

PROCTOTRETUS MULTIMACULATUS.

PLATE IX.—FIG. 1.

Corpore subdepresso ; capite squamis numerosis parvis tecto ; auribus parvis, margine lævi ; seriebus quatuor squamarum supralabialium ; squamis temporum imbricatis ; collo granuloso ; femorum facie posteriore partim granulosa, partim squamis imbricatis tectâ.

Proctotretus multimaculatus, Bibr. l. c. p. 291.

Habitat, Bahia Blanca, Northern Patagonia.

DESCRIPTION.—The body depressed and wide—the head triangular, the muzzle rather acute. Nostrils prominent and nearly round. Scales of the head very small and numerous ; those of the temple rhomboidal and imbricated. There are four series of small irregular scales between the labial and sub-orbital. The sides of the neck are wholly granular ; the scales of the body very small ; those of the upper parts rhomboidal, flat with very low carina, and obtuse at the apex—beneath they are also small and rhomboidal ; the posterior surface of the thighs is granular, but, as in some other species, there is, near the groin, a distinct patch of imbricated scales like those of the inferior surface. The tail is broad to some distance from the origin, and then tapers to the extremity. The scales of the tail are rather small, short and obtuse.

The anterior extremity placed against the sides reaches about two-thirds the distance towards the posterior, and the latter reaches forwards to the shoulder.

The ground colour of this species is gray, with numerous small black spots, some of which are bordered with white. The under parts are white, and in one specimen in Mr. Darwin's collection there are on the belly numerous distinct small black spots. His description of the colours is as follows:—"Colours above singularly mottled. The small scales are coloured brown, white, yellowish red and blue, all dirty, and the brown forming symmetrical clouds. Beneath white, with regular spots of brown on the belly."

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------------|---------|--------|
| Length of the head | 0 | 8 |
| of the body | 1 | 8 |
| of the tail | 3 | 0 |
| | <hr/> | |
| Total length ... | 5 | 6 |
| Length of anterior extremity | 1 | 0 |
| of posterior extremity | 1 | 6 |

Found at Bahia Blanca, on the northern confines of Patagonia. The following remarks of Mr. Darwin on the habits of this species are very interesting. "In its depressed form and general appearance it partakes of some of the characters

of the Geckos. Its habits are singular. It lives on the dry sand of the beach, at some distance from the vegetation, and the colour of the body much resembles that of the sand. When frightened it depresses its body, stretches out its legs, and closing its eyes tries to escape detection. If pursued it buries itself with great quickness in the sand; but as its legs are short, it cannot run very swiftly."

PROCTOTRETUS PECTINATUS.

PLATE IX.—FIG. 2.

Capite squamis subæqualibus, rhomboideis, imbricatis, carinatis tecto.

Proctotretus pectinatus, Bibr. Hist. Rept. IV. p. 292.

Habitat, Patagonia.

DESCRIPTION.—The scales of the head are narrow, closely imbricated, strongly but not acutely carinated, and the anterior ones arranged in somewhat of a radiating direction from the muzzle. There is but a single series of scales between those of the upper lip and the orbit, and these, together with all the scales about the head, partake of the carinated and elongated character already described. A single strong triangular scale and two smaller ones are placed on the anterior margin of the ear, which is narrow, oval and reniform. The scales of the temples and sides of the neck are rhomboidal, acute, carinated and imbricated. There is a longitudinal fold on each side of the neck and a transverse one anterior to the shoulder, behind which is a deep depression. The scales of the back and side are prominently and acutely carinated, those of the central line being rather more prominent than the others; and above this there is on each side a marked longitudinal lateral crest extending from beneath the eyes to the base of the tail. The scales constituting these crests are very prominent, narrow and acutely carinated. The scales of the belly are also imbricated and rhomboidal, but flat; those of the under surface of the hands and feet are carinated; and those of the toes have three carinæ. The body is somewhat depressed as is the tail at its commencement, becoming more rounded and rather abruptly smaller at some distance from its origin. The fore-foot reaches to about two-thirds of the distance from the shoulder to the side, and the hinder extremity thus placed extends to the shoulder.

The colours of this most elegant of all the species of the genus are very beautiful. "This is the most beautiful lizard," says Mr. Darwin, "I have ever seen; the back has three rows of regular oblong marks of a rich brown, the other scales symmetrically coloured either ash or light brown; many of them of a bright emerald green; beneath pearly, with semilunar spots of brilliant orange on the throat." I find in the specimens I have examined that the pectinated lateral crests are white, and the brown oblong marks of the back are bordered with a similar colour. There are always three white transverse lines across the head.

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------------|---------|--------|
| Length of the head | 0 | 7 |
| of the body | 1 | 7 |
| of the tail | 3 | 1 |
| | <hr/> | |
| Total length..... | 5 | 5 |
| Length of anterior extremity | 1 | 0 |
| of posterior extremity | 1 | 5 |

This species, as has been observed by M. Bibron, who first described it, may be at once distinguished from every other by the character of the scales of the head, which, instead of lying flat, with the edges in contact, are all of them imbricated and carinated. Another obvious distinguishing character, is the narrow line of prominent scales running the whole length of the body on each side, forming a sort of *pectinated* lateral crest, from which circumstance it has derived its name.

Found by Mr. Darwin, at Bahia Blanca, and Port Desire in Patagonia.

GENUS—DIPLOLÆMUS. *Bell.*

Caput *breve, latum, subtriangulare*. Aures *parvæ, ovatæ, margine lævi*. Nares *magnæ, rotundæ*. Collum *infra transversè, ad latera longitudinalitèr plicatum*. Corpus *subdepressum, non cristatum*. Cauda *teres, breviuscula, lævis*. Pedes *breves, robusti*. Squamæ *capitis numerosæ, parvæ, rotundatæ, non imbricatæ—corporis atque caudæ suprâ minimæ, læves, convexæ, paulò imbricatæ, infra læves, planæ*. Pori femorales *et præ-anales in utroque sexu nulli*. Dentes palatini *nulli*.

The new genus which I have thus defined, resembles very closely, in most of its characters, the genus *Leiosaurus* of Bibron; from which, indeed, it scarcely differs, excepting in the absence of palatine teeth, and in the form of the suborbital plates, which in *Leiosaurus* are all distinct, and of nearly equal size; whereas, in the present genus, three of these are united to form one plate, resembling that in *Proctotretus*, and some other *Agamidæ*. In other respects the genera are very closely allied; but the existence or non-existence of palatine teeth, is a character of so much importance, that it appeared to me,—and in this opinion I am supported by M. Bibron, who examined the specimens with me,—that they should be considered as distinct. Both the genera are natives of South America. Of *Leiosaurus Bellii* (Bibr.) the only known specimens were presented to me by Capt. King, who obtained them during his survey, from whom also I obtained specimens of one of the species of the present genus, *D. Bibronii*.

DIPLOLEMUS DARWINII. *Mihi.*

PLATE X.

Squamis capitis convexis; caudá, corpore cum capite longiore.

Habitat, Port Desire, Patagonia.

DESCRIPTION.—Head short, almost equilaterally triangular, rising obliquely from the muzzle to the vertex, then flattened. Nostrils large, round, each placed in front of the supra-orbital crest, and in a line between it and the centre of the muzzle. The ears are small, oval, the margin simple, and the membrana tympani superficial. The neck is considerably contracted; it has a longitudinal fold on each side formed by the confluence of two others, one of which arises from behind the angle of the mouth, and the other from above the ear, which is, as it were, enclosed between them; they coalesce a little behind the ear. There is also a distinct transverse fold on the throat, very similar to that in *Leiosaurus Bellii*. The body is moderately thick, somewhat depressed, and without the slightest appearance of a longitudinal crest, or any elevation along the median line. The tail is somewhat longer than the head and body, nearly round and tapering almost evenly from its origin to the apex. The fore legs are short and moderately robust, the toes short, nearly equal; the hinder legs moderately long. The former when placed against the sides, do not reach the thighs by nearly a third of the distance between the two limbs; the latter when directed forwards, just reach the axillæ. The cloacal covering is semi-lunar, turgid, and the margin quite simple.

