latere antico prælongo, leviter arcuato, longe elliptico, superne recto et horizontali, antice late obtuso, paulo dilatato, inferne parum convexo; latere postico brevissimo, fere perpendiculari, obtuso, vix flexo, non angulato; cardine angusto, in valva dextra bidentato, in altera unidentato, dentibus lateralibus nullis; sinu pallii elliptico, oblique ascendente.*

*Hab.* Northern Ocean.

170. **TELLINA TURGIDA**. *T. testa ovata, transversa, lata, turgida, satis tenui, subæquilaterali, squalide albo-fuscescente, intus candidissima, transversim satis regulariter striata, striis angustis, prominulis, striis obsolete longitudinalibus numerosis decussatis; latere antico paulo longiore, latissimo, obtusissimo, inferne parum oblique producto; latere postico lato, subtruncato, superne declivi, sinu lato profundoque, contorto, in valva dextra biangulato, striis longitudinalibus prominentioribus; cardine angusto, bidentato, dentibus angustis, subæqualibus, apice bifidis; ligamento brevi, angusto, vix infosso; dentibus lateralibus nullis; sinu pallii irregulariter subquadrangulati, superne sinuoso.*

*Hab.* Catbalonga; Philippines. Coll. Cuming.

*Obs.* *T. lacunosæ* et *obesæ* affinis, attamen distincta forma, striis, cardine, et præcipue sinu pallii.

171. **TELLINA OBESA**. *T. testa ovato-transversa, crassa, solida, valde ventricosa, subæquilaterali, squalide alba, intus vivide aurantia, transversim inæqualiter striata, et striis incrementi crassis, inæqualibus irregulariter gradata; latere antico lato, paulo longiore, semicirculari; latere postico superne parum declivi, obtuso, plicatura lata profunde contorto, in valva dextra subtriangulato; umbonibus magnis, oppositis approximatis; ligamento magno, crasso, partim infosso; cardine crasso, inæqualiter bidentato; muscolum cicatriculis maximis, antica ovata, postice rotundata; sinu pallii subtrapezoidali, superne dilatato et gibboso.*

*Hab.* Chinese Seas. Coll. Cuming.

*Obs.* *T. lacunosæ* affinis, sed multo magis tumida, magis crassa, intus aurantia, extus contabulata.

172. *TELLINA MORETONENSIS*, Desh. *T. testa ovato-trigona, convexiuscula, tenui, pellucida, subæquilaterali, omnino candida, transversim tenue striato-lamellosa, longitudinaliter sub lente tenuissime striata, lamellis transversis, distantibus, angustissimis, brevibus, in medio sæpius interruptis; latere antico lato, obtuso, semi-elliptico; latere postico attenuato, trigono, superne longe declivi, inferne obtuse angulato; umbonibus minimis, acutis, lævigatis; lunula parva, lunata, impressa; cardine bidentato, dentibus lateralibus nullis; sinu pallii magno, ovato, obtuso, superne dilatato, flexura posticali fere nulla.*

*Hab.* Moreton Bay. Coll. Cuming.

173. *TELLINA NUCLEOLUS*, Desh. *T. testa ovato-transversa, minima, convexiuscula, tenui, pellucida, maxime inæquilaterali, nuculæformi, postice sub angulo recto truncata, pallide rosea, transversim tenue et regulariter striata, striis impressis, in latere postico majoribus, profundioribus, alternatim interpositis; latere antico prælongo, longe semi-elliptico, superne recto, margine inferiore regulariter convexo; latere postico brevissimo, obtuso, flexura fere nulla; ligamento brevi; cardine satis crasso, dentibus lateralibus validis subæqualibus, postico cardine approximato.*

*Hab.* — ? Coll. Cuming.

174. *TELLINA FABAGELLA*, Desh. *T. testa regulariter ovato-transversa, crassiuscula, tumidula, inæquilaterali, pallide lutescente, transversim tenue et regulariter striata, striis profunde incis; latere antico prælongo, longe semi-elliptico, obtuso; latere postico brevi, obtuso, superne recto, declivi, striis distantioribus, sublamellosis cum aliis alternantibus; flexura vix perspicua; lunula elongato-lanceolata, impressa, angulo acuto circumdata; cardine bidentato; dentibus cardinalibus validis, in valva dextra dilatatis; sinu pallii ovato-oblongo, horizontali, in medio paulo dilatato.*

*Hab.* Philippines, Luzon. Coll. Cuming.

175. *TELLINA ROMBERGI*, Mörch. *T. testa orbiculato-subtrigona, solidula, convexiuscula, inæquilaterali, ad peripheriam albicante, roseo-rubente, radiis duobus ad umbones saturatoribus, brevibus, oblique tenuissime striata, striis in latere antico flexuosis, postice in angulo acutissimo flexis, striis posticalibus multo tenuioribus, in latere antico valvæ dextræ zonula longitudinali lævigata; latere antico brevi, late obtuso, subsemicirculari, postico superne recto, attenuato; cardine bidentato; dentibus lateralibus minimis, acutis, subæqualibus, remotis; sinu pallii subtriangulari, superne gibboso, ad extremitatem attenuato.*

*Hab.* Brazil. Coll. Cuming.

*Tellina Rombergi*, Mörch, Kjerulf. Cat.

Obs. *Tellinæ strigillatæ* affinis, standem distincta colore et striarum dispositione.

176. *TELLINA OBTUSALIS*, Desh. *T. testa parvula, ovato-trans-*

*versa, tenuissima, nitida, turgidula, valde inæquilaterali, omnino roseo-purpurascente, transversim sub lente tenuissime et regulariter striata, striis in latere postico profundioribus; latere antico prælongo, obtuso, superne inferneque convexiusculo; latere postico brevissimo, obtusissimo; dentibus lateralibus in valva sinistra magnis, crassis, æqualibus.*

*Hab.* — ?

177. *TELLINA JAPONICA*, Desh. *T. testa ovato-transversa, compressa, solidula, inæquivalvi, inæquilaterali, omnino candida, lævigata, polita, nitida; latere antico longiore, paulo attenuato, obtuso, superne convexiusculo, declivi, inferne in medio convexo, ad latus posticum ascendente; latere postico angulo decurrente, obtuso notato, inferne subangulato; valva dextra profundiore; cardine in utraque valva inæqualiter bidentata; ligamento partim infosso, in nymphis intus callosis affixo; sinu pallii magno, profundo, triangulari, superne valde angulato.*

*Hab.* Japan. Coll. Cuming.

178. *TELLINA VENTRICOSA*, Desh. *T. testa magna, ovato-transversa, subtrigona, tenui, ventricosa, subæquilaterali, omnino candida, sub epidermide tenui, griseo-flavescente, transversim inæqualiter striata; latere antico paulo brevior, obtuso, superne declivi, convexiusculo, extremitate paululum attenuato; latere postico attenuato, late rostrato, superne declivi, recto, extremitate oblique truncato; margine inferiore late convexo, ad extremitatem posticam coarctato; plicatura posticali nulla; cardine angusto, dentibus cardinalibus angustis, lateralibus nullis; sinu pallii parvo, angusto, sublanceolato.*

*Hab.* West African Coast. Coll. Cuming et Desh.

179. *TELLINA CONTABULATA*, Desh. *T. testa ovato-subrotunda, sublenticulari, solida, crassa, subæquilaterali, squalide albo-rufescente, irregulariter transversim obsolete striato-rugosa, incremento interrupto regulariter et distanter contabulata; latere antico lato, semicirculari, postico triangulari, inferne angulato, oblique late truncato, superne recto, declivi, angulo oblique decurrente distincto, flexura nulla; umbonibus acutis, oppositis; ligamento elongato, partim infosso; valvis intus candidis; cardine crasso, dentibus primariis angustis, brevibus, lateralibus nullis; sinu pallii brevi, superne acutissimo, dein excavato.*

*Hab.* Chinese Seas. Coll. Cuming.

180. *TELLINA OBLIQUARIA*, Desh. *T. testa suborbiculato-trigona vel subovata, tenui, compressiuscula, inæquivalvi, inæquilaterali, pallide lutescente, oblique tenuissimeque striata, striis numerosis approximatis, incis, parum undulatis præcipue in latere antico; ad angulum posticum subito interruptis; umbonibus minimis, inæqualibus, approximatis, valvulæ dextræ umbone eroso, alterum recipiente; latere antico brevior, paulo attenuato, obtuso, superne*



*declivi; latere postico magis attenuato, superne declivi, inferne subtruncato, angulo obtusissimo decurrente distincto, lævigato; cardine angusto, unidentato, in valva sinistra emarginato; dentibus lateralibus nullis; sinu pallii profundissimo, angusto, superne convexiusculo.*

*Hab.* Pacific Ocean. Coll. Cuming.

181. *TELLINA TEXTILIS*, Desh. *T. testa ovato-transversa, satis lata, solidula, convexiuscula, alba, roseo-purpurascete ad umbones picta et dilute radiata, radiis ad margines evanidis, superne inter se confluentibus, intus pallide purpurea, oblique angustissime striata in valva dextra, striis transversis, obsoletis decussata et textiliosa, valvula sinistra lævigata; latere antico semi-ovali, longiore, postico brevi, obtuso, superne declivi; cardine crassulo, bidentato, dentibus lateralibus nullis; sinu pallii maximo, ad impressionem muscularem posticam subito ascendente, angulato, dein lente declivi; flexura posticali fere nulla.*

*Hab.* — ? Coll. Cuming.

182. *TELLINA DONACIFORMIS*, Desh. *T. testa elongato-transversa, solidiuscula, compressa, valde inæquilaterali, postice truncata, omnino alba, transversim angustissime striata, striis longitudinalibus exilibus, obsoletis subdecussata, latere antico longe elliptico, superne inferneque recto, obtuso, marginibus parallelis; latere postico brevissimo, inferne obtuse angulato, transversim tenue plicato, plicis ad angulum posticum obtusissimum abrupte terminatis; cardine angusto, bidentato, altero unidentato, dentibus minimis, lateralibus nullis; sinu pallii profundo, elongato, attenuato, in medio dilatato, superne undulato.*

*Hab.* Torres Straits. Coll. Cuming.

183. *TELLINA LAYARDI*, Desh. *T. testa elongato-trigona, tenui, fragili, compressa, valde inæquivalvi et inæquilaterali, candida, antice tenue transversim striata, in medio lævigata, postice sub lente minutissime longitudinaliter striata, striis densissimis; latere antico brevior, obtuso, postico fere duplo longiore, sensim attenuato, subacuminato, superne recto et longe declivi, inferne parum convexo; cardine inæqualiter bidentato, dentibus lateralibus nullis; valva dextra profundior, sinistra planulata, sinu pallii breviculo, subtrapezoidali, late et oblique truncato; flexura nulla; area plana, angulo obtuso circumdata, eleganter striata.*

*Hab.* Ceylon. Coll. Cuming.

184. *TELLINA INQUINATA*, Desh. *T. testa trigona, crassa, solida, depressiuscula, inæquilaterali, sub epidermide squalide fusca albo-fusca, ferrugineo inquinata, transversim irregulariter striata, intus candida; latere antico late obtuso, subsemicirculari, superne parum declivi; latere postico cuneiformi, attenuato, superne recto et declivi, extremitate oblique truncato, inferne oblique angulato, flexura parum perspicua; ligamento prælongo, incrassato; cardine biden-*

*tato, dentibus lateralibus nullis; sinu pallii magno, profundo, superne gibboso, deinde declivi et apice acuto.*

*Hab.* Columbia.

185. *TELLINA SUENSONI*, Mörch. *T. testa rotundato-trigona, solidula, convexiuscula, inæquilaterali, squalide griseo-alba vel flavescente, sub epidermide tenui, decidua, griseo-flavescente, tenue et irregulariter transversim striata; latere antico longiore, semi-elliptico, marginibus subparallelis; latere postico triangulâri, superne recto, declivi, extremitate attenuato, oblique truncato, angulato; flexura parum profunda; valvis per longitudinem arcuatis; cardine bidentato, altero unidentato, dente postico valvæ dextræ profunde fisso; dentibus lateralibus nullis.*

*Tellina Suensoni*, Mörch, Kjerulf. Cat.

*Hab.* Brazil. Coll. Cuming.

186. *TELLINA TICAONICA*, Desh. *T. testa parva, elongato-ovata, transversa, compressa, hyalina, tenuissima, inæquilaterali, nitida, polita, omnino pallide rosea; latere antico longiore, obtuso, superne convexiusculo, margine inferiore parallelo; latere postico brevi, truncato, inferne subangulato; ligamento brevi, prominente; cardine angustissimo, dentibus binis minimis, bifidis in valva dextra; sinu pallii maximo, profundo, superne valde angulato, sub umbonibus ascendente.*

*Hab.* Philippines, Ticao. Coll. Cuming.

187. *TELLINA NITENS*, Desh. *T. testa elongato-transversa, tenui, pellucida, depressiuscula, inæquilaterali, pallide rosea et coloribus variis nitente, transversim obsolete tenue striata; latere antico elongato, longe semi-elliptico, inferne superneque convexiusculo; latere postico triangulâri, attenuato, extremitate angulato, margine inferiore fere recto; flexura vix inconspicua; cardine angustissimo, bidentato, altero unidentato, dentibus lateralibus nullis; sinu pallii magno, impressionem muscularem posticam versus subito ascendente, angulum formante, dein longe declivi usque ad impressionem anticam.*

*Hab.* —? Coll. Cuming.

188. *TELLINA ÆQUALIS*, Desh. *T. testa satis regulariter ovata, transversa, tenui, translucida, convexiuscula, æquilaterali, candida, rufo dilute maculata, nitente, transversim angustissime striata, obsolete radiata, utroque latere æqualiter obtusa et superne parum declivi, margine inferiore regulariter arcuato; umbonibus parvis acutis, oppositis; ligamento elongato, angusto, prominente; cardine angustissimo, dente primario unico, minimo, in utraque valva; sinu pallii profundo, horizontali, superne late gibboso, ad extremitatem excavato.*

*Hab.* Port Essington. Coll. Cuming.

189. *TELLINA COMPRESSA*, Desh. *T. testa late ovata, transversa, subæqualiter obtusa, solidula, complanata, subæquilaterali, omnino*

*alba, transversim substriata; latere antico paullo latiore, late semi-elliptico, obtuso; latere postico parum attenuato, obtuso; margine inferiore regulariter convexiusculo; umbonibus acutis, prominentibus, compressis, approximatis; cardine latiusculo, in valva dextra bidentato, in sinistra unidentato, dentibus elongatis, angustis, prominentibus, lateralibus nullis; sinu pallii elongato, obtuso, ovali, superne dilatato, ad apicem declivi.*

*Hab.* — ? Coll. Cuming.

190. *TELLINA CONTORTA*, Desh. *T. testa ovato-transversa, tenui, fragili, valde ventricosa, inæquilaterali, albo-cretacea, transversim tenuissime et satis regulariter striata, striis confertis; latere antico late semiovato, obtuso, superne convexiusculo, inferne recto, marginibus subparallelis; valvis in medio profunde contortis, postice profunde plicato-laminosis; umbonibus magnis, obliquis, apice truncatis, prominentibus; flexura posticali lata, profundaque, in valva dextra angulo carinato marginata, in valva sinistra costa rotundata, late formata; cardine angusto, bidentato, altero unidentato, dentibus bifidis lateralibus nullis; sinu pallii latissimo, subtrapezoidali.*

*Hab.* — ? Coll. Cuming.

191. *TELLINA DILATATA*, Desh. *T. testa late ovata, tenui, fragili, tumidula, subæquivalvi, inæquilaterali, albida, sub epidermide flavida, decidua, maculis punctiformibus, raris, irregulariter sparsis, rubro-castaneis, pallidis irrorata, transversim inæqualiter et obsolete striata; latere antico paulo longiore, lato, subsemicirculari; latere postico superne recto, declivi, obtuse truncato, attenuato; flexura torta, vix profunda, biplicata; valvis intus albis, sub umbonibus pallidissime roseis; dentibus primariis minimis, angustis, lateralibus nullis; sinu pallii magno, ovato, subspathuliformi, a linea inferiore detecto.*

*Hab.* — ? Coll. Cuming.

192. *TELLINA SANGUIOLENTA*, Desh. *T. testa elongato-transversa, ovata, solidula, compressiuscula, inæquilaterali, flavo-rubente, ad umbones purpurea vel violascente, intus vivide rubra, sanguineo colore tincta; latere antico elongato, obtuso, superne recto, margine inferiore rectiusculo, superiori parallelo; latere postico obtuso, superne recto, parum declivi, angulo decurrente, obtusissimo distincto; dentibus cardinalibus 2 inæqualibus, obliquis, lateralibus nullis; sinu pallii profundissimo, angusto, in medio dilatato.*

*Hab.* Philippines. Coll. Cuming.

193. *TELLINA MAZATLANICA*, Desh. *T. testa ovato-transversa, compressa, tenui, inæquilaterali, pallide albo flavidula, lævigata substriatave, nitidula; latere antico longiore, semi-elliptico, margine superiore inferiori parallelo; latere antico attenuato, superne recto, extremitate truncato; flexura vix perspicua; ligamento brevi, partim infosso; cardine bidentato, altero unidentato, den-*

*tibus angustis, elongatis, lateralibus nullis; sinu pallii late ovato, apice parum angustato, horizontali.*

*Hab.* Mazatlan. Coll. Cuming.

194. *TELLINA CUSPIDATA*, Desh. *T. testa orbiculato-trigona, tenui, pellucida, inflata, albo-grisea, nitida, laevigata; latere antico paulo longiore, late rotundato, subsemicirculari, postico triangulari, attenuato, subrostrato, cuspidato, superne recto et declivi; umbonibus minimis, acutis, oppositis; lunula satis magna, ovata, depressa, angulo obtuso circumscripta; cardine angustissimo, bidentato, dentibus lateralibus elongatis, angustissimis, antico cardine magis approximato.*

*Hab.* Chusan. Coll. Cuming.

195. *TELLINA CLAUSA*, Desh. *T. testa ovato-subtrigona, tumidula, crassa, solida, æquilaterali, undique clausa, pallide albo-flavescente, intus candida, transversim obsolete striata, superne æqualiter utroque latere declivi; latere antico obtuso, postico late truncato; cardine crasso, dentibus duobus inæqualibus, simplicibus in valva dextra, antico prominentiore, dente unico crasso in valva sinistra; dentibus lateralibus crassis, subæqualibus, æquidistantibus; sinu pallii ovato, profundo, obtuso, in medio parum dilatata.*

*Hab.* West Indies.

196. *TELLINA DISCULUS*, Desh. *T. testa sublenticulari, orbiculari, superne vix angulata, in medio convexiuscula, æquilaterali, squalide alba, ad umbones pallide lutea, intus candida, in fornice sulphurea, transversim tenue striata, striis regularibus, obtusis, profundis, in flexura breviter lamellosis; latere antico late obtuso, subsemicirculari, postico vix in medio subtruncato, superne rectiusculo, declivi, margine inferiore late arcuato; cardine lato, crasso, dente laterali antico valido, obtuso, cardine approximato, postico nullo; flexura parum profunda; sinu pallii subtriangulari, superne valde angulato, apice obtuso.*

*Hab.* New Zealand.

197. *TELLINA PRETIOSA*, Desh. *T. testa ovato-trigona, crassula, tumidula, æquilaterali, omnino alba, longitudinaliter costellata, costellis regularibus, elatis, apice dilatatis, elegantissime squamulosis, squamulis dilatatis, erectis, circularibus, acutis, per series transversas atque longitudinales digestis; latere antico lato, obtuso, semi-elliptico, superne recto, declivi, postico triangulari, attenuato, superne recto, longe declivi; lunula minima, lanceolata, impressa, laevigata, angulo circumdata; area elongato-lanceolata, ad margines angulata, angulo altero minore circa ligamentum, area in valva dextra quadrilineata, in altera nuda; cardine crassiusculo, dentibus lateralibus validis, acutis, æqualibus, æquidistantibus; flexura fere nulla.*

*Hab.* Philippines; Sumatra.

198. *TELLINA DIEMENENSIS*, Desh. *T. testa trigona tam lata, quam alta, solida, compressiuscula, valde inæquilaterali, squalide rufula, sub lente exillime transversim striata, incrementi ad margines interrupta; umbonibus acutis, subterminalibus; latere antico longiore, late obtuso, brevi, semi-elliptico; latere postico truncato, recto, valde declivi, extremitate inferiore subacuto; flexura parum perspicua; dentibus cardinalibus apice bifidis, laterali antico approximato; sinu pallii magno, profundo, lato, superne dilatato, gibboso.*

*Hab.* Van Diemen's Land.

199. *TELLINA CALLOSA*, Desh. *T. testa late ovata, subtrigona, crassa, solida, tumidula, inæquilaterali, omnino candida, tenuissime transversim striata, striis sublamellosis, striis longitudinalibus obsoletis decussatis; latere antico paulo longiore, late semi-elliptico; latere postico triangulati, superne recto, declivi, inferne angulato, flexura angusta, satis profunda, notato; margine inferiore paulo arcuato; valvis intus circa impressiones callosis, sub lente puncticulatis; cardine crasso, bidentato, dentibus lateralibus nullis; sinu pallii magno, ovato-triangulati, superne gibboso.*

*Hab.* Ceylon (Layard). Coll. Cuming.

200. *TELLINA MÆSTA*, Desh. *T. testa regulariter ovata, transversa, crassiuscula, tumidula, tenui, valde inæquilaterali, sub epidermide tenui, pallide viridi-flavicante alba, suberetacea, transversim obsolete striata, striis obtusis, latis, subplanis, irregularibus; latere antico longiore, obtuso, margine inferiore superioreque convexiusculis, parallelis; latere postico obtuso, paulo angustiore, flexura parum profunda; ligamento brevi, partim infosso; cardine angustissimo, bidentato, dentibus minimis, laterali antico nullo, postico obsoleto; sinu pallii brevi, late ovato.*

*Hab.* Northern Ocean. Coll. Cuming.

201. *TELLINA RECURVA*, Desh. *T. testa ovato-trigona, depressa, solidula, inæquilaterali, valde per longitudinem arcuata, squalide alba, irregulariter transversim striata; latere antico brevior, late obtuso, semicirculari; latere postico trigono, acuminato, superne recto, declivi, inferne angulo acuto terminato; dentibus lateralibus parum perspicuis, antico in valva sinistra dilatato, sinu pallii angusto, profundissimo, apice acuminato.*

*Hab.* Australia.

202. *TELLINA TRISTIS*, Desh. *T. testa elata, trigona, compressa, inæquilaterali, sub epidermide tenui, decidua, pallide flava squalide alba, calcarea, ad umbones erosa, intus candida; latere antico brevi, late obtuso, subsemicirculari, superne tumidulo; latere postico triangulati, superne recto, longe declivi, extremitate acuminato; flexura angusta, vix conspicua; sinu pallii magno, in medio dilatato, spathuliformi, profundo, apice acuto, sub impres-*

*sione musculari postica maxime strangulato; ligamento elongato, crassiusculo, partim infosso.*

*Hab.* Van Diemen's Land.

203. *TELLINA ABBREVIATA*, Desh. *T. testa late ovato-trigona, compressa, solidula, valde inæquilaterali, albo-pellucida, transversim tenue et irregulariter striata, striis obtusis confertis; latere antico lato, regulariter semi-elliptico; latere postico brevi, superne recto, rapide declivi, extremitate angulato, subrostrato; plicatura posticali angusta, satis profunda, duplicata, in valva dextra transversim oblique lamellosa; cardine angusto, inæqualiter bidentato, dentibus lateralibus validis, elongatis, antico approximato; area elongata, angusta, excavata, lævigata, angulo acuto circumdata.*

*Hab.* Ceylon. Coll. Cuming.

204. *TELLINA BREVIROSTRIS*, Desh. *T. testa late ovata, subtrigona, minima, tenui, depressa, inæquilaterali, candida, transversim tenue lamellosa, lamellis regularibus, brevibus, erectis, æquidistantibus; latere antico paulo longiore, late obtuso, semi-elliptico; latere postico triangulari, superne recto et valde declivi, inferne rostro brevi terminato; flexura minima, uniangulata, angusta, lamellis transversis rarioribus; area elongato-lanceolata, angusta, excavata, carina acuta, tenue et eleganter crenulata circumdata; lunula minima, angusta, lanceolata; dentibus lateralibus, subæqualibus, subæquidistantibus; sinu pallii prælongo, superne gibboso, dein declivi.*

*Hab.* Central America and California. Coll. Cuming.

205. *TELLINA AUSTRALIS*, Desh. *T. testa ovato-trigona, tenui, pellucida, compressa, subæquilaterali, pallide straminea, transversim tenuissime et regulariter striata, in valva sinistra striis postice evanidis, in dextra continuis; umbonibus acutis, prominentibus; margine superiore utroque latere æqualiter declivi; latere antico lato, obtuso, postice attenuato, oblique truncato, triangulato; flexura parva, parum perspicua; cardine angusto, dentibus lateralibus inæqualibus, antico majore, approximato; sinu pallii maximo, superne undulato, apice acuto.*

*Hab.* Australia.

206. *TELLINA STRANGEI*, Desh. *T. testa ovato-subtrigona, convexiuscula, tenui, pellucida, inæquilaterali, pallide lutea, transversim tenuissime lamellosa, striisque longitudinalibus, regularibus decussata; lamellis regularibus, æquidistantibus, brevibus; latere antico longiore, superne parum declivi, obtuso, postico paulo attenuato, obtuso, vix flexo, margine inferiore regulariter convexo; umbonibus minimis, vix prominentibus, lunula minima, parum excavata, lanceolata, lævigata; dentibus lateralibus magnis, subæqualibus, æquidistantibus.*

*Hab.* New Zealand. Coll. Cuming.

207. *TELLINA TESSELLATA*, Desh. *T. testa ovato-transversa, tenui, pellucida, tumidula, inæquilaterali, omnino squalide fulva,*

*intus concolore, nitente, striis longitudinalibus transversalibusque tenue et eleganter decussata, striis omnibus regularibus, æqualiter impressis; latere antico elongato, semi-elliptico, superne inferneque convexiusculo; latere postico superne recto, declivi, extremitate truncato; flexura fere nulla; cardine angusto, dentibus lateralibus magnis, elongatis, triangularibus, prominentibus, æqualibus, subæquidistantibus; sinu pallii maximo, ovato, in medio superne gibbosulo.*

*Hab.* Moreton Bay. Coll. Cuming.

208. *TELLINA ATTENUATA*, Desh. *T. testa ovato-trigona, depressa, solidula, subæquilaterali, candida, transversim inæqualiter substriata; latere antico longiore, paulo obliquato, obtuso, superne declivi, convexiusculo, margine inferiore superiori fere parallelo; latere postico angulo obliquo decurrente separato, superne recto, declivi, extremitate attenuato, subrostrato; flexura posticali fere nulla; cardine angusto, dentibus lateralibus nullis; sinu pallii magno, profundo, impressione musculari antica juncto, superne dilatato, angulato.*

*Hab.* Port Essington. Coll. Cuming.

209. *TELLINA SILICULA*, Desh. *T. testa elongato-transversa, angusta, crassiuscula, tumidula, valde inæquilaterali, alba, vel pallide sulphurea, in latere postico radio unico, pallide roseo ornata, nitida, oblique tenuissime striata, striis argute undulatis, ad latus posticum subito terminatis; latere antico elongato, obtuso, marginibus rectis, parallelis; latere postico oblique truncato, inferne angulo obtusiusculo terminato, transversim tenue sublamelloso; flexura fere nulla; cardine crassiusculo, bidentato, altero unidentato, dentibus lateralibus nullis.*

*Hab.* Columbia. Coll. Cuming.

210. *TELLINA DELICATULA*, Desh. *T. testa elongato-ovata, tenuissima, compressa, hyalina, valde inæquilaterali, pallide et gratissime rosea, oblique tenuissime striata, striis æqualibus, satis distantibus, regularibus, in latere postico deficientibus; latere antico elongato, longe semi-elliptico, obtuso, superne inferneque convexiusculo; latere postico obtuso, subangulato, tenue transversim plicato; cardine angustissimo unidentato, dente laterali antico minimo, elongato, posticali nullo; sinu pallii magno, oblongo, profundo, superne undulato.*

*Hab.* Mazatlan. Coll. Cuming.

211. *TELLINA STRAMINEA*, Desh. *T. testa ovato-trigona, tenui, pellucida, convexiuscula, subæquilaterali, omnino pallide straminea, transversim tenue et regulariter striata; latere antico obtuso, superne declivi, paulo brevior, postico valde attenuato, triangulari, acuto, superne recto, declivi; cardine angustissimo, dente laterali antico minimo, perspicuo, posticali nullo; sinu pallii maximo, late trigono, superne angulato, gibboso.*

*Hab.* Bay of California. Coll. Cuming.

212. **TELLINA LEDA**, Desh. *T. testa minima, ovato-transversa, tenui, depressa, æquilaterali, alba, transversim regulariter striata, striis impressis; lateribus æqualiter obtusis, superne declivibus, margine inferiore paulo convexo; latere postico angulo obtuso distincto, striis transversis obsoletis, longitudinalibus decussatis; cardine angusto, dentibus cardinalibus minimis, lateralibus æqualibus, æquidistantibus; flexura postica fere nulla; lunula lanceolata, minima, excavata.*

*Hab.* Malacca. Coll. Cuming.

213. **TELLINA RUBELLA**, Desh. *T. testa elongato-angusta, tenui, fragili, convexiuscula, valde inæquilaterali, omnino rubro-purpurascente, antice posticeque rubro saturatiore uniradiata, transversim tenue et regulariter striata, striis ad latus posticum evanescentibus; latere antico elongato, obtuso, superne recto, non declivi, margine inferiore recto, superiori parallelo; latere postico attenuato, declivi, inferne acuminato, striis undulatis transversis præsertim in valvula dextra ornato; cardine angustissimo, dentibus minimis, lateralibus nullis; sinu pallii maximo, obtuso, in medio dilatato.*

*Hab.* Philippines. Coll. Cuming.

214. **TELLINA RUBRA**, Desh. *T. testa orbiculato-trigona, depressa, tenui, pellucida, subæquilaterali, omnino rubro-purpurea, transversim argutissime striata, striis in valva dextra profundioribus, in sinistra obsoletis, fere nullis, in latere postico evanescentibus; latere antico breviter semi-ovali, late obtuso, postico paulo brevior, triangulari, superne recto, declivi, inferne attenuato, flexura parum profunda, angusta; cardine unidentato, dentibus lateralibus parvis, postico longiore, remoto; sinu pallii maximo, triangulari, angulo superiore acuto, sub cardine prodiente.*

*Hab.* Ceylon. Coll. Cuming.

215. **TELLINA RESECTA**, Desh. *T. testa trigona, depressiuscula, crassa, valde inæquilaterali, sub angulo fere recto postice quasi resecta, candida, transversim tenuissime striato-lamellosa, striis tenuibus longitudinalibus decussata, striis transversis, erectis, pluribus ad latus posticum inter se confluentibus, antice sursum reflexis; latere antico prælongo, semi-ovali; latere postico abrupte truncato, inferne angulato, flexura parum perspicua, in valva dextra biangulata, lamellosa; area postica plana, lævigata, angulo acuto, tenue serrato circumscripta; ligamento elongato, crasso, partim infosso, cardine inæqualiter bidentato, dentibus majoribus pediculatis, apice profunde bifidis; sinu pallii maximo, elliptico.*

*Hab.* Australia.

216. **TELLINA DIAPHANA**, Desh. *T. testa ovato-trigona, solidula, convexiuscula, æquilaterali, candido-diaphana, zonulis magis perlucetibus interrupta, transversim striato-lamellosa, in latere antico obtusioribus, striis radiantibus, tenuissimis decussata;*



*latere antico semi-ovato, postico triangulari, attenuato, compresso, brevirostrato, longe superne recto et declivi, margine inferiore convexo; cardine lato, inæqualiter bidentato, dentibus lateralibus triangularibus, inæqualibus, antico majore, postico magis remoto; sinu pallii maximo, impressione musculari antica juncto, superne gibboso, dein paulo excavato.*

*Hab.* Japan. Coll. Cuming.

217. *TELLINA DENTICULATA*, Desh. *T. testa ovato-subtrigona, transversa, crassa, solida, compressa, subæquilaterali, omnino candida, transversim regulariter et tenuissime striata, striis acutiusculis, longitudinalibus, obsoletis decussatis; latere antico lato, paulo brevior, semi-elliptico, postico attenuato, superne recto et declivi, extremitate brevi-truncato; flexura minima, angusta, in valvula dextra biangulata; area angusta, plana, angulo acuto et regulariter denticulato circumscripta; cardine crasso, latiusculo, dentibus lateralibus magnis, elongatis, antico paulo majore, approximato.*

*Hab.* —? Coll. Cuming.

218. *TELLINA SQUAMIFERA*, Desh. *T. testa ovato-transversa, compressa, solidula, inæquivalvi, æquilaterali, candida, transversim tenue et regulariter lamellosa, lamellis numerosis, latis, in latere postico erectis, in antico retroversis, lateribus æqualiter obtusis et superne declivibus; margine inferiore regulariter arcuato; in flexura posticali parum profunda lamellis distantioribus et minus regularibus; area angusta, plana, lævigata, angulo squamifero marginata, squamis magnis, erectis, obliquis, regularibus; dentibus lateralibus magnis, subæqualibus, postico valde remoto; sinu pallii breviculo, obtuso, medio dilatato.*

*Hab.* Chinese Seas. Coll. Cuming.

219. *TELLINA SEMIASPERA*, Desh. *T. testa ovato-transversa, tenui, pellucida, compressa, æquilaterali, candidissima, in medio transversim regulariter tenue striata, ad latus posticum striis erectiusculis, lamellaribus, irregulariter interruptis, in latere postico squamulis longis, erectis, spinæformibus, quincuncialibus exasperata, in latere antico squamulis brevioribus, radiatim ordinatis; latere antico obtuso, semi-elliptico, postico oblique truncato, subangulato; flexura satis profunda, in valva dextra subcarinata; lunula angusta, lanceolata, impressa, lævigata, angulo marginata; dentibus lateralibus magnis, æqualibus, æquidistantibus.*

*Hab.* —? Coll. Cuming.

220. *TELLINA SOLENELLA*, Desh. *T. testa elongato-transversa, subsoleniformi, depressa, tenuissima, membranacea, hyalina, inæquilaterali, candida, lævigata, nitente; latere antico paulo longiore, obtuso, margine superiore et inferiore convexiusculis parallelis; latere postico obtuso, paulo angustiore, non*

*declivi, hiante; flexura vix perspicua; cardine angusto, bidentato, dente laterali antico minimo, cardine approximato.*

*Hab.* Philippines, Bohol. Coll. Cuming.

221. *TELLINA EGREGIA*, Desh. *T. testa ovato-transversa, tenui, fragili, tumidula, inæquilaterali, rosea, roseo-purpurascente transversim multifasciata, albo eleganter radiata, nitida, inæqualiter transversim substriata; latere antico semi-elliptico, superne inferneque convexiusculo; latere postico triangulari, depresso, declivi, subrostrato, apice truncato; flexura late biplicata, subangulata, lævigata; cardine angusto, inæqualiter bidentato, altero unidentato, dentibus majoribus apice dilatatis, furcatis, lateralibus minimis, angustis, æqualibus, subæquidistantibus; sinu pallii elongato, supra gibboso, extremitate attenuato.*

*Hab.* — ? Coll. Cuming.

222. *TELLINA AMBOYNENSIS*, Desh. *T. testa transversa, ovato-oblonga, tenui, fragili, turgidula, subæquilaterali, albo-flavida, subcornea, zonulis angustis interrupta, lævigata, nitente, obsolete transversim striata; latere antico paulo longiore, parum oblique obtuso, superne inferneque convexiusculo, marginibus parallelis; latere postico paulo attenuato, superne declivi, convexiusculo, ad extremitatem truncato; flexura parum profunda; ligamento immerso, cardine angusto, dente laterali postico vix perspicuo, antico nullo; sinu pallii profundo, lato, ovato, subspathuliformi.*

*Hab.* Amboyna. Coll. Cuming.

223. *TELLINA GLABRELLA*, Desh. *T. testa ovato-trigona, transversa, compressa, tenui, subæquilaterali, sub epidermide tenui, pallide flavida, albo-cretacea, inæqualiter obsolete transversim striata; latere antico longe semi-elliptico, obtuso, superne inferneque convexiusculo; latere postico attenuato, trigono, superne recto et declivi; margine inferiore in medio recto, extremitatibus arcuato; umbonibus acutis; flexura angusta, parum perspicua; cardine angusto, bidentato, dentibus inæqualibus, minimis, lateralibus nullis; sinu pallii profundo, superne gibboso, deinde declivi.*

*Hab.* New Zealand. Coll. Cuming.

224. *TELLINA RADIANS*, Desh. *T. testa orbiculato-trigona, solida, depressiuscula, inæquilaterali, pallide flava, ad umbones roseo-purpurascente, radiis numerosis roseis ornata, in valvula sinistra minus numerosis, transversim tenue et regulariter striata, striis simplicibus, obtusis; latere antico magno, late semi-ovali, postico brevi, trigono, superne recto, rapide declivi, inferne subangulato, subrostrato; flexura brevi, parum profunda; lunula areaque albis; valvis intus pallide purpureis; cardine crasso, dentibus lateralibus crassis, brevibus, æqualibus,*

*cardine approximatis; sinu pallii profundissimo, impressionem muscularem anticam attingente, superne gibboso.*

*Hab.* — ? Coll. Cuming.

225. *TELLINA PETALINA*, Desh. *T. testa ovato-transversa, sub-trigona, tenui, compressiuscula, inæquilaterali, pallide albolutescente, roseo-purpurascente pulchre guttato-radiata, radiis numerosis angustis, interruptis, umbonibus albidis, intus coloribus repetitis, transversim striata, striis tenuibus, regularibus, ad umbones nullis, ad latus posticum subundulatis; latere antico semi-elliptico, superne umbones versus concaviusculo, inferne convexo; latere postico brevior, triangulari, superne recto et oblique declivi, ad extremitatem acuminato; flexura parva, angusta, parum profunda, lævigata; dentibus lateralibus magnis, triangularibus, acutis, æquidistantibus.*

*Hab.* — ? Coll. Cuming.

226. *TELLINA RUFa*, Desh. *T. testa ovato-transversa, solidula, convexiuscula, inæquilaterali, albida, rufo late radiata, radiis inæqualibus, ad umbones sæpius interruptis, transversim regulariter striata, striis antice planulatis, in medio et ad latus posticum erectis, striis longitudinalibus decussatis in valva sinistra, striis transversis in latere postico subito evanidis; latere antico elongato, semi-elliptico, marginibus parallelis; latere postico triangulari, attenuato, superne declivi, apice truncato; flexura lata, profunda, biplicata, profunde transversim striato-plicata; valvis intus pallide luteis; dentibus lateralibus magnis, acutis, æqualibus, æquidistantibus; sinu pallii magno, obtuso, ovato.*

*Hab.* — ? Coll. Cuming.

227. *TELLINA INCERTA*, Desh. *T. testa late ovata, transversa, solidula, convexiuscula, inæquilaterali, in umbones purpurata, flava vel pallide purpurascente, purpureo-radiata, radiis numerosis, maculis saturatioribus transversim maculatis, strigis irregularibus fissuras simulantibus subreticulata, transversim striata, striis antice planis et obtusis, in medio erectis, angustioribus, interstitiis striis longitudinalibus notatis; latere antico longiore, semi-ovato, obtuso, superne subrecto, inferne convexiusculo; latere postico triangulari, attenuato, inflexo, obtuse subtruncato; flexura profunda, satis lata, biplicata, striato-lamellosa, superne alba; valvis intus vel purpureis vel sulphureis; cardine crasso, dentibus lateralibus acutis, triangularibus, magnis, æquidistantibus.*

*Tellina crucigera*, var., Hanley.

*Hab.* Philippines. Coll. Cuming.

228. *TELLINA FLAMMULA*, Desh. *T. testa elongato-transversa, subovata, solida, convexiuscula, inæquilaterali, luteo-sulphurea, in umbones purpureo-violascente maculata et biflammulata, flammulis rapide evanescentibus, transversim tenue striata, striis*

*depressis, ad latus posticum erectis, et in squamulas inæquales divisis, in valva dextra striis postice subito evanidis; latere antico semi-elliptico, obtuso, paulo longiore; latere postico attenuato, subrostrato, superne declivi, extremitate truncato, flexura profunda, fere lævigata; valvis intus sulphureis; sinu pallii profundissimo, longe ovato.*

*Hab.* —? Coll. Cuming.

229. *TELLINA SIEBOLDII*, Desh. *T. testa elongato-transversa, angusta, lanceolata, tenui, fragili, compressa, inæquilaterali, omnino rubro-purpurascente, in valva sinistra transversim tenue et satis regulariter striata, in valva dextra striis obsoletis; latere antico elongato, obtuso, superne recto, inferne paulo arcuato; latere postico brevior, valde attenuato, compresso, rostrato; flexura angusta; area posticali angusta, eleganter plicata, angulo angusto, tenue et regulariter crenato circumdata; dentibus lateralibus angustis, elongatis, æqualibus, æquidistantibus; sinu pallii breviculo, superne gibboso, dein declivi, apice attenuato.*

*Hab.* Japan. Coll. Cuming.

230. *TELLINA VENUSTA*, Desh. *T. testa elongato-transversa, tenui, fragili, compressiuscula, inæquilaterali, nitida, sulphureo-incarnata, ad umbones rosea, et breviter subradiata, radio unico angusto, roseo in plicatura posticali, transversim obsoletissime striata, in valva dextra, striis ad latus posticum prominentioribus, acutis; latere antico elongato, obtuso, longe semi-elliptico, marginibus parallelis; latere postico triangulari, compresso, attenuato, rostrato, plicatura satis profunda, contorto, apice oblique truncato; sinu pallii breviculo, attenuato, superne in medio gibbosulo, deinde declivi, et paulo excavato; dentibus lateralibus angustissimis, elongatis, æqualibus.*

*Hab.* Sandwich Islands. Coll. Cuming.

231. *TELLINA DIALEUCA*, Desh. *T. testa elongato-transversa, tenui, fragili, turgidula, inæquilaterali, nitida, hyalina, pallide flavo-aurantia, ad umbones subvitrea, obsoletissime transversim et longitudinaliter striata, striis transversis in latere postico prominulis, subrotundato-crenatis; latere antico prælongo, longe semiovali, superne recto, inferne convexiusculo; latere postico valde attenuato, rostrato, apice breviter truncato, superne recto et declivi; flexura profunda, in valva dextra acute biangulata; cardine angusto, inæqualiter bidentato, dente laterali antico minimo, elongato, valde remoto, postico minore.*

*Hab.* Pedang. Coll. Cuming.

232. *TELLINA SULCATINA*, Desh. *T. testa elongato-transversa, angusta, compressa, tenui, inæquilaterali, inæquivalvi, squalide flavo-rubente, transversim tenue et regulariter striata, striis planis, latis, ad latus posticum rectiusculis, acutiusculis; latere antico longe semi-elliptico, angusto, obtuso, superne inferneque recto, marginibus parallelis, latere postico subtrigono, elongato, subros-*

*trato, apice oblique truncato, superne recto et declivi, flexura obtusa distincto, supra angulum transversim lamelloso; cardine angusto; dente laterali antico elongato, postico nullo; sinu pallii profundo, angusto, obtuso, marginibus parallelis.*

*Hab.* Chinese Seas. Coll. Cuming.

233. *TELLINA VINOSA*, Desh. *T. testa elongato-transversa, solidula, subventricosa, inæquilaterali, squalide purpurea, vinosa, zonulis aliquibus saturatioribus interrupta, intus grate albo-purpurascenti, ad extremitatem posticam vivide purpureo-sanguinea, transversim striata; striis in latere antico simplicibus, planis, ad latus posticum angustioribus, erectiusculis, et in squamulas erectas, inæquales divisas, in valva sinistra striis postice subito interruptis; latere antico elliptico, paulo dilatato, obtuso; latere postico triangulari, attenuato, rostrato, superne recto et declivi; flexura profunde bicipitata, lævigata; cardine crassiusculo, dentibus lateralibus validis, elongatis, æqualibus, æquidistantibus.*

*Hab.* —? Coll. Cuming.

234. *TELLINA AMÆNA*, Desh. *T. testa elongato-transversa, angusta, solidula, convexiuscula, inæquilaterali, pallide luteo-sulphurea, radiis raris, angustis, purpureis, interruptis ornata, transversim regulariter striata; striis in latere antico planis, in latere postico erectis, sublamellosis, aliquantisper paulo interruptis in valva dextra, continuis et crassioribus in sinistra; latere antico longe semi-elliptico, obtuso, superne inferneque vix convexiusculo; latere postico breviori, triangulari, angusto, attenuato, rostrato, acuto, flexura profunda notato, in flexura lamellosa; dentibus lateralibus validis, æqualibus, æquidistantibus, in valva dextra dilatatis.*

*Hab.* Chinese Seas. Coll. Cuming.

235. *TELLINA GRATIOSA*, Desh. *T. testa elongato-transversa, solidula, convexiuscula, inæquilaterali, pallide sulphurea, purpureo eleganter radiata, fasciis tricoloribus, transversis, satis regulariter interruptis et maculis quadratis formatis; umbonibus purpureis; transversim et regulariter striata, striis latis, planis in latere antico, in postico angustis, lamellosis, in squamulas oblongas interruptis; latere antico longiori, obtuso, superne fere recto, inferne in medio convexo, latere postico attenuato, inflexo, rostrato, oblique truncato, superne recto et declivi, flexura profunda, lamellosa; cardine inæqualiter bidentato, dentibus lateralibus magnis elongatis, postico paulo breviori.*

*Hab.* Philippines. Coll. Cuming.

236. *TELLINA GRATA*, Desh. *T. testa elongato-transversa, solidula, compressiuscula, inæquilaterali, pallide purpurascenti, purpureo interruptim radiata, radiis ad umbones evanidis, in latere antico tenuissime et regulariter striata, striis in medio multo minus numerosis, majoribus, postice lamellosis et in squamulas interruptis; latere antico semi-elliptico, postico breviori, attenuato, rostrato, flexura profunda notato; valvis intus albis, ad margines purpureis,*

*impressionibus muscularibus sanguineis; sinu pallii profundissimo, longissime elliptico.*

*Hab.* Amboyna. Coll. Cuming.

237. *TELLINA ORNATA*, Desh. *T. testa elongato-transversa, angusta, solidula, convexiuscula, inæquilaterali, albo pallide purpurascenti, ad umbones purpurea, radiis purpureis, angustis ornata, transversim regulariter et tenuè striata; striis obtusis, ad latus posticum angustioribus, lamellosis, erectis; latere antico longiori, angusto, obtuso, marginibus parallelis; latere postico attenuato, subrostrato, superne recto et declivi, extremitate perpendiculariter truncato; flexura profunda, in valva dextra biangulata, vix striato-lamellosa; sinu pallii longissimo, angusto, marginibus convexiusculis, fere parallelis.*

*Hab.* —? Coll. Cuming.

238. *TELLINA DECOLORATA*, Desh. *T. testa elongato-transversa, solidula, depressa, æquilaterali, pallide luteo-grisea, transversim sulcata, sulcis ad latus posticum distantioribus, sublamellosis, in squamulas breves interruptis, interstitiis striis obsoletis longitudinalibus radiatis; latere antico semi-elliptico, superne recto, paulo declivi, inferne convexiusculo; latere postico rostrato, arcuato, recte truncato, attenuato, superne recto et declivi; flexura profunda, biangulata, late lamellosa; area angusta, plana, angulo crenato circumdata; sinu pallii magno, profundo, ovato, apice elevato, acuminato.*

*Hab.* Moluccas. Coll. Cuming.

239. *TELLINA DISSIMILIS*, Desh. *T. testa elongato-transversa, angusta, crassiuscula, compressiuscula, subæquilaterali, luteo-flavescenti, ad umbones albicanti, purpureo multi-radiata, transversim striato-sulcata, sulcis in valva dextra ad latus posticum erectiusculis, lamellosis et squamulis erectis quincuncialibus divisis; in valva sinistra sulcis continuis; latere antico paulo longiori, longe semi-elliptico, superne recto, inferne paulo convexo; latere postico triangulari, late subrostrato, attenuato, superne recto, declivi, extremitate oblique truncato; flexura profunda, biangulata, undatim lamellosa; valvis intus albis, roseo-radiatis; sinu pallii profundo, anguste elliptico.*

*Hab.* —? Coll. Cuming.

240. *TELLINA SPLENDIDA*, Desh. *T. testa elongato-transversa, solidula, compressiuscula, subæquilaterali, albo pallide lutea, eleganter purpureo vivide multi-radiata, radiis interruptis, fasciis angustis albis et purpureo saturatiore, umbonibus pallidis, intus lutea, roseo pallide radiata, transversim regulariter et profunde striata; striis antice obtusis, ad latus posticum acutioribus et in valva sinistra tenuè undato-crispis; latere antico longe semi-elliptico, superne recto; latere postico attenuato, rostrato, superne recto et declivi, extremitate truncato; cardine dentibus lateralibus elongatis, acutis, æquidistantibus.*

*Hab.* —? Coll. Cuming.

241. TELLINA DUBIA, Desh. *T. testa ovato-transversa, tumidula, solidiuscula, alba, zonulis transversis, pallidis interrupta, inaequali laterali, transversim inaequaliter subtilissime striata; latere antico elongato, semi-elliptico, late obtuso, margine superiore inferiori parallelo; latere postico brevi, flexura lata, non profunda, contorto, superne recto et declivi, extremitate late truncato; ligamento brevi, semicylindrico, intus in margine triangulari affixo; dentibus cardinalibus duobus parvis, lateralibus nullis; sinu pallii irregulariter trapezoidali, in medio valde dilatato.*

*Hab. — ?*





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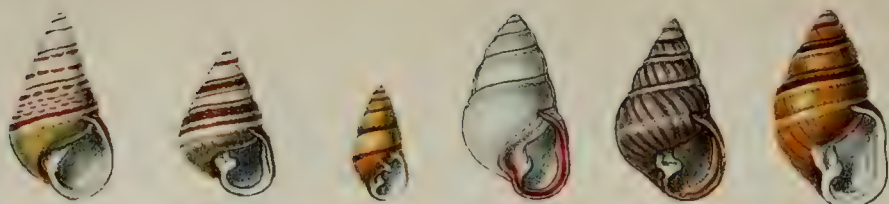
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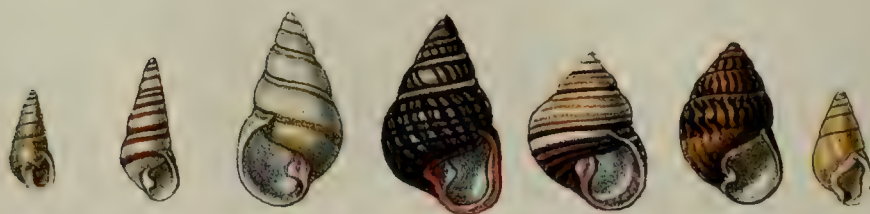
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# PROCEEDINGS

OF THE

## ZOOLOGICAL SOCIETY OF LONDON.

January 9, 1855.

Dr. Gray, Vice-President, in the Chair.

The following papers were read :—

1. DESCRIPTIONS OF TWENTY-SEVEN NEW SPECIES OF ACHATINELLA, FROM THE COLLECTION OF H. CUMING, ESQ., COLLECTED BY DR. NEWCOMB AND BY MONS. D. FRICK, LATE CONSUL-GENERAL OF FRANCE AT THE SANDWICH ISLANDS. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXX.)

Genus ACHATINELLA.

Sect. NEWCOMBIA, Pfr. in Malak. Bl. 1854, p. 117.

1. A. APTYCHA, Pfr. (Pl. XXX. fig. 1.) *A. testa imperforata, dextrorsa, oblongo-conica, tenuiuscula, striatula, parum nitida, alba, cingulis punctatis, castaneis ornata; spira elongato-conica, apice obtusula; sutura subsimplice; anfract. 6½, convexiusculis, ultimo ⅔ longitudinis subaequante, basi rotundato; apertura obliqua, truncato-ovali; intus lactea; plica columellari obsoleta, vix tortula; peristom. simplice, intus levissime labiato, margine dextro recto, columellari angusto, adnato.*

Long.  $21\frac{1}{2}$ , diam. 10 mill.

*Hab.* In insulis Sandwich (*Frick*).

Sect. AURICULELLA, Pfr.

(Testa subperforata, oblongo-conica; paries aperturalis lamella spiraleriter intrante munitus, plica columellaris supera, dentiformis vel obsoleta; perist. expansiusculum. Species: *Helix auricula*, Fér., *Tornatellina Petitiana*, Pfr., *Partula pusilla*, Gould?)

No. CCLXXXIV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

2. *A. CEREAE*, Pfr. (Pl. XXX. fig. 21.) *A. testa subperforata, dextrorsa, elongato-conica, tenui, striatula, diaphana, cerea; spira turrata, apice obtusa; anfr. 8, vix convexiusculus, ultimo  $\frac{1}{3}$  longitudinis subæquante, basi subcompresso; apertura parum obliqua, truncato-ovalis; lamella parietali tenui; plica columellari obsoleta; perist. albo, margine dextro breviter expanso, columellari dilatato, patente.*

Long.  $8\frac{2}{3}$ , diam.  $3\frac{2}{3}$  mill.

*Hab.* In insulis Sandwich (*Dr. Newcomb*).

Sect. FRICKELLA, Pfr.

(Testa subperforata, oblonga; paries aperturalis lamella spiraliter intrante munitus; plica columellaris compressa, mediana; perist. simplex, rectum.)

3. *A. AMÆNA*, Pfr. (Pl. XXX. fig. 3.) *A. testa subperforata, ovato-oblonga, tenui, striatula, nitida, lutea, fusco obsolete unifasciata; spira convexo-conica, apice obtusula; sutura impressa; anfr.  $6\frac{1}{2}$ , convexiusculus, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi subattenuato; apertura obliqua, semiovali; lamina parietali subtransversa; plica columellari subduplicata, callosa, superposita, lamina spirali; perist. simplice, recto.*

Long.  $11\frac{1}{2}$ , diam. 5 mill.

*Hab.* In insulis Sandwich (*Frick*).

Sect. BULIMELLA, Pfr. in Malak. Bl. 1854, p. 119.

4. *A. CANDIDA*, Pfr. (Pl. XXX. fig. 4.) *A. testa dextrorsa, imperforata, ovato-conica, striatula, parum nitida, candida; spira convexo-conica, vertice minuto, nigro, acutiusculo; sutura levi, filomarginata; anfr.  $6\frac{1}{2}$ , planiusculus, ultimo  $\frac{3}{7}-\frac{4}{9}$  longitudinis æquante, obsolete angulato, basi rotundato; apertura obliqua, truncato-auriformi; plica columellari mediocri, supera, obliqua, subcompressa; perist. fusco-violaceo, intus valide labiato, margine dextro expanso, columellari dilatato, plano, crasso, adnato.*

Long. 22, diam. 11 mill.

*Hab.* In insulis Sandwich (*Frick*).

5. *A. CINEROSA*, Pfr. (Pl. XXX. fig. 5.) *A. testa dextrorsa, imperforata, ovato-conica, solida, sublævigata, nitida, fusco-grisea, lineis fuscis et albis radiata; spira conica, apice acutiuscula, alba; sutura subcrenulata, albo-marginata; anfr. 6, vix convexiusculus, ultimo spira paulo brevior, basi rotundato; apertura parum obliqua, truncato-auriformi; plica columellari torta, valida, dentiformi; perist. crasse albo-labiato, margine dextro substricto, breviter expanso, columellari crasso, adnato.*

Long. 21, diam. 11 mill.

β. *Fulvida, fusco radiata, sutura concolore.*

*Hab.* In insulis Sandwich (*Frick*).

6. *A. MACROSTOMA*, Pfr. (Pl. XXX. fig. 6.) *A. testa dextrorsa, imperforata, conico-ovata, solidula, levissime striatula, nitida, fulva, fasciis nonnullis pallidis et fuscis variegata; spira*

*conica, obtusula; sutura submarginata; anfr. 5½, modice convexis, ultimo spiram æquante, superne turgido, medio attenuato, basi rotundato; apertura parum obliqua, ampla, obauriformi, intus alba; perist. albo, leviter labiato, margine dextro expanso, superne valde curvato, columellari dilatato, adnato.*

Long. 21½, diam. 11 mill.

*Hab.* In insulis Sandwich (*Frick*).

7. A. FRICKI, Pfr. (Pl. XXX. fig. 7.) *A. testa subimperfurata, dextrorsa vel sinistrorsa, oblongo-ovata, solida, leviter striata, nitida, coloribus per varia; spira convexiusculo-conica, acuta; sutura anguste marginata; anfr. 6, vix convexiusculis, ultimo ¾ longitudinis subæquante, basi rotundato; apertura obliqua, obauriformi; plica columellari supera, torta, valida; perist. expansiusculo, obtuso, violaceo vel nigro labiato et limbato, margine dextro substricto.*

Long. 20–21, diam. 10½ mill.

α. *Isabellina, pallide fusco subfasciata, sutura alba.*

β. *Late castanea, fasciis albis et saturatoribus ornata (sinistrorsa).*

γ. *Griseo-fusca, fasciis saturatoribus picta, sursum alba.*

δ. *Alba vel lutescens, fasciis 2–3 nigro-fuscis ornata.*

*Hab.* In insulis Sandwich (*Frick*).

8. A. PLANOSPIRA, Pfr. (Pl. XXX. fig. 8.) *A. testa imperforata, dextrorsa, ovato-pyramidata, solida, conferte striata et sub lente obsoletissime decussata, nitida, nigricante, fasciis nonnullis albis vel luteis, angustis ornata; spira conica, acutiuscula; sutura lineari, marginata; anfr. 5½, planis, ultimo spira paulo brevior, obsolete angulato, basi rotundato; apertura obliqua, obauriformi; plica columellari supera, valida, torta, alba; perist. crasse albolabiato, margine dextro repando, breviter expanso, columellari adnato.*

Long. 19, diam. 9½ mill.

β. *Superne nigro-castanea, anfr. ultimo fulvo, brunneo lineato.*

*Hab.* In insulis Sandwich (*Frick*).

9. A. MONACHA, Pfr. (Pl. XXX. fig. 9.) *A. testa imperforata, ovato-conica, solida, oblique striatula, parum nitida, griseo-alba, lineis fuscis varie cincta; spira elevato-conica, acutiuscula; sutura leviter marginata, subcrenulata; anfr. 6, convexiusculis, ultimo spira paulo brevior, basi rotundato; apertura obliqua, late obauriformi; plica columellari supera, obliqua, mediocri; perist. sublabiato, margine dextro breviter expanso, columellari crasso, flexuoso, adnato.*

Long. 20, diam. 10½ mill.

*Hab.* In insulis Sandwich (*Frick*).

10. A. VIDUA, Pfr. (Pl. XXX. fig. 10.) *A. testa subimperfurata, dextrorsa, conico-ovata, striatula, sub lente minutissime decussata, nitida, saturate fusca, cæruleo-albido bifasciata; spira convexo-conica, apice obtusula; sutura subsimplice; anfr. 6, vix convexiusculis, ultimo spira paulo brevior, basi rotundato; apr-*

*tura parum obliqua, truncato-oblonga; plica columellari obsoleta, vix torta; perist. intus valide labiato, margine dextro anguste reflexo, columellari dilatato, subadnato.*

Long.  $18\frac{1}{2}$ , diam. 10 mill.

*Hab.* In insulis Sandwich (*Frick*).

11. *A. MULTICOLOR*, Pfr. (Pl. XXX. fig. 11.) *A. testa imperforata, dextrorsa vel sinistrorsa, conico-oblonga, solida, striata et sub lente minutissime decussata, nitida, lutea vel albida, fasciis nigro-castaneis varie ornata, rarius unicolore; spira elongato-conica, apice subattenuata, acutiuscula; sutura marginata; anfr. 6, planiusculis, ultimo  $\frac{2}{3}$  longitudinis subæquante, basi rotundato; apertura obliqua, truncato-obauriformi; plica columellari supera, valida, torta; perist. nigro-limbato, margine externo substricto, breviter expanso, columellari dilatato, subadnato.*

Long. 17, diam. 9 mill.

*Hab.* In insulis Sandwich (*Frick*).

12. *A. ATTENUATA*, Pfr. (Pl. XXX. fig. 12.) *A. testa subperforata, ovato-turrita, tenuiuscula, striatula et sub lente granulata, alba, strigis corneis sæpe angulosis picta; spira concavo-turrita, obtusula; sutura distincte filomarginata; anfr.  $5\frac{1}{2}$ , superis planis, sequentibus convexis, ultimo  $\frac{3}{4}$  longitudinis subæquante, rotundato, basi subcompresso; apertura obliqua, subtetragono-auriformi; plica columellari valida, compressa, linguæformi; perist. acuto, breviter expanso, intus labiato, margine basali cum columellari dilatato intus angulum formante.*

Long. 16, diam.  $7\frac{1}{2}$  mill.

*Hab.* In insula Mani, Sandwich (*Frick*).

13. *A. SWAINSONI*, Pfr. (Pl. XXX. fig. 13.) *A. testa sinistrorsa, imperforata, ovato-conica, solida, sublævigata, nitida, albida, fulvo tenuiter strigata; spira conica, apice fulva, acutiuscula; sutura marginata; anfr.  $5\frac{1}{2}$ , convexiusculis, ultimo  $\frac{2}{3}$  longitudinis subæquante, infra suturam turgido, basi rotundato; apertura fere diagonali, obauriformi; plica columellari supera, valida, nodiformi; perist. nigro-fusco limbato, margine externo reflexiusculo, intus crasse labiato, columellari crasso, flexuoso, adnato.*

Long. 20, diam. 11 mill.

$\beta$ . *Virenti-lutea, anfr. ultimo antice castaneo.*

*Hab.* In insulis Sandwich (*Frick*).

14. *A. SOWERBYANA*, Pfr. (Pl. XXX. fig. 14.) *A. testa sinistrorsa, imperforata, conico-oblonga, solidula, sublævigata, glutinoso-nitente, fulvo-lutescente, saturatius subradiata; spira convexiusculo-conica, subacuta; sutura marginata; anfr. 6, vix convexiusculis, ultimo spira paulo breviora, basi saccato-rotundato; apertura obliqua, obauriformi, intus alba; plica columellari supera, valida, torta, rosea; perist. roseo-labiato, margine externo breviter expanso, columellari dilatato, adnato.*

Long. 18, diam. 9 mill.

$\beta$ . *Paulo minor, flavo-albida, basi castanea vel viridula.*

*Hab.* In insulis Sandwich (*Frick*).

15. *A. DOLIUM*, Pfr. (Pl. XXX. fig. 15.) *A. testa perforata, ovato-conica, tenuiuscula, leviter striatula, parum nitente, pallide lutescente, fasciis et strigis angustis, fuscis variegata; spira conica, acutiuscula; sutura vix marginata; anfr. 6, convexis, ultimo spiram paulo superante, ventroso, basi subcompressa; apertura obliqua, obauriformi, intus alba; plica columellari alta, dentiformi, alba; perist. tenui, intus sublabiato, margine dextro anguste expanso, columellari dilatato, patente.*

Long. 17, diam. 10 mill.

*Hab.* In insulis Sandwich (*Dr. Newcomb*).

16. *A. FORBESIANA*, Pfr. (Pl. XXX. fig. 16.) *A. testa subperforata, dextrorsa vel sinistrorsa, ovato-conica, solida, conferte striatula, nitida, grisea vel albida, fasciis crebris griseis vel fuscis, sæpe confluentibus picta; spira exacte conica, sursum alba, apiculo nigro acutiusculo; sutura marginata; anfr. 6, convexiusculis, ultimo spira paulo brevior, rotundato; apertura obliqua, obauriformi; plica columellari supera, valida, nodiformi; perist. fuscis vel carneo limbato, margine externo breviter expanso, columellari crasso, subadnato.*

Long. 19, diam.  $10\frac{1}{2}$  mill.

*Hab.* In insulis Sandwich (*Frick*).

Sect. LAMINELLA, Pfr. in Malak. Bl. 1854, p. 126.

17. *A. RUDIS*, Pfr. (Pl. XXX. fig. 17.) *A. testa subimperfurata, ovato-turrita, solida, ruditer striata, fulvo-fusca; spira elevato-conica, acutiuscula; sutura simplice, levissime crenulata; anfr.  $7\frac{1}{2}$ , modice convexis, ultimo  $\frac{2}{5}$  longitudinis vix formante, rotundato; apertura obliqua, sinuato-ovali; plica columellari mediana, laminaformi, subtransversa; perist. simplice, recto, acuto, margine columellari dilatato, reflexo, subadnato.*

Long. 21, diam.  $11\frac{1}{2}$  mill.

$\beta$ . *Castanea, fascia mediana et basi lutescentibus, spira minus elongata.*

*Hab.* In insulis Sandwich (*Frick*).

18. *A. FUSIFORMIS*, Pfr. (Pl. XXX. fig. 18.) *A. testa imperforata, fusiformi-oblonga, tenuiuscula, striatula, saturate fusca, pallide conspersa et oblique lineolata; spira convexo-conica, apice nigra, acuta; sutura simplice; anfr. 7, vix convexiusculis, ultimo  $\frac{2}{5}$  longitudinis formante, basi attenuato; apertura obliqua, ellipsoidea; plica columellari levi, compressa, subduplicata; perist. simplice, recto, margine dextro regulariter arcuato, columellari anguste adnato.*

Long. 14, diam.  $6\frac{2}{3}$  mill.

*Hab.* In insulis Sandwich (*Frick*).

Sect. ACHATINELLASTRUM, Pfr. in Malak. Bl. 1854, p. 133.

19. *A. NAPUS*, Pfr. (Pl. XXX. fig. 19.) *A. testa imperforata, dextrorsa, turrita, solida, striatula, nitidula, albida, fasciis griseo-carneis et interdum lineis castaneis cingulata; spira elongato-conica, apice alba, acuta; sutura distincte marginata; anfr.  $6\frac{1}{2}$ ,*

*superis planis, sequentibus convexiusculis, ultimo  $\frac{1}{2}$  longitudinis subæquante, rotundato; apertura diagonali, truncato-auriformi; plica columellari supera, mediocri, leviter torta; perist. intus labiato, margine dextro recto, columellari subdilato, adnato.*

Long.  $19\frac{1}{2}$ , diam.  $10\frac{1}{2}$  mill.

*Hab.* In insulis Sandwich (*Frick*).

20. *A. VENTROSA*, Pfr. (Pl. XXX. fig. 20.) *A. testa imperforata, ovato-conica, solidula, striata, alba, deorsum epidermide fulva, nigro-strigata vestita; spira conica, obtusa; anfr.  $5\frac{1}{2}$ , inflatis, ultimo spira paulo brevior, basi rotundato; apertura fere diagonali, late auriformi, intus alba; plica columellari crassa, dentiformi; perist. intus labiato, margine dextro recto, substrictè descendente, leviter antrorsum arcuato, columellari brevi, adnato.*

Long.  $17\frac{1}{2}$ , diam. 11 mill.

*Hab.* In insulis Sandwich (*Dr. Newcomb*).

21. *A. PULCHELLA*, Pfr. (Pl. XXX. fig. 2.) *A. testa imperforata, ovato-conica, sublevigata, nitida, fulva, fasciis nigro-viridibus et interdum fascia mediana alba ornata; spira conica, versus apicem acutum attenuata, alba, sutura filomarginata; anfr.  $5\frac{1}{2}$ , convexiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante, rotundato; apertura fere diagonali, subtetragono, auriformi; plica columellari supera, dentiformi, valida; perist. intus valide labiato, margine dextro recto, strictiusculo, columellari reflexo, subadnato.*

Long.  $15\frac{1}{2}$ , diam. 10 mill.

*Hab.* In insulis Sandwich (*Frick*).

22. *A. GRACILIS*, Pfr. (Pl. XXX. fig. 22.) *A. testa imperforata, gracili, turrata, solidula, sublevigata, alba, fusco bifasciata; spira elongata, regulariter attenuata, apice obtusula; sutura simplice; anfr. 8, planiusculis, ultimo  $\frac{1}{3}$  longitudinis fere æquante, basi rotundato; apertura subverticali, sinuato-ovali; plica columellari mediana, subcompressa; perist. simplice, margine dextro recto, leviter arcuato, columellari dilatato, adnato.*

Long. 14, diam.  $5\frac{1}{2}$  mill.

*Hab.* In insulis Sandwich (*Dr. Newcomb*).

23. *A. CRASSIDENTATA*, Pfr. (Pl. XXX. fig. 23.) *A. testa imperforata, sinistrorsa, solidula, striatula, parum nitida, alba, fasciis nonnullis luteis ornata, interdum basi virenti-lutea; spira conica, apice obtusula; sutura marginata; anfr.  $5\frac{1}{2}$ , convexiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi rotundato; apertura diagonali, sinuato-semiovali; plica columellari supera, crassissima, dentiformi; perist. simplice, margine externo acuto, leviter arcuato, columellari brevi, angusto.*

Long. 20, diam. 11 mill.

*Hab.* In insulis Sandwich (*Frick*).

24. *A. VALIDA*, Pfr. (Pl. XXX. fig. 24.) *A. testa imperforata, dextrorsa (rarius sinistrorsa), ovato-conica, solida, sublevigata, cinereo-fusca, pallide subfasciata et nigro strigatula; spira elevata, conica, apice fusca, acuta; sutura marginata, alba; anfr. 6, pri-*

*mis 3 planis, sequentibus convexiusculis, ultimo  $\frac{2}{3}$  longitudinis subæquante, inflato; apertura obliqua, truncato-auriformi; plica columellari supera, nodiformi, parum torta; perist. fusco limbato, margine dextro subrecto, strictiusculo, columellari dilatato, appresso.*

Long.  $21\frac{1}{2}$ , diam. 13 mill.

$\beta$ . *Nigra, pallide interrupte lineolata vel fasciata.*

*Hab.* In insulis Sandwich (*Frick*).

25. A. GLOBOSA, Pfr. (Pl. XXX. fig. 25.) *A. testa subimperfurata, dextrorsa, conico-globosa, tenuiuscula, striatula, alba, lineis fuscis cingulata; spira brevi, convexiusculo-conica, subacuta; sutura levi, submarginata; anfr. 5, modice convexis, ultimo ventroso, spiram subæquante, basi fusco; apertura obliqua, subtetragono-ovali, intus margaritacea; plica columellari levi, vix torta; perist. acuto, fusco-limbato, intus albo-sublabiato, margine columellari incrassato, subadnato.*

Long. 17, diam.  $11\frac{1}{2}$  mill.

*Hab.* In insulis Sandwich (*Frick*).

26. A. CONSPERSA, Pfr. (Pl. XXX. fig. 26.) *A. testa imperforata, dextrorsa, conico-ovata, tenuiuscula, conferte striata, saturate fusca, maculis sordide albidis, strigas angulosas formantibus conspersa; spira convexo-conica, apice acuta; sutura simplice; anfr. 6, superis planiusculis, penultimo convexiore, ultimo  $\frac{3}{7}$  longitudinis subæquante, rotundato; apertura parum obliqua, sinuato-elliptica; plica columellari subbasali, compressa; perist. simplice, recto, margine columellari nullo.*

Long. 18, diam.  $10\frac{1}{2}$  mill.

*Hab.* In insulis Sandwich (*Frick*).

Sect. LABIELLA, Pfr. in Malak. Bl. 1854, p. 142.

27. A. DENTATA, Pfr. (Pl. XXX. fig. 27.) *A. testa imperforata, conico-ovata, solida, striatula, nitida, sub epidermide fulvida alba; spira conica, obtusa; anfr. 7, planiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi rotundato; apertura fere verticali, subrhombea, basi angulata; plica columellari profunda, compressa; perist. albo-callosa, marginibus callo junctis, dextro recto, medio introrsum unidentato; columellari dilatato, adnato.*

Long. 12, diam.  $5\frac{2}{3}$  mill.

*Hab.* In insulis Sandwich (*Dr. Newcomb*).

2. DESCRIPTIONS OF NINE NEW SPECIES OF LAND-SHELLS, IN THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

1. BULIMUS LATILABRIS, Pfr. *B. testa imperforata, succinoidea, tenui, longitudinaliter subgranulato-rugulosa, flavida, strigis angulatis, castaneis subtessellata, vel ad suturam interrupte fasciata; spira brevi, conica, acutiuscula; anfr. 4, rapide acrescentibus, vix convexiusculis, ultimo fere  $\frac{3}{4}$  longitudinis formante; columella ad apicem spiræ aperta; apertura subverti-*

*cali, acuminato-ovali, intus margaritacea; perist. late expanso et reflexiusculo, marginibus callo tenui junctis, columellari arcuato, calloso, albo.*

Long. 49, diam. 26 mill.

*Hab.* Santa Fé de Bogota.

2. *BULIMUS STRANGEI*, Pfr. *B. testa subcompressa umbilicata, fusiformi-oblonga, tenuiuscula, striata et striis spiralibus levisime decussata, fulvida, ad suturam crenulatam albo-fasciata; spira elevato-conica, apice obtusa; anfr. 5, vix convexiusculis, ultimo spiram superante, antice breviter arcuatim ascendente, basi attenuato; apertura vix obliqua, elongato-ovali, intus vitellina, nitida; columella alba, longe plicata; perist. albo, subincrassato, margine dextro expanso et reflexo, superne arcuato, tum strictiusculo, columellari dilatato, plano, patente.*

Long. 46, diam. 17 mill.

*Hab.* Eddystone Island, Australian Seas.

3. *BULIMUS EDDYSTONENSIS*, Pfr. *B. testa imperforata, ovato-conica, tenuiuscula, confertim striata et suboblique malleata, sericea, saturate castanea; spira exacte conica, apice acuta; sutura levi, subcrenata; anfr. 6, convexiusculis, ultimo spira paulo longiore, basi rotundato; columella tenui, subplicata, recedente, aurantiaca; apertura parum obliqua, subangulato-ovali, intus margaritacea, virenti-livida; perist. simplice, vix expansiusculo, obtuso, sordide aurantiaco, margine columellari vix dilatato.*

Long. 74, diam. 34 mill.

*Hab.* Eddystone Island, Australian Seas.

4. *BULIMUS SIGNIFER*, Pfr. *B. testa perforata, subfusiformi-oblonga, tenui, confertim et leviter plicato-striata, albida, strigis spadiceis serratis irregulariter signata; spira inflato-conica, acutiuscula; anfr. 6, superis planiusculis, penultimo convexo, ultimo spiram subaequante, basi attenuato; columella torta, recedente; apertura vix obliqua, oblonga; perist. simplice, margine dextro sublato expanso, columellari dilatato, abrupte reflexo, patente.*

Long. 33, diam.  $13\frac{1}{2}$  mill.

*Hab.* Venezuela?

5. *BULIMUS CERATACME*, Pfr. *B. testa profunde et anguste rimata, subfusiformi-oblonga, solidula, irregulariter striatula, parum nitente, carneo-albida; spira elongata, apice cornea, obtusula; anfr.  $7\frac{1}{2}$ , parum convexis, medianis remote et obsolete corneo-strigatis, ultimo  $\frac{1}{3}$  longitudinis vix superante, basi subattenuato; columella recedente, leviter plicata; apertura vix obliqua, oblongo-ovali; perist. acuto, intus sublabiato, marginibus approximatis, callo tenui junctis, dextro expanso, superne arcuato, columellari patente.*

Long.  $18\frac{1}{2}$ , diam. 6 mill.

*Hab.* Peru?



6. *BULIMUS PEREGRINUS*, Pfr. *B. testa perforata, subfusiformi-turrita, solidiuscula, striatula, cerea; spira convexo-turrita, apice obtusula; sutura subcrenulata; anfr. 8½, vix convexiusculis, ultimo ⅓ longitudinis subæquante, basi subcompresso; apertura obliqua, oblonga, utrinque angulata; perist. simplice, recto, marginibus conniventibus, dextro arcuato, columellari fere stricto, a basi apertura dilatato, patente, planato.*

Long. 18, diam.  $5\frac{2}{3}$  mill.

Hab. —?

7. *SPIRAXIS MANDARINA*, Pfr. *Sp. testa imperforata, cylindraceo-turrita, solidula, lævigata, nitida, lutescenti-cerea; spira elongata, apice attenuata, obtusa; sutura submarginata; anfr. 8, primis rotundatis, sequentibus modice convexis, ultimo ¼ longitudinis subæquante, basi rotundato; columella callosa, torta, subduplicata; apertura obliqua, elliptico-ovali; perist. simplice, recto, margine dextro superne antrorsum arcuato.*

Long. 23, diam. 6 mill.

Hab. China.

Allied to *Achatina erecta*, Bens., which is also a *Spiraxis*. *Achatina Dunkeri*, Pfr. must likewise be transferred to the same genus.

8. PUPA (ENNEA) *OBOVATA*, Pfr. *P. testa breviter arcuato-rimata, obovata, tenui, lævigata, hyalina; spira ventrosa, sursum turgida, obtusa; sutura lineari-marginata; anfr. 7, primis 4 convexis, sequentibus subplanis, ultimo ⅓ longitudinis vix attingente, attenuato, basi compresso, latere dextro scrobiculato; apertura verticali, subtriangulari, plica profunda columellari, lamina valida, intrante ad angulum parietis, denticulis 2 marginis dextri et singulo subbasali coarctata; perist. albo, breviter expanso.*

Long. 6, diam. supra medium 3 mill.

Hab. Liberia.

9. PUPA (ENNEA) *CEYLANICA*, Pfr. *P. testa breviter rimata, subcylindrica, striatula, pellucida, nitida, lutescenti-hyalina; spira versus apicem obtusum vix attenuata; sutura sub lente regulariter denticulata; anfr. 8½, convexis, ultimo ¼ longitudinis non attingente, latere constricto et antice profunde scrobiculato, basi gibbo; apertura subverticali, truncato-oblonga, plica profunda columellari, plica laminæformi juxta angulum parietis, dente valido in medio marginis dextri et minore basali coarctata; perist. albo, nitido, reflexiusculo.*

Long.  $6\frac{2}{3}$ , diam. 2 mill.

Hab. Ceylon (*E. L. Layard*).

3. NOTICE OF THE HORNS OF AN UNRECORDED SPECIES OF PRONG HORN (ANTILOCAPRA), IN THE COLLECTION OF THE DERBY MUSEUM, LIVERPOOL. BY DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S. ETC.

Some years ago the late Earl of Derby showed me a pair of horns attached together by the skin of the forehead, which he had then

recently received; and more lately, Mr. Moore, the Keeper of the Derby Museum, submitted these horns to my examination, requesting my opinion on them. At his request I bring a short notice of them before the Society, in hopes to obtain further information respecting them, and a specimen of the animal itself, should it prove to be a distinct species of the anomalous American Antelope. The horns are most probably from America; but this is not certain, as the special locality has not been recorded, nor the person from whom they were obtained.

The colour, substance, and texture of the hair on the skin of the forehead attached to the horns, exactly resembles that of the Cabrit or Prong-horn (*Antilocapra Americana*, Gray, Cat. Mam. B.M. p. 117), and if it were not for the very peculiar form of these horns, I should have been inclined to have considered them as only the deformed horns of that animal; but both the horns are alike and have the same peculiarities, which is not usual in malformations; under these circumstances it appears better to regard them provisionally as belonging to a distinct species, to be established or erased from the list as further knowledge may decide.

There can be no doubt of the position of the horns, as a part of the upper surface of the orbit is to be observed, with the remains of the eyelids and eyebrows at the base of the left horn.



Fig. 1. *Antilocapra Americana*.



Fig. 2. *Antilocapra anteflexa*.

#### ANTILOCAPRA ANTEFLEXA.

The horns compressed, dark brown, rugose, rounded and curved and arched behind, compressed in front, becoming more so as they reach the supra-medial frontal process. The apex subtrigonal, evidently compressed and angularly bent forwards rather above the compressed frontal process, with a deep furrow rather on the inner side of the middle of the hinder upper part of the bend; the inner edge of the recurved tip is rounded, the outer compressed, rather produced and sharp-edged; the extreme tip is roundish, tapering, with

a white end. They are considerably larger than the horns of the usual species.

In the *Cabrit* or *Antilocapra Americana*, the horns are thick, rounded on each edge and produced into a compressed submedial frontal process, which is gradually bent towards the inner side. The tips of the horns are rounded, becoming nearly cylindrical, and are gradually and regularly arched backwards and inwards with a bluntish extreme end.

The horns of the genus are peculiar for being lined internally with a close velvety coat of short hair, directed towards the tip of the cavity; and the whole outer surface of the horn appears to be formed of agglutinated hair, some separate hairs being seen on the surface.

The peculiarity in the internal structure of the substance of the horns of this genus shows, like the branched external form, a similarity to the horns of the Deer; the hairy horn being the analogue of the deciduous velvet of the Deer, and the permanent hairy coat of the Giraffe. The ring of hair round the base of the outer surface is to be observed equally developed in the horn from Lord Derby's Collection and in that of the common *Prongbuck*.

#### 4. ON THE GENUS *CULICIVORA* OF SWAINSON, AND ITS COMPONENT SPECIES. BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

The genus *Culicivora* (as established by Mr. Swainson in the Zoological Journal for 1827) has the *Muscicapa stenura* of Temminck for its type, but embraces also the *Muscicapa cærulea* of Wilson and its affines. Now these birds belong in reality to two very different groups; the *M. stenura* being a *Tyrannine*, while the *M. cærulea* can hardly be placed within the limits of that family, but must be arranged either with the old-world *Muscicapines* (as in Bonaparte's *Conspectus*) or with the *Sylvians* (as in Gray's *Genera of Birds*). Dr. Cabanis in his *Ornithologische Notizen*, in Wiegmann's *Archiv*, has rightly separated these two forms, but has unfortunately chosen to call the *M. cærulea* and its allies *Culicivora*, and made a new name *Hapalura* for the *M. stenura*—the true *Culicivora* of Swainson. Under these circumstances *Hapalura* is a mere useless synonym of *Culicivora*, Sw., and a new name is required for the group containing *M. cærulea*, and commonly known as *Culicivora*. I therefore propose for it the term *Polioptila*, from the general grey colouring of the plumage.

The species of this genus that I am at present acquainted with are the following:—

##### 1. *POLIOPTILA CÆRULEA* (Linn.).

*Motacilla cærulea*, Linn. *Muscicapa cærulea*, Wils. Am. Orn. ii. p. 164. pl. 18. fig. 5; Audub. pl. 84 ♂ & ♀.

♂ *Cæruleo-cinerea, fronte et superciliis nigris: subtus cæruleo-centi-alba, rectricibus extimis albis.*

♀ *Mari similis, sed linea superciliari et frontali nulla.*

*Hab.* United States, Texas, and Mexico.

I cannot discover how the *Culicivora mexicana*, Bp. Consp. p. 316 (of which I have examined the type in the Berlin Museum), differs from this species. It appears to me to be merely a female of the present bird.

## 2. POLIOPTILA DUMICOLA (Vieill.).

El Contra-maestre azuladillo, Azara, no. 158, unde *Sylvia dumicola*, Vieill. *C. dumicola*, d'Orb. Voy. Ois. p. 331. *C. boliviana*, Sclater; in Proc. Zool. Soc. 1852, p. 34, pl. 47.

♂ *Supra plumbea : fronte et genis nigris : subtus plumbescenti-alba, ventre et rectricibus utrinque extimis albis.*

♀ *Fronte et regione auriculari plumbeis concoloribus.*

*Hab.* Paraguay (Azara); Corrientes and Buenos Ayres in the Argentine Republic, and Chiquitos and Moxos in Bolivia (d'Orb.).

D'Orbigny and Lafresnaye in their Synopsis in the Magazin de Zoologie, Hartlaub in his Index to Azara, and Bonaparte in his Conspetus, have all more or less confounded the synonyms of this species with those of the next; indeed the latter author has united all the synonyms under one head, and I was thus led into the error of describing the present bird as new. It is without doubt however the Azuladillo of Azara, and consequently must bear the specific name '*dumicola*' of Vieillot. Lichtenstein's name '*bivittata*' belongs to the next species, though the above-mentioned authors have quoted it as synonymous with this.

## 3. POLIOPTILA LEUCOGASTRA (Max.).

Pl. Enl. 704. fig. 1, unde *Motacilla cærulea*, var.  $\beta$ . Gm. *Sylvia leucogastra*, Max. Beit. iii. 710. *S. bivittata*, Licht. in Mus. Berol. *C. atricapilla*, Sw. Zool. Ill. n. s. pl. 57. *C. leucogastra*, Gray's Gen. ? *C. dumicola*, Bp. Consp. p. 316.

♂ *Cinerea, pileo nigro : subtus alba, rectricibus utrinque extimis albis.*

♀ *Pileo concolore cinereo.*

*Hab.* Brazil; Bahia (Pr. Max.); Monte Video (Mus. Berol.); Cayenne (Buffon); New Grenada.

This species is described by Prince C. L. Bonaparte in his Conspetus as *C. dumicola*, from which it may be easily distinguished by its black head.

## 4. POLIOPTILA BILINEATA (Licht.).

*Sylvia bilineata*, Licht. in Mus. Berol. *Culicivora bilineata*, Bp. Consp. p. 316.

♂ *Supra plumbea, pileo nigro : loris superciliis et corpore subtus albis : primariis anguste cinereo, secundariis latius albo marginatis : rectricibus extimis apice albis.*

♀ *Pileo concolore plumbeo : superciliis albis.*

*Hab.* Cartagena (Mus. Berol.).

The type-specimens in the Berlin Museum are the only examples I have seen of this species; which may be at once distinguished from all the preceding by its white superciliary stripe.





J. Wolf del.

M. & W. Nichol. Lith.

*GALBULA FUSCICAPELLA* SCOTT

5. REMARKS ON THE ARRANGEMENT OF THE JACAMARS (*GALBULIDÆ*), WITH DESCRIPTIONS OF SOME NEW SPECIES.

BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. LXXVII.)

Since I wrote some articles on the *Galbulidæ*, which appeared in Sir William Jardine's Contributions to Ornithology, and the little Synopsis of the family afterwards printed apart, I have lost no opportunity of examining specimens of these birds in several museums which I have visited. In so doing I have acquired some additional information concerning them, which I now purpose bringing before the Society, together with characters of what I believe to be three hitherto unrecognized species.

GENUS I. *GALBULA*.

1. *viridis*, Lath. Synopsis of the *Galbulidæ*, p. 2. sp. 1.

Dr. Cabanis, in his article upon these birds in Ersch and Gruber's Encyclopædie, calls the Amazon specimens true '*viridis*,' and separates the Cayenne and Guiana bird from them, under Swainson's title '*viridicauda*.' I cannot myself discover much difference between them. Prince C. L. Bonaparte quotes as a species '*quadricolor*,' Verreaux, a MS. name for which no specific characters have been published. A specimen so labelled in the British Museum is from Peru, but seems to me barely separable from *G. viridis*.

2. *rufoviridis*, Cab. Enc. d. W. u. K. vol. lii. sect. 1. p. 308. *G. maculicauda*, Synopsis, p. 2. sp. 2.

Dr. Cabanis' name has, I believe, a few months' precedence in point of date over my '*maculicauda*,' and must therefore be used for this species. As additional localities, I have now: River Tocantins, Brazil (Mr. Wallace), and Bolivia (Bridges, in Mus. Brit.).

3. *melanogenia*, Sclater. Synopsis, p. 3. sp. 3.

I have since seen other specimens of this species, both male and female, all from Central America.

4. *ruficauda*, Cuv. Synopsis, p. 3. sp. 4.

Add, as localities: Tobago (Kirk); Cumana (Dyson); Cartagena (Mus. Berol.).

These four species are, as I have already remarked (Cont. to Orn. 1852, p. 93), very closely allied to one another, but may be distinguished by the colouring of the rectrices. They are not, however, placed together in Prince C. L. Bonaparte's arrangement in his *Conspectus Zygodactylorum*.

