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The interesting specimens of fossil fructification, apparently furnished with a stem, belonging to this family, which exist in the collections of the British Museum, Mr. Bean of Scarborough and Mr. Saull of London, etc., have not been alluded to in this paper; they probably constitute a new genus from being generally associated with fronds having a peculiar character, first pointed out to me by M. König; and I shall reserve any remarks on this subject until I have completed some observations on the internal structure of the stem and its affinity to *Zamiæ*.

XVI.—*Carabideous Insects collected by Charles Darwin, Esq., during the Voyage of Her Majesty's Ship Beagle*. By G. R. WATERHOUSE, Esq.

[Continued from vol. vi. p. 353.]

Genus *FERONIA*.

Sp. 1. *Feronia Coriathis*, Dejean, *Spécies général des Coléoptères*, tom. iii. p. 304.

Metope Coriathis, Germ. *Col. sp. nov.* p. 21.

Of this species Mr. Darwin obtained many specimens at Maldonado, La Plata, and two specimens are labelled 'Monte Video.' It is the *Carabus striatulus* of Fabricius, the original specimen of which is contained in the Banksian collection. I speak without hesitation, having compared Mr. Darwin's specimens with the original, with Dejean's description, and also with three specimens sent from the continent by different parties, all bearing the same specific name.

The *Feronia Coriathis* is readily distinguished from all the *Feroniæ* of the southern portions of South America hitherto discovered, by its large size, and the elytra being deeply striated towards the suture and almost smooth externally. The *Feronia chalcæa* of Dejean is closely allied to the present species, having very nearly the same general form and similar sculpturing to the elytra; but in size it is much inferior, *F. Coriathis* being 8 lines in length, whilst *F. chalcæa* is only 5½ to 6 lines in length; the former is brassy black, and the latter is of a brassy colour inclining to æneous.

Sp. 2. *Feronia chalcæa*, Dejean, *Sp. général des Coléop.* tom. iii. p. 308.

Four specimens of this species were brought from Maldonado, La Plata, by Mr. Darwin.

Sp. 3. *Feronia cordicollis*, Dejean, *Spécies général des Coléop.* tom. iii. p. 306.

Seven specimens of this species occur in Mr. Darwin's collection, five of which are from Monte Video, and two from Maldonado, La

- P. filiciformis*, *Zamites filiciformis*, Presl, *l. c.* pt. 7. and 8. p. 198.
Filicites dubius, Sternb., pt. 4. p. 23. t. 47. f. 1.
P. obtusum, *Odontopteris obtusum*, Brong. Hist. Vég. Foss., t. 78. f. 4.
P. latifolius, *O. latifolius*, Sternb., pt. 5. and 6. p. 79. *Taxiopteris latifolius*, Brong., t. 82. f. 6.

Apex acute.

- P. acuminatum*, *Zamites*, Presl, *l. c.* p. 198. t. 43. f. 2. Keuper, Bamberg.
P. Brongniarti, *Cycadites*, Mantell, Geol. S.E. England, p. 238. Wealden, Sussex.
P. heterophyllus, *Zamites*, Presl, p. 199. t. 43. f. 4, 5. Keuper, Bamberg.
P. tenuicaulis, *Cycadites*, Phillips, pt. 1. t. 7. f. 19. Gr. Ool., Grinstead Bay.
P. difformis, *Zamites*, Presl, *l. c.* pt. 7, 8, p. 198. *Aspleniopteris difformis*, Sternb., pt. 4. p. 21; pt. 2. t. 24. f. 1. Bohemia.

The following species I have not seen:—

- P. longifolium*, Brong. Prod., p. 95. *Algacites filicoides*, Schloth. Nachtr., p. 46. t. 4. f. 2. Lias.
P. Meriani, Brong. Prod., p. 95. Lias.
P. Williamsianis, Brong. Prod., p. 95. Inf. Ool., Whitby.
P. æsericæ, Brong. Prod., p. 95. Variegated marl.

NILSSONIA, Brong.

Fronde pinnate; pinne approximate, oblong, more or less elongate, apex rotundate, adhering by their whole base; veins unequal, parallel.

- N. brevis*, Brong., Ann. des Sc. Nat. 4. p. 218. t. 12. f. 4; Hist. Let. Succ. Höer, Sweden.
N. elongata, Brong., *l. c.* t. 12. f. 3. *Zamites*, Presl, *l. c.* p. 198. Höer, Sweden.
N. proxima, *Cycadites Nilssonii*, Sternb., pt. 1—4. t. 47. f. 1.

The above is an outline of some of the characters in the recent and fossil Cycadeæ, the geological position of which is equally interesting with their recent affinities. A few species are found in the carboniferous beds of Bohemia and in the new red sandstone of Germany, and some have also been met with in the cretaceous series of Denmark and Sweden; but their great development appears to have been during the Jurassic period, thirty species occurring in the colitic formation of England, and three in that of India. Thus they seem to have formed the characteristic vegetation of that age, intermediate between the abundant Cryptogamic tribes of the carboniferous era and the dicotyledonous flora of the tertiary series.

The great number of fossil species supposed to belong to this fa-

mily has probably suggested the remark by Prof. Don, that the recent species "constitute the remains of a class of plants which belonged to a former vegetation."

The interesting specimens of fossil fructification, apparently furnished with a stem, belonging to this family, which exist in the collections of the British Museum, Mr. Bean of Scarborough and Mr. Swall of London, etc., have not been alluded to in this paper; they probably constitute a new genus from being generally associated with fronds having a peculiar character, first pointed out to me by M. Kœnig; and I shall reserve my remarks on this subject until I have completed some observations on the internal structure of the stem and its affinity to *Zamiæ*.

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[Continued from vol. vi. p. 335.]

GENUS *FEROSEA*.