Scales covering the upper surface of the head numerous, rounded, and considerably elevated; those between the two supra-orbital semicircles are in a double series. The occipital plate is oval, raised from the margin, hollowed immediately around the centre which is again raised like a minute tubercle. Above the labial scales, is a series of equal, rounded, oblong scales, and between these and the principal suborbital is a single series of smaller ones. Scales of the whole of the upper and lateral parts of the neck and body extremely small, slightly elevated, passing at the sides into a flatter and more expanded form. Those of the whole of the under parts are quite flat and imbricated. Beneath the anterior parts of the lower jaw, and behind the broad mental scales, are a series of flat, hexagonal scales on each side, passing backwards and outwards, the front pair large and oblong and the others diminishing by degrees. The scales of the throat are very small, those on the fold larger and acutely rhomboidal. The scales of the anterior part of the belly are also rhomboidal and those of the posterior portion hexagonal or nearly quadrate. The tail is covered by scales disposed in whorls, those on the median line beneath being larger than the others. Beneath each toe is a series of transverse hexagonal imbricated scales.

The colours and markings of this species are very difficult to be described, on account of the great irregularity of their disposition. The ground colour of the head is yellow, passing into grey on the back part. The anterior part has several small spots of a dark brown colour, and there is a larger one on each orbit, another between the eye and the ear, and others on the back part of the head extending to the neck. The middle of the back is reddish yellow, on

each side bluish gray, passing beneath into yellowish white. A series of very irregular transverse spots cross the yellow median portion of the back, and there are others on the sides; and these two series becoming confluent on the tail, form, with the yellow ground, alternate half rings of the two colours. The upper part of the legs has similar bands. The whole of the throat, belly, and inferior surface of the limbs and tail are yellowish white. There are numerous small blackish spots over these parts which are more distinct and linear on the throat, and becoming paler, smaller and round on the belly.

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------------|---------|--------|
| Length of the head | 1 | 0 |
| of the body | 2 | 2 |
| of the tail..... | 3 | 8 |
| | <hr/> | |
| Total length..... | 7 | 0 |
| Length of anterior extremity | 1 | 1 |
| of posterior extremity | 1 | 6 |

Taken at Port Desire, on the coast of Patagonia.

DIPLOLEMUS BIBRONII. *Mihi.*

PLATE XI.

Squamis capitis planis; caudâ corpore cum capite brevior.

Habitat, Port Desire.

DESCRIPTION.—Head thick and clumsy, longer than it is broad, muzzle obtuse, supra-orbital arches slightly elevated. Nostrils as in the former species, in size, form, and situation. Ears sub-triangular, the margin simple. Neck considerably contracted, with a longitudinal fold on each side, and a distinct transverse fold on the throat. Body rather broad, slightly depressed, perfectly even, without any central crest or elevation. The tail is shorter than the head and body, slightly triangular at its base, tapering regularly to its extremity. Limbs of moderate length; the toes of each foot longer than in *D. Bibronii*, and those of the fore-feet more unequal, the third being the longest, then the fourth, the second, the fifth, and the first. The fore-legs placed against the side reaches to about two-thirds of the distance between the shoulder and thigh; the hinder foot placed in the same manner reaches to the axilla.

The scales of the head are quite flat, a character in which this species differs remarkably from the former, although in their number and arrangement they are very similar. The occipital scale is flat and hexagonal. Between the labial scales and the suborbital, there are, in addition to the regular series of larger supralabial scales, at least three distinct series of smaller ones; whereas in *D. Darwinii* there is but one.

The scales of the temples, the neck, the body, the limbs and the tail, are similar to those

of the former species in general form and arrangement, excepting that they are smaller and less elevated. Those beneath the anterior part of the lower jaw are much smaller; but the rest on the under parts are similar to the former.

The head is of a dull light-brown colour, with a few obscure darker spots. The general ground colour of the back is "bluish gray, tinged with rust colour;" there are five transverse bands across the back, which are composed principally of numerous, close, small, dark-brown spots, on a bluish-gray ground, darker than the intervals, and without any red tinge; and each band is marked on the posterior margin with strongly defined semilunar indentations, bordered with yellowish-white, or bright yellow. These bands are continued on the tail, where they become half-rings.

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------------|---------|--------|
| Length of the head | 1 | 2 |
| of the body | 2 | 9 |
| of the tail | 3 | 5 |
| Total length ... | 7 | 6 |
| Length of anterior extremity | 1 | 4 |
| of posterior extremity | 2 | 1 |

GENUS—AMBLYRYNCHUS. *Bell.*AMBLYRYNCHUS DEMARLII. *Bibr.*

PLATE XII.

Cristâ supra cervicem elevatiore, supra dorsum humiliore; tuberculis verticalibus subdepressis, occipitalibus conicis; caudâ tereti.

Amblyrynchus Demarllii. Bibr. Hist. Rept. IV. p. 197.

This species was first described by Mons. Bibron in the "Histoire des Reptiles," and so fully as not to require any detailed account of its characters here. It has not, however, hitherto been figured, and it is thought very desirable to embrace so good an opportunity of giving a representation of so interesting an animal. Its most important structural peculiarities will be alluded to in the account of the next species, which is an aquatic form, whilst the present is strictly terrestrial. The toes are long, compared with those of the other, and so unequal as to constitute essentially an ambulatory form.

By Mr. Darwin's observations we are now enabled fully to confirm Mons. Bibron's suggestion, that this species was from the Galapagos, and to establish the genus as strictly appertaining to that curious and interesting locality.

AMBLYRYNCHUS CRISTATUS. *Bell.*

Cristâ supra humeros humiliore; digitis ferè equalibus subpalmatis; caudâ compressâ.

Amblyrynchus Cristatus. Bell, Zool. Journ. 1825, p. 195. Tab. Supp. XII. Bibr. Hist. Rept. IV. p. 204.

I established the genus *Amblyrynchus* nearly eighteen years ago, from a stuffed specimen of the present species, which had been obtained by Mr. Bullock, Jun., in Mexico. I had never seen another specimen, until Mr. Darwin brought home a young one from the Galapagos, in excellent preservation in spirits, and thus established its true habitat, and enabled me to correct those errors in my description which arose from drying and bad stuffing. Mons. Bibron also took his description from my specimen, and thus necessarily fell into the same mistakes, of which the most important are those which relate to the form of the tail, and the structure of the feet. Thus the tail is described as "round, excepting towards the extremity, where it is flattened at the sides," whereas it is in fact much compressed throughout its whole length; and with regard to the toes no mention is made of their being partially united by a web or fold of skin, which is the case both on the anterior and posterior feet. These two characters so obviously point out a power of swimming, that the aquatic habits of the species might at once have been predicated, and it is exceedingly interesting to find, from Mr. Darwin's observations, that such is really the case. We have, therefore, two distinct forms—distinct equally in their structure and in their habits—in the two species now described; the one, *A. Demarllii*, being truly terrestrial, with lengthened, unequal, and distinctly separated toes and a round tail, and the present species as truly amphibious, having short, nearly equal and webbed toes, and a compressed tail.

A very interesting account of their habits, &c., is given by Mr. Darwin in his delightful Journal of the Voyage of the Beagle, p. 466 to 472, to which the reader is referred, and which exactly accords with the peculiarities of their respective structure just alluded to.

It is remarkable also, that whereas *Amblyrynchus cristatus* inhabits the coasts of all the islands, the other species is found only in the central portion of the group.

GENUS—LEIOCEPHALUS. *Gray.*

LEIOCEPHALUS GRAYII.

PLATE XIII.—FIG. 1.

Crista dorsali elevatá; caudá sub-compressá; squamis ventralibus rhomboideis, lævibus; margine anteriore meatus auditorii quadridentato; squamá occipitali magná.

Habitat, Galapagos Archipelago.

DESCRIPTION.—Head, viewed from above, forming a nearly equilateral triangle, covered with irregular slightly raised scales. Supra-orbital ridge prominent, and covered with a series of elongated and imbricated scales. Occipital plate large, pentagonal, notched at its posterior margin. The anterior margin of the auditory passage is strongly quadridentate, from the existence of four long and rather narrow scales. Scales of the temple obtusely carinated, not imbricated; those of the back strongly and acutely carinated and disposed in numerous rows, converging backwards towards the dorsal crest. Ventral scales rhomboidal, not carinated. Dorsal crest elevated, composed of flat vertical scales, so closely placed as to constitute an almost continuous line, extending from the neck to the end of the tail. Tail somewhat compressed at the base, becoming nearly round towards the middle. Scales beneath the feet and toes carinated.