5. *tombacea*, Spix (*cyanescens*, Deville).

From the Upper Amazon and eastern provinces of Peru.

6. *GALBULA FUSCICAPILLA*, Sclater, sp. nov. (Pl. LXXVII.)

♂ *Læte viridis; fronte et pileo summo fuscis: nucha paululum cyanescente: mento albido: ventre crissoque intense castaneis:*

*rectricibus extimis rufis, quatuor mediis supra viridibus dorso concoloribus.* Long. tota 8·0, alæ 3·0, caudæ 3·5.

♀ *Ventre valde dilutiore.*

*Hab.* In Nova Grenada, Bogota.

I have hitherto confounded this species with the *G. tombacea*, but the examination of several examples of the latter bird in the continental museums has convinced me that they are quite distinct, the *tombacea* presenting no appearance of the fuscous crown which distinguishes this species. In one of my specimens, apparently the most adult, the green descends much lower down than in others I have seen. The two outer rectrices of this bird are, as is usual in this genus, abnormally small. The first outer normal pair are rufous, tipped and externally edged with green. This green is blackish below, but above vivid as the back. The next two pair are wholly rufous. The middle four are vivid green above, and blackish-green below; the submedial pair having some rufous colouring inwardly towards the base.

7. *albirostris*, Latham. Synopsis, p. 5. sp. 6.

8. *chalcocephala*, Deville. Synopsis, p. 5. sp. 7.

I have lately seen many specimens ♂ and ♀ of this species. The male has a white bar on the throat, as in *G. albirostris*, with which it is certainly *very* closely allied. In his 'Conspectus Zygodactylorum,' Prince C. L. Bonaparte unites this species with *G. leucogastra*, with which it has nothing to do. In the 'Conspectus Anisodactylorum,' the origin of this error is attributed to an opinion of mine that they were identical (!), which however I never either expressed or entertained.

9. *cyanicollis*, Cassin. Synopsis, p. 6. sp. 8.

Specimens of this bird in the Berlin Museum,—the types of *G. cyanopogon*, Cab.,—are from Cametà, which is on the south of the Amazon, in the province of Para. The female is pale rufous below, instead of chestnut-red.

10. *leucogastra*, Vieill. Synopsis, p. 6. sp. 9.

11. *chalcothorax*, Sclater, Proc. Zool. Soc. 1854, p. 110.  
From Quixos in Ecuador.

## Genus 2. UROGALBA, Bp.

1. *paradisea* (Linn.). Synopsis, p. 8. sp. 11.

2. UROGALBA AMAZONUM, Sclater, sp. nov.

*U. purpurascenti-nigra*: *alis caudaque et hujus tectricibus superioribus cænis: mento nigrescente, gutture late albo: pileo antico albescenti-fusco: rostro pedibusque nigris.*

Long. tota 13·0, alæ 3·8, caudæ 6·5.

*Hab.* In Brasil. Boreali, Para, et fl. Amazonum.

*Obs.* Similis *U. paradiseæ*, sed major et pileo antico albescente fusco.



It is not without hesitation that I separate this bird from the former. I have seen many examples of it from North Brazil, and have always remarked that they differ from the Cayenne *U. paradisea* in size and in the whiteness of the forehead. Mr. Wallace brought specimens from the neighbourhood of Para, whence I believe came also my type, which I purchased in Hamburg. I may remark that there are many other corresponding species of birds in Cayenne and Brazil, of which the distinctness is generally admitted (such as *Pteroglossus aracari* and *Wiedi*, *Caryothraustes cayanensis* and *brasilensis*, and *Piprites chlorion* and *chloris*), which depend upon differences similar to, or perhaps less than, those between *Urogalba paradisea* and *U. amazonum*.

### Genus 3. BRACHYGALBA, Bp.

1. *inornata*, Sclater, Synopsis, p. 7. sp. 10. *Brachygalba albiventris*, Bp. Consp. Vol. Zygodact., nec Cuv.

To the localities add: Quixos in rep. Equat. (Sir W. Jardine), and Angostura on the Orinoco (Mus. Kiliens.).

The female has the belly rufous instead of white. This species is certainly not the *albiventer* of Cuvier, that name having been applied by him to Le Vaillant's figure, Supp. H. (cited by Cuvier, insufficiently perhaps, but not incorrectly, by the number of the page, 46), and consequently a synonym of Vieillot's *leucogastra*, as placed by me in my Synopsis (see Cuvier's Règn. An. (1829) i. p. 448). I had supposed *G. albigularis* of Spix, and not this species, to be the type of *Brachygalba*, Bp., because it stood first in the list. When the creator of a genus gives neither generic characters nor type, the only rule to go by is to take the *first* species given as the type species.

2. BRACHYGALBA MELANOSTERNA, Sclater, sp. nov.

*Supra nigricanti-fusca; subtus nigra; mento albedo: ventre medio albo; alis caudaque ænescentibus; rostro albo.*

*Hab.* Goyaz in imp. Brasiliensi (Behn); Guarayos in Bolivia (d'Orb.)?

I observed a specimen of this species in the collection of Professor Behn, at Kiel. It closely resembles the preceding, but has the breast quite black and the bill white. It was brought by the owner from the province of Goyaz, in the interior of Brazil. D'Orbigny's specimen, mentioned in my Synopsis, page 7, probably also belongs to this species.

I have nothing further to say concerning *Jacamaralcyon* and *Jacamerops*. The *Galbuloides Boersi* is probably a fictitious bird. Specimens of *Galbalcyrrhynchus* in the Paris Museum were brought by MM. Castelnau and Deville from Pebas, on the Upper Amazon; and one of these birds, in the collection of Herr Kalckmann of Hamburg, was procured in the neighbourhood of Pernambuco in Brazil.

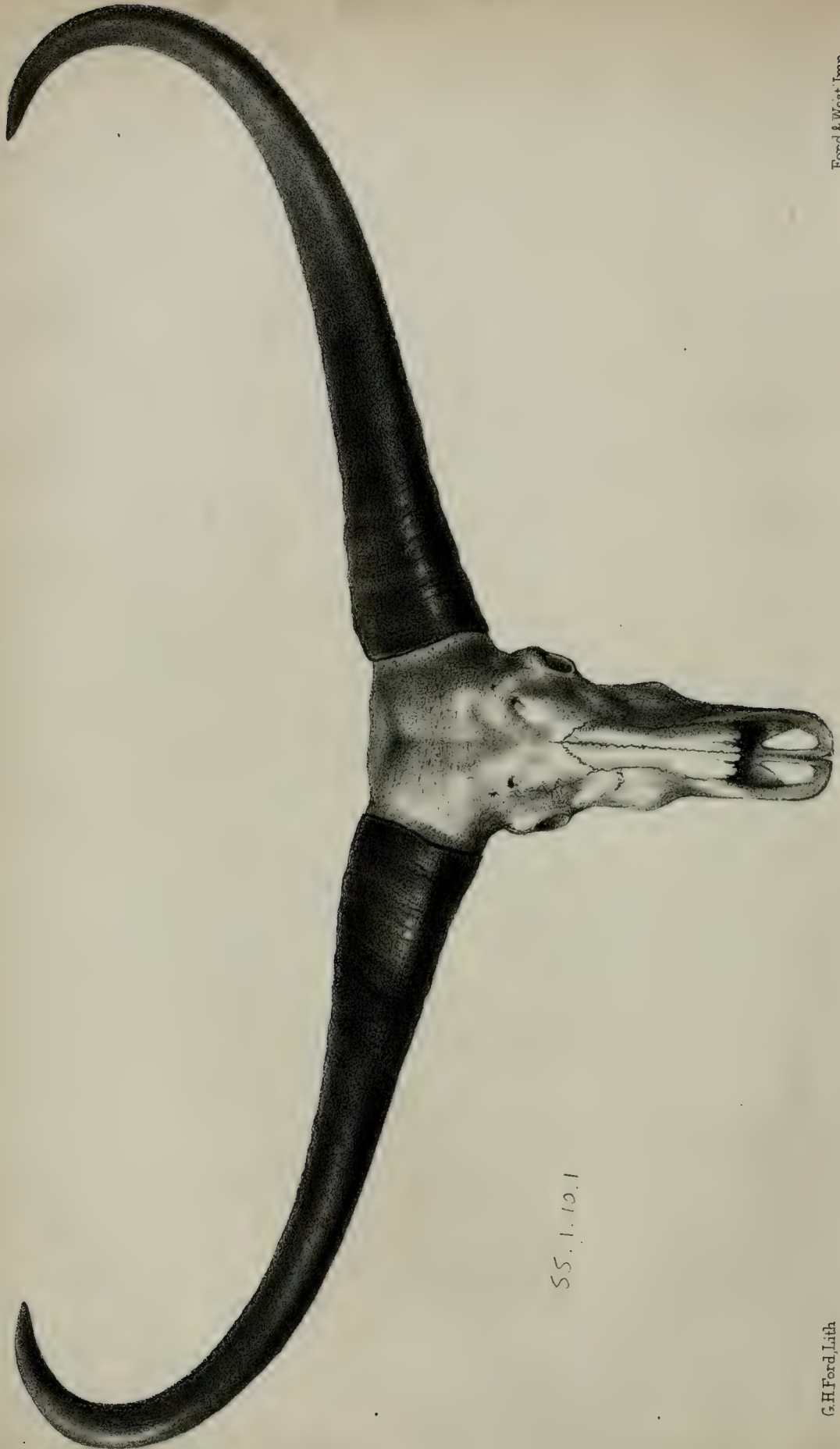
Excluding therefore the *Galbuloides*, we have at present no less than twenty species of the family *Galbulidæ*, all inhabiting the tro-

pical portions of South America. One only of these birds is found outside the Isthmus of Panama, and none occur on the western side of the Andean range. Azara includes none among the birds of Paraguay, and two only range so far south as the Brazilian provinces of Rio and S. Paulo. The true home of these birds seems to be the hot, low forests of Guiana and the Amazons, where the number of species attains its greatest development.

## GALBULIDARUM TABULA GEOGRAPHICA.

	Veragua.	New Grenada.	Trinidad.	Venezuela.	Guiana.	Lower Amazon.	Rio Negro.	Rio Napo.	Upper Amazon.	East Peru.	Interior Brazil.	N.E. Brazil.	S.E. Brazil.	Bolivia.
<b>GALBULA.</b>														
1. <i>viridis</i> .....	..	..	..	..	*	*	..	..	..	*	..	..	..	..
2. <i>rufoviridis</i> .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3. <i>melanogenia</i> .....	*	..	..	..	..	..	..	..	..	..	..	..	..	..
4. <i>ruficauda</i> .....	..	..	*	*	*	..	..	..	..	..	..	..	..	..
5. <i>tombacea</i> .....	..	..	..	..	..	..	..	..	*	*	..	..	..	..
6. <i>fuscicapilla</i> .....	..	*	..	..	..	..	..	..	..	..	..	..	..	..
7. <i>albirostris</i> .....	..	..	..	..	*	..	*	..	..	..	..	..	..	..
8. <i>chalcocephala</i> .....	..	..	..	..	..	..	..	..	..	*	..	..	..	..
9. <i>cyanicollis</i> .....	..	..	..	..	..	*	..	..	..	..	..	*	..	..
10. <i>leucogastra</i> .....	..	..	..	..	*	..	*	..	..	..	..	..	..	..
11. <i>chalcothorax</i> .....	..	..	..	..	..	..	..	*	..	..	..	..	..	..
<b>UROGALBA.</b>														
12. <i>paradisea</i> .....	..	..	..	..	*	..	..	..	..	..	..	..	..	..
13. <i>amazonum</i> .....	..	..	..	..	..	*	..	..	..	..	..	..	..	..
<b>BRACHYGALBA.</b>														
14. <i>inornata</i> .....	..	..	..	*	..	..	..	*	..	..	..	..	..	..
15. <i>melanosterna</i> .....	..	..	..	..	..	..	..	..	..	..	*	..	..	*
<b>JACAMARALCYON.</b>														
16. <i>tridactyla</i> .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..
17. <i>lugubris</i> .....	..	..	..	..	*	..	..	..	..	..	..	..	*	..
<b>JACAMEROPS.</b>														
18. <i>grandis</i> .....	..	..	..	..	*	..	*	..	*	*	..	..	..	..
19. <i>Isidori</i> .....	..	..	..	..	..	..	..	..	..	*	..	..	..	..
<b>GALBALCYRHYNCHUS.</b>														
20. <i>leucotis</i> .....	*	..	..	..	..	..	..	*	*	..	..	*	..	..





55. 1. 10. 1

January 23, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. NOTICE OF THE HORNS AND SKULL OF THE ARNEE.  
BY DR. J. E. GRAY, F.R.S., P.B.S., V.P.Z.S. ETC.

(Mammalia, Pl. XL.)

Colonel James Matthie has lately presented to the British Museum the skull and horns of an Arnee or Buffalo, killed by him near Fezpoor, Central Assam, on the 8th of April, 1842.

The horns are of a very large size, as proved by the accompanying measurement, being nearly as large as the separate horns without a skull, in the British Museum, which formerly formed part of Sir Hans Sloane's Collections, and were described and figured by him in the Philosophical Transactions for 1727, no. 397, p. 222, f. 23. These horns are 78 inches, or 6 feet 6 inches long.

The dimensions of Colonel Matthie's specimen are as follows, according to his measurement.

	ft.	in.
"Length of the skull from occiput to nose . . . . .	2	4
Length of the horns round the outside of them and across the forehead . . . . .	12	2
Length of line from tip to tip of the horns . . . . .	6	8
Circumference of right horn at base . . . . .	1	8½
"    "    left horn at base . . . . .	1	8
Width across the forehead . . . . .	0	11

"The horns do not exactly correspond in length and shape."

The occipital portion of the skull is very much developed, to give enlarged attachment to the muscles of the neck for the support of the horns.

I may observe, that the Arnee of Anderson, *Bee*, 1792 (the *Bos arne* of Kerr, 'Animal Kingdom,' 336. t. 295, copied into 'Shaw, Zoology, iv. p. 400, t. 210) is only a large horned variety of the common Buffalo, with horns nearly regularly curved from the base. The horns presented by Colonel Matthie, on the other hand, are nearly straight for great part of their length, and only curved at the end. In this respect they agree with the horns in the British Museum, which Mr. Doyle, whose name is "given to a sort of stuffe worn in summer," discovered in a cellar in Wapping, and which he gave to Sir Hans Sloane for his kindness in attending him in sickness. These are described by the latter in the 'Philosophical Transactions' for 1727, no. 397, p. 222. f. 23; and re-described and figured by Colonel Hamilton Smith as those of *Bos Arnee* in *Griffith*, *A. K.* iv. t. 201. f. 2, 3.

Dr. Hook read a lecture on Mr. Doyle's horns at Gresham College, and thought they were probably those of the *Sukotyro* or *Sucotaria*, No. CCLXXXV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

described by Nieuhoff in his 'Voyages and Travels in the East' as found in Java. He compares the horns to the tusk of the elephant, which they somewhat resemble. Dr. Shaw thought otherwise, and formed a genus for Nieuhoff's animal, making a figure of it from his description (see *General Zool.* 1. 226. t. 65). Illiger considered it more probably a *Babyrusa*. See *Illiger, Genera Mam.* 100.

2. CHARACTERS OF SIX NEW SPECIES OF THE GENUS *THAMNOPHILUS*. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXIX—LXXXII.)

1. *THAMNOPHILUS TRANSANDEANUS*.

*Supra niger; subtus albus; tectricibus alarum superioribus et caudæ inferioribus nigris albo terminatis; cauda nigra rectricibus duabus utrinque extimis macula parva terminali alba.*

Long. tota 8·1, alæ 3·7, caudæ 3·2 poll.

*Hab.* in rep. Equatoriana, Guyaquil. Mus. Brit.

*Obs.* Similis *Thamnophilo majori*, sed tectricibus subcaudalibus nigris albo terminatis et rectricibus non albo guttatis.

2. *THAMNOPHILUS LEUCHAUCHEN*. (Pl. LXXIX.)

♂ *Pileo cristato cum lateribus capitis et gutture antico ad medium pectus nigris; nucha, cervice laterali et corpore subtus albis; dorso murino-brunneo; alis caudaque nigris albo limbatis; rectricis unæ utrinque extimæ pogonio externo medio et omnium apicibus albo maculatis; rostro et pedibus nigris.*

♀ *Crista ferruginea; subtus ochraceus, gutture nigro striato, lateribus capitis et nucha ochraceis nigro mixtis.*

Long. tota 6·4, alæ 2·8, caudæ 2·5.

*Hab.* in Peruv. Orient., Chamicurros. Mus. P.L.S.

*Obs.* Affinis *Th. atricapillo*, Vieill., sed rostro minore, lateribus cervicis et corpore subtus albis neque cinereis, dorso clariore brunneo et gutturali nigro non in ventrem producto distinguendus.

3. *THAMNOPHILUS ALBINUCHALIS*.

♂ *Supra murino-brunneus; nucha late alba; dorsi medii pennis albo mixtis; capite summo cristato nigro; alis fuscis, tectricibus albo limbatis; cauda nigra, rectricum omnium apicibus et unæ utrinque extimæ margine externo albo maculatis; subtus albus; gutture et pectore antico nigris; capitis lateribus albo mixtis.*

♀ *Supra brunnescentior, capite et cauda tota rufo-ferrugineis; nucha et corpore infra ochraceis.*

Long. tota 6·5, alæ 3·2, caudæ 2·5.

*Hab.* in rep. Equatoriana, Guyaquil et insula Puna. Mus. Brit.

*Obs.* Species a *Thamnophilo atricapillo* nucha alba et colore corporis inferi albo nec schistaceo, a *Thamnophilo leuchauchene* dorso albo mixto, crassitie majore, et nucha candidiore distinguenda.



W. C. C. 1881

W. A. M. Brennan, 1881

THAMNOPHILUS LEUCAUCHEN. *Sclater.*









J. Wolf lith.

M. & N. Hanhart Imp<sup>s</sup>

THAMNOPHILUS MELANONOTUS, *Sclater*.





J. Wolf lith

M. & N. Hanhart Imp<sup>r</sup>

THAMNOPHILUS NIGROCINEREUS *Slater.*





J. Wolf del.

THAMNOPHILUS CAESTUS (Günther)

M. & N. Hamhart Imp.

## 4. THAMNOPHILUS MELANONOTUS. (Pl. LXXX.)

*Niger; interscapularibus albo mixtis; dorso postico cinereo; abdomine cinerascenti-albo; alis nigris albo marginatis; cauda nigra, rectricibus omnibus apice et extima utrinque laterali etiam pogonio externo medio albo maculatis; rostro et pedibus nigris.*

Long. tota 6·5, alæ 3·0, caudæ 2·5.

*Hab.* in Nova Grenada, Santa Martha. Mus. P.L.S.

*Obs.* Affinis *Thamnophilo atricapillo*, sed dorso nigro.

## 5. THAMNOPHILUS NIGROCINEREUS. (Pl. LXXXI.)

♂ *Cinereus, capite toto cum dorso summo et gutture nigris; interscapularibus basi albis; alis caudaque nigricantibus, albo limbatis; rectrice una utrinque extima media albo notata; rostro et pedibus nigris.*

♀ *Rufo-brunnea; gula et ventre medio albescentioribus; alarum tetricibus secundariisque et cauda sicut in mari albo notatis.*

Long. tota 5·75, alæ 3·8, caudæ 2·4.

*Hab.* in Brasilia boreali, Para. Mus. Brit. et P.L.S.

*Obs.* Similis *Th. nævio* sed multo major; rostro fortiore et gutture nigro.

## 6. THAMNOPHILUS CÆSIUS. (Pl. LXXXII.)

*Lanius cæsius*, Cuv. in Mus. Paris.

♂ *Nigro-plumbeus; pileo cristato gulaque nigris; tetricibus alaribus anguste albo limbatis; cauda nigricante unicolore; rostro pedibusque nigris.*

♀ *Grisescenti-brunnea, crista nigricante; capitis lateribus, tetricum alarum marginibus et corpore subtus rufis; rostro nigro, mandibula inferiore basi et pedibus pallidis.*

Long. tota 5·5, alæ 3·25, caudæ 2·25.

*Hab.* in Guiana Britannica. Mus. Parisiensi et P.L.S.

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February 13, 1855.

John Gould, Esq., F.R.S., in the Chair.

The following paper was read:—

DESCRIPTIONS OF SOME NEW SPECIES OF CLERIDÆ,  
COLLECTED AT SINGAPORE BY MR. WALLACE.  
BY J. O. WESTWOOD, F.L.S. ETC.

(Annulosa, Pl. XXXVIII.)

Having lately submitted to the notice of the Zoological Society a memoir containing descriptions of fifty new species of *Cleridæ*, na-

tives of Asia, Africa and Australia, selected from the cabinets of our most zealous collectors of exotic Coleoptera, I could have had but little hope of being able in a few months' time to record the existence of a number of additional species of the same family, from one of the same quarters of the globe. Nevertheless, the indefatigable exertions of Mr. Wallace, who has recently started on a natural-history excursion to Singapore and the islands of the Eastern Archipelago, have enabled me to give a supplement, containing not fewer than twelve new species, to my former memoir, all of which were collected by that gentleman within a few days after his arrival at Singapore; proving how rich must be the harvest which he is likely to reap, should his health be spared, in that and the adjoining countries. The species of *Cleridæ* which he has sent home furnish us with a clue to several important points connected with the geographical distribution of the family in question, belonging as they do exclusively to two genera, *Omadius* and *Stigmatium*, which are thus proved to have their metropolis in that quarter of the world. It is true that the species now about to be described do not possess the splendour of many of the Brazilian, or even European species of the family, their specific distinctions consisting of variations in the markings of the elytra, which it is almost impossible to describe in words, and which can only be satisfactorily represented by careful figures. Some variation in form also occurs in several of the species, and I have also observed variations in the structure of the antennæ in most of the species beyond what might be regarded as sexual. One of the species of *Omadius* is especially distinguished in this respect, from having several of the central joints of the antennæ furnished with long curved setæ, such as I have not elsewhere observed.

Mr. Wallace has not at present supplied any notices of the habits of the species received by his agent in this, his first consignment; but as all the specimens are specifically numbered, I have no doubt that he possesses notes concerning them with which I hope to be favoured before this article goes to press.

From the specimen now given an idea may be obtained of the richness of the collection which Mr. Wallace has already formed. I may allude, however, to the families *Carabidæ* and *Anthribidæ*, which contain many new and remarkable forms, especially among the smaller species. We may therefore trust, that when he reaches Borneo and the adjacent islands, we shall receive from thence many very interesting novelties.

#### Genus STIGMATIUM, G. R. Gray.

##### 1. STIGMATIUM IGNAVUM. (Pl. XXXVIII. fig. 1).

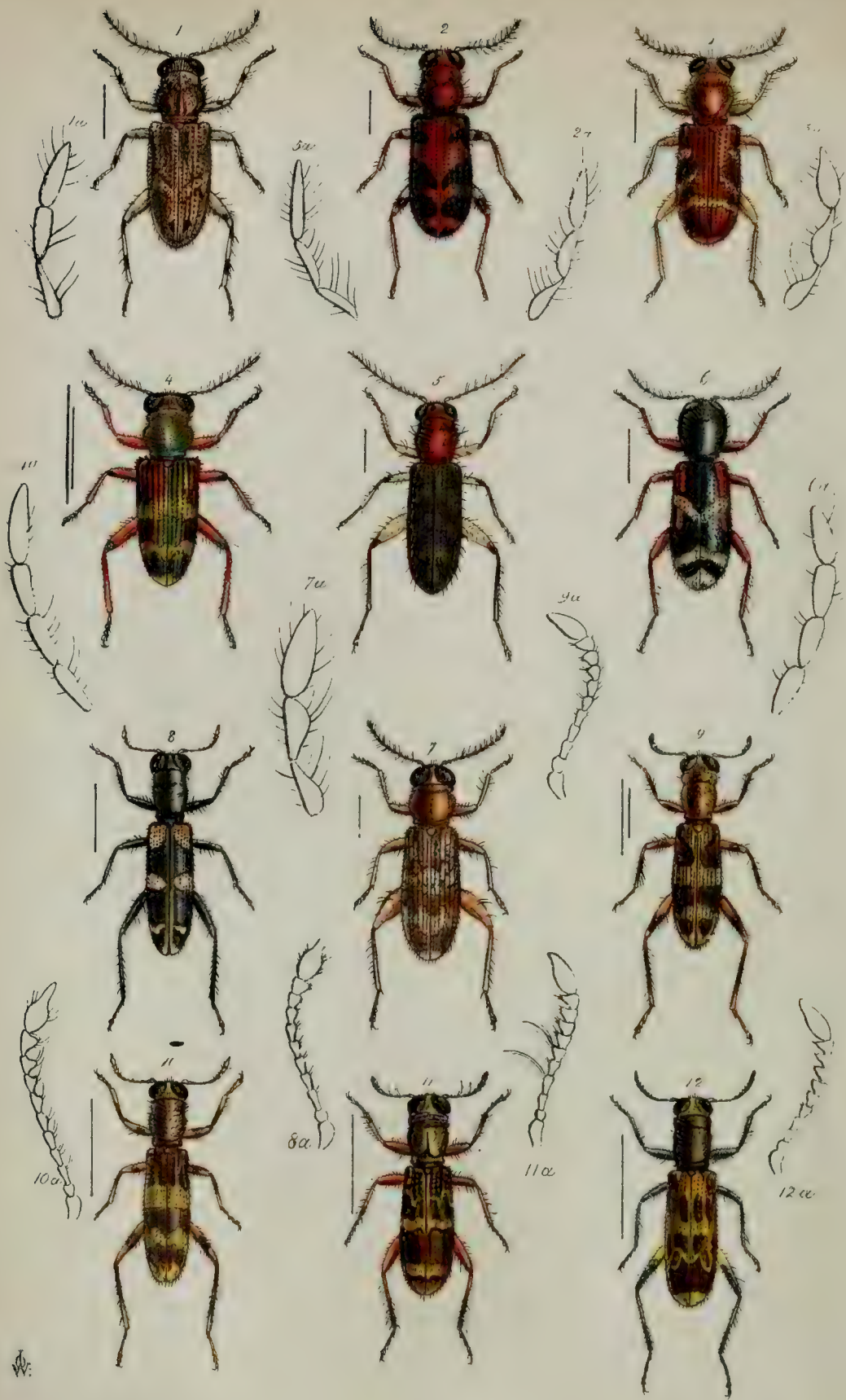
*Piceo-ferrugineum, punctatum, undique luteo-griseo sericeum, setisque longioribus sparsis vestitum, antennis gracillimis, elytris punctato-striatis, litera V lutescenti, paullo pone medium disci notatis, pedibus flavidis, femoribus ante apicem tibiisque pone medium obscure fasciatis.*

Long. corp. lin.  $3\frac{1}{2}$ .

*Hab.* apud Singapore.







1. <i>Stigmatium ignavum</i> .	7. <i>Stigmatium cursor</i>
2. _____ <i>torulentum</i> .	8. <i>Omadius Ctenostomoides</i> .
3. _____ <i>fervidum</i> .	9. _____ <i>fasciipes</i>
4. _____ <i>granulosum</i> .	10. _____ <i>vigilans</i>
5. _____ <i>ambulator</i>	11. _____ <i>seticornis</i>
6. _____ <i>cylindricum</i>	12. _____ <i>obtusum</i>

W.

Caput cum oculis latitudine pronoti, nitidum, tenuissime punctatum, sericeum, mandibulis magnis, uncinatis, piceis, nitidis, intus dente forti medio armatis. Palpi pallide lutescentes, maxillares versus apicem magis brunnei. Antennæ gracillimæ longe setosæ, fuscæ, basi lutescentes, articulis 4-9 elongatis, e basi ad apicem sensim attenuatis, duobus ultimis latioribus, 10 apice subtruncato. Prothorax lateribus rotundatis, pone medium latior, disco in medio subcarinato, carina magis castanea, tenuissime punctatus, sericeus et setosus, ante apicem constrictus. Elytra ad basin prothorace multo latiora, e medio ad apicem sensim attenuata, singulo ad basin convexo, punctato-striata, luteo-sericea parum nebulosa, paullo pone medium fascia angulata lutescenti (literam V referente) maculaque angulata subapicali obscura notata. Corpus infra piceum setosum, abdomine rufo, segmentis abdominis flavido marginatis. Pedes cum coxis 4 anticis luteo-albidi, femoribus posticis crassioribus, omnibus ante apicem obscurius fasciatis tibiisque basi et pone medium obscurioribus; tarsi brunnei; oviductus feminae exsertus gracilis, abdomine longior.

## 2. STIGMATIUM TORULENTUM. (Pl. XXXVIII. fig. 2).

*Ferrugineum nitidum sericeum, antennis gracilibus nigris, elytris punctato-striatis, macula obliqua subhumerali, fascia obliqua submedia (ad suturam interrupta), maculis duabus magnis pone medium apicibusque nigris, coxis femoribusque albidis, his apice piceis, tibiis tarsisque castaneis.*

Long. corp. lin. 3.

*Hab.* apud Singapore.

Caput latitudine prothoracis, obscure ferrugineum nitidum, sericeum; mandibulæ nigræ acutæ; palpi lutescentes, maxillares apice castanei; antennæ graciles nigræ articulis duobus basalibus pallidis, articulis elongatis compressis 4-9 versus basin latioribus, ad apicem sensim attenuatis, duobus ultimis latioribus elongato-ovalibus. Prothorax convexus lateribus rotundatis, paullo pone medium latior, antice et prope basin constrictus. Elytra elongata, e basi ad medium lateribus fere parallelis, hinc ad apicem rotundato-attenuatis, ferruginea nitida aureo-sericea striato-punctata, singulo macula marginali subhumerali, altera magna triangulari submedia in fasciam angulatam, ad suturam interruptam intus extensa, tertia magna inter medium et apicem, apiceque ipso nigris.

Corpus infra rufo-piceum, subsericeum, abdomen aurantiacum. Coxæ quatuor anticæ cum omnibus femoribus albidis, horum apicibus piceis; tibiæ et tarsi castanei.

## 3. STIGMATIUM FERVIDUM. (Pl. XXXVIII. fig. 3).

*Piceo-castaneum, luteo-sericeum, albidoque setosum, antennis gracilibus pallidis, apicibus paullo obscurioribus; elytris striato-punctatis obscurioribus, guttis nonnullis sericantibus inter basin et medium, fascia subrecta transversa pone medium apicibusque sericeis, pedibus luteo-testaceis femoribus basi pallidioribus.*

Long. corp. lin. 3-3½.

*Hab.* apud Singapore.

Caput latitudine prothoracis, tenuissime punctatum, facie et orbitu oculorum dense albido setosis; mandibulæ castaneæ apice nigræ; palpi lutescentes, antennæ graciles pallide fulvescentes, articulis apicalibus paullo obscurioribus, articulis 4-10 basi ovalibus, ad apicem valde attenuatis, 11mo ovali apice subacuto. Prothorax convexus sericeus tenuissime punctatus nitidus, lateribus pallidioribus et dense albido-setosis. Elytra elongata, subparallela, postice rotundata, striato-punctata, sericea, piceo-castanea, lateribus ante medium paullo obscurioribus, inter basin et medium guttis variis irregularibus fasciaque subundata pone medium apiceque sericantibus. Corpus infra castaneum punctatissimum; abdomen aurantio-rufum. Pedes pallide castaneo-fulvi, coxis 4 anticis et femoribus omnibus pallide flavescentibus.

4. STIGMATIUM GRANULOSUM. (Pl. XXXVIII. fig. 4).

*Piceum aureo-sericeum; capite pronoto et parte postica elytrorum æneis nitidis, elytris dimidio basali punctato-striatis, spatiis inter puncta granulosis, punctis striarum in parte postica fere oblitteratis; maculis, fascia undata pone medium apiceque aureo-sericeis; pedibus rufis, femoribus posticis apice tarsisque nigris.*

Long. corp. lin.  $5\frac{1}{3}$ - $7\frac{2}{3}$ .

*Hab.* apud Singapore.

Caput prothoracis latitudine, oculis magnis, æneum nitidum, vertice et hypostomate longe aureo setosis. Antennæ nigræ, articulis duobus basalibus rufis, 3-10 compressis oblongis, e basi fere ad apicem sensim latioribus, apicali elongato-ovato apice subacuto. Mandibulæ nigræ; palpi obscure lutei, maxillares articulo ultimo piceo. Prothorax æneus nitidus tenuissime punctatus aureo-villosus, lateribus rotundatis, medio latior, antice et postice constrictus. Elytra lata, singulo ad basin parum convexo; sutura depressa, dimidio basali rugosa, scil. profunde punctato-striata; spatiis inter puncta granulosis; dimidio apicali multo læviori, macula subquadrata subscutellari, guttis nonnullis ante medium (suturali majore communi); fascia irregulari quasi e guttis tribus angulatis conjunctis formata apiceque aureo villosis. Metasternum rufum. Pedes cum coxis omnibus rufi, apice femorum posticorum tibiisque fuscis. Abdomen cyaneum, segmenti basalis parte antica media attenuata rufa.

*Obs.* Individua majora segmentum penultimum abdominis habent emarginatum et articulos antennarum paullo latiores.

*Var.* Minor et obscurior absque tinctura ænea, antennisque paullo latioribus.

5. STIGMATIUM CYLINDRINUM. (Pl. XXXVIII. fig. 6).

*Nigrum nitidum prothorace truncato-ovali luteo villosio, elytrorum humeris fulvis, fascia tenui angulata ante medium, altera transversa pone medium apiceque albis; abdomine nigro, segmento basali coxisque omnibus luteis.*

Long. corp. lin.  $3\frac{1}{2}$ .

*Hab.* apud Singapore.

Gracile, subcylindricum, nitidum, sublæve; capite et prothorace griseo-sericeis. Caput cum mandibulis parvis nigris, tenuissime punctatum; antennæ nigræ articulo basali piceo, 3-10 compressis subovallibus, basi parum attenuatis, 11mo ovali apice attenuato; palpi pallide lutei; prothorax truncato-ovalis; antice latior, valde convexus; versus apicem transverse subcanaliculatus; canali transversa etiam basi proxima griseo-setosus. Elytra elongata subcylindrica nigra nitida, dimidio basali punctato-striata, apicali lævi, humeris vittaque longitudinali fulvis, fascia tenui obliqua ante medium, altera transversa pone medium apiceque albo-sericeis. Thorax infra castaneus; abdominis segmentum basale cum coxis omnibus luteum; segmenta reliqua nigra nitida; oviductus fœminæ abdomine longior lutescens. Pedes castanei femoribus basi pallidis, 4 posticis apice obscurioribus; tarsis nigris.

6. STIGMATIUM AMBULATOR. (Pl. XXXVIII. fig. 5).

*Capite et prothorace castaneis nitidis, aureo-sericeis longe setosis, antennis gracillimis, articulis tenuibus; elytris fuscis subæneovillosis nebulosis; pedibus elongatis gracilibus, femoribus posticis elongato-clavatis.*

Long. corp. lin. 3.

*Hab.* apud Singapore.

Caput castaneum, hypostomate piceo, aureo-villosum, setisque longis vestitum; mandibulæ nigræ; antennæ fuscæ articulis basalibus pallidis, tenuissimæ, articulis fere filiformibus et compressis, ultimo elongato attenuato; oculi magni. Palpi albi. Prothorax castaneus aureo-sericeus setisque longis vestitus, lateribus rotundatis, in medio latior antice et postice vix transversim impressus. Elytra elongata, fusca sericie tenui subænea subnebulosa setisque longis vestita, dimidio basali lateribus parallelis, apicali sensim attenuatis; punctato-striata; striis ante apicem oblitteratis. Corpus infra castaneum. Pedes præsertim postici elongati graciles, setis longis instructi, femoribus cum coxis 4 anticis albidis apicibus piceis; posticis elongato-clavatis; tibiis 4 anticis castaneo-piceis apice lutescentibus; tibiis 2 posticis cum tarsis omnibus castaneis.

7. STIGMATIUM CURSOR. (Pl. XXXVIII. fig. 7).

*Fusco-luteum, elytris albido nebulosis; oculis maximis, pedibus longe setosis, femoribus duobus posticis valde incrassatis; antennis gracilibus, articulo 10 elongato-triangulari, ultimo elongato ovato.*

Long. corp. fere lin. 3.

*Hab.* apud Singapore.

*S. ambulatori* brevior femoribusque posticis multo crassioribus. Caput fuscum antice nigrum, luteo setosum, oculis maximis, antice spatium valde angusto inter se separatis, labro fulvo. Palpi lutei; antennæ fuscæ articulo basali fulvo; longe setosæ, articulis 3-9 versus basin latioribus apice acuminatis, 10mo elongato-trigono, 11mo elongato-ovato. Prothorax piceo-brunneus punctatissimus, capite

vix latior, luteo setosus, versus apicem et basin transversim impressus, lateribus rotundatis, ante medium paullo latior. Elytra oblonga subparallela, profunde punctato-striata, fusco-lutea, nitida, sericie albida nebulosis, nebulis fasciam valde irregularem maculosam ante medium alteraque latiori pone medium formantibus apicibusque albidis. Pedes brunnei, albido-sericei, setisque longis nigris instructi, femoribus duobus posticis compressis dilatatis margine postico in medio nigro. Corpus cum abdomine nigrum.

#### Genus OMADIUS, Laporte.

##### 8. OMADIUS CTENOSTOMOIDES. (Pl. XXXVIII. fig. 8).

*Niger subcylindricus nitidus, prothorace subæneo, elytris guttis 6 brunneo-albidis suturaque luteo-sericeis, antennis gracilibus, articulis 9 et 10 sensim latioribus, 11 brunneo apice luteo, utrinque e medio ad apicem attenuato.*

Long. corp. lin. 4-4½.

*Hab.* apud Singapore.

Caput piceum luteo-setosum; oculis magnis; prothorace latius, clypeus transversus niger, labrum fulvum bilobatum. Maxillæ labium et palpi pallide lutei, horum articulo ultimo piceo. Antennæ piceæ, articulo basali brunneo, 9no præcedenti vix latiori, 10mo triangulari latiori, 11mo lato ovato brunneo, e medio ad apicem utrinque attenuato, dimidio apicali lutescenti-setoso. Prothorax subæneus nitidus, lævis, elongatus, subcylindricus, capite angustior, versus apicem et basin transversim, utrinque etiam in medio oblique, impressus. Elytra elongata, subcylindrica, capite paullo latiora, e basi ad medium punctato-striata; subnitida, nigro setosa, nigra, humeris piceis, singulo humero late, macula subrotunda media, alteraque undulata subapicali brunneo-albidis sericeis, suturaque luteo-sericea. Pedes nigri, nigro setosi, trochanteribus 4 anticis fulvis, tarsis castaneis. Corpus infra nigrum, abdomine fulvo.

##### 9. OMADIUS FASCIIPES. (Pl. XXXVIII. fig. 9).

*Piceus aureo-sericeus, fascia denudata castanea ante medium, altera latiori irregulari pone medium, tertiaque subapicali, omnibus sutura anguste sericea divisis; pedibus fulvis, femoribus tibiisque in medio late nigris.*

Long. corp. lin. 3½-5.

*Hab.* apud Singapore.

*O. Kameliano*, White (Cat. Cler. Brit. Mus.) magnitudine et statura æqualis, antennis autem nigris fasciisque elytrorum distinctus. Caput piceum aureo-setosum, facie infra oculos lutea, clypei apice piceo; labro luteo; mandibulæ nigræ, palpi pallidi, articulo ultimo apice obscuriore; antennæ piceæ, articulis duobus basalibus luteis, 7, 8, 9 et 10 sensim latioribus subtrigonis; ultimo magno compresso ovali. Prothorax oblongus, e capite ad basin elytrorum sensim angustatus, piceus, sub lente punctatissimus, antice transversim striolatus, aureo-sericans, versus caput et basin (hic curvatim) transverse

impressus; elytra capite latiora depressa, in medio latiora, castaneo-picea, striato-punctata; striis fere ad apicem extensis, at pone medium minus distinctis; aureo-sericea, fascia irregulari paullo ante medium, altera latiori paullo pone medium, (lobum semirotondum postice in singulo elytro emittente,) maculisque duabus subquadratis subapicalibus denudatis; pedes fulvi, femoribus tibiisque in medio late nigris, nigredine autem in femoribus 4 anticis infra interrupta. Corpus infra piceum, abdomine fulvo.

*O. modestus*, Klüg. Mon. Cler. pl. 1. f. 2, proximus; differre videtur, autem forma fasciarum elytrorum.

10. *OMADIUS VIGILANS*. (Pl. XXXVIII. fig. 10).

*Nigro-piceus nitidus, aureo sericeus, elytris castaneis sericeis, fascia ante medium (e maculis oblongis formata) altera latiori pone medium tertiatque subapicali denudatis, pedibus fulvis nigro variegatis.*

Long. corp. lin.  $6\frac{1}{4}$ .

*Hab.* apud Singapore.

*O. bifasciato*, Lap. proximus.

Caput piccum aureo-sericeum, oculi magni nigri, prothorace evidenter latiores, labrum pallidum; palpi lutei apice articuli ultimi obscuriori; mandibulæ nigræ, antennæ piceæ articulo basali et dimidio 2di fulvis; 7-10 trigonis sensim latioribus, magis laxis, 11mo basi lato, e medio ad apicem utrinque attenuato; prothorax subcylindricus, versus marginem anticum et basin transversim impressus, impressione postica curvata; elytra castanea, aureo-sericea, humeris, fascia ante medium e maculis oblongis quasi formata, altera latiori paullo pone medium, antice fere recta, postice vero in medio singuli elytri emarginata, 3tia lata curvata in medio sutura sericea divisa, denudatis et colore obscurioribus; striato-punctata, punctis in dimidio basali elytrorum majoribus. Pedes fulvi femoribus in medio fascia nigra notatis, in 4 anticis subtus interruptis, tibiis omnibus e basi ultra medium nigris tarsorumque articulis basalibus piceis, coxis et trochanteribus 4 anticis fulvis, 2 posticis piceis. Corpus infra piceum, metasterno rufo bimaaculato; abdomen rufo-fulvum.

11. *OMADIUS SETICORNIS*. (Pl. XXXVIII. fig. 11).

*Piceus aureo-sericeus prothorace oculis latiori, antennis in medio longe setigeris; elytris basi, fascia angusta media, altera subapicali apiceque flavidis, ad basin granulato-striatis; pedibus rufo-castaneis, tarsis nigris.*

Long. corp. lin.  $6\frac{1}{2}$ .

*Hab.* apud Singapore.

Præcedentibus crassior: caput piceum aureo-sericeum, clypeo labroque pallidis; mandibulæ nigræ; palpi lutei, apice articuli ultimi obscuriore; antennæ nigræ, articulo basali fulvo, 4 et 6 setas longas curvatas emittentibus, 6-10 sensim majoribus obconicis, ultimo ovali compresso, apice extremo subattenuato; prothorax oblongus, antice

capite paullo lator, postice sensim attenuatus, versus marginem anticum et basin transverse impressus, parte antica transverse striolata; medio disci linea tenuissima lævi elevata; elytra elongata, subdepressa in medio latiora: punctato-striata, punctis minutis; interstitiis inter puncta ad basin elytrorum in tubercula parva (in lineas 4 singuli elytri) elevatis; picea, basi anguste pallidiori, fascia tenui valde irregulari inter basin et medium, altera undulata media, tertia latiori subapicali apiceque ipso aureo-sericeis; pedes castanei, tarsi omnibus, apiceque tibiæ 2 posticarum nigris; corpus infra piceum, metasterno late castaneo, abdomine basi luteo.

12. OMADIUS CLYTIFORMIS. (Pl. XXXVIII. fig. 12).

*Elongatus subcylindricus obscure piceus aureo subsericeus; capite postice, apice elytrorum, femoribus basi et infra flavis; elytris sericie aurea reticulatis.*

Long. corp. lin. 7.

*Hab.* apud Singapore.

Præcedentibus longior et subcylindricus. Caput cum oculis prothorace latitudine fere æquale, oculi magni fere contigui; occipite pilis flavis dense obsito, facie griseo-setosa; palpi pallide lutescentes, apice fuscii. Mandibulæ nigræ; antennæ nigræ; articulis 3-10 sensim majoribus triangularibus, 11mo magno compresso e basi ad apicem sensim angustato parum curvato, apice rotundo; prothorax subcylindricus, parallelus, antice et postice linea transversa impressus, supra sub lente tenuissime transversim striolatus, subsericeus, sericie aurea densiore versus angulos anticos: elytra elongata, subcylindrica, picea, opaca, puncto parvo pallido basali intra humeros apiceque pallido fulvo-sericeo, disco, præsertim pone medium, lineis tenuibus sericeis reticulata. Corpus infra nigrum, griseo-setosum; pedes 4 antici coxis albidis, trochanteribus piceis, femoribus infra pallide flavis, supra cum tibiis et tarsis piceo-nigris; pedes 2 postici cum coxis et trochanteribus nigro-picei, femoribus basi pallide flavis.

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February 27, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The Chairman communicated the following extract from a letter he had received from Francis Brent, Esq. of Folkestone:—"The fishermen bring into Sandgate, Kent, hundreds of immense Conger Eels, which they pick up at sea, off Dungeness. Most of them are dead, but some only nearly so. The frost appears to have destroyed them. Some of them are very large indeed. On Thursday last (the 22nd of February 1855), several *tons* were brought in by the boats, and sent off to the London markets." By the papers it





1



2



1. *Pterocles exustus*.

2. *Pterocles quadricinctus*

appears, that the Red Mullet and other fish were found dead about the same time in Southampton Waters.

The following paper was read:—

1. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART VII.  
BY LIEUT. BURGESS.

(Aves, Pl. LXXVIII.)

Subfamily PROMEROPIDÆ.

Genus UPUPA.

UPUPA EPOPS. HOOPOE.

In the upper portion of the Deccan the Hoopoe is a common bird, frequenting gardens and woody spots, and is very partial to sandy plots of ground, particularly outside the walls of villages. In such places the sand is perforated with the conical holes of the ant-lion, and that this is the food sought for by the Hoopoe in these spots, I discovered on opening the gizzard of one, which was of a very soft texture, and contained one large grub and two or three ant-lions. The Hoopoe breeds in the months of April and May, building its nest in holes in the mud walls which surround towns and villages in the Deccan. I transcribe a note taken on 7th May 1850 on the subject:—"To-day a man brought me word that about fifteen or twenty days ago he found a pair of Hoopoes breeding in a hole in the walls of a town; the nest contained two young birds; it was composed of grass, hemp, and feathers. The same man tells me that he has discovered another pair building." The head man of the town of Jintee brought me an egg of the Hoopoe, which has unfortunately been broken. It was of a very pale blue, or rather skim-milk colour. He found a nest in a hole in a fort wall; it was made soft with a few pieces of hemp, and contained three eggs.

Tribe FISSIROSTRES.

Family MEROPIDÆ.

Genus MEROPS.

MEROPS INDICUS. COMMON INDIAN BEE-EATER.

A common bird in the Deccan, but remarkable for its brilliant plumage, and active fly-catching habits. It chooses for its perch the outside twig of a tree, whence it makes its forage amongst the insect tribes that are brought out by the morning beams. The Bee-eater breeds during the months of April and May, laying its eggs in holes in banks. On the 13th May 1850, I found a pair of these birds breeding in a hole in a bank; the hole was more than an arm's length in depth. At the bottom of it I found three young birds, one very small, with scarcely any feathers on it; another somewhat larger, and the third of considerable size and pretty well fledged. There was no nest.

That birds of this genus migrate, I had a convincing proof when returning to England in 1852. When about half way between Bombay and Aden, on the evening of either the 8th or 9th May, a large flock of Bee-eaters was observed fluttering about the ship, some three or four of which were caught after dusk, when they had settled on the ropes and shrouds. I obtained three or four for the purpose of preserving their skins, but in the confusion occasioned by a shower they were unfortunately thrown overboard. They were larger than *Merops indicus*.

#### Family HALCYONIDÆ.

##### Genus HALCYON.

##### HALCYON SMYRNENSIS.

This and the black and white Kingfishers are the most common of their tribe in the Deccan, frequenting almost every stream and nullah. The former breeds during the month of May in holes in the banks of rivers, laying as many as seven eggs. They are of a beautiful pinky tinge, owing to the colour of the yolk showing through the thin delicate shell. The egg is about the size of that of the little Indian Owl (*Noctua indica*).

#### Family CAPRIMULGIDÆ.

##### Genus CAPRIMULGUS.

Of the eggs of these birds, of which there appear to be several varieties in India, I merely subjoin a note made by Mr. Jerdon from Mr. Elliott's notes. He states, that he once found the eggs of the common species, two in number, placed on the ground without any nest. They were pink, spotted with brown.

#### Family HIRUNDINIDÆ.

##### Genus CYPSELUS.

##### CYPSELUS AFFINIS. WHITE-RUMPED SWIFT\*.

I should certainly say that this is a common bird in the Deccan, about the city of Ahmednuggur. I have seen their nests crowded together under the roofs of old buildings, choultries and temples, and obtained the nest and eggs from a rock in the range of hills about twelve miles from Ahmednuggur, on the road to Aurungabad. This nest was obtained on 21st September 1849. It was built of mud and lined with grass, and contained two white eggs. The eggs are considerably elongated in form.

##### CYPSELUS PALMARUM, Hardw. BALASIAN SWIFT.

This Swift, according to General Hardwicke, builds its nest on the

\* This Swift builds twice during the year; I obtained a nest and eggs in September, and also found a nest with young birds in April.

leaf of the palm. Dr. Jerdon says that it "is common in all the districts of India, except on the bare table-land." I have, however, never met with its nest or eggs.

### Genus *HIRUNDO*.

#### *HIRUNDO FILIFERA*, Stephens.

This very handsome Swallow breeds in old temples and under projecting stones in wells and banks of streams. On 28th January 1850, I found the nest of this species built in an old well under a large stone, near the water; the nest was not domed, but open, and the young ones, three in number, exposed to view. On 1st April 1851, I took an egg out of a nest of this Swallow; the nest contained three. The old birds began building about 15th March; the nest was composed of mud, lined with a few fibrous roots and feathers; it was built under a stone in the bank of a stream. The egg is  $\frac{8}{10}$ ths of an inch in length, by rather more than  $\frac{5}{10}$ ths in width; white, spotted with two shades of red-brown, the spots forming a broken belt round the larger end.

### Order *RASORES*.

#### Family *PAVONIDÆ*.

#### Genus *PAVO*.

#### *PAVO CRISTATUS*. COMMON PEAFOWL.

Peafowl abound in the jungles clothing the slopes of the Ghauts, and in some wooded districts in the interior. In the Deccan, in the wooded hilly portions of the districts of Jamkhair and Scogao they were plentiful, and a remarkably pretty sight it was to see them stalking about near the grain stacks, or running along the bushy banks of the nullahs. They are wary birds, and lead the sportsman a good chase when once they take to the low spurs of the hills, up which they run with incredible swiftness. The best plan to secure them is to wait for their roosting time, under the trees to which they resort. Thick mango trees appear to be their favourite resting-places. Peafowl breed at the end of the monsoon, in the months of September and October, laying, I am told, from three to five eggs, of a buffy white colour, 2 inches and nearly  $\frac{6}{10}$ ths in length, by 2 inches and nearly  $\frac{1}{10}$ th in width. The nest is said to be composed of grass, and formed on the ground amongst bushes.

#### Genus *GALLUS*, Briss.

#### *GALLUS SONNERATII*, Temm.

As I have not been fortunate enough to obtain the eggs of this jungle fowl, I have again recourse to my friend Dr. Jerdon's notes. He says, "I once found the eggs of this fowl, seven in number, on

the ground in dense jungle at the foot of the Neilgherries. They were of a light pinkish-cream colour.”

Family TETRAONIDÆ.

Genus TETRAO.

Subgenus PTEROCLES.

PTEROCLES EXUSTUS. COMMON WHISTLING GROUSE.

This Grouse is common in the open plains of the Deccan, flying in flocks, and, as Colonel Sykes has remarked, announces its approach by its peculiar and piercing cry. I believe that this Grouse breeds during the greater part of the year. Eggs of this species (I believe) have been brought to me from the month of December to May. The Common Whistling Grouse lays three eggs in a slight hollow on the bare ground, and the colour of the eggs so much assimilates with that of the sandy ground on which they are laid, that it is very difficult to find them. The egg sent (Pl. LXXVIII.) is, I believe, the egg of this species. It measures  $1\frac{6}{10}$ ths of an inch in length, and 1 inch and rather more than  $\frac{1}{10}$ th in width, and is of a stone colour, thickly spotted and blotched with grey and olive-brown. I have in my collection several eggs of the Sand Grouse, which vary much in their size and markings.

PTEROCLES QUADRICINCTUS. PAINTED WHISTLING GROUSE.

This handsome Grouse frequents the low stony hills so common in the Deccan. It is not nearly so common as the last mentioned. I succeeded in getting two or three pairs, by waiting for them at a piece of water whither they used to come at dusk to drink. This Grouse most probably breeds at the same time and lays the same number of eggs as *P. exustus*. Many eggs of birds of the subgenus *Pterocles* were brought to me by the people in the districts, but as they are not generally very accurate observers, and call both *P. exustus* and *P. quadricinctus* by one common name, they could not tell me to which they belonged; but from my own observations, and the notes of Dr. Jerdon, I believe the egg sent with this paper is that of *P. quadricinctus*. Dr. Jerdon says, “I have lately got the eggs of this species, also very similar to the other, but rather smaller, and with the spots fewer and larger.”

Genus PERDIX.

PERDIX PICTA.

I met with the Painted Partridge in the grassy valleys near and amongst the Western Ghauts near Nassick, in the thickly planted and rich gardens, and in one of the districts between the Godavery and the Bheema rivers. In the latter district the Shikaries brought me several pairs alive. Its very peculiar cry is heard at a considerable distance. When out shooting in a valley amongst the Ghauts, I saw one calling when perched on the low stump of a tree. Dr.

Jerdon says, "It breeds during the monsoon, lays six or seven eggs of a smoky bluish-white colour, of an oval form, much depressed at the thick end."

#### Subgenus FRANCOLINUS.

##### FRANCOLINUS PONTICERIANUS. COMMON PARTRIDGE of India.

This Partridge is found amongst bushes and underwood, but is particularly fond of thick grassy hedges round garden plantations. It is found either singly or in pairs. The Grey Partridge breeds during the months of February and March, laying its eggs, seven in number, in grassy spots, hedgerows, and amongst bushes. The egg is of a rich stone colour, 1 inch and  $\frac{5}{10}$ ths in length, by 1 inch and  $\frac{1}{10}$ th in width, but they vary considerably in colour and size. This Partridge is by no means a shy bird, but, on the contrary, appears to prefer fields and gardens near towns and villages to less frequented spots. By some it is called the Scavenger Partridge, but I believe there are no grounds for such a term being applied to it; its flesh is very fair eating. The crop of one which I shot was full of bajoce and small seeds.

##### FRANCOLINUS SPADICEUS. SPUR-FOWL.

I procured a specimen of the Spur-fowl on the Ghauts at Khanda. It was flushed in a garden, and betook itself to a tree in which I shot it. Its gizzard contained a quantity of earth, some small stones, and small brown seeds. I was informed by a Shikarie that they breed in the months of February and March in thick jungles, making their nests on the ground or in thick close bushes, and laying three white eggs.

#### Subgenus COTURNIX.

I herewith forward an egg, in itself a bad specimen, but the only one I was able to procure, and which I believe to belong either to *C. dactylisonans*, the large grey Quail, or to *C. textilis* (Temm.). I believe the egg to be that of the latter, as if *C. dactylisonans* be identical with the English Quail, the egg should be of a yellowish or dull orange-coloured white, blotched or speckled with umber-brown, whereas the egg now sent is of uniform buff, merely spotted and discoloured by a long exposure to wet.

##### COTURNIX ARGOONDAH (Sykes). ROCK QUAIL.

This pretty little Quail, as its name implies, is an inhabitant of stony hills and bushy sides of streams and nullahs. It lives in be vies, and is to be met with in company with the grey and black-breasted Quail. The Rock Quail breeds generally during the months of November and December, but I have had its eggs brought to me as late as March, and have procured a young bird well fledged as early as 20th November. It does not, I believe, lay more than four eggs, as on three different occasions I have had that number brought to me, and on a fourth, four young ones just fledged were brought

to me when out quail-shooting. The young were covered with down, and had the appearance of being powdered. The egg of this Quail is of a pale buff colour, 1 inch and  $\frac{1}{10}$ th in length, by  $\frac{8}{10}$ ths of an inch in width.

I take this opportunity of bringing to the notice of the members of this Society distinguishing marks between the Rock Quail and the Grey and Black-breasted Quail, and of proposing that the former species should not be confounded with the two last. The distinguishing marks of the former, the Rock Quail, are the stoutness and depth of the beak in proportion to its length, the much more rounded form of the wing, the secondaries and tertials being much more equal in size with the primaries than those of the Grey and Rain Quail; the much more defined scaly protection of the legs and feet in the Rock Quail, and what I believe the most distinguishing mark, the smaller number of eggs laid by the Rock Quail. I believe that the Grey and Rain, or Black-breasted Quail, lay *eight or nine eggs*, the Rock Quail not more than *four*.

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March 13, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. NOTES ON THE HABITS OF SOME INDIAN BIRDS. PART VIII.  
By LIEUT. BURGESS.

Family STRUTHIONIDÆ.

Genus OTIS.

OTIS NIGRICEPS (Vigors). BLACK-HEADED BUSTARD.

This fine Bustard is found in flocks, varying in size, in the open plains of the Deccan, preferring the dry grassy and stony grounds to others. It grows to a large size; one fine male which I measured was 7 feet across the wings, and 46 inches from the tip of the beak to the end of the tail. This Bustard may almost be said to breed all the year round. I have had an egg brought to me in February, another on the 4th May, containing a young bird. A gentleman on the Revenue Survey told me that he had seen a young Bustard, covered with down, in the early part of October. I have had a young bird brought to me late in November, as well as eggs in November and December. The female generally lays but one egg. A. F. Davidson, Esq., Superintendent of the Ahmednuggur Revenue Survey, told me a curious habit of the male Bustard. He says, "About breeding time the male is fond of mounting some elevated spot, and then strutting about with the tail erected and spread, the wings drooping,



and the pouch in the throat inflated with air, and looking like a large bladder; under the hillock where the male was thus displaying himself were several young ones." In corroboration of this, a boy told me on the 17th May 1850, that about four days previously he had seen a Bustard, with a white-looking bag hanging below the neck. I see in Dr. Jerdon's Catalogue, that he gives an extract from Mr. Elliot's notes to this effect; speaking of the cock Bustard, he says: "He was strutting about on some high ground, expanding his tail, ruffling his wings, and distending his neck and throat, making the feathers stand out like a ruff." I do not find it recorded that the large Bustard of Europe (*O. tarda*) has this habit of showing himself off during the breeding season. The egg of the Black-headed Bustard varies in size; the one sent with this paper measures  $3\frac{3}{10}$ ths in. in length, by  $2\frac{3}{10}$ ths in. in width. It also varies in colour; the general colour is a brownish olive, dashed with pale brown. One egg which I had was of a nearly uniform palish blue. The egg now sent was found in a grassy spot on 18th December. As everything relating to this noble bird is interesting, I give a description of a young one brought to me on 28th December 1849. It stood about 10 inches in height; its beak was of a dirty whitish colour, nostrils large; irides clear pale hazel, and eyes very large; back mottled, very much as in the old birds, as also the wing feathers; front of the neck pale yellowish-brown, with a dark streak running down the sides; legs dull yellowish-white, feet the same, knee-joints very thick; there was down on the neck. This was quite a young bird, very feeble on its legs, and barely able to stand. The Black-headed Bustard utters, when frightened, a harsh barking note. Its flight is like that of the Heron, a steady flight, sustained by the continued flapping of its large wings.

#### OTIS AURITA (Lath.). FLORIKIN.

I have not met with the Florikin sufficiently often to allow me to enter into the argument as to whether the Black Florikin is the male bird in its breeding plumage, or a distinct species from the common brown Florikin, but Dr. Jerdon's arguments in his "Illustrations of Indian Ornithology," appear conclusive, that the black and brown are one and the same bird in different states of plumage. But this point might soon be set at rest, by sportsmen and ornithologists in India ascertaining whether the black plumaged birds are ever met with during the cold weather and spring. That the male of the Little Bustard (*Otis tetrax*) should to a certain extent assume this black plumage during the breeding season, affords strong ground for the supposition that the Black Florikin is the male in his nuptial dress. The Florikin breeds during the end of the monsoon, laying three eggs of a dark olive-green colour, spotted and dashed with light brown,  $1\frac{9}{10}$ ths in. in length, by  $1\frac{5}{10}$ ths in. in width, the greatest width being about the centre. The egg now sent was procured with two others early in September. An officer, who was out shooting, put up a Florikin and killed it, and on going to the spot where she rose, found three eggs. I had two specimens of the Florikin sent

to me, both males, one in beautiful black plumage on 2nd October, the other in the brown plumage on the 4th February.

### Family COLUMBIDÆ.

#### Genus COLUMBA.

##### COLUMBA CENAS. BLUE PIGEON.

This Pigeon is very common in the Deccan, inhabiting holes in old forts, walls, temples and wells. It breeds during the cold season, laying two white eggs. Holes and ledges in wells are its favourite resorts for breeding. The egg measures  $1\frac{4}{10}$ ths in. in length, by 1 inch and nearly  $\frac{2}{10}$ ths in width, and is of a clear shining white. An egg is sent with this paper; it was taken from a well on the 8th December.

#### Genus TURTUR.

##### TURTUR CAMBAYENSIS.

Of this Dove, Dr. Jerdon says in his notes,—“This little dove abounds over most of India, both in low jungles and near villages and cantonments, being found, especially towards the north, in every garden, and frequenting stable-yards, houses, &c.” It is, I believe, the same as the small Dove to which—not knowing that it had been previously named—I gave the name of the Vinous-necked Turtle, on account of the colour of its neck. If this be the case, it breeds during the month of March, building its nest in low bushes, and laying two white eggs, rather more than  $\frac{9}{10}$ ths of an inch in length, by nearly  $\frac{8}{10}$ ths of an inch in breadth.

##### TURTUR RISORIA.

This Dove is considerably larger than the last, and is easily distinguished by the white crescent on its neck, like the Wood Pigeon of this country. It abounds in every place; amongst the prickly-pear hedges and thickets near villages, in groves of babool trees, and bushes. Its half plaintive, half laughing note, is heard as soon as it becomes light, and if the trees over your tent happen to be its resort, it is anything but conducive to sleep. This Turtle breeds during the cold season, building in low babool trees; its nest is composed of a few twigs and pieces of grass. It lays two white eggs,  $1\frac{2}{10}$ ths in. in length, by rather more than  $\frac{9}{10}$ ths in width.

### Order GRALLATORES.

#### Family ARDEADÆ.

#### Genus GRUS.

##### Subgenus ANTHROPOIDES (Vieillot).

##### GRUS VIRGO. DEMOISELLE CRANE.

This Crane visits the Deccan during the cold weather, but sometimes remains as late as May. I saw a large flock of them on the

river Seena, near Waterphul, as late as 24th May, and was told that one had been brought into the cantonments of Almednuggur as late as 12th June, but I never heard of any remaining to breed. It would be most interesting to find out their breeding haunts, their manner of nesting, and the number and colour of their eggs. The greater portion leave the Deccan at the end of March or beginning of April, and return at the end of November. They feed in the grain fields, retiring to the larger rivers about ten o'clock, where they may be seen standing in large flocks in the shallows.

### Genus ARDEA.

#### Subgenus ARDEA.

#### ARDEA CINEREA (Lath.). COMMON HERON.

A tolerably common bird in the Deccan, frequenting tanks and rivers. I found two nests in a tall peepul tree on the 27th February; one contained the egg sent with this paper, the other was a nest just finished, and contained no eggs. This bird is considered, I believe, to be identical with the English Heron; it most probably therefore lays four or five eggs, as Mr. Yarrell states that the English Heron does. The egg is a uniform sea-green colour,  $2\frac{4}{10}$ ths in. in length, by 1 inch and rather more than  $\frac{7}{10}$ ths in width.

#### 2. AN ARRANGEMENT OF THE FAMILIES OF ECHINIDA, WITH DESCRIPTIONS OF SOME NEW GENERA AND SPECIES.

BY DR. JOHN EDWARD GRAY, F.R.S., V.P.Z.S., P.B.S. ETC.

MM. Agassiz and Desor have given the generic characters and a list of the species of *Echinida*, but do not divide the genera of the normal division into families. I propose to divide them into the following groups.

The *Echinida acrocystos*, or those which have a vertical dorsal vent, a regular globular body, with an inferior central circular mouth, armed with conical jaws, furnished with five elongate acute teeth, and with the ambulacra forming continuous vertical bands from the mouth to the vent. They may be divided into the following families.

#### I. *Tubercles of spines perforated; spines elongate; body circular.*

##### Fam. 1. CIDARIDÆ.

Ambulacra narrow, formed of double pores; interambulacral plates few, with a single large tubercle; spines thick, solid.

1. *Cidaris*. Tessera even-topped.

2. *Goniocidaris*. Tessera bevelled on the edge.—*G. pistillaris*.

##### Fam. 2. DIADEMADÆ.

Ambulacra narrow, of one series of double pores; interambulacral plates numerous, with two or more rows of tubercles; spines slender, often tubular.

1. *Astropyga*. Body depressed; ambulacral area with very small crowded tubercles, bearing very thin spines, much smaller than the interambulacral spines and tubercles; interambulacral area with smooth bands.

2. *Garelia*. Body depressed; ambulacral area narrow, with two or four series of small tubercles, and thin spines; interambulacral area with oblique series of large tubercles and spines, but without any smooth band; spines tubular.

3. *Diadema*. Body globular or subdepressed; ambulacral area with the same sized tubercles and spines as the interambulacral area.

## II. *Tubercles imperforated.*

*Echinidæ*, Gray, 1828.

### Fam. 3. ARBACIADÆ.

Ambulacral area narrow; ambulacra narrow, with a single series of double pores; body circular; spines short, solid.

1. *Agarites*. Upper surface of the interambulacral area without tubercles.

2. *Arbacia*. The upper and lower surface of the interambulacral area covered with tubercles.

### Fam. 4. HIPPONOIDÆ.

Ambulacral area as wide as the interambulacral; ambulacra wide, formed of three separate vertical rows of double pores. Body circular; shell thin.

1. *Amblypneustes*. Body high; porous zones not quite regular; mouth small, entire.—*A. ovum*.

2. *Boletia*. Body depressed; porous zones regular, inner separated by a vertical series of tubercles; mouth very large, with five deep slits.—*B. pileolus*.

3. *Hipponoë* (Gray, 1841). Body swollen; two outer porous zones regular; middle one interrupted; mouth small, slightly cut.—*H. Sardica*.

4. *Holopneustes*. Body swollen; two outer porous zones regular; middle one separate or interrupted; mouth small, entire.—*H. porissimus*.

### Fam. 5. ECHINIDÆ.

Ambulacral area half as wide as the interambulacral area, with two (or three) close series of double pores, placed in threes; buccal membrane naked; body circular.

#### A. *With angular pores at the junction of the plates.*

1. *Mespilia*. 2. *Microcyphus*. 3. *Salmacis*. 4. *Temnopleurus*.

#### B. *Without any pores at the angles of the plates.*

5. *Echinus*. 6. *Psammechinus*. 7. *Heliocidaris*.

## Fam. 6. ECHINOMETRADÆ.

Ambulacral area only half as wide as the interambulacral area ; ambulacral pores in groups of four or more, forming an arched series round the ambulacral tubercles.

A. *Body circular.*

1. *Strongylocentrotus*. Spines equal, subulate, short.

B. *Body oblong.*

2. *Echinometra*. Spines subulate, subequal.
3. *Holocentronotus*. Spines of back elongate, subtriangular ; of the oral side large, spathulate.
4. *Colobocentrotus*. Spines of the back very short, truncated ; of the oral side spathulate.

Dr. Gray described the following species, which he regards as new, from the British Museum Collection.

## Genus CIDARIS.

\* *Spines smooth or granular.*

## 1. CIDARIS ORNATA.

Depressed. Tubercles of interambulacral area rather distant ; spines lanceolate, subulate, depressed, white, red-ringed ; base with series of small red spots, and with regular longitudinal series of granules ; each side with one, and the upper surface of the base with two series of white angular spines ; spinules white, with a central red streak.

*Hab.* East Indian Seas.

\*\* *Spines verticillate-spinose.*

## 2. CIDARIS VERTICILLATA.

Depressed. Interambulacral tubercles rather far apart ; spines of upper surface rather elongate (about as long as the diameter of the body), subulate, smooth ; some subulate at the top, others with scattered conical spines, others obliquely truncated, cupped, and spinose at the tip ; spines of lower surface shorter, cylindrical, truncated, granular near the tip ; those of the oral surface much spotted, truncated, compressed and largely granular near the end.

*Hab.* — ?

## 3. CIDARIS ANNULATA.

Orange. Rather depressed. Interambulacral tubercles of moderate size, far apart ; spines elongate, subulate, tapering, red and white ringed ; suprabasal ring white ; with longitudinal ridges. The ridges of the lower half of the spines spinulose and with scattered larger spines ; sometimes placed in lines. The dorsal spines sometimes truncated and slightly cupped at the tip ; ambulacral spinules narrow, flat.

*Hab.* West Indies.

## 4. CIDARIS SPINULOSA.

Interambulacral tubercles small, very far apart; spines elongate, fusiform, red-brown, with close squamose longitudinal ridges and scattered subverticillate acute and small spines; the dorsal spines truncated, cupped and spinose at the end; ambulacral spinules narrow.

*Hab.* — ?

## Genus ASTROPYGA.

## 5. ASTROPYGA DEPRESSA.

Shell depressed, very thin; ambulacra swollen; interambulacral area with a very wide smooth band in the middle and on each side of the upper part; the lower part of the centre of each area with *three* oblique series of larger tubercles; ovarian plate broad, triangular.

*Hab.* — ?

## Genus GARELIA.

Ambulacra broad; the pairs of pores crowded, so as to form two, or rarely three, series; ambulacral area narrow, upper part with four series of small, and lower part with two or four series of rather larger tubercles; spines of ambulacral area bristle-like, very slender; interambulacral area with several oblique series of larger tubercles, without any smooth band on the back near the crown; ovarian plates moderate, triangular.

\* *Ambulacra convex, area linear, spines elongate, subulate, hollow, covered with whorls of lanceolate scales.*

## 6. GARELIA ÆQUALIS.

Ambulacra convex; ambulacral area with two series of tubercles, the outer series rather the largest, rather narrowed below; upper side of ambulacral area with 5·5 oblique series of larger tubercles; ovarian plate elongate trigonal; spines purple, or purple and white ringed.

*Var. α.* With spines pale, white-ringed.

*Var. β.* Spines purple; underside obscurely pale banded.

*Var. γ.* Spines purple, not banded.

*Hab.* Mauritius.

\*\* *Ambulacra flat; area wide, with four or five series of spines, near vertex narrow, with two series of tubercles below; spines subulate, tapering, longitudinally striated.*

## 7. GARELIA CLAVATA.

Interambulacral area with four oblique series of larger tubercles; ambulacra slightly raised; the upper part of the area near the crown broad; each side with two or four or six series of small tubercles; the lower part narrow, with a single series of rather larger tubercles.

## Genus TOREUMATICA.

\* *Transverse sutural grooves wide and deep; back granular.*

## 8. TOREUMATICA HARDWICKII.

Transverse sutural groove deep, wide; tessera of interambulacral area high, about twice as broad as high, with one large and several scattered unequal smaller tubercles.

*Hab.* —? Presented by General Hardwicke.

\*\* *Transverse sutural grooves narrow and small; back equally granular.*

## 9. TOREUMATICA GRANULOSA.

Transverse sutural groove narrow and shallow; interambulacral tessera with a subcentral row of large, and numerous nearly equally scattered smaller tubercles. Near the circumference the secondary tubercles become more distinct. Base concave.

*Hab.* —?

\*\*\* *Transverse sutural grooves indistinct; back equally tubercular.*

## 10. TOREUMATICA REEVESII.

Depressed, thin; tessera of interambulacral area with a single series of large, and several unequal-sized smaller tubercles. Under side rounded, concave in the middle; ambulacral area with two, interambulacral area with three rows of subequal tubercles; holes between tessera distinct, between ambulacral tessera circular and deep.

*Hab.* China. Presented by J. R. Reeves, Esq.

\*\*\*\* *Transverse sutural grooves indistinct; back with a smooth band, near the suture between the interambulacral areas.*

## 11. TOREUMATICA CONCAVA.

Depressed, thin; middle between two interambulacral areas on the back smooth; interambulacral tessera with a few unequal tubercles near the ambulacra. Under-side deeply concave, largely tubercular; ambulacral area with two, interambulacral with three series of large tubercles.

*Hab.* China.

## 3. EXTRACTS FROM THE LETTERS OF DR. HENRY GOULD, RELATING TO THE NATURAL HISTORY OF WESTERN INDIA. COMMUNICATED BY HIS FATHER, J. GOULD, ESQ., F.R.S.

The following extracts have been placed at the disposal of the Society at the urgent request of the Secretary, because he fully appreciates the value of original observations so clearly and naturally expressed, and because he hopes that the appearance of this record of them will induce corresponding members of the Society in other parts of the world to occupy themselves in a similar manner.

The first of Dr. Gould's letters is written from Bombay, and dated—

Feb. 26, 1854.

Within two yards of my tent, as I write, are several species of birds. 1st, The hoopoe (*Upupa Senegalensis* ?), very tame, and perching about at my feet, within reach of a stick. 2ndly, Two species of wagtail, white and grey, fighting with the hoopoe: sparrows innumerable, but different from ours; they are perched in a cluster on a trelliswork at the tent-door. Two crows are sitting on the tent-pegs, one on each side of the entrance; a bird called "mino" here (*Pastor Mahrattensis* ?) is feeding two yards off; whilst another pretty black bird, with a long tail, published in one of the numbers of the 'Birds of Asia,' is pluming its feathers within arm's length. Kites here are as common as crows,—literally in hundreds, performing the office of scavengers.

Bombay, March 7, 1854.

Ornithology, you may be sure, will not be forgotten. The following species have already fallen to your gift of a double-barrelled gun. Firing into the midst of a flock as it swept by, I dropped four of the *Pastor roseus* in very fine plumage. Kingfishers are common and very beautiful; *Nectarinæ* also, of which I shot several, but have no means of determining the species at present, my books not having arrived. A fine collection of these beautiful birds could be made here. King crows are to be found everywhere: what is their scientific name\*? Sandpipers are as common and tame as larks. The Bulbul (*Pycnonotus jocosus* ?) abounds, and commits sad havoc in the gardens; several species of wagtail, to me unknown, various raptorial birds, &c.

Last Monday I paid a visit to Elephanta. It contains many birds, strange and new to me,—plenty of pigeons, doves, parrots, and numerous pretty finches; and horrible thickets of Euphorbia, the prickles of which pierce clothes, boots, and everything, and the juice stings your eyes, if by chance it gets in them.

Kotree, opposite Hyderabad,  
April 17, 1854.

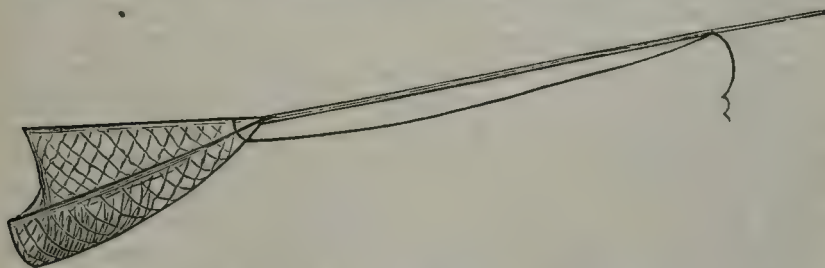
The men went on shore to cook their suppers before it became dark, whilst the officer in command and myself went for a stroll with our guns. The ground was covered with sandpipers, curlews, terns, gulls, spoonbills, flamingos, herons, ducks, and, in fact, every species of water-fowl. We tried for the ducks, but they were very shy; and after an hour's wading, I got a shot at a brace of shieldrakes flying overhead. Firing right and left, I killed one and wounded the other (not bad for a beginner). They are fine birds, very similar, if not quite the same, as our own species. Mr. Lewis knocked over a shoveller, and that was the extent of our sport. In the winter-time the ducks and other wild fowl congregate here in thousands upon thousands, and no place could be better adapted for them. There are some very pretty river terns, and a most lovely kingfisher; but I

\* *Dicrurus macrocercus*.



am in such a delightful state of ignorance as to what birds are scarce and which well-known, that I skin but few; and no one in the Presidency understands or cares the least for them; and as for books, the word "ornithology" is not comprehended. The first numbers of the 'Birds of Asia' would be of very great assistance, as also Colonel Sykes's Catalogue. Your works have been very much admired by all who have seen them.

I shot some of the famed black partridge of Scinde, *Francolinus vulgaris*, which you must know well. It is a very handsome species. As a bird for the table, it is excellent, the flesh white and delicate. I also shot a very fine plover with a coral-red fleshy expansion extending from the eye over the forehead, and meeting on the opposite side. The throat and chest are black, legs yellow, eye dark brick-red. What is it? I have its egg. The bird is common enough here. I have also the egg of an *Ædicnemus*. What species are there of this genus? The egg is very similar to that of our own in England. The last day of the voyage great excitement was caused by the appearance of alligators in the river. They are common above Hyderabad, and ugly green-looking beasts they are, crawling about on the sand-banks. But *the* peculiarities and *the* lions of the Indus are the *pullah* and the *pullah*-fishers. The *pullah* is a much-esteemed fish, said to be found only in the Indus: it is something like the grey mullet in appearance, and in taste little better than a mackerel, but is thought a great deal of. Every one eats *pullah*. It is caught in the following manner, by a particular caste of natives brought up to the business. A large earthen-vessel is procured, shaped like a lentil-seed, with an aperture at the top; the vessel is about a yard in diameter, and half a yard deep, the orifice 8 inches across. This of course floats on the water, and will sustain a considerable weight. Pushing it off from the side, the fisherman throws himself on his belly across it, and so closes the aperture with his body, thus forming a kind of boat, which is propelled by the motions of the arms and legs, as in swimming. This buoys him up on the rapid stream, and prevents his being swallowed up by the eddies of the river, and also enables him to use his net, which is stretched across a kind of fork attached to the end of a long pole. This machine is held perpendicularly in the water,



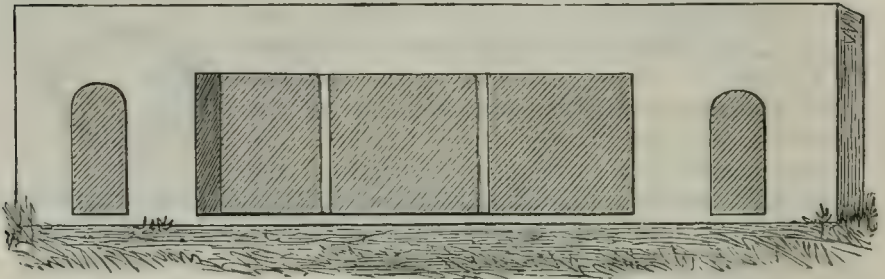
the ends of the fork touching the bottom. The current causes the net to bag and spread out as the man floats on his earthen pot down-

stream. The pullah, lying head up, cannot see the net, from the muddiness of the water, so that it comes upon them unawares. The fisherman feels a tug, and instantly closes the net by means of a string he holds, and the pullah is caught. The next process is to haul him up, and stick the poor brute with a skewer, whilst still in the snare; then taking it out, and shifting his belly to one side, the pullah-wallah drops the fish into the pot and resumes his agreeable employment. Having floated some miles down-stream, he paddles to shore, shoulders his support and net, and walks back again to the point from which he started, repeating the whole process again and again, from morning to night, from youth to old age, earning a few anas per diem.

Kurrachee, May 4, 1854.

In this letter Dr. Gould gives a journal of his overland journey from Hyderabad to Kurrachee.

April 18.—Up at sunrise; went out for a walk; saw a few hares, but no black partridge; shot some pigeons for breakfast. The country is very sandy, with here and there patches of jungle; returned at 7, very hot and much disgusted. The village consists of about four huts and twice that number of inhabitants, and yields wood and water to the traveller, but no provisions of any kind. At 8 o'clock, was glad to retreat into one of the pigeon-holes of the Dhum-sallah, an outline of which I send you.



April 20.—The station, which is called Hulliaga, being placed in the midst of a capital shooting-ground, the first sound that struck me on awaking was the loud call of the black partridge all around the Dhum-sallah. They are very difficult to get within range, from their habit of running before the sportsman, and seldom rising. In order to get a "bag," you must have at least a dozen beaters. I managed, however, to kill a brace, after much labour and walking. The jungle here is very thick, and full of birds, hares and snakes; for the latter of which, including large boas, it is particularly celebrated; parrakeets are also very plentiful. Dined sumptuously on pullah and black partridge, both of which are capital; and, in a cool climate, where the partridge could be kept for a week or two, it would be quite equal to gelinotte; the flesh is plump, white and well-flavoured.

Ghiznee Sanatorium, June 1, 1854.

The only birds are the sand-grouse and a species of lark, the crows and sparrows even contemptuously avoiding such a dried-up place ; about two miles distant is a creek banked with rocks, which is a favourite resort for water-fowl. In my pursuit of natural history this morning, an accident happened which I am afraid will lose me a good servant. A pair of hawks had built their nest in the rocks, about fifteen feet from the ground, and my gharawallah (groom) declared that nothing would be so easy as to take it, and that he could climb up the side of a house ; so I sent him up, but when within a few feet of it he screamed out and fell ; he afterwards stated that the devil (*shitan*) came behind and pushed him off ; the fall would have been nothing on soft ground, but the poor fellow fell across a stone and injured his spine ; I had to gallop into camp and fetch a palanquin and four men to bring him into hospital, where I am now treating him. The hills hereabout abound with jackals and hyænas, and one of the latter came within the tent-ropes last night after my unhappy goats ; the barking of the dogs awoke me, when I saw him gazing affectionately at my throat, not two yards distant ; a clout on the head with a stone sent him off.

I should like to start in the month of December to the Lake Munchar, beyond Hyderabad, where, during the winter, is to be found a reunion of all the water-fowl in Scinde : I am told that the ducks, geese, cranes, and, in fact, all the natatorial and wading-birds congregate there in immense numbers ; thence to Luccur and Shikarpore, shooting all the way. I should then wish to explore an entirely new country, zoologically speaking,—Khelat—the temperature of which is somewhat similar to our own, freezingly cold in winter, with a delightful spring ; it is well-wooded, and doubtless contains much of interest to the naturalist ; with introductions from the Commissioner, I believe I should be well treated by the “Khan ;” the only difficulty is to reach it. From Jacobabad to Khargarth, our extreme frontier military post, there are two routes, one by the well-to-be-remembered Bolan Pass (*vide* the march of our troops to Cabul), and the other by Gundawa and the Gundawa Pass. By the Bolan, the chances are about equal whether I should get through or have my throat cut, for the Khan cannot control the fierce Beelooch hill-robbers, although his own subjects ; they would attack anything under the force of fifty men ; by Gundawa the road is tolerably safe, being under the influence of the Scinde horse ; that is the road I should take. It is seventeen days’ march between Jacobabad and Khelat, which I should reach at the commencement of spring, and a month or six weeks’ stay would enable me to ascertain the zoological resources of the country, after which I should return to Kurrachee and resume my medical duties. This leave I do not wish for any private, but for a scientific purpose, and the collections I may make would be sent, after any novelties had been described, to the Company’s house in Leadenhall Street, or such of them as they may want for their museum ; everything, however, must depend upon circumstances.

Ghiznee Sanatarium, July 15, 1854.

It may be interesting to you to know that a fine Houbara Bustard (*Otis Macqueeni*) is very common here during the winter; it is much sought after by the officers, and considered fine "shikar" or sport; my tent is pitched in the midst of the Houbara ground. A very pretty small species of deer is also common in this neighbourhood; it is about the size of a gazelle, with sharp straight horns, is very difficult of approach, and incredibly fleet; I suppose it is well known; will you inquire, and let me know its name? the young are sold in the Bazaar at one rupee each and soon become very tame; I have one now that is allowed to wander about at pleasure, and which invariably comes to sleep in my bed at night: any number of beautiful Amaduvades may be bought in the Bazaar at one penny per pair, and Parrots at fourpence each; if the means of transit were easy, I could send home a gross of these small birds.

I will now give you a short account of an excursion to a well-known spot called "Munghur Peer" or the "Munghur Talou," *Anglice* Holy Alligator or the Alligator Tank. Some time ago, a very holy mussulman pitched upon this oasis as his dwelling-place; a pure spring flows from a rock in a valley surrounded by immense barren volcanic hills, forming part of that range of rugged mountains which is seen so conspicuously from Kurrachee; the spring above mentioned vivifies a small extent of surrounding country, nourishes groves of date palms and banian trees, and encourages the cultivation of various fruits and vegetables; the old gentleman, finding that he had fallen into a good berth, sanctified it: here he lived and died, after which happy release his body was conveyed to the top of an awfully high rock and there buried; his faithful disciples erecting a large tomb over his remains: this is said to be a fine work of art, but I have seen no one who has had the courage to ascend and inspect it. The spring after his death became more holy than before, and a tolerably-sized mosque was built over it; a large stone tank with steps was constructed for it to flow into, and the overflowing surplus water now forms a marsh or pond which is full of small islands a few feet distant from each other, and it is in the water between these that the alligators are to be found; there are several hundreds of them, varying in size from 6 inches to more than twice as many feet; they live in a state of great fraternity; their calm serenity being only disturbed by that most useful dispensation of providence, the larger devouring the smaller ones; they are considered most holy by the mussulmen and are actually worshipped by them; in which, however, they slightly depart from the precepts of the Koran, which says, "*La Ala ila allah—Mahomed rasoul allah,*" the famous profession of the mussulman faith. From most of the districts of Scinde, the natives make pilgrimages to these beasts, throwing goats to them as peace offerings; the inhabitants of the small village adjoining the mosque feed them regularly, and are great in the odour of sanctity. Should a little native urchin be swallowed, through his indiscreetly venturing too near, they say his is a happy *kismet* or fate, for he is sure of paradise. The brutes do not confine

themselves to the water, but wander among the palm trees and low bushes, and wherever a sahib discovers a cool retreat, there a large alligator is sure to be found, and before a transfer of seat can be effected, must be fought and dislodged, or run away from, if he charges. Not long since one of them killed a man, upon hearing which two officers resolved to take vengeance, and accordingly, in spite of military prohibition, shot the delinquent, whereupon all the crazy and bigoted inhabitants turned out to avenge the insult, and had they not been well armed it would have gone hard with the sacrilegious scamps. These holy reptiles are not without their royal family, of which, however, there exists at present but one lineal descendant, by name *moor-sahib*, who is the acknowledged king of the alligators; although superior to his subjects not only by his descent but by his enormous size and appetite, he is but a liliputian in size, and a trifle as regards his powers of eating, compared with his late sainted and lamented sire, concerning whom the inhabitants of the village relate marvels of masticatory prowess. The present king does not associate with his subjects, but is built into a large underground tank covered above by masonry; in the roof of this palace is a hole something like, but rather larger than, that into a coal-cellar; when his majesty is to be fed, his attendant thrashes the water with a long stick through the hole in the roof; and the well-known sound brings him to the surface, where, without condescending to unclothe his eyes, he opens an enormous pair of jaws and waits patiently till the delicate morsel, such as half a donkey or a goat, is dropped into them; the jaws instantly close with a terrific snap and the royal personage disappears from sight.

