

The three hinder vertebræ have no distinct lower lateral processes; their place is only marked by three slight ridges on the lower edge of the hinder side of the mass. The upper lateral processes of the hinder cervical vertebræ are small, slender, forming a strap-like section, rather tapering towards and truncated at the tips on the side of the apertures for the passage of the nerves for the neural canal. The neural canal is rather large, oblong transverse, the height being about two-thirds of the width; it is rather larger and higher behind.

The hinder surface of the body of the last cervical vertebra is oblong transverse, about two-thirds of the height of its width at the widest part; the lower edge is rounded and rather angularly produced in the centre, and the upper margin transverse, with a slight central depression; the surface is concave, with a central, linear, perpendicular, compressed line.

The cervical vertebræ in *Catodontidæ* are united into a single mass by their bodies, the neural arch, and the lateral processes. The lateral processes of the anterior vertebræ are produced, and form a thick, subconical, triangular prominence on the side of the mass. The front side is nearly flat, and the lateral processes of the hinder vertebræ are shorter and shorter to the last. The hinder surface shelves from before backwards, and is crested with some conical prominences which indicate the lateral processes of the different vertebræ of which the mass is formed. The first dorsal vertebra is sometimes partially anchylosed with the seventh cervical.

The arm-bones are very short.

3. A REVISION OF THE GENERA AND SPECIES OF AMPHISBÆNIANS, WITH THE DESCRIPTIONS OF SOME NEW SPECIES NOW IN THE COLLECTION OF THE BRITISH MUSEUM. BY DR. JOHN EDWARD GRAY, F.R.S., F.L.S., V.P.Z.S., ETC.

Sir Andrew Smith having kindly presented to the British Museum, along with a number of other reptiles which he has described, the types of his genus *Monotrophis*, which I had not before seen, and having received from Mr. Welwitsch and from the collection of my late excellent and lamented friend Dr. Balfour Baikie two Amphisbænians from Africa, and from Mr. Bates a species from the Amazons which I believed had not hitherto been recorded in the Catalogue, I proceeded to examine them; and, for the purpose of making the comparison the more complete, I was led on to study all the specimens of this tribe which we have in the Museum.

The natural result of such an examination was, that I was dissatisfied with the manner in which the species had hitherto been arranged and described, and, after repeated examination, I have reduced my observations to the following results:—

The determination of the species themselves, and the means which a paper resulting from the re-examination and comparison of all the species in a large collection afford to a student, are much more certain than any isolated description of the species regarded as new,

however detailed and particular the description may be; and in a comparative review of the species of a group or order the distinctions be stated in a more condensed form.

The Amphisbænians are very rarely collected; hence few species are found in museums and noticed in systematic catalogues. This is explained by their living almost exclusively in the nests of ants, and being seldom seen by the casual observer. There is reason to believe that every country which has ants has some form of Amphisbænians. Until lately they were thought to be confined to Tropical America, though one was described by Vandeli as occurring in Spain as long ago as 1780; but his essay and the animal itself were alike so little known to naturalists, that Professors Hemprich (in 1820) and Wagler each described Vandeli's species as new, the latter as a South-American species. Professor Kaup described a species from North Africa in 1830, and M. Gervais redescribed it as new in 1835. MM. Dumeril and Bibron have described a specimen in the Leyden Museum from Guinea; Dr. Andrew Smith one as occurring at the Cape, and Dr. Peters has added another from the east coast of Africa. The number of African species is in this essay raised to seven. As yet none have been received from Asia Proper; but Sir Charles Fellows brought from Xanthus the same species that is found in Spain, Portugal, and North Africa.

The following table shows the geographical distribution of the species here recorded:—

EASTERN HEMISPHERE.

Fam. *Trogonophidæ*.

1. *Trogonophis wiegmanni*. N. Africa.

Fam. *Amphisbænidæ*.

2. *Blanus cinereus*. Spain, N. Africa, Asia Minor.
3. *Amphisbæna? violacea*. East Africa.
4. *Cynisca leucura*. Guinea.
5. *Baikia africana*. W. Africa.

Tribe *Cephalopeltinæ*.

6. *Monotrophis capensis*. S. Africa.
7. *Dalophia welwitschii*. W. Africa.

WESTERN HEMISPHERE.

Fam. *Chirotidæ*.

1. *Chirotos lumbricoides*. Mexico.

Fam. *Amphisbænidæ*.