COLOUR.—The colour of this species is thus stated in Mr. Darwin's notes:—"Upper part clove brown, passing into black brown with black spots. Sides slightly tinted with orange; some of the scales of the crest near the head are white; belly nearly white; the whole of the throat before the fore legs glossy black. This is the most common variety in the Archipelago. The black spots are not unfrequently placed in waved transverse bars, and are sometimes arranged longitudinally.

DIMENSIONS.

| | Inches. | Lines. |
|--------------------------|---------|--------|
| Length of the head | 0 | 9 |
| of the body | 2 | 8 |
| of the tail | 5 | 8 |
| | <hr/> | |
| Total length | 9 | 5 |

Of this species, one of the most beautiful in the whole order of Saurians, Mr. Darwin obtained numerous specimens, one only of which is fully adult. In the younger individuals the dorsal crest is low and almost inconspicuous. It differs very materially from either of the two species previously described, and I have dedicated it to Mr. Gray, who first distinguished the genus. Mons. Bibron, unaware that Mr. Gray had already constituted the genus under the name *Leiocephalus*, named it *Holotropis*. I have, however, retained the former name, as having the claim of priority.

It constitutes one of the numerous interesting novelties obtained by Mr. Darwin in the Galapagos. The specimens, which are of various ages, were taken in Chatham Island and in Charles Island.

GENUS—CENTRURA. *Bell.*

Caput *breve, triangulare*. Aures *magnæ, anticè cutis plicâ, haud dentatâ, partim celatæ*. Nares *magnæ, rotundæ*. Gula *transversè subplicata*. Collum atque corpus *haud cristata; hoc depressum, latum, cute longitudinalitèr plicatâ*. Cauda *teres, basin versus subdepressa, squamis fortibus spinosis verticillatis*. Squamæ capitis *numerosæ, parvæ, rotundatæ, non imbricatæ*—corporis *minimæ, rotundæ, subconvexæ, læves*. Pori femorales et præ-anales *nulli*. Dentes palatini.

The propinquity of this genus both to *Oplura* and to *Doryphorus* is very obvious. It differs, however, from both in several structural characters. From the former in the absence of denticulations on the anterior margin of the ear, and of a nuchal crest; from the latter in the presence of palatine teeth. Its place is probably between these two genera.

CENTRURA FLAGELLIFER. *Mihi.*

PLATE XIII.—FIG. 2.

DESCRIPTION.—Head almost equilaterally triangular, the muzzle rounded; scales of the head small, nearly equal, rounded, not imbricated, those of the temples subconical; nostrils round, large, confined to the nasal scales. Ears rather large, the tympanum lying beneath the surface, and partly concealed by an anterior fold of skin, which is not denticulated, as in *Oplura*. Skin of the neck folded at the sides, that of the body flaccid, and with strongly marked lateral folds, extending from the shoulder to the thigh. Scales of the neck and back very small, round, slightly convex, very smooth. Skin of the throat rugose, with a transverse pectoral fold not very strongly marked. Scales of the throat similar to those of the back; those of the belly broader and less convex; all perfectly smooth. Tail about the length of the head and body, flattened at the base, then round, surrounded with strong spinous verticillated scales, of which there are about fifty circles; beneath smooth. Legs of moderate length, strong, covered with small conical, imbricated scales. The toes compressed towards the extremity, and terminated with a strong, short, compressed nail.

COLOUR.—The colour can only be partially described, as the specimen has been long in spirits. It

is of a dark brown colour above, with darker, obscure markings on the body. About the head are traces of green. The tail and limbs are rich brown, and the under parts dull, pale fuscous.

DIMENSIONS.

| | Inches. | Lines. |
|--|---------|--------|
| Length of the head | 0 | 8 |
| of the neck | 0 | 4 |
| of the body | 2 | 5 |
| of the tail | 3 | 7 |
| Total length | 7 | 4 |
| Length of anterior extremity | 1 | 4 |
| of posterior extremity | 2 | 0 |

FAMILIA—GECKOTIDÆ. *Gray.*GECKOTIENS OU ASCALABOTES. *Bibr.*GENUS—GYMNODACTYLUS. *Spix.*GYMNODACTYLUS GAUDICHAUDII. *Bibr.*

PLATE XIV.—FIG. 1.

Squamâ mentali impari pentagonâ, scutiformi; squamarum labialium inferiorum paribus quinque, superiorum paribus sex; caudâ medio crassiore.

Gymnodactylus Gaudichaudii. Bibr. Rept. III. p. 413.

This species was first brought from Coquimbo by Gaudichaud, after whom it was named by Mons. Bibron, who described it in his work; but as one specimen alone exists in the French National Collection, and as the species has never been figured, it is thought desirable that a figure should be given in the present work. The characters above given sufficiently distinguish it from all other species; but for a detailed description, the reader is referred to the "Histoire des Reptiles" above quoted.

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------|---------|--------|
| Length of the head | 0 | 5 |
| of the body | 1 | 4 |
| of the tail | 2 | 3 |
| Total length | 4 | 2 |

The specimens brought home by Mr. Darwin were from Port Desire, in Patagonia, and the following observations occur in his MS. notes :—"Centre of the back yellowish brown, sometimes with a strong tinge of dark green; sides clouded with blackish brown; in very great numbers under stones; makes a grating noise when taken hold of; after death loses its darker colours.

"A specimen being kept for some days in a tin box, changed colour into an uniform grey, without the black cloudings. I thought I noticed some change after catching and bringing home these animals, but could observe no instantaneous change."

I have considered these specimens as belonging to the species to which I have assigned them, because they exactly agree with Mons. Bibron's description. It is, however, very possible that an opportunity of comparing them with those obtained by Gaudichaud, would show them to be distinct, as it rarely happens that the same species of reptile is found on the opposite sides of the American Continent.

GENUS—NAULTINUS. *Gray.*

NAULTINUS GRAYII.

PLATE XIV.—FIG. 2.

Omninò viridis; fronte subconcavo; squamulis capitis planis.

DESCRIPTION.—Head thick, swollen across the posterior part, concave between the eyes, and forwards nearly to the snout, which is rounded. Scales of the head larger towards the fore part, nearly flat. Eyes round, large; ears longitudinally oval. Body covered with small nearly equal scales. Tail round, one-fifth longer than the body. Limbs short, the anterior, when placed against the side, reaching but little more than half way to the thigh; the posterior reaching about two-thirds the distance towards the shoulder. Toes short; on the anterior foot the first is the shortest, then the second, the fifth, and the fourth; on the posterior increasing in the same series; all compressed towards the extremity, and all furnished with small curved close claws.

The colour is a fine green.

It was taken at the Bay of Islands, New Zealand. It lives on trees, and is said to make a laughing noise.

This species greatly resembles *Naultinus Elegans** of Mr. Gray, of which a beautiful specimen is in the British Museum. Upon a comparison of the two,

* See Fauna of New Zealand, p. 203. Zool. Misc. p. 72.

however, I find that they differ in the following particulars. In the present species the head is concave between the eyes, and forwards nearly to the snout; in the other, this part is quite plain; the scales of the head in this species are flat; in the other they are convex. The colour of this species is uniformly green, whereas *N. Elegans* has several markings of a yellow colour, each distinctly bordered with black.

FAMILIA — LACERTIDÆ.

GENUS—AMEIVA. *Cuvier.*

AMEIVA LONGICAUDA. *Mihi.*

PLATE XV.—FIG. 1.

Squamis supra-humeralibus, rhomboideis, imbricatis; subfemoralibus transversim hexagonis; abdominalibus in seriebus decem longitudinalibus dispositis; caudâ, corpore cum capite plus quam duplò longiore, squamis medio carinatis, et ad margine subcarinatis.

Habitat, Bahia Blanca, Northern Patagonia.

DESCRIPTION.—Head very narrow, much elongated and pointed, the vertex flattened; nostrils rather large, open, round, directed laterally, and placed in the centre of the naso-rostral plate; superciliary plates three in number, the central one the largest; suprahumeral scales rhomboidal, imbricated, not broader than long, in four series; those of the arm transversely hexagonal; the anterior surface of the thigh, and the inferior of the leg, covered with large hexagonal, somewhat imbricated, scales; caudal scales above quadrate, longer than broad, with a strong medial carina, and the lateral margins slightly raised; beneath smooth; tail very long. Anterior extremity placed against the body, reaching rather more than half way to the thigh; posterior extremity extending forwards nearly to the ear.