The rains have just set in here;—very pleasant for those who live in houses, but quite the contrary for poor wretches who, like myself, are under canvass; my tent will stand two days' rain well enough, but after that it begins to feel moist, gradually-increasing puddles make their appearance below, and water drips in from above; but one hot day makes all dry again. After a shower your tent becomes the refuge of all the vermin in the neighbourhood; snakes, scorpions, centipedes, frogs and lizards occupy the dark corners, whilst all attempts at reading or eating by night are frustrated by the countless myriads of large ants, from half to one inch in length, that fly into every habitation, and cover the lamps, table-cloth, books, &c., smother your shirt and collar, get down your back, and after having caused an immense deal of annoyance and inconvenience, leave their wings as a parting present and crawl away; so that in the morning the tables, chairs, and other furniture, and the floors are found strewed with these relics. A very beautiful ground spider makes its appearance after the rains; it is about the size of a bean, and of the most splendid scarlet, resembling velvet in appearance and lustre; it is seen at no other time, and is apparently driven from its underground retreat by the rain.

Ghiznee, August 15, 1854.

Ghiznee is not the locality from whence to supply you with much information as regards Scinde; its natural products being but few;

in the absence of anything of greater moment, perhaps you would like to know something of the domestic resources of Kurrachee and the circumjacent country. Substantials in the shape of beef and mutton are plentiful and cheap; the latter is small, very small, a leg weighing about four pounds, but it can occasionally be had somewhat larger; its price is one ana per pound. The sheep are celebrated for their tails, which are of an enormous size, and one mass of fat. Good beef is also to be had at the same price as mutton. Kid's flesh is not despised, and one day in the week pig is converted into pork; but our friend so much relished in England is but little honoured here, none but the very lowest castes condescending to touch him, and his very name being an abomination; so if you wish to irritate a native, hint at the "suer," in connection with himself, and the required irritation will be immediately produced. Fowls are brought into Kurrachee in vast numbers, and fetch four anas (sixpence) each. Ducks can be obtained at a little higher price, but are considered by the Mahometan population as unclean. Turkey being an expensive luxury, is only produced at mess on great nights. Pigeons are very plentiful, but are not worth eating, besides being considered holy by some of the castes. The sea and harbour supply us with fish in any quantity and of every size; many species are brought to market, from the Sardine to the noble "Seer" fish, which is about the size of a cod and superior to it in flavour. Oysters are abundant, and when in season rival "real natives:" for one hundred you pay sixpence. The pearl oyster, although not eaten, is eagerly sought after for its precious contents. Magnificent prawns, of doubtful feeding, are caught in numbers, and are sold at the ridiculously low price of one ana (three halfpence) for two pounds weight; they grow to an enormous size, some being 7 or 8 inches in length, but the smaller ones are the best.

Ghiznee, Sept. 20, 1854.

You will be pleased to hear that I have just received a long letter from Mr. Blyth, of Calcutta, who evidently opines, that, having been brought up in the halls of science, I must be thoroughly acquainted with its long-named treasures—painful delusion!—and quite easily requests me to procure for him species of the *Soricidæ*, *Erinacidæ*, *Hypsipidæ*, *Malacocercidæ*, and many others; all which I would most readily do. But what sort of a beast is an *Erinaceus* or a *Malacocercus*, still remains a profound mystery to me, and is likely to be, until I get hold of a treatise on hard names which will unravel the secret; for if it be supposed that such knowledge ought to come by the "light of nature," I can only say that she has not as yet illumined me by her countenance. This is why I requested a treatise on the science of ornithology. I shall get on better when I receive my books. Mr. Blyth wishes a correspondence to be kept up between us, and of course I shall be happy to promote his views in every way I can.

Shark-fishing is going on actively at present; they are caught in large nets, which are dragged across the harbour. The species is the ground-shark, the fins of which are considered a great delicacy

by the Chinese; and it is to supply them that the sharks are captured.

Enclosed is a curious little bird which I shot on the sea-shore. What is its name\*? It frequents the low salt marsh plants that grow at the edge of and even in the water. It is extremely difficult to shoot, and when shot, equally hard to find; it runs among the roots, and occasionally perches on a twig, gives forth a wheezy feeble song, and instantly drops into the thicket. The eye is dark.

Ghiznee, Oct. 5, 1854.

The warm weather has given life to numbers of the dragon-fly family, but their short life is cut still shorter by the numbers of birds that come, self-invited, to the feast; shrikes, bee-eaters, hoopoes, stone-chats, wheatears, willow-wrens, and many other species, have now appeared about the rocks, where, a month since, nothing but a lark was to be seen. Terns, that before could only be found at sea, now come wandering over the land, and, hunting up and down, soon fill their stomachs with the delicious morsels; even the very cheels (kites) have given up their carrion-feeding propensities. The consequence of this good feeding is very distressing to the collector, for the birds become so fat that it is almost impossible to skin or preserve them: my servant is in despair, and brings me a mass of oily feathers as the result of an hour's labour. Is there any remedy? Large flocks of cranes are continually passing over my tent, "*en route*" to the Indus. Geese have been seen, and I myself have fired at ducks, all which are indications of approaching winter; wading-birds of all kinds are now exceedingly common, but very difficult to procure, for they congregate on large open flats left at low water, and cannot be approached. The salt-water creeks too, in which they are to be found at certain stages of the tide, are quite exposed and without cover on their banks; so that if by dint of great care and caution you can manage to get within 300 yards of the water, you are then sure to hear some small plover or sanderling set up his shrill piping, to which that wariest of birds, the curlew, immediately responds, and away scuds every feather in the creek, leaving you to expend your vexation and charges upon the crabs and mud. There is one crane in particular that I have been after many times; he is a very cunning old gentleman, and evidently fond of a joke; he knows exactly how far a gun will carry, allows me to approach, by dint of much knee-grazing and elbow work, to within 100 yards of him, and then, rightly imagining that a nearer proximity would be dangerous, gives a hoarse chuckling laugh, and, after four flaps of his enormous wings, is hopelessly gone; but I will be even with him some day.

Enclosed you will find a rough sketch of a thrush-like bird killed by me yesterday; it is the only one I have seen, but my servants know it well, and state that it is a beautiful songster. If you can make out the species from my drawing, I should like to know its name†.

\* *Suya lepida*, an extremely rare bird in the collections of Europe.

† *Certhilauda bifasciata*, or an allied species.

“O me miserum! O me, miserabile dictu!!” a dire misfortune has befallen me. One morning, while pursuing my friend the crane, I broke the stock of my gun, or rather the horse broke it for me. As you may expect, I was much annoyed; first, because it was a present from you, and secondly, because the gun was a capital one to shoot with, and I was rapidly improving in the art. As it is impossible to get a new stock in Kurrachee, I have been obliged to expend £30 in the purchase of a fresh gun, and have obtained an excellent one with double barrels for shot and rifle fitting the same stock: I will send my lame gun back to Fisher’s to be restocked.

Mr. Frere has, I believe, very kindly written to Lord Elphinstone respecting my journey to Khelat, and has also offered the services of an excellent person in his pay to accompany me; with this assistance, if leave be granted me, I hope to make a good collection, and do some service to science; I intend shooting everything that comes in my way, and it will be your task to determine whether anything be new or otherwise. You will say, this is rather Don-Quixotish; but the sight of a fine country will quite recompense me for any little self-disgust at the butchering nature of my propensities; all for science, “ça va bien,” the healing pill is swallowed. I wish that you could be with me, the trip would then be a great treat, and I might learn something. Please to let me know how to make “damper,” as, if I go, I shall have to be my own baker for a few months; I should like to know this by return of post, and also to receive any other hints your bush experience enables you to give. As I have before said, if I am allowed to take this journey, I shall proceed as soon as another assistant-surgeon has been found to supply my place. Towards the end of next month, on the approach of winter, all the regiments will be on the move: ours, it is expected, will be ordered to Hyderabad, and the fusiliers will supply our place at Kurrachee; the 83rd are ordered to Deessa in Gujerat, a frightfully hot place, but with capital shooting; for there abound the Indian lion and tiger, antelopes, and Sambur deer, and buffaloes are seen in great numbers; the artillery will proceed to Poonah, and the 14th Native Infantry to Shikarpore, her Majesty’s 86th having the doleful prospect of Aden before them. Mr. Frere starts for his annual tour of the district on the 2nd of November, taking with him a good hunter and stuffer; he has requested me to let him know what objects are most desirable for the advancement of science, which, as you are aware, he is always anxious to promote; he has already sent considerable collections to the Norwich museum.

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March 27, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The Chairman read the following extract from a letter received from Francis Brent, Esq., of Sandgate, giving some further particulars regarding the destruction of the Conger eels by the late severe frosts. The letter was dated :—

Sandgate, 25th March, 1855.

You seemed to take some little interest in the account of the Conger Eels, so I will send you a few additional particulars. The *oldest* inhabitants recollect only two other occasions on which the fish in the sea were killed by the frost, one about thirty years and the other twenty-two years ago; indeed then the destruction was not nearly so great as during the present winter. Some of the eels were five and six feet long, and weighed between fifty and sixty pounds. One boat went out, and in three or four hours the crew picked up 800 eels. They were mostly found near a feeding-ground called the Diamond-bank, but were more or less all round the coast: some of the sailors here say, they have seen conger eels which had been killed by the cold floating in the North Sea, but never in the Channel. The only other fish that seem to have suffered were the mullet, many of which were found in Southampton harbour. Twenty-two years ago, the gurnets also were destroyed. The eels were all found with head and tail under water, part of the belly and vent at the surface, the whole fish bent almost into a circle. The fishermen say that the conger-eel is a very clean-feeding fish, and will only take live bait or flesh that is quite fresh. He feeds at night and near the surface of the sea, and some of the men attribute the destruction to the fact that the cold acted upon the creatures' *vents*, in proof of which they assert that the vents always presented a different appearance from the other part of the body, and that decomposition invariably commenced there. Others affirm, that the cold attacked the swimming-bladders, and so prevented the fish from sinking, and thus they perished from not being able to get into a warmer current of water than was to be found at the surface.

At first only a few of the fishermen would pick them up, as they said they were not fit for food; but some having been sent to London, a person there immediately telegraphed that he would purchase any quantity that could be procured, without reference to what state of freshness they were in. He boiled them down and made gelatine of them. It was, however, almost too late, for the wind changed almost immediately after his message was received, and the eels either sank from their air-bladders bursting or were carried out to sea.

Dr. Gray also stated that in a shallow pond in front of Lord John Russell's house in Richmond Park, all the freshwater fish, including carp, tench, roach, eels, and the frogs and toads, were killed by the frost in February 1855; and numerous specimens were rotting on No. CCLXXXVII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

the bank. He had observed the freshwater fish similarly killed in a pond near Beddington, Surrey.

Mr. Gould exhibited a small collection of birds from Scinde, being the first of his son's contributions to Indian ornithology, and remarked, that although there was nothing new among them, still they comprised several species which are of interest from the circumstance of their being rare both in India and in the collections of Europe.

The following is a list of the species :—

*Cypselus affinis*, Gray.  
*Suya lepida*, Blyth.  
*Certhilauda dumetorum*, Stanley.  
*Galerida Chendoola*, Blyth.  
*Calandrella brachydactyla*, Blyth.  
*Saxicola atrogularis*, Blyth.  
*Saxicola picata*, Blyth.  
*Pratincola indica*, Blyth.  
*Malacocercus caudatus*, Dum.  
*Ploceus Manyar*, Horsf.  
*Actitis hypoleuca*, Linn.  
*Sterna* — ? like *S. minuta*.

The following papers were then read :—

1. OBSERVATIONS ON THE SPECIES OF VOLUTES,—VOLUTIDÆ.  
 BY DR. J. E. GRAY, F.R.S., V.P.Z.S., P.B.S. ETC.

In the following observations I shall confine myself to the genera of Volutes which form the tribe of *Volutina*; they are particularly characterized by having the sides of the base of the siphon furnished with an auricle; the tentacula far apart, united together by a broad veil, forming a hood over the head; and the eyes situated far back, behind the base of the small tentacles.

I am induced to make these observations, founded on the magnificent collection of specimens in the British Museum collection, because, though Professor Schumacher, and Messrs. Swainson and A. and H. Adams have arranged the species of the family, the genera they have used have not been founded on any consideration of the modifications of the animal, but solely on the external conformation of the shells themselves. I have considered this revision the more necessary, as in more than one instance these authors have regarded as belonging to different genera, shells which I am inclined to believe are only varieties of the same species.

*I. The animals of the greater part of these genera have broad teeth, with a more or less lunate base, and with three large acute lobes at the apex.*

*1. Some of these animals are viviparous. The shell of the very young animal has a very large irregular callous tip, which forms a permanent nucleus to the shell. The foot is large, and without any operculum.*

## 1. YETUS.

The shell ventricose, covered with a horny periostraca, which is more or less covered in the different species with a polished shelly coat, deposited by the expanded mantle. The spire is short, and irregular; the aperture expanded.

The animal is large, compared to the size of the shell, when expanded. It is ovoviviparous; the young when born being of a large size, and covered with a shell with a large irregular callous apex. The foot is large, partly covering the shell, which is sunk into its substance. Operculum wanting.

Confined to the coast of Africa and the shores of the Mediterranean.

The best character for the distinction of the species of this genus depends on the extent which the mantle covers the shell, shown in the shells themselves by the size of the polished coat. Unfortunately, the original surface, indicating the extension of the mantle over the surface of the shell, in this and other genera of this family, is often destroyed in cabinet specimens, even in the most recently-formed collection, which greatly deteriorates from their scientific value, and great care should be taken to observe that the specimens desired to be determined have not been injured in this respect.

Mr. Adams, by some oversight, observes, when referring to this genus, "These shells are *uniform* in colour, sombre, covered with an *epidermis*, and with a *deciduous* nucleus." (Genera, 159.) Several species are marbled; some have the epidermis covered with a glassy coat; and I am not aware that any shell has the nucleus deciduous, much less this genus, when they are enclosed by the older whorls.

A. *The only species found in the Mediterranean has a narrow deep channel near the suture; the shell is one-coloured, and the left side of the mantle and inner lip of the shell is much expanded over the last whorl.*

## 1. YETUS OLLA.

*Voluta Olla*, Linn.

*Voluta papillaris*, Gmelin.

*Cymbium Olla*, Menke, Adams, 150.

*Cymba Olla*, Brod., Sow. Spec. Conch. 7. f. 1 a, b, c, d.

*Cymbium papillatum*, Schum. 237.

*Hab.* Mediterranean.

B. *The species found on the coast of Africa have a broad wide channel on the suture of the shell. They may be divided into three groups:—*

\* *The left side of the mantle and the inner lip of the shell rather expanded; the shell is mottled.*

## 2. YETUS NAVICULA.

Spire short.

*Voluta Navicula*, Gmelin.

*Voluta Pepo*, Solander.

*Cymba Neptuni*, pt., Brod., Sow. Spec. Conch. f. 2 *a, b*.

*Cymbium Neptuni*, Menke.

*Hab.* W. coast of Africa ; Gambia.

### 3. YETUS CYMBIUM.

Spire subconic.

*Voluta Cymbium*, Linn.

*Cymbium Cisium*, Menke.

*Cymba Cimbium*, Sow. Gen. f. 2 ; Brod., Sow. Spec. Conch. f. 9  
*a, b, c, d*.

*Cymbium Cymbium*, Adams.

*Voluta rubiginosa*, Swainson, Exot. Conch. ; Wood, Cat. Supp.  
f. 23.

*Cymba rubiginosa*, Brod. f. 7 *a, b, c, d*.

*Cymbium rubiginosum*, Adams.

Var.  $\beta$ . Spire produced, conic.

*Cymbium gracile*, Adams.

*Cymba gracilis*, Brod. ; Sow. Spec. Conch. f. 8 *a, b, c, d*.

*Hab.* W. coast of Africa ; Gambia.

\*\* *The left side of the mantle and the inner lip of the shell much expanded over the last whorl ; the shell one-coloured.*

### 4. YETUS NEPTUNI.

*Voluta Neptuni*, Gmelin.

*Voluta Auguria*, Solander.

*Cymba Neptuni*, pt., Brod., Sow. Spec. Conch. f. 2 *c, d*.

*Voluta glans*, Gmelin.

*Cymba patula*, Brod., Sow. Spec. Conch. f. 4, 4 *b*.

*Cymbium patulum*, Adams.

*Cymba Tritonis*, Brod., Sow. Spec. Conch. f. 3, 3 *a, b*.

*Cymbium Tritonis*, Adams.

*Hab.* W. coast of Africa ; Gambia.

\*\*\* *The left side of the mantle very much exposed, and, like the inner lip, covering the whole outer surface of the shell ; shell plain-coloured.*

### 5. YETUS PROBOSCIDALIS.

*Philin*, Adans. Seneg. t. 3. f. 2.

*Voluta proboscidalis*, Lamk.

*Cymbium proboscidale*, Adams.

*Cymba proboscidalis*, Brod., Sow. Spec. Conch. f. 5 *a, b, c, d* ;  
Sow. Gen. f. 3.

*Voluta porcina*, Lamk.

*Cymbium porcinum*, Menke.

*Voluta Scapha*, Solander.

*Cymba porcina*, Brod., Sow. Spec. Conch. f. 6 *a, b, c, d, e, f, g, h, i, k*.  
Jun. *Voluta papillaris* v. *glans*, Gmelin.

*Hab.* W. coast of Africa ; Senegal ; Gambia.

2. The animals of the other genera are oviparous, the eggs being deposited in cartilaginous egg-cases like those of the other zoophagous mollusks. The shell of the just-hatched animal has a regular or subregular spiral tip.

A. The mantle of the animal is enclosed, and the inner lip of the shell is defined, or only slightly expanded.

a. Some have a ventricose shell, with a large expanded aperture, and five or six strong subequal plaits on the pillar. Foot large, and no operculum.

## 2. CYMBIUM. The Melons.

Shell ventricose, covered with a hard horny periostraca; the spire short, depressed, often sunken; aperture very large, expanded.

*Cymbium Indicum*, *C. tessellatum*, *C. Æthiopicum*, *C. Diadema*, and *C. armatum* are found in the Indian Ocean, and probably on the north coast of Australia; *C. Broderipii* at Manilla; *C. Miltonis* in Swan River, Western Australia; *C. Georginæ* and *C. umbilicatum* in Moreton Bay, on the eastern coast of Australia.

In 1833 I described and figured three new species of this genus in the Mollusca plates to Griffith's translation of Cuvier's 'Animal Kingdom,' under the names of *Melo Miltonis*, *M. Georginæ* and *M. Broderipii*. About the same time Mr. Broderip prepared an essay on the genus, which was printed some time after the above publication, as he refers to the species and figures. It was to appear in the 2nd part of Mr. G. B. Sowerby's 'Species Conchyliorum;' but this part was not published then. At Mr. Sowerby's death in 1854, Mr. Lumley, the second-hand bookseller, appears to have purchased the plates and text, as far as they had been prepared, from the executors of Mr. Sowerby, and published it on the 1st of March, 1855. This part contains the text without the figures of the genus *Melo*, the plates without the text of the genus *Cyclostoma*, and the plates and text of the genera *Amphidesma* and *Terebellum*.

† *Spire enclosed, unarmed.*

### 1. CYMBIUM MELO, Menke.

*Melo indicus*, Brod.; Adams.

*Voluta indica*, Gmelin.

*Voluta æthiopica*, var.  $\gamma$ , Born.

*Voluta Melo*, Solander.

*Voluta præputium*, Chemn.? (Junior).

*Hab.* Indian Ocean.

- †† *Spire exposed, not produced, surrounded with arched spines.*  
 § *Shell pale yellow, with two or three bands of square dark spots.*  
*Spines broad at the base, decumbent.*

2. CYMBIUM TESSELLATUM.

*Melo tessellatus*, Brod.

*Voluta tessellata*, Lamk. ; Swainson.

*Voluta Haustum*, Soland. MSS.

*Cymbium æthiopicum* β, Schum. N. S. 237.

*Melo tessellata*, Adams.

*Hab.* Indian Ocean.

- §§ *Shell brown or pale with angular brown lines ; spines spreading.*

3. CYMBIUM ÆTHIOPICUM, Menke.

Cinnamon-brown, sometimes two-banded.

*Cymbium coronatum*, Martini, iii. f. 784.

*Voluta Æthiopica*, Linn.

*Melo Æthiopicus*, Brod.

*Cymbium Æthiopicum*, Schum. N. S. 237 ; Menke.

*Melo Æthiopica*, Adams.

Var. β. Spines decumbent.

*Voluta Nautica*, Linn.

*Melo Nautica*, Brod. ; Adams.

*Cymbium Nauticum*, Menke.

*Hab.* Indian Ocean ?

4. CYMBIUM DIADEMA.

Chestnut, white-marbled. Spines short, rare.

*Melo Diadema*, Brod.

*Voluta diadema*, Lamk.

*Voluta amphora*, Soland.

? *Melo senticosa*, Adams.

*Hab.* Indian Ocean ?

5. CYMBIUM ARMATUM.

Orange, white-marbled. Spines elongate, straight.

*Melo armatus*, Brod.

*Voluta armata*, Lamk.

*Voluta Cithara*, Soland.

*Voluta ducalis*, Lamk.

*Cymbium ducale*, Menke.

*Hab.* Indian Ocean ?

6. CYMBIUM GEORGINÆ.

*Melo Georginæ*, Gray, G. A. K. t. 34, 1833.

*Melo mucronatus*, Brod. 1855.

*Melo mucronata*, Adams.

*Hab.* Moreton Bay ; Blackwood Bay ; Port Essington.

7. CYMBIUM UMBILICATUM.

*Melo umbilicatus*, Brod. ; Sow. Gen.

*Melo umbilicata*, Adams.

*Hab.* Moreton Bay.

These species, or rather presumed species, appear to be varieties of the same kind, peculiar to certain districts of the Indian Ocean. If we select certain specimens of each, they appear very distinct; but if a large number of specimens of different ages, from various localities, are arranged together, the differences gradually merge into each other, and it is difficult, if not impossible, to separate them from one another. In the younger specimens the spines are generally distinct and crowded; sometimes they enlarge more rapidly than the rest of the shell as it increases in size; in other specimens, after a time they suddenly cease to be developed, and the larger external whorls are not armed behind.

††† *Spire exposed, convex, large, crowned with numerous small, rather inflexed spines.*

### 8. CYMBIUM BRODERIPPII, Gray. Japan Melon.

White, with chestnut lines or spots; young shell concentrically sulcated; hinder part of the whorls near suture crenulate.

*Melo Broderipii*, Gray, G. A. K. 1833.

*Melo regius*, Brod. 1855.

*Hab.* Manilla. Japan, *Humphreys*.

†††† *Spire produced, conic, armed with compressed inflexed scales.*

### 9. CYMBIUM MILTONIS.

*Melo Miltonis*, Gray, G. A. K. t. 29, 1833:

*Melo cylindratus*, Brod. 1855.

*Hab.* Australia; Swan River.

b. *Shell ovate or fusiform, covered with a thin periostraca; aperture moderate.*

§ *Pillar with four or five strong well-defined plaits. Operculum none. Foot moderate.*

### 3. SCAPHA.

Shell ovate or fusiform. Periostraca thin, smooth. Spire conic; aperture moderate; inner lip smooth, defined, pillar 5- or 6-plaited. Operculum none.

† *Nucleus or shell of the very young animal very large, irregularly spiral.*

#### 1. SCAPHA MAMILLA.

Nucleus very large, subglobose, apex of spire lateral.

*Voluta mamilla*, Gray, Sow. Conch. Thes. 207. t. 50. f. 57, 58.

*Cymbium mamilla*, Adams, 159.

*Hab.* Australia; Van Diemen's Land.

#### 2. SCAPHA DUBIA.

Nucleus large, rather irregular-shaped, spiral apex acute.

*Voluta dubia*, Brod., Zool. Journ. iii. 81. t. 3. f. 1; Sow. Conch. Thes. 209. t. 55. f. 115.

*Fulguraria (Aurinia) dubia*, Adams, 166.

*Hab.* ———? Cab. Roussel.

†† *Nucleus large, pale, regularly spiral, crenulated.*

3. SCAPHA VESPERTILIO.

*Voluta Vespertilio*, Linn., Sow. Thes. Conch. t. 47. f. 15, 23; t. 51. 37.

*Cymbiola Vespertilio*, Swains. Malac. 317.

*Voluta pellis-serpentis*, Lamk.

*Voluta mitis*, Lamk.

*Cymbiola mitis*, Swains. Malac. 317.

*Voluta serpentina*, Lamk.

*Aulica vespertilio*, Adams, 161.

*Hab.* Indian Ocean; Amboina.

4. SCAPHA PULCHRA.

*Voluta pulchra*, Sow., Tank. Cat. t. 4. f. 2; Conch. Thes. t. 51. f. 62; Wood, Cat. Supp. f. 6.

*Aulica pulchra*, Adams; 161.

*Hab.* North-east coast of Australia; Heron Islands.

5. SCAPHA NIVOSA.

*Voluta nivosa*, Lamk., Sow. Conch. Thes. 200. t. 51. f. 63, 64.

*Aulica nivosa*, Adams, 161.

*Cymbiola nivosa*, Swains. Malac. 317.

*Hab.* Australia; Garden Island; Swan River.

6. SCAPHA NORRISII.

*Voluta Norrisii*, Sow. Conch. Thes. 201. t. 51. f. 65.

*Voluta nivosa*, Wagner.

*Aulica Norrisii*, Adams.

*Hab.* Australia; Dupuch Islands, on reefs at low water.

7. SCAPHA RUTILA.

*Voluta rutila*, Brod. Zool. Journ. ii. 30. t. 3; Sow. Conch. Thes. 200. t. 46. f. 5, 6.

*Voluta aulica*, Kiener.

*Aulica rutila*, Adams, 161.

*Hab.* N.E. coast of Australia; Raines Islet.

††† *Nucleus large, regularly spiral, smooth.*

8. SCAPHA AULICA.

*Voluta aulica*, Soland.; Sow. Tank. Cat. t. 3; Conch. Thes. 198. t. 46. f. 9, 10, 11, 12; Wood, Cat. Supp. f. 4.

*Aulica aulica*, Adams, Gen. 161.

*Hab.* Sooloo Islands.

9. SCAPHA DESHAYESII.

*Voluta Deshayesii*, Reeve, P. Z. S. 1854, p. 73 Moll. pl. 26.

*Hab.* Solomon's Island.

10. SCAPHA PIPERITA.

*Voluta piperita*, Sow. Conch. Thes. 199. t. 51. f. 62.

*Aulica piperita*, Adams, 161.

*Hab.* —? Cab. Norris (only one specimen known).



## 11. SCAPHA MAGNIFICA.

*Voluta magnifica*, Chemn., Sow. Conch. Thes. 200. t. 54. f. 103.

*Hab.* Australia, in estuaries. Port Jackson, in two fathoms water; Stutchbury.

## 12. SCAPHA JUNONIA.

*Voluta Junonia*, Chemn., Lamk., Sow. Conch. Thes. 197. t. 42. f. 44.

*Scaphella Junonia*, Swains. Malac. 318; Adams, 163.

*Hab.* Gulf of Mexico.

## 13. SCAPHA PUNCTATA.

*Voluta punctata*, Swains. Zool. Ill. 161; Sow. Conch. Thes. 198. t. 54. f. 89, 90; Wood, Cat. Supp. f. 19.

*Aulica punctata*, Adams, 161.

*Hab.* — ?

A single imperfect specimen in the British Museum.

## 14. SCAPHA LUTEOSTOMA.

*Voluta luteostoma*, Chemn. xi. f. 1708, 1709; Sow. Conch. Thes. t. 51. f. 59.

*Voluta chrysostoma*, Swains.

*Aulica luteostoma*, Adams, 161.

*Voluta imperialis*, var., Dillwyn.

*Hab.* Indian Ocean, Chemn.

†††† *Nucleus small, regularly spiral, smooth.*

## 15. SCAPHA COLOCYNTHIS, Gray.

*Voluta Brasiliانا*, Portland Cat.; Lamk.; Sow. Conch. Thes. t. 54. f. 98.

*Cymbiola Brasiliانا*, Swains. Malac. 317; Adams, 162.

*Cymbiola Colocynthis*, Swains.; Adams.

*Hab.* Brazils.

## 16. SCAPHA MAGELLANICA.

*Voluta ancilla*, Soland. MSS.; Sow. Conch. Thes. 203. t. 54. f. 101.

*Cymbiola ancilla*, Swains. 317; Adams, 163.

*Volutella ancilla*, Gray, P. Z. S.

*Voluta spectabilis*, Gmelin, S.N.

Female? *Voluta subnodosa*, Leach, Zool. Misc. i. t. 8; Sow. Conch. Thes. 203. t. 47. f. 24; Gray, Wood, Cat. Supp. f. 1.

*Voluta Magellanica*, Chemn., Sow. Conch. Thes. 204. t. 54. f. 99; D'Orb. Voy. v. 425.

*Cymbiola magellanica*, Swains. Malac. 317; Adams, 162.

Male? *Voluta gracilis*, Gray in Wood, Supp. 10. f. 2.

*Voluta Ceramica* β, Gmelin.

Var. β. Shell thicker, striated.

*Voluta tuberculata*, Gray, Wood, Cat. Supp.; Swains.; D'Orb. Voy. A. M. v. 426.

*Scaphella (Alcithoë) tuberculata*, Adams, 164.  
*Voluta Beckii*, Brod. Proc. Zool. Soc. 1836, 43.  
*Cymbiola Beckii*, Adams, 163.  
*Voluta festiva*, D'Orb. Voy. A. M. v. 426, not Lamk.  
*Hab.* Patagonia; Maghellan Straits.

## 17. SCAPHA FERUSSACII.

*Voluta Ferussacii*, Donovan, Nat. Rep. ii. t. 67, 1824; Sow. Conch. Thes. 203. t. 46. f. 7.  
*Voluta rudis*, Gray, Griff. A. K. xiii. t. 30. f. 1, 1833.  
*Cymbiola Ferussaci*, Adams, 163.  
*Hab.* — ?

††††† *Nucleus smooth, small, spiral, with the upper whorl rather swollen and irregular.*

## 18. SCAPHA PACIFICA.

*Voluta Pacifica*, Soland., Chemn.; Sow. Conch. Thes. t. 48. f. 25, 26, 27.  
*Voluta insularis*, Solander.  
*Scaphella (Alcithoë) Pacifica*, Adams, 164.  
*Cymbiola Pacifica*, Swains. Malac. 317.  
*Voluta arabica*, Gmelin.  
*Buccinum Arabicum*, Martyn.  
 Var.  $\beta$ . *Voluta elongata*, Swains. Exot. Conch.  
*Voluta gracilis*, Swains., Sow. Conch. Thes. t. 55. f. 117, 118.  
*Scaphella (Alcithoë) gracilis*, Adams, 164.  
 Var.  $\gamma$ . *Voluta fusus*, Quoy & Gaim. Voy. Astrol.  
*Scaphella (Alcithoë) fusus*, Adams, 163, 164.  
*Voluta tuberculata*, Sow. Conch. Thes. t. 50. f. 49, 50.  
*Cymbiola tuberculata*, Swains. Exot. Conch. t. 29.  
*Hab.* New Zealand.

## 19. SCAPHA MEGASPIRA.

*Voluta megaspira*, Sow. Conch. Thes. 208. t. 48. f. 31, 32.  
*Voluta lyriformis*, Kiener, Icon.; not Brod.  
*Scaphella (Alcithoë) megaspira*, Adams.  
*Hab.* — ? Mus. Cuming. Perhaps a variety of *S. pacifica*.

## 20. SCAPHA CONCINNA.

*Voluta concinna*, Brod. Proc. Zool. Soc. 1836, 43; Sow. Conch. Thes. t. 51. f. 66.  
*Voluta Lyræformis*, Kiener, Icon.  
*Hab.* — ?

## 21. SCAPHA FUSIFORMIS.

*Voluta fusiformis*, Swains. Bligh Cat.; Sow. Conch. Thes. 208. t. 54. f. 100.  
*Scaphella fusiformis*, Swains. Malac. 318.  
*Scaphella (Alcithoë) fusiformis*, Adams, 164.  
*Hab.* Van Diemen's Land.

§§ *Pillar lip with four or five strong subequal plaits in front, and some small ones behind. Operculum horny, distinct.*

## 4. VOLUTA.

Shell ovate, striated, covered with a thin periostraca; spire conic, nucleus small, cylindrical, regular, spiral, produced, brown; mouth elongate; inner lip parallel to outer; pillar with some (four to five) large oblique plaits in front and more transverse ones behind.

† *Outer lip thickened, reflexed; inner lip rounded.*

## 1. VOLUTA MUSICA, Linn.

Schum. 238; Adams, 165; Lamk.; Sow. Conch. Thes. 211. t. 49. f. 36, 43.

*Harpula musica*, Swains. Malac. 317.

*Voluta Thiarella*, Lamk.

*Harpula Thiarella*, Sow. Malac. 317.

*Voluta carneolata*, Lamk.

*Harpula carneolata*, Sow. Malac. 317.

*Voluta guinaica*, Lamk.

*Harpula guinaica*, Swains. Malac. 317.

*Voluta virescens* β, Dillwyn, R. S.

*Voluta lævigata*, Lamk.

*Harpula lævigata*, Swains. Malac. 317.

? *Voluta nodulosa*, Lamk.

*Harpula nodulosa*, Swains. Malac. 317.

*Voluta sulcata*, Lamk.

*Harpula sulcata*, Swains. Malac. 317; Sow. Conch. Thes. 212. t. 53. f. 87.

*Voluta plicata*, Dillwyn.

*Hab.* Jamaica; St. Vincent's.

## 2. VOLUTA EBRÆA.

*Voluta ebræa*, Linn.; Schum. N. S. 238; Adams, 165; Sow. Conch. Thes. 211. t. 54. f. 95, 96, 97.

*Harpula Hebræa*, Swains. Malac. 317.

*Hab.* Indian Ocean.

†† *Outer lip thickened, reflexed on the edge; inner lip thickened, compressed.*

## 3. VOLUTA POLYZONALIS, Lamk.

*Harpula polyzonalis*, Swains. Malac. 317; Sow. Conch. Thes. 212. t. 52. f. 77, 78.

*Voluta virescens*, Soland.

*Murex Cantinelosus*, Mus. Gevers.

*Voluta fulva*, Lamk.

*Harpula fulva*, Swains. Malac. 317.

*Voluta chlorosina*, Lamk.

Var.? β. *Voluta Pusio*, Swains.; Gray, Wood, Cat. Supp. f. 9; Sow. Conch. Thes. 213. t. 55. f. 119.

*Hab.* — ? Guinea, *Humphreys*.

††† *Outer lip rounded, not reflexed on the edge.*

4. VOLUTA VEXILLUM.

*Voluta vexillum*, Chemn.; Sow. Conch. Thes. 210. t. 50. f. 54, 55, 56.

*Harpula vexillum*, Swains. Malac. 317; Adams, 165.

*Voluta arausiaca*, Solander.

*Murex arausiacus*, Mus. Gevers.

*Hab.* China; Amboina.

5. VOLUTA LAPPONICA.

*Voluta lapponica*, Linn.

*Voluta indica*, Sow. Conch. Thes. 210. t. 51. f. 68, 69, 70.

*Harpula lapponica*, Swains. Malac. 317; Adams, 165.

*Hab.* Indian Ocean; China.

5. FULGORARIA.

Shell ovate, fusiform, striated and costated; spire conical; nucleus small, spiral; aperture elongate; inner lip slightly dilated; pillar with a central thickening, covered with many irregular oblique plaits; canal rather produced in front.

Operculum —? Animal —? Teeth —?

1. FULGORARIA CHINENSIS, Schum. N. S. 242.

*Voluta fulminata*, Lamk.; Sow. Conch. Thes. 209. t. 50. f. 51, 52, 53.

*Harpula fulminata*, Swains. Malac. 318.

*Voluta rupestris*, Gmelin, Dillwyn.

*Fulguraria fulgura*, Adams.

*Murex fulgora*, Martini, iii. f. 841, 942.

*Hab.* China; Japan.

§§§ *Front of the pillar with two or three small oblique plaits, and generally some small ones behind them.*

6. LYRIA.

Shell fusiform, longitudinally plaited; spire conic; aperture ovate; pillar-lip with numerous small plaits behind the two larger front ones.

Operculum —? Teeth —?

† *Aperture ovate; outer lip moderate, not toothed within; inner lip nearly smooth behind.*

1. LYRIA LYRÆFORMIS, Adams, 167.

*Voluta lyræformis*, Brod. Zool. Journ. iii. 83. t. 3. f. 3; Sow. Conch. Thes. 217. t. 49. f. 45, 46.

*Mitra lyræformis*, Swains. Zool. Illust. t. 54.

*Harpula lyriformis*, Swains. Malac. 318.

*Hab.* East coast of Africa.

2. LYRIA MITRIFORMIS, Adams, 167.

*Voluta mitriformis*, Lamk.; Sow. Conch. Thes. 216. t. 52. f. 81, 82; t. 55. f. 109.

*Voluta multicostata*, Brod. Zool. Journ. iii. t. 3. f. 2.

*Harpula mitræformis*, Swains. Malac. 318.

*Hab.* Australia; Java?

3. LYRIA NUCLEUS, Adams, 167.

*Voluta Nucleus*, Lamk.; Sow. Conch. Thes. 218. t. 55. f. 116.

*Voluta Perdicina*, Schubert & Wagner.

*Voluta harpa*, Wood, Cat. Suppl. 11. f. 26.

*Harpula Nucleus*, Swains. Malac. 318.

*Hab.* Australia.

4. LYRIA FESTIVA, Gray.

With a black spot on the front of the pillar, and another at the hinder part of the inner lip near the suture.

*Voluta festiva*, Lamk.; Sow. Conch. Thes. 218. t. 52. f. 79, 80, from Lamk. specimen, not D'Orb.

*Cymbiola festiva*, Swains. Malac. 317; Adams, 163.

*Hab.* East coast of Africa.

†† Aperture ovate; outer lip moderate, simple, without any internal rib; inner lip with numerous small grooves.

5. LYRIA COSTATA, Gray.

*Voluta costata*, Swains. Journ. Sci. xvii. 33; Sow. Conch. Thes. 215. t. 52. f. 71, 72.

*Voluta lyrata*, Humph. MSS.; Sow. Tank. Cat. n. 2140.

*Lyria lyrata*, Adams, 167.

*Voluta Anna*, Lesson, Zool. Illust.

*Harpula Harpa*, Swains. Exot. Conch.

*Hab.* Madagascar?

6. LYRIA DELESSERTIANA, Adams, 167.

*Voluta Delessertiana*, Petit, Mag. Zool. 1842, t. 52; Sow. Conch. Thes. 216. t. 52. f. 73, 74.

*Hab.* North coast of Madagascar, at Nosse-Bé.

††† Aperture narrow; outer lip thickened externally with a convex varix and a strong internal central rib; inner lip smooth.  
Enæta.

7. LYRIA (ENÆTA) HARPA, Gray.

*Voluta Harpa*, Barnes, Ann. Lyc. N. York, i. 139. t. 9. f. 4; Sow. Conch. Thes. 215. t. 55. f. 114.

*Lyria (Enæta) harpa*, Adams, 167.

*Hab.* Peru.

8. LYRIA (ENÆTA) CYLLENIFORMIS.

*Voluta Cylleniformis*, Sow. Conch. Thes. 214. t. 55. f. 112, 113.

*Lyria (Enæta) cylleniformis*, Adams.

*Hab.* —? Mus. W. Metcalf, Esq.

The shell is strongly spirally striated and costated.

## 9. LYRIA (ENÆTA) GUILDINGII.

*Voluta Guildingii*, Sow. Conch. Thes. 214. t. 55. f. 110, 111.

*Lyria (Enæta) Guildingii*, Adams.

*Hab.* St. Vincent's.

## 10. LYRIA (ENÆTA) CUMINGII.

*Voluta Cumingii*, Brod. Proc. Zool. Soc. 1832-33; Sow. Conch. Thes. 213. t. 55. f. 105, 106, 107.

*Lyria (Enæta) Cumingii*, Adams.

*Hab.* Central America; San Salvador; Gulf of Fonseca.

## 7. CALLIPARA.

Shell oblong, subcylindrical; spire short, nucleus small; mouth linear; inner lip —; pillar with two small plaits in front. Animal —? Operculum —?

## 1. CALLIPARA BULLATA, Gray.

*Voluta bullata*, Swains. Zool. Ill. ii. t. 15; Sow. Conch. Thes. 206. t. 53. f. 88; Adams, Gen. Moll. t. 17. f. 6.

*Harpula bullata*, Swains. Malac. 318.

*Hab.* Cape of Good Hope; Algoa Bay.

B. *Mantle lobes produced and partly covering the shell; inner lip produced over the body whorl. Pillar-folds: 4-5, large, distinct, oblique.*

## 8. VOLUTELLA.

Shell fusiform, smooth, more or less covered with a glassy coat (often artificially removed in cabinet specimens); spire conic, nucleus small or moderate, spiral; aperture ovate elongate, inner lip expanded, reflexed; mantle produced on the left side. Teeth —? Operculum none.

† *Mantle lobes largely expanded, entirely covering the spire, which is often covered with a callous deposit.*

## 1. VOLUTELLA ANGULATA, D'Orb.

*Voluta angulata*, Swains. Exot. Conch. t. 3, 4; Malac. 317; Sow. Conch. Thes. 202. t. 47. f. 13, 14; Wood, Cat. Supp. f. 21.

*Voluta Dufresni*, Donovan, Nat. Rep. ii. t. 67, 1824.

*Voluta narisa*, Wagner.

*Zidona angulata*, Adams, 161.

*Hab.* West coast of South America; Patagonia.

†† *Mantle lobes moderately expanded, covering the lower side of the spire, and leaving a callous band on the suture of the upper side; spire often crowned.*

## 2. VOLUTELLA SCAPHA, Gray, P. Z. S.

*Voluta Scapha*, Gmelin; Sow. Conch. Thes. t. 46. f. 12, t. 48. f. 35.

*Aulica Scapha*, Adams, Gen. Moll. 161.

*Voluta nobilis*, Soland.

*Hab.* China? Australia.

## 3. VOLUTELLA IMPERIALIS, Gray.

*Voluta imperialis*, Solander, Lamk., Sow. Conch. Thes. t. 54. f. 102.

*Voluta Vespertilio*, var., Born.

*Hab.* Philippine Islands; China.

## 4. VOLUTELLA CYMBIOLA, Gray.

*Voluta Cymbiola*, Chemn. x. f. 1385, 1386; Sow. Conch. Thes. t. 51. f. 75, 76.

*Voluta ducalis*, var. C, Lamk.

*Voluta flammula*, Goodall, Wood, Cat. Supp. f. 5.

*Melo (Ausoba) Cymbiola*, Adams, Gen. Moll. 160.

β.? *Voluta Corona*, Chemn. x. f. 1387, 1388, cop. Sow. Conch. Thes. t. 55. f. 120, 121.

*Voluta ducalis*, var.? Lamk.

*Voluta Æthiopica*, var. γ, Gmelin.

*Hab.* Amboina.

## 5. VOLUTELLA SOPHIA, Gray.

*Voluta Sophia*, Gray, Ann. N. H. ; in Stokes, N. Australia.

*Hab.* Australia, Endeavour Straits.

## 6. VOLUTELLA VOLVACEA, Gray.

*Voluta flavicans*, Gmelin.

*Voluta Scrofa*, Solander.

*Voluta Volva*, Chemn.

*Voluta volvacea*, Lamk.; Sow. Conch. Thes. 195. t. 46. f. 3, 4; t. 51. f. 60.

*Voluta modesta*, Wood, Cat. Supp. f. 24.

*Hab.* Australia; Port Essington.

††† *Mantle lobes moderately expanded, not covering the spire; suture simple; spire not crowned.*

## 7. VOLUTELLA PAPILLOSA, Gray.

*Voluta papillosa*, Swains. Bligh Cat. ; Sow. Conch. Thes. 207. t. 48. f. 30.

*Scaphella papillosa*, Swains. Malac. 328.

*Scaphella (Alcithoë) papillosa*, Adams, 164.

*Hab.* Australia? ; Van Diemen's Land; Tiger Islands?

## 8. VOLUTELLA FULGETRUM.

*Voluta fulgetrum*, Sow. Tank. Cat. t. 4, 5; Conch. Thes. 207. t. 47. f. 33, 34; Gray, Wood, Cat. Supp. f. 3.

*Scaphella (Alcithoë) fulgetrum*, Adams, 164.

*Hab.* Australia; Port Lincoln; Torres Straits.

II. *The following genus has linear, acute teeth, with a narrow, angularly diverging base; the mantle enclosed? ; inner lip of shell*

defined; spire conic, nucleus small, regularly spiral. Operculum none. Animal oviparous.

## 9. AMORIA.

Shell fusiform, polished; spire conic, nucleus small, spiral; suture of whorls with a callous edge; aperture elongate; pillar with five oblique plaits in front.

† Spire smooth.

## 1. AMORIA TURNERI, Gray.

*Voluta Turneri*, Gray, Griffith A. K. t. 40. f. 1.

*Voluta pallida*, Gray, Griffith A. K. t. 30. f. 4; Sow. Conch. Thes. 196. t. 53. f. 91-94.

*Scaphella Turneri*, Adams, 164.

*Hab.* Australia; Port Essington.

## 2. AMORIA RETICULATA.

*Voluta reticulata*, Reeve, Sow. Conch. Thes. 197. t. 49. f. 47, 48.

*Scaphella reticulata*, Adams, 164.

*Hab.* Australia.

## 3. AMORIA UNDULATA, Gray.

*Voluta undulata*, Lamk., Sow. Conch. Thes. 196. t. 48. f. 28, 29.

*Voluta strangulata*, Muhlfield.

*Scaphella undulata*, Swains. Malac. 328.

*Voluta fluctuata*, Solander.

*Hab.* Australia; Van Diemen's Land.

## 4. AMORIA MACULATA.

*Voluta maculata*, Swains. Exot. Conch. t. 38; Sow. Conch. Thes. 196. t. 53. f. 85, 86.

*Scaphella maculata*, Adams, 163.

*Hab.* Australia.

## 5. AMORIA ZEBRA.

*Voluta zebra*, Leach, Zool. Misc. i. t. 12. f. 1, 1814; Sow. Conch. Thes. 195. t. 53. f. 84, 1822.

*Marginella radiata*, Lamk.

*Scaphella zebra*, Adams, 164.

*Hab.* Australia.

†† Spire nodulose.

## 6. AMORIA LINEATA.

*Voluta lineata*, Leach, Zool. Misc. i. t. 12. f. 2.

*Voluta zebra*, var., Dillwyn, Sow. Conch. Thes. 195. t. 53. f. 83.

*Hab.* North-east coast of Australia.

## 7. AMORIA? MARMORATA.

*Voluta marmorata*, Swains., Sow. Conch. Thes. t. 44. f. 8; Wood, Cat. Supp. f. 20.

*Aulica marmorata*, Adams, 161.

*Hab.* Australia.



There is a shell which has been described as *Volutilites abyssicola* by Messrs. Adams and Reeves, Voy. Samarang; Adams, Gen. Moll. t. 18. f. 8; found near the Cape of Good Hope; but it is very doubtful if it is not more nearly related to *Cassia* than *Voluta*; for the pillar lip is only marked with numerous faint rudimentary or obsolete plaits, and the shell is costately variced and deeply striated.

In the above list great attention has been paid to the country inhabited by the species, and no special habitat has been given unless specimens have been received directly from the locality recorded.

2. NOTE ON THE SIXTEEN SPECIES OF TEXAN BIRDS\* NAMED BY MR. GIRAUD OF NEW YORK, IN 1841. BY PHILIP LUTLEY SCLATER, M.A.

1. *ICTERUS AUDUBONII*, Giraud (no plate), is *Psarocolius melanocephalus*, Wagl. Isis, 1829, p. 750. A good figure and interesting account of this fine species is given by Mr. Cassin in his new work on the birds of California, Texas, Oregon, &c. pt. 5. p. 137. pl. xxi.

2. *MUSCICAPA TEXENSIS*, Giraud, pl. 1. This seems very like *Elania cayennensis* (Linn.), (which is included by Mr. Swainson in his Synopsis of the Birds of Mexico,) though rather larger in size.

3. *MUSCICAPA LAWRENCEII*, Giraud, pl. 2. fig. 1.

4. *MUSCICAPA FULVIFRONS*, Giraud, pl. 2. fig. 2.

5. *SYLVIA HALSEII*, Giraud, pl. 3. fig. 1. This and the two preceding species I do not recognise.

6. *MUSCICAPA DERHAMII*, Giraud, pl. 3. fig. 2, is *Muscicapa vulnerata*, Wagl. Isis, 1831, p. 520; *Setophaga vulnerata*, Bp. Consp. p. 313.

7. *MUSCICAPA BELLI*, Giraud, pl. 4. fig. 1. This bird I believe to be *Sylvia chrysophrys*, Licht. in Mus. Berol.; *Myiodiactes chrysophrys*, Licht. Nomencl. p. 32; *Basileuterus chrysophrys*, Bp. Consp. p. 314. But Mr. Giraud's name has many years' precedence, and it will therefore stand as *Basileuterus Belli* (Giraud).

8. *PARUS LEUCOTIS*, Giraud, pl. 4. fig. 2, is without doubt *Setophaga rubra*, Sw. Phil. Mag. 1827, p. 368, and has other prior synonyms.

9. *FRINGILLA TEXENSIS*, Giraud, pl. 5. fig. 1, is *Chrysomitris mexicana* (Sw.); *Carduelis mexicana*, Sw. Phil. Mag. 1827, p. 435.

\* Descriptions of sixteen new species of North American birds, collected in Texas, 1838, described in the 'Annals of the New York Lyceum of Nat. Hist.' by Jacob P. Giraud, Jun.—New York, 1841, 1 vol. fol.

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10. PIPRA GALERICULATA, Giraud, pl. 5. fig. 2 = *Euphonia elegantissima* (Bp.); *Pipra elegantissima*, Bp. Pr. Z. S. 1837, p. 112, and has other synonyms.

11. MUSCICAPA LEUCOMUS, Giraud, pl. 6. fig. 1, is *Setophaga picta*, Sw. Zool. Ill. n. s. pl. 3.

12. MUSCICAPA BRASIERI, Giraud, pl. 6. fig. 2, seems to be the same as *Basileuterus culicivorus*, Bp. Consp. p. 313; *Sylvia culicivora*, Licht. in Mus. Berol., which in that case must be called *Basileuterus Brasieri* (Giraud).

13. MUSCICAPA RUBRIFRONS, Giraud, pl. 7. fig. 1. This very pretty bird is named in Bonaparte's Consp. p. 312, *Cardellina amicta*, Dubus; and a reference is given to that author's 'Esquisses Ornithologiques,' 1850, t. 25, which, unless I am much mistaken, is still unpublished. Be that as it may, Mr. Giraud's name has many years' priority, and the bird will stand as *Cardellina rubrifrons* (Giraud).

14. SYLVIA OLIVACEA, Giraud, pl. 7. fig. 2, is *Sylvia taniata*, Dubus, Bull. Ac. Brux. xiv. part 2. p. 104; Rev. Zool. 1848, p. 245. Mr. Giraud's name has the priority.

15. CErTHIA ALBIFRONS, Giraud, pl. 8, is *Salpinctes mexicanus*, Bp. Consp. p. 224; *Thryothorus mexicanus*, Sw. Zool. Ill. n. s. pl. 11.

16. ALAUDA MINOR, Giraud (no plate), is an *Otocorys*, probably the same as Wagler's *Alauda chrysolæma*, Isis, 1831, p. 530; *Otocorys chrysolæma*, Bp. Consp. p. 246. But there is much confusion at present among the American, as among the Old-World species of this genus.

I have thought it worth while to give the previous list of the Texan birds described by Mr. Giraud, and some remarks on their synonymy, as his book appears to be very little known on this side of the Atlantic. The only copy I have seen is that in the Society's Library, to which it was presented by the author. It will be observed that by far the greater portion of the species have been also noticed by European naturalists, though in some cases subsequently to Mr. Giraud's publication of them.

### 3. ON A NEW SPECIES OF THE GENUS TODIROSTRUM OF LESSON. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXXIV.)

TODIROSTRUM NIGRICEPS. Pl. LXXXIV. fig. 1.

*T. supra flavo-olivaceum: alis caudaque nigris; reatricibus et remigibus primariis stricte, secundariis autem et alarum tetricibus latius flavescente limbatis: pileo cum nucha et capitis lateribus nigris: subtus flavum; gutture et crisso albis: rostro pedibusque nigris.*



Wolf lith.

M. & N. Hanhart Imp<sup>r</sup>

- (1) TODIROSTRUM NIGRICEPS. *Scoter.*  
(2) \_\_\_\_\_ SPICIFERUM, *Lafr.*







J. Woodcut

M. & N. Henbert Imp.

THAMNOPHILUS METAPHYSICUS, &c.

Long. tota 3·4, alæ 1·5, caudæ 1·1.

*Hab.* Santa Martha in Nov. Grenada.

De Lafresnaye has given an account of the species of this peculiar South American genus of Tyrants in the 'Revue Zoologique' for 1846, p. 360. Bonaparte in his 'Conspectus' has rather extended the list; but his 4th and 5th species from Desmarest seem rather doubtful, and the *Muscicapa diops* of Temminck is, I believe, quite incorrectly stated to be identical with Hartlaub's *Todirostrum granadense*, and does not belong to this genus. There is also little doubt that *Todus melanocephalus*, Spix, is the same as *Todus cinereus*, Linn., and the first and third species of the Conspectus are therefore coequal. The latest additions to this genus are:—

1. *T. ruficeps*, Kp. in these Proceedings, 1851, p. 52 = *T. multicolor*, Strickl. Cont. Orn. 1852, pl. 85. fig. 2.—(*Todirostrum pectorale*, Kp. of the same page does not differ from Hartlaub's *granadense*.)
2. *T. chrysocrotaphum*, Strickl. Cont. Orn. 1850, p. 48. pl. 49.
3. *T. striaticolle*, Lafr. Rev. et Mag. de Zool. 1853, p. 58.
4. *T. fumifrons*, Hartl. Journ. f. Orn. 1853, p. 35; and
5. *T. rufilatum*, Hartl. l. c. 1855, p. 98.

The present elegant species I cannot identify with any of those previously described. It is a typical *Todirostrum*, and may be placed near *T. cinereum*, the type of the genus, from which it is easily distinguished by its pure black head, yellowish-olive back, and white throat. I obtained the only example of it I have yet seen from the MM. Verreaux, by whom it was received along with many other rare and valuable species from Santa Martha, on the north coast of New Grenada.

Mr. Gould has specimens of the *Todirostrum spiciferum*, Lafr. (Aves, Pl. LXXXIV. fig. 2), from Chamicurros in North-east Peru. This species, with its largely-developed crest, quite reminds one of the *Muscivora regia* (Gm.).

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April 10th, 1855.

Dr. Gray, F.R.S., Vice-President, in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF EIGHT NEW SPECIES OF BIRDS FROM  
SOUTH AMERICA.

BY JOHN GOULD, ESQ., F.R.S. ETC.

(Aves, Pl. LXXXIII.)

Before describing the following birds, all of which are in my own collection, I would remark, that I have submitted them to the in-

spection of Mr. P. L. Selater, who has paid much attention to South American birds, and who pronounces them new to science; I therefore embrace the earliest opportunity of placing them upon record.

### 1. *CAMPYLORHYNCHUS HYPOSTICTUS*, Gould.

General hue of the upper surface brown, the feathers edged with greyish-brown, producing a somewhat spotted appearance; from above each eye, down the side of the neck, an obscure streak of buffy-white; upper tail-coverts dark brown, fringed with reddish-brown; along the margins of the primaries a series of dark brown dots on a light brown ground; tail brown, with lighter edges dotted with dark brown like the primaries; under surface greyish-white, with a streak of light brown down the centre of each feather, small on the throat, gradually increasing on the abdomen, and assuming the form of bars on the flanks; under tail-coverts buff, barred with dark brown; irides red; bill light horn-colour; feet olive-brown.

Total length,  $8\frac{1}{4}$  inches; bill, 1; wing,  $3\frac{1}{2}$ ; tail,  $3\frac{7}{8}$ ; tarsi, 1.

*Hab.* River Ucayali in Peru.

*Remark.*—This species is very closely allied to *C. scolopaceus*, Spix, but differs in being of a rather larger size, in having a somewhat more curved bill, a more uniformly coloured back, and in the greater number and larger size of the brown markings of the under surface, which, moreover, extend on to the upper part of the neck and throat.

### 2. *CHAMÆZA NOBILIS*, Gould.

Head very dark brown suffused with rufous; upper surface, wings and tail-coverts rich reddish or saffron-brown; tail reddish-brown, crossed by a broad black band near the end, and slightly tipped with buffy-white on the centre feathers, and much more conspicuously on the lateral ones; lores fawn-colour; under surface white, the feathers of the breast broadly, and those of the centre of the abdomen narrowly bordered on the sides with brownish-black; on the flanks the latter hue increases to such an extent as to leave only a lanceolate stripe of the white down the centre of each feather; under tail-coverts buff, speckled with brown; above each eye a narrow streak of buff commencing a little in advance of the centre of the eye, and extending downwards as low as the nape; irides brown; bill black; feet reddish-brown.

Total length,  $9\frac{1}{2}$  inches; bill,  $1\frac{1}{8}$ ; wing,  $4\frac{1}{2}$ ; tail,  $2\frac{7}{8}$ ; tarsi,  $1\frac{3}{4}$ .

*Hab.* Chamicurros, on the eastern side of Peru.

*Remark.*—This is the largest and perhaps the finest species of the genus: its legs and feet are very powerful, its bill thick and strong, its tail very short and rounded, its wings concave, and its plumage offers that silkiness to the touch which is so characteristic of the members of the genus *Chamæza*, of which it forms in every sense a typical example.

### 3. *FORMICARIUS NIGRIFRONS*, Gould.

Band across the forehead black; crown, occiput and nape deep



chestnut; upper surface and wings rich brown; central primaries edged at the base with yellowish-brown; base of the inner web of the primaries and secondaries golden, showing conspicuously on the under surface, but not perceptible on the upper; the outer covert at the shoulder with a streak of ochreous-yellow along the margin of its outer web; tail brown at the base, gradually deepening into black at the tip; throat, neck and breast sooty-black; abdomen and under tail-coverts fuliginous-brown, assuming an olive tint on the flanks; irides brown; bill black; feet dark brown.

Total length, 7 inches; bill,  $\frac{7}{8}$ ; wing,  $3\frac{3}{8}$ ; tail,  $2\frac{1}{4}$ ; tarsi,  $1\frac{1}{8}$ .

*Hab.* Chamicurros, on the eastern side of Peru.

*Remark.*—About the same size and nearly allied to *F. Cayennensis*, but may be at once distinguished from that species by the bar of black on the forehead.

#### 4. FORMICARIUS ERYTHROPTERUS, Gould.

Head, upper and under surface and the tail black; feathers of the shoulders and mantle fringed with grey, giving it a scale-like appearance; those of the back fringed in a similar manner, but so narrowly as to be scarcely apparent; tail-coverts black, edged with rusty-red; extreme edge of the shoulder white; wing-coverts black, tipped with dark rust-red, forming first a narrow bar of red, and then a broad one of black; primaries rusty-red, largely tipped with black; secondaries rusty-red at the base, then black and tipped with rusty-red, the extent of the red increasing as the feathers approach the body; orbits naked and apparently red; bill black; feet fleshy-brown.

Total length,  $6\frac{3}{4}$  inches; bill,  $\frac{7}{8}$ ; wing,  $3\frac{1}{2}$ ; tail,  $2\frac{1}{2}$ ; tarsi,  $\frac{3}{4}$ .

*Hab.* Interior of Demerara.

*Remark.*—This is a very fine species. The specimen above described, which is the only one I have seen, is in my own collection.

#### 5. SCHISTOCHLAMYS SPECULIGERA, Gould.

Head, neck, breast, back, wings and tail black; base of the third, fourth and succeeding primaries white, forming a small conspicuous patch in the centre of the wing; lower part of the back, rump and upper tail-coverts grey; under surface of the wing, abdomen and under tail-coverts white; flanks grey, with a few black feathers interspersed on the sides of the chest; irides red; bill, legs and feet greenish.

Total length,  $6\frac{3}{4}$  inches; bill,  $\frac{3}{4}$ ; wing, 3; tail, 3; tarsi,  $\frac{7}{8}$ .

*Hab.* River Ucayali in Peru.

#### 6. THAMNOPHILUS CORVINUS, Gould.

The entire plumage deep black with the exception of the shoulders, on which is a broad mark of white; bill black; feet dark olive.

Total length, 7 inches; bill,  $1\frac{1}{8}$ ; wing,  $3\frac{3}{8}$ ; tail,  $2\frac{5}{8}$ ; tarsi,  $1\frac{1}{4}$ .

*Hab.* River Ucayali in Peru.

#### 7. THAMNOPHILUS MELANURUS, Gould. (Pl. LXXXIII).

Male.—Crown and sides of the head, crest, back, lesser wing-

coverts and tail, black; the wing-coverts tipped with white; remainder of the wing blackish-brown; throat and all the under surface white; bill black, becoming lighter at the base; feet olive-brown.

Total length,  $8\frac{1}{2}$  inches; bill,  $1\frac{1}{4}$ ; wing,  $3\frac{1}{2}$ ; tail,  $3\frac{1}{2}$ ; tarsi,  $1\frac{1}{4}$ .

Female.—Crown of the head, crest, upper surface of the body, wings and tail, chestnut; throat and chest white, passing into the mingled grey and sandy-red of the flanks; feathers clothing the thighs rusty-red tipped with white; bill blackish-brown; feet olive-brown.

*Hab.* River Ucayali in Peru; I have also received examples from Bogota. I must remark, however, that the specimens from the latter locality are somewhat smaller than those from Peru.

#### 8. THAMNOPHILUS HYPERYTHRUS, Gould.

Crown and sides of the head, all the upper surface and tail, slaty-black; wings brownish-black, with a spot of white at the tip of each of the coverts, forming three semicircular rows across the wing; chin, breast and abdomen rich dark chestnut-red, gradually blending on the flanks and vent into the dark hue of the upper surface; bill black; feet olive-brown.

Total length, 7 inches; bill, 1; wing,  $3\frac{1}{8}$ ; tail,  $2\frac{1}{2}$ ; tarsi, 1.

*Hab.* Chamicurros in Peru.

*Remark.*—I believe the above to be the description of a female.

## 2. NOTES ON THE HABITS OF SOME INDIAN BIRDS.

BY LIEUT. BURGESS. PART IX.

### Genus ARDEA.

#### Subgenus EGRETTA (Swainson).

#### ARDEA CABOGA. CATTLE HERON.

This active little Heron is abundant in the Deccan, and, as its name implies, is a constant attendant on cattle, running about amongst them, and picking off the flies that settle on them. I give the following from my note-book on their habits:—"Towards the end of November I observed a number of the common small White Heron feeding near some cattle, and the same day twenty or thirty others, and there were probably more feeding in fields of the toor plant; they appeared to be picking up food from the ground, and were in constant motion, frequently taking short flights from one part of the field to the other. I observed the same birds next morning sitting on a banian tree within the walls of a village; they quite whitened the top of the tree with their numbers.

"1st May, 1848.—Observed that the small White Heron has at this season of the year the fawn-coloured neck, and also that the long feathers falling over the breast are fawn-coloured.

"12th May.—Saw numbers of the small White Heron feeding amongst the sheep and along the grass plain at Khoonthephi.

“18th May.—Observed a flock of fifty-nine small White Herons in a ploughed field picking up the worms and insects brought out by last night’s heavy rain ; several of them were without the fawn-colour on the neck, head and breast.”

“8th May, 1849.—Saw five or six of the small White Heron feeding amongst cattle. They keep close to the animals whilst feeding, and I saw one evidently picking the flies off a bullock ; all these had more or less of the buff-colour on the neck. It is extremely amusing to observe these birds chasing flies, their long neck stretched out as they follow every turn and twist of the fly, which is seized immediately it has settled.”

The Cattle Heron breeds during the month of April, building in tall trees. The nest is composed of sticks, and contains four eggs of a pale greenish-blue colour,  $1\frac{8}{10}$  in. in length by  $1\frac{5}{10}$  in. in width. I obtained eleven eggs from one tree on which there were twenty nests. I do not know if it has been satisfactorily determined whether both sexes assume the buff head and neck during the breeding season.

#### Subgenus NYCTICORAX.

##### ARDEA NYCTICORAX. NIGHT HERON.

Is a tolerably common bird in the Upper Deccan, but from its habit of roosting during the day in thick lofty trees, which it leaves for the streams after dusk, is not often observed. Its harsh grating cry is heard in the early dawn as it returns to its hiding-places. I made several attempts to obtain its nest and eggs, but without success, neither could I learn its time of breeding ; however, I shot a young bird on 3rd December, with some down remaining on its head, which circumstance leads me to believe that they do not breed at the same time as others of the Heron tribe. Dr. Jerdon says, “it breeds on palm and other trees, many nests together.” The Night Heron of England, identical I believe with that of India, “builds in trees,” says Mr. Yarrell, “and lays four pale greenish-blue eggs, rather more than 2 in. in length by  $1\frac{1}{2}$  in. in breadth.”

#### Genus PLATALEA.

##### PLATALEA LEUCORODIA. WHITE SPOONBILL.

I have seen flocks of these birds on the river Godavery, and occasionally on the smaller streams. They breed during the month of April, building in tall trees on the border of a stream. I append a note on the subject:—“18th April, 1848. Found the White Spoonbill breeding in a peepul tree beside a stream. The nest was not, like those of the species of *Tantalus* and *Ibis*, built on the top of the tree, but on the outside branches, about two-thirds from the ground ; it was composed of sticks, and appeared small for so large a bird. It contained four eggs of a white colour, spotted with pale red, of much the same size as those of the *Tantalus leucocephalus*.” The egg is  $2\frac{6}{10}$  in. in length, by rather more than  $1\frac{7}{10}$  in.

in breadth. The gizzard of the male bird, which I shot rising from the nest whence the eggs were taken, was of a strong and rough texture, much like that of a fowl; it contained some bright yellow substance, a few small stones, a seed, and a few small particles of grass. Although the Spoonbill does not build its nest in the same situation as the *Tantalus* or *Ibis*, I quite agree with Dr. Jerdon that the Spoonbill shows more affinity to the Ibis than to the Herons, from the size and colouring of its eggs; and I believe that the more the study of oology is taken up, the more clearly will it be shown that birds may be nearly as well classed by the number and colour of their eggs and their mode of nidification, as by their external form and internal organization. The egg is white, with a belt of light red spots at the larger end.

### Genus CICONIA (Briss.).

#### CICONIA LEUCOCEPHALA (Jerdon). WHITE-NECKED STORK.

I have but seldom met with this handsomely-marked bird, but I was fortunate enough to find it in its breeding haunts, and to secure its eggs. On the 7th March 1850, I found a pair of these Storks breeding in rather a low peepul tree; the nest was composed of sticks, and contained four white eggs, nearly  $2\frac{5}{10}$  in. in length, by nearly  $1\frac{9}{10}$  in. in breadth. On the same tree a Black Vulture (*Vultur ponticerianus*) had also built its nest, containing one egg. In February I found young birds; when hatched, the beak and bare skin of the face are of a dull greenish-black, irides brown; the body is covered with light brownish fawn-coloured down, legs and feet dull brownish-orange. On one tree were two nests, each containing two young. The nests were composed of sticks, and built near the top of the tree, a tall Indian fig, the stem of which was partly within the walls of a village. These birds, I was informed, breed in the same tree every year.

### Genus TANTALUS (L.).

#### TANTALUS LEUCOCEPHALUS. PELICAN IBIS.

The Pelican Ibis, as it is called by Dr. Jerdon, is a common bird in the Deccan, frequenting rivers and tanks, and feeding, I believe, chiefly on fish. Its large size renders it remarkable, particularly during the breeding season, when the back and scapulars attain their particularly rich rosy tint. These birds are social, feeding in flocks. I was told by the natives of a village close to a tank frequented by them, and close to one of their breeding places, that when they fish in the tank they walk in the shallow water in line, driving the fish before them. In another village, about ten miles from the Godavery River, where there are a great number of large banian trees both outside and inside the walls, I found a community of these birds, which had built their nests on them, probably to the number of fifty. The trees inside the walls were as thickly

covered with nests as those outside, and the birds, which appeared docile and tame, did not mind the noise of the people passing beneath them. At the time that I visited the village, the young birds were all well-fledged, and most of them able to fly. The village people informed me that the old birds move off to the river in the very early dawn, and having caught a sufficient supply for their young, return about eight or nine o'clock. A second expedition is made during the afternoon. Some idea of the quantity of fish caught by these birds may be gathered from what the people told me, that quantities of fine fish were dropped by the old birds when feeding their young, and were eaten by them. A young bird of this species which I shot in Scinde, disgorged a large quantity of small eels. This Ibis breeds during the month of February. The nest is composed of small sticks, and is placed at the top of the trees. If there are many on the same tree, they are placed pretty close together. They lay three or four eggs, of a dull opaque white, nearly  $2\frac{6}{10}$  in. in length, by rather more than  $1\frac{8}{10}$  in. in width. The young birds are able to fly by the month of May. I kept a young bird which had dropped from the nest and broken its wing in my garden for three or four months. It was most gentle and quiet, occasionally only snapping its strong beak at any person it did not like. In a short time it recognized the person who fed it, and whenever he made his appearance it would walk towards him, uttering a piteous cry, flapping its long wings and bowing its head towards him. It was a most ludicrous sight, which many came to see. It was fed on fresh fish, and would not touch any that were at all tainted. Another young bird which I also kept, would devour the bodies of birds brought in for stuffing, and did not appear at all particular as to the quality of its food. The stomach of an old bird contained a grassy substance, the remains of fish, and what appeared to be the claw of a small crab. I give a description of a young bird taken on 20th April. The beak dark lead-brown, darkest at the base, which is very thick; the skin on the face and forehead the same blackish lead-colour; the feathers on the head brownish-grey; the feathers on the neck of an ashy-brown, mixed with down. Shoulders ashy, with light brown edges; scapulars much the same, with much lighter ash edges; the centres of the feathers darkest in colour; lesser wing-coverts brownish-black, with an ashy tinge and light ashy edges; larger coverts dark greyish-black; outer webs tipped with whitish ash-colour, and inner webs tinged with the same colour on the edges. Tertiaries much the same colour as the greater coverts, but tinged with rose-colour. Primaries and secondaries black, with green reflections; back beautiful pale rose-colour; upper tail-coverts dusky grey; tail-feathers twelve, black, with bright green reflections. The breast, belly and sides covered with beautiful white down, interspersed on the breast with some dark ash-grey feathers, and on the sides with white, tinged with delicate rose-colour; the whole of the back is also covered with beautiful down. This bird was evidently a nestling, the first feathers having scarcely grown enough to cover the body.

## Genus IBIS.

## IBIS PAPILLOSA (Temm.). WARTY-HEADED IBIS.

This Ibis is more common than the Black-headed, and is fond of open places, as well as the sandy shores of the larger streams and rivers. They are seen in flocks in the open country, picking up insects; the stomach of one which I shot contained nothing but the heads, legs, and wing-cases of locusts; that of a second was full of large grasshoppers, and a lizard; that of a third was filled with the *chrysalides*? of butterflies. At the approach of evening the Warty Ibis retires to thick trees to roost, uttering its loud and discordant cry. It breeds during the months of February, March, April, May and June, laying as many as three, and probably four eggs, of a pale bluish-white, slightly streaked and spotted with pale brown,  $2\frac{4}{10}$  in. in length, by nearly  $1\frac{7}{10}$  in. in width. I found the nest of this Ibis built on the top of a peepul tree (a species of Banian), and containing three young birds, in the month of March.

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April 24, 1855.

John Gould, Esq., F.R.S., in the Chair.

The following paper was read:—

1. ON SOME NEW OR LITTLE KNOWN SPECIES OF BIRDS IN THE  
DERBY MUSEUM AT LIVERPOOL.  
BY PHILIP LUTLEY SCLATER, M.A.  
(Aves, Pl. LXXXV.—LXXXVIII.)

The zoological collection of the late Earl of Derby, now at Liverpool, contains one of the largest and finest series of birds at present in existence, many of the examples being valuable not only for their rarity, but also as types of species described long ago by Latham in his 'General History' and other works, and which are hardly to be recognized without examination of the original specimens.

Mr. Thomas Moore, the present Curator, is busily engaged in arranging this mass of materials, and affords every facility to those who are anxious to inspect any of the objects committed to his care. Among the birds I have had an opportunity of examining there during a recent short visit are the following, which I venture to characterize as new.

1. CONIROSTRUM FERRUGINEIVENTRE, Sclater. (Pl. LXXXV.)  
*C. cærulescenti-schistaceum, pileo et alis caudaque intus nigri-*  
*cantibus: superciliis latis et elongatis albis: subtus intense*  
*ferrugineum aut ferrugineo-rufum.*  
Long. tota 4·9, alæ 2·75, caudæ 2·0.  
*Hab.* in Bolivia.











J. Wolf lith.

M. & W. Haubart del.

STRALLEN'S FINCH, THORNTON, 1887

This is a typical *Conirostrum*, and quite distinct, I think, from any species hitherto described. The members of this genus with which I am at present acquainted are—

1. *CONIROSTRUM CINEREUM* (Lafr. and d'Orb.); D'Orb. Voy. Ois. pl. 59. fig. 1. From Tacna in Peru and Sicasica in Bolivia.

2. *CONIROSTRUM RUFUM*, Lafr. Mag. de Zool. 1843. *Dacnis rufo-cinerea*, Bp. Atti 6<sup>ta</sup> Riun. Sc. It. 1845, p. 404, et Consp. p. 401. From Bogota.

3. *CONIROSTRUM SITTICOLOR*, Lafr. Rev. Zool. 1840, p. 102. *C. bicolor*, Less.; Gray's Gen. pl. 34. From Bogota.

4. *CONIROSTRUM ALBIFRONS*, Lafr. R. Z. 1842, p. 301; Mag. de Zool. 1843, Ois. t. 35 (from which, I believe, *C. atrocyanum*, Lafr. R. Z. 1848, p. 9, and *C. caeruleifrons*, Lafr. R. Z. 1842, p. 302, only differ in age or sex). From Bogota.

*Conirostrum superciliosum* of Hartlaub, R. Z. 1844, p. 215, and Bp. Consp. p. 402. sp. 5, is a true *Sylvicola* of Swainson, the same as *Parula mexicana*, Bp. Consp. p. 310, and has of course nothing to do with these birds.

The only other species that have been referred to this genus, as far as I am aware, are *Conirostrum ornatum*, Townshend, Ann. Lyc. New York, 1851, p. 112, pl. 5. fig. 1, from Texas (the same as *Ægithalus flaviceps* of Sundeval, according to Dr. Hartlaub), and the *C. fuscum* and *colombianum* of Lesson, Descr. d. Mamm. et Ois. pp. 273 and 274, none of which I have as yet recognized.

## 2. *SYNALLAXIS ERYTHROTHORAX*, Sclater. (Pl. LXXXVI.)

*S. fuscus, olivaceo-tinctus, capite obscuriore: gutture nigro-cinereo: alis extus, nisi parte apicali, tectricibus subalaribus et vitta lata pectorali rufo-castaneis: ventre medio cinerascete, lateribus brunnescenti-olivaceis: cauda brunnea: rostro nigro: pedibus brunneis.*

Long. tota 5·3, alæ 2·3, caudæ 2·5.

*Hab.* in America Centrali; Coban et Honduras.

Of this *Synallaxis*, which seems different from all other members of the genus that I am acquainted with, there is a specimen in the Derby Museum procured at Coban by Delattre in 1843. The British Museum contains an example from Honduras, and I have a single skin in my own collection purchased in Paris, which I believe to be from the same locality. The occurrence of species of this group north of the Isthmus of Panama seems hitherto unnoticed, except by the Prince Charles Bonaparte, in a list of a Guatemala collection of birds in these Proceedings for 1837, p. 118, in which he includes the *Synallaxis cinerascens* of Temminck (Pl. Col. 227. fig. 3). But the characters there given do not at all agree with Temminck's bird, and would seem more applicable to the present species. Besides, the true *Synallaxis cinerascens* is said to be from Brazil, and is not likely to occur also in Guatemala.

In my specimen of the present species the throat is slightly speckled with whitish.

3. *RAMPHOCÆNUS CINEREIVENTRIS*, Sclater. (Pl. LXXXVII.)

*R. olivaceo-brunneus*; *capitis lateribus rufis, spatio postoculari nigro*: *alis extus brunnescentibus*: *gutturæ albo, nigro-cinerascente striato*: *abdomine cinerascente, medialiter albescentiore, lateraliter autem olivascentiore*: *cauda nigricanti-fusca*: *rostri mandibula superiore nigrescente, hujus autem apice et mandibula inferiore albidis.*

Long. tota 4·0, alæ 2·0, caudæ 1·3.

*Hab.* in rep. Novæ Grenadæ, Pasto.

A third species of this peculiar genus, beautifully intermediate in colouring as in locality between the *Ramphocænus melanurus* of Brazil and the *rufiventris* of Central America. When I say a *third* species, I am perhaps doing an injustice to M. Lesson, who has already described a third and a fourth. But I have never seen the *Ramphocæni trinitatis*\* and *viridis*†, and indeed they are hardly likely to be recognized again from such meagre descriptions.

The *Ramphocænus cinereiventris*, of which there is only one example in the Derby Museum, was procured at Pasto, in the mountains of New Grenada, by the indefatigable Delattre. It is a rather shorter-billed bird than the other two to which I have compared it. Like *R. rufiventris*, it has the sides of the head rufous, but differs in showing a well-marked postocular spot. It is also striated on the throat like that species, but has no tinge of rufous on the abdomen, which is darkish cinereous. The tail of the specimen, I regret to say, is not quite perfect, but there is no appearance of the white markings which are the distinguishing characteristic of the Guatemalan bird.

The Derby Museum contains examples of *R. rufiventris* from Coban and Panama, and also specimens of *R. melanurus*. The latter species appears to extend from the Amazon, where Mr. Wallace collected specimens in the neighbourhood of Para, to South Brazil, where Prince Maximilian of Neuwied notices its occurrence under the name of *Troglodytes gladiator*, Beit. iii. p. 751.

4. *CYPHORINUS ALBIGULARIS*, Sclater. (Pl. LXXXVIII.)

*C. intense rufo-brunneus*: *alis extus obsolete nigro-fasciatis*: *cauda nigra, brunneo fasciata*: *capitis lateribus nigris*: *superciliis posticis et gutture toto pure albis*: *abdomine crissoque nigris, fasciis minutis albidis transvittatis*: *rostro nigro, tomis pallidis*: *pedibus nigris.*

Long. tota 5·75, alæ 2·7, caudæ 2·1.

*Hab.* in Isthmo Panama.

This fine large typical *Cyphorinus*, distinguishable by its pure white throat and dark closely-banded under plumage, is also due to the

\* Lesson, Rev. Zool. 1839, p. 42. *R. pileo rufo*: *dorso et alis brunneo-rufis*: *corpore infra niveo, lateribus griseis.*

† Lesson, Traité d'Orn. p. 377. *Vert-olivâtre en dessus, jaune en dessous!*



J Wolf lith

M & R Harlan del

*RAMPHOCORNIS VIRGIVENTRIS*, *Sclater*









researches of M. Delattre, by whom it was brought from the Isthmus of Panama. The only species I can find which resembles it in some degree is *Cyphorinus leucostictus*, Cab. Orn. Notiz. in Wieg. Archiv, 1844, p. 206; Schomb. Reise, iii. p. 673. sp. 37, from Mexico and Guiana; but that would appear to be a much smaller bird, and has the under parts from the chin to the belly white, with the sides and crissum reddish-brown.

Among the rare types in the Derby Museum is Mr. Eyton's *Dendrexetastes capitoides* (Cont. Orn. 1851, p. 76). This does not seem to me different from M. de Lafresnaye's *Dendrocolaptes temmincki* (Rev. et Mag. de Zool. 1851, p. 154. pl. 4), named about the same time, but I think the latter term has a slight precedence in point of date, and the bird will therefore stand as *Dendrexetastes temmincki*, if thought worthy of continuing to rank as a separate genus. The Derby Museum specimen is, to judge by its make, decidedly a Cayenne skin. The *Denrocolaptes temmincki* in the Leyden Museum is said to be from Bogota.

Upon examining Dr. Kaup's *Psaris fraseri*, of these Proceedings, 1851, p. 47, I found it the same as *Tityra albitorques*, Du Bus, Bull. Ac. Brux. 1847, xiv. pt. 2. p. 104; and his *Psaris parinus*, ib. p. 48, seems to me very closely allied to, if not identical with, *Pachyramphus atricapillus* (Gm.), Pl. Enl. 687. fig. 1.

I can also confirm what Dr. Hartlaub has said in Wiegmann's Archiv, 1854, that *Todirostrum pectorale*, Kp., of the same paper is *T. granadense*, Hartl., *T. ruficeps*, Kp. = *T. multicolor*, Strickl., and *Setophaga flammea*, Kp. = *S. intermedia*, Hartl. R. Z. 1853, p. 5. But in the two latter cases Dr. Kaup's names were first given, though from the long delay in publishing the Proceedings the others were first published.

When criticising other writers, it is proper also to mention my own mistakes; and I take this opportunity therefore of stating, that my *Tænioptera striaticollis* of these Proceedings, 1851, p. 193 (of which the Derby Museum contains examples), has been long ago named and figured in D'Orbigny's Voyage as *Tyrannus rufiventris*, p. 312. pl. 32. fig. 2.

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May 8, 1855.

G. R. Waterhouse, Esq., in the Chair.

Mr. Gould exhibited a portion of a collection of birds formed by Mr. Hauxwell in a district lying on the eastern side of the Peruvian Andes, in the neighbourhood of the River Ucayali, one of the tributaries of the Upper Amazon. Mr. Gould observed, that the exploration of this particular district had been one of the earliest

objects of his own ornithological ambition, but that until within the last few years no naturalist had visited it. The splendid collection sent by Mr. Hauxwell, of which the birds exhibited to the Meeting formed a part, fully bore out the anticipations entertained by Mr. Gould, that when explored it would prove one of the richest and most interesting ornithological districts with which we are acquainted.

Amongst the birds exhibited were some *Cotingas*, differing from the ordinary species found in the lower countries of Brazil, and remarkable from the splendour of their colouring, together with species of *Phoenicercus*, *Rhamphocelus*, &c., of the most dazzling brilliancy. As a contrast to these, Mr. Gould exhibited a series of dull-coloured *Thamnophili*, also contained in this collection, and remarked that this striking difference in the coloration of birds inhabiting the same locality was due almost entirely to their different degrees of exposure to the sun's rays; the brilliantly coloured species being inhabitants of the edges of the forests, where they fly about amongst the highest branches of the trees, whilst the others form a group of short-winged insectivorous birds, which inhabit the low scrub in the heart of the dense humid jungle, where the sun's rays can rarely, if ever, penetrate.

Mr. Gould also remarked, that the colours of the more brilliant species from the banks of the Ucayali, a district situated towards the centre of the South American continent, were far more splendid than those of the species representing them in countries nearer to the sea, and from this circumstance he took occasion to observe that birds from the central parts of continents were always more brilliantly coloured than those inhabiting insular or maritime countries. This rule applies equally to birds of the same species, the Tits of Central Europe being far brighter in colour than British specimens. Mr. Gould had observed that the like difference existed between specimens of the same species inhabiting Van Diemen's Land and the continent of Australia. He attributed this principally to the greater density and cloudiness of the atmosphere in islands, and countries bordering the sea; and in further illustration of the influence of light upon colour, he stated, that the dyers of this country are never able to produce tints equal in brilliancy to those obtained by their continental rivals, and that in England they never attempt to dye scarlets in cloudy weather.

The following papers were then read:—

1. DESCRIPTION OF A NEW SPECIES OF *RUTICILLA* FROM ERZEROU. BY JOHN GOULD, F.R.S. ETC.

*RUTICILLA ERYTHROPROCTA*, Gould.

Forehead black; crown of the head clouded silvery-grey; back, shoulders, throat, chest, and the upper part of the abdomen, jet-black; lower part of the abdomen, upper and under tail-coverts dull red; tail-feathers dull red, except the two middle ones, which are

brownish-black; wings both above and beneath brownish-black; some of the secondaries slightly fringed with silvery-grey; bill and feet black.

Total length,  $5\frac{1}{2}$  inches; bill,  $\frac{5}{8}$ ; wing,  $3\frac{1}{4}$ ; tail,  $2\frac{5}{8}$ ; tarsi,  $\frac{7}{8}$ .

*Hab.* Erzeroum.

*Remark.*—Nearly allied to, and about the size of, *R. Tithys*; but differing from that species in the under surface of the shoulder being darker, and the lower part of the abdomen being red instead of greyish-white.

In my own collection.

## 2. NOTES ON THE BIRDS OF WESTERN INDIA.

By LIEUT. BURGESS.

Family RALLIDÆ.

Genus FULICA, L.

FULICA ATRA. BALD COOT.

I found some of these birds breeding on the Singwa tank, situated about eighteen miles north of the station of Ahmednuggur, on 21st August, 1849. I obtained three eggs and three nestlings, which were marked as follows: head, neck, breast and back covered with bright orange-red, hair-like feathers; beak crimson, tip white; lower part of the back dark lead-colour, nearly black; near the beak the face was covered with bright scarlet pustules; irides brown; legs and feet dark lead-colour. The young birds swam with surprising rapidity. I was attracted at first by the unusual movements of the old birds, who swam backwards and forwards with great swiftness at some distance from the nest, showing great uneasiness, and when I was handling their young appeared quite distracted.

The egg is rather more than  $2\frac{1}{10}$  in. in length, by nearly  $1\frac{5}{10}$  in. in width, of a stone-colour, spotted with numberless small specks of brown, and some larger spots of dark brown and grey.

Family SCOLOPACIDÆ.

Genus SCOLOPAX.

Subgenus RHYNCHÆA (Cuv.).

RHYNCHÆA PICTA (Gray). PAINTED SNIPE.

I quite think that the Painted Snipe breeds in the Deccan, or at least some few of them, as I have had both male and female birds sent to me in the middle of July, which were shot near Ahmednuggur. The female was in remarkably rich and beautiful plumage. It is very probable that some breed annually in the rushy grounds bordering the large tank at Singwa.

Subgenus *SCOLOPAX*.

*SCOLOPAX NEMORICOLA*. SOLITARY SNIPE of the Neilgherries.

Dr. Jerdon in his Catalogue says, "It is a rare visitant to the Neilgherries during the cold season, and has not, as far as I am aware, been killed elsewhere in the Peninsula." I believe the Snipe mentioned in the following note, which I made at Nassick, to be the same bird:—

"Solitary, or rather, a very large Snipe, shot at Nassick by Lieut. Boddam of the Engineers: a very fine specimen; the plumage of a very dark dim colour, and the tints on the scapulars not very bright. Shot 5th January, 1847."

Family *CHARADRIADÆ*.Genus *CHARADRIUS*.

*CHARADRIUS PLUVIALIS*. GOLDEN PLOVER, L.

I have never met with this Plover in the Deccan, but shot them on the sandy plains near Kurachee in Scinde. Dr. Jerdon says, that it "is but rarely met with in the Peninsula. I have only seen it on two or three occasions on the banks of large rivers on the table-land, and on grass plains near the sea-coast, usually in small flocks of five or six. I have seen specimens killed in the neighbourhood of Madras in the breeding plumage, viz. with the whole under surface of the body deep black. It therefore most probably breeds in this country."

*CHARADRIUS MINOR*, Wagl. LESSER RINGED PLOVER.