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Malope Coriathis, Germ. Col. sp. nov. p. 21.

Of this species Mr. Darwin obtained many specimens at Maldonado, La Plata, and two specimens are labelled 'Monte Video.' It is the *Carabus striatatus* of Fabricius, the original specimen of which is contained in the Banksian collection. I speak without hesitation, having compared Mr. Darwin's specimens with the original, with Dejean's description, and also with three specimens sent from the continent by different parties, all bearing the same specific name.

The *Ferosia Coriathis* is readily distinguished from all the *Ferosia* of the southern portions of South America hitherto discovered, by its large size, and the elytra being deeply striated towards the suture and almost smooth externally. The *Ferosia chalcæa* of Dejean is closely allied to the present species, having very nearly the same general form and similar sculpturing to the elytra; but in size it is much inferior, *F. Coriathis* being 8 lines in length, whilst *F. chalcæa* is only $5\frac{1}{2}$ to 6 lines in length; the former is brassy black, and the latter is of a brassy colour inclining to aeneous.

Sp. 2. *Ferosia chalcæa*, Dejean, *Sp. général des Coléop.* tom. iii. p. 308.

Four specimens of this species were brought from Maldonado, La Plata, by Mr. Darwin.

Sp. 3. *Ferosia cordicollis*, Dejean, *Spécies général des Coléop.* tom. iii. p. 306.

Seven specimens of this species occur in Mr. Darwin's collection, five of which are from Monte Video, and two from Maldonado, La

Plata. It is easily distinguished from other Patagonian *Ferosia* hitherto discovered by its comparatively depressed form, the small size of its head, cordiform thorax, black colouring, and the want of wings. By candle-light the elytra display a beautiful iridescence (steel-blue being the prevailing colour), as in the *Pterostichus brassipes* or *iridipesalis* of Stephens; in size it very nearly agrees with that insect; but the *F. cordicollis* has a much smaller head and thorax, and the latter is more attenuated behind.

A specimen of this species has been sent to Mr. Hope with the specific name of *obsidians*, but I have not yet found it described under that name.

Sp. 4. *Ferosia Dejeanii*.

Fer. alata, nigra, nitida; thorace cordato, posticè foveis duabus impressis; elytris elongatis subparallelis, distinctè striatis, interspatiis aliquantò convexis.

Long. corp. $7\frac{1}{2}$ lin.; lat. $2\frac{1}{2}$ lin.

Hab. Monte Video.

This species resembles the *Ferosia Corinthia* of authors, but is a trifle less than that insect; the thorax is less convex, and although considerably contracted behind, is less suddenly so than in *F. Corinthia*; the posterior foveae are large and shallow, instead of being in the form of a deep longitudinal groove; the elytra are distinctly striated throughout, and not, as in the species last mentioned, obliterated on the outer portion of each elytron. The present insect, moreover, differs in being of a black colour—there is perhaps a slight trace of the seneous tint.

From *Ferosia cordicollis*, which is found in the same locality, and which, in the somewhat depressed form of the thorax, it resembles, the *F. Dejeanii* may be at once distinguished by the comparatively large size of its head, its possessing wings, the thorax being rather less contracted behind, the posterior foveae being broad, the elytra more elongate and of a more parallel form, the striae impunctate, and the antennae stouter; its size rather exceeds that of *F. cordicollis*, and consequently that of *F. chalcica*, *F. assimilis*, and *F. simplex* of Dejean.

Description.—Head large, but slightly narrower than the thorax; the eyes rather prominent; two longitudinal deep grooves are situated on the forepart of the head. Thorax truncated behind, the widest part very near the anterior angles, the sides not very much rounded, and the hinder part much narrower than the opposite extremity; the dorsal channel distinct, but not extending either to the anterior or posterior margins; the posterior fovea large, shallow, and impunctate, or at least very nearly so—some very minute punctures being discernible under a strong lens; these foveae extend to the posterior angles, and occupy nearly two-thirds of the space between them and the dorsal channel. Elytra elongate, the sides nearly parallel, being very indistinctly dilated in the middle; the striae are rather deep and impunctate, and the interspaces are slightly convex: two impressed points are observable on the second stria from the suture situated on the hinder half of the elytron, and there

is of a black colour, but may be distinguished from that species by its smaller size, the thorax being almost as broad behind as before, and the palpi, basal joint of the antennæ and the tarsi being pitchy red.

Sp. 7. *Feronia (Pterostichus) Bonelli*.

Fer. aptera, atra; thorace cordato, posticè utrinque bistriato; elytris elongato-ovatis, striatis, striis obsolete striatis; antennæ ad basin piceis; palpis tarsisque rufo-piceis.

Long. corp. $5\frac{1}{2}$ — $5\frac{3}{4}$ lin.; lat. $1\frac{1}{2}$ —2 lin.

Hab. Ynche Island, Chonos Archipelago; Valdivia, and E. Chiloe.

This species is about the same size as the *Feronia oblongo-punctata*, and it also approaches that insect in form; the head is rather narrower, the thorax is narrower, longer, and more attenuated behind; the elytra are of the same ovate form, but a trifle more elongated; the antennæ are also longer. It has the general form and appearance of the species of Bonelli's genus *Pterostichus*.

The eyes are moderately prominent, and the frontal sulci are short and rather deep; the thorax is rather depressed, as long as broad, considerably attenuated behind, and the posterior angles are right angles; there is sometimes a slightly impressed transverse groove in front, and there is also, in some individuals, a transverse groove behind; the dorsal channel is not very distinct; the posterior fovea, on each side, is in the form of a narrow long groove, and is impunctate; the elytra are elongate-ovate, distinctly striated, and the striae are generally faintly punctured, especially those nearest the suture and towards the base of the elytra; but this is not constant, in some specimens the striae being impunctate; the elytra are slightly sinuated at the apex and have some distinct impressed points on this part; there are also one or two impressions on the third stria from the suture; the palpi and tarsi are pitchy red, and the three basal joints of the antennæ are pitchy.