COLOUR.—The upper surface of this beautiful species is dark brown or blackish, with nine distinct white or yellowish longitudinal fasciæ extending through the whole length of the neck and body; tail with four of these lines. Under parts white.

DIMENSIONS.

| | Inches. | Lines. |
|------------------------------------|---------|--------|
| Length of the head | 0 | 6 |
| of the neck | 0 | 3 |
| of the body | 1 | 4 |
| of the tail | 5 | 2 |
| | <hr/> | |
| Total length..... | 7 | 5 |
| Length of anterior extremity | 0 | 7 |
| of posterior extremity..... | 1 | 5 |

Found at Bahia Blanca by Mr. Darwin. The specimens are probably all of them very young; hence the longitudinal lines can scarcely be considered as permanent, as most species of the genus are beautifully lineated in the young state. The length of the tail, with its carinated scales, the general elegance of the form, the gracile form of the head, and the neat and distinct arrangement of the colours, render this one of the most beautiful species of this elegant genus.

The description of the colours given above, being from specimens which have been long in spirits, it is necessary to state that Mr. Darwin has the following notice respecting one of them—"On the sides two dark red streaks; tail red."

FAMILIA—ZONURIDÆ.

GENUS—GERRHOSAURUS. *Weigmann.*

GERRHOSAURUS SEPIFORMIS. *Bibr.*

PLATE XV.—FIG. 2.

Scincus sepiformis, Schneid. Hist. Amph. II. p. 191. Merr. Syst. Amph. p. 70. n. 1.

Gerrhosaurus sepiformis, Bibr. Hist. des Rept. V. p. 384.

Corpore cum caudâ longo, serpentiformi; pedibus parvis; squamarum submaxillarum pari secundo contiguâ; squamis dorsalibus magnis, subrectangularibus, striatis, in seriebus tredecem, et ventralibus in seriebus octo dispositis.

Habitat, Cape of Good Hope.

After a careful examination of the data from which the different synonyms of this species, and of *Gerrhosaurus flavigularis*, Bibr., have been derived, I am inclined to agree with this author, that the present is the true *Scincus sepiformis* of Schneider, and of Merrem, and not *Scincus flavigularis* as supposed by Wagler, Weigmann, and Gray. It is very fully described by Bibron in the "Histoire Naturelle des Reptiles," but it has not hitherto been figured. There is no notice of it in Mr. Darwin's notes, further than its having been obtained at the Cape of Good Hope.

FAMILIA—SCINCIDÆ.

GENUS—CYCLODUS. *Wagler.*CYCLODUS CASUARINÆ. *Bibr.*

PLATE XV.—FIG. 3.

Aurium margine anteriore simplici; squamis corporis lævibus, in seriebus XXIV dispositis.

“*Kèneux de la casuarina*, Cocteau, Tab. Synopt.” (v. Bibr. Hist. Nat. des Rept. V. p. 749.)

Cyclodus casuarinæ, Bibr. l. c.

As I have not the work of the lamented Dr. Cocteau by me, I quote the above reference from M. Bibron's work, in which this species is fully described. It differs from the other species of this curious genus in many minute characters of the scaling of the head, but the most tangible and obvious distinctive character consists in the number of series of scales, which does not exceed twenty-four, all around the body, whilst in the others, they amount to thirty-four or thirty-eight. It would appear that it is liable to some considerable diversity in colour and markings. That which M. Bibron describes, has “the head of a yellowish grey, the whole of the upper part of the body olive grey, and the inferior part whitish grey.” The specimen in the collection of the Zoological Society has the whole upper part of a brownish grey, with twelve black lines extending from the neck along the back and tail, corresponding with the sutures of the longitudinal series of scales. The under surface of the tail is marked by about thirty transverse, interrupted, black bands. The following is the description given by Mr. Darwin from his specimen when taken,—“Scales on the centre of the back light greenish brown, edged on their sides with black; scales on the sides of the body above greyer and with less black, below reddish: belly yellow, with numerous narrow, irregular, waving, transverse lines of black, which are formed by the lower margin of some of the scales being black; head above grey, beneath whitish.” Mr. Darwin adds, that the motion of the body, when crawling, resembles that of a snake. It is not very active. Coleoptera and larvæ were found in its stomach. “It is common in the open woods near Hobart Town in Van Diemen's Land.”

CLASSIS—AMPHIBIA.

ORDO—ANOURA.

FAMILIA—RANIDÆ.

GENUS RANA.

RANA DELALANDII. *Bibr.*

PLATE XVI.—FIG. 1.

Dentibus palatinis in serie transversâ, medio interruptâ, dispositis; membris posterioribus corpore cum capite duplò longioribus; pedibus posticis gracillimis, semipalmatis.

Rana Delalandii, Bibr. Hist. Rept. VIII. p. 388.

DESCRIPTION.—Head elongate, depressed. Eyes large, not prominent. Tympanum nearly round. Palatine teeth in two simple series, commencing at the inner side of the anterior margin of the posterior nares, and extending towards each other in a transverse direction, leaving between them a space of about half the length of each. Tongue not quite as long as it is broad. Body somewhat depressed, and with the head forming an almost uninterrupted ellipse. Skin of the back, with several small longitudinal folds. Anterior legs, when placed against the sides, reaching to the thigh. Fingers very slender, and of nearly equal length. Posterior limbs fully twice as long as the head and body. Toes extremely long and slender, and connected by a membrane by about half their length.

COLOUR.—The general colour of the upper parts is a rich brown, with darker brown and white markings. A white median fascia extends the whole length of the head and body; another fascia of the same colour and of very irregular figure on each side, passes backwards and downwards from above the shoulders, and loses itself in the pale colour of the abdomen. There are several smaller white lines and spots, and others of a dark rich brown, particularly a large mark of the latter colour behind the eye, including the tympanum. The thighs and legs are elegantly banded with similar colours. The under side is whitish.

DIMENSIONS.

| | In. | Lines. |
|-----------------------------------|-----|--------|
| Length of the head and body | 1 | 8 |
| of anterior extremities | 1 | 1 |
| of posterior ditto | 3 | 7 |

This species was first discovered at the Cape of Good Hope by M. Delalande, and named after him by Mons. Bibron. Mr. Darwin found it in the same locality. It is now figured for the first time.

RANA MASCARIENSIS.

PLATE XVI.—Fig. 2.

Dentibus palatinis in fasciculis binis obliquis distantibus, ad marginem internam narium posteriorum attingentibus; tympano circulari, mediocri; digitis posticis usque ad phalanges penultimas connexis: plantis tuberculo unico; cute dorsi lævi, longitudinaliter plicatâ; suprâ fusco-rufescens, fasciâ longitudinali pallidâ.

Rana Mascariensis, Bibr. Hist. Rept. VIII. p. 315.

Habitat, the Mauritius.

This pretty species of the typical genus of the family was described by Bibron, but has not hitherto been figured. It was found in Mauritius, on swamps near the sea, by Mr. Darwin, who remarks on the extraordinary height of its leaps. It has also been found in the Seychelles, Madagascar, and the Island of Bourbon.

GENUS—LIMNOCHARIS. *Bell.*

Lingua ovalis, integra, margine posteriore libero. Dentes palatini utrinque in fasciculis duobus dispositis, quorum alter ad marginem anteriorem narium interiorum, alter pone nares interiores, prope arcum maxillarem. Nasus terminalis, truncatus, ultra labium productus. Tympanum conspicuum, circulare. Cutis omninò lævis. Digiti anteriores liberi, posteriores ad basin tantùm palmati.

The genus *Limnocharis* is remarkable for the existence of palatine teeth in a part of the mouth in which they have never been observed in any other amphibian. Not only is there a small group or line of these contiguous with the anterior margin of the posterior nares,—a situation in which they are found in some other genera of *Ranidæ*, but there is also a group of them placed at some distance behind the posterior margin of these openings, and close within the rise of the maxillary arch. This genus, of which one species only is at present known, will probably be most naturally placed between the true *Ranæ* and certain of the *Cystignathi*.

LIMNOCHARIS FUSCUS. *Mihi.*

PLATE XVI.—Fig. 3.

Habitat, Rio Janeiro.