I believe the egg sent with this paper to be that of the Lesser Ringed Plover; if so, this bird breeds in the Deccan in the month of April, laying its eggs on sand-banks in the middle of the larger rivers. The egg forwarded was from a sand-bank in the river Bheema. These pretty little lively birds are common in the Deccan, resorting to the beds of streams and sandy shallows and banks of rivers. They are difficult birds to shoot, being very restless, continually taking short flights, and running about with great activity along the water's edge; their food consists of worms, small shells and grass; they lay as many as three eggs I believe; the eggs are deposited on the bare sand. The egg is rather more than  $1\frac{1}{10}$  in. in length, by  $\frac{6}{10}$ ths of an inch in width, of a rich stone colour, spotted and streaked with grey and two shades of brown.

Genus *VANELLUS*.

*VANELLUS BILOBUS* (Gmel.). YELLOW WATTLED LAPWING.

I have had frequent opportunities of seeing this Lapwing on the open bare plains which it frequents, and have obtained specimens, but never to my knowledge succeeded in procuring its eggs, though

I have had the eggs of Plovers brought to me in numbers. Dr. Jerdon says, "I found the eggs of this bird on one occasion on a grass plain on the west coast in the month of September; they were of a light salmon colour with dusky spots, four in number, and laid on a slight depression of the ground." This Lapwing utters a plaintive cry when on the wing; it feeds on small beetles, white ants, &c., picking up small pieces of stone or crystal to assist the action of the gizzard.

VANELLUS GOENSIS (Lath.). RED WATTLED LAPWING.

This common Lapwing is as partial to water as the last-mentioned is to dry sandy plains; indeed I do not recollect ever to have seen it at any distance from water. It is very common in the Deccan, and may be easily recognized by its oft-repeated cry of—"Dick did *you* do it—Dick, Dick did you do *it*." As soon as March has well set in they pair, and the female commences laying; she generally chooses the banks of rivers and small streams. On a sand-bank in the midst of the river Bheema, one of the large rivers of the Deccan, I fell in with the nest of this bird—if a small heap of dry gravel with a hollow in it can be called a nest—it contained four eggs. During the breeding season these birds, vociferous at all times, become doubly so, acquainting every one with the fact that their nest is near. I have had their eggs brought to me as late as 19th May. On the 27th May a man brought me three young ones, apparently just released from their imprisonment; their plumage was as follows:—Irides dark hazel; wattles dark brown, nearly black; the whole body covered with down, that on the head and neck brown with spots of black; the front of the neck, breast and belly white; a black streak runs along the sides from the wing to the tail; on the nape of the neck there was a black patch, and another cravat-shaped patch of black on the fore part of the neck and throat; legs and feet dark lead colour.

This Lapwing, like many of the Sandpipers, has a curious fashion of elevating and throwing forward the head, much like the motion of bowing. It is equally active by night as by day, filling the air with its taunting cry of "Did *you* do it." If you should fire at and miss one of them, he goes off with, and his companions fly round you with the insulting cry of "Did you do it;" or, as Dr. Jerdon has it, "Pity to do it." The food of this bird consists of grass and small insects; it also picks up small pieces of crystal to help digestion. The egg varies much in size; one sent measures  $1\frac{3}{10}$  in. in length, by rather more than  $1\frac{2}{10}$  in. in width, of a yellow stone colour, spotted and dashed with grey and dark sepia. The egg marked 28 is of this bird.

Genus ŒDICNEMUS (Cuv.).

ŒDICNEMUS CREPITANS. THICK-KNEED PLOVER.

This bird is tolerably common amongst the stony hills and undulating grounds of the Deccan. It is more active by night than by

day, at which time its plaintive call is heard. I had for some time a young bird in my tent; during the day it used to remain quiet, but when evening began to draw on its restlessness commenced, and it used to run round and round the tent with great rapidity, uttering a single sharp querulous note. The Thick-knee feeds on small beetles and other insects, as also small particles of grass, taking down small stones to help the action of the gizzard, which is of a strong texture. They breed during the months of March and April, laying two eggs varying in colour, 2 in. in length, by rather more than  $1\frac{4}{6}$  in. in width, of a stone colour, blotched and spotted with dark sepia-brown, and a few under spots of dark grey. In some eggs the blotches are more of an olive-brown.

#### ÆDICNEMUS RECURVIROSTRIS (Swains.).

On the 5th April, 1849, I found two young birds of what I then took to be the young of *Ædic. crepitans*, on a large sand-bank in the middle of the river Bheema. At the same time I thought it a very strange place for a bird found in dry stony places to breed in. In March 1850, I shot a specimen of *Ædicnemus recurvirostris* on the same river, some distance higher up; I therefore think it most probable that they were the young of *Ædic. recurvirostris*, and not of *Ædic. crepitans*. Had I, at the time I found them, known that the former bird was to be found on that river, I should have examined carefully the shape of the bill. The testes in the male specimen shot in March were in a turgid state. I brought away the young birds above mentioned; one was much smaller than the other, but much more active. They were both, if I remember right, covered with a greyish down. For fear of their dying through not getting proper food, I returned them to their sandy hollow the next day. The gizzard of the full-grown bird contained the bones of some small animal.

#### GENUS TACHYDROMUS.

I believe the egg now exhibited to be that of the Courier Plover, *Tachydromus Asiaticus*. Two of them were found in a field in a slight hollow of the ground in the month of April. Of the breeding of this bird Dr. Jerdon says—"It breeds in the more retired spots during the hot weather, laying three eggs of a pale greenish-yellow colour, much blotched and spotted with black, and also with a few olive spots; they are deposited in a slight hollow." The Courier is abundant on the plains of the Deccan, frequenting sandy bare spots in flocks; they have a peculiar habit of running for a distance at great speed, then suddenly stopping and erecting the body, then starting off as before.

#### SUBGENUS GLAREOLA.

##### GLAREOLA ORIENTALIS (Leach).

I came across this pretty little Pratincole when shooting on a stony bank in the river Bheema. There were numbers of them





J. WOOD CUT.

M. & W. HANBART LITH.

ARREMON ERYTHORHYNCHUS *Aud.*







J. Wolf lith.

M. & N. Hanhart Imp<sup>s</sup>

TACHYPHONUS ZANTHOPYGIUS *Schulter*.

flying about like swallows, and as they mobbed me, I concluded that they had nests, but though I made most diligent search could not find any. I procured a pair of birds: the eggs in the ovaries of the female were large: the crop of the female was filled to a great size with a species of small black beetle. This occurred in the month of March.

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May 22, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF FOUR NEW OR LITTLE-KNOWN TANAGERS.  
By PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. LXXXIX.—XCII.)

1. ARREMON ERYTHORHYNCHUS, Sclater. (Pl. LXXXIX.)

*A. olivaceus*: capite nigro; vitta mediali verticis, nucha cervicisque lateribus cinereis; superciliis et corpore subtus albis: torque gutturali angusta nigra: lateribus cinerascentibus: campterio flavo: pedibus albis: rostro elongatiore, incurvo, rubro.

Long. tota 5·8, alæ 3·0, caudæ 2·7.

*Hab.* in Nova Grenada, Bogota.

I have to thank Mr. Gould for allowing me to describe this new *Arremon*, which is from his collection. It is closely allied to my *Arremon spectabilis* (P. Z. S. 1854, p. 114. pl. 67) from Quixos, but may be distinguished by its more lengthened incurved and brilliant orange red-bill, and the yellow bend of the wing.

2. TACHYPHONUS XANTHOPYGIUS, Sclater. (Pl. XC.)

*Tachyphonus xanthopygius*, Sclater, P.Z.S. 1854, p. 158. pl. 69 (♀).  
*Lanio auritus*, DuBus, Bull. Ac. Brux. Feb. 1855 (♂ et ♀).

♂ *niger*: tergo flavo: fascicula post-superciliari coccinea: carpo summo dilute flavo: tectricibus subalaribus albis.

Long. tota 6·1, alæ 3·5, caudæ 2·5.

♀ *nigro-cinereus*, subtus dilutior; axillis et tectricibus subalaribus albis: tergo flavo.

*Hab.* in Nova Grenada, Bogota.

I described the female of this fine Tanager at the meeting of this Society on the 25th of July last year. M. Parzudaki of Paris has lately received several examples of both sexes from Bogota. A pair of these passed into the hands of the Vicomte DuBus, by whom they were characterized as new in the Bulletins de l'Académie Royale

de Belgique\* for February last. A male bird from the same quarter has been kindly entrusted to me for examination before being deposited in the British Museum, where the female I originally named is also to be found. I cannot agree with the Vicomte DuBus in considering this species a *Lanio*, but, after seeing the male, am the more convinced that it is a true *Tachyphonus*.

3. TANAGRA NOTABILIS, Jardine. (Pl. XCI.)

*T. flavo-olivacea* : capite undique et mento nigris, macula nuchali triangulari, a dorso linea nigra divisa, flava : alis nigris cæruleo marginatis, tectricibus autem summis dorso concoloribus : cauda nigra, margine vix cærulescente : subtus læte aurantio-flava ; rostro pedibusque nigris.

Long. tota 7·2, alæ 3·7, caudæ 3·0.

*Hab.* in rep. Equatoriana.

Sir William Jardine has been so good as to lend me the types of this and the following species of Tanagers for examination. They were lately procured by Professor Jameson of Quito, during a botanical excursion along the eastern range of Cordilleras to the north of Quito, and are to be described with other rare birds, the product of the same or similar expeditions, in the forthcoming number of the new series of the Edinburgh New Philosophical Journal.

The present bird is a most brilliant fourth of the little section denominated *Compsocoma* by Cabanis, easily distinguished from the others by its yellow-olive back, triangular nape-spot, black chin and orange-yellow under-plumage, and may be therefore called *Compsocoma notabilis*, if that name is used generically. The other three species of this group are—(1) *Compsocoma victorini*, with its dark olive back and elongated nape-stripe, which is common in collections from Bogota ; (2) *C. sumptuosa* (Arch. du Musée Paris., vii. p. 379. pl. 23), with the back black and uropygium olivaceous, from Trans-andean Ecuador—the same locality as the present—and Peru ; and (3) *C. flavinucha*, a rare species in collections, which seems confined to Bolivia, where d'Orbigny discovered it on the eastern slope of the Andes of the province of La Paz.

4. SALTATOR ARREMONOPS, Jardine. (Pl. XCII.)

*S. rufo-brunneus*, olivaceo parum tinctus, pectore multo clariore et rubescentiore : capite toto mentoque nigris ; vitta mediali verticis et superciliari utrinque postice elongatis cum medio ventre cinereis : alis intus et cauda nigricantibus : rostro et pedibus nigris.

Long. tota 7·25, alæ 3·2, caudæ 3·5.

*Hab.* in rep. Equatoriana.

This peculiar Tanager in style of plumage and general habit cor-

\* The article is entitled " Note sur quelques espèces inédites d'Oiseaux." The *Nemosia torquata* therein described (sp. 10) is my *Dacnis pulcherrima*, Rev. et Mag. de Zool. 1853, p. 480—(a true *Dacnis* to my mind) ; and, is not *Vireosylbia frenata*, DuBus, sp. 1, the same as *V. altiloqua*, Vieill.—Cassin, Birds of Cal. pl. 37. p. 221—and *Phyllomanes mystacalis*, Cab. Wieg. Arch. 1844, p. 348 ?



lith.

M. & N. Hanhart Imp<sup>r</sup>

TANAGRA NOTABILIS. *Jardine*













1.2.3. SCOLANTHUS SPHÆRÔIDES. 4. ACTINIA PALLIDA. 5.6.7. ACT. ORNATA.

8. ACT. ORNATA. Var.

responds most closely with the members of the genus *Arremon*, but the bill is altogether abnormal, the upper mandible swelling in the middle and overlapping the under, as in the genus *Lanio*, though not developed into a decided hook. But the bill is much shorter, broader and deeper than in the last-named genus, and has more general resemblance to that of some of the *Saltatores*. The wings are very short, but the only skin sent belonging to a bird in moult, the comparative length of the remiges cannot be determined.

## 2. DESCRIPTION OF A NEW SEA ANEMONE.

By E. W. H. HOLDSWORTH, F.Z.S.

(Radiata, Pl. V.)

The species now to be described must be separated from the true *Actiniæ*, and may be well placed in the genus *Scolanthus*, which was proposed by Mr. Gosse for the reception of an animal obtained by him at Weymouth, and which presented the very distinctive characters of a perforated base, and the absence of a terminal adhesive disk. A description of that species will be found in the 'Annals of Natural History' for the year 1853, p. 157. These points of difference are accompanied, as might be expected, by a variation in habits, and the members of the genus will be found living buried in mud or sand, into which they retire on being alarmed, their extraordinary powers of inversion enabling them to hide at some little distance below the surface.

### SCOLANTHUS SPHÆROÏDES. (Pl. V.)

This species, which I found tolerably abundant at Seaford, near Beachy Head, has, in expansion, the body lengthened and cylindrical, regularly striated longitudinally with fine transverse markings, the upper part sparingly covered with sucking-glands, not arranged in any definite order. Disk flat and even, but little exceeding the diameter of the body. Tentacula numerous, in three or four irregular series, the inner one containing from nine to twelve; these are the longest, and measure, when fully extended, about half an inch, or two-thirds of the breadth of the disk; the outer row consists of from fifty to sixty tentacula of the same slender tapering form as the inner ones, but are one-third shorter, the other series being intermediate in size and number. The body tapers a little posteriorly and terminates with a rounded base, having a distinct central perforation. When closely contracted, the two ends of the body are nearly alike, and the animal assumes the appearance of a more or less flattened sphere or bead, the resemblance to which is much increased by the presence of the terminal orifices.

The colour of the body is a dirty-white, and the upper portion is generally covered with particles of sand or mud adherent to the sucking-glands surrounding that part, and which help to conceal the animal when contracted, as is found to be the case with *Act. crassicornis*, and probably other species under similar circumstances. The mouth opens transversely, and from it very delicate white lines radiate

to the bases of the tentacula, interspersed with two or three shades of brown in the form of stripes or spots: in some specimens a circle of very pale spots with darker margins surrounds the mouth. The base of each tentaculum is very dark and is surmounted by a broad band of white or buff, the upper portion shading off to a clear pale pelucid brown, on which are three narrow distinct white rings, their breadth and the interspaces diminishing rapidly as they approach the tip. These animals are capable of assuming a great variety of shapes, and even when fully expanded sometimes elongate themselves to the extent of  $1\frac{1}{2}$  inch, or contract to little more than a  $\frac{1}{4}$  of an inch. They feed readily in confinement; but those that had buried themselves in the sand appeared best able to secure their prey when placed within reach, the others on the surface often tumbling over in their endeavours to get the food into a proper position for swallowing, from not having the support of the surrounding sand or mud natural to them when buried. They were all found near low water-mark, imbedded in the fine chalky mud which fills the crevices of the rocks at Seaford, their expanded disks being just level with the surface, but so nearly covered that only a faint star-like outline was visible; on being touched they instantly disappeared; and so great was their power of inversion and contraction, that on digging carefully, they were generally found about  $1\frac{1}{2}$  inch deep, and having that peculiar bead-like form which has suggested the specific name of *sphæroides*. There was usually a depth of 6 or 7 inches of mud below them, so that they could not have been fastened to the rock; and since I have had them at home, now nearly five weeks, they have not shown the least inclination to attach themselves to the gravel, or glass sides of the tank in which they are living; three of them have burrowed into some sand on which they were placed, but the others remain on the surface, and are but rarely contracted. Soft mud is probably their natural habitat, being the most easily penetrated, and I could find no traces of any of these animals in a considerable tract of sand only a few yards from the locality whence these were obtained.

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June 12, 1855.

W. Yarrell, Esq., in the Chair.

The following papers were read:—

1. ON TWO NEW SPECIES OF HUMMING BIRDS.  
BY JOHN GOULD, F.R.S.

I bring before the notice of the Meeting two species of beautiful Humming Birds, which I believe to be new to science: they belong to that section of the *Trochilidæ* to which the generic appellation of *Heliothrix* has been given: of this form only three species have





J. Wolf lith.

M. & N. Hanhart Imp.

PRION BREVIROSTRIS. *Gould.*  
 $\frac{1}{2}$  NAT. SIZE.

been previously characterized, namely *H. auritus*, *H. auriculatus*, and *H. Barroti*. One of these new species, for which I propose the specific name of *purpureiceps*, is nearly allied to *H. Barroti*, but differs from that bird in having a much shorter bill, in the blue of the head being of a paler purple, and in that hue not being confined to the crown, but extending some distance down the nape of the neck. This species was obtained from the districts near Popayan. The second species, for which I propose the name of *phainolæma*, has several characters in common with *H. auritus* and *H. auriculatus*; it differs, however, from both those species in the beautiful metallic-green colouring extending over the throat and front, as well as the sides of the throat. The two species may be described as follows:—

#### HELIOTHRIX PURPUREICEPS.

Male: Forehead, crown and nape beautiful purplish-blue; upper surface, upper tail-coverts, and upper and under wing-coverts beautiful golden-green; mark below the eye and ear-coverts black, terminating in a small blue tuft; below the black a streak of rich luminous green; wings purplish-black; central tail-feathers bluish-black; lateral tail-feathers, chin, throat, and under surface, pure white; bill black; feet flesh-colour.

Total length,  $4\frac{1}{8}$  inches; bill,  $\frac{5}{8}$ ; wing,  $2\frac{1}{2}$ ; tail,  $1\frac{3}{4}$ .

*Hab.* Popayan.

#### HELIOTHRIX PHAINOLÆMA.

Male: Head, upper surface, upper tail-coverts, upper and under wing-coverts rich golden-green, very brilliant on the head; wings purplish-black; four central tail-feathers bluish-black; lateral tail-feathers snowy-white; below and behind the eye a lengthened mark of black, terminating in a violet-blue tuft; chin, throat and sides of the neck rich luminous green; breast and under surface pure white; bill black; feet flesh-colour.

Total length,  $4\frac{1}{2}$  inches; bill, 1; wing,  $2\frac{3}{8}$ ; tail,  $1\frac{7}{8}$ .

*Hab.* River Napo.

## 2. ON A NEW SPECIES OF THE GENUS PRION.

BY JOHN GOULD, F.R.S.

(Aves, Pl. XCIII.)

Through the kindness of Mr. Yarrell, I have the pleasure of bringing to the Meeting a bird which I conceive to be a new species of *Prion*, captured on the island of Madeira, or on the neighbouring rocky islets called the Desertas. I also exhibit five other species (forming part of my own collection), which I consider to belong to the same beautiful group, and which were captured by myself during my voyages to or from Australia.

The entire series present a great similarity in the colour of their plumage, but a great diversity in the breadth or lateral development of

their mandibles, as well as in the fringe-like pectinations of the base of the upper mandible; this latter character being much more prominent in the larger than in the smaller species of the group, in which, indeed, it is almost obsolete, if not entirely absent. I consider the members of this genus to constitute a very distinct group among the Petrels, quite equal in point of interest and value to that of the *Thalassidromæ*. I have had many opportunities of observing the whole of them in their oceanic haunts, and did not fail to observe that every five or six degrees of latitude was frequented by a different and distinct species: they all inhabit the wide ocean, and rarely visit the land except for the purpose of incubation: they are often seen in immense flocks, and sometimes in multitudes: they never mount high in the air, but are altogether the most light, buoyant and fairy-like members of the great group to which they belong: their great stronghold is the temperate latitudes of the southern ocean, and until the occurrence of the present new species, I have never heard of one being found north of the equator. The species to which the Madeiran bird is most nearly allied, is that to which I have given the name of *P. Ariel*, and which I met with and shot in great numbers in Bass's Straits. It differs, however, in being smaller in all its admeasurements, in having a shorter, more swollen or robust bill, particularly with reference to the nostrils and the terminal hook of the upper mandible. For this new species I propose the name of

PRION BREVIROSTRIS. (Pl. XCIII.)

Upper surface delicate blue; edge of the shoulder, the scapularies, outer margins of the external primaries and the tips of the middle tail-feathers black; lores, sides of the head and all the under surface white, stained with blue on the flanks and under tail-coverts; bill light blue, deepening into black on the sides of the nostrils and at the tip, and with a black line along the side of the under mandible; feet light blue, the interdigital membrane flesh-colour.

Total length,  $10\frac{1}{2}$  inches; bill,  $\frac{1}{16}$ ; wing,  $6\frac{5}{8}$ ; tail,  $3\frac{1}{2}$ ; tarsi,  $1\frac{1}{4}$ .

3. DESCRIPTIONS OF SOME NEW SPECIES OF ANT-THRUSHES  
(FORMICARIINÆ) FROM SANTA FÉ DI BOGOTA.  
BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. XCIV.—XCVII.)

1. GRALLARIA HYPOLEUCA.

*G. supra ferruginea, loris albidis: subtus alba, lateribus magis cinerascens: tibiis et hypochondriis brunnescentibus.*

Long. tota 6·5, alæ 3·5, caudæ 1·8.

The collection of the Jardin des Plantes at Paris contains the only example I have yet seen of this bird, which appears to have escaped the notice of the French ornithologists. It is marked as having been received from Bogota in 1843 by M. Rieffer. Its form is typical, but in colouring it differs from all hitherto known members of the genus, though perhaps showing some resemblance to *Grallaria*







J. Wolf lth.

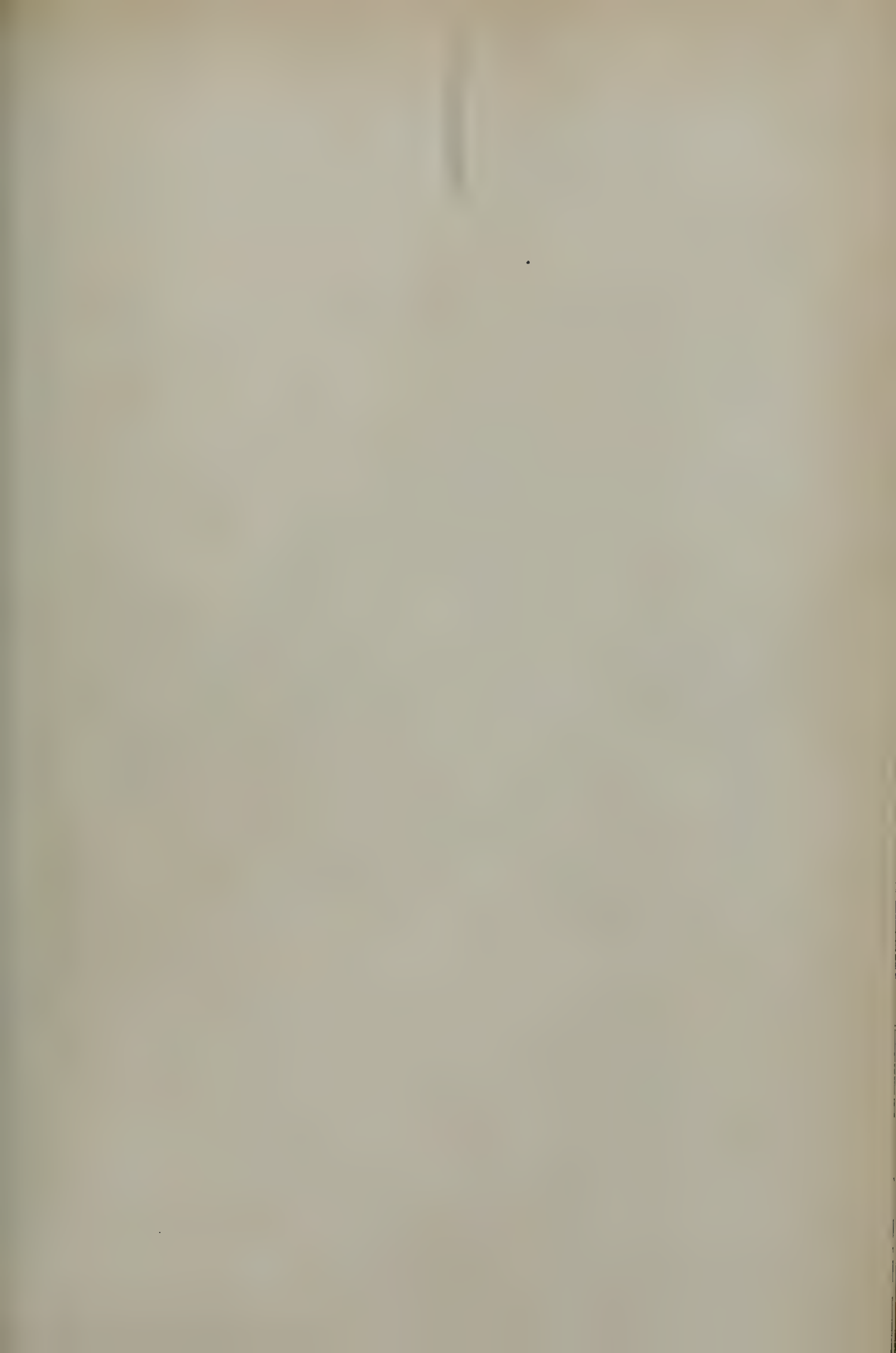
M. & N. Hanhart Imp.

GRALLARIA MODESTA. *Sclater*





CHAMÆZA MOLLISSIMA. Sciator.





*brevicauda*, (Bodd.) (Pl. Enl. 706. fig. 1), which is, however, much smaller. It is of a uniform ferruginous brown above and white below, passing into a cinereous tinge on the sides. Some brown colour is mixed with the feathers on the sides of the breast. The bill is black, the tarsi plumbeous; the thighs and the under wing-coverts brown.

## 2. GRALLARIA MODESTA. (Pl. XCIV.)

*G. supra intense brunnescenti-olivacea, alis caudaque nigricanti-brunneis olivaceo tinctis: subtus olivacea, flavescenti-albido flammulata; ventre medio flavescenti-albido: tectricibus subalaribus pallide castaneis: mandibula superiore plumbea, hujus apice et tomis et mandibula inferiore, nisi basi, albicantibus: pedibus pallide brunneis.*

Long. tota 6·2, alæ 3·2, caudæ 1·8, tarsi 1·75.

This is a rather uniformly-coloured species, of which the British Museum contains a single specimen. There are indications of darker marginations to the feathers of the nape and back. The breast feathers are medially yellowish-white, broadly margined with olivaceous.

## 3. CHAMÆZA MOLLISSIMA. (Pl. XCV.)

*C. supra brunneo-castanea, remigibus reatricibusque intus nigricantibus: capitis lateribus et corpore toto subtus nigris, albo dense transvittatis: uropygii plumis laxis, elongatis, densissimis: rostro Chamæzæ marginatæ simili sed minore.*

Long. tota 5·75, alæ 3·2, caudæ 2·5.

This peculiar Ant-thrush, of which there is one specimen in the British Museum, has the lower back very densely feathered, the coverts reaching to within an inch of the end of the rectrices. The wings are shorter than is usual in *Chamæza*—the 4th, 5th, 6th and 7th primaries being nearly equal in length, but the 5th rather the longest; the tail rather more lengthened; the formation of the feet is much the same.

Above the colouring is of a brown chestnut, rather darker towards the tail; the sides of the head and whole under-plumage are blackish barred with white, every feather having three or more transverse white bars. A slight tinge of castaneous is intermixed, particularly on the breast.

## 4. FORMICIVORA CALLINOTA. (Pl. XCVI.)

*F. olivacea; pileo summo et nucha nigris: loris, capitis lateribus, et corpore subtus ad imum pectus cinereis: abdomine pallide flavicanti-viridi: tergo læte castaneo, pennis quibusdam nigris supra marginato: alis nigris, carpo et tectricum marginibus flavis: secundariis et reatricibus olivaceo marginatis: rostro subulato, mandibula superiore nigricante, inferiore pallide plumbea: pedibus plumbeis.*

Long. tota 4·0, alæ 2·0, caudæ 1·7.

This is an exceedingly pretty species of *Formicivora*, distinguished

by the bright chestnut colouring of its lower back, above which, in the middle of the back, are a few black-tipped feathers, forming a small black patch. It must be placed next to the Brazilian *Formicivora maculata*, (Max.) (*Leptorhynchus striolatus*, Menetries, Mém. de l'Ac. St. P. 1835, pl. 10. fig. 2\*), with which it agrees in form and style of plumage. A single example of it is in the British Museum.

5. *DYSITHAMNUS SEMICINEREUS*. (Pl. XCVII.)

♂ *cinereus, pileo intensiore; subtus medialiter albicantior: dorso postico et remigum marginibus cum ventre imo olivascentibus: tectricibus alarum tenuissime albo limbatis: rostro pedibusque nigris.*

♀ *olivacea, pileo rufescente: gutture medio albo, lateraliter cinerascens: ventre flavicanti-olivaceo; mandibula inferiore basi albicante.*

Long. tota 4.5, alæ 2.4, caudæ 1.6.

In this apparently new *Dysithamnus*, of which the British Museum contains several specimens, the cinereous colour in the male occupies the whole upper plumage down to the middle of the back, where it gradually passes into olive, and the whole lower plumage down to the middle of the belly, where a like colour supervenes. The middle of the body beneath is much paler. The bill is rather longer than in *D. mentalis*, but the form is otherwise the same. The genus to which this bird belongs is certainly very closely connected with *Thamnophilus*, but I doubt whether that form can be divided even as a subfamily from the South American Ant-thrushes.

6. *PYRIGLENA TYRANNINA*. (Pl. XCVIII.)

♂ *nigricanti-cinerea, carpo summo et alarum tectricum marginibus albis: plaga dorsi medii interna nivea: subtus paulo pallidior, rostro et pedibus nigris.*

♀ *pallide brunnea, rufescente tineta; abdomine toto clare rufo: mandibula inferiore, nisi apice alba.*

Long. tota 5.2, alæ 2.5, caudæ 2.25.

A series of specimens in the British Museum clearly connect the somewhat dissimilar male and female of this species, which it is difficult to place satisfactorily in any of the present established genera of this family as far as I am acquainted with them, though without doubt a member of the group, with somewhat of a Tyrannine aspect. The characteristic white patch underneath the feathers of the back is well marked in both sexes.

\* M. Menetries has made this bird a second species of his genus *Leptorhynchus*, but I do not think it can be satisfactorily arranged along with the peculiar form which he has made the type of his genus; and the name *Leptorhynchus* being preoccupied, I propose to change it into *Psilorhamphus*. Type *P. guttatus*, mihi. (*Leptorhynchus guttatus*, Men. pl. 10. fig. 1.)









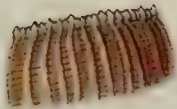
J. Wolf lith.

M & N Hancock Imp<sup>r</sup>

*PYRIGLENA TYRANNINA*, etc.







4. DESCRIPTIONS OF FORTY-SEVEN NEW SPECIES OF HELICEA,  
FROM THE COLLECTION OF H. CUMING, ESQ.  
BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXI.)

1. **HELIX CHAMISSOI**, Pfr. *H. testa imperforata, sublenticulari, tenui, superne irregulariter plicata striisque concentricis sub lente decussata, parum nitida, pallide straminea; spira brevissime conoidea; anfr. 4½ vix convexiusculis, sensim accrescentibus, ultimo non descendente, medio carinato, basi sublævigato, lutescente; apertura vix obliqua, angulato-lunari; perist. simplice, recto, acuto.*

Diam. maj. 9, min.  $7\frac{2}{3}$ , alt.  $4\frac{1}{2}$  mill.

*Hab.* Sandwich Islands.

2. **HELIX NEPOS**, Pfr. *H. testa perforata, turbinato-depressa, tenui, lævigata, nitidissima, pellucida, purpurascenti-fusca; spira magis minusve conoideo-elevata, vertice subtili, acutiusculo; sutura impressa; anfr. 5 convexiusculis, sensim accrescentibus, ultimo non descendente, basi modice convexo; apertura subverticali, late lunari; perist. simplice, recto, margine columellari subverticali, calloso, superne anguste reflexo.*

Diam. mag. 8, min. 7, alt. 5 mill.

*Hab.* Ceylon (Mr. Thwaites).

3. **HELIX SUBTECTA**, Pfr. *H. testa subobtecte perforata, conoidea, tenui, conferte striata, superne lineis impressis, spiralibus subgranulata, diaphana, pallide cornea; spira conoidea, apice obtusa; anfr. 6 convexiusculis, sensim accrescentibus, ultimo non descendente, periphæria compressæ carinato, basi convexo, sublævigato; apertura obliqua, rotundato-lunari, subangulata, intus nitida; perist. tenui, recto, marginibus vix convergentibus, basali arcuato, ad perforationem dilatato, subadnato.*

Diam. maj. 15, min.  $13\frac{1}{2}$ , alt. 9 mill.

*Hab.* Salomon's Islands.

4. **HELIX CONVEXIUSCULA**, Pfr. *H. testa perforata, globoso-turbinata, tenui, ruguloso-striata, pellucida, pallide cornea; spira cornea, apice obtusula; anfr. 5½ modice convexis, sensim accrescentibus, ultimo non descendente, periphæria obtuse carinato, basi convexo; apertura obliqua, rotundato-lunari, intus submargaritacea; perist. simplice, recto, marginibus vix convergentibus, columellari superne brevissimo reflexo.*

Diam. maj. 12, min.  $10\frac{1}{2}$ , alt.  $8\frac{1}{2}$  mill.

*Hab.* Ceylon (Mr. Thwaites).

5. **HELIX MOZAMBICENSIS**, Pfr. *H. testa perforata, trochiformi, tenuiuscula, confertim et oblique capillaceo-striata, sericea, fusco-fulva; spira conoidea, acutiuscula; sutura submarginata; anfr. 5 convexiusculis, lente accrescentibus, ultimo medio carina*

- compressa, albo munita, antice non descendente, basi convexiore; apertura diagonali, angulato-lunari; perist. simplice, acuto, margine columellari superne brevissime reflexo.*  
 Diam. maj. 12, min.  $10\frac{1}{2}$ , alt.  $6\frac{1}{2}$  mill.  
*Hab.* Tette, Mozambique (Peters).
6. **HELIX TEXTRIX**, Pfr. *H. testa umbilicata, depressa, tenui, striatula et subdistanter arcuato-plicata, diaphana, vix nitidula, pallide cornea, lineis angulosis rufis amæne picta; spira vix convexiuscula; anfr. 5 planiusculis, ultimo depresso, peripheria subangulato, antice non descendente, basi convexiore; umbilico conico,  $\frac{1}{4}$  diametri subæquante; apertura diagonali, subtriangulato-lunari; perist. simplice, recto, margine dextro antrorsum dilatato, columellari fere verticali.*  
 Diam. maj. 8, min. 6, alt.  $2\frac{1}{2}$  mill.  
*Hab.* Lord Howe's Island, New Hebrides (Macgillivray).
7. **HELIX IGNAVA**, Pfr. *H. testa umbilicata, depressa, solidula, oblique rugoso-striata striisque spiralibus subregulariter decussata, parum nitida, fulvo-lutescente; spira vix convexa; anfr. fere 4 convexiusculis, ultimo subdepresso, non descendente, prope suturam impresso, basi convexiore; umbilico conico,  $\frac{1}{3}$  diametri fere æquante; apertura diagonali, lunato-rotundata; perist. simplice, recto, marginibus conniventibus, columellari vix dilatato.*  
 Diam. maj. 7, min.  $5\frac{1}{2}$ , alt. 3 mill.  
*Hab.* Lord Howe's Island, New Hebrides (Macgillivray).
8. **HELIX CÆCILIA**, Pfr. *H. testa angustissime umbilicata, depressa, tenuiuscula, conferte capillaceo-plicata, parum nitida, cerea; spira plana, medio subimmersa; anfr.  $4\frac{1}{2}$  convexis, lente accrescentibus, ultimo non descendente, altiore quam lato; apertura parum obliqua, lunari; perist. simplice, recto, marginibus remotis, dextro superne leviter arcuato, tum substriato oblique descendente, columellari declivi.*  
 Diam. maj.  $4\frac{1}{2}$ , min. 4, alt. 2 mill.  
*Hab.* Lord Howe's Island, New Hebrides (Macgillivray).
9. **HELIX MATURA**, Pfr. *H. testa umbilicata, conoideo-lenticulari, tenuiuscula, acute carinata, striatula, saturate castanea; spira breviter conoidea, vertice pallido, obtusulo; sutura carina submarginata; anfr.  $5\frac{1}{2}$  vix convexiusculis, ultimo antice breviter deflexo, basi parum convexo, circa umbilicum latiusculum, conicum obsolete angulato; apertura perobliqua, subrhombæa; perist. albo, margine supero recto, antrorsum arcuato, basali intus late incrassato, fere dentato, columella breviter ascendente.*  
 Diam. maj. 20, min. 18, alt. 8 mill.  
*Hab.* Guadalcanar, Salomon's Islands. Pl. XXXI. fig. 10.
10. **HELIX YATESI**, Pfr. *H. testa umbilicata, conoideo-depressa, tenuiuscula, striatula et sub lente minutissime granulata, satu-*



rate castanea; spira breviter conoidea, obtusula; sutura vix impressa; anfr.  $4\frac{1}{2}$  planiusculis, sensim accrescentibus, ultimo acute carinato, antice subito perdeflexo, circa umbilicum medio-crem subinflato, antice profunde et late scrobiculato; apertura subhorizontali, piriformi-elliptica, lamella parietali longa, parum flexuosa, sublibera, angustata; perist. continuo, albo, undique soluto, margine supero subexpanso, basali medio dente conico munito, tum descendente et dentibus 2 divergentibus, basi lato junctis instructo.

Diam. maj. 24, min. 22, alt.  $2\frac{1}{2}$  mill.

β. Minor, fusco-cornea, umbilico paulo angustiore.

Hab. Banks of the river Solimoes, Brazils (Mr. Yates).

Plate XXXI, fig. 13, 14.

11. BULIMUS HOLOLEUCUS, Pfr. *B. testa imperforata, conico-ovata, tenuiuscula, striatula, nitida, subdiaphana, alba; spira convexiusculo-conica, apice obtusa; sutura anguste marginata; anfr. 5 convexiusculis, ultimo subrotundato; columella striata, vix obliqua, callosa; apertura fere diagonali, truncato-ovali, intus concolore; perist. breviter expanso, margine columellari dilatato, adnato, cum basali angulum distinctum formante.*

Long. 32, diam. 23 mill.

Hab. Philippine Islands.

12. BULIMUS YATESI, Pfr. *B. testa imperforata, fusiformi-oblonga, solida, lævigata, sub epidermide non nitente fusco-olivacea, fasciis nigris, maculis sagittæformibus luteis interruptis, picta; spira elongato-conica, obtusa; sutura leviter marginata; anfr. 8 convexiusculis, ultimo  $\frac{2}{5}$  longitudinis vix superante, basi attenuato; columella callosa, superne valde plicata; apertura subverticali, elliptico-oblonga, basi subangulata, intus cæruleo-albida; perist. incrassato, breviter expanso, marginibus callo sordide carneo junctis.*

Long. 82, diam. 32 mill.

Hab. Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 5.

13. BULIMUS CAPILLACEUS, Pfr. *B. testa imperforata, ovata, tenui, capillaceo-striata, fulva; spira ovato-conica, obtusissima; sutura albido-marginata, crenulata; anfr. 5 convexiusculis, ultimo inflato,  $\frac{2}{5}$  longitudinis æquante, subplicato, inter plicas dense striato et striis distantibus spiralibus obsolete decussato; columella rosea, recedente, vix plicata; apertura parum obliqua, oblongo-ovali, intus fulva, antice albida; perist. roseo, incrassato, reflexiusculo-expanso, margine columellari dilatato, fornicato, adnato.*

Long. 64, diam. 37 mill.

Hab. Banks of the river Solimoes (Mr. Yates).

14. BULIMUS BOGOTENSIS, Pfr. *B. testa anguste umbilicata, subfusiformi-oblonga, tenuiuscula, sublævigata, nitidula, albida, fasciis subinterruptis vel strigis subangulosis nigricantibus*

*picta; spira elongato-conica, acutiuscula; anfr. 7 convexiusculis, ultimo spiram subæquante, basi attenuato, non compresso; columella saturate violacea, leviter procedente; apertura vix obliqua, oblongo-ovali; perist. tenui, undique late expanso, patente.*

Long. 38, diam. 14 mill.

*Hab.* Santa Fé de Bogota.

15. *BULIMUS LACERTA*, Pfr. *B. testa compressæ subumbilicata, fusiformi-oblonga, tenui, plicatula et striis irregularibus spiralis oblongo-granosa, lutescenti-albida, strigis latis, obliquis, subramosis, fuscis variegata; spira convexo-conica, acutiuscula; sutura subfilomarginata, crenulata; anfr. 5 convexiusculis, ultimo spiram paulo superante, basi attenuato; columella fusca, valide oblique torto-plicata; apertura vix obliqua, sinuato-oblonga; perist. albo, expanso et reflexiusculo, margine dextro superne arcuato, tum substricto, columellari fornicato, flexuoso.*

Long. 33, diam. 14 mill.

*Hab.* Para (Mr. Yates). Pl. XXXI. fig. 15.

16. *BULIMUS SACCATUS*, Pfr. *B. testa compressæ umbilicata, ovato-pyramidata, tenui, leviter striatula, nitida, albida, fasciis 4-5 nigricantibus ornata; spira regulariter elongato-conica, apice acuta; anfr. 6 convexiusculis, ultimo spira brevior, rotundato, basi subsaccato, distinctius striato; columella violacea, superne levissime plicata; apertura subverticali, truncato-ovali, intus violaceo cincta; perist. pallido, dilatato, fere rectangule patente, marginibus approximatis, dextro superne perarcuato, columellari substricto.*

Long. 22, diam. 10 mill.

*β. Paulo gracilior, unicolor, albido-flavidus, columella et margine interno aperturæ violaceis.*

*Hab.* Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 2.

17. *BULIMUS PROTRACTUS*, Pfr. *B. testa profunde compressæ umbilicata, oblongo-pyramidata, tenuiuscula, confertim subarcuato-striata, albido-flavescente; spira protracta, apice acuti- uscula, nigricante; anfr. 7 parum convexis, ultimo spira vix brevior, antice breviter ascendente, fortius striato, basi subcompresso; columella subplicata, recedente; apertura vix obliqua, oblonga, basi effusa, intus alba vel pallide lilacina; perist. late expanso et reflexiusculo, margine columellari sinuato, per dilatato, patente.*

Long. 30, diam.  $11\frac{1}{2}$  mill.

*β. Minor, anfractu ultimo subangulato, margine dextro peristomatis magis curvato.*

*Hab.* Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 1.

18. *BULIMUS SERRATUS*, Pfr. *B. testa profunde rimata, subperforata, fusiformi, tenui, lævigata, albida, strigis spadiceis*

*remote serratis picta; spira conica, acutiuscula; anfr. 6 convexiusculis, ultimo spiram superante, antice subascendente, basi attenuato; columella compressa, leviter arcuata, sulco obliquo ab anfractu penultimo separata; apertura perobliqua, ampla, acuminato-ovali, intus pallide lilacea; perist. tenui, late expanso, margine columellari abrupte reflexo.*

Long. 27, diam. 11 mill.

*Hab.* Meobamba, Eastern Peru (*Mr. Yates*). Pl. XXXI. fig. 6.

19. *BULIMUS MUSIVUS*, Pfr. *B. testa profunde rimata, ovato-pyramidata, tenui, sublævigata, nitida, albida, strigis latis nigricantibus, subserratis, interdum confluentibus picta; spira conica, acutiuscula; anf. 6 planiusculis, ultimo spiram subæquante, basi saccato; columella leviter arcuata; apertura parum obliqua, ovali-oblonga, superne vix angulata, intus pallide lilacea; perist. tenui, dilatato, expanso, albo, marginibus fere contiguis, dextro superne valde curvato, columellari patulo.*

Long. 22, diam.  $9\frac{1}{2}$  mill.

*Hab.* Meobamba, Eastern Peru (*Mr. Yates*). Pl. XXXI. fig. 3.

20. *BULIMUS ARCUATO-STRIATUS*, Pfr. *B. testa profunde rimata, ovato-pyramidata, tenui, confertim arcuato-striata, albida, fasciis latis griseo-fuscis, strigatim interruptis, strigisque angulosis irregulariter picta; spira convexiusculo-conica, apice nigra, obtusiuscula; anfr. 6 modice convexis, ultimo spiram subæquante, antice subascendente, basi parum attenuato; columella vix plicata, subverticali; apertura parum obliqua, oblique truncato-ovali; perist. tenui, late expanso, margine dextro leviter arcuato, columellari fornicatim reflexo, patente.*

Long. 30, diam. 13 mill.

*Hab.* Peru.

21. *BULIMUS INCARNATUS*, Pfr. *B. testa compresse umbilicata, oblongo-conica, tenui, sublævigata, roseo-cærnea, strigis spadiceis irregulariter variegata; spira elongato-conica, acutiuscula; sutura levi, pallida; anfr. 7 planiusculis, ultimo spira paulo brevior, basi subcompressa; columella compressa, substrictè recedente; apertura vix obliqua, oblongo-ovali; perist. tenui, margine dextro breviter expanso, columellari late reflexo, patente.*

Long. 31, diam. 12 mill.

*Hab.* Venezuela.

22. *BULIMUS CUTICULA*, Pfr. *B. testa perforata, ovato-fusiformi, membranacea, striatula, haud nitente, diaphana, pallidissime cornea, fusculo punctatim strigata et niveo-punctata; spira conica, obtusula; sutura minute crenulata; anfr.  $4\frac{1}{2}$  convexiusculis, ultimo  $\frac{2}{5}$  longitudinis formante, infra medium fuscia pallida, superne fusco-marginata ornato, basi attenuato; columella subplicata, recedente; apertura parum obliqua, acumi-*

*nato-oblonga; perist. simplice, recto, margine columellari nitido, reflexo.*

Long. 28, diam. 13 mill.

*Hab.* Rio Janeiro.

23. *BULIMUS SINGAPORENSIS*, Pfr. *B. testa imperforata, ovato-turrita, tenuissima, lævigata, pellucida, pallide cornea, lineis fuscis longitudinalibus nonnullisque spiralibus infra medium anfractus ultimi notata; spira regulariter conica, apice acutissima; anfr. 9 convexiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, rotundato; apertura vix obliqua, ovali; perist. simplice, recto, margine columellari subcalloso, adnato.*

Long. 8, diam.  $4\frac{1}{2}$  mill.

*Hab.* Singapore.

24. *BULIMUS MEOBAMBENSIS*, Pfr. *B. testa imperforata, ovato-conica, solidula, confertim striata striisque spiralibus subgranulata, videnti-albida, fasciis interruptis nigris, strigis undulatis junctis et supra medium anfractuum maculis magnis nigris angulosis picta; spira conica, obtusa; anfract.  $6\frac{1}{2}$  convexiusculis, ultimo  $\frac{5}{8}$  longitudinis æquante, ventroso, interdum varicoso; columella compressa, albo-callosa, stricta, recedente; apertura obliqua, angulato-ovalis, intus margaritacea; perist. nigro limbato, vix expansiusculo, marginibus callo nigro-castaneo junctis.*

Long. 88, diam. 46 mill.

*Hab.* Meobamba, Eastern Peru (Mr. Yates).

25. *BULIMUS RECTILINEARIS*, Pfr. *B. testa subperforata, oblongo-pyramidata, tenui, levissime striatula, diaphana, albida, fasciis 3 rubicundis et 2 basalibus castaneis, albo-articulatis notata; spira elongato-conica, subrectilineari, apice aurantiaca, acutiuscula; anfr. 7 planiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, basi rotundato; columella subverticali; apertura obliqua, ovali-elliptica; perist. simplice, recto, margine columellari fornicato-reflexo.*

Long. 24 diam.  $10\frac{1}{2}$  mill.

*Hab.* Meobamba, Eastern Peru (Mr. Yates). Pl. XXXI. fig. 7.

26. *BULIMUS AMANDUS*, Pfr. *B. testa anguste perforata, oblongo-conica, tenui, sublævigata (sub lente exilissime spiraliter striata), diaphana, pallidissime rosea; spira elongato-conica, acutiuscula; anfr. 6 convexiusculis, ultimo spira paulo brevior, infra medium obsolete angulato, basi vix attenuato; columella arcuata, compressa; apertura obliqua, angulato-ovalis; perist. simplice, recto, acuto, margine columellari anguste et abrupte reflexo.*

Long. 30, diam.  $11\frac{1}{2}$  mill.

*Hab.* Venezuela. Pl. XXXI. fig. 4.

27. *BULIMUS MELANACME*, Pfr. *B. testa perforata, globoso-conica, solidula, sublævigata, alba, punctis obscuris pellucidis*

*raris aspersa; spira turbinata, apice acuta, nigra; anfr. 6 modice convexis, regulariter accrescentibus, ultimo spira paulo brevior, rotundato; apertura obliqua, truncato-ovali; perist. simplice, recto, margine columellari papyraceo, superne per dilatato, fornicatim reflexo.*

Long. 17, diam. 10 mill.

*Hab.* Tette, Mozambique (*Peters*). Pl. XXXI. fig. 8.

28. *BULIMUS PETERSI*, Pfr. *B. testa umbilicata, ovato-conica, solidula, confertim plicato-striata, parum nitida, griseo et pallide corneo variegata; spira elongato-conica, apice saturate cornea, obtusa; anfr. 6½ convexis, ultimo vix striatulo, ¾ longitudinis æquante, basi juxta umbilicum mediocrem, conicum subcompresso; apertura vix obliqua, oblonga; perist. simplice, recto, margine dextro leviter arcuato, columellari dilatato, patente.*

Long. 12½, diam. 6 mill.

*Hab.* Tette, Mozambique (*Peters*).

29. *BULIMUS JUVENILIS*, Pfr. *B. testa perforata, ovato-fusiformi, tenui, levissime striatula, haud nitente, pallide rubello-cornea; spira elongato-conica, apice acutiuscula; anfr. 6½ vix convexiusculis, ultimo spira paulo brevior, medio obsolete subangulato, basi attenuato; columella substricta, paululum recedente; apertura obliqua, ovali-elliptica, basi subangulata; perist. simplice, recto, margine dextro regulariter arcuato, columellari albo, nitido, sursum dilatato, fornicatim reflexo.*

Long. 20, diam. 8½ mill.

*Hab.* Santa Fé de Bogota.

30. *PARTULA STENOSTOMA*, Pfr. *P. testa umbilicata, dextrorsa, oblongo-conica, solidula, confertim striolata, nitida, fulva, fusco-subnebulosa, late castaneo bifasciata; spira elongato-conica, acutiuscula; sutura levi, albida; anfr. 5½ vix convexiusculis, ultimo spira brevior, basi subcompresso-rotundato; columella oblique procedente, superne leviter plicata; apertura parum obliqua, angusta, truncato-oblonga, callo dentiformi profundo anfractus penultimi coarctata; perist. calloso, albo, undique expanso et reflexiusculo, margine dextro superne sinuato.*

Long. 22, diam. 10⅓ mill.

*Hab.* — ?

31. *PARTULA MACGILLIVRAYI*, Pfr. *P. testa late et compressa umbilicata, conica, tenuiuscula, irregulariter striatula et sub lente striis spiralibus confertis sculpta, albida, strigis lutescentibus fasciisque obsoletis notata; spira elongato-conica, acutiuscula; anfr. 5 vix convexiusculis, ultimo spiram subæquante, antice subascendente, basi saccato; columella leviter arcuata, in fundo leviter plicata; apertura parum obliqua, truncato-oblonga; perist. albo, tenui, æqualiter subrectangule expanso.*

Long. 23, diam. 11 mill.

*Hab.* New Hebrides (*Macgillivray*).

32. *PARTULA SUTURALIS*, Pfr. *P. testa anguste perforata, oblongo-conica, tenui, spiraliter distincte striata, fulvo-lutea, strigis castaneis irregulariter picta; spira convexo-conica, acuta; sutura filo albo marginata; anfr. 5½ convexiusculis, ultimo spira vix brevior, superne subturgido, basi attenuato; columella subsimplice, fere verticali; apertura vix obliqua, truncato-oblonga; perist. albo, tenui, margine dextro anguste expanso, superne sinuato, columellari dilatato, fornicatim reflexo.*

Long. 19, diam. 9 mill.

*Hab.* — ?

33. *PARTULA REPANDA*, Pfr. *P. testa compresse umbilicata, ovato-conica, solidula, sub lente minutissime spiraliter striata, parum nitente, pallide lutescente, versus apicem interdum rosea; spira conica, acutiuscula; anfr. 5 modice convexis, ultimo spiram paulo superante, medio antice subimpresso, basi saccato; columella subverticali, superne subplicata; apertura parum oblonga; perist. albido, expanso, intus calloso, margine dextro repando, intus supra medium subdentato.*

Long. 17, diam. 9 mill.

*Hab.* New Hebrides.

34. *PARTULA MUCIDA*, Pfr. *P. testa perforata, ovato-conica, solidula, confertim spiraliter striata, castanea, griseo quasi mucida; spira elongato-conica, acuta; sutura levi, albida; anfr. 5 vix convexiusculis, ultimo spiram vix æquante, infra medium obsolete angulato, basi subsaccato; columella superne plicata; apertura obliqua, obauriformi; perist. carneo, rectangule æqualiter expanso, intus callo prominulo labiato.*

Long. 17½, diam. 8½ mill.

*Hab.* Pacific Islands.

35. *ACHATINELLA (LEPTACHATINA) OBCLAVATA*, Pfr. *A. testa subperforata, clavæformi, tenui, vix striatula, parum nitente, pallide cornea; spira elongata, apice obtusa; sutura linea impressa, filum crenatum formante, crenata; anfr. 7½ vix convexiusculis, ultimo ⅓ longitudinis paulo superante; plica columellari obliqua, subtorta; apertura verticali, oblonga; perist. simplice, margine dextro medio antrorsum dilatato; columellari angusto, subadnato.*

Long. 7¾, diam. 3 mill.

*Hab.* Sandwich Islands (*Dr. Newcomb*).

36. *ACHATINELLA (AURICULELLA) CHAMISSOI*, Pfr. *A. testa subperforata, oblonga, pyramidata, solidiuscula, striis spiralibus sub lente sculpta, epidermide fusca, obsolete strigata induta; spira elongato-conica, obtusiuscula; anfr. 7½ planiusculis, ultimo ⅔ longitudinis subæquante, basi subcompressa; apertura vix obliqua, auriformi; lamella parietali valida, extus deorsum ramosa; plica columellari levi, subtorta, alba; perist. albido, expansiusculo.*

Long. 8, diam. 3½ mill.

*Hab.* Sandwich Islands.

37. SPIRAXIS SUBCALLOSA, Pfr. *Sp. testa subfusiformi-oblonga, tenui, lævigata, nitida, pellucida, lutescenti-hyalina; spira conica, obtusa; sutura distincte marginata; anfr. 5½ convexiusculis, ultimo ⅔ longitudinis fere formante, basi attenuato; columella subcallosa, leviter torta, basi subtruncata; apertura verticali, angusta, acuminato-oblonga; perist. simplice, margine dextro antrorsum arcuato.*

Long. 14, diam. 6 mill.

*Hab.* Venezuela.

38. SPIRAXIS BARCLAYI, Pfr. *Sp. testa oblonga, tenui, lævigata, cornea; spira convexo-conica, acutiusecula; sutura levi, simplice; anfr. 5 convexiusculis, penultimo magno, ultimo spira paulo brevior, basi vix attenuato; apertura verticali, acuminato-oblonga; columella oblique et leviter bistorta; perist. simplice, recto, margine dextro superne sinuato, medio subangulatim antrorsum dilatato.*

Long. 9, diam. 4 mill.

*Hab.* Isle of France (Sir D. Barclay).

39. ACHATINA INÆQUALIS, Pfr. *A. testa ovato-oblonga, tenui, strigis et flammis luteis, fulvis et castaneis irregulariter picta; spira elongato-conica, obtusa; sutura superne crenulata, in anfractu ultimo funiculo pallido crenulato munita; anfr. 7 convexiusculis, superis granulato-decussatis, ultimo spiram vix superante, subrugato, ad suturam obsolete granulato, basi subattenuato; columella leviter torta, albida, oblique truncata; apertura verticali, angulato-ovali, intus cærulescente; perist. recto, margine dextro fusco-limbato.*

Long. 78, diam. 38 mill.

*Hab.* Fernando Po.

40. ACHATINA CHRYSALLIS, Pfr. *A. testa oblongo-turrita, solidula, striatula, ad suturam linearem arcuato-plicata, pallide lutescente; spira subcylindræa, apice conica, obtusa; anfr. 10 planiusculis, ultimo ⅓ longitudinis subæquante, basi rotundato; columella callosa, basi abrupte truncata; apertura verticali, sinuato-semiovali; perist. recto, margine dextro arcuato, intus subincrassato.*

Long. 9, diam. 3½ mill.

*Hab.* Sandwich Islands.

41. ACHATINA YATESI, Pfr. *A. testa turrita, tenuiuscula, leviter striatula, diaphana, cerea; spira regulariter attenuata, obtusa; sutura profunda; anfr. 7 convexis, ultimo ¼ longitudinis vix superante, infra medium subangulato; columella arcuata, oblique distincte truncata; apertura vix obliqua, ovali-rotundata; perist. simplice, recto.*

Long. 11, diam. 3½ mill.

*Hab.* Meobamba, Eastern Peru (Mr. Yates).

42. *ACHATINA (GLANDINA) NYSTIANA*, Pfr. *A. testa fusiformi-oblonga, tenui, sublævigata, levissime striatula, pellucida, nitida, carnea; spira elongata, gracili, obtusa; sutura filo-marginata; anfr. 6½ convexiusculis, ultimo ¾ longitudinis subæquante, basi attenuato; columella levissime arcuata, basi breviter et horizontaliter truncata; apertura vix obliqua, ovali-elliptica; perist. simplice, tenui.*  
 Long. 47, diam. 12 mill.  
*Hab.* — ?
43. *ACHATINA (GLANDINA) CONULARIS*, Pfr. *A. testa oblongo-conica, tenuiuscula, lævigata, nitida, fuscuro-carnea; spira elongato-conica, obtusa; sutura filo albido marginata; anfr. 6 vix convexiusculis, ultimo spiram æquante vel paulo brevior, basi parum attenuato; columella levissime arcuata, abrupte truncata; apertura subverticali, acuminato-ovali; perist. simplice, acuto.*  
 Long. 23, diam. 8½ mill.  
*Hab.* Mexico (*Mr. Sallé*).
44. *ACHATINA (GLANDINA) FILOSA*, Pfr. *A. testa oblonga, solida, longitudinaliter conferte filoso-plicata, pallide rosea; spira elongata, convexo-conica, obtusa; sutura subsimplice; anfr. 6 vix convexis, ultimo spiram æquante, basi subattenuato; columella levissime arcuata, rugata, ad basin aperturæ abrupte truncata; apertura subverticali, acuminato-ovali, intus saturate carnea; perist. simplice, margine dextro strictiusculo.*  
 Long. 39, diam. 14 mill.  
*Hab.* — ?
45. *ACHATINA (GLANDINA) INSIGNIS*, Pfr. *A. testa ovato-oblonga, solidula, subdistanter distincte plicata, interstitiis subtiliter decussato-granulatis, parum nitida, carnea, plicis albidis; spira elongato-conica, sursum saturatiore, apice obtusa, fuscula; sutura linea impressa marginata et denticulis regularibus elegantè sculpta; anfr. 7 convexiusculis, ultimo spiram subæquante, basi subattenuato; columella crassa, subverticali, basi late et abrupte truncata; apertura verticali, anguste elliptica, intus albida; perist. simplice.*  
 Long. 48, diam. 18 mill.  
*Hab.* — ? Pl. XXXI. fig. 11, 12.
46. *ENNEA ANODON*, Pfr. *E. testa profunde rimata, oblongo-ovata, solidula, oblique distincte striata, alabastrina; spira ovata, versus apicem obtusulum sensim attenuata; anfr. 6-7 vix convexiusculis, penultimo latere aperturæ subplanato, ultimo attenuato, ⅔ longitudinis formante, antico arcuatim ascendente, basi rotundato; columella superne oblique plicata; apertura verticali, truncato-ovali; perist. subincrassato, expanso, mar-*







*Planorbis*  
*planorbis*

*Planorbis*  
*planorbis*  
*planorbis*

*gine dextro subrepano, columellari paulo brevior, dilatato, patente.*

Long. 15–17, diam.  $7\frac{3}{4}$ – $8\frac{1}{4}$  mill.

Hab. — ?

47. ENNEA REEVEANA, Pfr. *E. testa breviter rimata, cylindracea, tenuiscula, oblique distincte plicato-striata, nitida, virenti-hyalina; spira subcylindrica, apice conoideo-rotundata; sutura impressa, submarginata, ad anfr. ultimum conferte denticulata; anfr. 7, primis 2 lævigatis, sequentibus convexiusculis, ultimo  $\frac{3}{7}$  longitudinis formante, antice subascendente, basi rotundato; columella oblique recedente, compressa; apertura subverticali, acuminato-ovali; perist. albo, reflexiusculo, margine dextro subrepano, columellari brevior, sursum dilatato, fere adnato.*

Long. 15, diam. 6 mill.

Hab. — ?

5. DESCRIPTIONS OF A NEW GENUS AND TWENTY-THREE NEW SPECIES OF PNEUMONOPOMA, FROM THE COLLECTION OF H. CUMING, ESQ. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXII.)

1. TROCHATELLA EXCAVATA, Pfr. *Tr. testa depresso-globosa, spiraliter levissime lirata, opaca, carnea, convexa, acute mucronata; anfr. 6 vix convexiusculis, ultimo inflato, obsoletissime subangulato; columella lata, triangulari, excavata; apertura diagonali, ampla, subsemicirculari, in fundo fusco-carnea; perist. albo, late expanso, ad columellæ angulum subrotundatum angustato.*

Diam. maj.  $13\frac{1}{2}$ , min.  $11\frac{1}{2}$ , alt.  $9\frac{1}{2}$  mill.

Hab. — ?

2. HELICINA REPANDA, Pfr. *H. testa conoideo-semiglobosa, solida, levissime striatula, nitidula, lutescenti-albida, fascia 1 rubra supramediana ornata; spira convexa, subacuminata; anfr.  $4\frac{1}{2}$  vix convexiusculis, ultimo antice descendente; columella brevi, simplice, callum crassum, circumscriptum retrorsum emittente; apertura diagonali, subtriangulari; perist. recto, in-crassato, margine supero repando, basali versus columellam attenuato.*

Diam. maj. 8, min.  $6\frac{1}{2}$ , alt. 5 mill.

Hab. — ?

3. HELICINA ZEBRIOLATA, Pfr. *H. testa subconoideo-depressa, tenui, striatula, parum nitida, strigis flexuosis rubris et albis variegata, vel rubra, albo-punctata; spira parvula, parum elata, subacuta; anfr.  $4\frac{1}{2}$  planis, ultimo lato, acute carinato, basi inflato; columella brevi, simplice, callum emittente tenuem; aper-*

*tura perobliqua, semiovato-subtriangulari; perist. simplice, recto, margine basali in columellam subangulatim transeunte.*

Diam. maj.  $6\frac{2}{4}$ , min.  $5\frac{1}{2}$ , alt.  $3\frac{1}{2}$  mill.

*Hab.* Lord Howe's Island, Australian Seas (Macgillivray).

4. *HELICINA RUDIS*, Pfr. *H. testa conoideo-depressa, solidula, ruditer striatula et submalleata, filo-carinata, fulva; spira conoidea, acutiuscula; anfr.  $4\frac{1}{2}$  planis, ultimo descendente, basi parum convexo; columella brevi, simplice, callum tenuem, circumscriptum retrorsum emittente; apertura diagonali, subtriangulari; perist. simplice, recto, acuto, margine basali cum columella angulum sub-rectum formante.*

Diam. maj.  $4\frac{1}{3}$ , min.  $3\frac{1}{3}$ , alt. 3 mill.

*Hab.* — ?

5. *HELIX SHANGHAIENSIS*, Pfr. *H. testa depresse conoidea, tenui, carinata, laevigata, pallide cornea, rufo-strigata; spira breviter conoidea, obtusula; anfr. 5 convexiusculis, ultimo non descendente, ad suturam et carinam subacutam pallide articulato, basi convexiore; columella brevi, verticali, callum emittente tenuem; apertura fere diagonali, subtriangulari; perist. simplice, recto, acuto, margine basali leviter arcuato, cum columella angulum formante.*

Diam. maj.  $4\frac{1}{2}$ , min. 4, alt.  $2\frac{2}{3}$  mill.

*Hab.* Shanghai, China (Mr. Fortune).

6. *HELICINA SPHÆROIDEA*, Pfr. *H. testa subglobosa, solidula, sub lente minutissime striata, parum nitente, pallide virenti-straminea; spira rotundata, subacuminata; anfr.  $4\frac{1}{2}$  convexiusculis, ultimo magno, infra medium obsoletissime angulato; columella albo-callosa, recedente, basi indistincte dentata, callum emittente diffusum; apertura diagonali, late semiovali; perist. simplice, brevissime expanso, margine basali cum columella angulum sub-acutum formante.*

Diam. maj. 7, min. 6, alt.  $5\frac{1}{2}$  mill.

*Hab.* Loyalty Island, Australian Seas (Macgillivray).

7. *HELICINA MERDIGERA*, Sallé MSS. *H. testa globoso-turbinata, tenui, irregulariter et subdistanter striata, sub tegumento lutoso rubicunda vel hyalina; spira elata, conica, acutiuscula; anfr.  $5\frac{1}{2}$  convexiusculis, ultimo utrinque convexiore; columella brevi, basi extrorsum subdentata, callum emittente tenuissimum; apertura diagonali, subsemicirculari; perist. simplice, breviter expanso, margine basali sensim in denticulum columellæ abeunte.*

Diam. maj. 6, min. 5, alt.  $4\frac{1}{2}$  mill.

*Hab.* Vera Cruz, Mexico (Sallé).

8. *HELICINA MACGILLIVRAYI*, Pfr. *H. testa subconoideo-depressa, solidula, spiraliter obsolete striata, nitidula, carnea vel pallide lilacea, indistincte fasciata; spira breviter conoidea, subacuminata; anfr.  $4\frac{1}{2}$  planis, ultimo peripheria obsoletissime angulato;*

*apertura perobliqua, subtriangulato-semiovali; columella brevi, callum emittente crassiusculum, sulco brevi circumscriptum; perist. simplice, breviter expanso, versus columellam attenuato.*

Diam. maj.  $6\frac{1}{2}$ , min.  $5\frac{1}{2}$ , alt. 4 mill.

*Hab.* Isle of Pines, Australian Seas (Macgillivray).

9. *HELICINA DENTICULATA*, Pfr. *H. testa globoso-conica, solidula, oblique striata, minutissime decussata, rugis antrorsum descendentibus distantioribus sculpta, parum nitida, alba, superne late flavo-fasciata; spira convexo-conica, acuta; sutura eleganter denticulata; anfr.  $5\frac{1}{2}$  vix convexiusculis, ultimo periphæria subangulato, basi parum convexo; columella breviter arcuata, antrorsum dentata, superne rima brevi notata; retrorsum in callum tenuem abeunte; apertura subtriangulati-semiovali; perist. albo, angulatim patente, medio in rostrum triangulare producto.*

Diam. maj. a rostro 13, min. fere 11, alt. 9 mill.

*Hab.* Honduras.

10. *HELICINA TURBINELLA*, Pfr. *H. testa turbinata, solida, leviter striatula, vix nitidula, lutescente; spira conoidea, acutiuscula; anfr.  $4\frac{1}{2}$  convexiusculis, ultimo carinato, basi convexo; columella brevi, subverticali, basi subtruncata, callum retrorsum emittente tenuissimum; apertura diagonali, subtriangulati-semiovali; perist. albido, tenui, breviter expanso, margine basali leviter arcuato.*

Diam. maj.  $4\frac{1}{3}$ , min. 4, alt. 3 mill.

*Hab.* Sidney.

11. *CYCLOSTOMA (CYCLOTUS) GLAUCOSTOMUM*, Pfr. *C. testa umbilicata, subturbinato-depressa, solidula, striata et plicis obliquis superne irregulariter sculpta, nitida, castanea; spira brevissime conoidea, apice obtusulo, nudo; anfr. 4 convexis, rapide accrescentibus, ultimo antice dilatato, brevi minute mallearato-granulato; umbilico pervio,  $\frac{1}{4}$  diametri non æquante; apertura vix obliqua, subrotundata, intus cærulea, margaritacea; perist. recto, marginibus superne subangulatim junctis, columellari subincrassato, perarcuato,*

Diam. maj. 18, min. 14, alt. 9 mill.

*Hab.* Venezuela.

12. *CYCLOSTOMA (CYCLOTUS) SORDIDUM*, Pfr. *C. testa umbilicata, conoideo-depressa, solidula, levissime et confertim spiraliter lirata, sub epidermide decidua, fulva sordide alba; spira conoidea, mucronata; anfr. 4 convexis, celeriter accrescentibus, ultimo terete, antice vix adnato; apertura parum obliqua, subcirculari; perist. simplice, continuo, vix expansiusculo.*

Diam. maj.  $7\frac{1}{2}$ , min.  $6\frac{1}{3}$ , alt.  $4\frac{1}{2}$  mill.

*Hab.* China.

13. *CYCLOSTOMA (CYCLOTUS) MACGILLIVRAYI*, Pfr. *C. testa umbilicata, turbinato-depressa, solida, rugoso-striata et liris*

*spiralibus in anfr. ultimo evanescentibus sculpta, opaca, carneo-albida; spira convexo-conoidea, submucronata; anfr. 4½ convexiusculis, sensim accrescentibus, ultimo subdepresso, basi circa umbilicum conicum, ⅓ diametri fere æquantem, abrupte angulato; apertura obliqua, superne et basi subangulata; perist. continuo, obtuso, recto, ad angulum circa umbilicalem subproducto.—Operc. concavo, calcareo, arctispirali.*

Diam. maj. 9, min.  $7\frac{1}{2}$ , alt. 5 mill.

*Hab.* Isle of Aneiteum, New Hebrides (*Macgillivray*).

14. **CYCLOSTOMA (AULOPOMA) GRANDE**, Pfr. *C. testa umbilicata, depressa, solida, confertim distincte striata, sulcis spiralibus nonnullis remotis sculpta, sub epidermide nigro-fusca, sæpe fasciatim detrita, obsolete marmorata; spira brevissima conoidea, vertice subtili, acuminato, nigricante; anfr. 5 convexis, ultimo terete, basi læviore, antice breviter soluto, vix descendente; apertura obliqua, subcirculari; perist. simplice, recto.—Operc. subsexspirato, anfractibus oblique valide plicatis.*

Diam. maj. 25, min.  $21\frac{1}{2}$ , alt. 13 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

15. **CYCLOSTOMA (CYCLOPHORUS) FORBESIANUM**, Pfr. *C. testa umbilicata, subdepressa, solida, liris spiralibus inæqualibus subconfertis cincta, opaca, albida vel rubella; spira parum elevata, vertice submucronato; anfr. 5 convexis, ultimo descendente, terete; umbilico conico, ¼ diametri superante; apertura parum obliqua, subcirculari, intus alba vel vinosa; perist. simplice, recto, superne subdilato, breviter adnato.—Operc. pallido.*

Diam. maj. 23, min. 18, alt. 11 mill.

*Hab.* Lord Howe's Island; New Hebrides (*Macgillivray*).

16. **CYCLOSTOMA (CYCLOPHORUS) CONVEXIUSCULUM**, Pfr. *C. testa umbilicata, convexiuscula, tenuiuscula, epidermide sordide fuscescente, confertim membranaceo-plicata, ad suturam squamosa, induta; spira parum elevata, vertice subtili; anfr. 4½ modice convexis, ultimo subdepresso, basi rotundato; umbilico aperto, ⅓ diametri formante; apertura obliqua, subcirculari; perist. continuo, breviter adnato, simplice, recto.—Operc. corneo, indistincte arctespirato.*

Diam. maj. 6, min. 5, alt.  $2\frac{2}{3}$  mill.

*Hab.* Cape of Good Hope (*Macgillivray*).

17. **CYCLOSTOMA (LEPTOPOMA) BARBATUM**, Pfr. *C. testa umbilicata, depresso-turbinata, tenui, acute carinata, sub epidermide arcuato-striata, fulvo et castaneo variegata; spira turbinata, apice acuta; anfr. 5 convexiusculis, superne liris 3–4 prope carinam munitis, ultimo ad carinam pilis squamosis barbato, basi convexiore, liris 2 distantibus nonnullisque obsoletioribus subangulato; umbilico mediocri, conico; apertura fere diagonali, subcirculari; perist. duplice; interno continuo, expansiusculo, ad anfr. penul-*

*tinum subsinuato, externo breviter patente et reflexiusculo, superne subdilatato.*

Diam. maj. 13, min. 11, alt.  $6\frac{1}{2}$  mill.

β. Major, anfr. 5, paulo depressior, umbilico paulo latiore.

Diam. 18, alt.  $8\frac{1}{2}$  mill.

γ. Minor, anfr. 5, liris basalibus distinctioribus.

Diam. 11, alt. 6 mill.

Hab. Borneo, Sarawak.

18. CYCLOSTOMA (CYCLOSTOMUS?) ANNATONENSE, Pfr. *C. testa perforata, globoso-conica, tenui, carinis pluribus periphericis acutis, lirisque compressis, confertis, vix elevatis munita, parum nitida, fusca; spira acute conica, sursum pallescente; anfr. 6 convexiusculis, ultimo ventroso; apertura vix obliqua, irregulariter ovali; perist. tenui, albido, marginibus approximatis, dextro brevissime expanso, columellari superne recedente, cum parte inferiore subangulatim juncto, angustissimo.*

Diam. maj. 8, min.  $6\frac{2}{3}$ , alt. 8 mill.

Hab. Isle of Aneiteum or Annaton; New Hebrides (Macgillivray).

19. CYCLOSTOMA (CYCLOSTOMUS?) SINUATUM, Pfr. *C. testa umbilicata, globoso-turbinata, solida, lævigata, vix nitidula, alba; spira turbinata, acutiuscula; anfr.  $5\frac{1}{2}$  convexis, prope suturam liris 5 filaribus cinctis, ultimo rotundato, circa umbilicum angustum, pervium liris paulo confertioribus sculpto; apertura vix obliqua, subcirculari; perist. breviter expanso, marginibus callo subexciso junctis, dextro superne repando, fere sinuoso, columellari non latiore.*

Diam. maj. 22, min. 18, alt. 17 mill.

Hab. Madagascar?

20. DIPLOMMATINA CHORDATA, Pfr. *D. testa sinistrorsa, profunde rimata, subfusiformi, tenui, lævigata, costulis subdistantibus chordæformibus munita, diaphana, cereo-albida; spira ovato-conica, acuta; anfr. 7 convexis, ultimo attenuato, antice ascendente; apertura vix obliqua, subcirculari; perist. duplice, interno continuo, breviter adnato, cæterum expansiusculo, externo breviter patente.*

Long. 4, diam. 2 mill.

β. Minor, paulo confertius chordata.

Hab. New Zealand (Strange); var. β. Lord Howe's Island (Macgillivray).

ANALUS, Pfr., nov. gen. *Operculum tenuissimum, corneum, subarctispirum, extus concaviusculum. Testa umbilicata, pupinæformis; apertura circularis; peristoma duplex: internum continuum, externum dilatatum, ad insertionem marginis dextri canali aperto perforatum.*

21. ANALUS BOMBYCINUS, Pfr. *A. testa impervie umbilicata, oblonga, tenuiuscula, confertim striata, sericea, rubello-corneu;*

*spira irregulari, inflata, in conum obtusulum desinente; anfr. 6 convexis, penultimo gibbo, latere aperturali subplanato, ultimo attenuato, ad suturam marginato, antice ascendente; apertura circulari, basi axin subexcedente; perist. interno calloso, adnato, externo late expanso, reflexiusculo, marginibus superne callo junctis.*  
—*Operc. luteo-corneo.*

Long. 14, diam.  $7\frac{1}{3}$  mill. Apert. intus fere 4 mill. diam.

β. *Minor anfr.  $5\frac{1}{2}$ , penultimo magis turgido.*

Long. 10, diam. vix 6 mill.

*Hab.* Borneo, Sarawak. Pl. XXXII. fig. 10.

22. HYDROCENA ACUTILIRATA, Pfr. *H. testa aperte perforata, turbinata, tenui, liris acutis, magis minusve confertis, nonnullis interdum carinaeformibus, cincta, cornea; spira conica, acuta; anfr.  $5\frac{1}{2}$  convexiusculis, ultimo basi inflato; apertura obliqua, angulato-subovali; perist. simplice, subrecto, marginibus vallo tenui junctis, sinistro subangulato.*

Long. 10, diam.  $6\frac{1}{2}$  mill.

*Hab.* Lord Howe's Island; New Hebrides (*Macgillivray*).

23. HYDROCENA (OMPHALOTROPIS) VESTITA, Pfr. *H. testa perforata, oblongo-conica, tenui, striata et spiraliter conferte lirata, epidermide fuscula vestita; spira pyramidata, acutiuscula; anfr. 6 planis, ultimo carina acuta infra medium, secunda circa perforationem, nonnullisque minoribus basalibus munito; apertura vix obliqua, subangulato-ovali; perist. simplice, recto, marginibus convergentibus.*—*Operc. fusco.*

Long. 5, diam. 3 mill. Ap. 2 mill. longa.

*Hab.* New Zealand.

## 6. DESCRIPTIONS OF NINE NEW SPECIES OF HELICEA, FROM MR. CUMING'S COLLECTION. BY DR. L. PFEIFFER.

(Mollusca, Pl. XXXII.)

1. SPIRAXIS CUMINGIANA, Pfr. *S. testa turrata, solida, sublavigata, nitidula, nigra; spira elongata, sursum in conum acutiusculum terminata; anfr. 8, supremis planis, capillaceo-striatis, reliquis prope suturam albo cinctam angulosis, ultimo  $\frac{2}{3}$  longitudinis subæquante, superne et infra medium angulato, basi attenuato; columella lamina alba, torta, basin fere attingente, munita; apertura vix obliqua, rhombeo-ovali, intus carulescente; perist. simplice, intus nigro-labiato.*

Long. 48, diam. 16 mill.

*Hab.* Kanai, Sandwich Islands (*Dr. Newcomb*). Pl. XXXII. fig. 1.

2. BULIMUS TRAILLI, Pfr. *B. testa imperforata, oblongo-ovata, tenuiuscula, leviter striata, nitida, nigro-castanea; spira convexo-conica, apice obtusa; sutura levi, albo-marginata; anfr. 5 con-*



*vexiusculis, ultimo spira vix brevior, infra medium obsoletissime angulato; columella fere stricta, subdilatata, plana; apertura obliqua, ovali, antice fusca, intus cærulescente; perist. breviter expanso, margine dextro leviter arcuato.*

Long. 36, diam. 22 mill.

*Hab.* Palawan Passage, near Borneo (Dr. Traill, H.E.I.C.).

Pl. XXXII. fig. 6.

3. *BULIMUS CINEROSUS*, Pfr. *B. testa imperforata, ovoidea, solida, oblique striatula, fusca, epidermide suturate cinerea, strigatim detrita, obducta; spira convexo-conica, apice obtusa; anfr. 5 modice convexis, ultimo spira paulo brevior; columella subplana, leviter introrsum dilatata, alba; apertura obliqua, truncato-ovali, intus albida; perist. subsimplice, breviter expanso.*

Long. 36½, diam. 13 mill.

*Hab.* Palawan Passage, near Borneo (Dr. Traill, H.E.I.C.).

Pl. XXXII. fig. 5.

4. *HELIX TRAILLI*, Pfr. *H. testa umbilicata, conica, solida, oblique confertim plicata, castaneo-fulvida; spira conica, apice obtusula; anfr. 5 convexis, ultimo fascia peripherica et area lata basali lutea ornato, antice vix descendente; apertura diagonali, truncato-ovali, intus cæruleo-albida; perist. fusco, expanso et reflexiusculo, marginibus subconniventibus, columellari brevi, albo, late reflexo, umbilicum angustum fere tegente.*

Diam. maj. 54, min. 43, alt. 37 mill.

*Hab.* Palawan Passage, near Borneo (Dr. Traill, H.E.I.C.).

Pl. XXXII. fig. 4.

5. *HELIX PALAWANICA*, Pfr. *H. testa umbilicata, globoso-depressa, solida, oblique striata, striis obliquis subgranulata, pallide fulva; spira brevi, convexa; anfr. 4 convexiusculis, ultimo parum deflexo, prope suturam et supra peripheriam nigro-fasciato, infra fasciam periphericam albidam nigricante, circa umbilicum fere obtectum pallido; apertura perobliqua, rotundato-lunari, intus margaritacea, obscure fasciata; perist. incrassato, nigro, expanso et revoluto, margine columellari dilatato, fornicato-reflexo.*

Diam. maj. 43, min. 33, alt. 23 mill.

*Hab.* Palawan Passage, near Borneo (Dr. Traill, H.E.I.C.).

Pl. XXXII. fig. 7.

6. *HELIX MELEAGRIS*, Pfr. *H. testa umbilicata, convexo-depressa, tenuiuscula, subremote striata, parum nitida, superne nigro-castanea, maculis lutescentibus irregulariter aspersa; spira brevi, conoideo-convexa, obtusula; anfr. 5½ convexiusculis, ultimo antice parum descendente, periphæria rotundato, fascia pallida cincto, basi convexo, pallide corneo; umbilico conico, ½ diametri subæquante; apertura perobliqua, irregulariter lunato-rotundata; perist. subsimplice, marginibus conniventibus, dextro antrorsum*

*arcuato, vix expansiusculo, basali incrassato, subreflexo, columellari brevi, parum dilatato.*

Diam. maj. 19, min. 16, alt. 8 mill.

*Hab.* Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 8.

7. **HELIX MIGRATORIA**, Pfr. *H. testa umbilicata, conica, tenuiuscula, oblique levissime striatula, nitidula, fulvo-lutea, sæpe linea rufa ad suturam ascendente notata; spira turbinata, apice obtusula; anfr. 5 modice convexis, ultimo antice non descendente, peripheria obsolete angulato, basi convexo, sub lente spiraliter striato; apertura perobliqua, subrhombico-ovali; perist. albo, margine dextro breviter expanso, flexuoso, basali calloso, reflexo, columellari dilatato, reflexo, umbilicum angustum semitegente.*

Diam. maj. 18, min. 15, alt. 15 mill.

*Hab.* Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 3.

8. **HELIX VITIENSIS**, Pfr. *H. testa perforata, subconoideo-depressa, solida, levigata, nitida, fusco-carnea; spira conoideo-convexa, vertice subtili; sutura levi, rufo-marginata; anfr. 5½ convexiusculis, sensim accrescentibus, ultimo non descendente, supra medium obsolete angulato, basi planiore, pallidior; apertura parum obliqua, lunari, intus margaritacea; perist. recto, marginibus vix convergentibus, columellari oblique descendente, ad perforationem leviter incrassato et reflexo.*

Diam. maj. 18, min. 16½, alt. 10 mill.

*Hab.* Ovalau, Feejee Islands (*Macgillivray*). Pl. XXXII. fig. 9.

9. **BULIMUS MACGILLIVRAYI**, Pfr. *B. testa umbilicata, fusiformi-oblonga, solidula, leviter striata, nitida, castaneo-fulva; spira elongato-conica, obtusiuscula; sutura levi, fascia albida vel rosea notata; anfr. 5½ parum convexis, ultimo ¼ longitudinis subæquante, infra suturam turgidulo, basi attenuato; apertura vix obliqua, angusta, acuminato-semiovali, intus margaritacea, callo nodiformi parietali et plica validissima, obliqua columellæ coarctata; perist. subincrassato, breviter expanso, margine columellari dilatato, umbilicum angustum semitegente.*

Long. 59, diam. 22 mill.

*Hab.* Wanderer Bay, Guadalcanar, Salomon's Islands (*Macgillivray*). Pl. XXXII. fig. 2.









J. Wolf lith

PYRIGLENA ELLISIANA. Schaeffer.

W. & S. Hartman. Imp.







June 26, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. DESCRIPTIONS OF SOME NEW SPECIES OF BIRDS FROM SANTA FÉ DI BOGOTA. BY PHILIP LUTLEY SCLATER, M.A.

(Aves, Pl. XCIX.-CII.)

1. NEMOSIA ALBIGULARIS. (Pl. XCIX.)

*N. nigra*: dorso postico crissoque cum macula collari utrinque et plumis narium quibusdam aurantio-flavis: speculo alari albo: subtus albo pectoris et laterum plumis partim intus nigro vitatis: rostro supra nigricante, subtus carneo: pedibus nigris.

Long. tota 4·2, alæ 2·5, caudæ 1·8.

This is a close ally of *Nemosia flavicollis* (Vieill.), from which, however, it may be at once distinguished by its white throat, the yellow colour being confined to a patch on the side of the neck. The spot above the nostrils and orange tint of the yellow are other differences which serve to confirm the validity of this species. There are examples of it in the British Museum and in Mr. Gould's collection and my own.

2. PYRIGLENA ELLISIANA. (Pl. C.)

*P. fusco-castanea unicolor*: facie, mento et regione auriculari cum cauda nigricantibus: rostro nigro, mandibula inferiore, nisi ipsa tomia basique, alba.

Long. tota 7·0, alæ 3·3, caudæ 3·1.

The only specimen I have seen of this species was received by Lady Ellis in a collection of birds from Bogota, and presented by her to the British Museum. At the request of Mr. G. R. Gray, I have named it after the donor. The form is nearly that of *P. domicella*, but there is no sign of a white subinterscapular spot, as is general in the species of this genus. The tail-coverts are very thick. The plumage is of a nearly uniform cinnamon-brown, brighter above, and with a greenish gloss on the breast. The front, sides of the head, throat and tail are black.

3. ANTHUS BOGOTENSIS. (Pl. CI.)

*A. pennis corporis superi medialiter nigris pallido cervino-brunneo late marginatis: alis intus nigris; primariis stricte, secundariis autem et tectricibus pallido cervino-brunneo late marginatis: reatricibus nigris; una utrinque extima, nisi pogonii interioris parte basali, tota pallide alba, brunnescente tincta; cæteris extus et duabus mediis utrinque cervino-brunneo anguste lim-*

*batis : capitis lateribus et corpore toto subtus pallide cervino-brunneis, ventre crissoque albescentioribus ; pectoris lateribus et collo antico punctis paucis triangularibus nigris, quasi torquem formantibus, notatis : rostro nigro, mandibula inferiore basi flavido : pedibus validis, flavis : ungue postico valde elongato.*

Long. tota 5·0, alæ 3·2, caudæ 2·3.

This is the only bird of the nearly universally distributed family of Pipits I have seen from Bogota, and appears distinct from any species previously noticed. The bill is rather larger, and the feet stronger and thicker than in the ordinary members of the genus. Above, the plumage is of the usual pale brownish fawn-colour, thickly clouded with black, caused by the feathers being broadly margined on each side with the fawn-colour. The sides of the head and under-plumage are uniform, except on the sides of the breast and across the neck, where there are small black triangular spots in the centre of some of the feathers. The under wing-coverts are pure pale buff ; the middle of the belly and crissum lighter and nearly whitish.

#### 4. OTOCORYS PEREGRINA. (Pl. CII.)

*Otocoris chrysolaimos*, Bp. Att. Sc. It. 1845, p. 405 (nec Wagl.).

*O. supra grisescenti-brunnea, rufo tincta ; pennis nigro variegatis : fronte, facie gulaque flavis, loris et regione auriculari et vitta transversa verticis cum plaga magna superpectoralis nigris : abdomine crissoque et tectricibus alarum inferioribus albis, pectore et lateribus rufescente griseo mixtis : alis nigricantibus ; primariis albedo, secundariis rufescente-griseo, tectricibus majoribus rufo limbatis ; tectricibus summis pure rufo-brunneis, pæne castaneis : cauda nigricante ; rectrice una utrinque extima late, secunda autem versus apicem solum et angustius albo limbata ; duabus mediis rufescente griseo utrinque late marginatis : tectricibus caudæ superioribus basi rufis : rostro nigro, mandibula inferiore basi alba : pedibus intense brunneis.*

Long. tota 5·5, alæ 3·8, caudæ 2·4.