The specimens from Ynche Island have the elytra more deeply striated than those from Valdivia; one of the Valdivia specimens is considerably broader than the others, and the elytra have a purplish hue.

Sp. 8. *Feronia areæ*, Dejean, *Spé. gén. des Coléop. tom. iii. p. 379*.

This appears to be a common species in the neighbourhood of Valparaiso. I have seen many specimens from that locality.—Mr. Darwin's collection contains five. It is very nearly equal in size to the *F. Corinthia*, and of the same brassy black colour; it differs however in having the thorax less convex, rather longer, not so narrow behind, and less suddenly contracted at this part; the elytra are rather deeply striated throughout and are impunctate.

The *Omasus marginatus* of Curtis (*Linn. Trans. vol. xviii. p. 191*) I have compared, and found to agree with these specimens; they however appear to me to agree with Dejean's description of *F. areæ*, and in Mr. Hope's cabinet there is a similar insect bearing the same name.

is an impression on the third stria situated on the anterior half of the elytra. This insect is of a glossy black colour throughout—on the upper parts there is a very indistinct metallic gloss.

Mr. Darwin found but one specimen of this insect.

Sp. 5. *Ferosis submetallica*.

Per. alata, nigra, supra nigro-venea; thorace sub-cordato, postice foveis duabus punctulisque impresso; elytris paulò elongatis, subparallelis, distinctè striatis, interspatiis levitèr convexis.

Long. corp. $6\frac{1}{2}$ lin.; lat. $2\frac{1}{2}$ lin.

Hab. Maldonado, La Plata.

This species is about equal in size to the *F. cordicollis* of the same country, and rather larger than the *F. macer* of Europe. In many respects it is intermediate between the *F. Coriathis* (or *striata*) and the *F. cordicollis*; the head is proportionately rather larger than in the latter, but considerably less than in the former species; in the sculpturing of the elytra it greatly resembles the *F. Dejeani*, and differs from *F. cordicollis* in having the striae impunctate, and from *F. Coriathis* in having these striae distinctly continued throughout the surface of the elytra. The thorax is less attenuated behind than in either of these species, being very nearly of equal width in front and behind.

Description.—Head triangular in front of the eyes (which are tolerably prominent), suddenly contracted, and cylindrical behind the eyes, with two longitudinal irregular impressions in front; thorax rounded at the sides, and but slightly attenuated and truncated behind, the dorsal channel distinct; the anterior and posterior transverse impressions indistinct, and the posterior fovee in the form of longitudinal grooves*, rather short and deep and minutely punctured. Elytra moderately long, and but slightly broader in the middle than near the extremities; the striae moderately deep and impunctate, and the interspaces are slightly convex; two abbreviated striae near the scutellum; on the second stria from the suture are two impressed points, situated on the hinder half of each elytron, and on the third are one or two similar impressions. The general colour of the upper surface of the body is brassy black; the under parts of the body, as well as the legs, antennae and palpi, are black.

But two specimens of this species were brought home by Mr. Darwin; one is from Maldonado, La Plata, and the other from Monte Video.

Sp. 6. *Ferosis assimilis*, Dejean, *Sp. gén. des Coléop.*, Suppl., tom. v. p. 773.

A *Ferosis*, agreeing well with Dejean's description of the above-mentioned species, was found by Mr. Darwin at Monte Video. It is about the same size as the *Ferosis macer*, and, like *F. cordicollis*,

* None of the South American *Ferosis* which I have seen, have more than one fovea on each side at the base of the thorax, and in this respect they differ from those European forms (such as *F. vulpina*) in which there are two channels on each side.

Sp. 9. *Ferosis Nebrioides*, *Omwesus Nebrioides*, Curtis, Linn. Trans. vol. xviii. p. 191.

In Mr. Darwin's collection are four specimens of this species, two of which are from E. Chiloe, one is from Valparaiso, and the fourth is from Concepcion.

F. Nebrioides greatly resembles *F. arex* in colour, form, and sculpturing, but is not more than half its size. The *Ferosis erraticus* of Guérin (Mag. de Zool. pl. 226. fig. 3.) agrees very nearly with this species, but there is no mention of the brassy tint of the upper parts which is observable in the *F. Nebrioides*; in the figure there is an admixture of green in the colouring.

Sp. 10. *Ferosis lucidas*. *Pterostichus lucidas*, Curtis, Linn. Trans. vol. xviii. p. 192.

This species greatly resembles the *F. clalrea* of Dejean; but in that insect the sides and apical portion of the elytra are almost smooth, the striae being obliterated on those parts as in *F. Coriathis*, whilst in *F. lucidas* the striae are distinct throughout the elytra.

Sp. 11. *Ferosis mesticifera*, Dejean, Spé. général des Coléoptères, Suppl. tom. v. p. 762.

Three specimens of this species occur in Mr. Darwin's collection; they are from Valparaiso. This insect, no doubt, is allied to that division of *Ferosis* called *Steropus*, but is remarkable for having the second, third, fourth and fifth striae of the elytra less distinct than the sutural stria, and those on the outer margin; in one of the three specimens the intermediate striae are almost obliterated, but in the others they are more distinctly marked.

Sp. 12. *Ferosis (Steropus) marginata*.

This is a new species closely allied to the last, having the intermediate striae of the elytra almost obliterated; those on the margin of the elytra are remarkably distinct, and give to the insect a peculiar appearance; it is less than half the size of *F. mesticifera*, which is about equal to the *F. octopunctata*. In both species the elytra appear to be soldered together.