2. *Amphisbæna alba*. Brazil.
3. *A. americana*. British Guiana.
4. *A. petræi*. Brazil.
5. *A. vermicularis*. Brazil.
6. *A. darwinii*. Monte Video, Buenos Ayres.

7. *Bronia brasiliana*. Brazil.
8. *Sarea cæca*. W. Indies.
9. *Cadea punctata*. Cuba.
10. *Anops kingii*. Buenos Ayres.

Fam. *Lepidosternidæ*.

11. *Lepidosternon microcephalum*. Brazils.
12. *L. grayii*. Tropical America.
13. *L. phocæna*. Buenos Ayres.

Tribe *Cephalopeltinæ*.

14. *Cephalopeltis lepidosterna*. Brazils.

The rings of oblong scutella on the skin are in most species interrupted on the sides, and in some species also on the vertebral line; these interruptions form a more or less wide depressed groove on the surface of the body, and are called the lateral and dorsal lines.

The skin at this interruption is usually marked at each transverse ring with two oblique grooves, which form a cross and divide the space into four minute triangular shields; in some cases, where the line is wider and less sunken, the transverse ring of shields is only divided at the sunken line by a single oblique groove caused by the tapering end of one of the oblong shields going before the end of the other. Sometimes this is the case with the dorsal line, and not with the lateral one. In some species, instead of only the four triangular shields in the lateral line, the shield between the cross groove is divided into several minute scale-like shields.

In some of the larger species, as *Amphisbæna alba*, some of the rings of shields are marked with an oblique groove crossing several shields, dividing each of them into two parts; but these seem to be mere individual variations occurring on several parts of the back of some specimens, and not present in others.

Duméril and Bibron give the number of the teeth as one of the specific characters. I have not been able to verify their observations; they give the following as the number. There seems to be always an odd number of intermaxillary teeth, the middle one being usually large.

<i>Trogonophis wiegmanni</i>	$\frac{4.5.4}{9.9} = \frac{13}{18}$
<i>Chirottes caniculatus</i>	$\frac{3.7.3}{6.6} = \frac{13}{12}$
<i>Amphisbæna americana</i> et <i>A. alba</i>	$\frac{5.5.5}{8.8} = \frac{15}{16}$
— <i>petrei</i>	$\frac{5.7.5}{8.8} = \frac{17}{16}$
— <i>darwinii</i>	$\frac{4.7.4}{7.7} = \frac{15}{14}$
<i>Sarea cæca</i>	$\frac{5.5.5}{7.7} = \frac{15}{14}$
<i>Cadea punctata</i>	$\frac{4.7.4}{8.8} = \frac{15}{16}$
<i>Anops kingii</i> .. }	$\frac{4.7.4}{7.7} = \frac{15}{14}$
<i>Blanus cinereus</i> }	

Fam. 1. TROGONOPHIDÆ.

Head oblong, depressed, rounded below; nostrils lateral, in large nasal shields; teeth conical, on the edge of the maxilla. Body cylindrical, covered with rings of uniform, elongate, oblong, four-sided shields, without any sternal disk; lateral line sunken, narrow, covered with a few minute scales; preanal pores none; tail conical, acute.

Glyphodermes acrodontes, Dum. et Bibr. Erp. Gén. v. 467.

TROGONOPHIS, Kaup, Isis, 1830, p. 880.

Head oblong, depressed; nasal shields large, united by a short straight edge, behind the large triangular convex rostral; crown with two pairs of shields; temple with many small shields; upper labial plate moderate; lower labial shield larger, with a series of large chin-shields on each side, and a central gular one. Tail conical, acute; preanal pores none.

The skull of this genus has been figured by Dr. Kaup in his paper in the 'Isis' above quoted.

TROGONOPHIS WIEGMANNI, Kaup, Isis, 1830, p. 880, t. 861; Féruss. Bull. Sci. Nat. xxv. 203, 1831; Dum. et Bibr. Erp. Gén. v. 470.

Amphisbæna elegans, Gervais, Bull. Sci. Nat. de France, 1855, p. 135; Mag. Zool. 1835, class 3. t. 11 (details not good).

Hab. Tangiers (*Fraser*, B.M. 1848); N. Africa (B.M. 1846); Algeria (*Duméril*, B.M.).

This animal was first described by Dr. Kaup, who showed that the teeth of it were placed on the edge of the jaw, as in the genera of the family *Agamidæ*, which are all confined to the eastern hemisphere and Australia; while all the other genera of the order that have been examined have the teeth on the inner side of the jaw, as in the family *Iguanidæ*, which is restricted to the New World.