DESCRIPTION.—Head semi-oval, depressed, as broad as it is long. The muzzle truncated, extending beyond the lips, which it overhangs. Tongue oval, entire, free at the posterior margin. Palatine teeth in two parcels on each side; one consisting of very few at the anterior and inner margin of the posterior nares, the other behind those openings, in the angle formed by the maxillary arch and the orbits. Posterior nares large and oval. Tympanum conspicuous, nearly circular. Skin every where perfectly smooth, without glands or pores. Anterior legs of moderate length and size. The fore-arm rather longer than the upper arm. Fingers of moderate length, wholly detached. Hinder legs little more than one-third longer than body. The toes separate, excepting a slight rudiment of a connecting membrane at their base, which extends, though very narrow, along their sides, the extremity very slightly notched.

COLOUR of the upper part rich dark brown. The thighs lighter, obscurely banded with dark brown. Under parts pale blueish grey. The throat dotted with brown.

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body | 1 | 4 |
| of the anterior extremities | 0 | 7 |
| of the posterior extremities | 1 | 8 |

Found in brooks at Rio Janeiro by Mr. Darwin, who states that it is infested with acari; and I observe, in the specimen under examination, several marks in the skin, from whence these have been taken.

GENUS—CYSTIGNATHUS. *Wagler.*CYSTIGNATHUS GEORGIANUS. *Bibr.*

PLATE XVI.—Fig. 4.

*Dentibus palatinis perpaucis, in fasciculis binis approximatis, pone nares posteriores; linguâ integrâ, oblongâ; tympano celato; pedibus posterioribus non pal-
matis.*

Crinia Georgiana, Tschudi Class. Batrach.

Cystignathus Georgianus, Bibr. Rept. VIII. p. 416.

This species, which formed the type of Tschudi's genus *Crinia*, was separated by him from *Cystignathus* on account of the form of the tongue, the non-

appearance of the tympanum, the paucity of palatine teeth, and the total absence of an interdigital membrane on the hinder feet. These characters being either merely comparative or unimportant, were not considered by Bibron as sufficient to warrant a generic separation, and I have followed him in retaining the species amongst the *Cystignathi*. It was first discovered by Messrs. Quoy and Gaimard at King George's Sound, in Australia, where it was also obtained by Mr. Darwin. It is a beautiful species; the back being of a rich brown colour, with a pale orange fascia extending along the sides from the eye to the thigh, becoming bright orange on the flanks. Thighs and legs banded with rich deep brown and bright orange.

GENUS—BORBOROCÆTES. *Bell.*

Lingua ovata, posticè libera, rotundata; anticè subacuminata. Dentes palatini in fasciculis binis plùs minùsve obliquis, pone nares posteriores positi. Tympanum celatum. Digiti anteriores haud palmati; posteriores ad basin tantùm cute connexi. Glandulæ cutaneæ nullæ. Sacculi vocales (maris) utrinquè sub lingua nascentes.

The two species on which I have founded this genus approach so nearly to some species of *Cystignathus*, that it is not without hesitation that I determine on considering them as typical of a new generic form. The principal characters on which I have founded the distinction are the position of the palatine teeth, the form of the tongue, the concealment of the tympanum, the absence of glands and pores on the skin, and the connexion of the base of the hinder toes by a rudimentary palmar membrane. It is true that some of the species of *Cystignathus*, as that genus is at present constituted, agree with the present form in some or other of these particulars; but upon the whole they are sufficiently distinct; and in fact the genus *Cystignathus*, as left by M. Bibron, appears to me to stand in need of revision and dismemberment. The species constituting the genus now proposed, are however both new. The genus *Borborocætes* will probably stand, in its natural affinities, between *Cystignathus* and *Cycloramphus*, from the latter of which it differs in the situation of the palatine teeth, in the degree to which the hinder feet are webbed, and the comparative length of the hinder legs. The two latter characters are of importance as indicating a difference of habit; and we find that *Cycloramphus* has proportionally short hinder limbs, with the toes

extensively palmate, whilst in *Borborocætes* the hinder legs are much longer, and the toes scarcely at all webbed. The former structure indicates a greater power of swimming, and the latter of leaping.

BORBOROCÆTES BIBRONII. *Mihi.*

PLATE XVII. FIG. 1.

Dentibus palatinis in fasciculis distantibus obliquis pone nares posteriores positis; palmis bituberculatis.

Habitat, Chiloe and Valdivia.

DESCRIPTION.—Head depressed, the vertex slightly concave between the orbits; front (space included between two lines drawn from the anterior corner of the orbits to the point of the nose) triangular and distinct. Nostrils lateral. Eyes rather prominent. Tongue broad, ovate, acuminate in front, behind entire and rounded, the posterior half and the sides detached. Palatine teeth in two oval parcels, direct obliquely backwards and inwards, and situated at some distance behind the line of the posterior margin of the nares. Tympanum concealed. Body rather depressed and short. Skin smooth and without pores or glands, excepting on the posterior and inferior surface of the thighs, where there are some small granular elevations. Fore legs two-thirds the length of the head and body. The fore-arm rather larger than the upper arm. The fingers entirely separated, the third considerably the longest. A small tubercle under each joint, and two on the palm near the wrist. Length of the hinder legs to that of the head and body as 5 to 3, or rather more. Toes connected only at their base. A small tubercle under each joint, and a very depressed one at the base of the inner toe.

COLOUR of the upper parts fuscous, with a lateral fascia extending from the orbit nearly to the thigh, of a dark-brown colour, bordered with whitish; and another of an elongated triangular form on each ilium. Legs with transverse incomplete faciæ of the same colour. Under parts grey, with numerous brown dots.

DIMENSIONS.

| | In. | Lines. |
|------------------------------------|-----|--------|
| Length of the body and head | 1 | 5 |
| of the anterior extremities | 1 | 0 |
| of the posterior extremities | 2 | 6 |

Taken at Valdivia and at Chiloe, in a thick forest, by Mr. Darwin.

BORBOROCETES GRAYII. *Mihi.*

PLATE XVII.—Fig. 2.

Dentibus palatinis in fasciculis subcontiguis paulò obliquis, pone nares posteriores positis; palmis non tuberculatis.

Habitat, Valdivia.

This species considerably resembles the former in most of its characters. The palatine teeth, however, form at once a certain and tangible distinction, and there are some minor points in which they differ, sufficient at a glance to determine them. The head in the present animal is broader than it is long; in the former the breadth is only equal to its length. The palms are in this species without conspicuous tubercles; in the other there are two, although very small.

In colour it differs much from the former. The general colour is a rich fuscous brown, rather paler beneath; the flanks, the throat and belly, and the whole of the thighs and legs, with various white markings, those of the throat and belly being the smallest. This species was found in the forest, in Valdivia.

GENUS—PLEURODEMA. *Tschudi.*

I have thought it right to follow Tschudi in separating from the genus *Cystignathus* of Wagler, such species as have large and conspicuous lumbar glands, particularly as they all agree in possessing a much more bufonine aspect than the others. The discovery of three new species, all agreeing in these characters with *Pleurodema Bibronii* of Tschudi, increases the importance of the grounds upon which this separation is made.

PLEURODEMA DARWINII. *Mihi.*

PLATE XVII.—FIG. 3.

Dentibus palatinis paucis, minimis; linguâ subcordatâ, vix emarginatâ; glandulis lumborum magnis, rotundis, convexis; digitis posticis ad basin tantùm membranâ connexis; dorso sparsim tuberculato-glanduloso; suprâ pallidè virescens, maculis fusco-olivaceis.

Habitat, Maldonado.

DESCRIPTION.—Head triangular, rather broader than long. Muzzle rounded. Eyes slightly prominent. Tongue somewhat heart-shaped, scarcely emarginated behind. Palatine teeth very few, and with difficulty perceptible, placed in two small groups between the posterior nares. Body thick and broad, with numerous glandular tubercles scattered over the surface, principally on the anterior parts, and assuming somewhat of a longitudinal arrangement. Lumbar glands large, round, and prominent. Legs robust and short. Toes of the fore feet wholly separate, with a small tubercle under each joint, and two larger ones at the hinder part of the palm. Hinder toes, with a rudimentary membrane at the base, a small tubercle under each joint; the first and second toes very short. A conical tubercle at the inner, and another at the outer side of the metatarsus.

COLOUR.—The upper surface is beautifully marbled with dark olive or black, on a light-green ground; some of the markings assume somewhat of an ocellated form, and approach to a symmetrical arrangement. The lumbar glands are more strongly coloured than the other parts, the centre being black, and nearly surrounded by a bright line of very light green, or nearly white. The thighs are numerously banded with the prevailing colours, and a tinge of orange or red. Beneath pale; in some specimens blackish under the chin.