I have had an example of this bird in my possession several years, but have always considered it the same as Wagler's *O. chrysolæma*, with which it has been identified by Prince Charles Bonaparte. Having however lately obtained specimens of the Mexican species, I find the Bogota bird presents such differences as to render its specific isolation necessary. It is rather smaller than the former, the tail is shorter, the bill longer and more curved, and the back has more black upon it. But the chief peculiarity to be remarked in my specimen (which is not quite adult) is the pure red-brown colour of the upper wing-coverts, which in the Mexican bird are lighter, paler, and more pinky. There are many examples of this species in the Paris Museum, in the collection recently transmitted from Bogota by M. Lewy, the French consul there. I have no doubt fully mature individuals will exhibit still further differences.





2. DESCRIPTIONS OF THIRTY-EIGHT NEW SPECIES OF LAND-SHELLS, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. **HELIX RHEA**, Pfr. *H. testa subobtecte perforata, globoso-depressa, solida, striata, sulcis obliquis irregularibus profunde cicatricosa, epidermide glutinosa, fulva, castaneo strigata obducta; spira brevi, conoidea, obtusa; anfr. 5 convexis, infra suturam canaliculatam perturgidis, ultimo obsolete subangulato, periphæria albo-fasciato, basi leviter undulato-striato, subcompresso; apertura perobliqua, truncato-ovali, intus albida, nitida; perist. simplice, obtuso, margine dextro subinflexo.*

Diam. maj. 69, min. 56, alt. 37 mill.

*Hab.* Dingle, Province of Ilo Ilo, Island of Panay, in woods under decayed leaves.

2. **HELIX COFFEA**, Pfr. *H. testa perforata, elato-trochiformi, solidula, levissime striatula, fusca, fasciis saturatioribus et suturali alba notata; spira convexo-conica, apice nigricante, acutiuscula; anfr. 6 modice convexis, ultimo periphæria obsolete angulato, basi subplano, fusco; apertura obliqua, truncato-ovali; perist. recto, marginibus subparallelis, columellari vix incrassato, ad perforationem reflexiusculo.*

Diam. maj. 30, min. 26, alt. 24 mill.

*Hab.* Moluccas.

3. **HELIX LALLOËNSIS**, Pfr. *H. testa imperforata, subdepresso-globosa, tenui, striis confertis subtilissime decussata, parum nitida, alba, fasciis 2 antice nigricantibus, tum pallescentibus ornata; spira parvula, convexa; anfr. 4 rapide accrescentibus, ultimo inflato, antice vix descendente; columella tenui, compressa, subexcavata, leviter arcuata; apertura obliqua, lunato-rotundata; perist. tenui, æqualiter et mediocriter expanso.*

Diam. maj. 29-38, min. 22 $\frac{1}{3}$ -29, alt. 18-25 mill.

*Hab.* Lallo, Cagayan, Isle of Luzon.

4. **HELIX MILITARIS**, Pfr. *H. testa imperforata, globoso-turbinata, tenui, oblique striata et lineis minutis oblique descendentes sculpta, nigro-castanea; spira turbinata, apice obtusa; anfr. 6 $\frac{1}{2}$  convexis, ultimo turgido, carinato (carina antice obsolete), breviter deflexo; columella brevi, plica valida dentiformi munita; apertura perobliqua, lunato-rotundata; perist. albo, expanso et reflexo, margine dextro perarcuato, columellari fere appresso.*

Diam. maj. 47, min. 39, alt. 36 mill.

*Hab.* Seychelles.

5. **HELIX CAMELUS**, Pfr. *H. testa compressæ umbilicata, conoideo-campanulata, solida, striata, sub lente minutissime decussata, alba, castaneo trifasciata; spira ventrosa, sursum conoideo-attenuata; anfr. 6 modice convexis, ultimo antice vix descendente, basi subgibboso-compresso; apertura diagonali, truncato-ovali;*

*columella arcuata, callosa, subtruncata; perist. albo, expanso, margine columellari dilatato, patente.*

Diam. maj. 29, min. 25, alt. 26 mill.

*Hab.* — ?

6. **HELIX FLEXUOSA**, Pfr. *H. testa umbilicata, depressa, solidula, leviter striata, nitida, castanea; spira subplana, medio vix immersa; anfr. 5 celeriter accrescentibus, convexiusculis, superne irregulariter spiraliter striatis, ultimo lato, subdepresso, antice vix descendente, basi circa umbilicum angustum, pervium non compresso; apertura obliqua, rotundato-lunari, latiore quam alta; perist. late lilacino, expanso, margine basali declivi, flexuoso, reflexo.*

Diam. maj. 30, min. 25, alt. 11 mill.

*Hab.* Borneo.

7. **HELIX BICILIATA**, Pfr. *H. testa perforata, convexo-lenticulari, tenui, pellucida, cornea, oblique plicata, bicarinata, carinis pilis longis ciliatis; spira parum elata, vertice subtili; anfr. 4½ scalaribus, ultimo antice non descendente, basi vix convexo; apertura subobliqua, depresso securiformi; perist. simplice, recto, marginibus subparallelis, columellari vix reflexiusculo,*

Diam. maj. 7½, min. 6½, alt. 3½ mill.

*Hab.* Ceylon.

8. **HELIX LEUCOSTYLA**, Pfr. *H. testa imperforata, conoideo-semiglobosa, solida, oblique striata, sub lente minute decussata, castanea; spira convexiusculo-conica, apice obtusula; anfr. 6½ convexiusculis, lente accrescentibus, ultimo non descendente, utrinque convexo, medio carinato; columella stricta, parum obliqua, calloso-incrassata; apertura diagonali, subtetragono-lunari; perist. simplice, recto.*

Diam. maj. 21½, min. 19½, alt. 14 mill.

*Hab.* Mauritius Island.

9. **HELIX LUDERSI**, Pfr. *H. testa umbilicata, sublenticulari, tenuiuscula, oblique striatula, corneo-albida, fasciis angustis æqualibus rufis ornata; spira convexa, obtusa; sutura albomarginata; anfr. 5½ vix convexiusculis, lente accrescentibus, ultimo non descendente, medio carina acuta alba nunito, basi convexiusculo, nitido; umbilico conico, ⅙ diametri subæquante; apertura diagonali, subrhombico-lunari; perist. simplice, marginibus vix convergentibus, supero recto, acuto, basali subincrassato.*

Diam. maj. 19, min. 17, alt. 7 mill.

*Hab.* Ovalau, Feejee Islands (Mr. Macgillivray).

10. **HELIX CONFUSA**, Pfr. *H. testa umbilicata, conoideo-semiglobosa, tenuiuscula, confertim striata et irregulariter spiraliter subsulcata, glutinosa, fulvo-lutea, castaneo-radiata; spira breviter conoidea, obtusa; anfr. 4½, ultimo lato, obsoletius striato, supra peripheriam subimpresso, antice non descendente, basi convexo,*

*laviore; umbilico perspectivo, intus concolore, striato; apertura fere diagonali, truncato-ovali, intus margaritacea; perist. simplice, recto, margine columellari superne subdilatato, patente.*

Diam. maj. 35, min. 28, alt. 17 mill.

*Hab.* Cape Upstart, Australia.

11. **HELIX ANTRORSA**, Pfr. *H. testa umbilicata, subconica, tenui, striata et rugulis antrorsum descendantibus decussata, pellucida, corneo-albida; spira conoidea, obtusiuscula; sutura marginata; anfr. 5 convexiusculis, celeriter accrescentibus, ultimo compresse et acute carinato, superne planiusculo, antice cum carina deflexo, basi circa umbilicum angustum inflato; apertura perobliqua, lanceolato-lunari; perist. tenui, marginibus vix convergentibus, supero expanso, ad carinam subrostrato, basali perarcuato, reflexo, supra umbilicum dilatato.*

Diam. maj. 23, min.  $19\frac{1}{2}$ , alt. 12 mill.

*Hab.* Haman Island.

12. **HELIX EXALTATA**, Pfr. *H. testa perforata, trochiformi, tenuiuscula, striis obliquis et spiralibus minute decussata, carinata, sericea, albida, supra carinam fusco anguste unifasciata; spira concavo-conica, elata, acutiuscula; anfr. 7 vix convexiusculis, ultimo non descendente, infra carinam acutam modice convexo; apertura parum obliqua, angulato-lunari; perist. simplice, recto, margine columellari superne reflexiusculo.*

Diam. maj. 15, min.  $13\frac{2}{3}$ , alt. 11 mill.

*Hab.* Salomon's Islands.

13. **HELIX VEXILLARIS**, Pfr. *H. testa imperforata, turbinata, tenui, striata et leviter antrorsum rugato-malleata, nitidula, alba; spira turbinata, apice grisea, acutiuscula; anfr. 5 convexis, ultimo vix descendente, turgido, subangulato, basi virenti-fulvo, spiraliter striato; columella declivi, subarcuata, plana; apertura diagonali, truncato-elliptica; perist. tenui, marginibus subconivalentibus, dextro expanso et reflexiusculo, superne arcuato, basali reflexo.*

Diam. maj. 28, min. 23, alt. 22 mill.

*Hab.* Haman Island.

14. **HELIX FRINGILLA**, Pfr. *H. testa imperforata, conoideoglobosa, solida, oblique striata, nitida, sub epidermide lutea albida; spira convexo-conoidea, acutiuscula; anfr.  $4\frac{1}{2}$  parum convexis, ultimo antice subito deflexo et valde constricto, medio subcarinato, basi convexiore, spiraliter striato, centro excavato; apertura perobliqua, irregulariter subtriangulari lunari; perist. calloso, albo, reflexo, margine supero subflexuoso, basali perarcuato, prope columellam intus subdentato.*

Diam. maj. 23, min.  $20\frac{1}{2}$ , alt. 15 mill.

*Hab.* Monda Island.

15. **HELIX MOTACILLA**, Pfr. *H. testa anguste umbilicata, conoideo-subglobosa, tenui, striatula striolisque antrorsum descendantibus sub-*

*decussata, fusco-lutea, ad suturam et peripheriam albo fasciata; spira conoidea, obtusula; anfr. 4½ convexis, ultimo inflato, antice non descendente, medio subcarinato; apertura diagonali, subtriangulari-lunari; perist. roseo-albo, marginibus distantibus, supero flexuoso, expanso, basali reflexo, leviter arcuato, juxta columellarem subfornicatim leviter dentato.*

Diam. maj. 20, min. 18, alt. 12½ mill.

*Hab.* Eddystone Island.

16. *HELIX SACHALENSIS*, Pfr. *H. testa anguste umbilicata, conoidea, tenui, striata, striolis antrorsum descendentibus subdecussata, fulvescenti-albida, fascia alba peripherica, angusta castanea supra eam et nonnullis fuscis ornata; spira conoidea; anfr. 4½ modice convexis, ultimo non descendente, medio subcarinato; apertura diagonali, rotundato-lunari; perist. tenui, marginibus subconniventibus, supero arcuato, expanso, basali reflexo, ad umbilicum dilatato, fornicato.*

Diam. maj. 19½, min. 15½, alt. 12 mill.

*Hab.* Sachala Island.

17. *HELIX HEROICA*, Pfr. *H. testa umbilicata, convexo-depressa, solida, irregulariter albo-plicata, interstitiis corneis; spira parum elevata, convexa, apice obtusa, livida; anfr. 4½ convexiusculis, lente accrescentibus, ultimo antice breviter deflexo, medio subangulato, basi subplanulato, antrorsum tumido et tum subconstricto; apertura perobliqua, elliptica; perist. subcontinuo, margine supero tenui, expanso, basali flexuoso, dilatato, reflexo, intus dente mediocri transversali munito.*

Diam. maj. 23½, min. 18, alt. 12 mill.

*Hab.* Celebes (Mrs. F. Pfeiffer).

*Note.*—*Helix Bridwilli*, Pfr. in Proc. Zool. Soc. 1853, p. 49, and Reeve, Conch. Ic. sp. 1034, pl. 157, must be *Helix Bidwilli*.

18. *BULIMUS INTEGER*, Pfr. *B. testa imperforata, oblonga, solida, oblique irregulariter rugata, spiraliter sulcata (interstitiis confertim arcuato-lineolatis), carnea, strigis et flammulis griseo-fuscis picta; spira elongato-conica, obtusula; sutura crenulata; anfr. 7½ convexiusculis, ultimo spira paulo brevior; columella griseo-lilacea, terete, subtorta, arcuatim in peristoma continuata; apertura fere verticali, truncata, ovali; perist. subincrassato, breviter expanso, margine columellari subdilatato, adnato.*

Long. 82, diam. 39 mill.

β. *Testa minore, sæpe subunicolore carneo-grisea, anfr. 6½, columella magis torta.*

Long. 65, diam. 31 mill.

*Hab.* Quito, Ecuador (Mrs. Pfeiffer).

19. *BULIMUS PLUMBEUS*, Pfr. *B. testa imperforata, oblonga, solida, impressionibus obliquis malleata, sub epidermide olivacea rufo-strigata et flammulata; spira convexo-conica, apice nigricante, obtusula; sutura subcrenulata; anfr. 6 vix convexis, ultimo*



*spira paulo brevior, antice subascendente, basi attenuato; columella leviter plicato, cæruleo-albida; apertura vix obliqua, semi-ovali, intus nigro-livida, margaritacea; perist. nigricanti-plumbeo, incrassato et breviter reflexo.*

Long. 93, diam. 36 mill.

*Hab.* Venezuela.

20. *BULIMUS HAINESI*, Pfr. *B. testa imperforata, ovato-conica, solida, oblique leviter striata, castanea, strigis undulosis et laceris flavidis picta; spira elongata, subconcavo-conica, apice violacea, acutiuscula; anfr. 6½ convexiusculis, ultimo 2/3 longitudinis vix formante, infra medium subangulato; columella parum declivi, livido-carnea; apertura diagonali, lunato-rotundata; perist. expanso et breviter reflexo, violaceo-fusco.*

Long. 52, diam. 27 mill.

*Hab.* Philippine Islands.

21. *BULIMUS EPISCOPALIS*, Pfr. *B. testa anguste umbilicata, ovato-conica, tenui, longitudinaliter subrugoso-striata et minute granulata, interdum transverse sulcatula, olivaceo-fulva, maculis rufis irregulariter aspersa; spira conica, acutiuscula; anfr. 4½, superis vix convexis, ultimo 2/3 longitudinis subæquante, oblique descendente, antice arcuatim subascendente, basi vix attenuato; columella leviter compresse plicata; apertura angulato-ovali, intus lilacea; perist. purpureo, expanso et breviter revoluto, margine columellari subappresso.*

Long. 47–58, diam. 22–27 mill.

*Hab.* Bogota.

22. *BULIMUS COCAPATENSIS*, Pfr. *B. testa imperforata, ovato-oblonga, solida, minutissime decussata, sub epidermide virenti-fulvida violaceo-carnea; spira convexo-conica, apice obtusa; sutura albida, irregulari; anfr. 5½, superis radiatim costatis et minutissime granulatis, sequentibus peroblique descendentibus, parum convexis, ultimo spiram subæquante, basi rotundato; columella recedente, leviter arcuata; apertura subverticali, acuminato-ovali, intus margaritacea; perist. incrassato, breviter expanso, marginibus callo nitido junctis, columellari dilatato, adnato.*

Long. 67, diam. 30 mill.

*Hab.* Copacata, Bolivia (*T. Bridges*).

23. *BULIMUS CONFLUENS*, Pfr. *B. testa late et compresse umbilicata, oblongo-acuminata, tenuiuscula, impresso-punctata, albida, strigis spadiceis angulosis, subfasciatim confluentibus, albo-punctatis picta; spira elongato-conica, acutiuscula; anfr. 6½ convexiusculis, ultimo spiram subæquante, basi valde compresso; columella arcuatim procedente, basi nodifera; apertura vix obliqua, rhombeo-ovali, basi subangulata, intus lilaceo-rubente; perist. undique late expanso, patente, margine columellari subflexuoso.*

Long. 40, diam. 17 mill.

*Hab.* Marmato, New Granada.

24. *BULIMUS CONVEXUS*, Pfr. *B. testa anguste umbilicata, oblongo-fusiformi, solidula, striata, nitida, albida, strigis fuscis, albo-lineolatis ornata; spira elongata, acutiuscula; anfr. 7 convexis, ultima spira paulo brevior, juxta umbilicum compressa; columella arcuata, supra basin nodifera; apertura obliqua, basi recedente, elliptica, basi canaliculata, intus lilaceo-rosea; perist. latiuscule expanso, margine columellari anguste reflexo.*

Long. 38, diam. 14 mill.

*Hab.* New Granada.

25. *BULIMUS CHAMÆLEON*, Pfr. *B. testa perforata, ovato-oblonga, solidula, striatula, nitida, albida, strigis fulvis, castaneis et latis nigricantibus varie ornata; spira convexo-conica, obtusula; anfr. 6 convexiusculis, ultimo spira paulo brevior, basi rotundato; columella leviter torta, recedente; apertura vix obliqua, truncato-ovali, intus albida; perist. simplice, recto, margine columellari superne dilatato, subangulatim reflexo.*

Long. 27, diam.  $11\frac{1}{2}$  mill.

*Hab.* Quito (*Mr. Bourcier*).

26. *BULIMUS ABSCISSUS*, Pfr. *B. testa subimperfecta, pyramidata, solidula, ruguloso-striata, opaca, albida; spira elongato-conica, acutiuscula; anfr.  $6\frac{1}{2}$  vix convexiusculis, ultimo spira paulo brevior, basi rectangule carinato, quasi abscisso; columella arcuata; apertura parum obliqua, rhomboideo-ovali, intus rosea; perist. vix expanso, purpureo, marginibus callo purpureo junctis, columellari reflexo, subadnato.*

Long. 28, diam. 13 mill.

*Hab.* Province of Quito, Ecuador.

27. *BULIMUS VERRUCOSUS*, Pfr. *B. testa aperte et compresse umbilicata, ovato-conica, solida, plicis subinterruptis et verrucis oblongis sculpta, fusca, pallide variegata; spira conica, acutiuscula; sutura subcanaliculata; anfr.  $7\frac{1}{2}$  planiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi rotundato; columella leviter plicata; apertura subverticali, truncato-ovali, ad columellam subangulata, intus livida; perist. recto, intus fusco-limbato, margine columellari dilatato, patente.*

Long. 23, diam.  $11\frac{1}{2}$  mill.

*Hab.* Galapagos Islands.

28. *ACHATINA ATRAMENTARIA*, Pfr. (*A. regina*  $\beta$ , Pfr. Mon.)  
*A. testa oblongo-ovata, solidula, confertim subruditer striata, nitidula, plerumque tegumento calcareo obducta; spira elongata, apice obtusiuscula; anfr. 7 modice convexis, summis carneis, sequentibus fusco-violaceo flammulatis, ultimo  $\frac{3}{7}$  longitudinis subæquante, nigricante; columella violacea, callosa, subtorta, basi oblique truncata; apertura obliqua, truncato-ovali, intus margaritacea, violacea; perist. simplice, intus nigro-limbato, marginibus callo fusco-nigro junctis.*

Long. 81, diam. 35 mill.

*Hab.* New Granada.

29. *ACHATINA (OLEACINA) BINNEYANA*, Pfr. *A. testa fusiformi, tenui, confertim plicata, parum nitente, carnea, strigis varicosis castaneis irregulariter notata; spira conica, apice acutiuscula; sutura marginata et eleganter crenulata; anfr. 7½ parum convexis, ultimo spira paulo longiore, basi attenuato; columella leviter arcuata, ad basin apertura verticalis, lanceolata late truncata; perist. simplice, tenui.*

Long. 91, diam. 33 mill.

*Hab.* — ?

30. *CYLINDRELLA CHORDATA*, Pfr. *C. testa vix rimata, cylindraceo-turrita, truncata, tenera, subtilissime striata et costulis chordæformibus, subdistantibus munita, albida; sutura costis excurrentibus crenata; anfr. superst. 11–12 vix convexiusculis, ultimo antice soluto, breviter descendente, latere dextro angulato, basi acute carinato; carina filiformi, crenata; apertura obliqua, subtetragono-rotunda; perist. albo, continuo, undique breviter expanso.*

Long. 10, diam. 2½ mill.

*Hab.* St. Croix, West Indies.

31. *PTEROCYCLOS BIFRONS*, Pfr. *Pt. testa umbilicata, discoidea, solida, superne arcuato-striatula, nitida, purpurascenti-castanea; spira plana, vertice subtili, lucide castaneo; sutura alba; anfr. 6 convexis, ultimo latiore, periphæria obsolete angulata, antice descendente et juxta suturam prominentiam fornicatam formante, basi violaceo; apertura diagonali, subcirculari; perist. duplicato, incrassato; interno superne sulco triangulari interrupto, externo subpatente, superne producto et in prominentiam anfractus ultimi abeunte.*

Diam. maj. 25, min. 21½, alt. 8 mill.

*Hab.* Ceylon.

32. *CYCLOSTOMA (CYCLOTUS) IRREGULARE*, Pfr. *C. testa umbilicata, turbinato-depressa, solida, confertim striata, fulvida; spira breviter turbinata, acutiuscula; sutura profunda; anfr. 5 convexis, ultimo superne turgido, ad suturam late canaliculato, infra medium fascia lata fusca notato, circa umbilicum infundibuliformem, intus valide plicatum subanguloso; apertura obliqua, subtriangulari-ovali, superne angulata; perist. continuo, breviter adnato, recto, margine dextro dilatato, columellari incrassato, leviter arcuato, ad basin canaliculato.*

Diam. maj. 37, min. 30, alt. 19 mill.

*Hab.* Costarica, Central America.

33. *CYCLOSTOMA (CYCLOTUS) BOGOTENSE*, Pfr. *C. testa umbilicata, turbinato-depressa, tenuiuscula, malleato-punctata, nitida, fusco-viridi; spira parum elata, apice obtusiuscula, albida; anfr. 4½ convexis, rapide accrescentibus, ultimo terete, periphæria linea albida cingulato, circa umbilicum mediocrem, conicum pallido; apertura parum obliqua, subcirculari, superne vix angulata; perist.*

*recto, continuo, breviter adnato, margine dextro perarcuato, sinistro subincrassato, minus arcuato.*

Diam. maj. 22, min. 17, alt. 11 mill.

*Hab.* New Granada.

34. *CYCLOSTOMA (CYCLOSTOMUS) LEVE*, Pfr. *C. testa perforata, globoso-conica, tenui, levi, striatula, nitida, pellucida, rubello-succinea; spira conica, acutiuscula; anfr. 5 convexis, ultimo spiram subæquante; apertura obliqua, irregulariter rotundata; perist. subcontinuo, breviter adnato, margine sinistro medio angulatim dilatato.—Operc. calcareum, nucleo submediano.*

Long. 7, diam. 5 mill.

*Hab.* Guadalcanar, Salomon's Islands (*Mr. Macgillivray*).

35. *CATAULUS AUREUS*, Pfr. *C. testa breviter rimata, oblongo-pyramidali, tenuiuscula, confertim striata, sericina, late aurea; spira turrata, apice acutiuscula; sutura submarginata; anfr. 8 convexis, ultimo parum attenuato, basi axin vix excedente; carina umbilicari valida, compressa, antrorsum parum dilatata; periomphalo lato, antice costulato; apertura circulari; perist. albo, duplici interno continuo, appresso, basi canali angusto interrupto, externo perincrassato, fornicatim reflexo, basi producto, canali mediocri perforato.*

Long. 25, diam. 10 mill.

*Hab.* Ceylon (*Mr. Thwaites*).

36. *PUPINA SUPERBA*, Pfr. *P. testa ovato-conica, tenui, glaberima, nitidissima, aurantiaco-fusca; spira convexo-conica, acutiuscula; sutura levi, submarginata; anfr. 6 convexiusculis, ultimo latere aperturæ planulato, antice breviter ascendente, basi axin paululum excedente; apertura subcirculari, bicanaliculata; lamella parietali arcuata, latere dextro canalem latum cum peristomate formante, sinistro angulatim supra linguam latam columellarem prominente; perist. obtuso, latere dextro subrependo, sinistro ad canalem ascendentem subincrassato.*

Long. 15, diam.  $12\frac{1}{2}$  mill.

*Hab.* Sumatra (*Mrs. F. Pfeiffer*).

37. *HELICINA EGREGIA*, Pfr. *H. testa subgloboso-conoidea, tenuiuscula, spiraliter substriata, albida, superne tænia lata fulvida et ad peripheriam fascia castanea ornata; spira parvula, conoidea, acuta; anfr. vix 5 convexiusculis, ultimo magno, periphæria rotundata; columella brevi, in nodum dentiformem abeunte, callum emittente lutescentem, circumscriptum; apertura obliqua, subtriangulari; perist. subincrassato, horizontaliter patente.*

Diam. maj.  $11\frac{1}{2}$ , min. 9, alt.  $7\frac{1}{2}$  mill.

*Hab.* Wanderer Bay, Guadalcanar, Salomon's Islands (*Mr. Macgillivray*).

38. *HELICINA SPINIFERA*, Pfr. *H. testa conoidea, tenuiuscula, oblique striata et spiraliter subconfertim lirata, flavida vel carnea,*

*sæpe saturatius tessellata et ad suturam tænia articulata ornata; spira conoidea; anfr. 5 vix convexiusculis, ultimo acute carinato, basi convexiore; columella brevi, in spinam subacutam desinente, callum emittente vitreum, circumscriptum; apertura diagonali, subtriangulari; perist. breviter expanso, margine basali substricto, reflexiusculo.*

Diam. maj. 12, min.  $10\frac{1}{3}$ , alt. 8 mill.

*Hab.* Wanderer Bay, Guadalcanar, Salomon's Islands (Mr. Macgillivray).

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July 10, 1855.

John Gould, Esq., F.R.S., in the Chair.

Mr. Westwood exhibited several new and remarkable species of beetles belonging to the families *Cicindelidæ* and *Carabidæ*. The species of the former family belonged to the genera *Collyris* and *Tricondyla*, peculiar to the islands of the Eastern Ocean, and had been collected by the late Colonel Champion and by Dr. Templeton in Ceylon. The species of *Carabidæ* were remarkable for having the antennæ particoloured, several of the joints being white. They were collected in Ceylon by Mr. Thwaites, in India by General Hearsey, in Brazil by Mr. Bates, and formed several new and distinct genera.

The following paper was read :—

DESCRIPTIONS OF TWO NEW GENERA AND SEVERAL NEW SPECIES  
OF MOLLUSCA, FROM THE COLLECTION OF HUGH CUMING, Esq.  
BY ARTHUR ADAMS, F.L.S., &c.

Genus CLEA, H. and A. Adams.

The shell on which this genus is founded resembles a fluviatile *Buccinum*, and is from the river in Sarawak Borneo. The notch at the fore part of the aperture differs from that of *Melanopsis*, and the form and abruptly truncate columella separates it from *Hemisimis* of Swainson. The only species at present known is that described below, distinct varieties of which have lately been received from Malacca.

Type. CLEA NIGRICANS, A. Adams.

*Testa bucciniformis, ovata, epidermide corneo nigro-fusco induta, spira aperturam æquante, apice decollato; anfractibus convexiusculis transversim striatis; apertura ovato-oblonga, antice valde emarginata; columella abrupte truncata, plica unica, spirali, antica, obliqua instructa; labro simplici margine subreflexo et intus subincrassato.*

Shell bucciniform, ovate, covered with a brown-black horny epidermis; spire as long as the aperture, apex decollated, eroded;

whorls rather convex, transversely striated. Aperture oblong-ovate, with a distinct notch in front; columella abruptly truncate, with a single oblique spiral fold anteriorly; outer lip simple, the margin somewhat reflexed and thickened internally.

Genus ERINNA, H. and A. Adams.

Shell semiglobose, thin, horny, olivaceous, longitudinally finely striated; spire very short, obtuse, apex rather eroded, last whorl ventricose, aperture large semiovate; inner lip posteriorly ascending on the body-whorl; columella straight excavated and with a curved elevated ridge outside the excavation, continued in front into the outer lip, which is thin and simple.

Type. ERINNA NEWCOMBI, H. and A. Adams.

*E. testa olivacea tenui longitudinaliter oblique striata, spira brevissima, obtusa, apice erosula, anfractu ultimo ventricoso; apertura semiovata; columella recta excavata, labro tenui.*

*Hab.* Heneta River, Kami, Sandwich Islands. (*Dr. Newcomb.*)

This shell by some would be referred to *Neritina*, by others to *Limnæa*, and possibly by a few to the genus *Otina*; it appears, however, to be distinct in character from all these.

The nineteen other New Species which I shall proceed to describe are referable to established Genera, and may be characterized as follows:—

1. CHITON MACGILLIVRAYI, A. Adams.

*C. testa oblongo-ovali, elevatiuscula nigra areis centralibus fasciis duabus pallidis longitudinaliter picta; valvis obtusis (sub lente) minutissime granulatis, liris concentricis undulatis rugoso-granatis ornatis, valva terminali antice umbonata, umbonibus sublævibus vix productis; ligamento spinis calcareis nigris curvatis obtusiusculis obsito.*

*Hab.* Fejee Islands, on the reefs. (*J. Macgillivray.*)

This is a well-marked and handsome species, rather more than two inches in length; the surface of the valves is finely granulated and ornamented, besides, with subgranulated, wavy, concentric, elevated lines; the central areas have a pale greenish band on each side of the umbo.

2. MUREX DILECTUS, A. Adams.

*M. testa ovato-fusififormi trivariata, carneola, rufescenti sparsim variegata, spira brevi, acuminata, anfractibus septem, varicibus foliaceo-fimbriatis ac laciniatis, interstitiis plicato-nodosis, transversim liratis liris rufo articulatis; apertura ovali, canali vix clauso, valde recurvato, labro margine crenato.*

*Hab.* — ? (*Mus. Cuming.*)

## 3. MUREX (PTERONOTUS) SPECIOSUS, A. Adams.

*M. testa ovato-fusiformi albida pallide rufo tincta; spira acuta, anfractibus septem, porcis transversis distantibus instructis, varicibus tribus foliatis, plicatis sublaciniatis postice in spina dilatata productis; interstitiis postice nodatis; apertura ovali integra; canali recto, clauso.*

*Hab.* — ?

This is a very elegant species of *Murex*, which seems to be somewhat allied to the *M. alabaster* of Reeve, and is one of that section of the genus with foliated winged varices and a closed canal.

## 4. BELA ARCTICA, A. Adams.

*B. testa ovato-fusiformi sordide alba epidermide fusco tenui induta, spira aperturam æquante, anfractibus 5, erosio longitudinaliter plicatis postice noduloso-angulatis, transversim obscure sulcatis, anfractu ultimo ventricoso postice carina crenata ornato; apertura ovali, labio expanso canali brevi lato aperto; labro tenui, postice sinu obsoleto instructo.*

*Hab.* Arctic Seas.

This is an example of *Bela* of rather larger form than most of the other species. The genus appears to consist of small Muriciform shells, concentrated chiefly in northern regions.

## 5. CONUS TRAILLII, A. Adams.

*C. testa parva turbinato-conica, spira elata, apice obtuso, anfractibus convexis, ultimo transversim sulcato, albida fasciis duabus latis cinereo tessellatis et punctis cinerascentibus ornata; anfractu ultimo postice rotundato; apertura angusta, lineari, labro simplice acuto.*

*Hab.* Malacca. (Dr. Traill.)

This is a small and very peculiar species of *Conus*, unlike in appearance to any other example of the genus. The spire is elevated and obtuse, and the whorls are convex; the last whorl is rounded at the shoulder and is transversely grooved throughout, and the shell is ornamented with two broad bands tessellated with ashy.

## 6. CONUS SELECTUS, A. Adams.

*C. testa turbinato-pyriformi, spira elata acuminata, anfractibus acute angulatis et fasciis rufis ornatis, anfractu ultimo acutim angulato ad peripheriam, antice transversim sulcato et angustato; luteola maculis rufo-fuscis, in lineis transversis dispositis, et fascia albida antica, ornata; apertura angusta antice effusa, labro valde postice inciso.*

*Hab.* Malacca. (Dr. Traill.)

## 7. RHIZOCHILUS (CORALLIOPHILA) CALIFORNICA, A. Adams.

*R. testa ovata, alba, rimata spira acuminata, anfractibus convexis, longitudinaliter nodoso-plicatis, transversim liratis, liris irregu-*

*laribus; apertura ovali, columella reflexa, subexplanata, canali brevi subrecurvo, labro acuto margine irregulari.*

*Hab.* Gulf of California.

8. *STYLIFER EXARATUS*, A. Adams.

*S. testa subulato-turrita alba nitida semipellucida, anfractibus permultis convexiusculis transversim sulcatis longitudinaliter creberrime striatis, suturis impressis; apice mucronato; apertura ovata ad basim subeffusa; labro sinuoso, margine incrassato et subreflexo.*

*Hab.* Parasitic in the skins of Starfishes. Philippine Islands. (Mr. Cuming.)

In this species of Starfish Parasite the whorls of the large turreted wax-like shell are distinctly marked with transverse grooves, and the outer lip is thickened at the edge and a little reflexed.

9. *STYLIFER SUBANGULATUS*, A. Adams.

*S. testa subulato-turrita alba nitida semipellucida, apice mucronato flexuoso, anfractibus permultis convexiusculis, lineis elevatis transversis cinctis, ultimo ad peripheriam subangulato; apertura obpyriformi, labro tenui sinuoso in medio producto.*

*Hab.* West Indies.

Perhaps the nearest approach in form to this *Stylifer* is *S. coralinus* of Chemnitz, which was also obtained from the West Indies; but as there is an example in Mr. Cuming's Collection agreeing almost exactly with the figure in Chemnitz, and yet of a different species, I have named the present one *S. subangulatus* from the angular character of the last whorl.

10. *ADMETE BOREALIS*, A. Adams.

*A. testa ovato-oblonga albida epidermide fusco corneo induta, anfractibus sex, convexis, supremis obscure longitudinaliter plicatis, ultimo ventricosum transversim sulcato sulcis subdistantibus suturis impressis; apertura ovali labio tenui expanso, columella arcuata simplice antice subtruncata, labro margine acuto intus simplice.*

*Hab.* Melville Island.

This appears to be a well-marked species of the northern form of *Cancellariidae*; the shell is much larger than *Admete viridula*, and the columella is entirely without plaits.

11. *MACROCHISMA SINENSIS*, A. Adams.

*M. testa elongato-ovalis compressa, antice rotundata et angustiori postice sinuata et latiori, ad extremitates elevatis, lineis elevatis radiantibus et concentricis decussatim ornata, albida fasciis carneis et punctis fuscis radiatim picta; foramine postico lanceolato elongato.*

*Hab.* China Seas.

12. *MARGINELLA GEMMA*, A. Adams.

*M. testa ovato-fusiformi, spira producta, acuminata, alba, fasciis duabus latis transversis, maculis viridescentibus tessellatis et lineis*



*articulatis picta; apertura angusta, antice dilatata, columella quadriplicata, antice macula rosea ornata, labro marginato, intus crenato, extus transversim viridi-lineato.*

*Hab.* — ? (Mus. Cuming.)

A remarkably pretty species, allied to *M. festiva*.

13. *MESALIA PLICATA*, A. Adams.

*M. testa subulato-turrita, rufo-fusca, anfractibus 12 convexiusculis, longitudinaliter plicatis, transversim sulcatis, anfractu ultimo antice subangulato; apertura subquadrato-ovali, antice vix producta ac reflexa, labro flexuoso, margine subincrassato.*

*Hab.* Teneriffe. (Mr. MacAndrew.) (Mus. Cuming.)

A red-brown *Melania*-like species, with the whorls regularly plicate.

14. *CYLLENE UNIMACULATA*, A. Adams.

*C. testa ovata alba macula rufescenti dorso ornata, spira acuminata, anfractibus planiusculis postice excavatis, transversim sulcatis longitudinaliter valde plicatis, plicis postice acute angulatis; apertura ovali, columella antice oblique sulcata, labro intus valde lirato, extus incrassato.*

*Hab.* China Seas. (Mus. Cuming.)

15. *CANCELLARIA CLATHRATA*, A. Adams.

*C. testa oblongo-ovali anguste umbilicata, albida fasciis duabus pallide rufescentibus ornata, anfractibus septem postice vix angulatis regulariter clathratis; apertura subquadrata; columella recta tuberculato-granosa, triplicata, plica postica valida, plica media unisulcata, plica antica bisulcata, labro intus valde lirato.*

*Hab.* China Seas. (Mus. Cuming.)

This species is most nearly allied to *C. indentata*, Sow.

16. *CANCELLARIA NITIDA*, A. Adams.

*C. testa acuminato-ovali imperforata, alba, nitida spira acuta suturis valde impressis, anfractibus septem planis, longitudinaliter costatis, costis elevatis, compressis distantibus, crenulatis postice alatis, productis, liris tenuibus transversis regulariter sculptis; apertura ovata, columella triplicata.*

*Hab.* Philippines. (Mus. Cuming.)

17. *CANCELLARIA TENUIS*, A. Adams.

*C. testa ovato-ventricosa, tenuicula, sordide carneola, anguste umbilicata, spiræ suturis profunde impressis, anfractibus sex planiusculis, longitudinaliter costatis, costis tenuibus crenulatis fusco articulatis, liris transversis regulariter sculptis, postice angulatis, productis, lamellatis; columella triplicata, labro tenui.*

*Hab.* China Seas. (Mus. Cuming.)

Nearly allied to *C. foveolata*.

## 18. CANCELLARIA CRENULATA, A. Adams.

*C. testa acuminato-ovata, imperforata, sordide alba, anfractibus sex planulatis, longitudinaliter plicatis, plicis validis subdistantibus, crenatis, postice angulatis productis, spinosis, transversim liris elevatis sculptis, columella triplicata.*

*Hab.* China Seas. (Mus. Cuming.)

## 19. TYPHIS TRIANGULARIS, A. Adams.

*T. testa fusiformi, triangulari, alba, subcancellata, varicibus tribus pinnatis postice tubulatis, interstitiis transversim liratis in medio nodosis; apertura ovali canali mediocri aperto dextrorso sub-reflexo.*

*Hab.* — ? (Mus. Cuming.)

This is a species quite distinct from any *Typhis* hitherto described, and resembles in form the *Murex tripterus* of Born.

## 2. ON THE GEOGRAPHICAL DISTRIBUTION OF THE MAMMALIA AND BIRDS OF THE HIMALAYA.

BY B. H. HODGSON, ESQ.\*

“The Himálayan mountains extend from the great bend of the Indus to the great bend of the Brahmapútra, or from Gilgit to Brahma Kúnd, between which their length is 1800 miles. Their mean breadth is about 90 miles; the maximum about 110, and the minimum 70 miles. The mean breadth of 90 miles may be most conveniently divided into three equal portions, each of which will therefore have 30 miles of extent. These transverse climatic divisions must be, of course, more or less arbitrary, and a microscopic vision would be disposed to increase them considerably beyond three, with reference to geological, to botanical, or to zoological phænomena. But, upon comparing Captain Herbert’s distribution of geological phænomena with my own of zoological, and Dr. Hooker’s of botanical, I am satisfied that three are enough. These regions I have denominated the lower, the middle, and the upper. They extend from the external margin of the Tarai to the ghát line of the snows. The lower region may be conveniently divided into—I. The sandstone range, with its contained Dhúns or Máris; II. The Bháver or Saul forest; III. The Tarai. The other two regions require no subdivisions. The following appear to be those demarcations by height which most fitly indicate the three regions:—

Name.	Elevational limits.
Lower region .....	Level of the plains to 4000 feet above the sea.
Central region.....	4000 to 10,000 feet above the sea.
Upper region .....	10,000 to 16,000† feet above the sea: highest peak measured is 28,176.

\* Extracted from a memoir by the same author, entitled, “On the Physical Geography of the Himalaya,” and printed in the Journal As. Soc. Bengal for 1849, by Frederic Moore.

† This is about the average height of the gháts and of the perpetual snow. It

“To begin with Man, the upper region is the exclusive habit of the Bhótias, who extend along the whole line of the gháts, and who, with the name, have retained the lingual and physical characteristics of their tramontane brethren. To the central region are confined—but each in their own province from east to west—the Mishmis, the Bors and Abors, the Ákás, the Daphlas, the Lhópás, the Lepchas, the Limbús, the Kirántis, the Múrmis, the Névárs, the Súnwárs, the Chépángs, the Gúrúngs, the Magars, the Khas or Khasias, the Kóhllis, the Garhwális, the Kakkas, the Bambas, the Gakars, the Khatirs, the Awans, and the Janjúhs. To the lower region are as exclusively limited the Kóceh, the Bódó, the Dhimál, the Kichak, the Tháru, the Dénwár, the Sallah, and the Bóksar. Of these races, those of the central region are all of transnivean origin, like the first named; but they are much altered in speech and aspect by twelve to fifteen centuries of residence in a cisuvean climate, and by mixture in some few cases (as Khas or Khasia) with southern blood; whilst the races of the lower region are of the aboriginal Indian or Tamulian stock, and nearly unmixed, though some of them have adopted the speech and customs of the Hindus\*. The hill Bráhmans, Rájputés and Moslems, so common to the westward, so rare to the eastward, are more modern immigrants from the plains. It is very deserving of special notice, that the people of the upper region cannot endure the climate of the central one, nor those of the central region the climate of the lower one; so that the distribution even of the human race in the Himálaya affords a remarkable verification of our triple transverse division from a quarter the least likely to afford any such argument. But to proceed to our zoological enumerations. To the upper region exclusively belong, among the Ruminants, the Bisons (*Poëphagus*) and Musks, the Wild Goats (*Ibex*, *Hemitragus*) and Wild Sheep (*Pseudois*, *Ovis*); among the Rodents, the Marmots and Pikas (*Lagomys*); among Plantigrades, the Bears proper (*Ursus*). In the middle region, true Bovines (*Bos*) take the place of the Bisons of the upper region; Caprine Antelopes (*Nemorhædus*, *Kemas*) replace its Musks and Wild Goats and Sheep; common Rats, and Mice, and Hares, and Porcupines, and Hedgehogs, its Marmots and Pikas; and Sun Bears (*Helarctos*) its true Bears; whilst the Deer family, unknown to the upper region, is here represented only† by the anomalous Stilt-horns (*Styllocerus*). In the lower region, the Ox family is represented by Bibos and Bubalus (splendid wild types); the Deer family, here abundant, by Rusas, Stags, Axises, and Stilt-horns to boot; the Antelopes by Tetracerus, or the four-horned kind; the Rodents, by the Bambú

is also nearly the limit of possible investigation, and of the existence of organic phenomena.

\* For these tribes see Journ. As. Soc. Beng. for December 1847, and April and June 1848, and May 1849.

† I am fully aware that *Rusas* (Sámber) are found in the western hills, but a careful consideration of the facts in that part of the Himalaya, with due advertence to the known habits of the group, satisfies me that these Deer have been driven into the western hills by the clearance of the Tarai and Bháver.

Rats (*Rhizomys*) and Spiny Hares (*Caprolagus*); and the Bear family by the Honey Bears (*Melursus*); add to all which, that to this region are exclusively confined all the large Pachyderms, such as the Elephant and Rhinoceros; and the Monkeys also (*Semnopithecus* et *Macacus*), though not so exclusively in their case. The Carnivora, again, are represented in the upper region by Ounces, by Foxes of a large sort (*V. montanus*), by the Weasels proper, and by the *Ailuri* or Cat Lories; in the middle region, by the Wild Dogs (*Cuon*), the Marten Weasels, Leopards, Thick-tailed Leopards (*F. Macrosceloides*, Hodg.), Wild Cats (*F. Murmensis*, *Pardochrous Ogilbii*), Libyan Lynxes (*Libycus*), Zibets, Screw-tails (*Paradoxurus*), and Prionodons; and in the lower region by Tigers, Leopards, Hyænas, Wolves, Jackals\*, insectivorous Foxes (*Kokri*), Bear-badgers (*Ursitaxus*), Urvas, Mangooses, Helictes or Oriental Gluttons, small Civets (*Viverrula*), hirsute Screw-tails, and sharp-faced Cats (*Celidogaster*). Zibets recur in this region but rarely, and one small species of Mongoose is found in special spots of the central region. The Otters in the upper region are represented by the small golden and brown species (*L. aurobrunnea*); in the central, by *L. monticola* and *indigitata*; in the lower, by the large Chinese species *L. Sinensis*. Among the Squirrels, the great thick-tailed and purple species (*S. macruroïdes* et *purpureus*) belong solely to the lower region; the small Lokries (*S. Lokria* et *Lokroïdes*) to the central, and the Siberian to the upper; whilst Flying Squirrels, a numerous group, are confined to the central region, so far as appears. In the Bat group, the Frugivorous species, or Pteropines, all are limited to the lower region, whilst the Horse-shoes (*Rhinolophinæ*) specially affect the central region.

“From the class of Birds we may select as characteristic of the three regions the following:—

“The True Pheasants (*Phasianus*), the Tetraogalli, the Sanguine Pheasants (*Ithaginis*), the Horned and the Crested Pheasants (*Cerionis*, *Lophophorus*) of the upper region, are replaced by Fowl Pheasants (*Gallophasis*)† in the mid-region, and by Fowls proper (*Gallus*) in the lower. In like manner, among the Partridges (*Perdicinæ*), the Grouse Partridges (*Tetraoperdia*) belong exclusively to the upper region; the Chukórs (*Caccabis*) and the Tree Partridges (*Arboricola*) to the central; and the Francolines (*Francolinus*) to the lower, though the black species of this last form are also found in the mid-region. In the Pigeon group, the Blanched Pigeons (*C. leuconota*) belong solely to the upper region; the Vinous Pigeons (*C. Hodgsoni*)

\* Jackals have made their way (like crows) to the most populous spots of the central region, but they are not proper to the region, nor Indian Foxes, though some of the latter turned out by me in 1827 in the great valley of Nepal, have multiplied and settled their race there. *Ex his disce alia.*

† The influence of longitude on geographic distribution might be singularly illustrated, did space permit, from numerous Himálayan groups, Galline and others: thus, for example, a black-breasted *Cerionis* is never seen east of the Káli, nor a red-breasted one west of it. So of the black and white crested *Gallophases*; whilst a black-backed one is never seen west of the Arún, nor a white back east of it.

to the central, and the Green, the Golden, and the Banded (*Treron*, *Chalcophaps*, *Macropygia*), as entirely to the lower; the *Trerons* alone partially entering the central tract from the lower.

“The splendid Edolian Shrikes (*Chibia*, *Chaptia*, *Edolius*) belong exclusively to the lower region. They are replaced in the central tract by plain Dicurines, and in the upper by plainer Lanians. The Cotton Birds (*Campephaga*) of the south are replaced by gaudy Ampelines (*Cochoa*) and Leiothricinians (*Leiothrix*, *Pteruthius*, *Cutia*) in the middle region: but both groups seem excluded from the north. Among the Fly-catchers the gaudy or remarkable species and forms belong wholly or chiefly to the lower region, as *Tchitrea*, *Rhipidura*, *Cryptolopha*, *Myiagra*, *Hemichelidon*, *Chelidorynx*; whilst those which approach the Warblers (*Niltava*, *Siphia*, *Digenea*) belong to the mid-region; and the plainer and more European types are alone found in the northern.

“Among the *Fissirostres*, Goat-suckers and Swallows are pretty generally distributed; but Rollers, Bee-eaters, Eurylaimi, Trogons, and all such gaudy types, belong to the south, with only occasional alpine representatives, as *Bucia* is of *Merops*. The Tenuirostral birds belong distinctively to the lower region. Yet they have representatives or summer visitants in all three, even among the Sun-birds. Upon the whole, however, it may be safely said that the Sun-birds (*Nectarinia*) belong to the south; the Honey-suckers (*Meliphagidæ*) to the centre and south; and the Creepers, Nut-hatches and Wrens\*, to the north and centre. The Sylvians or Warblers are too ubiquitous, or too migratory for our present purpose, even Boreal types being common in the lower in the cold weather. Horn-bills, Barbets, Parroquets (*Palæornis*, *Psittacula*) belong to the lower region, though they have a few representatives in the central; none in the upper. Woodpeckers abound in the lower and central regions, but are rare in the upper. True Cuckoos (*Cuculus*) are as common and numerous in the central region as Walking Cuckoos (*Phœnicophaus*, *Centropus*), &c. are in the southern, where also the Golden (*Chrysococcyx*) and Dicurine Cuckoos (*Pseudornis*) have their sole abode, whilst what few of the group belong to the upper region, are all allied to the European type. The Ravens, Pies, Choughs, Nut-crackers and Conostomes of the upper region are replaced in the central region by Tree Pies (*Cissa*, *Dendrocitta*), Jays, Rocket-birds (*Psilorhinus*), Pie Thrushes (*Garrulax*), Timalias, and Hoopoe Thrushes (*Pomatorhinus*); and in the lower region, by the common Indian Crows (*C. culminatus* et *splendens*), Grackles†, Stares, Vagabond Pies and Dirt-birds (*Malacocercus*). Thrushes proper

\* I have in this paper followed, without entirely approving, Mr. G. R. Gray's classification of my collections in the printed Catalogue of the British Museum. The geographic distribution is now attempted for the first time. But I will recur to the subject in a separate paper devoted to it.

† When Darjeeling was established there was not a Crow or Pastor to be seen. Now there are a few Crows, but no Pastors. Enormously abundant as both are in the lower region, this sufficiently proves that they are not native to the central tract, though common in the great valley of Nepal.

with Rock Thrushes, Ousels, Myophones, Zootheres, Tesias and Hypsipetes are as abundant in the central and upper region as Bulbuls, Orioles, Pittas, are in the central and lower.

“In the Finch family, the Haw-finches, Bull-finches, Gold-finches, and Cross-bills (*Loxia*) are as strictly confined to the upper regions as are the corvine Conostomes, Nut-crackers, Choughs and Ravens. The former are replaced in the central region by the Buntings, Wood-finches (*Montifringilla*), and Siskins; and in the lower region by the Weavers and Múnias. The Raptorial birds are, in general, too cosmopolitan to subserve the purposes of geographic distribution. Still it may be remarked that the True Eagles belong, *quoad* breeding at least, to the upper region; the Crested Eagles (*Circaëtus*), the Neopuses and Hawk Eagles (*Spizaëtus*) to the central; and the Pernes (*Haliaëtus* et *Pandion*) and Haliasturs to the lower. Among the Vultures the distinction is more marked: for the Eagle Vultures (*Gypaëtus*) belong exclusively to the upper region; the large European Vultures (*fulvus* et *cinereus*) to the central; and the Neophrons and the small Indian Vultures (*Bengalensis* et *tenuirostris*) to the lower. The Himálaya abounds in *Falconidæ*, all the occidental types and species being found there, and many more peculiar and oriental ones; and it deserves special remark, that whereas the former (*Imperialis*, *Chrysaëtus*, *Lanarius*, *Peregrinus*, *Palumbarius*, *Nisus*, &c.) affect the upper and central regions, the oriental types (*Hypotriorchis*, *Haliastur*, *Hierax*, *Hyptiopus*, *Elanus*, *Poliornis*) are quite confined to the lower region.

“Those perfect cosmopolitans the Waders and Swimmers, migrate regularly in April and October, between the plains of India and Tibet, and, in general, may be said to be wanting in the mountains, though most abundant in the Tarai. The great Herons (*nobilis* et *cinereus*) the great Storks (*nigra* et *purpurea*) and great Cranes (the Cyrus and Damoiselle) of the Tarai are never seen in the mountains, where the Egrets alone represent the first group. But the soft-billed smaller Waders (*Scolopacidæ*) are sufficiently common in the mountains, in which the Woodcock abounds, breeding in the upper region and frequenting the central, and rarely the lower region, from October till April. Geese, Ducks and Teals swarm in the Tarai, where every occidental type (so to speak, for they are ubiquitous) may be seen from October till April; and many oriental non-migratory types; whereas in the mountains the Mergansers (*orientalis*) and the Cormorants (*sinensis* et *pygmæus*) only are found, and that very scantily, with a few Rails and Gallinules and Sandpipers from the vast host of the Waders.”

### 3. ON NATIVE IMPRESSIONS REGARDING THE NATURAL HISTORY OF CERTAIN [INDIAN] ANIMALS.

BY H. TORRENS, ESQ., B.A., V.P. AS. SOC. BENGAL\*.

The singular impressions current among natives even of the highest rank, as to the habits and nature of certain animals, are not undeserving of record. It is rarely that the credence of the narrators in these things can be elicited, if even they go so far as to mention the existence of the belief; for they dread the ridicule as much as they anticipate the incredulity of a European: consequently these strange stories are but imperfectly known, even to the best informed among us in such legends. I mention one or two, with the circumstances of my acquaintance with them.

While out tiger-shooting with a party of Musulman gentlemen, I was asked, in a confidential way, whether I had ever seen the *Phnew*: I spell the word with the almost undescribable nasal aspirate with which it was invariably pronounced to me. With an air of grave and serious interest, which is the best way of inspiring confidence, I replied, that the nature of the thing or being was unknown to me, and I requested information on the subject. On this there was a little hesitation, when, after a time, it was explained, that as I had seen more of Tigers than my companions, they fancied I might have also seen or heard something of the animal that always preceded the Tiger, called *Phnew*, from the ceaseless iteration of a sound similar to its name. I required further enlightenment as to this creature, when I found it was a "something that preceded the Tiger by six cubits, wherever he went, making the noise 'phnew' without end, looking for things for it." The old tales of "*the Lion and his provider*" recurred to me at once, and I bethought me of the hospitality of some cat-like sound of *Felis Tigris* having led, during his nightly search for prey, to the creation of the story. I have done all I could, but in vain, to discover whether there were real grounds for the belief, based on such a habit of the animal. I killed several Tigers in company with my friends afterwards, but though we found no *Phnew* with any of them, the silent faith of my believers in the marvellous has remained unshaken as to the existence of the mysterious animal. I subsequently learned that there is in Bengal a like belief respecting it among the Hindus, who term the creature *Ghóg*†.

There are few Englishmen in India who have not perhaps heard some of the strange tales related by the natives regarding Serpents. The most remarkable to me has always been the belief in the *Raj Samp*, or King-snake, who is represented as belonging to a superior order of Serpent, as exacting homage and obedience from his ophite subjects, and sometimes, as appearing with the semblance of a crown, the type of his authority. I was one day in company with a number

\* Extracted from the Journal As. Soc. Bengal for 1849. By Frederic Moore.

† According to Babu Rajendralál Mitra, the Hindus distinguish the *Ghóg* as a different animal from the *P'heu*.—Edw. Blyth, Esq.

of native gentlemen, when the conversation turned upon the nature of antidotes in the case of Snake-bites, the belief as to the cure effected by applying to the wound the head of the identical reptile that had inflicted it, the charms powerful to compel the Snake to appear,—as to all which matters I have never been able to obtain, amid many tales, any relator daring enough to declare himself an eye-witness of the marvels he recounted. At last, mention being made of the King-snake, a party present said—“At any rate I can assure you of the existence of *him*, for it is well known that I have seen,” and the story, to the following effect, was then told. The narrator, being at that time, he said, about fourteen years old, had run hastily to the terraced roof of a ground-floor house to recover his kite, when his attention was attracted by a large *Goomna* (Cobra capello) which, without perceiving him, raised itself with dilated hood in the erect attitude common with those Snakes, and uttered a loud cry. Immediately some ten or twelve Snakes appeared from different quarters, and assembled before their king, when, after a short time, he pounced upon and devoured one of the smaller ones, with which arbitrary assertion of regal power the convocation terminated. Now the narrator of this tale had no interest in attempting to mislead me; he had mentioned what he stated again and again to the majority of persons present for years before I ever saw him, and he is naturally of intelligence, and in no sort the man to tell a useless falsehood. It is, I was then informed, by these sort of assemblages that the King-snake asserts his power, and that his subjects are called to them for the purpose of bringing tribute, in the shape of dainties for the royal palate; should, however, no tributary Frog or Cat, or bird be forthcoming, or should even the offering produced be insufficient, one of the luckless ophids pays in person the penalty of the omission, even as had been witnessed by my informant. I ventured with respect to his story to object, in as delicate a way as I could, to the incident of the cry uttered by the King-snake, but in this I was immediately over-ridden. The cry of the large *Goomna* was well known in the ruinous city where we were, and in which they abound, and it was described to me as a strident sound, the attempted imitation of which resembled the acute *staccato* note of a treble hautboy. I heard this sound myself subsequently during a sleepless night, emitted by a large Snake which killed a Rat in my bed-room: as it was pitch dark, I was unable to rise and destroy the intruder, but the sound was too peculiar not to have been that of the ophid, according as it did with the description given me, and being unlike anything I ever heard before, as also contrasting distinctly and remarkably with the cries of its victim. I have noted down these trivial, but not incurious matters, as an inducement to the record of more valuable facts as to the opinions held by natives upon the habits of animals, whence perhaps some really useful information may be elicited.

*Note by MR. BLYTH.*

The Snake which I have had invariably pointed out to me as the *Raj Samp* by natives of Bengal, is *Bungarus annularis*, which



habitually preys upon other Snakes, and is currently said to be a deadly enemy of the Cobra. I have taken a *Tropidonatus umbratus* about two-thirds the length of its devourer from the stomach of this species. Another ophiophagous species with the Cobra hood is *Hamadryas hannah* of Cantor, or *Maia vettata* of Elliot, a specimen of which, 9 feet long, I obtained in the Midnapore jungle.

Mr. Layard some time ago informed me of a popular notion among the natives of Ceylon respecting a "horn" which is said to grow sometimes, but very rarely, on the forehead of the Jackal; and this horn is regarded by them as a specific of innumerable virtues. Strange to say, the same notion is equally current among the natives of Bengal, who believe that it ensures the prosperity of its possessor, and success in every undertaking.

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July 24, 1855.

Professor Tennant, F.G.S., in the Chair.

The following papers were read:—

1. ON THE BIRDS RECEIVED IN COLLECTIONS FROM SANTA FÉ DI BOGOTA. BY PHILIP LUTLEY SCLATER, M.A., F.Z.S.

(Aves, Pl. CIII. CIV.)

The collections of South American bird skins in the hands of European dealers are mostly imported from Rio and Bahia in Brazil and from Cayenne, occasionally also from Para and the island of Trinidad. About sixteen or seventeen years ago birds were first received in Paris from a French collector resident in Sante Fé di Bogota, the capital of the republic of New Granada, and since that time, the natives having been taught the method of preparing skins, large collections have been constantly imported both into England and France from the same quarter.

The species contained in these collections were, when first brought, for the most part new to science, and were described as such by M.M. De Lafresnaye, Boissoneau, Des Murs and Bourcier in Guérin's 'Revue Zoologique' and 'Magasin de Zoologie' in France, and some also in England by Mr. Fraser, in these Proceedings\*. It is to the first-named of these gentlemen however, the Baron de Lafresnaye, of Lafresnaye, near Falaise, that we owe by far the largest part of the knowledge of New Grenadian ornithology we possess, upwards of seventy new species from that country being characterized in the numerous papers he has written upon that subject in the 'Revue Zoologique.'

At the meeting of Italian savants held at Milan in 1844, Prince Charles Lucien Bonaparte read a catalogue of a collection of birds received from Bogota by the Marchese Orazio Antinori, containing

\* See P. Z. S. 1840, pp. 14, 22 and 59.

thirty-eight species\*. This, I believe, is the only attempt that has been yet made to throw light upon the peculiar ornithology of that country, otherwise than by describing such species as were unprovided with names.

I have from time to time had the pleasure of bringing before this Society Bogota birds which seemed to have escaped the notice of previous writers on the subject, and have characterized a few others in the 'Annals of Natural History' and the 'Revue et Magasin de Zoologie.' Most of my materials have been derived from a fine series of birds from that locality possessed by the British Museum (which Mr. George Gray's kindness has afforded me every opportunity of investigating), or from the collections received by the Jardin des Plantes at Paris, in examining which I have met with great courtesy from the directors of that establishment. I have always noted down the species I have thus observed, whether new or previously known, from Bogota, and by adding to them the birds described by the several authors before mentioned as coming direct from that country, and others, of which I have specimens in my own collection, have formed a list of 435 species belonging to this peculiar Fauna. I have myself examined in one place or another examples of nearly the whole of these 435 species, and have the greatest confidence that I am not in error in including any of them in my list. Where I rely upon another writer for the locality, I have invariably given a reference to my authority.

This list, though large, is, I must own, very incomplete, nearly the whole being made up of *Passeres* and *Scansores*. I know as yet very little of the *Accipitres*, or the *Gallinæ*, *Grallæ* and *Anseres* of this fauna, or, indeed, of many individual families of the two first-mentioned orders. Were the catalogue perfect or nearly so, the number contained would be much greater, amounting, I should say, to upwards of 700 at least. My object in promulgating it thus crude is to start a foundation upon which a more perfect work may be established.

Bogota skins are easily recognized by persons who have had any experience in such matters from their peculiar preparation, the wings and tail being squeezed up into the body and the whole skin pressed together in a manner which gives them a very different appearance from birds brought from any other country. I believe that they are collected by the native Indian hunters in the forests of the New Grenadian Andes, and brought in to the capital to be disposed of to the persons who transmit them to Europe. It is stated (and I think Mr. Mark, our Vice-Consul at Bogota, is my authority on this point) that the birds are in no case brought from any very great distance in the surrounding country, perhaps never from farther than a circuit of 100 miles around the city. If this is really the case, or even if they are brought from double or treble that distance, the number of different species occurring within so limited a range would appear truly marvellous. No doubt this may be

\* See Atti della sesta Riunione degli Scienziati Italiani tenuta in Milano, p. 404.

partly accounted for by the great variety of the elevations at which they are procured; the species belonging to one elevation in these countries being totally distinct from those of another.

The city of Bogota itself is situated at a height of more than 8900 feet above the sea-level, on a plateau on the western face of the eastern chain of the Andes of New Grenada, and it is not likely therefore that any great number of the birds brought to Europe as Bogota skins are obtained in its immediate neighbourhood. The animals that inhabit those higher ranges are doubtless quite different from those of the regions beneath, and it is probably in the hot tropical valleys of the Upper Magdalena and its affluents that the largest proportion of what are commonly called 'Bogota' birds are found.

Nevertheless, as Schomburgk only mentions 420 species of birds in his Zoology of Guiana, Prince Maximilian only 362 as found in South-east Brazil, Tschudi only 460 as occurring in Peru, and Azara 448 species in the fauna of Paraguay, it is somewhat remarkable that from so limited a district a list in many respects so deficient should contain as many as 435 species, and it would seem without doubt to indicate that this region is extraordinarily rich in ornithic life.

The ornithology of this country, taken as a whole, may be pronounced quite distinct from that of Guiana or Brazil. Of course there are some species common to all parts of the South American continent; but looking at the *Passeres* included in this list, a very large proportion of them are as yet only known to occur in collections from this spot. A good many New Grenadian species, however, are likewise found on the upper branches of the Amazon, in Ecuador, and East Peru, and some are identical with those met with by D'Orbigny in Bolivia. It is in this direction (as M. de Lafresnaye has pointed out\*) that the zoological province to which this part of New Grenada belongs seems rather to extend itself. A few Mexican and Central American forms are likewise present, as might be expected, and among these may be noticed as many as ten† or twelve species that are well-known inhabitants of the United States. Until we are better acquainted with the whole subject, it is hazardous to draw conclusions as to the comparative abundance or absence of particular families or genera in New Grenadian ornithology. It may be safely said, however, that the Tanagers and Humming-birds are nowhere more numerous. Of the former, no less than eighty-six out of a whole of 230 or thereabouts, occur in collections from these parts, and my list, though incomplete, contains the names of forty-nine species of Humming-birds.

\* Rev. Zool. 1845, p. 111.

† Namely—

*Mniotilta varia.*  
*Helmitheros chrysopterus.*  
*Rhimamphus æstivus.*  
 „ *striatus.*  
 „ *blackburniæ.*  
*Myiodiocytes canadensis.*

*Setophaga ruticilla.*  
*Hedymeles ludovicianus.*  
*Pyranga æstiva.*  
 „ *rubra.*  
*Vireosylvia olivacea?*  
 „ *virescens?*

Mr. Gould has kindly assisted me by looking through the Trogons, Humming-birds, Toucans, and Odontophores contained in this catalogue.

## VULTURIDÆ.

## 1. SARCORHAMPHUS PAPA (Linn.).

Mr. Gould has recently examined a specimen of this bird, procured near Bogota. The MM. Verreaux have received it from Santa Martha.

## FALCONIDÆ.

2. SPIZAËTUS TYRANNUS (P. Max.); Temm. Pl. Col. 73. (Mus. Brit.) List of Spec. i. p. 15.

3. SPIZAËTUS ISIDORI (Des Murs). *Falco isidori*, Des Murs, Rev. Zool. 1845, p. 177; Icon. Orn. pl. 1. (Mus. Paris.)

## 4. HERPETOTHERES CACHINNANS (L.).

In Mr. S. Stevens' Bogota Collection. Santa Martha (Verreaux).

5. GERANOËTUS MELANOLEUCUS (Vieill.). *Falco aguia*, Temm. Pl. Col. 302. M. Lewy's Bogota Collection in the Paris Museum.

6. BUTEO SCOTOPTERUS (P. Max.) (Mus. Brit.) List of Spec. i. p. 38.

## 7. ICTINIA PLUMBEA (Gm.).

In the Bremen Museum from Bogota; M. Verreaux's collection from Santa Martha.

## 8. HYPOTRIORCHIS RUFIGULARIS (Daud.); Pl. Col. 348.

I have examined a Bogota specimen of this species. The MM. Verreaux have received it from Santa Martha.

9. ACCIPITER ERYTHROCNEMIUS, G. R. Gray; Kaup, Cont. Orn. 1850, p. 64.

A British Museum specimen from Mr. S. Stevens' Bogota collection seems to belong to this species.

## STRIGIDÆ.

10. PHALÆNOPSIS MINUTISSIMA (P. Max.); Bp. Consp. p. 38.

11. PHALÆNOPSIS\* — ?

12. SCOPS CHOLIBA (Vieill.). *Strix crucigera*, Spix, Av. Bras. i. pl. 9.—(Mus. Paris et P. L. S.)

13. SCOPS PORTORICENSIS, Less. Tr. d'Orn. p. 107; Des Murs, Icon. Orn. pl. 26.

A specimen in the Paris Museum so labelled, from Bogota (Rieffer, 1843), appears distinct from, although closely allied to, the preceding. The two names are quoted by Mr. Cassin as synonymous.

\* Since named *Phalænopsis jardinii*, Bp., Compt. Rend. Ac. Sc. Paris, 1855, Oct. 22nd.

14. *SYRNIUM ALBIGULARE*, Cassin, Proc. Ac. Sc. Philad. iv. p. 124 (1848); Journ. Ac. Philad. iv. p. 52. pl. 4. *Syrnium macabrum*, Bp. Consp. p. 53. *Ephialtes albopunctata*, G. R. Gray. *Syrnium albipunctatum*, Kaup, Cont. Orn. 1852, p. 120. (Mus. Paris. et P. L. S.)

15. *SYRNIUM HYLOPHILUM* (Temm.) Pl. Col. 373.

16. *SYRNIUM VIRGATUM*, Cassin, Proc. Ac. Sc. Philad. iv. p. 124 (1848).

Specimens of these two last birds from Bogota are included in Mr. Cassin's catalogue of the *Strigidae* contained in the Museum of the Philadelphian Academy.

#### CAPRIMULGIDÆ.

17. *STEATORNIS CARIPENSIS*, Humb.

One of the localities assigned to this curious bird is under the celebrated natural bridge of Iconozo, near Bogota\*.

18. *HYDROPSALIS SEGMENTATUS*, Cass. Proc. Ac. Sc. Philad. (1849) iv. p. 238.—Mus. Philad. et Brit.

19. *HYDROPSALIS LYRA*, Bp. Consp. p. 59.—Mus. Philad. et Brit.

20. *NYCTIDROMUS GRALLARIUS*, Bp. Consp. p. 62.—Mus. Philad.

#### HIRUNDINIDÆ.

21. *ACANTHYLIS RUTILA* (Vieill.). *Hirundo rutila*, Vieill. Nouv. Dict. xiv. p. 528. *Hirundo robini*, Less. Tr. d'Orn. p. 271. *Chætura brunneitorques*, Lafr. R. Z. 1844, p. 81.

The Paris types of this elegant bird, whence Vieillot and Lesson's names were derived, are said to be from Trinidad. Lafresnaye's and others I have seen were from Bogota.

#### MOMOTINÆ.

22. *MOMOTUS BRASILIENSIS*, Lath. ?

The '*Momotus brasiliensis* ex Bogota' is one of those local varieties (*climatischen Abürte*, as Dr. Cabanis calls them) which are so puzzling to ornithologists. In general size and dimensions this bird agrees with Cayenne and Para examples, but the bill is decidedly smaller. The under plumage is nearly the same. In the Bogota bird the black is confined to a smaller space in the middle of the vertex, the thalassine blue front extending further backwards, and the occipital blue patch being also rather broader. There is also no such strongly marked chestnut colour on the nape, but a castaneous tinge extends over the upper back. I have not yet examined quite adult Bogota specimens, at least none that I have seen have the spatulation of the medial rectrices complete. Such may perhaps offer more decided differences.

\* Humboldt and Bonpland, Voyage, Atlas, p. 12.

23. *MOMOTUS SEMIRUFUS*, Sclater, Rev. et Mag. de Zool. 1853, p. 489.

I am much inclined to think that this is the true *Prionites martii* of Spix (Av. Bras. i. p. 64. pl. 60), which is generally identified with Leadbeater's *M. platyrhynchus*—a very different form. Certainly Tschudi's *Prionites martii* in the Neufchatel Collection belongs to this species.

#### BUCCONIDÆ.

24. *BUCCO RADIATUS*, Sclater; Pr. Z. S. 1853, p. 122. pl. 50; Syn. of Bucc. p. 11.

25. *BUCCO MACRODACTYLUS* (Spix); Av. Bras. i. p. 51. pl. 39. fig. 2; Syn. of Bucc. p. 14.

26. *MALACOPTILA FUSCA* (Gm.); Syn. of Bucc. p. 15.

27. *MALACOPTILA SUBSTRIATA*, Sclater, Pr. Z. S. 1853, p. 123. pl. 51; Syn. of Bucc. p. 17.

I have not yet seen a second example of this species, of which the type is in my own collection.

28. *MALACOPTILA ASPERSA*, Sclater, Pr. Z. S. 1853, p. 123. In Mr. Gould's collection from Bogota.

29. *MALACOPTILA MYSTACALIS* (Lafr.); Rev. de Zool. 1850, p. 215. pl. 3; Syn. of Bucc. p. 18.

30. *MALACOPTILA FRONTALIS*, Sclater, Syn. of Bucc. p. 20.

31. *MONASA FLAVIROSTRIS*, Strickl. Cont. Orn. 1850, p. 47. pl. 48; Syn. of Bucc. p. 21.

32. *CHELIDOPTERA TENEBROSA* (Pall.); Syn. of Bucc. p. 23.

I have lately seen several Bogota examples of this bird, which seems to be widely distributed in Cisandean South America. They are smaller, and form in fact a distinct local variety from the Brazilian.

#### ALCEDINIDÆ.

33. *CERYLE AMERICANA* (Gm.); Bp. Att. Sc. It. vi. p. 403. sp. 3. Seems to range far northwards. In Sitgreave's Report of the expedition to explore the Zuni and Colorado rivers (p. 64) it is mentioned as occurring abundantly on some of the tributaries of the Rio Grande.

34. *CERYLE AMAZONA* (Gm.).

I have a female of this species from Bogota.

#### GALBULIDÆ.

35. *GALBULA FUSCICAPILLA*, Sclater, P. Z. S. 1855, p. 13. pl. 77.

36. *GALBULA RUFICAUDA*, Cuv.; Le Vaill. Ois. de Par. pl. 50.

37. *GALBALCYRHYNCHUS LEUCOTIS*, Des Murs. R. Z. 1845, p. 207; Icon. Orn. pl. 17.

#### TROGONIDÆ.

38. *TROGON COLLARIS*, Vieill.; Gould, Mon. pl. 5.

39. *TROGON PERSONATUS*, Gould, Ann. Nat. Hist. (1842) ix. p. 237.

40. *TROGON CURUCUI* (L.). *Trogon melanurus*, Gould, Mon. pl. 18.

41. *CALURUS AURICEPS*, Gould, Ann. Nat. Hist. ix. p. 238; Gray's Gen. pl. 25.

42. *CALURUS FULGIDUS*, Gould, Mon. pl. 24.

43. *CALURUS ANTISIANUS* (d'Orb.), Mag. de Zool. 1837, pl. 85. *Trogon pulchellus*, Gould, Mon. pl. 22. *Trogon antisiensis*, d'Orb. Voy. p. 381. pl. 86. fig. 1.

#### CÆREBIDÆ.

44. *CÆREBA CÆRULEA* (L.); Vieill. Ois. Dor. pl. 44.

The Bogota skins which I refer to this species may be distinguished from the Cayenne birds by their shorter bill and the black descending farther down the fore neck. Such slight differences are in my opinion insufficient for specific separation. This is perhaps the same as one of the *Cærebæ* indicated as new in the Museum Heineanum of Dr. Cabanis.

45. *CHLOROPHANES ATRICAPILLA* (Vieill.); Ois. Dor. pl. 49; Reich. Handb. d. Sp. Orn. p. 234.

I have examples of this bird from Cayenne, Trinidad, Bogota and East Peru. The Bogota and Peruvian birds have a stronger bluish tinge on the back and belly. Mr. Gould has specimens of a very similar, though possibly distinct species, from Guatemala.

46. *DACNIS CAYANA* (L.); Sw. Zool. Ill. pl. 117.

47. *DACNIS ANGELICA*, De Filippi; Pl. Enl. 669. fig. 2.  
The blue is brighter than in Cayenne specimens.

48. *DACNIS CÆREBICOLOR*, Selater, Cont. Orn. 1851, p. 106.

49. *DACNIS EGREGIA*, Selater, P. Z. S. 1854, p. 251.

Mr. Gould has lately obtained an example of this elegant species. The type I described, and which was the only one I had then seen, is in the British Museum.

50. *DACNIS PULCHERRIMA*, Selater, Rev. et Mag. de Zool. 1853, p. 480.

I have not yet seen a second specimen of this very pretty bird, which has received another name from the Vicomte Du Bus—*Nemo-*  
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*sia torquata* (Bull. Ac. Sc. Brux. xxii. no. 2. Feb. 1855). But I maintain my opinion that it is a typical *Dacnis*, though I allow that it is difficult to separate certain species of that genus from the true *Nemosia*.

51. DACNIS LEUCOGENYS, Lafr., Rev. et Mag. de Zool. 1852, p. 470.

The British Museum have lately acquired a skin of this bird, which I omitted to include in my list of the genus given at p. 252 of the 'Proceedings' for last year. It forms a tenth species of this beautiful group, and must be placed next to *D. speciosa*.

52. CONIROSTRUM ALBIFRONS, Lafr., R. Z. 1842, p. 301, et Mag. de Zool. 1843, Ois. t. 35 (*♂ adultus*); *C. atrocyaneum*, Lafr. R. Z. 1848, p. 9 (*♂ juv.*), et *C. cæruleifrons*, Lafr. R. Z. 1842, p. 302 (*♀*).

I cannot but regard these three names as applicable to one species. The white-headed bird appears to be the adult, and the blue-headed the young male. I have examples of transition between these two. The *cæruleifrons* seems the female. I have also what I consider a still more immaturely plumaged bird of this species: *Olivaceum*; *subtus flavescens*; *alis caudaque fuscis*.

53. CONIROSTRUM SITTICOLOR, Lafr. R. Z. 1840, p. 102.

54. CONIROSTRUM RUFUM, Lafr. Mag. de Zool. 1842. *Dacnis rufo-cinerea*, Bp. Att. Sc. It. vi. p. 404, et Consp. p. 401.

55. CERTHIOLA LUTEOLA, Cab. M. H. p. 97. sp. 533.

Trinidad and Bogota specimens of this species agree with each other, and with Dr. Cabanis' description.

56. DIGLOSSA SIMILIS, Lafr. R. Z. 1846, p. 318.

57. DIGLOSSA ATERRIMA, Lafr. R. Z. 1846, p. 319.

58. DIGLOSSA PERSONATA (Fraser.), P. Z. S. 1840, p. 22. (Feb. 25th.) *Uncirostrum cyaneum*, Lafr. R. Z. 1840, p. 102. (April 1st.)

59. DIGLOSSA LAFRESNAYII (Boiss.), R. Z. 1840, p. 5. *Agrilorhinus bonapartei*, Fraser, P. Z. S. 1840, p. 22.

60. DIGLOSSA HUMERALIS (Fraser), P. Z. S. 1840, p. 22; Cab. M. H. p. 27 (note).

I am rather doubtful whether these two last birds and Cabanis' *intermedia* (M. H. p. 27) are all valid species.

61. DIGLOSSA ALBILATERALIS, Lafr. R. Z. 1843, p. 99, et 1846, p. 316.

62. DIGLOSSA D'ORBIGNII (Boiss.), R. Z. 1840, p. 5.

Probably a female. Bogota seems the head-quarters of this peculiar genus. One is found in Central America and South Mexico, one in the highlands of British Guiana, three in Bolivia, and one (accord-



ing to Gay) in Chili. Professor Jameson has transmitted *D. personata* from the neighbourhood of Quito.

TROCHILIDÆ.

Mr. Gould has been kind enough to revise my list of *Trochilidæ*, of which at least fifty species occur in Bogota collections.

63. EUTOXERES AQUILA (Lodd.), P. Z. S. 1847, p. 42; Gould, Mon. Trochil. pt. ii. pl. 5.

64. PHAËTHORNIS EMILIE (Bourc. et Muls.), Ann. Sc. Lyons, 1846, p. 317.

65. PHAËTHORNIS GUYI (Less.); Gould, Mon. iv. 9.

66. PHAËTHORNIS ANTHOPHILUS (Bourc.), R. Z. 1843, p. 71; Gould, Mon. vii. 13.

67. PHAËTHORNIS STRIIGULARIS, Gould, Mon. viii. 15.

68. PHAËTHORNIS GRISEIGULARIS, Gould, Mon. ii. 14.

69. HYPUROPTILA BUFFONI (Less.); Gould, Mon. vii. 14.

70. HYPUROPTILA CÆRULEIGASTER, Gould, P. Z. S. 1847, p. 96; Mon. vii. 15.

71. COLIBRI ANAIS (Less.). *Petasophora anais*, Gould, Mon. v. 2.

72. COLIBRI CYANOTIS (Bourc.), R. Z. 1843, p. 101. *Petasophora cyanotis*, Gould, Mon. v. 4.

73. COLIBRI DELPHINÆ (Less.), R. Z. 1839, p. 44. *Petasophora delphinæ*, Gould, Mon. vi. 8.

74. SCHISTES GEOFFROYI (Bourc. et Muls.), Ann. Sc. Lyons, 1843, p. 37; Gould, Mon. vi. 12.

75. HELIODOXA JACULA, Gould, P. Z. S. 1849, p. 96.

76. PTEROPHANES TEMMINCKI (Boiss.), R. Z. 1839, p. 354; Gould, Mon. i. 7. *T. cyanopterus*, Fras. P. Z. S. 1840, p. 17.

77. DOCIMASTES ENSIFERUS (Boiss.), R. Z. 1839, p. 354; Gld. Mon. i. pl. 8. *T. derbianus*, Fras. P. Z. S. 1840, p. 16.

78. DORIFERA LUDOVICIE (Bourc. et Muls.), Ann. Sc. Lyons, 1847, p. 136; Gould, Mon. vi. 4.

79. DORIFERA JOHANNÆ (Bourc.), P. Z. S. 1847, p. 45; Gould, Mon. vi. 5.

80. HELIANTHEA TYPICA, Bp.; Gould, Mon. viii. 5.

81. HELIANTHEA BONAPARTII (Boiss.), R. Z. 1840, p. 6; Gould, Mon. viii. 6. *T. aureigaster*, Lodd. P. Z. S. 1840, p. 16.

82. CÆLIGENA TYPICA, Bp.; Gould, Mon. viii. 11.
83. LAFRESNAYA FLAVICAUDATA (Fraser), P. Z. S. 1840, p. 18. *T. lafresnayi*, Boiss. R. Z. 1840, p. 8.
84. HELIANGELUS CLARISSÆ (Long.), R. Z. 1841, p. 306; Mag. de Zool. 1842; Ois. t. 26.
85. HELIOTRYPHA PARZUDAKII (Less.), R. Z. 1840, p. 72. *T. exortis*, Fraser, P. Z. S. 1840, p. 18 ?
86. ERIOCNEMIS CUPREIVENTRIS (Fraser), P. Z. S. 1840, p. 15; Gould, Mon. vi. pl. 9.
87. ERIOCNEMIS VESTITA (Longuem.), R. Z. 1838, p. 314. *T. uropygialis*, Fraser, P. Z. S. 1840, p. 15.
88. ERIOCNEMIS AURELIÆ (B. & M.), Ann. Sc. Lyons. 1846, p. 315.
89. ERIOCNEMIS SIMPLEX, Gould, P. Z. S. 1849, p. 96; Mon. iii. pl. 8.
90. ERIOCNEMIS ALINÆ (Bourc.), R. Z. 1842, p. 372.
91. ERIOCNEMIS ISAACSONI (Parz.), R. Z. 1845, p. 95.
92. LESBIA CYANURA (Stephens). *T. cyanurus*, Stephens, Gen. Zool. xiv. p. 239. *Cynanthus cyanurus*, Gould, Mon. iii. 2. *Ornismya kingii*, Boiss. R. Z. 1840, p. 7. *Lesbia gorgo*, Reich.
93. LESBIA AMARYLLIS (Bourc. et Muls.), R. Z. 1848, p. 273; Gould, Mon. vii. 1.
94. LESBIA GOULDI (Lodd.), P. Z. S. 1832, p. 7. *Ornismya sylphia*, Less. R. Z. 1840, p. 73.
95. RHAMPHOMICRON MICRORHYNCHUM (Boiss.), R. Z. 1839, p. 354. *T. brachyrhynchus*, Fraser, P. Z. S. 1840, p. 16. Gould, Mon. iv. 4.
96. RHAMPHOMICRON HETEROPOGON (Boiss.), R. Z. 1839, p. 355. *T. coruscus*, Fras. P. Z. S. 1840, p. 15.
97. OXYPOGON GUERINI (Boiss.), R. Z. 1840, p. 7; Gould, Mon. i. 12. *T. parvirostris*, Fraser, P. Z. S. 1840, p. 18.
98. METALLURA TYRIANTHINA (Lodd.), P. Z. S. 1832, p. 6. *O. paulinæ*, Boiss. R. Z. 1839. p. 354. *T. allardi*, Bourc. R. Z. 1839, p. 294.
99. ADELOMYIA MELANOGENYS (Fraser), P. Z. S. 1840, p. 18. *T. sabinæ*, Bourc. et Muls. Ann. Sc. Lyons, 1846, p. 323.
100. CLYTOLEMA RUBINOIDES (Bourc. et Muls.), Ann. Sc. Lyons, 1846, p. 322.

101. *PANOPLITES FLAVESCENS* (Lodd.), P. Z. S. 1832, p. 7; Gould, Mon. viii. p. 10. *O. paradisea*, Boiss. R. Z. 1840, p. 6.
102. *THALURANIA COLOMBICA* (Bourc.), R. Z. 1843, p. 2.
103. *CYANOMYIA FRANCIE* (B. et M.), Ann. Sc. Lyons, 1846, p. 324.
104. *CHRYSURONIA CENONE* (Less.), Ois. Mouch. Supp. pl. 30.
105. *SAUCEROTTIA SOPHIE* (Bourc.), Ann. Sc. Lyons, 1846, p. 318.
106. *HYLOCHARIS PORTMANNI* (Bourc.), R. Z. 1843, p. 2.
107. *SPATHURA UNDERWOODI* (Less.); Gould, Mon. i. pl. 9.—*Spathura spatuligera*, Reich.
108. *GOULDIA POPELAIREI* (Dubus); Gould, Mon. vii. pl. 6.
109. *GOULDIA CONVERSI* (B. & M.), Ann. Sc. Lyons, 1846, p. 314; Gould, Mon. vii. 7.
110. *CALOTHORAX HELIODORI* (Bourc.), R. Z. 1840, p. 275; Gould, Mon. ii. 8.
111. *CALOTHORAX MULSANTI* (Bourc.), Ann. Sc. Lyons, 1842, p. 344; Gould, Mon. ii. 9.

## FURNARINÆ.

112. *RHODINOCICHLA ROSEA* (Less.).—*Furnarius roseus*, Less., Ill. Zool. pl. 5; Hartlaub in Cab. Journ. f. Orn. 1853, p. 33.—*Turdus vulpinus*, Hartl. R. Z. 1849, p. 276, et P. Z. S. 1850, p. 276, pl. 32 (♀).—*Cichalopia* (!) *vulpina*, Bp. Notes Orn. p. 29.

I have seen specimens of this curious bird from Aragua in Venezuela (Mus. Berolin.), from Bogota, and from Panama and Guatemala in the Derby Museum at Liverpool.

## SYNALLAXINÆ.

113. *SYNALLAXIS STRIATICOLLIS*, Lafr. R. Z. 1843, p. 290.
114. *SYNALLAXIS UNIRUFUS*, Lafr. R. Z. 1843, p. 290.
115. *SYNALLAXIS BRACHYURUS*, Lafr. R. Z. 1843, p. 290.
116. *SYNALLAXIS GULARIS*, Lafr. R. Z. 1843, p. 290.
117. *SYNALLAXIS CINNAMOMEUS*, Lafr. R. Z. 1843, p. 290.
118. *SYNALLAXIS FULIGINOSUS*, Lafr. R. Z. 1843, p. 290.
119. *ANABATES FLAMMULATUS*, Eyton, Contr. Orn. 1850, p. 131.
120. *ANABATES BOISSONEAUII*, Lafr. R. Z. 1840, p. 104.—*Psev-*

*docolaptes semicinnamomeus* (!), Reich. Hand. d. Sp. Orn. p. 210. (1853).

121. MARGARORNIS SQUAMIGERA (Lafr. et d'Orb.).—Syn. Av. in Mag. de Zool. 1838, p. 14; d'Orb. Voy. pl. 54. fig. 2.—*Anabassitta squamigera*, Lafr. Rev. et Mag. de Zool. 1853, p. 492.—*Margarornis perlata*, Reich. Hand. d. Sp. Orn. p. 179.

#### DENDROCOLAPTINÆ.

122. DENDROCOLAPTES PROMEROPHIRHYNCHUS (Less.), R. Z. 1840, p. 270.—*D. lineatocephalus*, G. R. Gray, Gen. Birds, pl. 43; Lafr. R. et M. de Zool. 1850, p. 99.

123. DENDROCOLAPTES PERROTI, Lafr. R. Z. 1844, p. 80; Mag. de Zool. 1844, Ois. t. 54; R. et M. de Zool. 1850, p. 101.

124. DENDREXETASTES TEMMINCKI (Lafr.), Rev. de Zool. 1851, p. 145. pl. 4.—*Dendrexetastes capitoides*, Eyt. Contr. Orn. 1851, p. 76.—*Cladoscopus temmincki*, Reich. Handb. p. 192;—P. Z. S. 1855, p. 77.

The Derby Museum specimen of this bird (Mr. Eyton's type) and one in the British Museum are from Cayenne, but M. de Lafresnaye gives Bogota as the locality of his *D. temmincki*.