It was afterwards described by M. Gervais; and even when Dr. Kaup had informed him, after inspecting the specimen, that it was the same as he had previously described, he still regarded it as new, because he said the skull did not agree with Dr. Kaup's figure: but this was a mistake. Dr. Kaup figured the skull of *Trogonophis* and of an *Amphisbæna* for the sake of showing the difference between them; and M. Gervais must have compared his animal with the wrong figure.

Fam. 2. CHIROTIDÆ, Gray, Cat. Tortoises, &c., B. M. 74.

Head depressed, rounded on the sides; nostrils on sides; teeth on the inner side of the maxillæ. Body cylindrical, covered with rings of uniform oblong four-sided shields, and with two short weak front limbs, provided with five subequal clawless toes; lateral line sunken, covered with scales; preanal pores distinct. Tail cylindrical.

CHIROTES, Duméril; *Bimanus*, Oppel; *Chamæsauro*, Schneid.

Characters those of the family.

CHIROTES CANICULATUS, Cuvier.

Chirotos lumbricoides, Gray, Cat. Tortoises, &c., B. M. 74.

Hab. Tropical America, Mexico (B. M.).

Professor J. Müller has figured the skeleton and skull of this animal.

Fam. 3. AMPHISBÆNIDÆ.

Head oblong, rounded below; nostrils lateral, in nasal shields; teeth conical, on the inner edge of the maxillæ. Body cylindrical, covered with rings of uniform, elongate, four-sided shields, without any sternal disk; preanal pores distinct; lateral line linear, sunken, with a few small scales. Legs none. Tail cylindrical, rounded at the end.

Tribe 1. AMPHISBÆNINA. The head depressed, rounded on the sides in front; nostrils on the upper part of the sides of the head.

A. *Lateral and dorsal lines distinct, sunken, covered with small triangular scales; nasal shields large, square, lateral, forming part of the edge of the upper lip, and separated in front by a broad, square, convex rostral shield.*

BLANUS.

The rostral square, convex; the nasal shields large, forming part of the edge of the upper lip; the crown with a large pentagonal frontal shield and two pairs of square shields behind it; eye-shield triangular, between upper edge of the front labial shield and the frontal. Temples covered with a series of squarish shields; labial shields large, the hinder smallest; the lower shields without any chin-shield between them and the gular one. Tail rather tapering, blunt; preanal pores distinct.

BLANUS CINEREUS, Gray, *l. c.* 72.

Amphisbæna cinereus, Vandeli, Mem. Acad. Lisbon, i. 1780.

A. oxyura, Wagler.

A. rufus, Hempr.

Blanus rufus, Wiegman.

Hab. N. Africa, Tangiers (*Fraser*, B. M.); S.W. Europe, Spain (*Vandeli*, 1780); Oporto (*Allen*).

M. Gervais (*Mag. Zool.* 1837, class 3. t. 10) gives a figure of *A. cinerea*; but the details of the head do not perfectly agree with our specimens; perhaps this may be from want of care in the artist. The number of pairs of plates on the occiput varies from two to four.

B. *Lateral lines linear, distinct, sunken; dorsal none, or very indistinct; nasal shields not forming part of the upper lip.*

a. *Nasal plates large, extending across the muzzle, united by a long straight suture, or united into one cross band; the rostral triangular, under front edge of nasals; crown with two pairs of broad shields.*

AMPHISBÆNA.

Head depressed, broad, and rounded in front; frontal plates with one or two pairs of rather smaller similar plates behind them; preanal pores eight.

* *Head depressed, broad; occiput covered with square shields, like the body; preanal plates numerous.*

1. AMPHISBÆNA ALBA, Linn.; Gray, Cat. Tort., &c., B.M. 70.

Body thick, one-coloured, with only one pair of plates behind the frontal plates; occiput shielded like the body.

Hab. Brazil.

Varies in the size and form of the hinder pair of frontal plates; preanal pores eight, often seven.

There is a specimen in the British Museum sent by Mr. Brandt under the name of *A. darwinii*.

2. AMPHISBÆNA AMERICANA, Schreb.; Gray, Cat. Tort., &c., B. M. 70.

Body rather thick, black, varied; two or more pairs of plates behind the frontal plates.

Amphisbæna fuliginosa, Linn.