Per. picea, vel nigra; antennis pedibusque rufo-piceis; thorace subquadrato, angulis posticis rotundatis; elytris oblongo-ovatis, striatis, stria intermediis obsolete.

Long. corp. $3\frac{1}{2}$ —4 lin.; lat. $1\frac{1}{2}$ — $1\frac{1}{2}$.

Hab. Chile.

This species bears a considerable resemblance to the *Taphris rissalis*. The head is somewhat rounded in front, and the eyes are but little prominent; the frontal grooves are scarcely discernible. The thorax is about one-third broader than the head, about equal in length and breadth, somewhat convex, a little broader before than behind, and the anterior and posterior angles are rounded; the dorsal channel and posterior foveae are indistinct. The elytra are of an oblong-ovate form, not very much broader than the thorax, and slightly sinuated at the apex; the sutural stria is distinct but not deep, and impunctate; the four following striae are almost

obliterated, and on the second of these, or the third from the suture, are two distinct, impressed points, the foremost situated towards the base of the elytra, and the other near the middle; on the outer margin of each elytron are three distinct striae; that nearest the margin has numerous impressed points, and these impressions become more near to each other as they approach the apex of the elytra. The antennæ are rather shorter than the head and thorax taken together, testaceous red at the base, and becoming paler towards the tip, and the palpi are of the same colour; the legs are pitchy red, and the thighs are pitchy; the outer margins of the elytra are pitchy beneath.

Mr. Darwin found numerous specimens of this species both at Valparaiso and Concepcion; they vary a little in the form of the thorax; most of the Valparaiso specimens are a trifle smaller, and have the thorax rather narrower than those from Concepcion; but there are others from Valparaiso, which perfectly agree with the Concepcion specimens, and some which are intermediate.

Sp. 13. *Feronia (Pecillus) Peruviana*, Dejean, Spé. gén. des Coléop., tom. iii. p. 233.

The collection contains several specimens from Callao.

Sp. 14. *Feronia (Pecillus) Chaudoirii*, Guérin, Mag. de Zool. pl. 227. fig. 3. ?

An insect brought by Mr. Darwin agrees very well with Guérin's description of *F. Chaudoirii*; it is closely allied to the *F. sinistriatus* of Dejean, but, judging from his description (for I unfortunately have no specimens for comparison), it differs in having the frontal sulci well marked, the mandibles pitchy red, and in being rather larger, viz. $5\frac{1}{2}$ lin. etc.; but upon turning to Guérin's fig. 3. of pl. 227, I find an insect represented which does not at all agree with the description of *Chaudoirii*. I should imagine the figure to be that of some other genus; it is very like a species of *Melanotus*: there must be some mistake.

Sp. 15. *Feronia (Pecillus) Guerinii*.

Fer. nigra, nitida; thorace subquadrato, sulco dorsali mediocri impresso, nec non posticè foveis duabus, punctulisque; elytris distinctè striatis, striis subpunctatis; antennis, palpis tarsisque picis.

Long. corp. 5 lin.; lat. 2 lin.

Hab. Patagonia?

But one specimen of this species was found by Mr. Darwin, at sea, about sixty miles from the nearest land (but much further in the direction of the wind), Rio de la Plata. In size it is intermediate between the *F. Peruviana* and the *F. sinistriata*, and it is easily distinguished from both these species by its elytra being distinctly striated throughout, the striae being punctured, and there being small scattered punctures on the hinder portion of the thorax, between the posterior foveæ; compared with *Pecillus caprea*, it presents the following differences: size a trifle smaller, general form rather nar-

foveisque duabus, impresso; elytris picco-nigris, distinctè striatis, striis impunctatis; antennis, palpis, pedibusque picco-rubris; abdomine ad apicem rufescente.

Long. corp. $3\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

Hab. Maldonado, Monte Video, S^{ra} Fé, etc.

This species may possibly be the *F. obliqua*, or perhaps the *F. Beneriensis* of Dejean; but that author has not described those insects with his usual care, and after much trouble I have been unable to satisfy myself on this point. In all the specimens before me (eleven) the elytra are more or less pitchy, the margin is distinctly pitchy red beneath, and the terminal segment of the abdomen is of the same colour, as well as the legs, palpi and antennæ. In Dejean's account of the two species above-mentioned, they are described as black, with pitchy red legs.

Fer. Patagonica is about the same size, or a trifle less than *Argater vernalis*, but the head and thorax are narrower, and the latter is more contracted behind; the elytra are rather more ovate, and the frontal sulci are more distinct.

Eyes moderately prominent, frontal sulci short and moderately deep; thorax about equal in length and breadth, rather narrower behind than before; the sides form a gentle and even curve from the anterior, almost to the posterior angle, and the outer margin meets the posterior margin so as to form nearly a right, or slightly obtuse, angle; the dorsal channel is distinct, and the posterior foveæ (one on each side) are in the form of narrow grooves; there are no punctures on the thorax: elytra considerably broader than the thorax, and of an oblong-ovate form; the striae moderately deep and impunctate; a short rudimentary stria is observable on each side near the scutellum.

In some of the specimens the body and thorax are red beneath, but most commonly these parts are of a pitch colour; the terminal segment of the abdomen is always paler than the other parts. The specimens, moreover, vary somewhat in the form of the thorax, the posterior angles being sometimes almost acute, and in one or two of the specimens there is a distinct transverse impression on the hinder part of the thorax; a specimen from Monte Video has no wings. Notwithstanding these differences, I am convinced, after a careful examination, that they are all the same species.

Sp. 18. *Ferocia (Argater) Brullei*.

Fer. alata, picco-nigra; thorace subquadrato, posticè striis punctatisque impresso; elytris subparallelis, profundè punctato-striatis; antennis palpisque testaceis; pedibus picco-rubris.