The aspect of this species is remarkably bufonine; and this character is increased by the numerous glandular tubercles on the surface of the body, and pores about the parotid region. It is, doubtless, similar in its habits to many of the toads.

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body..... | 1 | 4 |
| of the anterior extremities | 0 | 8 |
| of the posterior extremities | 1 | 7 |

It was repeatedly found by Mr. Darwin at Maldonado, near the mouth of the river La Plata.

PLEURODEMA ELEGANS. *Mihi.*

PLATE XVII.—FIG. 4.

Dentibus palatinis prominentibus, in fasciculis binis ovatis obliquis dispositis; lingua rotundâ integrâ; glandulis lumbarum ovalibus, valdè convexis; digitis posticis haud palmatis; dorso tuberculato-glanduloso, fusco, nigro obscurè maculato, fasciâ longitudinali pallidâ.

Habitat, Valparaiso, Valdivia, and Archipelago of Chiloe.

DESCRIPTION.—Head semi-elliptic, as broad as long. Muzzle rounded. Eyes very slightly prominent. Tongue large, round, entire, very thick. Palatine teeth prominent, disposed in two

oval groups, extending obliquely backwards and inwards, but separated by a considerable interval. Body somewhat depressed and elongated, with many prominent glandular tubercles, and with pores about the parotid region. Lumbar glands of moderate size, of an elongated oval form, and very convex. Legs rather slender, the anterior feet with the third toe considerably the longest; a small tubercle under each joint of all the toes, and several small inconspicuous ones on the palm; hinder legs rather elongated, the toes long, particularly the fourth, the first very short; a small tubercle under each joint; the inner metatarsal tubercle prominent, the outer one inconsiderable.

COLOUR.—The markings of this species are very elegant and striking. The ground colour of the upper parts is a rich brown, with darker cloudings and marks; a light yellowish longitudinal line running all the length from the nose to the extremity of the body, a very irregular fascia on each side of the same colour enclosing a brown oblong spot on the upper lip, another just behind the tympanum, and two others on the sides; there is also a brown fascia from the extremity of the nose to each eye; the lumbar glands are black and yellow, distinctly marked. The limbs are obscurely banded with brown and pale yellowish. The colours in some specimens are more obscure than in that figured, and they appear to lose their clearness with age.

The following are the colours of the brighter individuals according to the observations of Mr. Darwin:—"Yellowish and broccoli-brown, with darker brown marks; broad medial dorsal line, pale gallstone yellow; lumbar glands saffron yellow and jet black." Another specimen was "ash-grey with blackish brown marks."

DIMENSIONS.

| | In. | Lines. |
|------------------------------------|-----|--------|
| Length of the head and body..... | 1 | 8 |
| of the anterior extremities | 1 | 0 |
| of the posterior extremities | 2 | 4 |

The general habit of this species is much more in accordance with its relation to the *Ranidæ* than that of the other species of the genus. Its general form is more elongated and depressed, and the limbs, particularly the hinder ones, are longer in proportion to the body. It is certainly very near *Pl. Bibronii* of Tschudi, but still undoubtedly distinct.

PLEURODEMA BUFONINUM. *Mihi.*

PLATE XVII.—Fig. 5.

Dentibus palatinis prominentibus, in fasciculis binis ovalibus, obliquis, dispositis; linguâ subcordiformi, subemarginata; glandulis lumborum maximis, ellipticis, planis; digitis posticis dimidio ferè palmatis, marginatis; dorso glandulis parvis instructo, fusco-griseo maculis, nigris, lineâ longitudinali pallidâ.

Habitat, Port Desire, Patagonia.

DESCRIPTION.—Head short. Muzzle rounded. Eyes prominent. Tongue thick, slightly heart-shaped, scarcely notched on the posterior margin. Palatine teeth prominent, in two oval groups, converging backwards. Tympanum rather small, perfectly round, conspicuous. Parotid glands distinct. Body thick and broad, with small glandular tubercles dispersed over the surface, particularly at the anterior part. Lumbar glands extremely large, elliptic-ovate, flat. Legs of moderate length, rather robust. Anterior toes separated, excepting at the base; a small tubercle under each joint, and several very small ones on the palm; hinder toes united to about half their length, and bordered on each side to the extremity; metatarsal tubercles prominent; soles of the hinder feet with many minute tubercles.

COLOUR.—The upper surface of this species is of a brownish grey colour, sometimes greenish brown or dark olive, and with numerous irregular spots of dark-brown or black. Thighs and legs with fasciæ of the same colour. Beneath yellowish white; in some with numerous blackish dots under the throat.

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body | 1 | 8 |
| of the anterior extremities | 1 | 0 |
| of the posterior extremities | 2 | 3 |

Found by Mr. Darwin at Port Desire, in Patagonia, and high up the river Santa Cruz—"probably," says Mr. Darwin, "the most southern limit for this family."

GENUS—LEIUPERUS. *Bibr.*LEIUPERUS SALARIUS. *Mihi.*

PLATE XVIII.—Fig. 1.

Supra nigricans, lumbis maculis 3 vel 4 nigris, albo-marginatis.

DESCRIPTION.—The head is short, the opening of the mouth small, the tongue rather thick, very slightly emarginate behind, and with the posterior margin free. The eyes small; the tym-

panum not very conspicuous; there is a trace of a parotid gland on each side of the neck. The body is rather thick, and the limbs proportionally short. The hinder toes are only connected at the base by a rudimentary membrane, the first four gradually increasing in length, and placed along the side of the matatarsus, one beyond the other; the fifth on the same line as the fourth, but not more than half its length. The metatarsal tubercle is rather prominent, and there are small subarticular tubercles on the toes of all the feet.

COLOUR.—The colour of the upper parts is brownish black. On each side near the thigh are three or four perfectly round black spots, each surrounded with a white line. The under parts whitish.

Of this second species of a rare and remarkable genus, one specimen only exists in Mr. Darwin's collection. It is only the third known instance, in the family of the RANIDÆ, of the absence of palatine teeth; the others being *Oxyglossus Lima* of Tschudi, and *Leiuperus marmoratus* of Bibron. The present genus must be considered as nearly approaching the family of the BUFONIDÆ in the absence of palatine and the extreme minuteness of the maxillary teeth, in the extremely small gape of the mouth, the thick form of the body, the shortness of the limbs, and the existence of rudimentary parotid glands. I have not had an opportunity of comparing this specimen with those on which Bibron founded the genus, but I cannot doubt the specific distinction between them.

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body | 0 | 9 |
| of the anterior extremities | 0 | 5 |
| of the posterior extremities | 1 | 1 |

It was found by Mr. Darwin at Port Desire, and its habitat is very remarkable. "It is bred in and inhabits water far too salt to drink."

GENUS—PYXICEPHALUS. *Bibr.*

PYXICEPHALUS AMERICANUS. *Bibr.*

PLATE XVIII.—Fig. 2.

Lingua cordiformi; dentibus palatinis in linea transversa interrupta, inter nares posteriores positus; tympano celato; dorso mammillato.

This curious species has, I believe, only once before been found. A single specimen exists in the French Museum, which was brought from Buenos Ayres

by Mons. d'Orbigny, and which formed the subject of Mons. Bibron's description. Mr. Darwin's specimen was taken on the open plains at Monte Video.

Of the three species of this remarkable genus at present known, two are inhabitants of Africa, from whence they were brought by Delalande. As neither of them has as yet been figured, it was thought desirable that the present opportunity should be taken to exhibit some of the generic characters, and especially the hard horny spur on the hinder foot.

This genus is one of those bufonine forms of the RANIDÆ which irresistibly lead us to doubt the correctness of the present received arrangement of the anurous Amphibia.

GENUS—ALSODES. *Bell.*

Caput convexum. Lingua anticè acutè-producta, posticè rotundata, et libera. Dentes palatini inter nares posteriores. Tympanum celatum. Aperturæ Eustachianæ haud conspicuæ. Digiti anteriores ad basin tantum—posteriores usque ad phalangem tertium membranâ connexi.