A. vulgaris, Laur.

Hab. Tropical America: British Guiana; Berbice; Demerara (B. M.).

The labial shields vary in number and shape; the shields behind the frontal vary in number and size, but they are generally in pairs and subsymmetrical.

Gervais figures the skull of the species (Ann. Sci. Nat. 1854, xx. t. 14. f. 4).

** *Head rounded, narrow; preanal pores and preanal shields ten or twelve.*

3. AMPHISBÆNA PETRÆI, Dum. et Bib. Erp. Gén. v. 487; Gray, l. c. 80.

Hab. Brazil (Mus. Paris).

*** *Head rounded, narrow, rather produced in front; crown-shields large; occipital shields polygonal. Body slender, one-coloured; preanal pores two or four; preanal plates six, middle ones elongate.*

4. AMPHISBÆNA VERMICULARIS, Dum. et Bibr. Erp. Gén. v. 489; Gray, *l. c.* 71.

Hab. Brazil (*Dr. Gardner*, B. M.; *Mus. Paris*); Porto Bello (*Capt. Austin*, R.N., B. M.: head in a very bad state).

5. AMPHISBÆNA ? DARWINII, Dum. et Bib. Erp. Gén. v. 491; Gray, *l. c.* 71.

Hab. Monte Video (*Mr. Darwin*; *Mus. Paris*).

6. AMPHISBÆNA ? VIOLACEA, Peters, Berlin Monatsb. 1854, p. 620; Wiegmann, Arch. 1855, p. 49.

Hab. East Africa, Inhambane (*Peters*).

This species is unknown to me; it is without a single frontal shield, and has four preanal pores and visible eyes.

CYNISCA, Gray, Cat. Tort., &c., B. M. 71, 1844.

Head flat, narrow; nose conical, four-sided, rounded at the end; rostral triangular; nasal plates very large, soldered together, covering the front of the head; crown with a small frontal and a pair of parietal shields; eyes distinct; temples and occiput with large shields. Body very slender; lateral line distinct. Tail cylindrical, elongate, truncated; preanal pores numerous.

CYNISCA LEUCURA, Gray, *l. c.* 71.

Amphisbæna leucura, Dum. et Bibr. Erp. Gén. v. 498.

A. macrura, Schlegel, Mus. Leyden.

Brown; end of tail white.

Hab. Guinea (*Mus. Leyden*) (not Guiana, as stated by mistake in the Catalogue).

b. *Nasal shields small, separate above, on the side of a large swollen rostral shield.*

BRONIA.

Head ovate, rather convex; rostral shield very large, hemispherical, with the small nasal shields inserted in notches on its hinder edge, which is placed over the front labial; crown convex, rounded on the side, covered with two pairs of shields; the front pair square, the hinder smaller, triangular, with a small triangular occipital shield on its outer side; eye-shield triangular; labial shields $\frac{3-3}{2-2}$, the second upper and front lower large; gular shield single, square, with a cross series of shields behind it. Body cylindrical; lateral line well marked; the dorsal shields elongate, narrow; the ventral ones rather broader, smooth; preanal pores four; the preanal shields six or eight, the central pair largest, the lateral ones very small. Tail blunt.

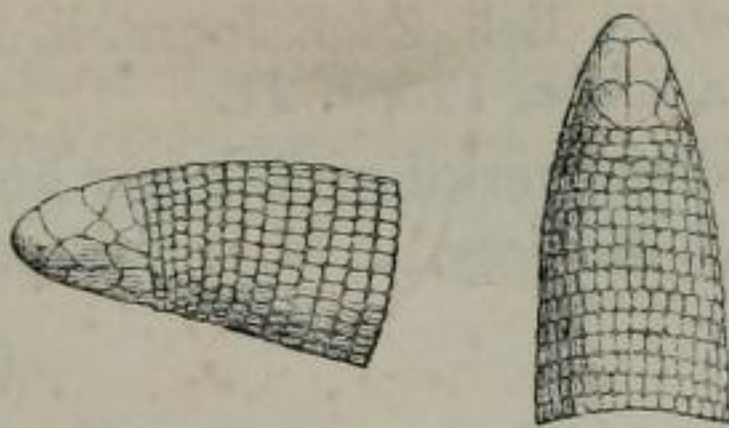
BRONIA BRASILIANA.

Pale brown; dorsal shields with a dark central spot.

Hab. Tropical America; Santarem, on the Amazons (*Bates*, B.M.).

Fig. 2.