Long. corp. $3\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

Hab. S^{ra} Fé, Buenos Ayres.

This species very nearly agrees in size with the *Argater vernalis*, but is of a narrower form, and the antennæ are proportionately longer, reaching, when extended backwards, considerably beyond the base of the thorax. The general colour of the upper parts of the body is black, slightly inclining to pitchy; the suture of the

rower, head and thorax decidedly narrower, the latter with the posterior foveæ more marked, and the elytra rather more distinctly striated.

Head narrow, eyes moderately prominent, frontal sulci not deep; thorax subquadrate, the sides slightly rounded; dorsal channel distinct; posterior foveæ in the form of narrow grooves, and rather deep; the space between these foveæ is punctured, but the punctures are not very numerous, and the space between the foveæ and the outer angles of the thorax is impunctate; elytra oblong-ovate, distinctly striated; the striae punctate, but the punctures are not very distinct; antennæ with the three basal joints blackish in the middle, but with the extremities red; the remaining joints brown; palpi pitchy red; legs pitchy black; the tarsi pitchy red. The upper parts of this insect are black, but I fancy I can trace some slight shades of blue, and think it probable it is a dark variety of a species having metallic colouring like the *P. substriatus*.

I have named this species after M. Guérin-Méneville, whose works have done much towards the elucidation of the various branches of Natural History, and more especially the entomological department.

Sp. 16. *Feronia (Pacillus) depressa*.

Fer. subdepressa, nigra, supra cuprea vel aeneo-cuprea; thorace subquadrate, posticè utrinque striato; elytris elongatis, subparallelis, distinctè striatis; antennis palpisque fuscis, his atque illis ad basin rufescentibus; pedibus nigris, tibiis piceo-rubris.

Long. corp. $5\frac{1}{2}$ — $5\frac{3}{4}$; lat. $1\frac{1}{2}$ —2 lin.

Hab. Monte Video.

This species is a trifle less than *Pacillus lepidus*, and of a more depressed form, and the striae on the elytra are not quite so deep.

Head rather large and obtuse in front; eyes very prominent, the frontal sulci very deep; thorax but slightly convex, nearly square, the sides but slightly rounded, and the fore part somewhat contracted; both anterior and posterior angles rather obtuse; dorsal channel tolerably distinct; posterior foveæ in the form of narrow and tolerably long impunctate grooves, and situated about midway between the dorsal channel and the outer margin of the thorax; elytra somewhat depressed, and having the sides nearly parallel; distinctly striated throughout, the striae impunctate; an impressed point on the second stria from the suture towards the base of the elytra, and two similar impressions on the stria situated on the hinder half of the elytra; antennæ shorter than the head and thorax, and rather thick; the three basal joints testaceous, and the remainder brown; palpi testaceous, the apical joints somewhat pitchy; legs black; anterior tibiae pitchy red; tarsi and posterior tibiae pitchy.

The above description is drawn up from three specimens from Monte Video.

The following species belong to the sub-genus *Argutor*:—

Sp. 17. *Feronia (Argutor) Patagónica*.

Fer. alata, nigra; thorace subquadrate, sulco dorsali medioerri,

elytra and outer margins are suffused with pitchy red; the under parts of the body are pitchy black; the mandibles and legs pitchy red, and the thighs assume a deeper hue in the middle; the antennæ and palpi are testaceous. Eyes moderately prominent, frontal sulci small and not deep; thorax subquadrato, slightly attenuated behind, the lateral and posterior margins forming a right angle on each side at their junction; dorsal channel moderately distinct, the posterior fovea on each side in the form of a long narrow groove, which extends to the posterior margin; the space between these foveæ is punctured, but the punctures are not very numerous: elytra considerably broader than the thorax, and with the lateral margins nearly parallel, deeply punctate-striated—no abbreviated striae near the scutellum.

But one specimen of this insect was brought home by Mr. Darwin; it is easily distinguished from the preceding species by its distinctly punctate striae. I have named it in honour of one of the authors of the 'Histoire Naturelle des Insectes' now in course of publication.

Sp. 19. *Feronia (Argutor) Andouini*.

Fer. alata, nigra; thorace subquadrato, angulis posticis subrotundatis, linea transversa striisque duabus impresso; clytris paulò elongatis, profundè striatis, stria impunctatis; antennis palpisque testaceis; pedibus rufo-piceis.

Long. corp. 4 lin.; lat. $1\frac{1}{2}$ lin.

Hab. S^{te} Fé, Buenos Ayres.

This species is rather larger than *Argutor versalis*; the antennæ are proportionately longer and more slender; the thorax is almost precisely the same form, excepting that the posterior angles are somewhat rounder; the elytra are considerably longer. Eyes but moderately prominent, and having two rounded and somewhat deep foveæ between them: thorax broader than long, the anterior and posterior parts of equal width, and with the anterior and posterior angles slightly rounded; dorsal channel distinct, and extending from the anterior to the posterior margins; posterior foveæ in the form of long narrow grooves, which extend to the base of the thorax, and are connected by a tolerably distinct transverse groove; there are no punctures on the thorax: elytra elongated, and rather deeply striated; the striae impunctate.

Sp. 20. *Feronia (Argutor) apicalis*.

Fer. alata, nigra; thorace subquadrato posticè angustiore, angulis posticis obtusis, striisque duabus impresso; clytris nigris vel piceo-nigris ad apicem et marginem externum piceo-rubris; antennis palpisque testaceis; pedibus rufo-piceis.

Long. corp. $4\frac{1}{2}$ —4; lat. $1\frac{1}{2}$ — $1\frac{1}{4}$ lin.

Hab. Maldonado, La Plata.