A genus of the Raniform group, nearly allied, as Mons. Bibron observes, to *Scaphiopus*, by the structure of the hands, which, although without any projecting rudimentary thumb, has a small process under the skin, along the extreme margin of the first finger. In common with the genus *Bombinator*, it has the opening of the Eustachian tubes so small as scarcely to be detected.

ALSODES MONTICOLA. *Mihi.*

PLATE XVIII.—FIG. 3.

DESCRIPTION.—Head semi-elliptical, somewhat convex, with the muzzle nearly perpendicular; vertex smooth. Eyes of moderate size. Nostrils very small, opening upwards. Tongue broad and rounded behind, narrowing to a point at the apex, detached at the posterior part. Palatine teeth in two small approximate patches, between the posterior nostrils. Openings of the Eustachian tubes scarcely visible. Extremities of moderate length. The fore feet, with four rather short toes, connected at the base by a short membrane; the inner toe broad, and with a slight projection under the skin, along its inner margin; hinder toes connected as far as the joint of the second and third phalanges.

The colour of the only specimen in the collection has become totally changed into a smoky brown by the spirit, but the following is Mr. Darwin's description

of it when living: "On the centre of the back a strong tinge of grass-green, shading on the sides into a yellowish brown; iris coppery."

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head | 0 | 5 |
| of the body | 1 | 0 |
| of the anterior extremities | 0 | 9 |
| of the posterior extremities | 1 | 8 |

Mr. Darwin found this species "in the island of Inchy, archipelago of Chonos, north part of Cape Tres Montes, from the same great height as *Bufo Chilensis* (from 500 to 2500 feet elevation) under a stone."

GENUS—LITORIA. *Bibr.*LITORIA GLANDULOSA. *Mihi.*

PLATE XVIII.—Fig. 4.

Femoribus posticè glandulosis; digitis posticis breviter palmatis.

This species agrees in many respects with *Litoria Americana* of Bibron. It differs, however, in the toes being much less palmate, at least according to the generic character given by that excellent naturalist, and in the existence of numerous thick glands on the posterior part of the thighs. The very slight degree to which the extremities of the toes are dilated in the other species of this genus, and which would at first sight lead to their allocation amongst the Raniform rather than the Hyliform group, is in the present species even more strongly exhibited; and it can scarcely be said that any dilatation exists at all.

The colours in the only specimen brought by Mr. Darwin are much obscured. The upper parts are apparently of an uniform brown, the under parts whitish, dotted with brown.

It was taken by Mr. Darwin at Concepcion, in Chile.

GENUS—BATRACHYLA. *Bell.*

Lingua suborbicularis, posticè libera. Dentes palatini in fasciculis binis obliquis inter nares posteriores dispositi. Tympanum distinctum, parvum, rotundum. Digiti depressi, ad apicem paulò dilatati, truncati. Anteriores ad basin tantum—posteriores paulò plus palmati.

This genus, which considerably resembles *Hylodes*, is nevertheless sufficiently distinct from it, in the distribution of the palatine teeth, in the form of the dilatations of the toes, in the presence of a small palmar membrane, and some other points. One of the most remarkable of its characters is the form of the dilatation at the extremity of the toes; it is very small, transverse, truncated, and even a little emarginate; in this respect it must be considered as constituting a very near approach to the family of the *RANIDÆ*. We are unfortunately without any information as to the habits of the only known species which could throw any light upon its relations; but it is very clear that the dilatations of the toes are not such as to constitute it a true *tree-frog*, nor, on the other hand, are the connecting membranes of sufficient extent to give it the typical character of the swimming group of these animals.

BATRACHYLA LEPTOPUS. *Mihi.*

PLATE XVIII.—Fig. 5.

DESCRIPTION.—Head depressed, broad, rounded. Nostrils small, placed near together. Eyes large, opening considerably upwards. Tongue nearly round, the posterior part free for about one-third of its length. Palatine teeth placed in two small oval groups, placed obliquely, between the posterior nostrils, separated from each other by a considerable space. Tympanum small, nearly round. Limbs of moderate length. The toes on all the feet depressed, slender, the terminal dilatation very small, transverse, truncated; those of the fore feet connected at the base only, those of the hinder to the union of the first and second phalanges; of those of the fore feet the third is the longest, then the fourth, the second, and the first; of the hinder the fourth is the longest, then the third and fifth equal, then the second and the first. There are some minute scattered glands on the posterior part of the thighs.

The only specimen in Mr. Darwin's collection is in so bad a condition, that it is impossible to say with any certainty what is its natural colour. It is brown

above, with a lighter band across the head between the eyes, and there are traces of a longitudinal line down the back; the limbs are banded with brown and brownish yellow; the under parts are pale, dotted with brown.

DIMENSIONS.

| | In. | Lin. |
|-----------------------------------|-----|------|
| Length of the head | 0 | 5 |
| of the body | 1 | 0 |
| of the anterior extremities | 1 | 0 |
| of the posterior extremities..... | 2 | 1 |

Found by Mr. Darwin at Valdivia.

GENUS—HYLORINA. *Bell.*

Caput subrotundum planum. Linguae magna circularis, posticè libera. Dentes palatini in lineâ transversâ, parum interruptâ, dispositi. Tympanum distinctum. Digiti subdepressi, ad apicem obtusi, haud expansi; anteriores ferè liberi; posteriores ad basin membranâ connexi, et marginati. Femora multò glandulosa.

A genus nearly allied to *Hylodes*, from which, however, it may at once be distinguished by the palmure of the hinder toes—which in *Hylodes* are entirely free—and by the absence of even the slightest dilatation of their extremities; offering another example of an osculant form between the HYLIDÆ and the RANIDÆ.

HYLORINA SYLVATICA. *Mihi.*

PLATE XIX.—FIG. 1.

DESCRIPTION.—Head broad, rounded, the anterior margin, from the nose to the lip, nearly perpendicular. Eyes large and prominent. Tympanum distinct, small, round. Tongue very large, circular, and entire, the posterior half free. Palatine teeth placed in a transverse line between the posterior nostrils, scarcely interrupted in the middle. Skin of the back rugose. Anterior feet with the toes long, rather slender, united at the base only by a very short membrane, with round subarticular tubercles, the apex rounded, but not presenting the slightest expansion. Hinder toes similarly formed, but with the connecting membrane more conspicuous, and extending along the sides of the toes nearly to the extremity. Thighs covered on the under and posterior surface with rather large and distinct glands.

The following is the description of the colouring, as given by Mr. Darwin from the living specimen. "Above fine grass green, mottled all over with copper colour, which nearly forms two longitudinal bands; beneath entirely of a lurid reddish lead colour. Iris brown."

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head | 1 | 0 |
| of the body | 1 | 8 |
| of the anterior extremities | 2 | 1 |
| of the posterior extremities | 4 | 4 |

Found by Mr. Darwin in the Archipelago of Chonos (S. of Chiloe) in thick forests.

GENUS—HYLA.

HYLA VAUTERII. *Bibr.*

PLATE XIX. FIG. 2.

Linguâ subcordiformi, posticè emarginatâ. Dentibus palatinis in fasciculis binis ovalibus, subcontiguis. Oculis prominentibus. Capite tam lato quam longo. Gulâ bi-plicatâ; suprâ levitèr—infrâ multùm granulosa. Dorso fusco-griseo, punctis, maculis et fasciis lateralibus nigris.

Hyla Vauterii. *Bibr.* MS.

DESCRIPTION.—Head short, thick, the sides anteriorly converging towards a nearly right angle, the muzzle rounded. Tongue nearly cordate, posteriorly emarginate, free for about one-fourth of its length. Palatine teeth in two oval fasciculi, placed nearly transversely between the posterior nares, and almost contiguous. Eyes prominent. Tympanum circular, rather large. Body plump, the sides nearly parallel for two-thirds of its length. The skin nearly smooth, but covered with very small inconspicuous granulations over the whole upper surface, which are rather more obvious on the head. The throat, the belly, and the inferior surface of the thighs covered with large prominent granulations. Beneath the lower jaw the granulations are smaller, and the under surface of the limbs excepting the thighs is quite smooth. A small fold of skin over the tympanum passes backwards to the arm; and beneath the throat there are two considerable transverse folds, one of which is before and the other immediately behind the arms. Fore feet, with the palms covered with small granular tubercles, and a tubercle under the joints of the fingers, which are connected to about one-third of their length. Hinder legs longer than the head and body by the whole foot and tarsus. The soles tuberculated. Toes rather short, palmate to half their length.