Fig. 1.

*Bronia braziliana.*

C. *Lateral and dorsal lines not defined, or the lateral line only visible on the hinder part of the body; rostral shield small; nasal shields far apart, small, placed on the side of the high rostral.*

SAREA, Gray, Cat. Tort., &c., B. M. 71, 1844.

Head conical; rostral narrow, higher than broad, rounded in front, placed behind the triangular nasal; crown with two pairs of shields, the front largest, elongate, the hinder trigonal; eye-shield triangular; the labial shields $\frac{3-3}{3-3}$; the second upper and lower labial shields very large, the others smaller; with one large gular plate. Body slender; the dorsal scutella square, as long as broad, with a dark central dot; two central longitudinal series of ventral scutella broader than long, smooth, white; the lateral line very indistinct, scarcely visible except on the hinder part of the body; preanal pores four; preanal shields six, square. The eyes are slightly visible through the shields.

SAREA CÆCA, Gray, Cat. Tort. &c., B. M. 71.

Amphisbæna cæca, Cuvier, R. A. 773; Dum. et Bibr. Erp. Gén. v. 492.

Hab. West Indies, St. Thomas's (*A. H. Riise*, B. M.).

The specific name is not characteristic, as the eyes are as much seen through the shield as in many Amphisbænians.

CADEA, Gray, Cat. Tort., &c., B. M. 71, 1844.

Head conical; rostral narrow, higher than broad, truncated at the tip, convex in front; nasals ovate, lateral; crown with two large, triangular shields; frontal with a small linear shield on each side of it; and two pairs of square occipital shields, the hinder pair smaller; eye-shield rhombic; eyes hidden; labial shields $\frac{3-3}{3-3}$, subequal, middle one in each lip largest; temples covered with square shields; gular plate single, elongate. Body cylindrical; lateral line very indistinct, scarcely to be distinguished except on the hinder part of the body; shields of the back square, of the under surface rather wider, but scarcely wider than long; preanal pores four; the preanal shields six, central ones elongate.

CADEA PUNCTATA, Gray, *l. c.* 71.

Amphisbæna punctata, Bell, Zool. Journ. ii. 236, t. 20. f. 2.

A. cæca, La Sagra, Cuba, 195, t. 21.

Pale brown, dotted and varied with deeper brown.

Hab. Cuba (*W. S. Macleay*, B. M.): the specimen described by Mr. Bell.

Tribe 2. ANOPININA. Head compressed, keeled on the sides in front; the nostrils lateral, on the under side of the keel.

A. *Lateral line distinct and impressed.*

ANOPS, Bell, Proc. Zool. Soc. 1833, p. 99; Zool. Journ. v. 391, t. 16. f. 1; Gray, Cat. Tortoises, &c., B. M. 72, 1844.

Lateral line distinct, sunken; preanal pores "none" (*Bell*); "four" (*Dum. & Bibron*).

ANOPS KINGII, Bell, Proc. Zool. Soc. 1833, p. 99; Zool. Journ. v. 391, t. 16. f. 1; Gray, Cat. Tortoises, &c., B. M. 72.

Amphisbæna kingii, Dum. et Bibr. Erp. Gén. v. 497.

Hab. S. America (*P. P. King*; *Charles Darwin*); Buenos Ayres (*D'Orbigny*, Mus. Paris).

I have not been able to examine this genus, which was described by Mr. Bell from a specimen brought from South America by Capt. P. P. King, R.N.; it is described in more detail by MM. Duméril and Bibron from specimens obtained by Mr. Charles Darwin.

The existence of the lateral line, which, according to Mr. Bell, "is more distinct than in *Amphisbæna*, though less so than in *Chirotes*," and the account of the plates of the head as described by MM. Duméril and Bibron, show that it must be distinct from the following, which comes from Africa.

B. *Lateral line none, or only very slightly visible on the hinder part of the body.*

BAIKIA.

The head compressed, elevated; rostral plate very large, compressed, forming an arched crest from the mouth to the forehead, with a groove on the hinder part over the nostrils; crown with two pairs of band-like shields behind the upper edge of the rostral, the front pair narrow; eye-shield very minute; eye invisible; temples with two small shields; the upper labial shields 3—3; the second upper large, produced, keeled on the side; the hinder, under the temporal shield, larger, square; lower lip covered with a single large shield on each side, separated by a square inferior rostral shield and by two small gular plates placed one behind the other; nostrils large, lateral, under the edge of the keel of the frontals. Body and chest covered with rings of similar oblong square shields; preanal pores

2—2, separated by a central shield. Tail cylindrical, rather conical at the tip.