125. DENDROCOPS TYRANNINUS, Lafr. R. et M. de Zool. 1851, p. 328.

126. DENDRORNIS TRIANGULARIS (Lafr.), R. Z. 1842, p. 134; Mag. de Zool. 1843, pl. 32; R. et M. de Zool. 1850, p. 418.

127. PICOLAPTES LACRYMIGER, Lafr. R. et M. de Zool. 1850, p. 144; Des Murs, Icon. Orn. pl. 70.

128. XIPHORHYNCHUS PUCHERANI, Lafr. R. et M. de Zool. 1850, p. 378; Des Murs, Icon. Orn. pl. 68.

129. GLYPHORHYNCHUS CUNEATUS (Licht.). (Mus. Brit.).

#### MENURINÆ.

130. TRIPTORHINUS ORTHONYX (Lafr.). *Merulaxis orthonyx*, Lafr. R. Z. 1843, p. 131; Mag. de Zool. 1844, pl. 93.

131. SCYTALOPUS SENILIS (Lafr.), R. Z. 1840, p. 103.

132. SCYTALOPUS GRISEICOLLIS (Lafr.), R. Z. 1840, p. 103.

133. SCYTALOPUS SQUAMIGER (Lafr.), R. Z. 1840, p. 103.

134. TROGLODYTES — ? —.

A Bogota skin of a true *Troglodytes* allied to Swainson's *æquinoctialis* is in my collection, but I am unwilling to describe it as new, until I have made further researches among several rather obscure South American species of this genus, to one of which it may belong.

135. *THRYOTHORUS FASCIATO-VENTRIS*, Lafr. R. Z. 1845, p. 337.

136. *THRYOTHORUS STRIATULUS*, Lafr. R. Z. 1845, p. 338.

137. *THRYOTHORUS RUFALBUS*, Lafr. R. Z. 1845, p. 337.

I have Bogota skins of this bird, which perfectly agree with examples from Santa Martha from the MM. Verreaux's collection. The latter have been recognized by M. de Lafresnaye himself as of this species. I have also the same bird from Trinidad.

138. *THRYOTHORUS RUTILUS* (Vieill.).—*T. rutilans*, Sw. Orn. Dr. pl. 15.

In the Paris Museum from Bogota (Lewy). Common in collections from Trinidad.

139. *CINNICERTHIA UNIRUFA* (Lafr.).—*Linnornis unirufa*, Lafr. R. Z. 1840, p. 105.—*Cinn. unicolor*, Less. Descr. d. Mamm. et Ois. p. 286.—*Presbys unirufa*, Cab. M. H. p. 80 (1850).

This and the following bird seem more closely allied to *Thryothorus* than to *Linnornis* as placed by Lafresnaye.

140. *CINNICERTHIA CANIFRONS* (Lafr.).—*Linnornis canifrons*, Lafr. R. Z. 1840, p. 105.—*Presbys canifrons*, Cab. M. H. p. 80.

141. *CAMPYLORHYNCHUS BREVIROSTRIS*, Lafr. R. Z. 1845, p. 339.

142. *CAMPYLORHYNCHUS ZONATOIDES*, Lafr. R. Z. 1846, p. 92. (Mus. Brit.)

#### MNIOTILTINÆ.

143. *MNIOTILTA VARIA* (L.); Wilson, Am. Orn. pl. 19. fig. 3.

144. *HELMITHEROS CHRYSOPTERUS* (L.); Wilson, Am. Orn. pl. 15. fig. 5.

145. *RHIMAMPHUS ÆSTIVUS* (L.); Wils. Am. Orn. pl. 15. fig. 6.

146. *RHIMAMPHUS STRIATUS* (Gm.); Wils. Am. Orn. pl. 30. fig. 3.

147. *RHIMAMPHUS BLACKBURNI* (Gm.); Wilson, Am. Orn. pl. 23, fig. 3.

148. *COMPSOTHYLPIS BRASILIANA* (Licht.). — *S. brasiliana*, Licht. Verz. d. Doubl. p. 35.—*S. venusta*, Temm. Pl. Col. 293. fig. 1.

149. *MYIODIOCTES CANADENSIS* (L.); Wilson, Am. Orn. pl. 26. fig. 2.—*Setophaga nigricincta*, Lafr. R. Z. 1843, p. 292, et 1844, p. 79; P. Z. S. 1854, p. 111.

150. *MYIOTHLYPIS NIGRICRISTATA* (Lafr.).—*Tricas nigricristatus*, Lafr. R. Z. 1840, p. 230; Bp. Att. Sc. It. vi. p. 405; Bp. Consp. p. 311.

151. *MYIOTHLYPIS LUTEOVIRIDIS* (Bp.).—*Trichas luteoviridis*, Bp. Att. Sc. It. vi. p. 405, et Consp. p. 311.

152. HYLOPHILUS SEMIBRUNNEUS, Lafr. R. Z. 1845, p. 341.
153. HYLOPHILUS FLAVIPES, Lafr. R. Z. 1845, p. 342.
154. BASILEUTERUS VERMIVORUS, Cab., Schomb. Reise iii. 661; Bp. Consp. p. 313. (Mus. Brit.)
155. BASILEUTERUS CORONATUS (Tsch.).—*Myiodioctes coronatus*, Tsch. F. P. p. 193. pl. xiv. fig. 1. (err. sub nom. *M. tristriato*). In the Paris Museum from M. Lewy's Bogota collection.

156. BASILEUTERUS DELATTRII, Bp. Notes Orn. p. 62.

*B. olivaceus*: pileo genisque rubris: superciliis a fronte et in nucham productis albis: subtus flavus, lateribus olivascentibus.

This seems to be the same as the Nicaraguan bird characterized by Prince Bonaparte. It is common in Bogota collections, and is generally confounded with Swainson's *Setophaga rufifrons* from Mexico, which has only the breast yellow, and the belly and crissum brownish-white.

157. SETOPHAGA RUTICILLA (L.); Wils. Am. Orn. pl. 6. fig. 6.

158. SETOPHAGA VERTICALIS (Lafr. et d'Orb.); d'Orb. Voy. p. 330. pl. 35. fig. 1.

159. SETOPHAGA ORNATA, Boiss. R. Z. 1840, p. 70.

160. SETOPHAGA FLAVEOLA, Lafr. R. Z. 1844, p. 81.

161. SETOPHAGA LEUCOPHOMMA, Kp., P. Z. S. 1851, p. 49.

162. SETOPHAGA RUFICORONATA, Kp., P. Z. S. 1851, p. 49.

These four last species seem to be very closely allied to one another. I have not yet studied the group sufficiently to be able to give an opinion as to whether they are all truly distinct. The *S. ornata* is common in Bogota collections.

163. SETOPHAGA RUFPECTUS (Less.).—*Tyrannula rufpectus*, Less. Descr. d. Mamm. et Ois. p. 296.

164. SETOPHAGA ALBIDIEMA, Lafr. R. Z. 1848, p. 8.

165. SETOPHAGA CINNAMOMEIVENTRIS (Lafr.), R. Z. 1843, p. 291.

These three last species would be more correctly placed, perhaps, among the *Tyranninæ*. They are certainly intermediate in form.

#### MOTACILLINÆ.

166. ANTHUS BOGOTENSIS, Sclater, P. Z. S. 1855, p. 109. pl. ci.

#### TURDINÆ.

167. TURDUS GIGAS, Fraser, P. Z. S. 1840, p. 59.

## 168. TURDUS — ? —

I have two specimens of a Bogota thrush allied to *T. fumigatus*, Licht., which I cannot yet satisfactorily determine.

## 169. TURDUS MINIMUS, Lafr. R. Z. 1848, p. 5.

Prince Bonaparte considers this the same as the northern *T. minor* (Notes Orn. p. 26, note).

## 170. MIMUS — ? —

I have a Bogota skin of a bird of this difficult genus, possibly referable to *M. colombianus*, Cab. or *M. melanopterus*, Lawrence.

## FORMICARIINÆ.

171. GRALLARIA SQUAMIGERA, F. Prevost, Zool. Venus, pl. 1 ; Lafr. R. Z. 1842, p. 333.

172. GRALLARIA RUFICAPILLA, Lafr. R. Z. 1842, p. 333.

173. GRALLARIA MODESTA, Sclater, P. Z. S. 1855, p. 89. pl. 94.

174. GRALLARIA HYPOLEUCA, Sclater, P. Z. S. 1855, p. 88.

175. GRALLARIA RUFULA, Lafr. R. Z. 1843, p. 99.

## 176. CHAMÆZA MARGINATA (Max.) ?

A single skin in the British Museum does not seem distinct from Brazilian specimens. It may perhaps be more strictly referable to the Peruvian *C. olivacea*, Tsch., with which I am not acquainted.

177. CHAMÆZA MOLLISSIMA, Sclater, P. Z. S. 1855, p. 89, pl. 96.

178. FORMICARIUS NIGRIFRONS, Gould, P. Z. S. 1855, p. 68.

Very similar to *Formicarius cayanensis*, Bodd. (Pl. Enl. 821), but with a permanent black front.

179. FORMICARIUS FUSCATER (Lafr.), R. Z. 1845, p. 341.

180. CONOPOPHAGA ARDESIACA, Lafr. et d'Orb. ? Tsch. F. P. p. 179 (certe).

A Bogota skin in the British Museum is identical with a type-specimen of Tschudi in my own collection, but I rather doubt whether Tschudi has rightly assigned it to d'Orbigny's Bolivian species.

181. CONOPOPHAGA NANA (Lafr.).—*Grallaria nana*, Lafr. R. Z. 1842, p. 334.—(Mus. Brit.)

Seems more of a *Conopophaga* than a *Grallaria*, as placed by Lafresnaye.

182. PITHYS ALBIFRONS (Gm.), Pl. Enl. 707. fig. 1. Schomb. Guian. iii. 685.—Mus. Paris., ex Lewy.

183. HETEROCNEMIS MARGINATA, Sclater, sp. nov.

*H. supra cinnamomeo-brunnea, pennis strictissime nigro mar-*

*ginatis: alis caudaque intus nigricantibus, externe brunnescentibus: subtus alba, gutturis et pectoris totius plumis stricte brunneo marginatis, quasi squamatis; his marginibus versus ventrem gradatim latioribus: ventre crissoque cinnamomeo-brunneis, nigro transversim vittatis: rostro nigro, mandibula inferiore basi alba; pedibus pallide brunneis.*

Long. tota 3·0: alæ 2·2: caudæ 1·2: rostri a fronte ·5.

Mr. Strickland's name *Holocnemis*, proposed in 1844 for the *H. navia* (figured in Cont. to Orn. 1849, pl. 18), has been previously applied to a family of Coleoptera by Schilling, and I therefore propose to change it into *Heterocnemis*. A second species of the genus seems to be the bird figured in Buffon's Pl. Enl. 73, fig. 2, under the name of 'Le Bambla de Cayenne.'—(*Turdus bambla*, Bodd.—*Heterocnemis bambla*, mihi.)—The present bird is very closely allied to the latter. In the upper plumage it is very similar, being only of a more cinnamomeous tinge; but it may be distinguished by the want of the white markings on the wings, and the throat, breast and upper belly being white, each feather narrowly margined with brown. In *H. bambla* these parts are ash-brown, with obsolete transverse markings. Lesson's *Myrmotheru troglodytes* (Desc. d. Mamm. et Ois. p. 301, no. 118) seems the same as *H. bambla*. This form is indeed very closely connected with some of the Wrens, and hardly to be separated from certain birds that are usually placed in the genus *Scytalopus*.

184. HYPOCNEMIS ERYTHROPHRYS.—*Pithys erythrophrys*, Sclater, P. Z. S. 1854, p. 255, pl. lxxii. fig. 1.

This is possibly the same as Dr. Cabanis' *Conopophaga angustirostris*, Schomb. Guian. iii. 685.

185. HYPOCNEMIS LEUCOPHRYS (Tsch.).—*Thamnophilus myiotherinus* ♀, Spix, Av. Bras. ii. p. 30, pl. 42, fig. 2?—*Pithys leucophrys*, Tsch. F. P. p. 176.—*Myrmonax leucophrys*, Cab. Orn. Notiz. p. 211?

*H. nigro-schistacea; alis caudaque nigricantibus; pileo antico et superciliis latis albis: gutture nigro in ventrem sensim dilutescente: rostro pedibusque nigris.*

Long. tota 5·0: alæ 2·75: caudæ 2·0.

This bird, which is common in collections from Bogota, appears to be the same as Tschudi's species, though his figure is not a good one.

186. HYPOCNEMIS MYIOTHERINA (Spix).—*Thamnophilus myiotherinus* ♂, Spix, pl. 42, fig. 1.—*Hypocnemis melanolæma*, Sclater, P. Z. S. 1854, p. 254, pl. lxxii. fig. 2.

I have erred in giving a fresh name to this species, which appears to be the same as the bird figured by Spix as the male of his *Thamnophilus myiotherinus*. A Bogota specimen is in the British Museum.



## 187. HYPOCNEMIS —? —.

*Olivaceo-brunnea, fronte paululum rufescente; plumis narium, loris, capitis lateribus et regione auriculari atris; tectricibus alarum nigris pallido brunneo late terminatis; subtus clare fulvo-brunnea, gutture toto albo; collaribus maculis quibusdam nigris; rostro nigro, mandibula inferiore basi albicante, pedibus nigris.*

Long. tota 4.75 : alæ 2.6 : caudæ 1.6.

This is a very close ally of my *H. melanosticta*, P. Z. S. 1854, p. 234. pl. lxxiii., to the female of which it shows much resemblance. But the bill is stronger and thicker, the throat purer white, the abdomen much more deeply coloured, of a buffish brown. There are also no traces of superciliary marks, and the wings are more broadly margined. I think it must be in female plumage; yet the example in the British Museum, and three or four in the Paris collection, sent by M. Lewy from Bogota, seem to be all alike.

188. MYRMECIZA LEUCASPIS, Sclater, P. Z. S. 1854, p. 253. pl. 70.

189. MYRMECIZA LONGIPES (Sw.), Zool. Ill. n. s. pl. 23. (Mus. Brit.)

190. FORMICIVORA ORNATA, Sclater, Rev. et Mag. de Zool. 1853, p. 480. Mus. Paris., ex Lewy.

191. FORMICIVORA AXILLARIS (Vieill.) ? (Mus. Brit.)

192. FORMICIVORA PYGMÆA (Gm.). Pl. Enl. 831. fig. 2.

Several Bogota skins of what I take to be this species are in the British Museum; but the throat is white, not straw-coloured, as in Buffon's plate.

193. FORMICIVORA CALLINOTA, Sclater, P. Z. S. 1855, p. 89. pl. xvi.

194. FORMICIVORA CAUDATA, Sclater, P. Z. S. 1854, p. 254. pl. lxxiv.

195. PYRIGLENA TYRANNINA, Sclater, P. Z. S. 1855, p. 90. pl. xviii.

196. PYRIGLENA ELLISIANA, Sclater, P. Z. S. 1855, p. 109. pl. c.

197. PYRIGLENA QUIXENSIS (Corn.)—P. Z. S. 1854. p. 112.

I have examined a Bogota skin of this bird, which agrees with the one in Mr. Gould's Quixos collection mentioned by me in the list given in these Proceedings for last year.

198. DYSITHAMNUS SEMICINEREUS, Sclater, P. Z. S. 1855, p. 90. pl. xvii.

199. THAMNOPHILUS MELANURUS, Gould, P.Z.S. 1855, p. 69. pl. lxxxiii.

200. *THAMNOPHILUS ALBICANS*, Lafr. R. Z. 1844, p. 82.
201. *THAMNOPHILUS MULTISTRIATUS*, Lafr. R. Z. 1844, p. 82.
202. *THAMNOPHILUS BREVIROSTRIS*, Lafr. R. Z. 1844, p. 82.
203. *THAMNOPHILUS ASPERSIVENTER*, Lafr. et d'Orb.—Lafr. R. Z. 1844, p. 83.
204. *THAMNOPHILUS SCHISTACEUS*, d'Orb.—Lafr. R. Z. 1844, p. 83.
205. *THAMNOPHILUS NÆVIUS* (Gm.)?—Sclater, Draft Arr. of Thamn. in Edinb. N. Phil. Journ. 1855, vol. i. p. 243. sp. 28.
206. *THAMNOPHILUS IMMACULATUS*, Lafr. R. Z. 1845, p. 340.

## ALECTRURINÆ.

207. *COPURUS LEUCONOTUS*, Lafr. R. Z. 1842, p. 335.
- I agree with M. de Lafresnaye in considering this species distinct from the Brazilian *Copurus filicauda*, but I believe that the back is only *white* in younger individuals, excepting the patch on the rump, which is common to the other species. But the New Grenadian bird may be recognized by the comparatively darker colour of the head, and the extreme elongation of the medial rectrices, which in my Bogota skins are two inches longer than the corresponding feathers of the Brazilian.

208. *FLUVICOLA PICA* (Bodd.)—Pl. Enl. 675. fig. 1; *M. bicolor*, Gm.

I have also Trinidad and Cayenne specimens of this bird, which is quite distinct from its southern representative—*Fluvicola albiventris* (Spix) (Av. Bras. ii. p. 21. pl. 30 = *F. bicolor*, d'Orb. Voy. p. 343)—with which it is generally confounded.

## TYRANNINÆ.

209. *TODIROSTRUM RUFICEPS*, Kp., P. Z. S. 1851, p. 52; *T. multicolor*, Strickl., Cont. Orn. 1852, pl. 85. fig. 2. p. 42.

210. *TODIROSTRUM GRENADENSE*, Hartl., R. Z. 1843, p. 289; Cont. Orn. 1852, pl. 85. fig. 1; *T. pectoralis*, Kp. P. Z. S. 1851, p. 52.

211. *TODIROSTRUM SQUAMICRISTATUM*, Lafr. R. Z. 1846, p. 363.

212. *TODIROSTRUM CINEREUM* (L.)—Pl. Enl. 585. fig. 3; *Todus melanocephalus*, Spix, Av. Bras. ii. pl. 9. fig. 2.

This little bird is found in Brazil (Spix and Max.), Guiana (Schomb.), Cayenne (Buff.) and Trinidad, from all which localities I have specimens. The British Museum and Mr. Gould's collection contain examples from Bogota.

213. **TODIROSTRUM GRACILIPES**, Sclater, sp. nov.

*T. supra olivaceum; alis caudaque nigricantibus, olivaceo anguste limbatis; pileo fuscescente; loris mentoque albidis; subtus flavum, lateribus olivascentibus; gutture et pectore longitudinaliter nigro striatis; tectricibus subalaribus sulphureis; rostro nigro; pedibus carnis; tarsi gracillimis.*

Long. tota 3·8; alæ 2·0; caudæ 1·7.

This apparently new species is most nearly allied to *T. maculatum* (Desm.) and *T. striaticolle*, Lafr. (in both of which the neck is also striated), but has the whole throat yellow. The bill agrees in form with that of the former bird, but is rather shorter and narrower. The type specimen is in the British Museum.

214. **TYRANNULA CINNAMOMEA** (d'Orb. et Lafr.), Syn. Av. in Mag. de Zool. 1837, p. 49; *M. vieilloti*, d'Orb. Voy. p. 321. pl. 34. fig. 1; *Myiobius pyrrhopterus*, Hartl. R. Z. 1843, p. 289.

215. **TYRANNULA ERYTHRURA**, Cab., Orn. Not. in Wiegman Archiv, 1844, p. 249. t. 5. fig. 1; Schomb. Guian. iii. 701. (Mus. Brit.)

216. **TYRANNULA DIADEMA** (Hartl.) R. Z. 1843, p. 289; *M. fuscocapilla*, Lafr. R. Z. 1843, p. 291.

217. **TYRANNULA RUFICEPS** (Lafr.); *Muscicapa (Todiostrostrum?) ruficeps*, Lafr. R. Z. 1843, p. 291; *Fluvicola (!) ruficeps*, Lafr. R. Z. 1844, p. 80; *Conopophaga (!) ruficeps*, Lafr. Mag. de Zool. 1844, pl. 91, et Bp. Consp. p. 203.

218. **TYRANNULA ORNATA**, Lafr. R. et M. de Zool. 1853, p. 57. P. Z. S. 1854, p. 113. pl. 66. fig. 2.

219. **TYRANNULA RUIPECTUS**, Lafr. R. Z. 1846, p. 207.

220. **TYRANNULA SETOPHAGOIDES**, Bp., Att. Sc. It. vi. p. 405; et Consp. p. 188.

221. **TYRANNULA CINCHONETI** (Tsch.), F. P. p. 151. pl. 8. fig. 2; Lafr. R. Z. 1848, p. 7; *T. icterophrys*, Lafr. R. Z. 1845, p. 341.

222. **SAYORNIS NIGRICANS** (Sw.).—*Tyrannula nigricans*, Sw. Phil. Mag. 1827, p. 367; Aud. pl. 434; Bp. Notes Orn. p. 87. (Mus. Brit.)

223. **SAYORNIS ARDOSIACA** (Lafr.).—*Tyrannula ardosiaca*, Lafr. R. Z. 1844, p. 80.

Closely allied to the preceding according to Lafresnaye, and therefore probably to be placed in the same genus.

224. **PYROCEPHALUS RUBINEUS** (Bodd.).—Pl. Enl. 675. fig. 1.

This bird is a summer visitant to Texas and New Mexico: see Cassin's B. of California, pl. xviii. p. 127. It also occurs in Trinidad, Cayenne and Brazil, and was found by Azara in Paraguay, and would seem therefore to have a very wide geographical range, if the

specimens from all these localities belong to one species. Mr. Gould's collection contains Bogota examples.

225. *MYIARCHUS VIRENS* (L.); Wils. Am. Orn. t. 13. fig. 5; Bp. Att. Sc. It. p. 405. sp. 31.

226. *MYIARCHUS FEROX* (Gm.); Pl. Enl. 571. fig. 1. (Mus. Brit. et P. L. S.)

227. *ELENIA CAYENNENSIS* (L.); Pl. Enl. 569. fig. 2. (Mus. Brit.)

228. *MILVULUS TYRANNUS* (L.); Pl. Enl. 571. fig. 1. (Mus. Brit.)

229. *HIRUNDINEA FERRUGINEA* (Gm.).—*Platyrhynchus hirundinaceus*, Spix, Av. Bras. ii. p. 11. t. 13. fig. 1. (Mus. Brit.)

230. *TYRANNUS FUMIGATUS*, Boiss. R. Z. 1841, p. 71.—*T. boissonneaui*, Bp. Consp. p. 71.

231. *TYRANNUS MELANCHOLICUS*, Vieill.—*M. furcata*, Spix, Av. Bras. ii. p. 19.—Schomb. Guian. iii. p. 700. (Mus. Brit.)

232. *TYRANNUS AUDAX* (Gm.).—Pl. Enl. 453. fig. 2.

233. *TYRANNUS RUFINUS* (Spix).—*M. rufina*, Spix, Av. Bras. ii. pl. 31—Schomb. Guian. iii. p. 700. (Mus. Brit.)

234. *PITANGUS CHRYSOCEPHALUS*, Tsch., F. P. p. 23. pl. 8. fig. 1; Lafr. R. Z. 1848, p. 5.

There are examples of this bird in the British Museum from Bogota and Venezuela. M. de Lafresnaye's specimen was from Caraccas.

235. *TYRANNULUS ELATUS* (Lath.).—*Pipra elata*, Spix, Av. Bras. ii. t. 8 a. fig. 2. (Mus. Paris.)

236. *TYRANNULUS NIGRICAPILLUS*, Lafr. R. Z. 1845, p. 341.

#### TITYRINÆ.

237. *TITYRA CAYANA* (L.).—Pl. Enl. 304. (Mus. Brit.)

238. *TITYRA ALBITORQUES*, DuBus, Bull. Ac. Brux. 1847, xiv. pt. 2. p. 104; R. Z. 1848, p. 244.—*Psaris Fraseri*, Kp. P. Z. S. 1851, p. 47. (Mus. Brit.)

239. *PACHYRHAMPHUS NIGER* (Spix), Av. Bras. ii. pl. 45. fig. 1. (Mus. Brit.)

240. *PACHYRHAMPHUS VERSICOLOR* (Hartl.).—*Vireo-versicolor*, Hartl. R. Z. 1843, p. 289. *P. squamatus*, Lafr. R. Z. 1843, p. 291, et 1844, p. 46.





J. Wolf del.

M. C. G. 1870

VIREOLANIUS B. TELOPHE (S. B.)

## MUSCICAPINÆ?

241. POLIOPTILA LEUCOGASTER (Max.).—*Sylvia leucogaster*, Max. iii. p. 710—Sclater, P. Z. S. 1855, p. 12.

## VIREONINÆ.

242. VIREOSYLVA OLIVACEA (Linn.). Aud. B. Am. pl. 150? (Mus. P. L. S.)

243. VIREOSYLVA VIRESCENS (Vieill.). Wils. Am. Orn. pl. 12? fig. 3.

244. VIREOLANIUS ICTEROPHRYS, Bp. Notes Orn. p. 60. (Pl. CIII.)

*V. læte viridis, pileo cærulescente; superciliis protractis et macula suboculari læte flavis; subtus flavescenti-viridis, gula et alis subtus flavescientioribus; rostro Cyclorhini simili sed productiore.*

Long. tota 4·75; alæ 2·75; caudæ 1·75.

Of this beautiful bird I have seen but the one specimen in the Derby Museum at Liverpool, from which my characters are taken. I was intending to name it as apparently new, when I found Prince Bonaparte's description of *Vireolanius icterophrys* in a note to his "Notes ornithologiques sur les collections rapportées par M. A. Delattre," which I think must be intended for the same bird. The Derby Museum specimen is from Bogota. The Prince gives "Rio Negro" as his locality.

245. CYCLORHIS NIGRIROSTRIS, Lafr. R. Z. 1842, p. 133.

## PIPRINÆ.

246. MANACUS EDWARDSI, Bp. Consp. p. 99.

Bogota specimens agree pretty well with those from Cayenne, but show rather more cinereous on the sides of the belly. The Brazilian *M. gutturosus* (Bp. Consp. p. 99) has the whole abdomen and the lower back- and tail-coverts cinereous.

247. MANACUS FLAVEOLUS, Cass. Pr. Ac. Sc. Phil. 1851, p. 349. *Pipra flavitincta*, Sclater, P. Z. S. 1852, p. 34. pl. xlviii.

Mr. Cassin's name had not reached this side of the Atlantic at the time I gave a second to this species. I do not know what is meant by *M. bogotensis*, which Prince Bonaparte quotes as *my* (!) name for this bird in his *Conspectus Anisodactylorum*, p. 3.

248. CHIROXIPHYA MELANOCEPHALA (Vieill.).—*Pipra melanocephala*, Vieill. Nouv. Dict. xix. p. 163.—*P. pareolides*, d'Orb. et Lafr. R. Z. 1838, p. 165.

Found also in Trinidad, Venezuela and Carthagera; not in Cayenne, as stated in Prince Bonaparte's *Conspectus*.

249. *PIPRA FILICAUDA*, Spix, Av. Bras. ii. t. 8. fig. 1. Common in collections from Bogota.

250. *PIPRA LEUCOCILLA* (L.) Pl. Enl. 34. fig. 2. I have seen Bogota skins of this bird.

251. *PIPRA ISIDORI*, Sclater, Rev. et Mag. de Zool. 1852, p. 9; Cont. Orn. 1852, p. 132. pl. 100. fig. 1.

252. *PIPRA STRIOLATA*, Bp. P. Z. S. 1837, p. 122; Gray's Gen. pl. 67. fig. 2. Common from Bogota.

253. *PIPRA FLAVICAPILLA*, Sclater, Rev. et Mag. de Zool. 1851, p. 9; Cont. Orn. 1852, p. 132.

254. *MASIUS CHRYSOPTERUS* (Lafr.), R. Z. 1843, p. 97; Bp. Consp. p. 175; Gray's Gen. pl. 67. fig. 1.

255. *PIPRITES CHLORIS* (Temm.), Pl. Col. 172. fig. 2; Tsch. F. P. p. 144. (Mus. Brit.)

256. *RUPICOLA PERUVIANA* (Latham).

The Peruvian Cock of the Rock seems to be distributed along the Andean range from Bogota through Ecuador and East Peru into Bolivia, where it was found by d'Orbigny in the province of Yungas. I am not sure that it occurs on the western side of the great range. The *Rupicola crocea* has a more limited distribution, being seemingly confined to the mountain system of Guiana. Mr. Wallace came across it at the inner extremity of this range near the borders of the Rio Negro\*.

257. *COTINGA NATTERERI* (Boiss.), R. Z. 1840, p. 2.

258. *AMPELION RUBRICRISTATUS* (Lafr. et d'Orb.), d'Orb. Voy. p. 298. pl. 31. fig. 1. *A. rufocristata*, Boiss. R. Z. 1840, p. 3.

259. *AMPELION ARCUATUS* (Lafr.), R. Z. 1843, p. 98.

260. *AMPELION CINCTUS* (Tsch.).—*Ampelis cincta*, Tsch. Wieg. Arch. 1843, p. 285, et Faun. Per. p. 285. *Cotinga tschudii*, Gray's Gen. i. p. 279. (Pl. CIV.)

♂ *olivaceus; pileo nigro, in medio aureo guttato; dorsi pennis nigris, olivaceo circumcinctis; alarum tectricibus, secundariis et caudæ tectricibus ad apicem flavo maculatis; alarum tectricibus majoribus pure olivaceis; subtus flavus, pennis nigro et olivaceo circumcinctis; gula flavescentiore; reatricibus nigris, maculis terminalibus flavo-albidis.*

♀ *supra olivacea, dorso nigro punctato; subtus mari similis, sed gula albo-flavescentiore.*

Long. tota 7·0; alæ 4·0.

A pair of this beautiful species (of which Tschudi has described the female) are in the British Museum.

\* See his Travels on the Amazon and Rio Negro. A most interesting account of the habits of this remarkable bird is also given by Schomburgk in Naumannia, 1850, pt. 2. p. 34.







261. *PROCNIAS OCCIDENTALIS*, Selater, P. Z. S. 1854, p. 249.

262. *PIPREOLA RIEFFERI* (Boiss.), R. Z. 1840, p. 3.

263. *PIPREOLA AUREIPECTUS* (Lafr.), R. Z. 1843, p. 68.

#### QUERULINÆ.

264. *LIPAUGUS FUSCO-CINEREUS* (Lafr.), R. Z. 1843, p. 291.

265. *QUERULA CRUENTA* (Bodd.)—Pl. Enl. 381. (Mus. Brit.)

#### GYMNODERINÆ.

266. *PYRODERUS GRENADENSIS* (Lafr.), R. Z., 1846, p. 277.

The Brazilian and New Grenadian *Pyroderi* seem to differ little except in size. The bill of the latter species is considerably smaller.

#### GARRULINÆ.

267. *CYANOCORAX ARMILLATUS*, G. R. Gray, Gen. Birds, ii. pl. 94.

268. *CYANOCORAX VIOLACEUS*, DuBus, Bull. Ac. Brux. (1847), xiv. ii. p. 103; Esq. Orn. pl. 30.—*C. hyacinthinus*, Cab. in Schomb. Reise, iii. 683.—*C. harrisii*, Cassin. (Mus. P. L. S.)

269. *CYANOCORAX PILEATUS* (Temm.), Pl. Col. 58. (Mus. Brit. et P. L. S.)

270. *CYANOCORAX INCAS* (Bodd.); Pl. Enl. 625.—*Xanthoura peruviana*, Bp. Consp. p. 110.

Dr. Cabanis has separated the Venezuelan variety (?) of this species under the name of *cyanocapillus*. See Tsch. F. P. p. 233, and Cab. Mus. Hein. p. 223. I do not know whether the Bogota bird is most like the Peruvian or Venezuelan form.

#### QUISCALINÆ.

271. *QUISCALUS SUBALARIS*, Boiss. R. Z. 1840, p. 70.

#### ICTERINÆ.

272. *CACICUS UROPYGIALIS*, Lafr. R. Z. 1843, p. 90, et 1847, p. 218.

273. *ARCHIPLANUS LEUCORHAMPHUS* (Bp.), Att. Sc. It. vi. p. 405; Consp. p. 428.

274. *OSTINOPS CRISTATUS* (Gm.)—Pl. Enl. 344. (Mus. P. L. S.)

275. *OCYALUS WAGLERI*, Gray's Gen. pl. 85.

I remarked a specimen of this species in a small collection lately received by Mr. S. Stevens from Bogota.

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276. *HYPOPYRRHUS PYRRHOGASTER* (de Tarr.), R. Z. 1837, p. 252; Bp. Consp. p. 425.

277. *ICTERUS GIRAUDI*, Cassin, Journ. Ac. Philad. i. pl. 17, p. 138.  
The Bogota birds have the bend of the wing yellow, and are therefore perhaps distinct from the Venezuelan *I. melanopterus*.— See Bp. Notes Orn. p. 16.

278. *ICTERUS MESOMELAS* (Wagler), Isis, 1829, p. 755.—*I. atrigularis*, Less. Cent. Zool. pl. 22, p. 73. (Mus. P. L. S.)

#### COCOTHRAUSTINÆ.

279. *HEDYMELES LUDOVICIANUS* (Linn.)—Wils. Am. Orn. pl. 17, fig. 2.

This well-known North American species extends all through Mexico and Central America into the northern parts of the southern continent. I have seen many Bogota specimens, but they are never in fully adult plumage.

280. *PHEUCTICUS AUREIVENTER* (Lafr. et d'Orb.)—d'Orb. Voy. pl. 49, fig. 2, p. 365.—Bp. Att. Sc. It. vi. p. 405. (Mus. Brit.)

#### TANAGRINÆ.

281. *PITYLUS GROSSUS* (Linn.)—Pl. Enl. 154. (Mus. Brit. et P. L. S.)

282. *SCHISTOCHLAMYS ATRA* (Gm.)—Pl. Enl. 714, fig. 2.

This species seems widely distributed. I have examples from Bogota, Cayenne, and Trinidad. Tschudi noticed it in Eastern Peru (F. P. p. 210), D'Orbigny in the provinces of Moxos and Chiquitos in Bolivia (Voy. p. 291), and Prince Max. of Neuwied in South-east Brazil (Beitr. iii. 504).

283. *CHLORORNIS RIEFFERI* (Boiss.), R. Z. 1840, p. 4; Gray's Gen. pl. 89.

284. *SALTATOR MAGNUS* (Gm.), Pl. Enl. 205. (Mus. Brit.)

285. *SALTATOR STRIATIPECTUS*, Lafr. R. Z. 1847, p. 73. (Mus. P. L. S.)

286. *CISSOPIS MINOR*, Tsch. F. P. p. 211. (Mus. P. L. S.)

287. *ARREMON AXILLARIS*, Sclater, P. Z. S. 1854, p. 97 et Tan. Cat. Sp. App. p. 15.

288. *ARREMON ERYTHORHYNCHUS*, Sclater, P. Z. S. 1855, p. 83, pl. lxxxix.

289. *ARREMON CONIROSTRIS*, Bp. Consp. p. 488.

A rather aberrant species if really belonging to this genus. I have a Bogota skin, which is quite similar to a Santa Martha example from the MM. Verreaux's collection.

290. BUARREMON ASSIMILIS (Boiss.), R. Z. 1840, p. 67.
291. BUARREMON PALLIDINUCHUS (Boiss.), R. Z. 1840, p. 68.
292. BUARREMON ALBIFRENATUS (Boiss.), R. Z. 1840, p. 68.—*Arr. mystacalis*, Sclater, Cont. Orn. 1852, pl. 99, p. 131, et Rev. et Mag. de Zool. 1852, p. 8.
293. BUARREMON BRUNNEINUCHUS (Lafr.), R. Z. 1839, p. 97; Boiss. R. Z. 1840, p. 68.
294. BUARREMON ALBINUCHUS (Lafr.), R. Z. 1838, p. 5. (Mus. P. L. S.).
295. BUARREMON GUTTURALIS (Lafr.), R. Z. 1843, p. 98.
296. BUARREMON SCHISTACEUS (Boiss.), R. Z. 1840, p. 69.
297. PIPILOPSIS SEMIRUFUS (Boiss.), R. Z. 1840, p. 69.
298. CHLOROSPINGUS ALBITEMPORALIS (Lafr.), R. Z. 1848, p. 12.  
I doubt whether this Bogota bird is really identical with the Mexican *Arremon ophthalmicus*, DuBus, as thought by M. de Lafresnaye (R. Z. 1848, p. 247.)
299. CHLOROSPINGUS FLAVIPECTUS (Lafr.), R. Z. 1840, p. 227, et 1848, p. 11.
300. CHLOROSPINGUS CANIGULARIS (Lafr.), R. Z. 1848, p. 11.
301. CHLOROSPINGUS FLAVIGULARIS, Sclater, Rev. et Mag. de Zool. 1852, p. 8; Cont. Orn. 1852, p. 131, pl. 98.
302. CHLOROSPINGUS ATRIPILEUS (Lafr.), R. Z. 1842, p. 335.
303. CHLOROSPINGUS RUBRIROSTRIS (Lafr.), R. Z. 1840, p. 227.
304. CHLOROSPINGUS MELANOTIS, Sclater, P. Z. S. 1854, p. 157, pl. 68.  
This seems to be the bird described, but not named, by Prince Bonaparte, Att. Sc. It. vi. p. 405, sp. 26.
305. CHLOROSPINGUS SUPERCILIARIS (Lafr.), R. Z. 1840, p. 227.—*Hylophilus leucophrys*, Lafr. R. Z. 1844, p. 81.
306. CHLOROSPINGUS VERTICALIS (Lafr.), R. Z. 1840, p. 227.
307. NEMOSIA ALBIGULARIS, Sclater, P. Z. S. 1855, p. 109, pl. xcix..
308. NEMOSIA GUIRA (Linn.).—Pl. Enl. 720. fig. 1. (Mus. P. L. S.).
309. TACHYPHONUS CRISTATUS (Gm.).—Pl. Enl. 7. fig. 2. (Mus. P. L. S.)

310. *TACHYPHONUS BREVIPES* (Lafr.), R. Z. 1846, p. 206.  
A female bird, but of what species?
311. *TACHYPHONUS MELALEUCUS* (Sparm.). (Mus. Brit.)
312. *TACHYPHONUS LUCTUOSUS* (Lafr. et d'Orb.).—d'Orb. Voy. pl. 20. (Mus. P. L. S.)
313. *TACHYPHONUS XANTHOPYGIUS*, Sclater, P. Z. S. 1854, p. 154, pl. lxix. (♀), et 1855, p. 83, pl. xc. (♂).—*Lanio auritus*, DuBus, Bull. Acad. Brux. Feb. 1855.
314. *LANIO ATRICAPILLUS* (Gm.).—Pl. Enl. 809. fig. 2. (Mus. P. L. S.)
315. *TRICHOThRAUPIS PENICILLATA* (Spix).—*Tan. penicillata*, Spix, Av. Bras. ii. t. 49.—*Pyrranga albicollis*, D'Orb.?—*Pipilopsis* (!) *cristata*, DuBus, Bull. Ac. Brux. Feb. 1855.
- I have specimens of this bird from several different localities, but at present can make out of them only one (though rather variable) species. The Bogota bird seems rather smaller and weaker-billed than a Cayenne specimen.
316. *PHÆNICOTHRAUPIS GUTTURALIS*, Sclater, Ann. Nat. Hist. 1854, p. 24. (Mus. Brit. et Paris.)
317. *LAMPROTES ALBICRISTATA* (Lafr.), R. Z. 1843, p. 132; Mag. de Zool. 1844, Ois. pl. 50.—*Sericossypha sumptuosa*, Less. Echo d. M. S. 1844, p. 302.
318. *PYRANGA ÆSTIVA* (Linn.).  
The Bogota skins I have seen seem referable to the North American species rather than the closely-allied *P. saira*, Spix (*azaræ*, Lafr. et d'Orb.). This bird has already been noticed as far south as Guatemala (P. Z. S. 1837, p. 116).
319. *PYRANGA RUBRA* (Linn.).  
Young birds from Bogota of this species are in the British Museum and my own collection.
320. *PYRANGA RUBRICEPS*, G. R. Gray, Gen. Birds, pl. 89.  
Afterwards erroneously united by Mr. Gray to *Spermagra erythrocephala*, Sw., which is the same as *Pyrranga cucullata*, DuBus. See Bp. Notes sur les Tang. p. 29.
321. *PYRANGA ERYTHROMELAS* (Licht.).—*Tanagra erythromelas*, Licht. Preis-Verz. sp. 69 (1831).—*P. leucoptera*, Trudeau, Journ. Phil. viii. 160.—*P. bivittata*, Lafr. R. Z. 1842, p. 70.—*Phænisoma ardens*, Tsch. Wieg. Archiv, 1844, p. 287.
- If the South American bird is the same as the Mexican (as I believe is the case), Lichtenstein's name is the first for this species.
322. *RAMPHOCELUS DIMIDIATUS* (Lafr.), R. Z. 1838, p. 165.

323. *RAMPHOCELUS FLAMMIGERUS* (Jard.), Ill. Orn. pl. 131 (*dorso postico rubro*).

324. *RAMPHOCELUS CHRYSONOTUS* (Lafr.), Rev. et Mag. de Zool. 1853, p. 246 (*dorso postico aurantio*).

325. *RAMPHOCELUS ICTERONOTUS*, Bp. R. Z. 1838, p. 8 (*dorso postico flavissimo*).

326. *TANAGRA EPISCOPUS* (Linn.).

By this I mean the true *episcopus*. See Mr. Strickland's note in Ann. Nat. Hist. xx. p. 332.

327. *TANAGRA CANA*, Sw. Strickl. Ann. Nat. Hist. xx. p. 332.

328. *TANAGRA PALMARUM*, Max. (Mus. P. L. S.)

329. *DUBUSIA TENIATA* (Boiss.), R. Z. 1840, p. 67.

330. *DUBUSIA OLIVICYANEA* (Lafr.), R. Z. 1843, p. 69.

331. *DUBUSIA CYANOCEPHALA* (Lafr. et d'Orb.)?

I have not yet compared the Bogota skins of this species with Bolivian examples, but they seem to agree with a specimen of the same bird in my collection from Peru, and I think it possible that they may be all referred to one species.

332. *COMPSOCOMA VICTORINI* (Lafr.), R. Z. 1842, p. 336.

333. *BUTHRAUPIS CUCULLATA* (Jard.), Ill. Orn. n. s. pl. 43.—*Dubusia gigas*, Bp. Rev. et Mag. de Zool. 1851, p. 171.

334. *BUTHRAUPIS EXIMIA* (Boiss.), R. Z. 1840, p. 66.

335. *ANISOGNATHUS LUNULATUS* (DuBus), Bull. Ac. Brux. vi. pt. 1, p. 439 (1839).—*Tanagra* (*Euphone?*) *constantii*, Boiss. R. Z. 1840, p. 3.—*Aglaiia erythrotis*, Jard. Ill. Orn. n. s. pl. 36.

336. *ANISOGNATHUS LACRIMOSUS* (DuBus), Esq. Orn. t. 9.—*T. palpebrosa*, Lafr. R. Z. 1847, p. 71. (Mus. Brit.)

337. *IRIDORNIS DUBUSIA* (Bp.).—*I. dubusia*, Bp. Consp. p. 239; Contr. Orn. 1852, p. 127, pl. 94.—*Arremon rufivertex*, Lafr. R. Z. 1842, p. 335.

338. *CALLISTE CÆLICOLOR*, Selater, Cont. Orn. 1851, p. 51.

339. *CALLISTE AURULENTA* (Lafr.), R. Z. 1843, p. 90.

340. *CALLISTE SCLATERI*, Lafr. Rev. et Mag. de Zool. 1854, p. 307.

341. *CALLISTE GUTTULATA*, Bp. Compt. Rend. 1851, p. 76.—*C. chrysophrys*, Selater, Contr. Orn. 1851, p. 24, pl. 69, fig. 2.

342. *CALLISTE XANTHOASTRA*, Selater, Contr. Orn. 1851, p. 23.

343. *CALLISTE RUFICAPILLA*, Sclater, Contr. Orn. 1851, p. 61.
344. *CALLISTE PARZUDAKII*, Lafr. R. Z. 1843, p. 97.
345. *CALLISTE GYROLOIDES*, Lafr. R. Z. 1847, p. 279.
346. *CALLISTE BOLIVIANA*, Bp. Compt. Rend. 1851, p. 80.
347. *CALLISTE INORNATA*, Gould, sp. nov.\*
348. *CALLISTE RUFICERVIX*, Prevost, Voy. Venus, Ois. pl. 5, fig. 1.
349. *CALLISTE ATRICAPILLA*, Lafr. R. Z. 1843, p. 290.—*Procnias heinei*, Cab. Mus. Hein. p. 31, (avis jr.).
350. *CALLISTE NIGRIVIRIDIS* (Lafr.), R. Z. 1843, p. 69.
351. *CALLISTE THALASSINA*, Strickl. Ann. Nat. Hist. xiii. p. 419.—*Aglaiia wilsoni*, Lafr. R. Z. 1847, p. 71, et Icon. Orn. pl. 56. fig. 2.
352. *CALLISTE CYANICOLLIS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 271, pl. 25, fig. 1.
353. *CALLISTE LABRADORIDES*, Boiss. R. Z. 1840, p. 67.—Voy. Venus, Ois. pl. 5, fig. 2.
354. *CALLISTE VENUSTA*, Sclater, P. Z. S. 1854, p. 248.
355. *DIVA VASSORI* (Boiss.), R. Z. 1840, p. 4.—Sclater, Tan. Cat. Spec. p. 13.
356. *DIVA ALBIVENTRIS* (Sclater), Rev. et Mag. de Zool. 1852, p. 8; Cont. Orn. 1852, p. 131, pl. 100, fig. 12.
357. *CHLOROCHRYSA CALLIPARÆA* (Tsch.), F. P. p. 202.—Cont. Orn. 1851, p. 99, pl. 73, fig. 1.
358. *TANAGRELLA ELEGANTISSIMA*, Verreaux, Rev. et Mag. de Zool. 1853, p. 195.
359. *CHLOROPHONIA LONGIPENNIS* (DuBus).—*Euphonia longipennis*, DuBus, Bull. Ac. Brux. Feb. 1855.

I have always hesitated to separate this bird from the Brazilian *C. viridis*. As M. DuBus has done so, however, I adopt his name, as I think it possible the species may be really distinct.

\* Mr. Gould has kindly furnished me with the following note on this peculiar species, which he considers new:—

“Crown of the head, back of the neck, back, throat and flanks very dark grey: rump and upper tail grey tinged with blue: on the shoulders a bright spot of shining blue: wings and tail brownish-black: centre of abdomen and under tail-coverts buffy white: bill and legs black. Total length  $4\frac{3}{4}$  inches; bill  $\frac{7}{16}$ ; wing  $2\frac{1}{2}$ ; tail  $1\frac{3}{4}$ ; tarsus  $\frac{5}{8}$ .”

“Remark.—This little unornamented bird belongs to that division of the *Callistæ* to which the term *Euprepistæ* has been applied, and of which *C. mexicana* and *boliviana* are types.”



360. CHLOROPHONIA PRETREI (Lafr.), R. Z. 1843, p. 97; Mag. de Zool. 1842, pl. 42 (♂).—*Euph. pyrrhophrys*, Selater, Contr. Orn. 1851, p. 89. pl. 75. fig. 2. (♀).

361. EUPHONIA NIGRICOLLIS (Vieill.), Cont. Orn. 1851, pl. 75. fig. 1. p. 83.

362. EUPHONIA MINUTA, Cab.—(*E. pumila*, Bp.—*E. strictifrons*, Strickl.) (Mus. Brit.).

363. EUPHONIA XANTHOGASTRA, Sund.—Cont. Orn. 1851, p. 85. (Mus. P. L. S.)

364. EUPHONIA CONCINNA, Selater, P. Z. S. 1854, p. 98 et Tan. Cat. Sp. App. p. 16.

365. EUPHONIA MELANURA, Selater, Cont. Orn. 1851, p. 86.

Mr. Gould's collection contains specimens of a black-tailed *Euphonia* from Bogota agreeing nearly with the Amazon bird, except that the yellow extends rather farther back on the head, and the bill is somewhat stouter.

366. CATAMBLYRHYNCHUS DIADEMA, Lafr. R. Z. 1842, p. 301. Gray's Gen. pl. 93.—*Bustamantia capitaurea*, Bp. Att. Sc. Ital. vi. p. 406 (1844).

#### FRINGILLINÆ.

367. CHRYSOMITRIS COLUMBIANA (Lafr.), R. Z. 1843, p. 292.

368. CHRYSOMITRIS SPINESCENS, Bp. Consp. p. 517.

369. SYCALIS AUREIPECTUS, Bp. Notes Orn. p. 17.

To this species I refer, though with some doubt, a Bogota *Sycalis*, of which there are examples in the British Museum and my own collection.

370. PHONIPARA PUSILLA (Sw.).—*Tiaris pusillus*, Sw. Phil. Mag. 1827, p. 438.

*Olivacea*: *pileo capitis lateribus gutture imo et pectore toto nigris*: *superciliis curtis et gula aureis*.

This continental species appears to me to be distinct from the *Ph. olivacea* of the Antilles. The latter has the head olive like the back, and the black on the breast confined to a patch beneath the golden throat, the mid-belly being nearly white.

*Phonipara canora*\* is a third rather rare and quite different species.

371. CATAMENIA ANALIS (Lafr.).—*Fringilla analis*, Lafr. R. Z. 1843, p. 291, Bp. Consp. p. 493.

\* Bp. Consp. p. 494; Brown, Ill. Zool. t. 24. fig. 1. A specimen of this bird is in the Neufchatel collection, and Mr. Strickland once informed me that Mr. Brown's original type is still extant in the Newcastle Museum.

## 372. VOLATINIA JACARINA (Linn.)?

*Nigro-chalybea* : *pennis paucis ad campterium albis* : *tetricibus subalaribus nigris.* (Mus. P. L. S.)

373. CORYPHASPIZA PILEATA (Max.).—*Lophospiza pileata*, Bp. Consp. p. 471. (Mus. P. L. S.)

## EMBERIZINÆ.

374. PHRYGILUS GEOSPIZOPSIS (!) (Bp.).—*Passerculus geospizopsis*, Bp. Notes Orn. p. 21 (♀)—(♂) *cinereus unicolor*—(♀) *fusco-rufescens* ; *subtus albidus* ; *fusco toto-striatus*.

I expect it will be found that this bird is an inhabitant of the high mountain ranges. It would appear to be nearly allied to *P. unicolor* (d'Orb. et Lafr.), or certainly to the bird figured under that name by Sir Wm. Jardine (Cont. Orn. 1849, pl. 20). Prince Bonaparte has named and described the female only. There are specimens of both sexes in the British Museum.

375. ZONOTRICHIA PILEATA (Bodd.).—Pl. Enl. 386. fig. 2.—*Z. matutina*, auct.

One of the most universally distributed South American Passeres, being found, I believe, in every part of that continent.

## ALAUDINÆ.

376. OTOCORYS PEREGRINA, Selater, P. Z. S. 1855, p. 110. pl. cii. The only South American bird of the subfamily.

## PYRRHULINÆ.

377. SPERMOPHILA LUCTUOSA, Lafr. R. Z. 1843, p. 291.

378. SPERMOPHILA OLIVACEO-FLAVA, Lafr. R. Z. 1843, p. 291, et 1846, p. 207.

379. SPERMOPHILA.

A species (of which there is a specimen in the British Museum) with a rufous crissum. I have not yet made it out.

380. SPERMOPHILA MINUTA (Linn.).—Pl. Enl. 319. fig. 2 ; Bp. Consp. p. 495. (Mus. Brit.). Also from *S. Martha* (Verreaux).

381. SPERMOPHILA GUTTURALIS (Licht.).—*Phonipara gutturalis*, Bp. Consp. p. 494.

I have seen Bogota specimens of this bird, which appears rather a true *Spermophila* than a *Phonipara*.

## RAMPHASTIDÆ.

382. RAMPHASTOS AMBIGUUS, Sw. Zool. Ill. pl. 168. Gould, Mon. ed. 2. pl. 5.

383. *RAMPHASTOS CUVIERI*, Wagl. S. A. sp. 5. Gould, Mon. ed. 2. pl. 8.

384. *RAMPHASTOS CITREOLÆMUS*, Gould, P. Z. S. 1843, p. 147; Gould, Mon. ed. 2. pl. 9.

385. *PTEROGLOSSUS CASTANOTIS*, Gould, P. Z. S. 1833, p. 119; Gould, Mon. ed. 2. pl. 19.

386. *ANDIGENA NIGRIROSTRIS* (Waterh.) P. Z. S. 1839, p. 111; Gould, Mon. ed. 2. pl. 39.

387. *AULACORHAMPHUS CASTANEIRHYNCHUS*, Gould, Ann. Nat. Hist. ix. p. 238; Mon. ed. 2. pl. 44.

388. *AULACORHAMPHUS ALBIVITTA* (Boiss.), R. Z. 1840, p. 70. Gould, Mon. ed. 2. pl. 49.

#### PICIDÆ.

389. *DRYOCOPUS POLLENS* (Bp.).—*Picus pollens*, Bp. Att. Sc. It. vi. p. 406.—*Campephilus malherbii*, Gray's Gen. pl. 108. Bp. Consp. p. 133.

390. *DRYOCOPUS GRAYI* (Malh.), Pr. Soc. d'H. N. de Moselle, 1849.

391. *DRYOCOPUS HÆMATOGASTER*, Tsch. F. P. p. 265. pl. 25. (Mus. P. L. S.)

392. *CHRYSOPTILUS CANIPILEUS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 379. pl. 63. fig. 2.

The female of this species is figured by d'Orbigny. A Bogota male specimen in my possession differs in having broad red superciliary and mental bands.

393. *CHRYSOPTILUS PUNCTIGULA* (Bodd.).—Pl. Enl. 613.—*C. cayennensis*, Bp. Consp. 122. (Mus. Lugd. ex Bogota.)

394. *CHLORONERPES CECILII* (Malh.), Rev. et Mag. de Zool. 1849, p. 538.

395. *CHLORONERPES FUMIGATUS* (Lafr. et d'Orb.).—d'Orb. Voy. p. 380. pl. 63. fig. 1.

I have a pair of birds from Bogota which seem to be referable to this species. Is not *P. oleaginus*, Wagler, ex Mexico, very closely allied to this?

396. *MELANERPES CRUENTATUS* (Bodd.).—Pl. Enl. 694. fig. 2.—*M. hirundinaceus*, Bp. Consp. p. 116. (Mus. P. L. S.)

397. *MELANERPES FLAVIGULA* (Malh.).—*Picus melanopogon*, Lafr. R. Z. 1844, p. 81.—*Melampicos flavigula*, Malh. Rev. et Mag. de Zool. 1849, p. 542.

398. *CENTURUS SUBELEGANS*, Bp. P. Z. S. 1837, p. 109, et Consp. p. 121.—*C. rubriventris*, Sw. An. in Men. p. 354 (1837).

My Bogota specimens of this bird are rather smaller in dimensions than Venezuelan examples. M. Verreaux has the same bird from Santa Martha. I have not yet had an opportunity of comparing Central American specimens.

399. *COLAPTES ELEGANS* (Fraser), P. Z. S. 1840, p. 60.—*Picus rivolii*, Boiss. R. Z. 1840, p. 36. Bp. Att. Sc. It. vi. p. 406.

#### PICUMNINÆ.

400. *PICUMNUS GRENADENSIS*, Lafr. R. Z. 1845, p. 7.

401. *PICUMNUS SQUAMULATUS*, Lafr. Rev. et Mag. de Zool. 1854, p. 208.

402. *PICUMNUS OLIVACEUS*, Lafr. R. Z. 1845, p. 7.

#### CAPITONIDÆ.

403. *CAPITO PERUVIANUS* (Cuv.), Règn. An. (1829), i. p. 458. Le Vail. Barb. p. 63. pl. 27. (Mus. Brit.)

404. *CAPITO RICHARDSONI*, G. R. Gray, Gen. Birds, pl. 106.

405. *CAPITO BOURCIERI* (Lafr.), R. Z. 1845, p. 179; Rev. et Mag. de Zool. 1849, p. 116. pl. 3.

406. *CAPITO HARTLAUBI* (Lafr.), R. Z. 1845, p. 180; Rev. et Mag. de Zool. 1849, p. 176. pl. 6.

#### PSITTACIDÆ.

407. *ARA SEVERA* (Linn.).

In Mr. S. Steven's Bogota collection.

408. *CONURUS WAGLERI*, G. R. Gray, Gen. Birds, pl. 102. (Mus. Paris.)

409. *CONURUS CALLIPTERUS*, Mass. R. Z. 1854, p. 72. (Mus. Paris.)

410. *PSITTOVIUS TOVI* (Gm.)? (Mus. P. L. S.)

411. *PSITTACULA CONSPICILLATA*, Lafr. R. Z. 1848, p. 172. (Mus. Paris et P. L. S.)

412. *EUOPSITTA AMAZONINA* (Des Murs), R. Z. 1845, p. 207; Icon. Orn. pl. 15; Bp. Tabl. d. Perr. p. 8.

413. *PIONUS CHALCOPTERUS* (Fraser), P. Z. S. 1840, p. 59. Bp. Att. Sc. It. vi. p. 403.

414. *PIONUS SENILOIDES* (Mass.), R. Z. 1854, p. 73. Mus. Paris.)

415. *PIONUS COBALTINUS* (Mass.), R. Z. 1854, p. 74.

*Similis P. menstruo : an vere distinctus ?*

CUCULIDÆ.

416. *CROTOPHAGA ANI* (Linn.). Mus. Paris et P. L. S.

417. *PIAYA MEHLERI*, Bp. Consp. p. 110.

418. *COCCYZUS LANGSBERGI*, Bp. Consp. p. 112.

COLUMBÆ.

419. *CHLORÆNAS ALBILINEA*. Bp. Consp. ii. p. 51.

420. *GEOTRYGON MYSTACEA* (Temm.), Fig. pl. 56. Bp. Consp. ii. p. 71.

421. *GEOTRYGON LINEARIS* (Prevost).—Knip et Prev. Fig. pl. 55. p. 104. Bp. Consp. ii. p. 71.

422. *LEPTOPTILA VERREAUXI*, Bp. Consp. ii. p. 73r

423. *CHAMÆPELIA GRANATINA*, Bp. Consp. ii. p. 77—nonne *Ch. passerinæ* fœm. sive jr. ?

GALLINÆ.

424. *TINAMUS JULIUS*, Bp. Notes Orn. p. 93. Hartlaub in Cab. Journ. für Orn. 1854, p. 410.

From Bogota and Ecuador.

425. *PENELOPE PIPILE* (Gm.).

I have examined a specimen of this bird contained in a collection received from Bogota by Mr. S. Stevens.

426. *EUPSYCHORTYX LEUCOTIS*, Gould, Mon. Odont. pl. 10.

427. *EUPSYCHORTYX PARVICRISTATUS*, Gould, Mon. Odont. pl. 12.

428. *ODONTOPHORUS MARMORATUS*, Gould, Mon. Odont. Introd. p. 22.

GRALLÆ.

429. *VANELLUS CAYENNENSIS* (Gm.), Pl. Enl. 836. (Mus. P. L. S.)

430. *TIGRISOMA TIGRINUM* (Gm.).

In Mr. S. Stevens' Bogota collection.

431. *TOTANUS MACROPTERUS* (Spix)? Av. Bras. ii. p. 76. pl. 92. (Mus. P. L. S.)

432. *GLOTTIS MELANOLEUCA* (Gm.).—*T. vociferus*, Wils. Am. Orn. t. 58. fig. 5. (Mus. P. L. S.)

## ANSERES.

433. *MERGANETTA COLUMBIANA*, Des Murs, R. Z. 1845, p. 179; Icon. Orn. pl. 6.

Is this bird distinct from *M. armata*?

434. *RHYNCHASPIS CLYPEATA* (Linn.).

Mr. Gould informs me that he has recently examined specimens of this bird killed near Bogota. Its occurrence as far south as Nicaragua has already been noticed by Prince Bonaparte. (Notes Orn. p. 94.)

435. *QUERQUEDULA CYANOPTERA* (Vieill.).

This duck seems to extend from the most southern portions of the South American continent into Texas and as far north as Louisiana: see Cassin's Illustrations, pt. 3. pl. 15. I have a female from Bogota, and the MM. Verreaux have received examples of the same bird from Santa Martha.

	Total.
Accipitres .....	16
Passeres .....	365
Scansores .....	37
Columbæ .....	5
Gallinæ .....	5
Struthiones .....	0
Grallæ .....	4
Anseres .....	3

2. ON SOME NEW SPECIES OF BIRDS COLLECTED BY MR. M'GILLIVRAY. BY JOHN GOULD, F.R.S. ETC.

In exhibiting a portion of the first collection of birds which has been sent to this country by Mr. John M'Gillivray, the naturalist attached to H. M. surveying ship 'Herald,' Captain Denham, I have to remark, that it comprises several species of especial interest, particularly some obtained on the Isle of Pines, and on Lord Howe's Island. It also comprises a new form among the *Turdidæ* or Thrushes, from that isolated spot the island of Tristan d'Acunha, which presents a union of the characters of the genera *Turdus*, *Chamaea* and *Oreocincla*. This new bird I propose to characterize under the generic and specific appellations of *Nesocichla eremita*. Among the birds from Lord Howe's Island is a singular species of *Merula* or Blackbird, nearly allied in form to, but very different in colour from, the *Merula nestor* of Norfolk Island; to this species the specific name of *vinitincta* is assigned. From the same island are two distinct species of *Zosterops*, entirely new to science. They differ from any other species of the genus which has come under my notice, one of them being a very large bird for a *Zosterops*, and the other a much smaller species, being nearly allied to, but distinct from, the Australian *Zosterops dorsalis*: to these

two species I give the names of *Z. strenuus* and *Z. tephropleurus*. A beautiful Parrakeet from Cape York, nearly allied to *Platycercus palliceps*, I propose to name *Platycercus cyanogenys*. Among the birds from the Isle of Pines is a very beautiful Pigeon, appertaining to the genus *Ptilinopus*. This bird, with several others of even greater interest, I propose to make the subjects of a second paper.

#### Genus NESOCICHLA.

Bill strong, more powerful than in the genus *Turdus*; gonys nearly straight, with a small notch near the tip in the upper mandible; culmen gradually descending from the base; nostrils seated in an oval depression at the base of the upper mandible; wings short, somewhat concave; first primary very small; the third, fourth and fifth equal and the longest; tail rather shorter than in *Turdus*, and the feathers rather pointed; tarsi very strong, toes strong and much lengthened, particularly the hinder one; front of the tarsi scutellated; under part entire.

This form differs from all others in the great family of the Thrushes, and appears to partake of the characters of the genera *Turdus*, *Chamæza*, and *Oreocinclæ*.

#### NESOCICHLA EREMITA.

Head and all the upper surface, wings and tail dark sandy-brown, with a darker shade in the centre of each feather, but the primaries have paler edges, and the greater coverts and secondaries are tipped with sandy buff; lores and cheeks rufous; feathers of the under surface deep buff at the base, with a lengthened pear-shaped mark of brown down the apex of each feather, these marks being so large and thickly placed as to give the whole a mottley appearance; on the throat these marks somewhat resemble striæ; thighs buff; bill black; tarsi reddish-brown, toes darker.

Total length,  $8\frac{1}{2}$  inches; bill,  $1\frac{1}{4}$ ; wing,  $3\frac{3}{4}$ ; tail, 3; tarsi,  $1\frac{1}{2}$ .

*Hab.* The island of Tristan d'Acunha.

*Remark.*—This bird is about the size of the common Song-thrush, *Turdus musicus*, and similar to it in appearance; on examination, however, it will be found to differ very considerably in structure.

#### MERULA VINITINCTA.

The male has the head and nape blackish-brown, upper surface and wing-coverts reddish-brown; wings brown margined with olivaceous; tail brown; throat dark bluish grey; under surface vinaceous red; bill bright gamboge-yellow; eye-lash yellow; tarsi and toes yellow.

Total length, 8 inches; bill, 1; wing,  $4\frac{1}{8}$ ; tail,  $3\frac{3}{8}$ ; tarsi,  $1\frac{1}{4}$ .

The female is very similar, but is of a somewhat paler tint, and has only a trace of the black hood of the male.

*Hab.* Lord Howe's Island.

*Remark.* Of the same form, and somewhat allied to the *Merula nestor* of the Norfolk Island.

**ZOSTEROPS TEPHROPLEURUS.**

Head and upper surface bright olive-green, with a wash of grey across the shoulders; wings and tail slaty brown, margined with olive-green; throat dull yellow; around the eyes a circle of white feathers, below which is a mark of black; under surface pale vinaceous brown, becoming gradually paler on the lower part of the abdomen, and passing into the pale yellow of the under tail-coverts.

Total length,  $4\frac{3}{4}$  inches; bill,  $\frac{5}{8}$ ; wing,  $2\frac{3}{8}$ ; tail,  $2\frac{1}{8}$ ; tarsi  $\frac{3}{4}$ .

*Hab.* Lord Howe's Island.

*Remark.* This species is allied to *Z. dorsalis*, but is of a somewhat larger size, and is less richly coloured on the flanks.

**ZOSTEROPS STRENUUS.**

Head and upper surface bright olive-green, with a wash of dark grey across the shoulders; wings and tail slaty-brown, margined with greenish olive; eyes surrounded by the usual ring of white feathers, beneath which is a narrow line of black; chin and throat yellow; flanks pale vinaceous; centre of the abdomen nearly white; under tail coverts pale yellow; bill and feet bluish black.

Total length,  $5\frac{3}{4}$  inches; bill, 1; wing,  $2\frac{3}{4}$ ; tail,  $2\frac{1}{4}$ ; tarsi,  $\frac{7}{8}$ .

*Hab.* Lord Howe's Island.

This is by far the largest species of the genus yet discovered.

**PLATYCERCUS CYANOGENYS.**

Crown of the head pale sulphur-yellow; cheeks cærulean blue; feathers of the nape, back and scapularies black, broadly margined with sulphur-yellow, stained with green on the lower part of the back; rump and upper tail coverts greenish yellow, with an extremely narrow fringe of black at the tip of the feathers; shoulder and greater wing-coverts deep blue; lesser coverts black, bordered with deep blue; primaries and secondaries blackish-brown, the basal half of their external webs deep blue, the apical half pale blue; tertiaries black, broadly margined with greenish yellow; breast pale greenish yellow, abdomen light greenish blue; all the feathers of the under surface slightly fringed with black; under tail coverts scarlet, narrowly margined with yellow; two middle tail-feathers greenish blue; the next on each side blue, slightly tipped with pale blue; the remainder blackish brown at the base of their internal webs, and deep blue externally; their apical portions being beautiful pale blue.

Total length, 13 inches; wing,  $6\frac{1}{4}$ ; tail, 7; tarsi,  $\frac{3}{4}$ .

*Hab.* Cape York, north-east coast of Australia.

*Remark.* This species offers a very close alliance to *Platycercus palliceps*, but differs in having no trace of scarlet on the forehead, in the green tinge of the borderings of the feathers of the back, in the greenish yellow of the breast, and in having the cheeks blue instead of light yellow.



### 3. SUR LE GENRE GALEOMMA, *Turton*. PAR G. P. DESHAYES.

Lorsque Turton institua le genre *Galeomma* une seule espèce était connue, et c'est d'après elle que les caractères génériques furent établis : une seconde espèce, décrite par Lamarck sous le nom de *Psammobia aurantia*, dut être introduite dans le genre, lorsque nous en eumes reconnue les véritables caractères. Peut-être est-ce aussi à côté d'elle que viendra se ranger le *Psammobia vitrea* de M. Quoy ; il serait possible cependant que cette espèce appartint à notre genre *Scintilla*. Quant à l'espèce de M. Philippi, elle est également incertaine pour nous de sorte que le genre était borné à deux espèces certaines et à deux espèces incertaines. On pouvait supposer d'après cela que le genre *Galeomma* n'était point destiné à s'enrichir beaucoup ; aussi avons nous été bien surpris en examinant la magnifique collection de M. Cuming, d'y rencontrer un grand nombre de *Galeomma* nouveaux. De cet examen résulte que le genre renferme actuellement quatorze espèces, et qu'il devient nécessaire d'apporter quelques modifications dans l'énoncé des caractères génériques.

En effet la première espèce connue, le *Galeomma Turtoni*, Sow., a une charnière simple et sans dents, tandis que la plus grande partie des espèces nouvelles ont cette partie accompagnée d'une charnière articulée très semblable à celle de notre genre *Scintilla* ; un peu différente cependant, car ici les dents sont égales de chaque côté de la charnière et sur chaque valve ; par leur saillie elles contribuent à augmenter la profondeur de la fossette du ligament, sur le bord de laquelle elles s'élèvent. Sous le rapport de la charnière, le genre *Galeomma* pourrait se partager en deux sections ; dans l'une les espèces à charnière dentée seraient rangées, dans l'autre les espèces édentules.

L'un des caractères les plus remarquables des *Galeomma* consiste dans cet énorme baillement du bord inférieure de la coquille. Que l'on suppose une coquille ordinairement close coupée en deux d'avant en arrière, et par cette ablation de la moitié inférieure elle offrira un baillement comparable à celui qui est naturel dans le *Galeomma*. Cette particularité annonce chez l'animal qui construit une coquille si singulière, une organisation toute spéciale, et c'est en effet ce que l'observation a démontré. Dans la série des espèces nouvelles de la collection de M. Cuming ce caractère n'a pas montré une fixité absolue ; une seule s'est rencontrée avec tous les caractères du *Galeomma Turtoni*, les autres ont le baillement en proportion plus étroit, car lorsque l'on regarde la coquille du côté du baillement, on voit que l'ouverture est plus étroite que la convexité ventrale ; dans quelques espèces l'ouverture devient plus étroite encore et plus courte que les valves, et de cette manière s'établit un passage insensible entre les genres *Scintilla* et *Galeomma*. Aussi on doit se demander s'il y a réellement une interruption entre les deux genres, et quel sera le caractère qui devra dominer. Par la charnière les deux genres se touchent, ils se confondent aussi par le baillement des valves que l'on voit grandir de la manière la plus insensible.

Le premier *Galeomma* connu a offert à la surface extérieure, un système d'ornementation particulier que nous avons supposé devoir persister dans les autres espèces ; mais ce moyen de limiter le genre nous échappe à son tour. Si le plus grand nombre des espèces offrent des caractères analogues, il en est d'autres qui étant baillantes, sont cependant lisses et brillantes comme les *Scintilla*. Ces dernières espèces appartiennent-elles au genre *Scintilla* ? alors le caractère si remarquable du baillement des valves perdrait presque toute sa valeur pour les *Galeomma*. Si au contraire on maintient dans le genre toutes les espèces baillantes, en voici quelques unes qui, à part ce caractère, sont de véritables *Scintilla*. Il est difficile, comme on le voit, de se décider entre ces deux manières d'envisager la question. Cependant nous admettons dans le genre *Galeomma* toutes les coquilles baillantes inférieurement, et nous proposons de les partager en trois sections de la manière suivante :

A. Espèces à charnière articulée.

I. Espèces lisses et brillantes à ouverture médiocre :—

1. *Galeomma ambigua*.
2. ———— *splendida*.
3. ———— *polita*.
4. ———— *Layardi*.

II. Espèces striées à ouverture plus grandes :—

5. ———— *indecora*.
6. ———— *argentea*.
7. ———— *angusta*.
8. ———— *paucistriata*.
9. ———— *formosa*.
10. ———— *chloroleuca*.
11. ———— *inflata*.

B. Espèces à charnière simple :—

12. ———— *Macrochisma*.
13. ———— *Turtoni*.

Je ne mentionne ici que les espèces qui me sont particulièrement connues, et sur lesquelles j'ai pu faire une étude attentive.

1. GALEOMMA AMBIGUA, Desh. *G. testa transversa, ovato-oblonga, turgidula, æquilaterali, pallide albo griseo flavidula, intus opaca, albicante, nitida, transversim substriata, minutissime albo puncticulata, puncticulis depressis irregulariter sparsis ad marginem inferiorem evanidis; latere antico paulo angustiore; margine superiore angusto, recto, inferiore recto, parallelo; margine inferiore hiante, hiatu lanceolato, angusto; cardine sinistro inæqualiter bidentato, dentibus parallelis; dextro bidentato, dentibus minutis subæqualibus divaricatis; dente posticali brevissimo, truncato, subquadrangulari.*

*Hab.* Insula Ticaonica Philippinarum (Cuming); portus Essingtonensis (Jukes).

2. *GALEOMMA SPLENDIDA*, Desh. *G. testa ovato-transversa, angusta, depressa, subæquilaterali, albo-lactea, pellucida, tenuissima, fragili, nitente ad apices vitrea, transversim irregulariter striata et zonulis opacioribus notata; latere antico paulo breviori; umbonibus minutissimis, obtusis, vix prominulis; margine superiore recto, inferiore hiante parallelo; hiatu elongato, angusto utrinque acuminato; cardine angusto, dentibus duobus minutissimis, inæqualibus in valvula sinistra; dente posticali subquadrangulari, brevi, obsoleto; ligamento minutissimo.*  
*Hab.* Insula Burias Philippinarum.

Espèce appartenant aux *Galeomma* par le baillement des valves, mais conservant la charnière des *Scintilla*.

3. *GALEOMMA POLITA*, Desh. *G. testa ovato-transversa, depressa, subæquilaterali, tenuissima, fragili, albo-pellucida, polita, nitida, transversim substriata; latere antico paulo breviori cum postico æqualiter obtuso; margine superiore recto inferiore paululum arcuato, parallelo, hiatu inferiore angusto; cardine bidentato in valvula sinistra; dentibus minutissimis subæqualibus, dente posticali obsoleto; ligamento minutissimo.*  
*Hab.* Insula Samar Philippinarum.

4. *GALEOMMA LAYARDI*, Desh. *G. testa elongato-transversa, ovata, æquilaterali, alba, translucida, zonulis angustis translucentioribus interrupta, punctulis numerosissimis confusis notata; latere antico paulo angustiore; umbonibus minimis, obtusis, brevibus non prominentibus; margine superiore recto, inferiore æqualiter recto parallelo, hiatu magno in medio lato, fere totam longitudinem marginis inferioris occupante; cardine utroque latere unidentato; dentibus validis obtusis; dente posticali lato.*  
*Hab.* Insula Ceylonica (*Layard*).

5. *GALEOMMA INDECORA*, Desh. *G. testa elongato-transversa, angusta, extremitatibus obtusa, æquilaterali, albo pallide flavidula, convexiuscula, inferne late hiante, obsoletissima, longitudinaliter striata; striis distantibus prominulis, angustissimis; umbonibus minimis, obtusis, brevibus, vix prominulis; margine superiore recto, inferiore parallelo; latere antico paulo angustiore et attenuato; cardine angusto utroque latere unidentato; dentibus minutis subæqualibus, obtusis; ligamenti fossula brevissima, angustissima.*  
*Hab.* Insula Masbate dicta.

6. *GALEOMMA ARGENTEA*, Desh. *G. testa ovato-transversa, angusta, compressiuscula, subæquilaterali, tenui, pellucida, intus nitidissima, albo-argentea margaritacea, extus alba, argutissime striata, striis numerosis, angustis, prominulis, superioribus divaricatis ad marginem superiorem ascendentibus; margine su-*  
 No. CCXCV.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

*periore recto, inferiore convexiusculo; latere antico paulo brevior et angustiore; cardine angusto utroque latere unidentato, dentibus minimis subæqualibus; ligamento minutissimo, convexo.*  
*Hab.* Insula Boholensis Philippinarum.

7. GALEOMMA ANGUSTA, Desh. *G. testa oblongo-transversa, angusta, turgidula, æquilaterali, albo squalide flavidula, æqualiter extremitatibus obtusa, longitudinaliter striata; striis tenuibus, æqualibus, continuis, minutissime granulosis, superioribus divaricatis oblique ascendentibus; margine superiore recto, inferiore æqualiter recto, parallelo; hiatu inferiore lanceolato totam longitudinem testæ occupante; cardine minimo, utroque latere unidentato; dente posticali minutissimo.*

*Hab.* Insula Boholensis Philippinarum.

8. GALEOMMA PAUCISTRIATA, Desh. *G. testa elongato-transversa, convexiuscula, æquilaterali, albo-lactea, translucida, longitudinaliter tenuissime striata, striis minimis obsoletis distantibus, prominulis, ad marginem inferiorem brevioribus interjectis, superioribus paululum undulatis, divaricatis, oblique ascendentibus; latere antico paulo angustiore, umbonibus minimis, acutis, oppositis, vix prominentibus; margine superiore atque inferiore rectis, parallelis; margine inferiore hiatu mediocri aperto; cardine minutissimo, antice bidentato, dentibus obtusis obsoletis; dente postico oblongo, brevi.*

*Hab.* Insula Samar Philippinarum.

9. GALEOMMA FORMOSA, Desh. *G. testa oblonga, ovato-transversa, tumidula, inæquilaterali, intus extusque aurantia, longitudinaliter et tenuissime striata; striis superne evanidis, inferne dichotomis, distantibus, prominulis, capillaceis, superioribus divaricatis, numerosioribus, ascendentibus; margine superiore recto, inferiore paulo arcuato, parallelo; hiatu inferiore magno, lanceolato; latere antico paulo brevior et angustiore; umbonibus minutissimis, oppositis, vix prominulis; cardine minimo, utroque latere unidentato; dentibus obtusis.*

*Hab.* Australia septentrionalis (Jukes).

10. GALEOMMA CHLOROLEUCA, Desh. *G. testa elongato-transversa, ovato-angusta, tumida, æquilaterali, chlorotina, tenui, nitente, argutissime longitudinaliter striata; striis prominulis, angustissimis, capillaceis irregulariter divisis et anastomosis conjunctis, superioribus numerosioribus, divaricatis, oblique ascendentibus; margine inferiore recto, superiore parallelo; margine inferiore in senioribus concaviusculo; cardine minimo, utroque latere unidentato, dentibus æqualibus, obtusis.*

*Hab.* Insula Samar Philippinarum.

11. GALEOMMA INFLATA, Desh. *G. testa ovato-transversa, angusta, turgida, subæquilaterali, intus extusque pallide flavida, tenui, opaca, utraque extremitate æqualiter obtusa, sublævigata,*

*extremitatibus obsolete divaricatim striata, impresso-puncticulata; latere antico paulo longiore et angustiore; margine superiore recto, inferiore excavato, late aperto, valide hiante; cardine utroque latere unidentato; dentibus subæqualibus obtusis minutissimis; ligamento exiguo.*

*Hab.* Insula Masbate dicta.

12. GALEOMMA MACROCHISMA, Desh. *G. testa ovato-transversa, angusta, inflata, subæquilaterali, pallide flava, striis numerosis dichotomis, prominentibus longitudinalibus et transversalibus minutis regulariter minutissime decussata; striis superioribus utroque latere divaricatis et ascendentibus; latere postico paulo longiore, attenuato; umbonibus minimis obtusis oppositis; margine superiore recto, inferiore parallelo; hiatu inferiore valvarum maximo totam basim testæ occupante; cardine edentulo; ligamento brevi, minimo.*

*Hab.* Insula Masbate dicta.

#### 4. SUR LE GENRE SCINTILLA. PAR G. P. DESHAYES.

##### Genus SCINTILLA, Desh.

Animal ignotum.

*Testa ovato-transversa, utroque latere obtusa, aliquantisper paulo hians, tumida, tenuis, nitidissime scintillans, epidermide destituta; margine superiori sæpius recto, inferiori parallelo; cardo angustus, brevis, nunquam in medio emarginatus; in valvula dextra dens cardinalis unicus, porrectus, uncinatus, in sinistra dentes duo inæquales approximati divaricati: internus major, dens lateralis in latere postico, cardine approximatus, brevis, conicus vel subquadrangularis, in altera valvula in fossula dentis bifidi receptus; ligamentum internum, breve, latum, tenue, in sulco angusto obliquo utriusque valvulæ affixa; impressio pallii integra.*

Le genre nouveau que nous proposons sous le nom de *Scintilla* mérite d'attirer un moment l'attention des Conchyliologues. Peu connu dans les collections nous l'avons trouvé d'une extraordinaire richesse dans celle de M. Cuming comme le témoignent les 37 espèces dont nous donnons ici la description. Une seule peut-être a été connue de M. Quoy, et décrite par lui dans le voyage de l'Astrolabe sous le nom de *Psammobia vitrea*, nous conservons au sujet de cette espèce des doutes légitimes parceque le savant naturaliste la caractérise par deux dents cardinales et un *ligament extérieur*, tandis que dans notre nouveau genre cet organe est toujours intérieur. Le doute au sujet de l'espèce de M. Quoy est d'autant plus regrettable que ce naturaliste donne la figure et la description de l'animal lequel se rapproche de celui des *Galeomma* et s'éloigne considérablement de celui des véritables *Psammobies*. Quoique

nous eussions le soupçon que l'espèce de M. Quoy appartient à notre nouveau genre, dans l'appréhension de commettre une erreur, nous n'osons nous servir des précieux documents de ce naturaliste pour compléter les caractères du genre par ceux de l'animal.

Les coquilles du genre *Scintilla* ont une apparence particulière qui les distingue assez facilement de tous les autres genres connus ; elles ont de très grands rapports d'un côté, avec les Erycines telles que les a reconstituées M. Recluz, et d'un autre avec les *Galeomma* ; elles sont réellement intermédiaires entre ces deux groupes et les rattachent à la même famille. Toutes ces coquilles sont ovales transverses, oblongues, presque symétriques tant elles sont équilatérales ; les Erycines au contraire sont pour le plus grand nombre obrondes ou ovalaires, mais inéquilatérales et obliques. La surface extérieure dans les *Scintilla* est dépourvu d'épiderme ; elle est lisse et brillante, souvent polie et sans stries ; état particulier qui annonce dans l'animal une organisation spéciale, qui lui permet de renverser les lobes de son manteau sur la coquille et de lui conserver ce poli, ce brillant remarquables. Toutes ces coquilles, d'un médiocre volume, sont minces, fragiles, transparentes, parfaitement équivalves ; la plupart sont parfaitement closes ; il en est d'autres qui sont un peu baillantes dans la région dorsale en avant et en arrière de la charnière, d'autres enfin plus rapprochées des *Galeomma*, chez lesquels se montre un baillement étroit dans la longueur du bord inférieur ; les crochets sont petits, souvent aplatis, opposés et à peine saillants au delà du bord cardinal. Nous avons remarqué dans un certain nombre d'espèces un caractère extérieur que nous n'avons pas eu occasion jusqu'ici de rencontrer dans d'autres coquilles : il consiste en une multitude de très fines ponctuations très nettes, déprimées, d'un blanc opaque sur le test transparent, et souvent tellement rapprochées que la coquille perd ainsi une grande partie de sa transparence.

Indépendamment des caractères généraux et extérieures que nous venons de rappeler, le genre est plus spécialement reconnaissable par la structure de la charnière et les empreintes laissées par l'animal dans l'intérieur des valves.

Le bord dorsal ou cardinal est le plus souvent droit, rarement une peu arqué ; une charnière très petite, très courte surtout, en occupe le centre. Cette charnière constituée à peu près comme celle des Erycines, s'en distingue cependant par ce fait important, qu'elle n'offre jamais cette échancrure plus ou moins large qui coïncide avec la position du ligament. Le bord cardinal dans les *Scintilla* reste droit, mince, étroit, souvent subcylindracé, d'autrefois plus aplati et même creusé d'une gouttière en avant et en arrière de la charnière. Les dents cardinales sont très petites, une seule, rarement deux s'élèvent sur la valve droite ; cette dent unique est ordinairement pyramidale, triangulaire un peu en crochet et pointue au sommet ; deux dents très inégales sur la valve gauche ; elles sont comprimées, l'antérieure la plus petite se projette obliquement vers le bord, l'autre plus épaisse et plus saillante descend perpendiculairement, et occupe la largeur du bord ; quelquefois les deux dents sont parallèles et laissent entre elles un interval très étroit, dans lequel se pose la dent de la

valve opposée. En arrière du ligament et tout près de lui se nombre une dent latérale postérieure, le ligament étant très court ; cette dent par le fait se trouve très rapprochée des cardinales. La dent latérale postérieure est peu variable : elle consiste sur la valve gauche en une saillie courte, tronquée au sommet et tranchée perpendiculairement en arrière, ce qui lui donne une forme quadrangulaire ; dans quelques espèces cette dent s'allonge un peu plus, et devint triangulaire ; sur la valve opposée, la dent est bifurquée, et c'est dans la très petite fossette, qui résulte de la bifurcation que s'interpose la dent de la valve gauche.

Le ligament occupe un très court espace entre les deux parties de la charnière ; il est aplati, sans saillie à l'intérieure ; il s'insère non dans tout l'espace que laissent les dents cardinales et latérales postérieures, mais seulement dans une petite rainure très étroite, oblique d'avant, en arrière et de haut, en bas un peu comparable à la fossette des ostéodesmes ou des *Lyonsia*, mais sans aucune trace d'osselet cardinal. Ce ligament devient parfois tellement exiguë qu'il se rapproche alors de celui des *Galeomma*. Nous avons recherché s'il n'y aurait pas quelque trace d'un ligament extérieur ; nous avons trouvé entre les crochets une très mince pellicule épidermique, qui s'étend d'une valve à l'autre, mais qui ne paraît jouir d'aucune des propriétés du ligament externe, car elle se brise au moindre mouvement des valves, et il n'y a aucune trace de Nymphes pour son insertion.

L'intérieur des valves étant souvent aussi brillant que l'extérieur, et les coquilles étant au reste très minces et transparentes, on aperçoit difficilement les impressions des muscles et du manteau, cependant on peut étudier ces parties dans des individus plus épais et plus opaques. Les impressions musculaires sont peu variables ; elles sont situées dans la région dorsale, et rentrées en avant dans l'intérieur des valves ; elles sont égales, ou presque égales ; le plus souvent circulaires, quelquefois un peu subquadrangulaires, la postérieure surtout. L'impression palléale est simple ; elle est située proche du bord, et le suit parallèlement dans son contour ; rarement elle forme une ligne simple et étroite ; le plus ordinairement elle est large et presque diffuse du côté interne.

La coloration dans le genre *Scintilla* tel qu'il est aujourd'hui connu, est peu variable ; la plupart des espèces sont d'une blanc laiteux translucide, ou d'un corné vitreux, parfaitement transparent ; peu-à-peu la couleur cornée devient plus intense passe au jaune blond ou fauve, transparent, et à l'orange pale ; dans un petit nombre d'espèces la coloration est d'une rose pourpré d'une très agréable nuance.

1. SCINTILLA CUMINGII, Desh. *S. testa magna, ovato-transversa, æquilaterali, symmetrica, convexiuscula, solidula, candidissima, opaca, inæqualiter striato-rugosa, antice, postice atque ad marginem inferiorem minutissime punctato-granulosa utroque latere superne æqualiter declivi extremitatibus obtusa in margine inferiore tenue et irregulariter denticulata ; umbonibus parvis tumidis, oppositis vix prominentibus ; lamina cardinali lata, dente cardinali*

*compresso, elongato in utraque valva, posticali approximato triangulari, abrupte resuto; cicatricula ligamenti angusta, obliqua, brevi.*  
*Hab.* Ad littora Panamensia.

Le nom de M. Cuming se retrouve dans presque tous les genres des Mollusques; cela prouve à la fois la reconnaissance des naturalistes et la grandeur des services qu'il a rendus à la science.

2. SCINTILLA JUKESI, Desh. *S. testa magna, ovato-transversa, æquilaterali, subsymmetrica, depressiuscula, utroque latere obtusa subtruncata, paululo hiante, candidissima, hyalina transversim obsolete striata, nitidissima; margine inferiore recto, inferiore leviter convexo, parallelo; cardine angustissimo, subedentulo, dentibus minutis, obsolete; fossula ligamenti angusta, profunda; ligamento cavitate valvarum convexo, prominente.*  
*Hab.* Portus Essingtonensis (Jukes).

3. SCINTILLA CUVIERI, Desh. *S. testa ovato-subrotunda, turgidula, subæquilaterali, tenui, polita, nitidissima, pallide luteo-flavicante, pellucida transversim irregulariter striata; latere antico paulo brevior, obtuso, superne declivi; latere postico latiore dilatato; umbonibus minimis, acutis, oppositis vix prominulis; margine cardinali regulariter arcuato, intus lato et utroque latere canaliculato; dentibus cardinalibus in valvula sinistra duobus inæqualibus approximatis antico minore, in valvula altera dente unico obsolete; dente posticali brevissimo approximato.*  
*Hab.* Baclayon in insula Boholensi Philippinarum.