Three specimens of this species, from the locality just mentioned, are contained in the collection; they all have a distinct pitchy red patch at the tip of the elytra, a character which suggested the name.

Head ovate, eyes but little prominent, two foveæ in front joined by a transverse impression; thorax nearly equal in length and

breadth, rather narrower behind than before, the posterior angles obtuse; dorsal channel indistinct, the posterior fovea on each side in the form of a long narrow groove, which extends to the hinder margin; no punctures on the thorax: elytra elongate, striated, the striae impunctate, those nearest the suture the most deep, the others rather faint: antennae scarcely reaching beyond the hinder margin of the thorax, and of a red colour, as well as the palpi; legs pitchy red; mandibles pitchy. In one specimen the thorax is pitchy black, and the elytra pitchy; in the other two specimens, the thorax, as well as the head, is black; in all the specimens the outer margins of the elytra are pitchy, and the reflected portion is pitchy red.

This species is considerably larger than either of the preceding, being equal in size to the *Colaris pictus*.

Sp. 21. *Ferosis (Argutor) Chilensis*, Dejean, *Spéc. gén. des Coléop.*, tom. iii. p. 251.

Of this species there are three specimens, two of which are from Valparaiso, and the third is from S. Chiloe.

[To be continued.]

XIX.—*Carabideous Insects collected by Charles Darwin, Esq., during the Voyage of Her Majesty's Ship Beagle.* By G. R. WATERHOUSE, Esq., Curator to the Zoological Society of London.

[Continued from vol. vii. p. 129. With a Plate.]

Section CARABIDES.

Genus ABROPUS*, nov. gen.

Caput elongatum, anticè et posticè acuminatum. Labrum subquadratum. Mandibule edentule, scute. Mentum profundè emarginatum, angulis anticis acutis. Palpi, articulo ultimo elongato, subcylindraceo, in medium paulò incrassato, ad apicem truncato. Antennis perlongis.

Thorax capite vix latior, fere quadratus.

* From *αβροπ* and *ωσ*, having soft or tender feet; the joints of the tarsi in both sexes being many of them furnished with soft brushes of hair and membranous appendages on the under side.

Elytra oblongo-ovata, posticè distinctè acuminata.

Pedes longi; tibiae anteriores intus emarginatae; tarsi articulo penultimo bilobato, subtus spongiosi; tarsi anteriores in maribus dilatati, articularis oblongo-quadratis, subtus membranacea.

Sp. *ABROPTUS SPLENDIDUS*, Plate III. fig. 1.

Metius splendidus, Guérin, Revue Zoologique, No. 10, 1839, p. 297.

Ab. viridis; supra splendidè viridis; antennae, palpi pedibusque flavescens; thorace ferè quadrato, anticè indistinctè acuminato, posticè foveis duabus impresso; elytris oblongo-ovatis, ad apicem distinctè acuminatis, leviter striatis, stris impunctatis. Long. corp. 3 lin.; lat. 2 lin.

Hab. Tierra del Fuego.

Descrip.—Head elongated and pointed in front, with a large puncture on each side near the inner margin of the eye, and two oblong shallow foveae in front: eyes large and moderately prominent: antennae long and slender, when extended backwards reaching to about the middle of the elytra. Thorax scarcely broader than the head, nearly of a quadrate form, but slightly contracted in front; the anterior and posterior angles very nearly forming right angles; the upper surface but little convex, with a distinct dorsal channel and two large and shallow posterior foveae: minute transverse rugae are generally visible on the upper surface of the thorax. The elytra are ample, and together are about twice as broad as the thorax, of an elongated and subovate form; the broadest part is rather behind the middle, and at a short distance from the apex they are suddenly contracted in width; the point of each elytron is rounded: the surface is rather delicately striated, but the striae are obliterated near the outer margin and on the apical portion of the elytron; those striae nearest the suture are most distinct and continued nearly to the point of the elytron: no punctures are observable in the striae, the interspaces are flat and impunctate. The upper surface of the head, thorax and elytra is of a brilliant green colour; the under surface of the insect is chiefly of a deep green hue; the head is of a pitchy red colour beneath, but faintly tinted with greenish, and the labrum is of the same tint; the mandibles are testaceous at the base and blackish at the point; the terminal segment of the abdomen is pitchy red at the tip. The legs, antennae and palpi are testaceous, but a slight pitchy hue is observable in the middle of the terminal joints of the palpi. The outer margin of the elytra is also reddish, and this tint is more or less visible at the suture.

This insect I feel no doubt is the *Metius splendidus* of Guérin; it differs however considerably from the *Metius harpaloides** of Curtis, which is the type of the genus *Metius*. The general form of the two insects is very dissimilar, the one (*Metius*) having the form of a *Harpalus*, and the other approaching more nearly in form to an *Aponus*. Besides the difference in the general form, *Abroptus* differs from *Metius* in having much longer antennae (as pointed out by M. Guérin), in having longer legs, the head also more elongated, and the labrum

* Transactions of the Linnæan Society, vol. xviii. p. 189.

not distinctly emarginated in front. The most important distinguishing character however is perhaps that furnished by the structure of the tarsi, the penultimate joint of which is distinctly bilobed and furnished beneath with membranous appendages in both sexes. I fancy I can also perceive similar appendages on the under side of the antepenultimate joint. In the male the whole under surface of the anterior tarsi is covered with small hairs and membranous appendages, and at least the penultimate and antepenultimate joints of the other tarsi are provided with the same soft cushions. Most of the above characters will serve to distinguish *Atropas* from *Antaretia*, but in a less marked degree; some of the species of the last-mentioned genus approaching very nearly to *Atropas* in their general form, as well as in the structure of the parts of the mouth. The labrum in *Antaretia* is shorter and broader and more distinctly emarginated in front; the mandibles are rather more curved and acutely pointed, and one of them has a distinct tooth on the inner side; the labrum differs only in being shorter and broader; scarcely any difference is perceptible in the palpi or in the maxillæ. Whilst, on the one hand, I find species of *Antaretia* with the narrow thorax and general form approaching *Atropas*, on the other, I find species which I can scarcely say differ from *Metax*;—the *Antaretia curvifer* of Dejean, for example, might with perfect propriety be placed in the genus *Metax*.