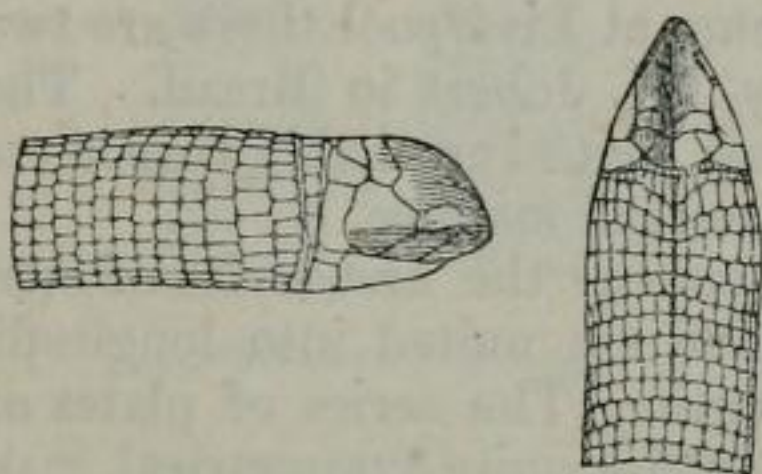
In spirits the skin is loose and inclined to form a fin-like fold, sometimes on one and sometimes on another part of the body, with a central longitudinal ventral groove, without any appearance of a lateral line.

BAIKIA AFRICANA.

Hab. West Africa (*Dr. Balfour Baikie*). B.M.

Fig. 4.

Fig. 3.



Baikia africana.

Fam. 4. LEPIDOSTERNIDÆ.

Lepidosternidæ, Gray, Cat. Tortoises, &c., B. M. 73, 1844.

Head oblong, depressed, with a short horizontal keel in front; nostrils in shields, under the keel of the rostral shield; teeth conical, on the inner side of the maxilla. Body cylindrical, covered with rings of oblong four-sided shields; the sternum with a disk formed of differently shaped shields; preanal pores distinct.

Tribe 1. LEPIDOSTERNINA. Head conical, covered with symmetrical polygonal shields; the pectoral disk covered with many polygonal shields placed in oblique lines; the dorsal and lateral lines well marked, broad, smooth, formed by the overlapping of the narrow ends of the sections of the rings. *America.*

LEPIDOSTERNON.

Head conical, covered with three pairs of symmetrical and a vertebral shield; rostral shield large, broad, rounded in front; the pectoral shield formed of regular, nearly equal, symmetrical rhombic or six-sided shields, sometimes united into long shields which are not symmetrical.

* *Sternal plate of central series united into elongated bands.*

Lepidosternon.

1. **LEPIDOSTERNON MICROCEPHALUM**, Wagler, Serp. Bras. 70, t. 26; Müller, Tiedem. Zeitsch. 1832, iv. t. 22. f. 4; Dum. et Bibr. Erp. Gén. v. 505; Gray, Cat. Tortoises, &c., B. M. 73.

"*L. macrocephalum*, Müller" (*vide* A. Smith).

Amphisbæna punctata, Neuwied, Abh.

Lepidosternon maximilianus, Wiegmann.

Head short, broad; the vertebral plate broader than long, six-sided; frontal short, broad, band-like; parietal small, square; ocular higher than broad.

Hab. Brazil, Rio (*Dr. Gardner*, B. M.).

The specimen in the British Museum has the shields on each side of the central line of the sternal disk united into an elongate shield, which is not symmetrical on the two sides, and appears like an accidental peculiarity.

In the Free Museum at Liverpool there are two specimens of this species, obtained by Mr. Jobert in Brazil. They are similar, but show that the sternal plates are liable to coalesce and form larger plates in an unsymmetrical manner.

In the larger specimens the first series of sternal plates on each side of the central line are united into longitudinal shields, which are not of equal length. The series of plates on the outer side of them are separate, but not quite symmetrical.

In the other specimen, which is rather smaller, the first series of sternal plates on the sides of the central line, and the second series on the outside of it on the right side, and second and third series on the left side, are united into longitudinal parallel plates, which are of unequal length, the two central ones being the longest, and the two outer plates on the left side much longer than the outer one on the right side.