4. SCINTILLA TIMORIENSIS, Desh. *S. testa late ovata, transversa, subæquilaterali, subsymmetrica, depressa, pallide luteo-citrina, solidula, translucida, polita, nitidissima, obsolete striata, latere antico paulo brevior, postico latiore, æqualiter obtusis paululum hiantibus; umbonibus minimis acutis, vix prominentibus; margine cardinali recto, satis lato; dentibus cardinalibus minutis, inæqualibus, angustis, obliquis, posticali obsolete, fossula ligamenti brevi, lata; cicatriculis muscularibus minimis orbicularibus in parte superiore valvarum.*  
*Hab.* Insula Timoriensis.

5. SCINTILLA SOLIDULA, Desh. *S. testa ovata, compressiuscula, subæquilaterali, symmetrica, polita, nitida, translucida, transversim obsolete striata, albo pallide lutescente vel corneola, superne utroque latere æqualiter arcuata, extremitatibus obtusa, inferne recta; valvulis solidiusculis intus iridescentibus; cardine crassulo dentibus cardinalibus duobus in valvula sinistra obtusis, valde inæqualibus, antico acuto minore in valvula dextra unico, obliquo, conico; posticali brevissimo cardine approximato; fossula ligamenti minima, angusta, brevissima.*  
*Hab.* Tamar, insula Bohol Philippinarum.

6. SCINTILLA OVULINA, Desh. *S. testa ovato-transversa, inflata, solida, incrassata, subæquilaterali, alba vel pallide flavescente,*



*nitida, polita substriatave, opaca; latere antico paulo brevior et angustior; umbonibus parvis, obtusis, vix prominulis; margine cardinali arcuato, inferiore recto; cardine incrassato; dentibus duobus in valvula sinistra valde inæqualibus, mediano maximo; dente posticali crasso, brevissimo, cardine approximato; fossula ligamenti brevissima angusta.*

*Hab.* Basay, insula Samar Philippinarum.

7. *SCINTILLA TURGESCENTIS*, Desh. *S. testa ovato-subtrigonalis, tumida, turgida, inæquilaterali, crassa, solida, alba, opaca, nitente, obsolete transversim striata; latere antico paulo brevior, obtuso; margine superiore utroque latere arcuato, inferiore recto; umbonibus prominulis, obtusis, oppositis; cardine incrassato lato, in medio profunde emarginato; dentibus cardinalibus in valvula sinistra inæqualibus in altera dente unico crasso obtuso, dente posticali crasso, brevi, obliquo; fossula brevissima, profunda.*

*Hab.* Sinus Moretonensis.

8. *SCINTILLA TURGIDA*, Desh. *S. testa ovato-transversa, turgida, æquilaterali, subsymmetrica utroque latere obtusa, antice hiante, hiatu brevi lanceolato, candidissima, incrassata, opaca, nitidissima; latere antico paulo angustior; umbonibus minimis, obtusis, brevibus; margine inferiore superioreque rectis et fere parallelis; cardine crassato, subedentulo, dentibus obsoletis; ligamento minutissimo, brevi.*

*Var. β.* *Testa minore, crassior, dentibus cardinalibus paulo majoribus.*

*Hab.* Basay, in insula Samar Philippinarum.

9. *SCINTILLA SCINTILLANS*, Desh. *S. testa ovato-transversa, convexiuscula, solidula, subæquilaterali, nitida, polita, subepidermide tenui, pallide glaucescente alba, in medio spatium triangulare vitreo notata; umbonibus minimis acutis, brevibus, vix prominentibus; margine superiore leviter arcuato, inferiore rectiusculo; cardine crassulo, angusto, dentibus cardinalibus in valva sinistra subæqualibus, posticali brevi, compresso, postice truncato, apice obtuso.*

*Hab.* Insula Bohol Philippinarum.

10. *SCINTILLA CROCEA*, Desh. *S. testa ovata, compressa, inæquilaterali, eleganter crocea, nitida, pellucida, fragili, polita, zonulis pellucidioribus interrupta; latere antico paulo breviori et angustiori, postico dilatato; margine superiore atque inferiore rectis, parallelis; umbonibus minutis acutis, vix prominentibus; cardine lato, brevi, dentibus cardinalibus approximatis inæqualibus, posticali fere nullo; fossula ligamenti brevissima.*

*Hab.* Insula Negros Philippinarum.

11. *SCINTILLA FLAVIDA*, Desh. *S. testa lata, ovato-transversa, depressa, subæquilaterali, symmetrica, utroque latere æqualiter obtusa, paulo hiante, tenui, fragili, nitidissima, transversim obsolete et satis regulariter striata, corneo-flavescente, translucida; um-*

*bonibus minimis, acutis, vix prominulis, oppositis; cardine angusto, solidulo, brevi; dente cardinali unico in utraque valva; dente posticali compresso valde approximato; fossula ligamenti angusta, brevissima.*

*Hab.* Basay, insula Samar Philippinarum.

12. SCINTILLA REEVEI, Desh. *S. testa ovato-transversa, subæquilaterali, subsymmetrica, depressiuscula, albo flavidula translucida, irregulariter transversim obsolete striata, nitente, utroque latere æqualiter obtusa, parum hiante; umbonibus brevibus, obtusis, vix prominentibus; margine cardinali recto inferiori æqualiter recto, parallelo; cardine lato in valvula sinistra inæqualiter bidentato; dente mediano majore compresso, in valvula dextra bidentato dente antico majore, dente postico brevissimo, abrupte truncato, in valvula dextra bifido.*

*Hab.* Bais, in insula Negros Philippinarum.

13. SCINTILLA TENUIS, Desh. *S. testa ovato-transversa, depressa, inæquilaterali, albo-translucida, tenuissima, fragili, transversim tenue striata; latere antico breviori, angustiori obtuso, postico superne dilatato, paulo hiante; umbonibus minimis, obliquis acutis; cardine angusto bidentato, altero unidentato; dentibus minimis inæqualibus, obsolete, posticali brevi, truncato, compresso.*

*Hab.* Basay, insula Samar Philippinarum.

14. SCINTILLA PHILIPPINENSIS, Desh. *S. testa ovato-transversa, compressa, æquilaterali, subsymmetrica, alba pallidissime flavicante, tenui, fragili, transversim inæqualiter striata, nitente; margine superiore inferioreque rectis parallelis; umbonibus minimis, brevibus obtusis, oppositis; cardine solidulo, latiusculo, dentibus cardinalibus, minimis, laterali postico brevi, approximato, truncato; margine cardinali utroque latere canaliculato.*

*Hab.* Insula Zebuensis Philippinarum.

15. SCINTILLA STRIATINA, Desh. *S. testa ovato-transversa, compressa, subæquilaterali, tenuissima, fragili, albo pellucida nitente, transversim tenue et regulariter striata; latere antico paulo brevior et angustior; umbonibus minimis, acutis, brevibus, vix prominulis; margine superiore leviter arcuato, inferiore fere recto; margine cardinali angusto, utroque latere cardinis anguste canaliculato; dentibus minimis, inæqualibus, postico oblongo, compresso, triangulari.*

*Hab.* Insula Bohol Philippinarum.

16. SCINTILLA SUCCINEA, Desh. *S. testa late ovata, tumidula, solida, inæquilaterali, polita, nitida, obsolete striata, succinea, translucida, intus albo leviter velata; latere antico paulo breviori et angustiore, umbonibus minimis obtusis, oppositis; margine superiore brevi, subrecto, inferiore parallelo; cardine crassulo, bidentato, dentibus inæqualibus, posticali fere nullo; cicatriculis muscularibus minimis circularibus.*

*Hab.* Baclayon in insula Boholensi Philippinarum.

17. *SCINTILLA CANDIDA*, Desh. *S. testa regulariter ovata, transversa, subæquilaterali, subsymmetrica, candidissima, transversim obsolete striata; striis irregularibus nitida, utroque latere æqualiter lata et obtusa; latere antico paulo brevior; margine cardinali atque inferiori parum arcuatis, parallelis; umbonibus parvulis, acutis vix prominentibus; cardine angusto; dentibus cardinalibus duobus in valvula sinistra subæqualibus; dente posticali elongato, angustissimo, fossula ligamenti brevissima.*  
*Hab.* In insula Burias atque Boholensi Philippinarum.
18. *SCINTILLA PELLICULA*, Desh. *S. testa ovato-subrotunda, depressa, subæquilaterali, tenuissima, pellucida, vitrea, fragili, nitidissima, transversim undato-plicata; plicis latis, undulatis in medio evanescentibus; latere antico paulo breviori, angustiori, obtuso; margine cardinali angustissimo quasi edentulo; dente cardinali unico in valvula dextra, in altera dentibus nullis, dente posticali elongato, obsolete; fossula ligamenti brevissima, angustissima.*  
*Hab.* Insula Boholensis Philippinarum.
19. *SCINTILLA HYDATINA*, Desh. *S. testa ovato-transversa, compressa, æquilaterali, tenuissima, pellucida, vitrea pallidissima flavicante polita, nitente, utroque latere æqualiter obtusa; umbonibus minimis, non prominentibus oppositis; margine cardinali in medio angustissimo, lateraliter latiore, planulato; dentibus duobus in valvula sinistra minutis subæqualibus; dente posticali brevi compresso, subquadrangulari.*  
*Hab.* Baclayon in insula Boholensi Philippinarum.
20. *SCINTILLA CRYSTALLINA*, Desh. *S. testa minima, ovato-transversa, depressiuscula, inæquilaterali, tenuissima, nitidissima, corneo-vitrea, polita, nitente, parum obliqua; latere antico paulo brevior atque postico superne utroque latere cardinibus dilatatis; umbonibus minimis, angustis, acutis, obliquis; cardine lato, dentibus in valvula sinistra, unico in valvula dextra, dente posticali elongato, angustato, fossula brevissima.*  
*Hab.* Cacagu in insula Mindanao Philippinarum.
21. *SCINTILLA OPALINA*, Desh. *S. testa ovato-rotundata, transversa, compressiuscula, subæquilaterali, tenuissima, hyalina, fragili, pallide lutescente, polita, nitente, ad margines substriata, ad apices lævigatissima, latere antico paulo brevior, posteriore tantisper acuminato; cardine angustissimo, in utraque valva unidentato, dentibus minimis posterioribus vix perspicuis; fossula ligamenti perangusta, lineari, brevi; umbonibus parvis, vix prominentibus.*  
*Hab.* Insula Luzon Philippinarum.
22. *SCINTILLA VITREA*, Desh. *S. testa suborbiculari, valde depressa, subæquilaterali, tenuissima, fragili, pellucida vitrea nitidissima, pallide flavidula, transversim minute striata; latere antico paulo brevior superne declivi, postico paulo latiore; margine superiore arcuato paululum obliquo; cardinali margine ad extre-*

*mitates latiore, dentibus cardinalibus duobus inæqualibus in utraque valva, dente postico brevissimo; fossula ligamenti brevi angusta.*

An *Erycina Cuvieri*, var. *junior*?

Unicum specimen vidi.

*Hab.* Insula Burias Philippinarum.

23. *SCINTILLA HYDROPHANA*, Desh. *S. testa regulariter elliptica, transversa, subæquilaterali, compressa, tenui, pellucida, hyalina, corneo-pallide flavescente, subsymmetrica, æqualiter extremitatibus obtusa, paulo hiante; latere antico paulo brevior; umbonibus minimis, acutis, oppositis, brevibus; margine cardinali fere recto, inferiori rectiusculo parallelo; cardine angusto in utraque valva bidentato; dentibus inæqualibus angustis minutissimis; dente posticali brevissimo, acuto.*

*Hab.* Zambalis, in insula Luzonica Philippinarum.

24. *SCINTILLA PUDICA*, Desh. *S. testa ovato-transversa, turgidula, oblonga, inæquilaterali, roseo-purpurascente intus extusque æqualiter picta, nitidissima, irregulariter transversim striata, ad apices minutissime albo puncticulata; puncticulis depressis, irregulariter sparsis; latere antico breviori, obtuso; umbonibus minimis, acutis, oppositis; margine superiore leviter convexo, inferiore recto; cardine angusto in utraque valva inæqualiter bidentato; dentibus parallelis; dente posticali brevi, truncato, subquadrangulati.*

*Hab.* Insula Zebuensis Philippinarum.

25. *SCINTILLA ROSEA*, Desh. *S. testa ovato-oblonga, transversa, turgidula, subæquilaterali, rosea, ad margines intusque albescente, solidula, nitidissima, transversim irregulariter striata, sub lente longitudinaliter obsolete striolata; latere antico brevior et angustior obtuso, postico latiore; umbonibus minimis, obtusis, oppositis; margine superiore tantisper convexiusculo, inferiore recto; cardine angusto, in utraque valva bidentato; dentibus minimis inæqualibus divaricatis; dente postico brevi, plano, truncato, subquadrangulati.*

*Hab.* Zambalis, in insula Luzonica Philippinarum.

26. *SCINTILLA RECLUZIANA*, Desh. *S. testa ovato-transversa, angusta, turgidula, inæquilaterali, tenui, fragili, pallide purpurea, hyalina, nitida, transversim irregulariter leviter striata, puncticulis minutissimis, depressis, irregulariter adspersa; latere antico breviori et angustiori, postico æqualiter obtuso; umbonibus minimis, obtusis, vix prominentibus; cardine angusto, in valvula sinistra unidentato, altero edentulo; dente posticali obsoleto.*

*Hab.* Australia septentrionalis.

27. *SCINTILLA PALLIDULA*, Desh. *S. testa ovato-transversa, oblonga, turgidula, æquilaterali, symmetrica, crassa, solida, albo pallide flavescente, apicibus pallide aurantiaca, nitida, irregulariter transversim substriata, irregulariter punctulis depressis minutissimis adspersa; umbonibus minimis, approximatis, acutis, oppo-*

sitis; margine superiore atque inferiore leviter convexis, parallelis, valvulis intus nitidis, pallide aurantiacis; cardine angusto, utraque valva inæqualiter bidentato; dente posticali brevissimo, truncato, subquadrangulari.

*Hab.* Insula Zebuensis Philippinarum.

28. *SCINTILLA FORBESII*, Desh. *S. testa ovato-transversa, solidula, æquilaterali, subsymmetrica, extremitatibus æqualiter obtusa, intus extusque pallide flavescente, nitida, hyalina, transversim obsolete striata, densissime et minutissime albo punctulata; punctis irregulariter sparsis depressis; margine superiore et inferiore rectis, parallelis; cardine crassiusculo, bidentato, altero unidentato, dentibus duobus subæqualibus acutis minimis; dente posticali brevissimo in valvula sinistra bifurcato; fossula ligamenti minima, angusta.*

*Hab.* Insula Borneo.

À la mémoire de Ed. Forbes, l'un des plus éminents naturalistes de la Grande Bretagne, et dont la science pleurera longtems la perte à jamais regrettable.

29. *SCINTILLA AURANTIACA*, Desh. *S. testa ovato-transversa, turgida, subcylindracea, angusta, inæquilaterali, pallide aurantiaca, nitida, tenui, hyalina, substriata, punctulis minutissimis distantibus, albis, irregulariter sparsis, depressis, ornatis, ad marginem inferiorem ovoideis; latere antico paulo brevior et angustior; umbonibus minimis magis concoloribus; margine superiore parum obliquo, recto, inferiore leviter convexo, subparallelo; cardine angusto; dentibus duobus inæqualissimis in valvula sinistra, unico validiore conico, in altera; dente posticali brevissimo, approximato, conico.*

*Hab.* Australia septentrionalis.

30. *SCINTILLA ADAMSI*, Desh. *S. testa elongato-transversa, ovata, æquilaterali, inflata, tenui, pellucida, pallide luteo-flava, nitidissima, transversim obsolete striata, albo punctatissima, punctulis albis depressis, minutissimis, irregulariter sparsis; umbonibus minimis, obtusis, oppositis, vix prominentibus; margine cardinali crassiusculo, recto, inferiori recto, parum obliquo; dentibus in valvula sinistra duobus inæqualissimis, obliquis; in valvula dextra dentibus duobus subæqualibus; dente posticali punctato, brevi subquadrangulari; latere antico paulo angustior.*

*Hab.* Insula Boholensis Philippinarum.

À M. Arthur Adams, le savant auteur du *Genera des Mollusques Vivants*, des Mollusques du Samarang, &c.

31. *SCINTILLA OWENI*, Desh. *S. testa ovato-transversa, turgida, æquilaterali, subsymmetrica, tenuissima corneo-alba, hyalina vitrea, zonulis angustis opacioribus ad margines notata, nitidissima; lateribus æqualiter obtusis; umbonibus obtusis, brevissimis, oppositis, vix prominentibus; margine superiore recto, angusto, inferiori parallelo; cardine brevi, dentibus minimis duobus inæqualissimis,*

*in valvula sinistra ; dente posticali minimo brevi, subquadrangulari.*

*Hab.* Insula Zebuensis Philippinarum.

En attachant à cette espèce le nom de M. Richard Owen, le plus grand zoologiste de l'empire Britannique, j'aime à rappeler ses titres à l'admiration du monde savant.

32. SCINTILLA HANLEYI, Desh. *S. testa ovato-transversa, satis lata, depressiuscula, subæquilaterali, albo-hyalina, ad apices vitrea, tenuissima, fragili, nitidissima, transversim obsolete striata, leviter undulata ; latere antico paulo breviori obtuso atque posticali paulo hiantibus ; margine superiore leviter arcuato, utroque latere cardinis extus dilatato, intus subcanaliculato ; cardine brevissimo in valvula sinistra bidentato ; dentibus subæqualibus, approximatis ; dente posticali brevissimo, apice truncato.*

*Hab.* Insula Zebuensis Philippinarum.

Nous attachons avec plaisir à cette espèce le nom de M. Hanley, savant Conchyliologiste, auquel la Grande Bretagne doit la plus grande partie du meilleur et du plus complet des ouvrages sur les Mollusques des mers Britanniques.

33. SCINTILLA PORULOSA, Desh. *S. testa ovato-transversa, angusta, turgidula, subæquilaterali, tenui, nitida, alba subhyalina, transversim obsolete striata, puncticulis minutissimis, albis, depressis, numerosissimis irregulariter sparsis adspersa, quasi porulosa ; margine superiore angusto, recto, inferiori parallelo ; cardine brevi inæqualiter bidentato, altero unidentato ; dentibus minutis ; dente posticali brevissimo, obsoleto.*

*Hab.* Insula Boholensis Philippinarum.

34. SCINTILLA HYALINA, Desh. *S. testa ovato-transversa, depressiuscula, subæquilaterali, tenui, pellucida, corneo-vitrea, alba, pallidissime flavidula, nitida, transversim substriata ; latere antico paulo breviori, paulo obliquato, antice superque late hiante ; umbonibus parvulis, brevissimis, acutis, vix prominulis ; margine superiore in medio recto, extremitatibus arcuato, inferiore convexiusculo, superiori parallelo ; cardine lato, dente uncinato, acuto, in utraque valva ; dente posticali brevi, trigonali, obtuso, altero bifido.*

*Hab.* Insulæ Torres dictæ.

35. SCINTILLA FABA, Desh. *S. testa ovato-transversa, turgida, in medio subcylindracea, inæquilaterali, candidissima, nitida, tenui, translucida, irregulariter transversim striata, punctatissima ; punctulis minutissimis, depressis, irregulariter sparsis, ad marginem inferiorem evanidis ; latere antico paulo brevior et angustiore ; umbonibus tumidulis obtusis, brevibus oppositis ; margine superiore recto paululum obliquo, inferiore angustissime hiante, recto ; cardine altero inæqualiter bidentato, altero unidentato, dentibus acutis, prominentibus ; dente posticali brevissimo, apice truncato, prominente.*

*Hab.* — ? Coll. Cuming.

36. *SCINTILLA STRANGEI*, Desh. *S. testa ovato-transversa, turgidula, æquilaterali, tenuissima, hyalina, alba, ad apices subvitrea, polita, nitidissima, superne utroque latere hiante, extremitatibus æqualiter obtusa; umbonibus minimis, brevissimis, obtusis, oppositis non prominulis; margine superiore recto, inferiore paululum convexo, parallello; cardine angusto, dente unico, obtuso, obsoleto, in utraque valva; dente posticali brevissimo, obsoleto; ligamento minutissimo.*

*Hab.* Sinus Moretonensis (*Strange*).

37. *SCINTILLA ANOMALA*, Desh. *S. testa ovato-subquadrangulari, transversa, æquilaterali, symmetrica, depressa, alba, pellucida, tenui, fragili, nitida, in medio translucidior, superne sub lente minutissime puncticulata, ad marginem superiorem striis divaricatis minutis ornata; margine superiore atque inferiore rectis, parallelis; latere antico subtruncato; umbonibus minimis acutis vix prominentibus; cardine angusto extremitatibus dilatato; dentibus cardinalibus obsoletis, postico dente nullo; cicatricula musculari postica bipartita.*

*Hab.* Insula Samar Philippinarum.

Cette espèce est sur la limite des *Scintilla* et pourrait bien appartenir au genre *Lepton*; cependant elle en diffère par la charnière, à laquelle on ne trouve pas les dents longues et divergentes telles quelles sont représentées par MM. Forbes et Hanley dans leur ouvrage sur les Mollusques des mers Britanniques.

## 5. DESCRIPTIONS DE NOUVELLES ESPECES DU GENRE ERYCINA. PAR G. P. DESHAYES.

1. *ERYCINA ROTUNDA*, Desh. *E. testa orbiculato-tumida, subcordiformi, fere æquilaterali, transversim substriata, albo griseola, iridescente, nitente, tenui, translucida, latere antico paulo brevior; umbonibus minimis, parum obliquis; cardine angusto, dentibus cardinalibus minimis, inæqualibus antico compresso, prominentiori acuto; in valvula dextra dente unico uncinato, acuto, lateraliter compresso, dente postico brevi, trigonali, acuto; fossula ligamenti angusta, obliqua, profunda.*  
*Hab.* Sinus Moretonensis (*Strange*).

2. *ERYCINA CYCLADIFORMIS*, Desh. *E. testa ovato-subrotunda, tumida, inæquilaterali, lævigata, nitida, epidermide griseo glaucescente tenui vestita, iridescente, transversim tenue et irregulariter striata; latere antico breviori obtuso; valvulis tenuibus translucens; cardine angustissimo; dentibus cardinalibus duobus in valvula sinistra, minutis, profunde basi disjunctis inæqualibus, laterali postico remoto; impressione musculari antica circulari minima, postica ovali cum impressione pallii continua.*

*Erycina Cycladiformis*, Desh. Trait. élém. pl. 11. fig. 6 à 9.

*Hab.* Le nord de la Nouvelle Hollande (*Jukes*); la Nouvelle Zélande (*Quoy*).

3. *ERYCINA DENTICULATA*, Desh. *E. testa ovato-trigonalis, donaciformi, valde inæquilaterali, antice oblique truncata, polita, nitidissima, nec striata, albo-griseo-flavescente, crassa, solida; latere antico brevi, obtuse truncato; margine superiore angulato, inferiore recto, intus tenue et regulariter denticulato; cardine incrassato, dentibus duobus in valvula sinistra inæqualibus crassis, divaricatis; interno majore; in valvula dextra dente unico pyramidalis, acuto, uncinato; dente posticali magno, brevi, crasso, triangulari, apice obtuso; ligamento brevissimo.*

*Hab.* Insula Borneo dicta.

4. *ERYCINA BULLULA*, Desh. *E. testa minima, suborbiculari, inflata, subæquilaterali, alba, translucida, epidermide tenuissimo griseo vestita, transversim inæqualiter striata; umbonibus prominulis, acutis; dentibus cardinalibus magnis, crassis, in valvula sinistra duobus inæqualibus; antico majore, laterali postico brevi, triangulari, intus producto; fossula brevi, angustissima; valvulis crassiusculis, intus lacteis.*

*Var. β. Testa crassiore, solidula, albo-opaca, cardinalibus dentibus solidioribus.*

*Hab.* Insulæ Philippinenses.

5. *ERYCINA PARVA*, Desh. *E. testa minima, orbiculari, subæquilaterali, turgidula, tenuissima, nitida, polita, corneo-alba, pellucida, inæqualiter substriata; latere postico paulo longiore, latiore, dilatato; cardine angusto, dentibus cardinalibus minutis, inæqualibus subdivergentibus, dente postico fere acuto; fossula brevi, angustissima; cicatriculis muscularibus æqualibus circularibus.*

*Hab.* Basay, in insula Luzon.

6. *ERYCINA ZEBUENSIS*, Desh. *E. testa ovato-suborbiculari, obliqua, inæquilaterali, tenui, fragili, tumidula, albo-lactea, translucida, obsolete striata, polita, nitente; umbonibus minimis, obtusis; cardine arcuato, angusto, dentibus duobus in valvula sinistra minutissimis; dente posticali remoto, elongato; fossula ligamenti angustissima, elongata.*

*Hab.* Sebinga in insula Zebuensi Philippinarum.

7. *ERYCINA GUTTULA*, Desh. *E. testa ovato-suborbiculari, obliqua, inæquilaterali, depressiuscula, albo-pellucida, zonulis lacteis intersecta, fragili, tenuissima, polita, nitente; latere antico brevioris, angustioris; umbonibus obliquis, porrectis, acutis, vix prominulis; cardine arcuato, angustissimo, subdentulo; dentibus cardinalibus minutissimis obsoletis, postico nullo; fossula ligamenti angusta.*

*Hab.* Insula Burias Philippinarum.

8. *ERYCINA MACRODONTA*, Desh. *E. testa rotundato-inflata, obliqua, inæquilaterali, inæqualiter striata, albo lactescente, zonulis transversis pellucidis interrupta; umbonibus oblique prominentibus, acutis; latere antico brevi, obtuso; cardine*



*incrassato, dentibus cardinalibus in valvula sinistra duobus sub-æqualibus, antico uncinato, in valvula dextra dente unico, maximo, triangulari, compresso; dente posticali brevi acuto, triangulari; cicatriculis muscularibus minimis, æqualibus, circularibus.*

*Hab.* Basay, in insula Luzon.

9. *ERYCINA GRATA*, Desh. *E. testa ovata, tumidula, parum obliqua, inæquilaterali, tenui, pellucida, alba, zonulis pellucidioribus interrupta, exillime sub lente puncticulata, puncticulis numerosissimis subreticulata; dentibus cardinalibus minimis vix perspicuis inæqualibus, acutis, dente laterali postico elongato valde remoto; fossula ligamenti lineari, elongata; margine inferiore valvularum obsolete undulato.*

*Hab.* Insula Samar Philippinarum.

10. *ERYCINA PAPYRACEA*, Desh. *E. testa late ovata, transversa, depressiuscula, subæquilaterali, tenuissima, fragili, albo-lactea, translucida, sub lente striis obliquis minutissimis subgranosis clathrata, textilosa; latere antico superne declivi, breviori, obtuso, postico acuto, latiore; umbonibus parum obliquis, obtusis, non prominentibus; margine cardinali arcuato, tenuissimo, unidentato, in valvula dextra bidentato, in sinistra dentibus minimis angustis æqualibus, posticali minimo, brevi, triangulari, acuto; ligamento elongato, angustissimo.*

*Hab.* Columbia occidentalis.

11. *ERYCINA AUSTRALIS*, Desh. *E. testa ovato-transversa, tumidula, inæquilaterali, candide lactea, translucida, tenui, fragili, nitidissima, obsolete transversim striata; latere antico brevi, obtuso, subtruncato; latere postico superne declivi, ad extremitatem obtuse angustato; margine superiore recto, inferiore æqualiter recto, parallelo; cardine angustissimo; in valvula sinistra dentibus duobus minimis inæqualissimis, in dextra dente validiore, uncinato; dente posticali elongato, triangulari.*

*Hab.* Australia septentrionalis.

12. *ERYCINA DUBIA*, Desh. *E. testa ovato-transversa, tumidula, oblique inæquilaterali, tenui, pellucida, fragili, alba nitida transversim tenue striata; latere antico brevi, obtuso, paulo angustiore, postico duplo majori; umbonibus brevissimis, acutis, obliquis vix prominentibus; margine cardinali lineari, oblique arcuato, inferiori recto; cardine angusto in medio late emarginato, antico bidentato, in valvula sinistra unidentata, in dextra dentibus minutissimis inæqualibus; dente posticali elongato, angusto, obsolete.*

*Hab.* Insula Muerte dicta in sinu Guayaquillense.

6. NOTES ON THE NESTS AND EGGS OF THE BIRDS OF WESTERN INDIA.—PART XI. BY LIEUT. BURGESS.

Family COLYMBIDÆ.

Genus PODICEPS.

PODICEPS PHILIPPENSIS.

I believe the egg sent with this paper, to be that of the Grebe. It was taken from the nest with several others in the month of August. The nests were composed of rotten reeds and grass, fastened between tall reeds\* ; each nest contained about eight eggs, 1 inch and nearly  $\frac{5}{10}$ ths in length, by 1 inch in width. Some of the eggs were nearly white, others much discoloured.

Family PELECANIDÆ.

Subfamily LARIDÆ.

Genus STERNA.

Subgenus STERNA.

STERNA MELANOGASTER (Temm.). BLACK-BELLIED TERN.

I found this Tern common on the river Bheena, and was fortunate enough to obtain an egg. On a second occasion, when walking on a sandbank in the midst of the river where I obtained the first egg, I was beset by a pair of these Terns, and on looking about on the ground, found two eggs deposited in a slight hollow scraped in the moist sand, not far from the brink of the water. These birds, when flying overhead, utter a cry very like the chirp of a Sparrow. One could easily distinguish the different kinds of Terns by their varied notes.

The Black-bellied Tern breeds during the months of March and April, laying two eggs. The egg measures 1 inch and rather more than  $\frac{2}{10}$ ths in length, by 1 inch in width. It is of a rich stone-colour, spotted chiefly round the centre, and more sparingly over the large end with grey and light brown spots.

Subgenus RHYNCHOPS.

RHYNCHOPS NIGRA.

This large species of Tern I found most abundant on the river Bheena, and had ample opportunities of studying its habits. On a large sandbank in that river I found that a large colony had established themselves, and found young birds able to fly, nestlings and

\* The eggs were carefully covered over, and the heat arising from the nest was most perceptible : the eggs appear to be hatched by the heat arising from the decaying vegetable matter.

eggs. The appearance of these birds is attractive, their long orange razor-like beak, long wings, and curious skimming flight, ever and anon dipping their lower mandible under water, their odd shuffling gait when walking on the sand, as if they scarcely knew what to do with their beak, and apparent difficulty in arranging their long swift-like wings, their curious chattering notes when they assemble on some spit of sand at the water's edge,—all these points attract any one fond of natural history.

I first noticed these birds on a mud-bank in the river in the month of January. On visiting the same place in April, I found them on a sand-bank higher up, and suspecting this to be their breeding-time, was conveyed over the water to the bank. On reaching it and narrowly inspecting the ground, I found the remains of broken eggshells; after a further search, I was rewarded by finding four or five nests, also the nest of a Little Ringed Plover and Black-bellied Tern. The Rhynchops lays four eggs in a hole scraped in the damp sand and gravel. Those which I found were mostly near the water's edge. In some nests I found young ones, and procured one young bird that was able to fly very fairly. Any one at all accustomed to the habits of birds might have told that they were nesting by their restlessness, and the vicious way in which they attacked all intruders. I saw them buffet a large Plover that pitched on the bank, and boldly attack those insatiable pilferers of nests, the Crows. The very young birds, when first hatched, are covered with a whitey-brown down, spotted with dark spots. The curious square end of the beak is very marked. The legs and feet of a dirty greyish-brown. The eggs are rather more than  $1\frac{1}{2}$  inch in length, by 1 inch and rather more than  $\frac{1}{10}$ th in width, of a pale stone colour, spotted and blotched with grey and two shades of brown.

I subjoin the description of a young bird that was able to fly, probably about six weeks or two months old. The beak (after the skin was dried) was of a dull brown tinged with orange; the under mandible sharp, as in the old bird, but scarcely longer than the upper. Feathers on the cheeks pale fawn colour, with a few dusky spots, those on the forehead much the same, but the dusky spots more visible; on the top of the head behind the eye, back of the neck, the feathers are dull black, with pale ferruginous edges; lower part of the back of the neck whitish, with a broad brown bar, and tipped with pale ferruginous; upper tail-coverts, some dusky black, with pale ferruginous edges, some ferruginous mottled with white; tail-feathers, lower portion white, upper portion dusky, with a marked border of pale ferruginous; primaries nearly black, with pale tips; smaller quill-feathers, lower portion dusky, upper nearly white; secondaries much the same, the white being much clearer; greater coverts dusky, with whitish tips; tertials dusky, with pale ferruginous edges; the lesser coverts the same; chin, throat, breast and belly, under tail-coverts white; sides of the neck white, with a few dusky spots; legs and feet dirty orange-brown.

7. ON THE RELATIVE WEIGHT OF THE BODY AND OF THE VISCERA OF THE ELEPHANT. BY EDWARDS CRISP, M.D.

In July 1854, I made a communication to the Society on the weight and form of the viscera of the Elephant, and I exhibited drawings of the thoracic and abdominal viscera of the size of life; I made some additional observations on the same subject at the Physiological Society of London, an abstract of which is published in the medical journals (the 'Lancet' and 'Medical Gazette').

The animal I had then dissected was a male Elephant, which died on Marsden Moor, in Yorkshire, in the menagerie of Mr. Wombwell. The recent death of the female Elephant in the Society's collection enables me to extend my observations, and I purpose now only giving the comparative weight of the bodies and of the viscera of these animals, with a few additional remarks.

The age of the male was twenty-two years, and he measured 10 feet from the highest part of his back. The animal, prepared by Mr. Bartlett, is now in the Crystal Palace. The cause of death, inflamed lungs. The weight stated at the Railway was 3 tons when the body was eviscerated, but, judging from the weight of the last specimen, it could not *altogether* have exceeded 3 tons, and assuming this to have been the weight, the relative proportion of the viscera is about as follows:—

Brain, 12 lbs.	$\frac{1}{560}$ .	
Lungs, 47 lbs. 8 oz.	$\frac{1}{140}$ .	
Heart, 17 lbs. 9 oz.	$\frac{1}{382}$ .	
Liver, 33 lbs. 12 oz.	$\frac{1}{199}$ .	
Spleen, 6 lbs. 9 oz.	$\frac{1}{1024}$ .	
Right kidney, 7 lbs. 2 oz.	$\frac{1}{943}$ .	} Supra-renal capsules included.
Left kidney, 5 lbs. 10 oz.	$\frac{1}{1194}$ .	
Alimentary canal, 106 feet.		

The next mentioned animal, a female, about thirty years of age, had been eighteen years at the Society's Gardens, and was in good health and condition up to July the 14th, 1855, when, during the thunder-storm on that day (Saturday), she exhibited signs of fright, diarrhoea came on, she shook violently, and died at five o'clock on Monday morning. From the appearance of the blood, microscopical and otherwise, I have reason to believe that her death was occasioned by fright or by electrical influence.

Mr. Bartlett had the body weighed, and the subjoined is the result:—

Skin . . . . .	683 lbs.
Flesh and bones . . . . .	3642 „
Supposed loss . . . . .	200 „
	<hr/>
	4525 „

The viscera were weighed with steelyards, and adding the weight of

the viscera to the above, the total amount is about 5225 lbs. The under-mentioned are the proportions:—

Heart, 23 lbs.	$\frac{1}{227}$ .	
Lungs, very much congested, 107 lbs.	$\frac{1}{48}$ .	
Liver, 50 lbs.	$\frac{1}{104}$ .	
Spleen, 9 lbs.	$\frac{1}{580}$ .	
Kidney, 8 lbs.	$\frac{1}{653}$ .	
Alimentary Canal—		
Œsophagus about . . . . .	6 feet.	
Stomach . . . . .	3	„
Small intestines . . . . .	74	„
Cæcum . . . . .	5	„
Other large intestines . . . . .	35	„
	<hr/>	
	123	„

The large intestines, from their great weight, were not extended like the small, and I measured them with a foot rule, so that the *exact* length could not be given, but I believe that the error (if any) is very slight. The large intestines were of great size, and would probably have held 150 gallons of water.

In estimating the comparative weight of the viscera of the above animals, it must be borne in mind that the male was very thin, and the female in excellent condition; and this leads me to speak of a curious circumstance respecting the presence of fat in the body of the Elephant. In the male not a particle of fat was present. Mr. Bartlett, who has assisted at the dissection of four Elephants besides the last-named, could find no fat in their bodies, and all writers that I know of have made the same statement. The body of this animal, however, contained a large quantity (probably 40 or 50 lbs. in all) of fat. This was not deposited in solid hard masses, as in the carnivora, ruminantia, and other animals, but it was dispersed about the viscera, stomach, intestines, heart and mesentery in thinnish layers, and a great deal of it, when the body was warm, was in a fluid state; but on cooling it assumed a tallowy condition, and evidently contained a large quantity of stearine.

Another circumstance I may allude to, respecting the assertion of many writers, that the body of the Elephant decomposes very rapidly; but this, as I stated in my first paper, depends much upon the state of the atmosphere. The body of this animal was in a rapid state of decomposition; but the viscera of the male, which were buried on Marsden Moor, and which I had exhumed after the animal had been dead about a week, were scarcely in the first stage of decomposition, but the weather was excessively cold.

The kidneys of the female were lobulated, those of the male not lobed.

As stated in my first communication, I examined in the space of a fortnight the teeth of ten living elephants in this country, and this animal was among the number. I copy the description given in February 1854:—“One molar on each side of the upper jaw, one on the left lower jaw, and two on the right side. The anterior one

being narrow, of a dark colour, loose, and evidently on the point of being shed.”

The keeper found this tooth some months after. At the time of death there were four molars; the upper two having eleven plates each, the lower, twelve. No rudimentary teeth were perceptible externally, but small apertures existed for their advent.

8. ON SOME POINTS RELATING TO THE ANATOMY OF THE TASMANIAN WOLF (*THYLACINUS*) AND OF THE CAPE HUNTING DOG (*LYCAON PICTUS*). BY EDWARDS CRISP, M.D.

Before I proceed to the immediate object of my communication, I may be excused, I trust, for alluding to a mode of investigation that I have followed in all my dissections, viz. that of taking accurate weights and measures of the body of the animal and of the viscera, with drawings the size of life of the organs examined.

By this method, combined with the use of the microscope, I believe hereafter that much light will be thrown upon many physiological subjects which are at present but imperfectly understood. It is, however, only by comparison on a large scale that any important benefit is likely to result.

*THYLACINUS CYNOCEPHALUS*.

This animal (a male) died at the Society's Gardens, where it had been for several years. I believe it is the only one that has been dissected in this country. It weighed 33 lbs., and measured from nose to root of tail 2 feet 9½ inches. The tail, 15 inches. The penis curved backwards. The cause of its death was unapparent. It was excessively fat; the fat on its abdomen and other parts weighing probably four or five pounds. The heart, long and pointed; weight, 4 oz. 60 grs. The trachea of moderate size; the connecting membrane at the posterior part very thick. The lungs trilobed; weight, 4 oz. 304 grs. The liver composed of five main lobes; weight, 14 oz. The spleen long, thin and narrow, with a lateral tongue-like process (as in nearly all of the *Marsupiiata*) ⅓ from the upper end. Length of spleen, 10½ inches; its average breadth about an inch; it was seated along the left side of the stomach, imbedded in fat. The kidney of a rounded form; weight, 1 oz. 167 grs. The alimentary canal measured only 6 feet 6 inches. The stomach of moderate size; its coats very thick, and capable of great distension. The rugæ of the lining membrane large and prominent; the pyloric valve strong and muscular; the length of empty stomach 8 inches; the duodenum at its commencement studded with numerous bead-like processes, which emerged into a portion of mucous membrane thickly studded with villi about 3 lines in length, as represented in fig. 1. These were continued for nearly four feet; they resemble much the rumen of the sheep or rein-deer. In the small intestines of the Rhinoceros, fig. 2, the villi are about 6 or 8 lines in length, but far less numerous.

The cæcum absent. The large intestine measured 12 inches; the coats thick and the lining membrane plicated longitudinally. The relative weight of the viscera as compared with that of the body is about as follows:—Liver,  $\frac{1}{37}$ ; spleen,  $\frac{1}{382}$ ; kidney,  $\frac{1}{382}$ ; heart,  $\frac{1}{127}$ ; lungs,  $\frac{1}{112}$ ; the blood-corpuscles about  $\frac{1}{4500}$  of an inch in diameter.

Fig. 1.

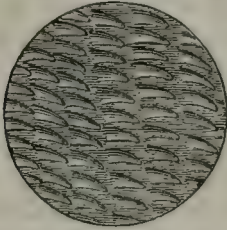
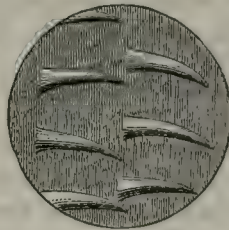


Fig. 2.



I have examined the two skeletons of the *Thylacinus* at the Museum of the College of Surgeons, a description of which is given by Professor Owen in the new Osteological Catalogue (p. 347). The teeth, 46 in number; incisors, 8 above and 6 below; canines, 4; molars, 28, 14 in each jaw = 46. Vertebrae: cervical, 7; dorsal, 13; lumbar, 5; sacral, 2; caudal, 23; ribs, 13.

The time does not allow me to dwell on many points of great interest respecting the anatomy of this animal, but a comparison of the structure of the *Thylacinus* with the Dog I am about to describe will not be unprofitable.

#### CAPE HUNTING DOG (*LYCAON PICTUS*. S. Africa).

This animal died at the Society's Gardens, where it remained for some months previous to its death, a few days before which period it had several convulsive fits. I could not examine the brain; but Mr. Ward, who stuffed the animal, told me that a large quantity of serum escaped from the cranium, so that probably death was occasioned by inflammation of the brain and effusion of fluid.

In Cuvier's 'Animal Kingdom,' 1849, by Carpenter, p. 91, is the following note:—"This remarkable species is dog-like, but certainly not a *Canis*; its form and colouring (and, there is reason to suspect, its internal conformation) are rather those of a hyæna, and it is known to copulate in the manner of those animals, and not in the peculiar manner of the dogs and foxes. Even its dentition is the same as that elsewhere found (with one other exception, *Proteles*) throughout the group to which we conceive the hyænas to belong, the dental system of which latter appears to be modified in accordance with their much increased and prodigious strength of the jaw."

This dog weighed about 50 lbs.; it measured 3 feet 1 inch from nose to root of tail; tail, 13 inches; height to the back behind neck, 2 feet 3 inches; fore-leg,  $16\frac{1}{2}$  inches; ribs, 13. Teeth: incisors, 6 in each jaw, 12; canines, 4; molars, 10 above and 12 below, = 38. The age of the animal about  $2\frac{1}{2}$  years. Heart of a rounded form; weight 8 oz.; the parietes of the left ventricle 10 lines in thickness, of

the right 3 lines ; the aorta of large calibre, and its coats thick. Lungs, the right four-lobed, the left three- ; weight 26 oz. Trachea very large. Liver seven-lobed ; weight 21 oz. Bile of a dark yellow colour. Gall-bladder of moderate size. Spleen about 500 grs. in weight ; long, lax, thin and narrow, as in all the *Carnaria*. It was in the usual situation in this order of animals, viz. on the left of the stomach, to which it was attached by a wide mesenteric fold ; the splenic artery and vein long ; no valves in the latter. Pancreas small and elongated. Kidney oblong, less concave on its inner side than usual. The stomach of moderate size, and shaped like that of the dog ; length 12 inches ; this organ with the œsophagus measured 12 feet 6 inches ; the cæcum, which was in  $2\frac{1}{2}$  spiral folds like that of the dog, when unfolded was 5 inches in length ; the colon and rectum 1 foot 10 inches ; total, 14 feet 9 inches. The cæcal valve strong and distinct. The alimentary canal was too much decomposed to allow of my making a microscopical examination of it, but its structure appeared to resemble that of the Dog.

The ribs of the Hyæna are 15 ; those of the Lycaon 13, as in the Dog, Wolf and Fox. The teeth of the Hyæna, judging from two skulls in the Museum of the College of Surgeons, are, 4 incisors above, 6 below, 10 molars above, 12 below, canines 4, =36. In the skull of the Striped Hyæna 10 molars in each jaw (one specimen), and in some fossil jaws of this animal the number of molars is less than above quoted ; but much, of course, will depend upon the age of the animal. In the Pointer, Blood-hound, Dingo, and other dogs, I found 12 molars above and 14 below, the canines being 4 and the incisors 12. The same with the Wolf and Fox.

The only record I can find of the dissection of a Hyæna is one furnished me by Professor Quekett, and in this animal (30 years old) the alimentary canal measured 39 feet  $5\frac{1}{2}$  inches. The account is copied from Professor Quekett's notes. I was at first inclined to suppose that the copyist had made some mistake, the length mentioned being very great for a carnivorous animal. Professor Quekett suggested "that the large quantity of phosphate of lime taken by the hyæna might explain the anomaly."

On referring, however, to the notes of my dissections of four dogs, in which I carefully measured the alimentary canal of all, the above statement does not appear to be so improbable :—

Small Terrier, alimentary canal 7 feet 4 inches.

Small Terrier (young), 7 feet.

Blood-hound, 21 feet ; including large intestines, 2 feet 2 inches.

Large Mastiff (old), weighing 104 lbs., 31 feet ; including large intestines, 3 feet.

Common Fox, 10 feet 6 inches.

Young Indian Wolf (four months old), 6 feet 1 inch.

So that, looking to the ribs, teeth, cæcum, length of alimentary canal, and general form of the viscera, this animal must be classed with the Dogs, and not with the Hyænas.



*Additional Remarks on the Lycaon pictus.*

After the death of the dog, the bitch which was with him became restless, howled frequently, refused her food, and died July 13th, ten days after.

I examined the body a few hours after death. She was about the same size as the dog, and of the same age. She had probably lost 10 or 15 lbs. in weight. The body weighed  $31\frac{1}{2}$  lbs., and the subjoined is the relative weight of the viscera, fractions being omitted:—

Heart, 7 oz.  $\frac{1}{72}$ .  
 Lungs, 24 oz.  $\frac{1}{21}$ .  
 Liver, 18 oz.  $\frac{1}{8}$ .  
 Spleen, 790 grs.  $\frac{1}{280}$ .  
 Pancreas, 370 grs.  $\frac{1}{599}$ .  
 Kidney, 1080 grs.  $\frac{1}{205}$ .  
 Alimentary canal, 13 feet 6 inches.

The uterus resembled that of the bitch (*C. familiaris*); the vagina 9 inches in length, the cornua 6 inches each.

But one of the most interesting results of this dissection was the examination of the blood-corpuscles; these were larger than in any carnivorous animal that I have dissected; they measured, the greater part of those examined, about the 3000th of an inch in diameter, being larger than those of Man.

I may add, that I could not discover any morbid lesion in this animal, and that I believe her death was occasioned by the loss of her companion.

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Dr. Crisp exhibited the injected heart and large arteries of a Viper (*V. berus*), for the purpose of showing the mode of communication between the aortæ, by way of contrast with the Saurians and Chelonians. The organs of generation (male) were likewise shown, the large comparative size of the testicles, and the great length of the seminal ducts being especially noticed.

Dr. Crisp had formed a table of the length and weight of the body, as well as of the viscera of seven of these reptiles, which he had dissected. The length varied from 19 to 23 inches; the weight from 1 oz. 182 grains to 3 ozs., the females being the largest. In the stomach of one of these reptiles a half-grown frog was found; in the remaining six this viscus was empty.

The proportion the various viscera of this reptile bear to the body is about as follows:—Liver, 30; pancreas, 2140; spleen, 2146; kidney, 59; heart, 178; brain, 1620.

Dr. Crisp stated that he had inserted the poison of the Viper into the bodies of Toads, Frogs, Snakes, Lizards, and several insects, without producing apparently any deleterious effects, but the experiments required repetition. Dr. Crisp believed that he had positive evidence to show that the young of the Viper were sometimes received into the throat of the mother; and the assertion of Pro-

fessor Henslow and others that it was an anatomical impossibility, was entirely disproved by the large size of the œsophagus before the Society.

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November 13, 1855.

Dr. Gray, F.R.S., in the Chair.

1. ON A NEW GENUS AND SPECIES OF TROCHILIDÆ FROM  
ECUADOR. BY JOHN GOULD, F.R.S. ETC.

The remarkably fine species of Humming Bird which I am about to describe, I have lately received from Ecuador. This new bird is remarkable for its large size, deeply forked tail and the harmonious hues of its plumage, which, although less glittering and metallic than in many other species, is nevertheless strikingly beautiful. I consider this bird to be new to science, both generically and specifically, and as the name of *Victoria regia* has been given to one of the finest flowers of the same part of South America, I am desirous of dedicating this new Humming Bird to the Empress of the French, and I accordingly propose to name it *Eugenia imperatrix*. Its native habitat is the vast Andean forests in the neighbourhood of Quito in Ecuador, where it procures its insect food from the bell-shaped flowers of the *Daturæ*.

Genus EUGENIA.

*Gen. Char.* Bill rather lengthened, straight and strong; wings long and pointed; tail lengthened and very much forked, the feathers narrow and rigid; tarsi clothed with feathers nearly to the toes; feet small.

EUGENIA IMPERATRIX.

*Male.* Face and fore part of the neck brilliant grass-green; crown of the head, back, neck, chest and upper part of the flanks very deep-green; on the centre of the throat a gorget of reddish-violet; abdomen and under tail-coverts shining, greenish-yellow; wings purplish brown; tail deeply forked, the feathers black, narrow and rigid; some tufts of white downy feathers across the lower part of the abdomen; thighs brown in front, white behind.

Total length  $6\frac{1}{4}$  inches; bill  $1\frac{1}{2}$ ; wing  $3\frac{1}{3}$ ; tail 3.

*Female.* Upper surface green; throat, chest and abdomen grayish-white spangled with green, the spangles being very minute on the throat and gradually increasing in size downward to the flanks; tail blackish-brown; tarsi white.

Total length  $5\frac{1}{2}$  inches; bill  $1\frac{3}{8}$ ; wing  $2\frac{3}{4}$ ; tail  $2\frac{3}{8}$ .

*Hab.* Ecuador.





2. CHARACTERS OF SOME APPARENTLY NEW SPECIES OF BUCCONIDÆ, ACCOMPANIED BY A GEOGRAPHICAL TABLE OF THE FAMILY. By PHILIP LUTLEY SCLATER, M.A., F.L.S.

(Aves, Pl. CV. CVI.)

1. BUCCO HYPERRHYNCHUS. (Pl. CV.)

*Tamatia hyperrhynchus*, Bp. MS. et Consp. Vol. Zygodact. p. 13.

*B. supra fulgenti-niger; fronte lata et superciliis anticis albis: subtus albus, nigro late torquatus; lateribus nigro radiatis: rostro maximo.*

Long. tota 10·5; alæ 4·5; caudæ 3·5; rostri a rictu 2·1.

*Hab.* In regionibus fl. Amazonum superioris (*Hawxwell*). Mus. Paris. et P. L. S.

When I drew up the characters of *Bucco macrorhynchus*, as given in the 'Annals of Nat. Hist.' for May last (p. 357), I had not in my possession specimens of the true *macrorhynchus* from Cayenne, and consequently confounded with it the present bird. But the much larger size of the bill and whole body, the greater extension of the white colour on the front, the narrower black band and the total absence of any fawn-coloured tinge on the belly and vent are quite sufficient to distinguish this *Bucco* from its Cayenne representative.

I have lately ascertained, through the kindness of Prince Bonaparte, that this is the species included under the name *Tamatia hyperrhynchus* in his *Conspectus Volucrum Zygodactylorum*, published in the 'Ateneo Italiano' of May last, and I have therefore adopted his specific designation. But no descriptions have yet appeared of the many new species of which the names only are inserted in that and other similar recent publications of the Prince.

The type specimens of the present bird are in the French National collection.

2. BUCCO DYSONI.

*Tamatia gigas*, Bp. Consp. Vol. Zygodact. p. 13?

*Bucco dysoni*, G. R. Gray in Mus. Brit.

*B. supra fulgenti-niger; fronte usque ad oculos et collari postico albis: subtus albus; vitta pectorali lata nigra; lateribus nigro variis; rostro pedibusque nigris.*

Long. tota 9·7; alæ 4·5; caudæ 3·4; rostri a rictu 1·8.

*Hab.* In America Centrali, Honduras (*Dyson*). Mus. Brit.

*Obs.* Species a *Buccone macrorhyncho* fronte latius albo, rostro majore, et ventre pure albo, a *Buccone hyperrhyncho* rostro minore et fronte minus albo diversa, et inter has duas media locanda.

A single specimen of this bird in the British Museum was procured by Mr. Dyson in Honduras. In my Synopsis of this family I have confounded it with its near affines, from which I now think, as might have been expected from the locality, it will bear separation. It is very probable that Prince Bonaparte's name, *gigas* (which was applied to a bird brought by Delattre from Nicaragua), was intended

for this same species, but as the type has disappeared, and no specific characters have been published for the name, it is difficult to be certain on that point.

### 3. BUCCO PULMENTUM. (Pl. CVI.)

*Tamatia* (*Nyctactes*) *pulmentum*, Bp. et Verr. MS.

*B. supra fusco-brunneus; fronte et superciliis rufescentibus; torque angusto nuchali inconspicuo albido; dorsi medii alarum uropygiique plumis partim fulvo terminatis: subtus albus; gutture inferiore pallide rufescente; plaga utrinque gutturali magna cum maculis crebris pectus totum et ventrem (præcipue ad latera) occupantibus atris: rostro nigro.*

Long. tota 5·0; alæ 3·1; caudæ 2·5.

*Hab.* in Peruvia Orientali et regionibus fl. Amazonum superioris: Pebas (*Cast. et Dev.*): Chamicurros (*Hawxwell*). Mus. Paris., Joh. Gould et P.L.S.

*Obs.* Sp. *Buconi tamatiæ* affinissima, sed gula pallidior et maculis ventris majoribus et intensioribus differt.

This appears to be a western representative of the *B. tamatia* of Cayenne, from which, however, I think it may be fairly separated. MM. Verreaux of Paris have lately received a considerable number of specimens of it from the Upper Amazon. They all present the same distinctive characters as are above noticed.

### 4. MONASA PERUANA.

*Monasa peruana*, Bp. et Verr. MS.

*M. plumbescenti-nigra, capite et gutture intensioribus; fronte et menti summa parte albis: rostro ruberrimo.*

Long. tota 11·0; alæ 5·0; caudæ 4·5.

*Hab.* In Peruvia Orientali in regionibus fl. Amazonum superioris: Chamicurros (*Hawxwell*). Mus. Joh. Gould et P.L.S.

*Obs.* Simillima *M. personatæ* sed rostro clarius rubro, mento ad ipsam apicem solum albo haud nisi dubie disjungenda.

My specimen of this bird was obtained from the MM. Verreaux, and carries the MS. name above quoted, which I have thought it as well to adopt. The characters which separate it from its well-known Brazilian representative are certainly very slight, but appear to be constant in at least a dozen examples I have examined from the same locality.

### 5. BUCCO PICATUS.

*B. supra niger; plaga in summis scapularibus utrinque magna et maculis in pileo rotundis cum loris albis: subtus albus; vitta lata pectorali nigra: cauda nigra, rectricibus tribus utrinque extimis in medio et harum omnium apicibus albo maculatis: rostro pedibusque nigris.*

Long. tota 6·7; alæ 3·2; caudæ 2·3.

*Hab.* In reg. fl. Amazonum superioris; Chamicurros (*Hawxwell*). Mus. Joh. Gould.







*Obs.* Species *Bucconi tecto* forsan nimium affinis, et ob crassitiem majorem, torquem pectoris latiore et caudam minus albo maculatam non sine dubio constituenda.

Mr. Gould's collection contains two examples of this bird, which he has entrusted to me for comparison with its Cayenne representative. It is not, however, without hesitation that I have determined to separate them from it. Besides their larger size and broader breast-band, the white medial square spot extends in the present species only through the three lateral rectrices, with a slight trace of it in the fourth.

In the Cayenne bird the outer five pairs are all strongly marked thus. The whole plumage of the bird is also generally more intensely black.

#### 6. MALACOPTILA NIGRIFUSCA.

*Malacoptila fusca*, ex Bogota, Sclater, P. Z. S. 1855, p. 136.

*M. nigricanti-brunnea*, plumarum scapis pallide fulvis; loris et plumis mystacalibus cum plaga triangulari super-pectoralis albis: ventre medio crissoque fere unicoloribus, albicantioribus; rostri basi læte aurantio, apice nigra; pedibus nigricanti-brunneis.

Long. tota 6·5; alæ 3·5; caudæ 2·5.

*Hab.* In Nova Granada, Santa Fé de Bogota. Mus. Brit. et Joh. Gould.

*Obs.* Sp. *Malacoptilæ fusca* affinissima sed statura minore et coloribus nigricantioribus: rostri basi lætius aurantio.

This New Grenadian bird, which in my Synopsis of this family and List of Bogota birds I united with the true *fusca* of Cayenne, certainly presents considerable claims for specific distinction. The body is generally smaller, the bill in particular is shorter and not so strong, and at the base is of a deep orange colour instead of pale yellow, the black not extending so far towards the base of the upper mandibles; also, the markings on the head, throat and breast are much blacker, and I have therefore named the bird *nigrifusca*. There are specimens of it in the British Museum and in Mr. Gould's collection.

The East Peruvian or High-Amazon examples on the other hand (which are held distinct by some naturalists under Du Bus' title *inornata*) resemble the Cayenne bird much more nearly. After remarking that the white lore-spot is nearly obsolete, and the skins are rather finer and larger, it is in truth difficult (at least with my present examples) to see further differences, and I therefore regard *M. inornata* as a very doubtful species.

Rio Napo specimens are still more like the true *fusca*.

## BUCCONIDARUM SCHEMA GEOGRAPHICUM.

	Central America.	New Grenada.	Quixos.	East Peru.	Bolivia.	Paraguay.	South Brazil.	North Brazil.	Guiana.	Venezuela.	Trinidad.
I. BUCCO.											
1. <i>collaris</i> .....			*	*					*		
2. <i>Swainsoni</i> .....							*				
3. <i>macrorhynchus</i> .....									*		
4. <i>Dysoni</i> .....	*										
5. <i>hyperrhynchus</i> .....			*?	*							
6. <i>pectoralis</i> .....											
7. <i>ordi</i> .....										*	
8. <i>tectus</i> .....								*	*		
9? <i>picatus</i> .....				*							
10. <i>tamatia</i> .....								*	*		
11. <i>pulmentum</i> .....				*							
12. <i>ruficollis</i> .....		*									
13. <i>bicinctus</i> .....										*	*
14. <i>radiatus</i> .....		*		*							
15. <i>chacuru</i> .....				*	*	*	*				
16. <i>lanceolatus</i> .....			*	*							
17. <i>maculatus</i> .....							*	*			
18. <i>striatipectus</i> .....					*						
19. <i>macroactylus</i> .....		*	*	*							
II. MALACOPTILA.											
1. <i>fusca</i> .....			*?						*		
2? <i>inornata</i> .....				*							
3. <i>nigrifusca</i> .....		*									
4. <i>rufa</i> .....				*				*			
5. <i>torquata</i> .....							*	*			
6. <i>fulvicularis</i> .....				*	*		*	*			
7. <i>aspersa</i> .....		*								*	
8. <i>substriata</i> .....		*									
9. <i>mystacalis</i> .....		*									
10. <i>panamensis</i> .....	*										
11. <i>inornata</i> .....	*										
III. NONNULA.											
1. <i>rubecula</i> .....								*			
2. <i>frontalis</i> .....		*	*?								
3. <i>ruficapilla</i> .....				*							
IV. MONASA.											
1. <i>atra</i> .....									*	*	*
2. <i>flavirostris</i> .....		*		*							
3. <i>nigrifrons</i> .....				*	*						
4. <i>personata</i> .....							*	*			
5. <i>peruana</i> .....				*							
V. CHELIDOPTERA.											
1. <i>tenebrosa</i> .....	*	*	*				*	*	*	*	*
2? <i>albipennis</i> .....									*	*	*

3. ON SOME NEW SPECIES OF FRESHWATER TORTOISES FROM NORTH AMERICA, CEYLON AND AUSTRALIA, IN THE COLLECTION OF THE BRITISH MUSEUM. BY DR. J. E. GRAY, F.R.S., F.R.G.S. ETC.

Fam. I. EMYDIDÆ.

The freshwater Tortoises which have been referred to the genus E<sub>M</sub>YS, as it is at present constituted, may be divided into two very distinct genera; and this is the more advisable as it is extremely difficult to distinguish the American species of which it is composed, and the separation of any of them by organic characters must facilitate the process. The genera may be thus named and defined:—

1. E<sub>M</sub>YS.

The lower jaw rounded beneath, and covered with, the hinder part of the horny beak; the toes strong, covered with broad band-like scales.

This genus includes *E. ornata*, *E. scripta*, *E. Holbrookii*, and many other species, both Asiatic and American.

2. PSEUDE<sub>M</sub>YS.

The lower jaw flattened beneath and covered with a soft skin. The toes weak, slender, covered with small scales above, and very broadly webbed.

1. *Pseudemys concinna*.

2. *P. serrata*.

The genera *Batagur* and *Malaclemys* have nearly similar feet, and they appear, like *Pseudemys*, to be the most aquatic animals of the family.

The species which have hitherto been referred to the genus CISTUDO differ considerably in their habits, some being nearly terrestrial and others almost exclusively aquatic. The examination of the animal shows that there are good external characters by which they may be divided into natural groups agreeing with their habits and their geographic distribution.

I. The more terrestrial have the front of their legs covered with thick, imbricate, triangular scales, the toes only slightly webbed, and the sternum broad, hiding the legs when withdrawn, as—

1. CISTUDO.

The head rhombic, the forehead flat, and eyes lateral: confined to N. America; as

*C. Carolinensis*, with four, and *C. Mexicana*, with only three toes on the hind feet.

2. LUTRE<sub>M</sub>YS.

The head oblong, depressed, with the eyes on the upper part of the cheek. Found in Europe, as *L. Europæa*.

II. The more aquatic kinds have the front of the legs covered with small scales and some broad, transverse, lunate plates; the toes webbed. They are confined to Asia; as

### 3. CUORA.

The head rhombic, the eyes lateral, the sternal lobes broad, hiding the legs when contracted, as *C. Amboinensis* and *C. trifasciata*.

### 4. CYCLEMYS.

The head depressed, eyes subsuperior, the sternal lobes rather narrow, not hiding the legs when contracted, as *C. dentata* and *C. platynota*. The latter species was referred to the genus *Testudo* by F. Müller, and when I first described it I considered it as an *Emys*, but the examination of a series of specimens of different ages shows that it is a species of Box Tortoise nearly allied to *C. dentata*.

It has been hitherto believed that there was only a single species of the genus KINOSTERNON, as now restricted, found in the United States; and all the adult specimens I have received from that country are, I must own, exceedingly alike, so much so that I cannot undertake to say that we have adult specimens of more than a single species. On examining the young specimens of this genus from the United States, in the Museum Collection, it is evident that there are at least three most distinct species found in that country, which probably in their eroded and discoloured adult state are so alike as to be mistaken for one another.

They may be thus described:—

#### 1. KINOSTERNON PENNSYLVANICUM.

Head brown-dotted; temples with two parallel distant streaks of white spots, from the upper and lower edge of the orbit, and a third streak across the lower jaw; neck white-dotted; back deep brown; lower side of marginal shields, the axillary and inguinal plates and each of the sternal plates with a large yellow spot; sternum broad, rounded before and behind.

*Hab.* North America, Florida, *E. Doubleday, Esq.*

#### 2. KINOSTERNON HIPPOCREPIS.

Head brown, with a broad white streak on each side, from the end of nose over the eyebrows to the sides of the nape; back pale and sternum brown; dorsal shield with a single apical and some scattered black spots; under side of each marginal and sternal plate rather paler in the middle; sternum rather broad, rounded in front and slightly truncated behind.

*K. Pennsylvanicum*, Holbrook, N. Amer. Herp. t. 21.

*Hab.* North America, New Orleans, *E. Doubleday, Esq.*

#### 3. KINOSTERNON PUNCTATUM.

Head brown, minutely white-dotted, without any streaks; the back brown, discal shield with a very distinct apical, and some scattered black spots; margin with a very narrow white line; under side whitish,

with minute scattered black dots and line; sternum narrow, contracted at each end, and with straight sides behind, rather truncated in front and more distinctly and broadly so behind.

*Hab.* North America.

There are several specimens of the first species of different ages, from various parts of the States, in the British Museum; I have therefore retained for it the more general name; and two young specimens and a half-grown one of the second species, and only a single young specimen of the third species; the latter is so distinct, by the narrow form of its sternum, from the other two, that it might be referred to the genus *Aromochelys* if the pectoral plates were not triangular; it may be considered as the species passing towards that genus, and I should think that the adult animal must differ considerably from the common form of *K. Pensylvanicum*.

#### AROMOCHELYS.

The Musk Tortoise, or, as it is more commonly called, the Stinkpot of North America, is easily distinguished from the other *Kinosterna* by the narrowness of the sternum and the humeral plates being square, like the pectoral one, instead of triangular, as they are in *K. scorpoides* and *K. Pensylvanicum*. For this reason I have proposed to divide them into a distinct group under the name of *Aromochelys*.

I am the more inclined to do so, as there are two most distinct species in the British Museum Collection, which have either been confounded together by the American naturalists, or have been most unaccountably overlooked. They may be thus defined:—

##### 1. AROMOCHELYS ODORATA.

Head moderate, with two streaks from the nose, one above and the other under the eyes, to the side of the neck; the back oblong-convex, the vertebral line rather flattened; the gular plate small, triangular, the humeral plate rather oblique, shield brown, purple-brown spotted.

Holbrook, N. Amer. Herpet. t. 22.

*Hab.* United States and Louisiana.

##### 2. AROMOCHELYS CARINATA.

We have four specimens of this species in the Museum Collection. Cat. Tortoises B.M. t. 20 a.

Head very large, black-dotted, without any lateral streaks; back oblong, very high, the vertebral line high and acutely keeled the whole length, shields grey-brown, spotted and lined with purple-brown; the gular plate very small, linear, transverse marginal, the humeral plate square, transverse, parallel to the pectoral plates.

*Hab.* North America, Louisiana.

There are two species of North American Tortoise which are referred to the genus CHELYDRA, which are so differently organized that they are evidently the types of two very distinct genera, which may be thus characterized:—

## 1. CHELYDRA.

Head moderate, rather depressed, covered with a soft skin, chin bearded, neck granular; back with two slight keels; marginal plates in a single series.

*Chelydra serpentina*.

## 2. MACROCHELYS.

Head large, angular, contracted in front, covered with symmetrical horny plates, neck with several series of spinose warts; back with three sharp continued tubercular keels; the lateral marginal plates in a double series.

*M. Temminckii*.

## Fam. II. CHELYDIDÆ.

When Australia was first visited by Sir Joseph Banks, he brought home with him from New Holland a freshwater Tortoise, which Dr. Shaw described under the name of *Testudo longicollis*. This has been made the type of the genus CHELODINA. Recent travellers in Australia have shown that the genus is distributed over the country; each part appears to have a species peculiar to itself. In Capt., now Sir George Grey's Travels, I described and figured a species from Western Australia under the name of *Chelodina oblonga*. In a collection which we have lately received from Haslar Hospital, there are two very large specimens of the genus sent from Swan River by the late Mr. Collie, which, though similar in several respects to *Chelodina oblonga*, may be considered as a distinct species, which I shall proceed to shortly characterize.

The species of the genus hitherto described have the thorax covered with very thin smooth shields, so transparent that a peculiar black reticulated appearance, which exists between the shields and the bones of the thorax, can be distinctly seen through them. This character is common to *C. longicollis* of New Holland, *C. oblonga*, and Mr. Collie's species from Swan River, which I propose to call, in honour of my late friend and excellent collector—

## 1. CHELODINA COLLIEI.

The shield oblong, elongate, contracted and revolute on the sides; under side uniform pale yellow.

*Hab.* Swan River, *Alexander Collie, Esq.*

This species agrees with *C. oblonga* in the uniform colour of the back and sternum, which is only varied by the dark lines of the netted appearance before referred to; but it is easily known from that species by its larger size, the much narrower shape, and the lateral margin becoming strongly revolute, and the edge over the hinder limb raised up and rather expanded.

The British Museum have lately received, with some other specimens, from the Australian continent—but unfortunately the special habitat was not indicated—the shell of a Tortoise which has all the characters of the genus as at present defined, except that, instead of

the shields on the thorax being thin, submembranous and semitransparent, they are thick, horny and concentrically grooved like the shields of many other genera. It is not accompanied by the head or limbs of the animal, so we have not the means of determining if they offer any characters which, with the peculiar structure of the shell, might render it desirable to form it into a separate genus. It may be defined and thus named :—

2. CHELODINA SULCATA.

Shell depressed, roundish ovate, brown; shield horny, thick, distinctly concentrically grooved.

*Hab.* Australia.

Fam. III. TRIONYCIDÆ.

The species of this family, which have the hind legs covered with moveable flaps affixed to the sides of the hinder lobe of the sternum, named *Cryptopus* by MM. Dumeril and Bibron, may be divided into two very distinct geographic genera.

1. EMYDA, Gray.

The margins of the upper shield strengthened with bones; the sternum with three pairs of callosities and a small odd one behind the anterior pair. Asia.

2. CYCLANOSTEUS, Peters.

The margin of the upper shield flexible, without any bones; the sternum with four pairs of callosities and an odd one behind the two anterior pairs; the pair on the hinder lobes small, far apart. Africa.

It has been usually stated that the only known species of the genus EMYDA was generally distributed over India; we have in the British Museum specimens only from the Valley of the Ganges. The young specimens all agree in the head and shell being variegated.

We have lately received a specimen of this genus from Ceylon, collected by Mr. Thwaites, which differs in both the above particulars; and in the Museum of the Society there is the shell of an adult animal, sent home from Ceylon by Dr. Kelaart, which shows that it is a most distinct species. They may be thus characterized :—

1. EMYDA PUNCTATA.

Back and upper part of the head pale spotted; the odd anterior callosity small, roundish triangular; the hinder callosity of adult ovate, inner edge semicircular; of young triangular, far apart.

*Hab.* India, Ganges.

2. EMYDA CEYLONENSIS.

Back and upper part of the head (in spirits) dull pale olive; lips, chin and lower part of the body whitish. The odd anterior sternal

tubercle large, oblong, transverse; the hinder pair of callosities large, close, in adult nearly united, with straight parallel inner edges.

*Emyda punctata*, Kelaart, Prod. Faun. Ceylon. 179.

*Hab.* Ceylon.

Dr. Kelaart, in his work on the Ceylon animals, was not aware of the distinctness of this animal from the continental species; he observes that the head is black-lined when alive.

The new species described in this paper will be figured in the Illustrated Catalogue of Tortoises in the Collection of the British Museum, which will shortly be published.

#### 4. DESCRIPTIONS OF TWENTY-THREE NEW SPECIES OF ACHATINELLA, COLLECTED BY MR. D. FRICK IN THE SANDWICH ISLANDS; FROM MR. CUMING'S COLLECTION.

BY DR. L. PFEIFFER.

##### Sect. BULIMELLA.

1. *A. NOBILIS*, Pfr. *A. testa subimperfurata, dextrorsa, turrata, solida, striatula, nitida, fulvida vel griseo-virente, saturatius strigata; spira exacte conica, apice alba, acuta; sutura leviter marginata; anfr. 6½—7 planiusculis, ultimo ⅔ longitudinis subæquante, infra medium obsolete subangulato; apertura obliqua, obauriformi, intus alba; perist. expansiusculo, margine dextro intus late labiato, columellari subadnato.*

Long. 23, diam. 11 mill.

*Hab.* Oahu.

2. *A. HANLEYANA*, Pfr. *A. testa subrimata, dextrorsa, globosconica, solida, lævigata (sub lente exilissime spiraliter striata), nitida, fulva, castaneo-radiata; spira conica, apice minuto, corneo; sutura filo crenulato marginata; anfr. 6, superis planis, sequentibus modice convexis, ultimo spiram fere æquante, rotundato; apertura obliqua, truncato-auriformi, intus alba; plica colum. supera, valida, dentiformi; perist. intus labiato, margine dextro breviter reflexo, columellari dilatato, calloso, subadnato.*

Long. 18, diam. 11 mill.

##### Sect. NEWCOMBIA.

3. *A. ZEBRINA*, Pfr. *A. testa imperfurata, dextrorsa, tenuiuscula, lævigata (sub lente minutissime decussata), nitida, albida, strigis fulgurantibus nigro-castaneis elegantissime picta; spira subturrata, apice obtusa, fusca; sutura filomarginata; anfr. 5 modice convexis, ultimo ¾ longitudinis fere æquante; apertura vix obliqua, truncato-oblonga, intus lilacina; plica colum. supera, torta, callosa, vix prominente; perist. simplice, recto, fusco-limbato.*

Long. 12½, diam. 6 mill.



4. *A. CHLOROTICA*, Pfr. *A. testa subperforata, ovato-conica, solida, ruguloso-striata, albida, epidermide virente strigatim variegata; spira conica, acutiuscula; anfr. 6, superis convexiusculis, penultimo turgido, ultimo  $\frac{2}{3}$  longitudinis subæquante, rotundato; apertura obliqua, truncato-ovali, intus alba; plica colum. supera, levissima, fere nulla; perist. simplice, recto, margine colum. parum dilatato, sublibero.*  
 Long. 18, diam.  $10\frac{1}{2}$  mill.

## Sect. LAMINELLA.

5. *A. FERUSSACI*, Pfr. *A. testa sinistrorsa, perforata, turrita, solida, subruditer striata, nuda, coccinea; spira elongata, subconcavo-conica, apice fusca, obtusiuscula; sutura profunda, subcrenata; anfr.  $7\frac{1}{2}$ , superioribus planiusculis, sequentibus convexus, ultimo globoso,  $\frac{1}{3}$  longitudinis non æquante; apertura diagonali, sinuato-semicirculari; columella distincte buplicata; plica supera obliqua, obtusa, altera compressa, illi subparallela; perist. nigro-limbato, margine externo recto, acuto, columellari dilatato, patente.*  
 Long. 24, diam. 11 mill.  
*Hab.* Oahu.

6. *A. ALBIDA*, Pfr. *A. testa perforata, ovato-turrita, tenui, irregulariter striata, albida, epidermide pallide fulvescente strigulata; spira conica, apice acutiuscula; sutura levissime crenulata; anfr. 6, superis planis, sequentibus convexioribus, ultimo  $\frac{2}{5}$  longitudinis vix æquante, rotundato, periphæria obsolete subangulato; apertura parum obliqua, sinuato-ovali; plica colum. mediana, laminæformi, obliqua; perist. simplice, recto, margine colum. breviter reflexo, sublibero.*  
 Long. 17, diam.  $9\frac{1}{2}$  mill.

7. *A. INFLATA*, Pfr. *A. testa imperforata, conico-globosa, subruditer striata, albida, epidermide nigra infra suturam late fasciatim detrita obducta; spica inflata, in conum brevem, acutum terminata; anfr.  $5\frac{1}{2}$ , ultimis 3 perturgidis, ultimo spiram æquante; apertura obliqua, sinuato-ovali, intus alba; plica colum. subtransversa, alte ascendente, perist. recto, intus labiato, margine colum. dilatato, calloso, adnato.*  
 Long.  $16\frac{1}{2}$ , diam. 10 mill.

β. *Minor, anfractu ultimo superne castaneo, basi pallido, vel coloribus obversis.*

8. *A. GONIOSTOMA*, Pfr. *A. testa rimata, dextrorsa, turrita, solida, oblique striatula, sub epidermide decidua fulva carneogrisea; spira elongato-conica, apice acuta; sutura subcrenata; anfr. 8 planiusculis, penultimo convexiore, ultimo  $\frac{1}{3}$  longitudinis vix superante, rotundato; apertura obliqua, elliptica, utrinque angulata; plica colum. subbasali, compressa, obliqua; perist. recto, basi producto, marginibus callo junctis, dextro intus sublabiato, columellari subdilatato, adnato.*  
 Long. 16, diam.  $7\frac{2}{3}$  mill.

9. *A. EXTINCTA*, Pfr. *A. testa perforata, ovato-turrita, solida, striatula, cretacea; spira elongata, sursum attenuata, acuta; anfr. 7 vix convexiusculis, ultimo  $\frac{1}{3}$  longitudinis non attingente, juxta perforationem subcompresso; apertura vix obliqua, rhombo-ovali, basi angulata; plica colum. compressa, fere a basi ascendente; perist. simplice, recto, marginibus callo crasso, subnodifero junctis, columellari dilatato, libero.*

Long. 16; diam.  $7\frac{1}{2}$  mill.

Subfossilis lecta in insula Oahu.

10. *A. TRANSVERSALIS*, Pfr. *A. testa subrimata, ovato-conica, solida, confertim striata, lineis spiralibus impressis distantibus subdecussata, nigro-rufa, epidermide fulvo-grisea, guttatim et fasciatim interrupta, obducta; spira inflato-conica, acuta; anfr. 6 convexiusculis, ultimo  $\frac{2}{5}$  longitudinis subæquante; apertura parum obliqua, sinuato-ovali; plica colum. lamellæformi, subbasali, fere transversa; perist. recto, intus albido vel roseo tenuiter labiato.*

Long. 12, diam. 6 mill.

11. *A. GROSSA*, Pfr. *A. testa imperf., dextr., conico-ovata, solida, subruditer striata, castanea; spira ovato-conica, apice acuta, nigricante; sutura pallida, crenulata; anfr. 7, summis planis, lævigatis, sequentibus sensim convexioribus, ultimo  $\frac{2}{5}$  longitudinis subæquante; apertura obliqua, sinuato-semiovali, intus albida; plica colum. lamellæformi, subtriangulari, fere transversa; perist. recto, acuto, marginibus callo albido junctis, dextro intus sublabiato, columellari adnato.*

Long. 23, diam. 11 mill.

12. *A. LUCTUOSA*, Pfr. *A. testa imperf., dextr., oblongo-conica, solida, striatula, nitidula, bicolore; spira inflato-conica, apice acuta; sutura crenulata; anfr. 6, summis 4 nigris, subplanis, penultimo pallido, convexiore, ultimo  $\frac{2}{5}$  longitudinis subæquante, superne pallide fulvescente, infra peripheriam nigricante; apertura parum obliqua, sinuato-semiovali, intus alba; plica colum. lamellæformi, subbasali, triangulari; perist. recto, acuto, nigro-limbato.*

Long. 16, diam. 8 mill.

13. *A. GRAYANA*, Pfr. *A. testa imperf., dextr., ovato-conica, solidula, nitidula, griseo-carnea, fasciis castaneis deorsum evanescentibus varie picta; spira inflato-conica, apice acuta, nigra; anfr.  $6\frac{1}{2}$ , superis planis, radiato-plicatis, penultimo convexo, ultimo spiram fere æquante, leviter striato; apertura subverticali, acuminato-ovali; plica colum. mediana, subtransversa, triangulari; perist. simplice, recto, margine colum. vix dilatato, adnato.*

Long.  $21\frac{1}{2}$ , diam. 12 mill.

14. *A. GLUTINOSA*, Pfr. *A. testa imperf., dextr., ovato-conica, solidula, arcuata, striatula, sub epidermide glutinosa, lutescente alba; spira subregulariter conica, apice obtusula; sutura levi,*

*crenulata*; anfr. 7 planiusculis, ultimo spira vix brevior, basi rotundato; apertura subverticali, sinuato-semiovali, intus alba; plica colum. compressa, torta, fere transversa; perist. recto, marginibus callo junctis, dextro sublabiato, columellari calloso, reflexo, adnato.

Long.  $11\frac{1}{3}$ , diam. 6 mill.

15. *A. UMBILICATA*, Pfr. *A. testa angustissime sed aperte umbilicata, dextr., ovato-conica, tenui, striata, opaca, fusca; spira concaviusculo-conica, apice acuta; anfr. 6 vix convexiusculis, ultimo spira paulo brevior, basi angulato; apertura elliptica, utrinque angulata; plica colum. compressa, profunda, subtransversa; perist. simplice, acuto, margine colum. subdilatato, omnino libero.*

Long.  $10\frac{1}{2}$ , diam.  $5\frac{2}{3}$  mill.

#### Sect. ACHATINELLASTRUM.

16. *A. CLEMENTINA*, Pfr. *A. testa imperf., dextr., ovato-conica, solida, sublaevigata, nitida, virenti-fusca, infra suturam lutescenti-fasciata; spira regulariter conica, obtusa; sutura castanea, impresso-marginata, crenulata; anfr. 6 superne turgidulis, ultimo  $\frac{2}{3}$  longitudinis subaequante; apertura obliqua, truncato-auriformi, intus alba; plica colum. supera, mediocri, alba vel carnea; perist. recto, marginibus callo junctis, dextro substricto, intus incrassato-labiato, columellari dilatato, adnato.*

Long. 19, diam. 10 mill.

17. *A. CUNEUS*, Pfr. *A. testa imperf., sinistr., oblongo-turrita, solida, striatula, nitida, albida vel lutescente, fasciis angustis fuscis varie ornata; spira convexo-conica, apice alba, acutiuscula; sutura filo castaneo marginata; anfr. 6 planiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante; apertura fere diagonali, semiovali, intus alba; plica colum. mediocri, oblique subtorta; perist. acuto, intus labiato, margine columellari adnato.*

Long. 18, diam. 8 mill.

#### Sect. AMASTRA.

18. *A. IRREGULARIS*, Pfr. *A. testa imperf., dextr., tenuiuscula, longitudinaliter confertim plicata, nigricante, interdum albido-fasciata; spira irregulari, conica, obtusa; sutura subcrenata; anfr.  $5\frac{1}{2}$  celeriter accrescentibus, convexis, penultimo gibbo, ultimo  $\frac{2}{7}$  longitudinis subaequante, infra medium laeviore, interdum corneo; apertura vix obliqua, ovali-oblonga; plica colum. supera, parum prominente; perist. simplice, margine dextro antrosum subarcuato, columellari dilatato, adnato.*

Long. 9, diam.  $4\frac{1}{3}$  mill.

#### Sect. LEPTACHATINA.

19. *A. DIMIDIATA*, Pfr. *A. testa imperf., ovato-conica, solidula, striatula, nitida, superne nigro-castanea; spira convexo-conica,*

*apice obtusula; sutura levi, subcrenulata; anfr. 6½ planiusculis, ultimo spira paulo brevior, a medio ad basin pallide cornea; apertura vix obliqua, sinuato-ovali, intus concolore; plica colum. callosa, subobliqua; perist. albo, recto, intus labiato, margine colum. angusto, adnato.*

Long. 11, diam.  $5\frac{1}{2}$  mill.

β. *Anfractu ultimo unicolore castaneo, spira pallidiore.*

20. A. SEMICOSTATA, Pfr. *A. testa subumbilicata, dextr., turrita, solidula, confertim costata, nitida, castaneo-cornea; spira elongata, convexo-conica, obtusula; sutura impressa; anfr. 8½ parum convexis, ultimo  $\frac{2}{5}$  longitudinis vix æquante, infra medium lævigato, pallido, attenuato, basi saccato-compressa; apertura parum obliqua sinuato-oblonga; plica colum. lata, obliqua, alba; perist. simplice, recto, margine colum. reflexo, omnino patente.*

Long.  $9\frac{1}{2}$ , diam. 4 mill.

21. A. TERES, Pfr. *A. testa imperf., dextr., cylindraceo-oblonga, tenuiuscula, leviter striatula, nitidissima, cornea; spira sensim attenuata, apice obtusula; sutura crenulata, saturate castanea, in anfractu ultimo impresso-marginata; anfr. 7 planiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, antice subscedente; apertura subobliqua, sinuato-semiovali; plica colum. subcallosa, torta, obliqua; perist. simplice, recto.*

Long. 10, diam. 4 mill.

22. A. ORYZA, Pfr. *A. testa subrimata, fusiformi, striatula, cornea (?); spira convexo-conica, apice obtusula; sutura levi, simplice; anfr. 7 vix convexiusculis, ultimo  $\frac{2}{5}$  longitudinis subæquante, basi attenuato; apertura vix obliqua, acuminato-ovali; plica colum. subcompressa, acuta; perist. simplice, recto, margine colum. subreflexo, adnato.*

Long. 8, diam.  $3\frac{3}{4}$  mill.

*Hab.* Subfossilis in insula Oahu.

23. A. MARGARITA, Pfr. *A. testa subrimata, dextr., ovato-oblonga, tenui, striatula, pellucida, pallide cornea; spira ovato-conica, obtusula; sutura submarginata; anfr. 6, superis planiusculis, penultimo convexiore, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi subattenuato; apertura subverticali, elliptico-ovali, basi subangulata; plica colum. mediana, parvula, dentiformi; perist. simplice, recto, albido-limbato.*

Long.  $6\frac{1}{3}$ , diam. 3 mill.

#### Sect. AURICULELLA.

To this section may be referred:—

24. ACHATINELLA LURIDA, Pfr. (*Tornatellina castanea*, Pfr. Mon.)

25. ACHATINELLA OBELISCUS, Pfr. (*Balea Newcombi*, Pfr. Mon.)

5. DESCRIPTIONS OF SIXTEEN NEW SPECIES OF ACHATINELLA,  
FROM MR. CUMING'S COLLECTION, COLLECTED BY  
DR. NEWCOMB IN THE SANDWICH ISLANDS.  
BY DR. L. PFEIFFER.

1. *A. DWIGHTI*, Newc. *A. testa perforata, sinistrorsa, solida, oblongo-conica, ruditer striata, striis confertis spiralibus decussata, fuscule et albo variegata s. marmorata; spira conica, obtusula; anfr. 6½ planiusculis, ultimo spira paulo brevior; apertura obliqua, obauriformi; plica columellari obliqua, levi; perist. albo, intus crasse labiato, margine externo expanso, columellari dilatato, calloso, sublibero.*

Long. 24, diam. 11½ mill.

Hab. Molokai.

2. *A. MANIENSIS*, Newc. *A. testa subperforata, ovato-oblonga, tenuiuscula, longitudinaliter irregulariter striata, sub lente striis spiralibus confertissimis decussata, haud nitente, albida, strigis fusco-corneis serratis variegata; spira regulariter conica, apice obtusa; sutura levi, vix submarginata; anfr. 5½ planiusculis, ultimo 2½ longitudinis subæquante, basi subattenuato; apertura parum obliqua, oblonga; plica colum. obsoleta; perist. simplice, recto, fusco-limbato, margine colum. fornicatim reflexo, subadnato.*

Long. 13, diam. 6 mill.

Hab. Mani.

3. *A. TETRAO*, Newc. *A. testa subperforata, sinistrorsa, globoso-conica, pallida, infra suturam late rubro-fasciata, undique epidermide virenti-fusca dense reticulata; spira conica, acutiuscula; anfract. 6½, summis subplanis, reliquis perconvexis, ultimo globoso, spira paulo brevior; apertura obliqua, semiovali, intus alba; plica colum. laminaeformi, subobliqua; perist. simplice, recto, acuto, margine columellari roseo, sublibero.*

Long. 16, diam. 8½ mill.

Hab. Ranai.

4. *A. REMYI*, Newc. *A. testa subimperfecta, sinistrorsa, oblongo-conica, plicatula, rubella, lineis fulguratis fuscis amœne variegata; spira elongata, apice nigricante, acuta; anfr. 7 modice convexis, ultimo ⅓ longitudinis vix superante; apertura fere diagonali, sinuato-ovalis, intus purpurascens; plica colum. parum prominente, subduplicata; perist. simplice, recto, acuto, margine colum. rubro, subadnato.*

Long. 17½, diam. 8 mill.