Plate III. fig. 1 a, head magnified; 1 b, mentum; 1 c, fore tarsi of male.

Mr. Darwin found the *Atropas splendide* flying in numbers about the sea-coast in the evening in the month of December. "These insects live amongst the soft yellow balls which are excrescences, or rather fungi, growing on the *Fagus antarctica*, and which are eaten by the Fuegians."

Some specimens were found by Mr. Darwin under bark at Port Famine in the month of February.

MIGADOPS*, nov. gen.

Cepus latum, subdepressum: labrum transversum, anticè emarginatum: mandibule intus bidentate: mentum emarginatum, dente medio, lato, ad apicem bifido, instructum: palpi articulo ultimo mediocriter elongato, in medium paulò incrassiore, ad apicem indistinctè truncato: antennæ mediocres.

Thorax transversus, elytris angustior.

Elytra ovata.

Pedes mediocres: tibiæ anteriores latè emarginatæ: tarsi quatuor anteriores in maribus dilatati et articulis transversis, subtis spongiosis.

Sect. A, with the four anterior tarsi distinctly dilated in the male sex.

Sp. *Migadops viridescens*, Plate III. fig. 2. Mig. niger, supra viridescens; antennis pedibusque rufo-piceis; capite lato, subdepresso; thorace transverso, subquadrato, ad latera in medio paulò dilatato,

* From $\mu\gamma\alpha\delta\alpha$, mixed, and $\delta\psi$, the countenance, aspect, &c. the species of the genus having the general aspect of one division of the Carabi, but an affinity to another.

posticè foveis duabus magnis impresso : elytris ovatis, posticè obtusis, leviter striatis, striis internis subpunctatis. Long. corp. $4\frac{1}{2}$ lin. ; lat. $2\frac{1}{2}$ lin.

Hab. Tierra del Fuego.

Head broad and depressed, with a very shallow fovea on each side near the eye, and another in front of each of these. Thorax about one-third broader than the head, broader than long, but little convex above; the posterior margin slightly sinuous, the lateral margin somewhat rounded, the sides being dilated in the middle; the anterior and posterior angles nearly in the form of right angles; an impressed line runs parallel with and close to the lateral margins; the dorsal channel is distinct, and commences at the anterior margin of the thorax and terminates at a short distance from the posterior margin; on either side, behind, is a largish shallow fovea, and there is a second small and indistinct fovea close to the posterior angle. Elytra about one-third broader than the thorax, and less than one-third longer than broad; nearly ovate, but obtuse and rounded behind; the surface but little convex, striated, the striae distinct near the suture and having a faint trace of punctures; on the outer half and apical portion of the elytra the striae are very nearly obliterated; the interspaces are flat and smooth. The upper surface of the head, thorax and elytra is of a blackish green hue and glossy; the under parts of the head and body are black; the legs and four basal joints of the antennæ are pitchy red, but the second joint of the antennæ is black at the base; the palpi are black, with the extremities of the joints pitchy.

Plate III. fig. 2 a, labrum and mandibles; 2 b, mentum; 2 c, maxilla; 2 d, fore tarsus of male; 2 e, middle tarsus of ditto.

The insect from which the above description is taken, somewhat resembles an *Helobis*, and in the form of the head, thorax and body is very dissimilar to the generality of the *Herpaliidæ*, though it has the four anterior tarsi distinctly dilated in the males. It appears to form a connecting link between the family just mentioned and the genus *Asterocia*.

Mr. Darwin's notes state that this species is abundant under stones, &c. in the damp forest of Navarin Island. The specimens were collected there in the month of January. Mr. Darwin also found the same species in the month of December at the summit of Hunter's Peak, an abrupt cone of greenstone 1700 feet high, in Hermite Island near Wigwam Cove, not far from Cape Horn. It was found at Hardy Peninsula in the month of March, and "under bark" at Port Famine in February.

Migodops Falklandicus.—Mig. nigro-viridis; corpore subtis piceo; antennis ad basin femoribusque piceo-rubris; thorace transverso, lateribus paulò dilatatis, posticè transversim impresso atque punctulato; elytris latis, ovatis, subdepressis, posticè obtusis, punctato-striatis, interstitiis paulò convexis. Long. corp. $4\frac{1}{2}$ lin. ; lat. $2\frac{1}{2}$ lin.

Hab. East Falkland Island.

Head with a few wavy transverse rugæ between the eyes, impunctate; thorax transverse, broadest in the middle, and but slightly

XIX.—*Carabideous Insects collected by Charles Darwin, Esq., during the Voyage of Her Majesty's Ship Beagle.* By G. R. WATERHOUSE, Esq., Curator to the Zoological Society of London.

[Continued from vol. vii. p. 139. With a Plate.]

Section CARABIDES.

Genus *ABROPUS**, nov. gen.

Caput elongatum, anticè et posticè acuminatum. *Labrum* subquadratum. *Mandibule* edentule, acute. *Mentum* profundè emarginatum, angulis anticis acutis. *Palpi*, articulo ultimo elongato, subcylindrico, in medium paulò incrassato, ad apicem truncato.

Astracæ perlongæ.

Thorax capite vix latior, fere quadratus.

* From *Atræ*, and *ropè*, having soft or tender feet; the joints of the tarsi in both sexes being many of them furnished with soft brushes of hair and membranous appendages on the under side.

ovatis, punctato-striatis, interstitiis paulò convexis. Long. corp. $3\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

Hab. Tierra del Fuego.