The head-shields in both these specimens are exactly alike, the central crown-shield being much broader than long; the hinder pair of frontal shields rather shorter than the front pair, and narrower on the central edge by the angular front edge of the crown-shield; the two pairs of occipital shields are shorter than broad, the hinder pair being the smaller, and in one instance coalesced on one side with the plate of the front pair.

They all have a brown spot on the centre of each of the dorsal scutella.

** *Sternal plates all separate, symmetrical.* Sphenocephalus.

2. LEPIDOSTERNON GRAYII, A. Smith, MS. Brit. Mus.

Head rather short, broad; the vertebral plate hexagonal, elongate, as long as broad; the frontal plate very short and broad; the parietal shields oblique; the occipital much longer than broad; temporal shields larger on the side of the occipital; plates of the sternal disk symmetrical, in oblique diverging lines.

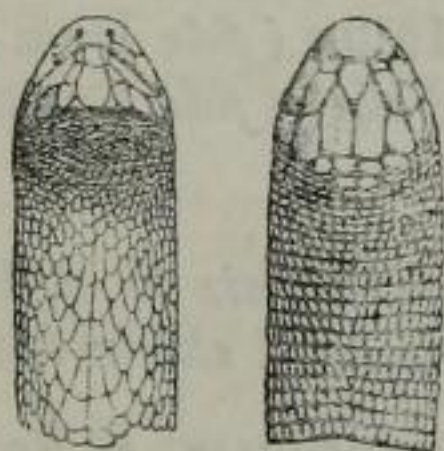
Hab. South America? (*Brit. Mus.*).

Sternal disk formed of four diverging lines of uniform, similar-sized, symmetrical shields; the shields on the central line smaller, being divided down the centre by a straight suture.

In 1848, Dr. (now Sir Andrew) Smith sent to the British Museum

this specimen, with the name of *Lepidosternon grayii*, informing me that he had described (or intended to describe) it in the 'Proceedings of the Zoological Society' under that name. I cannot find that it has been so described, nor can I find any notice of it in any other work, though it is very like, but evidently distinct from, the *Lepidosternon phocæna* of Duméril and Bibron, figured by M. d'Orbigny (Voy. Amér. Mérid.).

Fig. 6. Fig. 5.

*Lepidosternon grayii.*

3. LEPIDOSTERNON PHOCÆNA, Dum. et Bibr. Erp. Gén. v. 507; Gray, Cat. Tortoises, &c., B. M. 73; D'Orbigny, Voy. Amér. Mérid. Rept. t. 6. f. 7-10.

Head broad; the vertebral plate elongate, small, larger than broad, acute at each end; the frontal and occipital plates large, shorter than broad, the frontal the largest; the parietal plates short, broad, band-like; the plates of the sternal disk uniform, symmetrical, oblique.

Hab. Buenos Ayres (*Bridges*, B. M. : stuffed).

M. d'Orbigny's figure is very like the preceding species; but the head is represented shorter, the frontal plates are rather larger. The long occipital shield of that species is here represented by two pairs of square shields, as if the large plate of the former species were divided across; it also appears to be a shorter, thicker species.

The stuffed specimen which we received from Mr. Bridges agrees with the figure in all these particulars; but the head appears rather larger, perhaps from its being rather distorted in the preparation.

Both the figure and the specimen belong to a species evidently very distinct from *L. grayii*, and much thicker.

Tribe 2. CEPHALOPELTINA. The head depressed, covered above with a single simple or transversely divided, flat, horny, nail-like shield; pectoral disk formed of elongated, symmetrical shields; the dorsal and lateral lines very narrow, indistinct, except near the hinder part of the body.

A. *The pectoral disk formed of large, diverging, unequal, polygonal, symmetrical shields; crown-shield divided into two by a transverse suture.* America.

CEPHALOPELTIS, J. Müller, Tied. Zeitsch. für Phys. 1831, iv. 269.

Head covered with two large shields, the front one smaller; the

sternal disk of eight or ten large shields, the two central pairs parallel, one in front of the other; the lateral pairs diverging.

CEPHALOPELTIS SCUTIGERA, Gray, Cat. Tort., &c., B. M. 73.

Cephalopeltis lepidosternon, Müller, *l. c.* t. 21. f. 6 (skull), t. 22. f. 5 (head).

Amphisbæna scutigera, Hempr. Naturf. Freund. zu Berlin, 1820, p. 127.

Lepidosternon scutigerum, Dum. et Bib. Erp. Gén. v. 509.