Hab. Hawaii.

5. *A. HUMILIS*, Newc. *A. testa subperforata, oblongo-conica, solidula, subruditer striata, griseo-carnea; epidermide nigra fere omnino obducta; spira convexo-conica, apice nigra, acuta; anfr. 6½ infra suturam turgidis, medianis pallide reticulatis, ultimo ⅓ longitudinis paulo superante; apertura parum obliqua, sinuato*

*ovali, intus livide purpurascente; plica colum. mediocri, compressa, obliqua; perist. simplice, recto, acuto, margine colum. dilatato, reflexo, subadnato.*

Long. 18, diam.  $8\frac{2}{3}$  mill.

*Hab.* Molokai.

6. *A. PETRICOLA*, Newc. *A. testa subperforata, dextrorsa, ovato-conica, tenuiuscula, striatula, fusca; spira convexo-conica, acutiuscula; sutura levi; anfr.  $5\frac{1}{2}$  convexiusculis, ultimo  $\frac{2}{7}$  longitudinis subæquante; apertura parum obliqua, sinuato-ovali, intus concolore; plica colum. tenui, compressissima, parum obliqua; perist. simplice, recto, intus albo limbato, margine colum. reflexo, subpatente.*

Long.  $9\frac{1}{2}$ , diam. 5 mill.

*Hab.* Modonai.

7. *A. DUNKERI*, Cuming, MSS. *A. testa imperforata, oblongo-turrita, solidiuscula, lævigata, pallide carnea, strigis confertis fuscis ornata, lineis 1 vel 2 nigris sæpe cincta; spira turrita, apice acutiuscula, alba; sutura leviter marginata, pallida; anfr.  $6\frac{1}{2}$  vix convexiusculis, ultimo  $\frac{2}{5}$  longitudinis fere æquante; apertura obliqua, truncato-auriformi; plica colum. alba, valida, dentiformi, subsulcata; perist. recto, acuto, pone limbum fuscum albo labiato.*

Long. 24, diam. 11 mill.

8. *A. FULVA*, Newc. *A. testa subperforata, turrato-conica, solida, striatula et sub lente subtilissime decussata, nitida, luteo-fulva; spira subconcavo-conica, apice alba, acuta; sutura filomarginata; anfr.  $6\frac{1}{2}$ , superis planis, sequentibus convexis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, infra suturam turgido, basi saccato; apertura obliqua, subtetragono-auriformi; plica colum. supera, nodiformi, aurantiaca; perist. recto, intus labiato, margine dextro substricto, columellari dilatato, fornicato-reflexo.*

Long.  $18\frac{1}{2}$ , diam. 9 mill.

9. *A. OVIFORMIS*, Newc. *A. testa sinistrorsa, imperforata, ovato-conica, solida, striatula, sub epidermide nitida, olivacea alba, fusco 1-3 fasciata; spira convexo-conica, apice acutiuscula, alba; sutura profunde marginata; anfr. 5 vix convexiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante; apertura fere diagonali, auriformi; plica colum. mediocri, dentiformi, rubella; perist. recto, marginibus callo tenui junctis, externo intus labiato, columellari dilatato, adnato.*

Long. 17, diam.  $8\frac{2}{3}$  mill.

*Hab.* Oahu.

10. *A. UNDULATA*, Newc. *A. testa sinistrorsa (rarius dextrorsa), imperforata, solida, striatula, nitida, fulva, strigis undulatis fuscis vel nigro-castaneis picta; spira conica, apice acuta, alba; sutura marginata; anfr.  $5\frac{1}{2}$  modice convexis, ultimo  $\frac{2}{3}$  longitudinis subæquante, latere subcompresso; apertura fere diagonali, obauri-*

*formi, intus alba; plica colum. valida, dentiformi; perist. simplice, recto, fusco-limbato.*

Long. 16, diam. 9 mill.

*Hab.* Oahu.

11. *A. NIGRA*, Newc. *A. testa imperforata, globosa-conica, tenuiuscula, confertim striata, albida, epidermide nigricante fere omnino obducta; spira concavo-conica, apice acuta; anfr. 6, superis planis, penultimo convexo, ultimo spiram subæquante, inflato, plicis spiralibus irregulariter minuto; apertura obliqua, sinuato-ovali; plica colum. subtransversa, linguæformi; perist. recto, acuto, intus tenuiter labiato, marginibus callo tenui junctis, columellari obsoleto.*

Long. 17, diam.  $10\frac{1}{2}$  mill.

*Hab.* Mani.

12. *A. PULLA*, Newc. *A. testa imperforata, acuminato-ovata, solidida, distincte striata, lutescente, epidermide fusca varie fasciata, vel præter fasciam pallidam omnino obducta; spira inflata, versus apicem acutum attenuata; sutura pallida; anfr. 6, primis planis, penultimo modice convexo, ultimo  $\frac{3}{7}$  longitudinis subæquante; apertura parum obliqua, sinuato-ovali; plica colum. dentiformi, subacuta, alba; perist. simplice, recto, margine columellari adnato.*

Long. 11, diam. 6 mill.

*Hab.* Ranai.

13. *A. SUCCINCTA*, Newc. *A. testa imperforata, ovata, tenuiuscula, dense striolata, pellucida, cornea, linea suturali et fascia lata fusciscentibus ornata; spira ventroso-conica, obtusula; anfr.  $6\frac{1}{2}$  vix convexiusculis, ultimo  $\frac{3}{7}$  longitudinis subæquante, basi lævigato; apertura vix obliqua, sinuato-ovali; plica colum. obliqua, compressa, violaceo-submarginata; perist. simplice, recto, intus tenuiter albido-labiato.*

Long. 13, diam.  $6\frac{1}{2}$  mill.

*Hab.* Wahai.

14. *A. ELEVATA*, Newc. *A. testa imperforata, oblongo-turrita, solidula, longitudinaliter (ad suturam distinctius) striata, nitida, corneo-lutea, castaneo-bifasciata; spira turrita, apice obtusa; anfr. 8 planiusculis, ultimo  $\frac{1}{3}$  longitudinis subæquante, basi subattenuato; apertura verticali, elliptico-ovali; plica colum. compressa, obliqua, pallide lilacea; perist. recto, obtuso, margine dextro antrorsum subdilato.*

Long.  $11\frac{1}{3}$ , diam.  $4\frac{1}{3}$  mill.

15. *A. OBTUSA*, Newc. *A. testa imperforata, oblonga, sublævigata, nitida, pellucida, castaneo-cornea; spira cylindrico-turrita, apice obtusa; sutura submarginata; anfr.  $6\frac{1}{2}$  subplanulatis, ultimo  $\frac{2}{5}$  longitudinis subæquante; apertura verticali, acuminato-ovali, basi subangulata; plica colum. levi, obliqua; perist. simplice, recto, pallide limbato, marginibus callo tenui junctis.*

Long. 10, diam. 4 mill.

16. A. APICATA, Newc. *A. testa imperforata, globoso-conica, solida, lævigata, nigricante vel fusca, pallide irregulariter radiata et subfasciata; spica conica, apice acutiuscula, cinnamomea vel hepatica; anfr. 6, superis planis, penultimo convexo, ultimo globoso,  $\frac{2}{5}$  longitudinis vix æquante; apertura obliqua, subtetragonovali; plica colum. supera, dentiformi, lilacea; perist. recto, intus lilaceo-labiato, margine colum. perdilatato, incrassato, adnato.*  
Long.  $18\frac{1}{2}$ , diam. 12 mill.

6. DESCRIPTIONS OF FIVE NEW SPECIES OF TERRESTRIAL MOLLUSCA, FROM THE COLLECTION OF H. CUMING, ESQ.

BY DR. L. PFEIFFER.

1. LEPTOPOMA LOWI, Pfr. *L. testa perforata, globoso-turbinata, tenui, sub lente confertissime spiraliter striata, pellucida, fulvo-cornea, ad suturam fascia alba subopaca ornata; spira turbinata, acuta; anfr. 5 convexis, medianis liris nonnullis obsoletis notatis, ultimo rotundato; apertura obliqua, subcirculari, intus margaritaceu; perist. albo, subrectangule expanso, marginibus callo tenuissimo junctis, columellari superne subexciso.*

Diam. maj. 14, min. 12, alt. 11 mill.

β. *Minor, anfr. ultimo conico-variegato, medio albido-subfasciato.*

*Hab.* Isle of Labuan (Mr. Hugh Low).

2. PLEOTREMA BICOLOR, Pfr. *Pl. testa subumbilicata, ovato-conica, solida, spiruliter confertim sulcata, rugulis longitudinalibus irregulariter tuberculosa, vix nitidula, brunnea, pallide fasciata; spira convexiusculo-conica, apice pallida, acuta; anfr. 9 vix convexiusculis, ultimo spira paulo longiore, superne turgidulo, basi attenuato, circa perforationem non perviam compresso, antice crista elevata munito et contracto; apertura vix obliqua, oblonga; plicis parietalibus 2 parallelis, inferiore extus breviter bicurvi; plica colum. parvula, transversa; perist. vix patulo, marginibus callo junctis, dextro bidentulato.*

Long. 6, diam.  $3\frac{1}{2}$  mill.

*Hab.* Port Jackson (Mr. Strange).

3. CLAUSILIA BLANDIANA, Pfr. *Cl. testa non rimata, fusiformi-turrita, solidula, oblique obsolete striata, diaphana, cornea; spira turrita, obtusa; sutura levi, rufo marginata; anfr. 9 regulariter accrescentibus, parum convexis, ultimo angustato, deorsum protracto, basi rotundato, antice rufescente, distinctius striato; apertura oblique piriformi-circulari; lamellis convergentibus, superiore valida, marginali, altera conspicua, tenuiore; lunella distincta, angusta; plica palatali 1 supera, ad lamellam superiorem producta; subcolumellari inconspicua; perist. albo, tenui, expanso et reflexiusculo, margine sinistro angustiore.*

Long. 19, diam.  $4\frac{1}{2}$  mill.

*Hab.* Santa Fé de Bogota, Columbia.







4. *ACHATINA SCULPTA*, Pfr. *A. testa conico-oblonga, solida, plicis longitudinalibus subarcuatis validis sculpta, straminea; spira regulariter attenuata, obtusa; anfr. 8 planiusculis, ultimo  $\frac{1}{3}$  longitudinis paulo superante, antice subascendente; apertura subverticali, sinuato-ovali; columella breviter arcuata, oblique truncata; perist. simplice, recto, margine dextro antrorsum subarcuato, columellari tenuiter calloso.*

Long.  $8\frac{1}{2}$ , diam.  $3\frac{1}{2}$  mill.

*Hab.* Oahu, Sandwich Islands (Mr. Frick).

5. *ACHATINA COMORENSIS*, Pfr. *A. testa ovato-turrita, solida, leviter et irregulariter striatula, sub epidermide decidua, fulva alba; spira elongata, apice obtusula; anfr. 7, superis subplanis, penultimo convexiore, ultimo  $\frac{1}{3}$  longitudinis paulo superante, basi subattenuato; apertura subverticali, elliptica, basi subcanaliculata, columella ad basin aperturae protracta, oblique subtruncata; perist. obtuso, marginibus callo crassiusculo junctis.*

Long. 34, diam. 13 mill.

*Hab.* Comoro Islands.

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Nov. 27th, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read:—

1. ON A NEW SPECIES OF SOMATERIA, AND THE FEMALE OF LAMPRONETTA FISCHERI, BRANDT. BY G. R. GRAY, F.L.S. ETC.

(Aves, Pl. CVII.—CVIII.)

I have the pleasure of exhibiting Mr. Adams's drawing of a new species of Somateria, of which several specimens were collected by that gentleman during the voyage of H.M.S. Enterprise. The large drawing exhibits the male and female, while the lesser drawing contains, in addition to the two sexes, the male in change. It will at once be seen that this species is very similar to *Somateria mollissima*, but is easily distinguished from it by being larger, and by a black mark on the throat, which is like the one found on that part of the *Somateria spectabilis*; and by the white longitudinal mark on the top of the head being narrower and thereby less conspicuous than that found on the head of *Somateria mollissima*; while the yellow on the sides of the head, which is tinged with green, extends below the black towards the eyes; the black is less rounded posteriorly. The bill of the male also differs by being orange-yellow with a white nail; while that of the female is dusky green as in the com-

mon eider. The feet of both sexes are brownish yellow. A specimen of this species was added to the British Museum Collection in 1851, which was collected during the voyage of H.M.S. Herald at "Kotzebue Sound." From the black mark on the throat, which is in the form of a reversed V, I have named the species *Somateria V-nigra*. (Pl. CVII.)

I take this opportunity of also exhibiting a beautiful drawing of the *Lampronetta Fischeri* of M. Brandt (Pl. CVIII.), of which only one example was known to exist in collections, viz. in the Museum of the Academy at St. Petersburg. Mr. Adams had the good fortune to obtain, not only the male, but the female, during the voyage, as also the young male in change which is exhibited in the smaller drawing. As the male has been well described and figured by M. Brandt\*, it is unnecessary for me to repeat it; but as the female was unknown at that period, I will therefore point out the chief differences which it exhibits from its allied species. In general appearances it bears a great similarity to the female of *Somateria spectabilis*, but may be at once distinguished by the base of the culmen being feathered to beyond the nostrils and the space round each eye being paler than the rest of the head and speckled with minute spots of black; this space being the position of the white velvety spot round the eyes of the adult male.

M. Brandt's specimen of the male was obtained from Norton Sound on the coast of Russian America, and I believe the pair now in the British Museum's Collection was from the same locality.

I may observe that Mr. Adams had called the species, from the rich blue colour of the eyes, "Blue-eyed Eider Duck."

As M. Brandt's subgeneric name of *Lampronetta* is so near *Lampronessa* of Wagler, it may be thought advisable to change it to *Arctonetta*.

## 2. NOTE ON THE GENUS *LEGRIOCINCLUS*, LESSON, AND ITS SYNONYMS. BY PHILIP LUTLEY SCLATER, M.A. ETC.

In his last published work on natural history, entitled 'Description des Mammifères et Oiseaux,' which is part of the series known as 'Complément aux œuvres de Buffon,' M. Lesson has elevated to generic rank by the name of *Legriocinclus*, a bird previously described in the 'Annales des Sciences Naturelles' (ix. p. 168, anno 1838) as *Petrodroma mexicana*. While lately in Paris I was favoured by Prince Charles Bonaparte with a sight of several volumes of very beautiful coloured drawings of birds and other animals of which M. Lesson in his lifetime had published descriptions only. M. Lesson's descriptions, as is well known, are so short and often so inaccurate as to render identification of the originals almost impossible, and these drawings are therefore very valuable, and, as they are to be disposed of, will, it is to be hoped, pass into the possession of some public institution, where access to them may always be had. Among them

\* Mém. de l'Acad. Imp. Sci. de St. Pétersburg, 1849, p. 1. t. i.





is a plate of the so-called *Legriocinclus*, which, there is no difficulty in perceiving at a glance, is a member of Lafresnaye's genus *Ramphocinclus*, and so closely resembling the *R. brachyurus*, the type of that genus, as to leave little doubt that the two generic names are co-equal. But if Lesson's locality is correct (Vera Cruz), which, however, I am hardly inclined to believe, the *Legriocinclus mexicanus* may possibly be a new species of this peculiar form—hitherto considered as confined to the Antilles, but thus extended geographically to the mainland.

Three species of *Ramphocinclus* only are given by Lafresnaye in his article in the 'Revue Zoologique' (1843, p. 67). Of the first of these—the type of the genus—*R. brachyurus* (*Turdus brachyurus*, Vieill. Nouv. Dict. xx. 255, et Enc. Méth. p. 655), the Paris Museum contains several fine examples from the islands of S. Lucia and Guadeloupe. Vieillot says his bird was from Martinique, which is very probable, as that island is situate between the other two.

Upon reading attentively Lafresnaye's description of his second species of the genus *R. tremulus*, I think there can be little doubt that if not absolutely identical with, it is at all events a very close ally of the bird, which Mr. Gould described in these Proceedings, as long ago as 1835, under the name of *Stenorhynchus ruficauda*. There are two specimens of this bird in the British Museum, from the island of Nevis.

*Stenorhynchus*, having been previously employed in Zoology, was changed by Mr. G. R. Gray in 1840 to *Cinclocerthia*.

Prince Bonaparte, in his 'Conspectus' (p. 223), has somehow or other confounded the third species of this same genus along with *Campylorhynchus scolopaceus* of Spix which is quite a different form and is the type of the wren-like genus *Campylorhynchus*, and *Thryothorus longirostris* of Vieillot, which he likewise quotes as synonymous, is, I believe, a true *Thryothorus*. Again, *Zoothera cinclops* of the same work (p. 253), since generified into *Cinclops* (*Cinclops melanoleucus* of Mr. G. R. Gray's lately published List of genera), seems to be nothing more than a bird of this genus—probably *R. brachyurus*, though it is dangerous to draw positive conclusions from so meagre a description.

Under these circumstances I propose to reduce into one group, or at all events to place in close juxtaposition, the following six generic terms, some of which have hitherto been arranged in widely different families :—

1. STENORHYNCHUS, Gould (1835), P. Z. S. p. 186.
2. CINCLOCERTHIA, G. R. Gray (1840), List of Gen. p. 22.
3. RAMPHOCINCLUS, Lafr. (1843), Rev. Zool. p. 66.
4. HERMINIERUS, Lesson, ubi?
5. LEGRIOCINCLUS, Lesson (1847), Descr. d. Mamm. et Ois. p. 278.
6. CINCLOPS, Bp. (1854), Notes Ornithologiques, p. 25.

Of these Mr. G. R. Gray's name *Cinclocerthia* is the oldest that can be adopted.

*Note.*—Since writing the above, I have carefully examined the two specimens of *Cinclocerthia ruficauda* in the British Museum. They seem to agree in every respect with Lafresnaye's description of *Ramphocinclus tremulus*, and, as the islands of Nevis and Guadaloupe are so near, I think we may reasonably conclude that these two birds are not specifically distinct. The rectrices are twelve in number, and not ten, as Mr. Gould supposed (P. Z. S. 1835, p. 186) might be the case.

The three species of this group ought therefore apparently to stand as follows:—1. CINCLOCERTHIA RUFICAUDA (*Stenorhynchus ruficaudus*, Gould; *C. ruficauda*, G. R. Gray; *Ramphocinclus tremulus*, Lafr.). 2. CINCLOCERTHIA GUTTURALIS (*Ramphocinclus gutturalis*, Lafr.); and, 3. CINCLOCERTHIA BRACHYURA (*Turdus brachyurus*, Vieill.; *Ramphocinclus brachyurus*, Lafr.; *Zoothera cinclops* et *Cinclops melanoleucus*, Bp.).

P. I. S.

### 3. DESCRIPTION OF A NEWLY DISCOVERED Tanager OF THE GENUS BUARREMON.

By PHILIP LUTLEY SCLATER, M.A. ETC.

(Aves, Pl. CIX.)

Through the kindness of Sir William Jardine I am enabled to exhibit a specimen of a very distinct species of *Buarremon*, which Professor Jameson of Quito has lately transmitted to this country. It was obtained by him during a recent expedition into the eastern Cordillera of the Andes near Quito at an elevation of 6000 feet above the sea-level. In form and size it is similar to *B. pallidinuchus*, but the style of coloration is different and more nearly resembles that of *B. schistaceus*. Sir William Jardine has named it *leucopterus*, from the conspicuous white spot on the wing. The area of the genus *Buarremon* appears to extend along the Andean range from Bolivia into Southern Mexico, the vicinity of Bogota being perhaps the principal *sedes* or *focus*, where no less than seven or eight species occur. The present bird may be characterized as follows:—

#### BUARREMON LEUCOPTERUS (Pl. CIX.).

*B. schistacescenti-niger, alis caudaque obscurioribus; pileo ochraceo-rufo; macula utrinque anteoculari et speculo alari conspicuo cum toto corpore subtus albis; lateribus in cinereum trahentibus; capitis lateribus nigris; tectricibus alarum inferioribus albis; rostro pedibusque nigris.*

Long. tota 6·2; alæ 2·8; caudæ 2·7.

*Hab.* in rep. Equatoriana (Jameson).

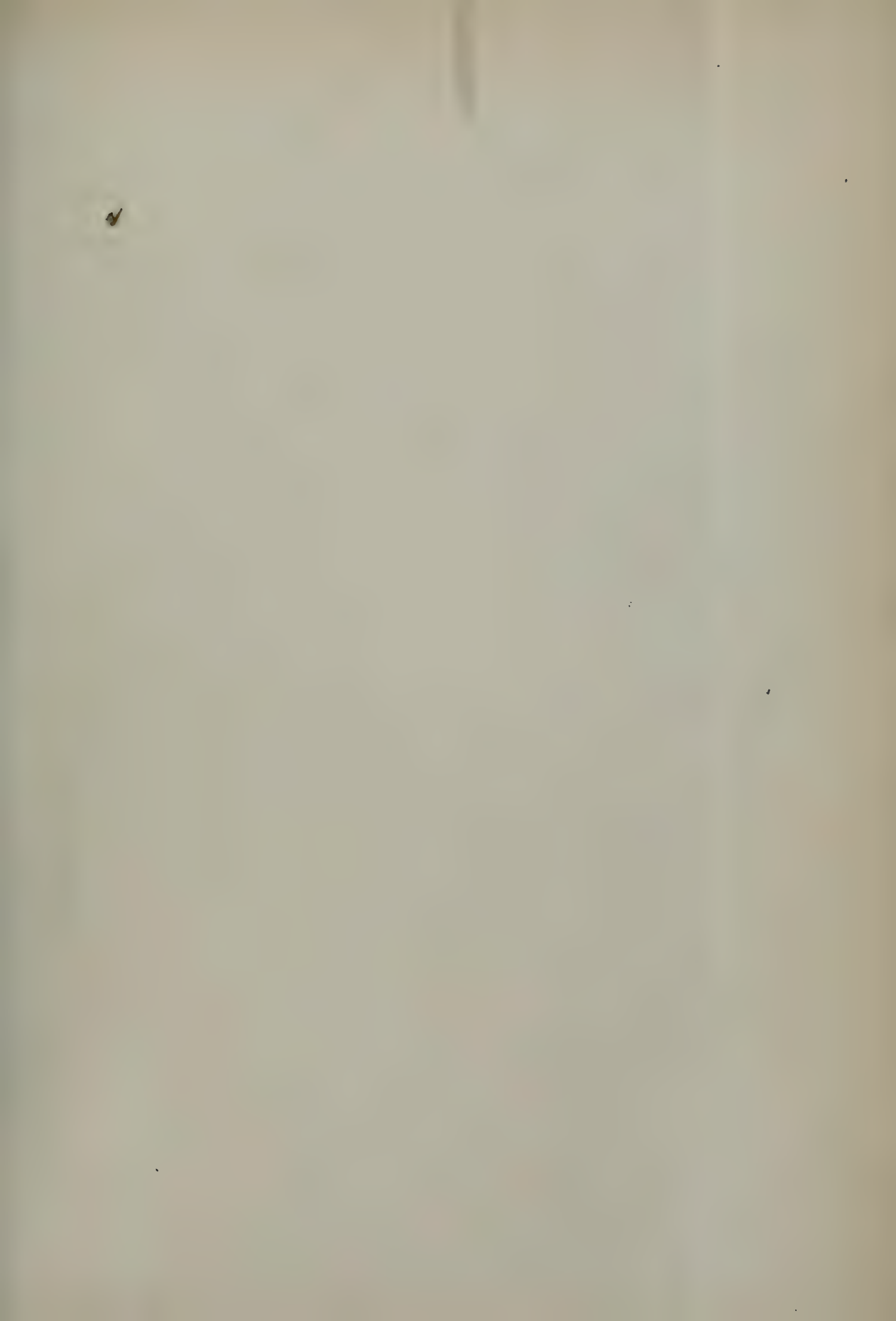










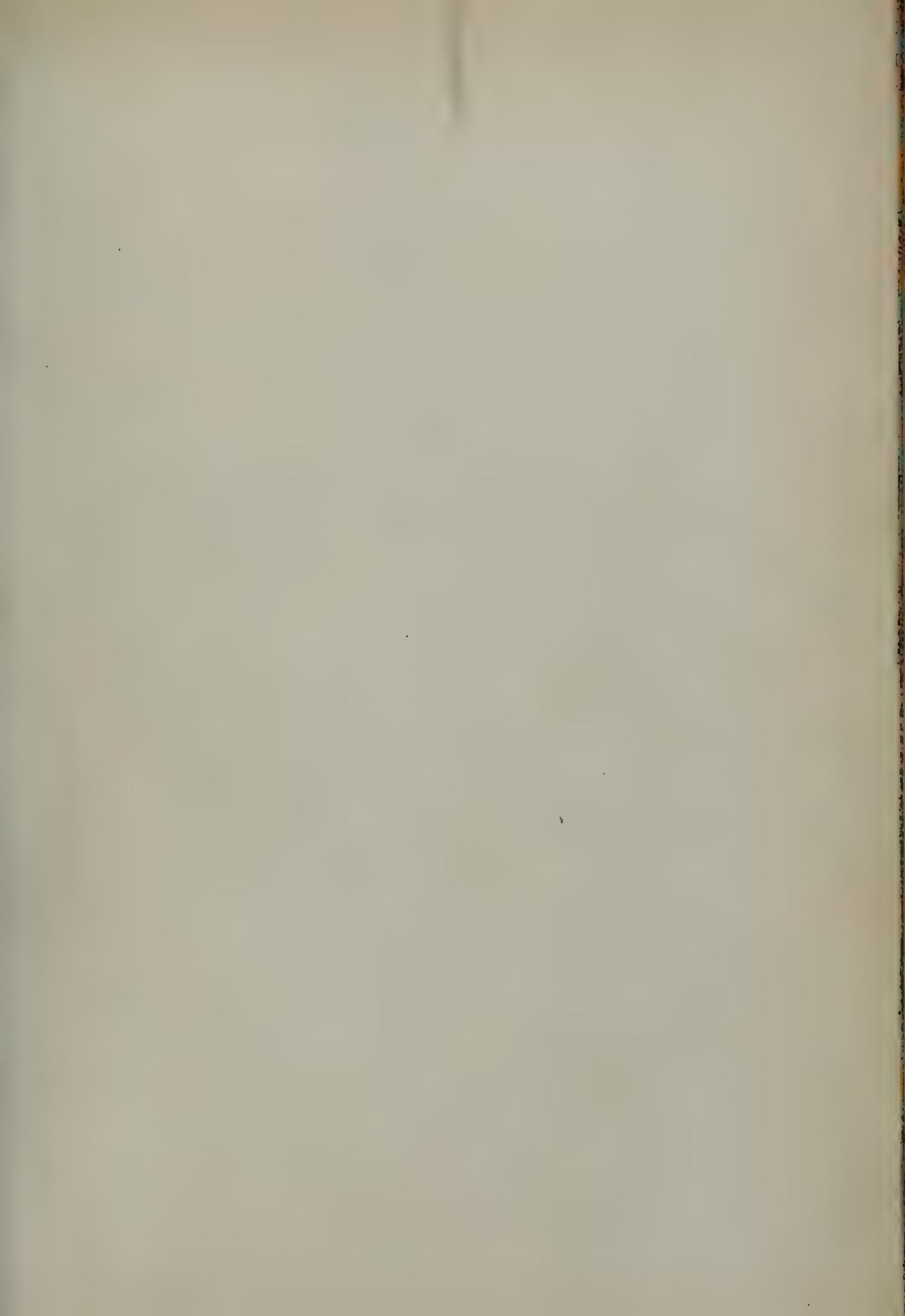




J. Wolf, lith

M & N. Hanhart In

EMBERIZA STRACHYI ♂ ♀











4. NOTICE OF SOME NEW SPECIES OF BIRDS. BY FREDERIC MOORE, ASSIST. MUS. EAST INDIA COMPANY.

Genus OTOCORIS, Bonaparte.

OTOCORIS LONGIROSTRIS, Gould, MSS.

Allied in colour to *O. penicillata*, and in the markings of the head and breast, but differs in its larger size, considerably more lengthened bill, wings and tail, and thicker toes; and in the feathers of the back being broadly centred with brown.

Length  $7\frac{3}{4}$  inches; of wing 5 inches; tail  $3\frac{3}{4}$ ths; bill to frontal plumes  $\frac{6}{10}$ ths; to gape  $\frac{3}{4}$ ths; tarsus  $\frac{10}{12}$ ths; middle toe and claw  $\frac{8}{12}$ ths; hind ditto  $\frac{7}{10}$ ths of an inch.

*Hab.* Neighbourhood of Agra. In Mr. Gould's Collection.

Genus EMBERIZA, Linn.

EMBERIZA STRACHEYI, Moore.

Affined to *E. Cia*, but differs in having the markings about the head more broadly developed, and of a deeper black colour, forming three well-defined black bars, as seen laterally; the throat and sides of neck being whiter, and ashy on the front of the neck only, the breast and the rest of the under-parts being uniform bright rufous-brown, which colour is also prominent on the back, and especially on the scapulars, rump and upper tail-coverts.

Length 6 inches; of wing  $3\frac{2}{3}$ ths; tail 3; tarsus  $\frac{3}{4}$ ths of an inch.

*Hab.* Kumaon. In Mus. East India Company.

EMBERIZA CASTANEICEPS, Gould, MSS.

Also affined to *E. Cia*. Crown and ear-coverts deep chestnut-brown; superciliary streak, base of upper mandible, throat, front and sides of neck ashy white; behind the ears and nape ashy; a spot before the eye and streak from base of lower mandible down the sides of the throat black; back, scapulars, and rump rufous-brown, the two former having blackish centres to the feathers; wings dusky black, the feathers margined with rufous-brown; tail dusky black, the two centre feathers broadly margined with rufous-brown, the two outer tipped obliquely with white for nearly the whole length; breast and flanks rufous-brown, and paling towards the centre of the belly; upper mandible dark-horn, lower paler.

Length  $5\frac{1}{2}$  inches; wing  $2\frac{7}{8}$ ths; tail  $2\frac{5}{8}$ ths; tarsus  $\frac{3}{4}$  of an inch.

*Hab.* Kintang in China. In Mus. East India Comp., J. Gould, Esq.

Genus PROPASSER, Hodgson, Gray's Zool. Misc. p. 84 (1844);  
P. Z. S. 1845, p. 36.

PHENICOSPIZA, Blyth, J. A. S. Beng. xxiii. p. 213 (1854).

PROPASSER THURA.

*Carpodacus Thura*, Bonaparte et Schlegel, Monogr. des Loxiens, t. 23. Bonap. Consp. Gen. Av. p. 531 (male).

*Propasser rodopeplus*, part. Hodgson.

*Hab.* Nepal. In Mus. East India Comp. Brit. Mus., J. Gould, Esq.

This species may be distinguished from the true *P. rodopeplus*, by its rather smaller and a trifle more pyrrhuline bill; the colour of the male above being hair-brown, the feathers centred with blackish, and the lesser range of wing-coverts *only* being crimson-tipped; the under-parts, rump and upper tail-coverts, cheeks, forehead, and superciliary streak is pale silvery-crimson, the end of the latter and the centre of the belly being pure white; the crimson feathers of the head and throat being centred also with white, and the crimson colour being deepest at the base of the bill; whereas, in *P. rodopeplus* the male above is dark crimson-brown, and having *both* ranges of wing-coverts *and the tertiaries* pale crimson-tipped. The female of *P. Thura* (which is now for the first time described) may be distinguished from the same sex of *P. rodopeplus* by being paler above and having paler centres to the feathers; the colour of the under-parts being considerably more uniform; having also but faint centres to the feathers. *P. rodopeplus* is a trifle larger than *P. Thura*.

The Prince Charles Lucien Bonaparte has compared these specimens, and his Highness also verifies their distinctness.

PROPASSER PULCHERRIMUS, Hodgson.

*Propasser pulcherrimus*, Hodgson, Gray's Zool. Misc. (1844), p. 85.

*Hab.* Himalaya. In Mus. East India Comp. Brit. Mus., J. Gould, Esq.

The male differs from *P. rodochrous* in having the forehead, superciliary streak, cheeks, throat, and under-parts, with the rump of a paler or more silvery-crimson colour, being in some lights very silvery; the upper parts, with the crown, are dusky-brown with pale crimson-tinged edges to each feather. The female differs from the same sex of *P. rodochrous* in having the under-parts dusky white, instead of rufescent, and above the colours are also less rufescent.

The size is the same as *P. rodochrous*, excepting that in *P. pulcherrimus* the wing is longer in both sexes.

*Remarks.*—Both sexes of this species and *P. rodochrous* were sent from Nepal by B. H. Hodgson, Esq., under the name of *pulcherrimus*, which name, upon examining his original drawings in the British Museum, we find refers to the true *rodochrous* and not to the present species; but, as that indefatigable naturalist applied the name to both birds, we deem it but correct to retain the same for the present bird.

Genus LINOTA, Bonaparte.

CANNABINA, Brehm.

LINOTA BREVIROSTRIS, Gould.

*Linota brevirostris*, Gould, Bonap. Geogr. et Comp. List of B. p. 34 (1838).





CORUCIA ZERRATA. Gray

?*Fringilla bella*, Hempr. et Ehrenberg, Mus. Berol.

*Hab.* Erzeroum and Afghanistan. In Mus. East India Comp. et J. Gould, Esq.

Allied to *L. montium*, but distinguished from that species by its lighter colour, and the male having the pink colour on the rump paler; the axillaries and the basal edge of the inner web of the primaries and secondaries pure white; the tail being margined on the whole outer and broadly on the inner web also with pure white; the primaries and secondaries above are also broadly margined exteriorly with white. The female is also paler and broadly edged as in the male with white.

Length 5 inches; of wing  $3\frac{7}{8}$ ths; of tail  $2\frac{5}{8}$ ths; centre feathers  $\frac{1}{2}$  inch less; bill to frontal plumes  $\frac{3}{10}$ ths; to gape  $\frac{1}{2}$  an inch; tarsus  $\frac{6}{10}$ ths; centre toe and claw  $\frac{5}{8}$ ths; and hind ditto  $\frac{1}{2}$  an inch.

*Remark.*—Cabanis in Catal. Birds Mus. Heine, p. 161, states that "the bill of *F. bella*, of Hempr. and Ehrenb., is a trifle larger than in *L. cannabina*, Linn., but in colour almost agrees with *L. fringillirostris*, Bonap. et Schlegel, Monog. Loxiens, t. 49. p. 45.

5. NEW GENUS OF FISH-SCALED LIZARDS (*SCISSOSARÆ*), FROM NEW GUINEA. BY J. E. GRAY, Ph.D. F.R.S., ETC. ETC.

(Reptilia, Pl. VIII.)

The Lizard which I have the pleasure of bringing before the Society this evening, was presented to the British Museum, with other most interesting and novel specimens, by Mr. John MacGillivray, who accompanied H.M.S. Herald as naturalist during her voyage in the Australasian seas.

CORUCIA.

Head broad, flat topped; nostrils ovate, oblique, simple, not prolonged behind, on the middle of the lower part of the nasal shields; supranasal shields none; rostral square; internasal one, large, 8-sided, broader behind; frontal-nasal two, moderate, band-like, transverse; lateral-frontal one small, subtrigonal, nearly equal-sided, frontal-parietals two rhombic, contiguous at the angle; interparietal one rhombic, elongate; eyebrows covered with band-like shields, lower eyelid with a series of larger opaque scales; temple covered with large shields; ears large, simple, edged in front.

Body fusiform, compressed scales, 6-sided, smooth, with 3, 5 or 7 grooves, seen through the skin, of chin and underside of the body thinner, smooth.

Legs strong; toes five, cylindrical, elongate, unequal, with a series of band-like shields beneath; claws strong, curved.

Tail elongate, tapering, rather compressed, scales of upper like those of the back, but rather larger, with a central series of broad hexangular shields beneath.

*Hab.* Australasia.

This genus belongs to the same section in the Museum Catalogue as *Ateuchoglossus*, characterized by the simple nostril and scaled No. CCXCVIII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.

opaque lower eyelids. It differs from that genus in the smoothness of the scales, the shielded underside of the tail and several other characters.

*CORUCIA ZEBRATA.* (Pl. VIII.)

Pale yellowish-white (in spirits); back with irregular blackish-brown cross-bands; upper part of limbs and tail blackish, varied; head dark-brown.

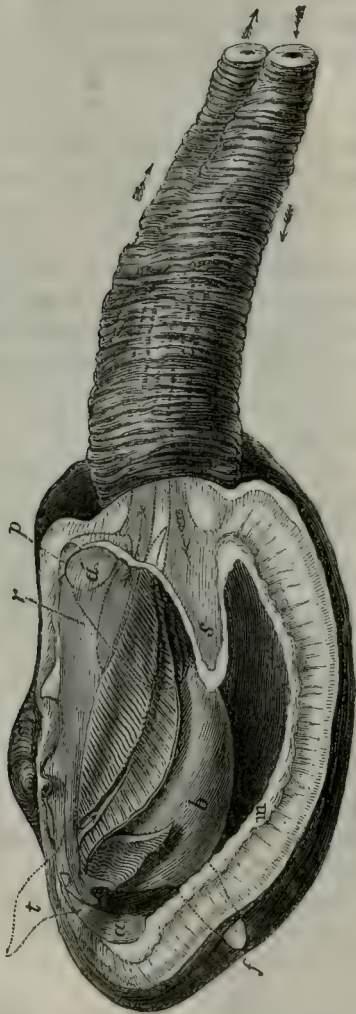
*Hab.* New Guinea, the Island of San Christoval, *John MacGillivray, Esq.*, two adult and young specimens.

Length of adult nearly 2 feet.

6. ON *PANOPÆA ALDROVANDI*, *Lam.*

BY S. P. WOODWARD, F.G.S.

The specimen of *Panopæa Aldrovandi*, preserved in spirits, and now



*PANOPÆA ALDROVANDI*, *Lam.*

(*Chama glycimeris*, Aldr.)

One fourth natural size.

*a, a'*, Adductor muscles.

*p, p'*, Pedal muscles.

*r*, Position of renal organ.

*t*, Labial tentacles, or palpi.

*b*, Body.

*f*, Muscular foot.

*m*, Pallial muscle, or retractor of the mantle.

*s*, Siphonal muscle.

The arrows indicate the inhalant, or branchial siphon, and the exhalant or anal siphon, communicating with the channels above the gills.

exhibited to the Zoological Society, was presented by Capt. Guise to



the Gloucester Museum, and was lent me for examination through the kindness of J. W. Wilton, Esq., of Gloucester.

This species is found at Sicily, and on the south coasts of Spain and Portugal; but not, so far as we are aware, at Mogador or the Canaries.

On the coast of Sicily, according to M. Philippi, it is rare, and only found between La Trezza and Aci Castello. M. H. Crosse, who purposely visited this locality, found a rocky beach in which it could not possibly live, and the only spot where the fishermen were acquainted with it was the village of Giardini, near the sandy bay of Taormina; even there only odd valves were procured, and he says it would be exceedingly difficult to obtain the animal on account of the absence of tides\*.

Capt. Guise has favoured me with the following note:—

“The *Panopæa* was collected, together with many of the rarest forms of Mediterranean Mollusca, by the Rev. L. Larking, on the coast of Sicily; the animal, when alive in a vessel of sea-water, was a most lively mollusk—slashing its siphons about, and discharging the water with the force of a piston.”

There appears to be no description of the animal published. Philippi had not seen it, nor Valenciennes, at the time he wrote the monograph of the genus for Chenu's ‘Conchological Illustrations.’ Being the type of the genus *Panopæa*, I was the more desirous of examining it, especially as British naturalists have taken their notion of *Panopæa* from the British shell called “*Panopæa Norvegica*”—which it now appears does not belong to the genus, or even to the same family, but must be referred to *Saxicava* amongst the *Gastrochænidæ*.

In *P. Aldrovandi* all the visible portion of the mantle and the long united siphons are clothed with thick, brown *epidermis*, striped with black, and very much wrinkled by the contraction of the animal in alcohol: it was impossible, without dissection, to see whether the orifices of the siphons were fringed as in *Mya*. The anterior gape of the shell exhibits an oval space, perforated in the centre by a small pedal orifice, scarcely large enough to admit the little finger.

By lifting up one valve and removing the portion of the mantle within the pallial line, the internal organs were seen and sketched.

The body is large and oval, suspended by four muscles whose attachments are close to those of the adductors; it is truncated in front, where it supports a small finger-like muscular foot; behind it is produced into a blunt point.

The *oral palpi* are triangular and pointed, but were probably larger and broader during life; they are deeply plaited inside, with a plain posterior border.

The gills are two on each side; the *inner* gills extend from the base of the respiratory siphon to the palpi, between which they are received; they are deeply plaited, the plaits being in pairs, and the lower edge of the gill is grooved. The inner dorsal margins are not

\* Journ. Conch. vol. ii. 1851.

united to the body, so that the dorsal channels are only closed by the apposition of the parts.

The *outer gills* are simpler in structure, being formed of a single series of vascular loops placed one behind another; the free edge is not grooved, and the gill terminates in front some way behind the inner gill. The dorsal margin of the outer lamina is expanded beyond the line of suspension, and is fixed.

The gills of the opposite sides are united to each other behind the body and to the branchial septum.

The whole structure is closely like that of *Mya arenaria*, the chief differences being the shortness of the palpi, and the inequality of the gills.

There are six other reputed species of recent *Panopæa*.

1. *P. ABBREVIATA*, Val.; discovered by M. d'Orbigny on the coast of Patagonia between the R. Negro and S. Blas. This shell appears to have been again met with by the U. S. Exploring Expedition, under Commander Wilkes, and is described by Dr. Gould as *P. antarctica*.

2. *P. ZELANDICA*, Quoy; of which an odd valve only was picked up on the beach.

3. *P. SOLANDRI*, Gray; probably the same as the last.

4. *P. AUSTRALIS*, G. Sby. (Genera of Shells, pl. 40. f. 2), one of G. Humphrey's shells from New South Wales; of which there is a series in the British Museum, from Tasmania.

5. *P. AUSTRALIS*, Val. (not Sowerby's.)

This species is as large as *P. Aldrovandi*, and very like it. Being quite distinct from the *P. australis* of Sowerby, it is proposed to call it *P. natalensis*.

It was discovered in the sandy bays of Port Natal, by Capt. Cecile and the officers of the French frigate 'Heroine,' who observed the tubes of the shell-fish projecting through the sand at low water.

"The sailors endeavoured to draw the creature out of its habitation by the tube, but in vain; for the siphons, after offering considerable resistance, in every instance gave way, and often were withdrawn entire, in spite of the grasp of its persecutor. Curious to know the nature of the being which thus escaped them, they dug for it with spades, and at length uncovered the *Panopæa* buried several feet below the surface of the sand, and gregarious\*."

6. *PANOPÆA JAPONICA*, A. Adams. Zool. Proc. for 1849, p. 170. Pl. VI. f. 5. This species, of which the original and unique example is in the Leyden Museum, is much like the fossil *P. intermedia* of the London clay.

7. *P. GENEROSA*, Gould; Puget Sound, Oregon. (U. S. Expl. Exped.)

8. *PANOPÆA NORVEGICA*, Spengler, is found throughout the Arctic seas, from Behring's Straits to Newfoundland, the North Sea and Russian Lapland.

I was so convinced of the affinity of this shell to the *Saxicava*, that (in my Manual) I placed the latter genus next to *Panopæa*; it now

\* Forbes, i. p. 174, from Valenciennes' Archives du Museum, t. i. 1839.

appears that I should have left it in its former place with *Gastrochæna* and have removed the *Panopæa Norvegica* to it. The shell differs from *Panopæa* in having the pallial line broken up or divided into a number of separate spots, and the animal has very long tapering gills, prolonged far into the branchial siphon.

9. *PANOPEA MIDDENDORFFII*, A. Adams. Zool. Proc. for 1854, p. 137. Arctic Seas. (Haslar Museum.) Appears to be a variety of *P. Norvegica*.

The Geographical Distribution of the genus *Panopæa* affords an illustration of the rule, or "law," so earnestly investigated by the late Prof. E. Forbes,—that the range of *genera*, as well as of *species*, depends in great measure on their geological antiquity; and that when the members of a group are scattered over the greater part of the world, we may expect to find evidence of their existence in the intervening spaces during a former age. M. D'Orbigny describes 139 extinct species of *Panopæa*, commencing in the *Permian* age, and occurring in every part of the world where secondary or tertiary strata have been found.

7. DESCRIPTIONS OF TWENTY-FIVE NEW SPECIES OF SHELLS FROM  
THE COLLECTION OF HUGH CUMING, ESQ.  
BY ARTHUR ADAMS, F.L.S., &C.

1. *TUDICLA ARMIGERA*, A. Adams. *T. testa turbinato-fusifor-  
m, epidermide fulvicante induta, spira obtusiuscula, apice mamillato;  
anfractibus planis, in medio serie spinarum ornatis, spinis tubu-  
losis, regularibus, subrecurvatis, liris transversis, elevatis, squa-  
mulis, aculeatis instructis, et interstitiis lineis elevatis simplicibus;  
anfractu ultimo serie secundo spinarum ad partem anticam ornato;  
apertura ovali, intus alba, columella triplicata, canali recto pro-  
ducto; labro intus lirato.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

This species is at once distinguished from the other known examples of *Tudicla* on account of the spiny armature of the whorls.

2. *FUSUS SPIRALIS*, A. Adams. *F. testa fusiformi, tenui, albida,  
spira elevata, anfractibus spiralibus, convexis, ad suturas con-  
tractis, transversim liratis, in medio angulatis, carina tuberculata  
et carina altera infima subsimplice instructis; apertura ovali,  
labio intus lævi; labro intus sulcato, canali elongato, recto.*

*Hab.* New Zealand. Mus. Cuming.

This is a beautiful and elegant spiral shell, very strongly reminding one of the young of some unknown species of *Gladius* (*Rostellaria*) with the whorls spiral, and where the outer lip is undeveloped.

3. *FUSUS DILECTUS*, A. Adams. *F. testa fusiformi, subventri-  
cosa, spira mediocri; fulvicante, strigis irregularibus, fuscis  
longitudinalibus picta; anfractibus ad octo, convexiusculis, supre-  
mis costato-plicatis, liris elevatis, transversis, crenulatis, majori-  
bus cum minoribus alternantibus, interstitiis longitudinaliter crebre*

*striatis, apertura elongato-ovali, labio transversim corrugato; labro rufo-marginato, intus sulcato; canali longiore, vix testam æquante, subreflexo, ad sinistram curvato.*

*Hab.* Venezuela. Mus. Cuming.

A very elegant *Fusus* reminding one somewhat in markings, form, and sculpture of an elongated *Sycotypus* (or *Ficula*).

4. **FUSUS ALBINUS**, A. Adams. *F. testa ovato-fusiforimi, subventricosa, candida, spira mediocri; anfractibus octo, convexis, longitudinaliter costato-plicatis, plicis, ad suturas, obsolete, liris transversis crebris cinctis; apertura elongato-ovali, labio lævi; labro intus sulcato, canali mediocri recto, aperto.*

*Hab.* Ichaboe, West Africa. Mus. Cuming.

This is a large, white, solid species with a moderately long beak, and with longitudinal, rounded, rib-like plicæ which are obsolete at the sutures.

5. **FUSUS ASSIMILIS**, A. Adams. *F. testa elongato-fusiforimi, fulvicante, epidermide tenui, fusco induta; spira elongata, acuta; anfractibus decem, rotundatis, longitudinaliter plicato-costatis, costis latis, medio subnodulosis, transversim valde liratis, liris æqualibus, subdistantibus; apertura parva, ovali, labio producto, intus transversim rugoso; labro margine crenulato, intus sulcato; canali longiore, fere clauso, recto.*

*Hab.* China Seas. Mus. Cuming.

Somewhat resembling in form and sculpture the *F. turricula*, Kiener, but the outline of the whorls is nodosely unguled.

6. **FUSUS NODICINCTUS**, A. Adams. *F. testa elongato-fusiforimi, dilute rufa, rufo-ferrugineo variegata; spira elongata, acuta; anfractibus convexis, transversim liratis, longitudinaliter nodosoplicatis, plicis in medio anfractuum tuberculatis productis; apertura ovali, labio transversim corrugato; labro intus sulcato, canali mediocri, recto, aperto.*

*Hab.* Australia. Mus. Cuming.

In this species the whorls are encircled with a series of conspicuous, rib-like nodules, and the shell is variegated with rusty-brown, of which there is a distinct transverse band on the last whorl.

7. **AMPHIPERAS (OVULUM) TRAILLII**, A. Adams. *A. testa elongata, in medio angulata, carnea, albo marginata, lineis transversis, impressis, obsolete, cincta; apertura angusta, canalibus brevibus, valde emarginatis; labio intus lævi, sulco longitudinali instructo, postice tumido; labro in medio recto, transversim sulcato, extus albi-varicoso.*

*Hab.* Malacca (*Dr. Traill*). Mus. Cuming.

This is an elongated species, somewhat angulated on the back, of a pale flesh-tint in some varieties, and of a deeper pink in others, and with the varix of the outer less white. In form it resembles, most closely, *O. formosum*, Sow., but that species is crossed with punctate, spiral lines.

8. *POLYDONTA MARIE*, A. Adams. *P. testa turbinato-conica, granulata, albida, rubro maculata ac flammulata; anfractibus convexiusculis, ultimo rotundato, plicato-noduloso, et, ad suturas, corrugato, granulis in seriebus permultis, æqualibus, regularibus, confertis, dispositis, basi cingulis granosis exsculpta, cavitate contorta, umbilicum mentiente, cingulo elevato, in dente unico terminato, exhibente; labro intus sulcato.*

*Hab.* —? Mus. Cuming.

A very beautiful, finely-granulated species, with the last whorl rounded, and having many of the characters of *Clavicularius*, thus showing the close affinity of the two genera.

9. *DOSINIA DESHAYESII*, A. Adams. *D. testa solida, subventricosa, cordato-orbiculari, rufescente, albo variegata, concentricè lamellosa, lamellis incrassatis, æqualibus, lunula profunda, cordata, umbonibus acutis, incurvatis, divergentibus, margine dorsali postico declivi, vix arcuato; intus alba, fascia lata purpurea postice ornata; sinu siphonali obliquo, obtusiusculo.*

*Hab.* North Australia. Mus. Cuming.

Like the brown varieties of *D. scalaris* in size and general appearance, but the lamellæ are sharper and more produced, the valves are more ventricose, the lunule is wide, deep and cordiform, the lozenge has rugose angulated ridges, and there is a broad purple streak in the interior of the valves.

10. *DOSINIA CORYNE*, A. Adams. *D. testa solida, cordato-orbiculari, subcompressa, luteo-albida, nitidiuscula, concentricè striata, striis confertis, vix lamellosis, incrassatis, æqualibus, lunula cordata, valde impressa, area lanceolata profunda, marginibus elevatis, acutis; margine dorsali vix arcuato; sinu siphonali obliquo, apice obtuso; intus alba.*

*Hab.* Van Diemen's Land (Mr. Gunn). Mus. Cuming.

A solid, rather compressed, and shining species, with the disk of the valves nearly smooth owing to the slight elevation of the striæ; the colour is pale yellowish white.

11. *DOSINIA LINEOLATA*, A. Adams. *D. testa solida, subventricosa, cordato-orbiculari, nitida, albido-cinerascente, ad umbones rufescente, lineolis radiantibus, interruptis ornata; concentricè plicata, plicis incrassatis, subimbricatis, glabratis; lunula profunda, cordata; umbonibus subincurvatis, antevergis, divergentibus; margine dorsali postico declivi, arcuato; area lanceolata profunda, marginibus elevatis angulatis lamellosis; intus alba; sinu pallii impressionis acuto.*

*Hab.* Borneo. Mus. Cuming.

The hinge in this species is very thick, and the teeth are very strong; the interior is strengthened, near the beaks, with a callous deposit. The surface is prettily marked with fine, irregular, longitudinal lines.

12. *DOSINIA TRAILLII*, A. Adams. *D. solidiuscula, subcompressa, orbiculato-quadrata, alba, vix æquilaterali, umbonibus levibus,*

*parvis, vix centralibus, lunula oblongo-cordata; concentricè striata, striis medio confertis, elevatiusculis, nonnullis utrinque obsolete, alteris postice erectis, lamellatis, productis; area lanceolata angusta, marginibus regulariter lamellosis; margine dorsali declivo; margine neutrali producto, rotundato; intus alba.*

*Hab.* Malacca (*Dr. Traill*). Mus. Cuming.

The striæ are alternately obliterated towards the sides, which produces a crowned appearance in the middle of the valves. Like *D. Gruneri*, Phil., it is strongly plicate at the lozenge.

13. *DOSINIA CYDIPPE*, A. Adams. *D. testa solidiuscula, subventricosa, albida, ad umbones luteola, rotundato-cordata, concentricè striata, striis confertis, vix elevatis; longitudinaliter radiatim crebre striata, lunula oblongo-cordata, umbonibus lævibus, area lanceolata angusta; intus alba; sinu pallii impressionis obliquo, profundo, apice obtuso.*

*Hab.* Van Diemen's Land (*Mr. Gunn*). Mus. Cuming.

This is a neat-looking species, without any great distinguishing peculiarity, except that, under the lens, the concentric, elevated striæ are finely engraved with radiating lines.

14. *DOSINIA SIMPLEX*, A. Adams. *D. testa solida, compressiuscula, subquadrato-cordata, alba, inæquilaterali, concentricè striata, striis confertis, incrassatis, inæqualibus, lunula oblongo-cordata, umbonibus lævibus, anteveris, area lanceolata angusta, margine dorsali vix arcuato, latere postico subtruncato, subsinuato; sinu pallii impressionis lato, apice obtuso; intus alba.*

*Hab.* Singapore. Mus. Cuming.

In this species the elevated concentric striæ are irregular, some being more elevated than the others; the posterior side of the shell is somewhat sinuated, and the sinus of the pallial line is very wide with an obtuse apex.

15. *DOSINIA DILECTA*, A. Adams. *D. testa tenui, subventricosa, orbiculato-cordata, alba, lamellis concentricis, distantibus, tenuibus, postice productis erectis, ornata; interstitiis nitidis, transversim striatis; lunula cordata, medio elevata; area lanceolata angusta, marginibus lamellosis; margine dorsali regulariter arcuato; intus alba.*

*Hab.* Malacca (*Dr. Traill*). Mus. Cuming.

A very elegant species, of a delicate structure, with the lamellæ thin and wide apart; the interstices shining and concentrically striated; and with the lozenge margined with elevated laminæ.

16. *DOSINIA EUNICE*, A. Adams. *D. testa solida, compressiuscula, orbiculato-cordata, alba, nitida, radiatim obsolete sulcata, concentricè striata, striis confertis, elevatis, æqualibus, utrinque erectis, sublamellaceis; lunula triangulari, valide impressa, lamina cardinali producta, acuta, area lanceolata marginibus angulatis; intus alba; sinu pallii impressionis obliquo, profundo, angulato.*

*Hab.* —? Mus. Cuming.

In this species the margins of the lozenge or ligamental area are acute, and the ligamental fossa is protected on each side by a produced lamina; the lunule is very deep and nearly triangular, and the concentric striæ on the valves seem to be undulated on account of the impressed grooves which radiate from the beaks.

17. *LUCINA LACTEA*, A. Adams. *L. testa crassa, orbiculari, subventricosa, lactea, vix obliqua, concentrice lamellosa, lamellis distantibus, regularibus, interstitiis striis elevatis, radiantibus, et lineis transversis decussatis, umbonibus fere medianis, prominulis; latere antico rotundato, subtruncato, et subangulato; postico rotundato; cardinis dente apicali antico, lato, prominente; intus incrassata alba, margine ventrali crenulato.*

*Hab.* Swan River (*Dr. Bacon*); New Zealand (*Mr. Strange*).  
Mus. Cuming.

A peculiar species, having somewhat the aspect of a *Corbis*, but without any lateral teeth, and with the anterior primary tooth of one valve very broad and dilated.

18. *LUCINA (CODAKIA) MUNDA*, A. Adams. *L. testa lenticulari, convexiuscula, æquilaterali, albida, costulis radiantibus, dichotomis, ad latera divaricantibus, ornata; concentrice imbricato-striata; umbonibus medianis, minutis, anteversis; lunula excavata, intus lutescente; margine ventrali radiatim sulcato; cardinis dentibus apicalibus duobus, divergentibus, lateralibus, validis.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

A very neatly sculptured species, with dichotomous radiating ribs, and with the inner margin of the valves radiately grooved.

19. *LUCINA (CRYPTODON) PLICIFERA*, A. Adams. *L. testa subquadrato-ovali, æquilaterali, subcompressa, sordide alba, epidermide fusca, tenui induta, concentrice plicata, plicis tenuibus, distantibus, latere antico margine sinuato, sulco obliquo, ad marginem extendente, impresso; latere postico obtuse angulato, margine subtruncato; lunula elliptica; cardinis dentibus apicalibus nullis, dente laterali antico instructo; intus alba.*

*Hab.* Borneo. Mus. Cuming.

This is a plicate species in which the primary teeth appear to be obsolete or wanting, and where there is only a single lateral tooth in each valve. This belongs to the form to which the name *Cryptodon* has been given.

20. *LUCINA (MYRTÆA) LAYARDI*, A. Adams. *L. testa lenticulari, solida, convexiuscula, alba, æquilaterali, costulis radiantibus, subnodoso-squamosis, ornata, concentrice sulcata, umbonibus minutis, centralibus, latere antico costis imbricato-lamellosis, postico superne rectiusculo; intus candida, margine ventrali crenulato, intus radiatim sulcato.*

*Hab.* Ceylon (*E. L. Layard, Esq.*). Mus. Cuming.

In form and sculpture this species very much resembles *L. (Myrtæa) Strangei*, but it is much more compressed, and the radiating ribs are more nodose than scaly.

21. LUCINA (MYRTÆA) STRANGEI, A. Adams. *L. testa æquilaterali, solida, ventricosula, lenticulari, albida, costellis radiantibus nodoso-squamosis, sculpta, concentrice sulcata, umbonibus medianis, vix prominulis; intus incrassata, alba, margine ventrali crenulato, intus radiatim sulcato.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

In most of its characters this species approaches *L. (Myrtæa) Layan'dii*, but it is much more ventricose, and the radiating ribs are more imbricately squamose than in that species.

22. DIPLODONTA GLOBULOSA, A. Adams. *D. testa tenui, rotundata, subglobosa, vix obliqua, sordide alba, concentrice striolata, umbonibus submedianis, anteversis, latere antico superne excavato, postico rotundato; cardinis dentibus apicalibus duobus, divaricatis, subobsoletis, lateralibus nullis.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

This species appears distinct from any hitherto described, although a great similarity runs through all the species of the genus.

23. YOLDIA GLORIOSA, A. Adams. *Y. testa elongato-transversa, inæquilaterali, utrinque hiante, lactea, tenui, subpellucida, nitente, latere antico brevior, rotundato, linea impressa, obliqua ex umbonibus usque ad marginem ventralem, instructo; latere postico acuminato-rostrato; concentrice plicato-lirata, plicis tenuibus, confertis, postice obsoletis, antice distantioribus; margine ventrali sinuato.*

*Hab.* Singapore. Mus. Cuming.

A very large and splendid species, having somewhat the character of *Y. lanceolata*, Sow., but with the cartilage-pit nearer the anterior end, and with the fore part broad and rounded.

24. MACTRA PUSILLA, A. Adams. *M. testa subtrigono-ovata, æquilaterali, tenui, nitente, concentrice striata, latere postico subangulato, area elliptica longitudinaliter sulcata, latere antico longiore, subangulato; rosaceo-albida, maculis roseis radiatim dispositis, irregulariter picta; intus roseo variegata; umbonibus rubiginosis.*

*Hab.* Moreton Bay (*Mr. Strange*).

A small and prettily variegated species of *Mactra*, with the interior showing the rosy markings of the valves, and of a shining appearance externally.

25. NÆERA FRAGILIS, A. Adams. *N. testa oblongo-ovata, compressiuscula, tenui, alba, vitrea, pellucida, nitida, concentrice striata, latere antico brevior, rotundato clauso, postico longiore, acuminato, subrostrato, hiante; margine ventrali postice subsinuato.*

*Hab.* Moreton Bay (*Mr. Strange*). Mus. Cuming.

This is a delicate glassy and fragile species, somewhat resembling in external appearance a *Yoldia*. The cartilage is in a projecting cavity of the hinge-plate, and there are no lateral teeth.







Dec. 11th, 1855.

Dr. Gray, F.R.S., in the Chair.

The following papers were read :—

1. CHARACTERS OF TWO NEW SPECIES OF TANAGERS.  
 BY PHILIP LUTLEY SCLATER, M.A.  
 (Aves, Pl. CX.)

1. DUBUSIA AURICRISSA.

*Dubusia cyanocephala* ? Sclater, P. Z. S. 1855, p. 157.

*D. supra flavescenti-olivaceo-viridis: capite nuchaque cæruleis: loris nigris: subtus cærulescenti-cinerea: tectricibus subalaribus et ventre imo crissaque cum tibiis vivide aureo-flavis.*

Long. tota 65, alæ 3·6, caudæ 3·0.

*Hab.* in Nova Grenada, Bogota.

*Obs.* Species *D. cyanocephalæ* simillima, sed rostro minore, colore dorsi flavescentiore olivaceo, capitis cæruleo magis extenso, ventre cærulescenti- neque albescenti-cinereo, et tectricibus subalaribus necnon ventre imo crissoque cum tibiis vivide aureoflavus.

Since compiling the list of Bogota birds, in which I have included this species under the name *Dubusia cyanocephala* ?, I have examined D'Orbigny's types of that bird in the Paris Museum, and find them so different from the present as to lead me to conclude that they are specifically distinct.

The present bird—which must be considered as the representative of *D. cyanocephala* in the mountain ranges of New Grenada—is common in collections from Bogota. The British Museum contains examples of both the species. Those of *D. cyanocephala* were procured by Mr. Bridges in Bolivia.

2. IRIDORNIS PORPHYROCEPHALA. (Pl. CX.)

*Tanagra analis*, Tschudi in Mus. Berolinensi.

*I. supra purpurea, dorso imo et marginibus alarum et caudæ viridescentibus: fronte, loris, mento summo et regione auriculari nigris: gutture late et læte aureo-flavo: pectore summo purpurascente; ventre viridescente, medialiter rufescenti-ochraceo: ano intense ferruginescenti-castaneo: tectricibus alarum inferioribus viridescentibus: rostro superiore nigro, inferiore albo.*

Long. tota 5·6, alæ 3·0, caudæ 2·2.

*Hab.* in Nova Grenada et rep. Equatoriana.

*Obs.* Affinis *Iridornithi anali*, sed capite dorsoque summo purpureis, pectore purpurascente et ventre viridescente facile distinguenda.

When at Berlin in 1854 I first noticed a specimen of this Tanager, which is in the Museum there under the name "*Tanagra analis*, Tschudi." But having just before that had the opportunity of examining type specimens of the latter bird in the collections of Bruxelles and Bremen, I saw at once that the present was to all

appearances a distinct although closely allied species, and accordingly assigned to it a new name in my MS. At Neufchatel I again saw Tschudi's *analis* (the types described in the *Fauna Peruana* being contained in the Museum at that place), and I was also so fortunate as to obtain by exchange, through the courtesy of M. Coulon, the Directeur of the Museum there, a duplicate example of that species. Upon comparing this with a skin lately received by Mr. Gould along with other birds from the neighbourhood of Quito, I find the same differences as I had previously noted in the Berlin Museum specimen; and, fortified by a second example, no longer hesitate to introduce the bird as new to science under the title of *Iridornis porphyrocephala*.

2. DESCRIPTIONS OF (SUPPOSED) NEW SPECIES AND VARIETIES OF SHELLS, FROM THE CALIFORNIAN AND WEST MEXICAN COASTS, PRINCIPALLY IN THE COLLECTION OF HUGH CUMING, ESQ. BY PHILIP P. CARPENTER.

1. PANDORA CLAVICULATA.

*P. t. magna, complanata, alba, epidermide fusca induta; antice curtissima, postice valde rostrata; rostro lato, valde projiciente, sulco in utraque valva ab umbone currente; concentrice undulata; margine ventrali maxime excurvato; margine dorsali postico subirregulariter arcuato; cardine lira (quasi clavicula) ligamentum ferente praelonga, dimidium ab umbone rostrum versus decurrente; dente antico satis producto; valva dextra denticulo tertio inter alios munita; cicatricibus muscularibus, antica rotundata, postica ovali, a margine valde distantibus, inter quas punctularum catena; aliter pagina interna haud punctata.*

Long. 1·23, lat. 1·78, alt. ·22 poll.

*Hab.* Mazatlan: legit "Conway Shipley, Esq.", olim Lieut. R.N. Mus. Cuming.

This magnificent species differs from similar forms found in the Philippines and New Zealand, in having the fold much larger, with the dorsal margin less arcuated. In form it closely approximates the Californian species, *P. punctata*, Conr.; but differs in the absence of punctures (except at the pallial line), and in the remarkable character of the hinge. In *P. punctata*, the ligament is (in one valve) affixed to the outer margin, which is bent upwards to receive it at right angles; in this, there is a sharp internal ridge, or clavicle, fully one half of the entire length from the umbo to the beak, at the base of which the ligament is situated.

2. LYONSIA (OSTEODESMA) DIAPHANA.

*L. t. valde inæquilaterali, irregulari, sed plerumque pyriformi; albidâ, tenuissima, translucida; epidermide nitida, albo-fusca induta; parte antica parva, satis excurvata; parte postica maxime prolongata, margine dorsali incurvato; margine ventrali excurvato,*

*plerumque plus minusve hiante; appendice ligamenti calcarca prolongata.*

Long. ·56, lat. ·92, alt. ·34 poll.

*Hab.* Mazatlan: legit C. Shipley, Esq. Mus. Cuming, Archer, Darbshire, &c.

A small species, nearly as glossy as *O. nitidum*, Gould, from California. In form it resembles *L. cuneata*, Gray, but is of a much lighter colour and thinner texture, and is not truncated at the anterior margin. The specimens brought by — Thorne, Esq., Paymaster of the Navy, vary greatly in the amount of pedal gape, which in most of Lieut. Shipley's specimens is scarcely perceptible.

### 3. PERIPLOMA EXCURVA.

*P. t.* "P. Leanæ" simili, sed minus inæquilaterali, margine ventrali maxime excurvato, postice et antice magis hiante, minus æquivalva, fossa cardinali et clavicula gracilioribus; magna, tenui, ventraliter arcuata, striis incrementi gracillimis; epidermide tenuissima, vix antice rugosa; cicatricibus muscularibus et pallii margini appropinquantibus, sinu modico, subtriangulato.

Long. 2·06, lat. 2·46, alt. 1·05 poll.

*Hab.* Mazatlan, teste Dr. Grüner. Mus. suo.

A very fine species, differing from *P. Leana*, Conr. (not to be confounded with *Cochlodesma Leana*), and from *P. argentaria*, Conr., in being much less inequilateral, with the ventral margin well rounded.

### 4. PERIPLOMA PAPYRACEA.

*P. t. suborbiculari, inæquilaterali, inæquivalva; parte postica brevissima, rostrata, rostro curto, lato; tenuissima, diaphana, albida; superficie striis incrementi tenuibus, lineas radiantes huc et illuc vix monstrante, granulis minimis induta, epidermide tenuissima; umbonibus prominentibus; marginibus ventralibus et dorsalibus anticis subæqualiter excurvatis, posticis subincurvatis; fossa cardinali parva, solida, clavicula solidiuscula; sinu pallii ore angustiore, intus lato, vix angulato.*

Long. ·78, lat. 1·06, alt. ·42 poll.

*Hab.* Mazatlan. Mus. Cuming.

A perfect valve, and a broken pair displaying the hinge *in situ*, are all that are known of this beautiful species. It differs from the others in its outline, the greater part of which is suborbicular, with a short broad beak.

### 5. THRACIA SQUAMOSA.

*T. t.* "T. villosiusculæ" simili, sed magis transversa; superficie granulis distinctioribus instructa; ligamento extus curtiori, intus fulcro majore, minus declivi; sinu pallii angustiore, magis pro-  
ducto.

Long. ·72, lat. 1·14, alt. ·38 poll.

*Hab.* Mazatlan: legit C. Shipley, Esq. Mus. Cuming.

Remarkably like the British species, from which it differs,—in the

shape, which is rather more transverse, lengthening the pallial sinus; in the external granules, which are somewhat coarser; and in the ligamental pit, which is rather larger, and therefore at a greater angle from the margin.

6. ? SCROBICULARIA PRODUCTA.

? *S. t. candida, tenui, sublævi, striis incrementi exillimis, confertis; antice et ventraliter maxime producta; margine anteriore bene excurvato, postico valde undato, ventrali subincurvato; umbonibus prominentibus, appressis; lunula indistincte impressa; ligamento externo magno, interno minimo, alteri adjacente; dentibus cardinalibus duobus, quarum alter bifidus, alter minimus; cicatricibus muscularibus, antica elongata, angusta, marginem ventralem appropinquante; postica subquadrata, intus undulata; sinu pallii maximo; pagina interna cardinem versus undulata.*

Long. 1·45, lat. 1·88, alt. ·7 poll.

*Hab.* Sinu Californiensi: legit C. Shipley, Esq. Mus. Cuming.

Resembles *S. angulata*, Chemn., but differs in the great production of the anterior ventral portion, in the development of the wave, and in the length of the external ligament. This and the following species form connecting links between *Scrobicularia* and *Tellina*.

7. ? SCROBICULARIA BIANGULATA.

? *S. t. suborbiculari, subæquilaterali, convexiuscula, striis concentricis vix regularibus, postice undata, angulis duobus subobsoletis; ligamento externo tenuissimo, in sulcos alte impresso, semi-interne sito; ligamento interno fossa trigonali scalena sito, alteri adjacente; dentibus cardinalibus in utraque valva duobus, contiguus, vix radiantibus; cicatricibus muscularibus subovalibus, sinu pallii maximo; alba, intus aureo tincta.*

Long. 1·5, lat. 1·78, alt. ·8 poll.

*Hab.* Sta. Barbara; legit T. Nuttall, Esq. Museo suo.

Differs from *S. producta* in form and texture, and also in the comparative size of the external ligament, which in this species is situated in a semi-internal furrow.

8. DONAX SEMISTRIATUS.

*D. t. parva, valde transversa, tumidiore; parte superficiei antica lævi, nitida; reliqua concentricè sulcata, sulcis impressis, interdum bifurcatis; striisque radiantibus evanescentibus, sulcos punctantibus; sulcis in parte postica valde calatis; aureo-fuscus, ad umbones rubro-fuscus radiatus; margine simpliciter crenulato.*

Long. ·4, lat. 8, alt. ·2 poll.

*Hab.* in Sinu Californiensi. Mus. Cuming.

Somewhat resembles *D. pulchellus*, Hanl., but differs in the markings, the anterior third of the surface being quite smooth, while the remainder is furrowed with rather distant concentric lines, ending suddenly, and slightly indented by evanescent striulæ.

9. DIPLODONTA SUBQUADRATA.

*D. t. subquadrata, valde inæquilaterali, antice brevi; tenui, albo-*

*flavescente, epidermide tenuissima; striis incrementi exillimis, ligamento subexterno; dentibus cardinalibus parvis; lateralibus antico in utraque valva acuto, postico subobsoleto; cicatricibus muscularibus, antica a cardine remota, elongata, intus crenulata; postica irregulariter pyriformi; linea pallii margini appropinquante.*

Long. .76, lat. .89, alt. .57 poll.

*Hab.* Mazatlan. Mus. Cuming.

In shape like *Lucinopsis undata*; remarkable for the anterior lateral teeth.

#### 10. CHITON MONTEREYENSIS.

*C. t. ovata, subelevata (ad angulum 120°), sublavi; olivacea, valva utraque ad jugum rubro-fusco maculata, lineis tenebrosioribus valvis intermediis subradiantibus, valvis ultimis radiantibus; valvis intermediis lineis diagonalibus subdistinctis, ad marginem subquadratis, suturis conspicuis; arcis lateralibus lineis paucis radiantibus obsoletis; tota superficie punctulis creberrimis conferta, subobsoletis, maxime ad areas laterales; mucrone vix prominente; limbo coriaceo, ad marginem et in suturis piloso, setis planatis, curtis, incurvatis; intus valvarum marginibus haud valde arcuatis, sinu parvo, ad jugum subimpresso.*

Long. 2.4, lat. 1.42, alt. .45 poll.

*Hab.* Monterey, rupibus ad undarum tumultum expositis: legit — Hartweg. Mus. Cuming.

Margin with numerous but not crowded, short, incurved, horny, flattened hairs; shell very finely sculptured, dark olive, with very dark rays slightly diverging from the summit of each valve, and very conspicuous on the terminal one. The jugum is stained in each valve with sienna.

#### 11. CHITON HARTWEGII.

*C. t. ovata, subelevata (ad angulum 125°), sublavi; olivacea, macula nigra in utroque jugi latere picta; valvis sine lineis diagonalibus, partim detritis, lineis incrementi conspicuis, tota superficie minutissime irregulariter subgranulosis; marginibus rotundatis, suturis magnis; limbo tenui, granulis minimis, confertissimis, irregulariter munito; intus valvarum marginibus arcuatis, lobis prominentibus, sinu lato, haud alto; ad jugum vix impressus.*

Long. 1.26, lat. .76, alt. .18 poll.

*Hab.* Monterey, cum præcedente: legit idem diligentissimus. Mus. Cuming.

A much smaller shell than the last, almost destitute of sculpture; with a blackish spot on each side of the jugum, but no radiating lines.

#### 12. CHITON NUTTALLI.

*C. t. "Chitoni Hartwegii" simili, sed latiore, depressa (ad angulum 130°), superficie granulis majoribus, maxime marginem versus;*

*marginibus quadratis, suturis nullis; intus valvarum marginibus valde arcuatis, sinu lato, alto.*

Long. 1·05, lat. ·8, alt. ·24 poll.

*Hab.* Monterey, cum præcedentibus; legit idem diligentissimus, et olim, primus in eas oras perscrutator, clarissimus T. Nuttall. Mus. Cuming et Nuttall.

A small specimen in Mr. Cuming's collection was passed over as the young of *C. Hartwegii*; but a fine one in Mr. Nuttall's collection distinctly displays the points of difference above indicated, which at present appear of specific value. This specimen has much the appearance of a young *Ch. articulatus*, but differs essentially in the character of the ligament.

### 13. CHITON REGULARIS.

*C. t. elongata, elevata (ad angulum 110°), fusco-olivacea, jugo acuto; valvis intermediis lineis diagonalibus haud conspicuis; areis lateralibus et valvis ultimis strigis radiantibus, areis centralibus strigis longitudinalibus, parallelis; mucrone parvo; marginibus valvarum subrotundatis, suturis modicis; limbo squamoso, squamis oblongis, irregulariter tessellatis; intus valvarum marginibus haud valde arcuatis, sinu lato, haud alto; ad jugum linea impressa.*

Long. 1·1, lat. ·58, alt. ·25 poll.

Var. *T. cerulea, strigis prope marginem subgranulosis.*

*Hab.* Monterey; sub saxis legit — Hartweg. Mus. Cuming.

A very similar species, but with larger scales on the margin, is from New Zealand, and at present undescribed in the Cumingian Collection.

### 14. CHITON ACUTUS.

*C. t. ovata, valde elevata (ad angulum 105°), tenui; olivacea, interdum maculis tenebrosioribus; lineis diagonalibus vix monstrantibus; areis lateralibus et valvis ultimis tenuissime granulosis, granulis longis, irregulariter radiantibus; areis centralibus iisdem lineis longitudinalibus undatis instructis; marginibus valvarum subquadratis, suturis parvis; jugo acuto, mucrone inconspicuo; limbo angusto, sublævi, tenui; intus virescente, valvarum marginibus et jugo impresso albidis; valvarum marginibus vix arcuatis, sinu parvo, inciso.*

Long. ·9, lat. ·5, alt. ·2 poll.

*Hab.* Sta. Barbara: olim legit T. Nuttall. Mus. suo.

A very sharply angled, thin, delicately marked species, with extremely thin margin, and the edges of the valves deeply cut within.

### 15. CHITON ORNATUS, Nutt. MS.

*C. t. subrotundata, depressa (ad angulum 130°), fusco-olivacea, utraque parte jugi tenebrosius maculata; lineis diagonalibus, et in ultima valva lineis x. radiantibus, nodulis validis instructis; areis lateralibus et valvis ultimis nodulis radiatim instructis; areis centralibus lineis nodulosis longitudinalibus, vix undatis, interstitiis alte decussatis; valvarum marginibus subquadratis,*



*suturis parvis; mucrone vix monstrante; intus virescente, rufo tincta; marginibus valvarum valde sinuatis, sinu angulato; ad jugum vix impressa; limbo valde piloso, setis longis, fortibus, incurvatis.*

Long. 1·05, lat. ·8, alt. ·22, poll.

*Hab.* San Diego; olim legit T. Nuttall. Mus. suo.

The sculpture of this species is very strongly marked; the marginal hairs rather long, short and crowded\*.

16. *PATELLA*? *TOREUMA*, var. *TENUILIRATA*.

*P. t. valde depressa, oblonga, diaphana; colore corneo, fusco-purpureo irregulariter flammato; liris circiter xxii., tenuissimis, interstitiis obsolete striatis; apice subprominente, circiter quinta parte longitudinis sita; pagina interna valde iridescente.*

Long. 1·38, lat. 1, alt. ·28, poll.

*Hab.* Monterey; legit — Hartweg. Mus. Cuming.

This shell appears to agree with *P. toreuma*, Rve., in all essential respects; but instead of the fine regular striæ of that species, there are a few delicate principal ribs, with obsolete striæ between. As its neighbour, *P. Oregona*, sometimes develops large ribs, and is at other times nearly smooth, this has not been considered a sufficient difference to constitute a species, until more is known of its variable powers.

17. *GALERUS*? *SINENSIS*, var. *FUSCUS*.

*G. ? Sinensis, t. rufo-fusca, huc et illuc lineis declivis instructa.*

This shell, marked "Gulf of California," Mus. Cuming, but without authority, differs essentially from *G. mamillaris*, Brod. (= *regularis*, C. B. Ad.), and is not to be distinguished from the British specimens of *G. Sinensis*, except by the colour, and by a few irregular diagonal lines here and there, which are probably an individual peculiarity. In the collection of R. M'Andrew, Esq. are several specimens of the true *G. Sinensis* from the Mediterranean, of an equally dark colour. It is impossible, therefore, to found a specific distinction on this circumstance alone. It is here described in order to direct the attention of collectors in that region to the subject. It would be very remarkable should the species be proved to inhabit so remote a locality. The specimen in question may have been imported.

18. *GALERUS SUBREFLEXUS*.

*G. t. irregulari, conica, rufo-fusca, radiatim tenui-striata; striis aculeatis; sutura impressa; vertice involuto, apice depresso; lamina interna apicem versus ad duas trientes reflexa, umbilicum magnum monstrante, margine dilatata, haud angulata.*

Lat. ·75, alt. ·4, poll.

*Hab.* In Sinu Californiensi. Mus. Cuming.

\* The specimens described not being my own property, I did not dare to examine the insertions of the valves with a view to determine the genus. It is possible that some of these species have been already described by Dr. Gould in the Expedition Shells (pp. 5, 6), the plates to which are, alas! not yet published.

Differs from *G. striatus*, Brod. (which must not be confounded with *Dispotæa striata*, Say), in its much more delicate, irregular, finely spinous striæ; and in the form of the internal laminae, which in this species is reflected back over two-thirds, in *G. striata* over the whole, forming a much larger umbilical region. The vertex of this shell is rather prominent, and is formed like a tumid *Planorbis*, with a sunken apex.

#### 19. FISSURELLA NIGROCINCTA.

*F. t. ovali, lata, conica; alba, lineis nigris radiantibus eleganter picta; striis radiantibus tenue calata; apertura subcentrali, obscure trilobata; intus alba, margine tenue crenulato, denticulis nigris; callositate alba, linea nigra cincta.*

Long. .75, lat. .52, alt. .3, poll.

Differs from the young of *F. alba* in its greater breadth, less compressed growth, finer striæ and crenulations; from *F. nigropunctata*, in the black line round the callosity; and from both in the form of the hole, which is trilobed, not contracted in the middle.

#### 20. CALLOPOMA (TURBO) ? FLUCTUATUM, var. DEPRESSUM.

*C. t. valde depressa, anfractibus v., quarum ultimus tumidus, sutura impressa; liris spiralibus circiter xxx., quarum plerumque v. majores sunt, subrugosis; viridi, punctis albis transversim in liris subirregulariter dispositis; apertura ad basin posteriusque producta; columella paulum excavata, non umbilicata.*

Long. 2.02, lat. 2.04, long. spir. .78, poll.; div. 110°.

*Hab.* California. Mus. Cuming.

*Syn.* *Turbo fluctuatus*, var., Rve. Conch. Ic. pl. viii. f. 34.

Among many hundred specimens examined of the true *C. fluctuatum* from the Mazatlan Collection, there was not one approaching this shell. Nevertheless, as there is in the British Museum a somewhat intermediate form, it may possibly be a variety of that species. The operculum is unfortunately wanting in Mr. C.'s specimens: until that has been examined, the point must remain in abeyance.

#### 21. LITIOPA DIVISA.

*L. t. parva, anfractibus ix., quarum vi. primi subturriti, liris transversis striisque spiralibus decussati, ultimique tres subleves sunt, tumidiores, striulis plus minusve appressis, spiralibus, maxime ad basin, tenuissime ornata; nonnunquam linea suturam impressam subeunte; subdiaphana, fusca; labro acuto; labio vix monstrante; columella truncata, infra maxime undata.*

Long. .13, lat. .06, long. spir. .07, poll.; div. 30°.

*Hab.* Cape San Francisco: legit clar. Hinds. Mus. Cuming.

This is the only species hitherto recorded from the west coast of N. America; the ?*L. saxicola* of C. B. Ad. not belonging to the genus. Exactly the same species was taken in abundance "among small drifted canes, Straits of Sunda," Mus. Archer. It is remarkable for the different character of the first six and the last three

whorls; the decussated portion suddenly becoming smooth, the joining whorl being often irregular in growth.

## 22. SCALARIA REFLEXA.

*S. t. turrita, anfractibus x. valde disjunctis, lævibus; varicibus in anfractu utroque v. magnis, valde prominentibus, ad marginem reflexis, supra in spira brevi semitubulari productis; lineis varicum subspiralibus; vertice lævi; apertura circulari, ad basin haud umbilicata.*

Long. .6, lat. (*spinas includens*) .21, long. spir. .45, poll.; div. 40°.

*Hab.* San Blas, prope Sinum Californiensem; unicum legit — Donnell, R. N. Mus. Cuming.

Most nearly allied to *S. mitraformis*, Sow., and remarkable for the large size of the varices, which are reflexed, and produced at the shoulder into a semitubular spout. The varical lines make about one revolution from the apex to the base. In the very young shell the varices are not shouldered, and are more numerous.

## 3. DESCRIPTION OF TWO NEW SPECIES OF ACTINIA, FROM THE SOUTH COAST OF DEVON. BY E. W. H. HOLDSWORTH.

(Radiata, Pl. V.)

Among various species of *Actinia* collected by me in July last, on the south coast of Devon, two appear to be undescribed, and although of small size, are of some interest in being additions to the fast increasing list of our native zoophytes.

They were found on the rocks near the entrance to Dartmouth harbour, a part of our western coast, which, from its steep rugged character and its luxuriant growth of sea-weeds, presents a fruitful hunting-ground for those in search of marine productions.

The first that I have to notice may be thus characterized:—

Body smooth and cylindrical when fully extended, from half to three-quarters of an inch in height, but very much flattened when contracted; tentacula in four rows, moderately long, slender, and slightly tapering towards the tips, their length regularly diminishing from those of the inner circle outwards. The entire animal has a pale transparent appearance, and the only trace of decided colour about it is found in a narrow dark blue line surrounding the base of each tentaculum, and extending a little in the direction of the mouth, but soon becoming indistinct. Very delicate white lines are at times visible on the surface of the body, but these are probably only the edges of the membranous septa seen through the transparent skin. When this animal is at all roughly handled, the long seminal filaments are thrown out from the mouth in great profusion. This little anemone approaches very closely in many respects the *Ac. candida* of Mr. Gosse, and I am indebted to that gentleman for his ready assistance in determining the differences between them. *Ac. candida* may be distinguished by its possessing fewer tentacles, by the colour

of the body being of a more opaque white, and especially by the narrow lines surrounding each tentaculum being of a reddish-purple tint, and enlarging into a conspicuous spot on each side of its base. In their habits and general appearance they are very much alike, and had I obtained only one example of the pale species, I should hardly have ventured to consider it more than a variety. Ten specimens, however, were taken from different places, and did not vary except in size; they were found on the exposed surface of perpendicular rocks at about half-tide mark, and when out of the water and contracted, were very difficult to distinguish, owing to their great transparency. I propose for this species the name of *pallida*.

It has been my custom, after any expeditions in search of *Actiniæ*, to bring home one or two plants of *Laminaria digitata*, in order to examine at my leisure the various forms of animal life commonly met with among their tangled roots; and it was on one of these plants I found, in company with minute *Ophiocomæ*, green *Nereides* and numerous other animals, the beautifully marked anemone that I have now to describe.

It has the following characters:—

Body elongate, cylindrical, about three-quarters of an inch in length, when extended, the upper half covered with numerous pale perforated warts, increasing in number as they approach the top, and from which the white filaments are protruded when the animal is irritated. Tentacula in five rows. Colour of the body a dark orange, becoming paler towards the base. This species is chiefly remarkable for the beauty of its oral disk, which for colouring and elegance of marking will bear comparison with that of any of the larger kinds. The external half of the disk is of a rich purplish-brown, changing into a light orange tint towards the mouth, the pink tumid lips of which are frequently conspicuous; from near the centre diverge ten or twelve pairs of yellow bands slightly separating as they proceed outwards, and at their extremities partially surrounding the bases of the tentacula, according to the following arrangement. Taking a small segment of the disk, the first tentacle may be said to arise from the space between two pairs of bands, the second being situated within the pair; the band bifurcates near its extremity, and encloses the third tentacle; these branches again divide and form a similar enclosure for the arms of the fourth row: beyond these is a set of very short tentacula; these, as far as I have been able to examine them, are not connected with the yellow bands, but their small size and the difficulty of seeing their entire length when the animal is expanded, render it almost impossible to describe their exact appearance. On the surface of the disk a cream-coloured spot is situated near the base of each tentacle of the first and second rows, those connected with the inner series being farther removed from them than those of the second; the alternation of light and shade produced by this arrangement gives a battlemented appearance to the disk, and adds considerably to the general effect. The tentacula rapidly diminish in size from those of the inner row outwards; they are dark brown at the bases, becoming paler towards the tips, and are encircled by

three well-defined white rings, of which the basal ones are very distinct. Several examples of this species were obtained at extreme low water-mark, from a large mass of detached rocks known as the Mewstone, near the entrance to Dartmouth harbour. They were met with on two or three occasions, but were always found nestling among the roots of *Laminaria digitata*.

A few weeks since, part of a plant of *Laminaria* was sent to me from Devon, and among the roots I found six specimens of an *Actinia* that closely resembled the one just described, excepting that the brown on the tentacula and certain parts of the disk was replaced by various shades of red. These animals differ so little, except in the general colour of the disk and appendages, that until I have an opportunity of examining some more specimens, I must consider the red one as only a variety of the other, and as such I would provisionally describe it. This uncertainty obliges me to depart from the old-established rule of giving the specific name from some marked character in the animal, and I must therefore propose the more general title of *ornata* for the brown species, and suggest that of *rubida* for the red one, should it on future examination prove to be distinct, which I am inclined to think is probable.



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