This species very closely resembles the *M. ovalis*, but the antennæ are longer and black at the base; the thorax is more dilated in front, and the elytra are rather more distinctly sculptured. The most important difference, however, consists in the intermediate tarsi of the male being distinctly dilated. In this respect the present species resembles the *M. Darwinii*; its smaller size, more elongated form, more distinctly sculptured elytra, and the steel-blue colouring of the upper parts, will serve to distinguish it.

Sex. B, with the intermediate tarsi very indistinctly dilated in the males.

Migadops ovalis, Plate III., fig. 3.—Mig. nigro-viridis; corpore sub-tilis piceo; antennis ad basin femoribusque piceo-rubris; tibiis, tarsisque nigris; capite lato, subdepresso, inter oculos foveis duabus impresso; thorace transverso, disco convexo, lateribus in medium dilatatis, posticè foveis duabus, atque punctis minutis, impresso; elytris breviter ovatis, convexis, punctato-striatis. Long. corp. 3 lin.; lat. $1\frac{1}{2}$ lin.

Hab. Tierra del Fuego.

Head broad and depressed; thorax broader than long, moderately convex above, the posterior angles acute; the lateral margins somewhat reflected near the posterior angles, rounded, most dilated in the middle; the dorsal channel short, being generally confined to the disc of the thorax; behind, the thorax has a slightly marked transverse impression, the area between which and the posterior margin is very finely punctured; on each side, towards the posterior angle, is a largish and somewhat deep fovea. Elytra convex, and of a short ovate form; punctato-striated, the punctures distinct and rather close together, but not large; the interspaces of the striae flat, or very slightly convex. The upper parts of the insect are of a greenish black colour, sometimes inclining to blue-black, the under parts are pitchy; the basal joint of the antennæ is pitchy red, the second and two following joints are black, but more or less pitchy at the base, and the remaining joints are dusky; palpi black, the terminal joint pitchy at the apex; femora pitchy red; tibiæ and tarsi black, or pitchy black.

Pl. III. fig. 3 a, labrum and mandibles; 3 b, mentum; 3 c, maxilla.

This species Mr. Darwin found in considerable numbers at Kater's Peak, Hermite Island, which is close to Cape Horn; he also found it on the mountains at Hardy Peninsula, in the month of February. From the last-mentioned locality the specimens are of a larger size (being $3\frac{1}{2}$ lines in length) than those found at Kater's Peak, but do not appear to be specifically distinct. This insect is readily distinguished from others here described, if the males be examined, by the two basal joints of the intermediate tarsi only being dilated in that sex, and these joints are much less dilated than usual. The palpi are moreover shorter.

contracted before and behind; the posterior angles acute, the anterior angles slightly rounded; dorsal channel distinct, and extending from the anterior to the posterior margins; on the disc of the thorax this channel is very broad; a transverse depression is observable on the hinder part of the thorax, and the space between this depression and the posterior margin is thickly but finely punctured; the lateral margins are reflected, and present a few scattered punctures. The elytra are ovate, but little convex, and obtusely rounded at the apex; punctate-striated, the punctures small, and the spaces between the striae slightly convex; the lateral margins of the elytra are reflected. The colouring of the upper parts is blackish green; the under parts are pitchy; the thighs are also pitchy, but inclining to reddish; the tibiae and tarsi are black; the antennae have the four basal joints of a pitchy red colour, and the remaining joints dusky; the palpi are also pitchy red, but the terminal joint is blackish in the middle.

This species approaches in form the *M. ovalis*, but differs in being more depressed, and in having the apex of the elytra obtusely rounded.

Migadops Darwinii.—Mig. ater, antennis ad basin, pedibusque piceo-rubris, corpore subtilis piceo; thorace posticè punctulato, transversim impresso, et foveis duabus magnis notato; clytris punctato-striatis. Long. corp. $3\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

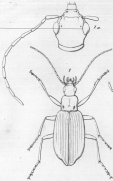
Hab. Tierra del Fuego.

Head broad, depressed, and with four shallow foveae arranged in a transverse line between the eyes; thorax broader than long, dilated in the middle and contracted behind; the upper surface but little convex; the dorsal channel short, the sides rather broadly margined, especially towards the hinder angles, where the lateral margin is recurved; behind is a faint transverse impression, and two large shallow foveae; these, as well as the whole space between the transverse impression and the posterior margin, are rather thickly and finely punctured; some punctures are also observable on the lateral margins, which have a pitchy tint; elytra considerably broader than the thorax, and of a short ovate form, moderately convex above, and punctate-striated; the punctures are small, and arranged closely together; the interspaces of the striae are nearly flat. The general colour of the insect is black, and it is moderately glossy; the palpi and four basal joints of the antennae are pitchy red, but the terminal joint of the former is blackish in the middle, and so is the apical portion of the second, third and fourth joints of the antennae; the body beneath is pitchy red, and so are the legs.

The pitchy tint of the under parts of the present insect would lead one to suppose the specimens to be somewhat immature.

Mr. Darwin found this insect at Navarin Island, near Hardy Peninsula; its form differs but little from the *Mig. ovalis* (Pl. III. fig. 3); the body, however, is broader, the thorax is more broadly margined, and the lateral margins are more recurved near the posterior angles. In size the present species slightly exceeds the *M. ovalis*.

Migadops nigro-caraleus.—Mig. nigro-caraleus; corpore subtilis, antennis, pedibusque piceo-algris; thorace posticè transversim impresso, punctis minutissimis adspersis, foveisque duabus; clytris



Waterhouse del.

Carabidae from the Straits of Magellan.

Edw. Newby sculp.