Cephalopeltis cuvieri, Müller (*fide* Dum.).

Coleopeltis cuvieri, J. Müller (*fide* A. Smith).

Hab. Brazils (Müller).

B. *The pectoral disk formed of six or eight elongate, longitudinal, parallel shields; head-shield single. Africa.*

MONOTROPHIS, A. Smith.

The head covered with a single nail-like shield, without any slits on the hinder part of its side edge; the rostral plate between the nasal plates, transverse, four-sided, broader than high; the shields of the sternal disk regular, broad, and truncated in front; the rings of shields in front of the sternal disk formed of regular square shields, like the rest of the body.

MONOTROPHIS CAPENSIS, A. Smith, Zool. S. Africa. Rept. t. 47 (white; pink when alive).

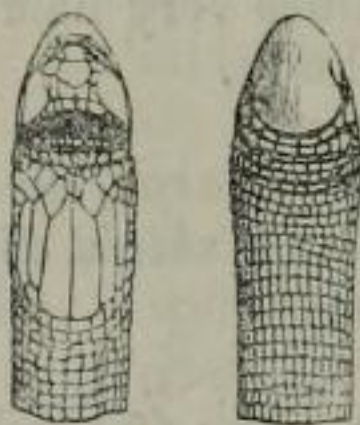
Hab. S. Africa (B. M.). The type specimen of Sir Andrew Smith.

Dr. Peters records *Monotrophis capensis* as found in Mozambique; but on comparison it may prove a distinct species. In my notes I have a reference to *Lepidosternon sphenorhynchum*, Peters, MS., as an East-African species, but I cannot find it described or noticed anywhere. Can it be the name Dr. Peters gave to his *Monotrophis* before he discovered it had been described by Sir Andrew Smith?

DALOPHIA.

The head covered with a single nail-like shield, with a linear slit on the hinder part of its side edges; the rostral plate small, triangular, with the point upwards between the nasal plates; the shields of the sternal disk rather irregular, but symmetrical, each with an

Fig. 8. Fig. 7.



Dalophia welwitschii.

acute front edge; the rings of shields in front of the sternal disk formed of unequal but symmetrical polygonal shields.

DALOPHIA WELWITSCHII.

Monotrophis capensis, Günther, MS. B.M. (not A. Smith).

Pale brown.

Hab. Angola; Pungo Andongo (*Welwitsch*). B.M.

4. DESCRIPTION OF SIX NEW SPECIES OF EXOTIC BUTTERFLIES
IN THE COLLECTION OF THE BRITISH MUSEUM. BY A. G.
BUTLER, BRITISH MUSEUM.

(Plate XXVI.)

1. *PIERIS PACTOLICUS.* (Pl. XXVI. fig. 1.)

Upperside. Front wings, basal half white; apical half, inner portion of anterior margin, and base grey; exterior edge of front margin and outer margin rich brown; nervures, except the base of the third median nervule and nearly the whole of the submedian nervure, brown. Posterior wings white, with broad bicoloured outer margin; the anal half grey; the apical half rich brown, forming sinuations with the nervules, which are also brown for nearly their entire length. Body silver-grey.

Underside. Front wings white, yellow at the base and apex; anterior margin greyish; all the nervures, except the interior portions of the third median nervule and the submedian nervure, deeply bordered with rich brown, the brown margins of the nervules gradually widening at the extremities into a marginal band; a brown spot crossing in the centre between the first and second discocellular, and another between the first and second median nervules. Posterior wings bright yellow, greyish on the outer margin; all the nervures deeply bordered with rich brown, except at the end of the cell, which gives it the appearance of being open; lower portion of folds between the median nervules and submedian nervure brown, and terminated inwardly by brown lunules, their concavities towards the base. Body dark grey.

Hab. ~~Bogota~~ Borneo.

2. *PIERIS CRUENTATA.* (Pl. XXVI. fig. 2.)

Upperside. Front wings white, with faint roseate reflection; apical edge rich brown, tapering nearly to the anal angle, and enclosing two small hastate, longitudinal, cream-coloured spots, and two barely perceptible dots of the same colour on either side of them; anterior margin brown, sprinkled with white scales near the base. Posterior wings white, with faint roseate reflection; base sprinkled with a few black scales; outer margin rich brown; anal portion faintly showing the markings of the underside. Body—prothorax and mesothorax olivaceous; metathorax and upper half of abdomen blue grey; anal portion white.