COLOUR.—The whole of the upper parts are greyish brown, with a tinge of red, and minutely punctured with black. There are scattered spots of the latter colour on the back and sides, assuming somewhat of a longitudinal arrangement, and a broad blackish grey fascia extends

from the eye backwards to the arm, including the tympanum, and this fascia is bordered beneath by a white line. The thighs and legs are barred and spotted with black. The under parts are yellowish white, excepting under the lower jaw, where it is finely mottled with black and white.

I received the name of this species from Mons. Bibron, who had, I believe, applied it to specimens in the Paris Museum. It was taken by Mr. Darwin at Maldonado, lurking under a stone, and at Rio Janeiro on palm-trees.

DIMENSIONS.

| | In. | Lin. |
|---------------------------------------|-----|------|
| Length of the head and body | 1 | 6 |
| of anterior extremities | 0 | 9 |
| of posterior extremities | 2 | 5 |

HYLA AGRESTIS. *Mihi.*

PLATE XIX.—FIG. 3.

Capite brevi. Oculis subprominentibus. Tympano mediocri circulari. Lingua subrotunda, posticè liberà, anticè angustatà. Dentibus palatinis in fasciculis binis, paulò separatis, ad marginem postico-interiorem narium posteriorum. Dorso granuloso. Gula plicatà. Digitis anticis ad basin tantùm, posticis usque ad phalanges penultimas palmatis. Suprà viridis, linea albà laterali, femoribus posticè atque lateribus abdominis, albis, nigro-maculatis.

Habitat, Maldonado, in grassy fields.

DESCRIPTION.—Head short, thick, the two sides of the muzzle approaching each other at a rather acute angle, rounded at the extremity. Eyes rather large and prominent. Tympanum circular, of moderate size, and very distinct. Tongue entire, rounded, and free behind, narrowed, and almost angular in front. Palatine teeth in two oval parcels separated by a very small interval, and placed on a line with the hinder margin of the *posterior nares*; the whole of the back covered with extremely small granules; a slight fold or elevation of the skin commencing above the posterior margin of the tympanum, and extending backwards just above the arm, in front of which it is met by a more considerable one which crosses the throat from side to side; the under parts covered with large granules; fore feet with the toes palmated only at the base; hinder ones palmated to four-fifths of the length.

The colour of this beautiful species is thus given by Mr. Darwin:—"Above emerald green, beneath white; a silvery white stripe bordered beneath with a very narrow black line, extends from the corner of the eye, along the side, to the

thigh; a smaller one at the corner of the mouth; the posterior surface of the hinder legs and the flanks marked with black spots. Iris gold coloured; tympanum brown."

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body | 1 | 8 |
| of the anterior extremities..... | 1 | 0 |
| of the posterior extremities | 2 | 8 |

The young of this species, instead of the bright green colour of the upper parts, is of a delicate grey with small brown markings; and a lateral fascia of brown, bordered above and beneath with a white line, extends from the fore part of the head backwards, the upper white line nearly to the thigh, the inferior one to the shoulder. The black spots on the flanks and thighs are but just visible.

This species so nearly resembles the *Hyla pulchella* of Mons. Bibron, at least as far as his description enables me to ascertain its characters, that it was with some hesitation that I came to the conclusion that they are distinct. Exclusive, however, of the difference of colour, the back of the present species is granulated, and the throat still more distinctly so, whereas the other animal has the skin on the upper parts, as well as on the anterior part of the throat, quite smooth. The palatine teeth also appear to be somewhat differently arranged.

Mr. Darwin observes, that this species was found in numbers in the open grass plains, and likewise in swamps, about Maldonado, and that they can never ascend trees, as these are entirely wanting at the places frequented by the Hylæ.

FAM.—BUFONIDÆ.

GENUS—RHINODERMA. *Bibr.*

Lingua cordato-ovata, postice libera et submarginata. Dentes palatini nulli. Tympanum celatum. Glandæ parotideæ nullæ. Digiti breves, depressi; anteriores ad basin tantùm, posteriores ferè dimidio palmati. Rostrum cutis appendiculo filiformi instructum.

RHINODERMA DARWINII. *Bibr.*

PLATE XX.—FIG. 1, 2.

Suprà pallidè rufo-cinereum, fasciis transversis viridescens; subtus castaneo-nigrum, maculis albis.

Rhinoderma Darwinii. Bibr. Hist. Nat. Rept. VIII. p. 659. *Var.* Dorso fuscescenti-nigro.

DESCRIPTION.—The head and body are flattened, the head triangular, slightly truncated in front, but appearing angular from the skin being produced into a small filiform appendage, standing forwards from the extremity of the snout. The eyes are lateral, slightly prominent. Body very slender. Skin perfectly smooth, and without apparent glands, excepting on the thighs. Fore legs rather short, reaching quite to the thighs when placed by the side; the toes almost wholly separate, there being but the rudiment of a connecting membrane at their base. Hinder legs long, extending forwards beyond the head by the whole length of the foot; the hinder toes are connected nearly half their length, and the connecting membrane is thick and coloured like the rest of the skin.

COLOUR.—The colour varies greatly in different individuals. The following are the principal variations in the specimens collected by Mr. Darwin. Above pale iron rust-colour, with a transverse fascia across the head, a triangular one over the shoulders, a large broad mark on the loins, and the upper part of the thighs all of a bright beautiful green. The under side anteriorly rich chestnut-brown, passing into black posteriorly, with several irregular snow-white spots, particularly a broad one across the belly, and white bands across the legs. Another specimen was cream colour above, the markings darker, and with small spots of green. In one the chestnut colour beneath was replaced by bright yellow. There is one, constituting a very distinct variety, in which the upper part is wholly and almost uniformly dark brown. The female is greenish grey above, without conspicuous markings.

This is the only known species of the genus, which was founded by Mons. Bibron upon the specimens collected by Mr. Darwin. The general slightness and elegance of its form, and its slender proportions, would lead us to consider it at first sight as rather belonging to the *Ranidæ* than the *Bufo*idæ; but the total absence of teeth in the upper maxillary arch, shews that its proper place is in the latter group. Its form and the length of the posterior extremities would also prepare us to expect that it can leap freely, which Mr. Darwin states to be the fact. It inhabits thick and gloomy forests, and is excessively common in the forest of Valdivia.

DIMENSIONS.

| | In. | Lin. |
|------------------------------------|-----|------|
| Length of the head and body | 1 | 0 |
| of the anterior extremities | 0 | 5 |
| of the posterior extremities | 1 | 4 |

BUFO CHILENSIS. *Bibr.*

Of this species, which has been described under different names by many naturalists, and the synonymy of which has only lately been cleared up by Mons. Bibron, there exist numerous specimens in the collection of Mr. Darwin, who found it at Buenos Ayres, and also in the Archipelago of Chonos, on the west coast of South America. It is certainly remarkable that the same species should be found on the opposite sides of the Continent; but on a careful examination I do not find any specific distinctions between the specimens from the different localities. The Prince de Wied has described it as found at Brazil, under the name of *Bufo cinctus*, and it is also well known as having been repeatedly procured in Peru and in Chile; but Mons. Bibron has in his work considered them all as belonging to but one species. The following account of its habits as given by Mr. Darwin is very curious and interesting:—“These Toads are exceedingly abundant all over the treeless damp mountains of granite, crawling about, and eating during the daytime, and making a noise similar to that which is commonly used in England to quicken horses. Many of them on being touched close their eyes, arch their back, and draw up their legs (as if the spinal marrow was divided), probably as an artifice. They are remarkable from their curious manner of *running* like the Natter Jack of England; they scarcely ever jump, neither do they crawl like a toad, but run very quickly. Their bright colours give them a very strange appearance. They abound at an elevation of 500 to 2500 feet.”

GENUS—PHRYNISCUS.

PHRYNISCUS NIGRICANS. *Weigm.*

PLATE XX.—FIG. 3, 4, 5.

Dorso granuloso, scabriusculo. Pedibus posticis subpalmatis. Corpore membrisque nigris, abdomine maculâ magnâ transversâ ad partem posteriorem et maculâ rotunda utrinque medium versus, palmis atque plantis, omnibus coccineis.

Phryniscus nigricans. Weigm. Nov. Act. Leop. XVII. p. 264. Bibr. Hist. Rept. VIII. p. 723.

Chaunus formosus. Tschudi Classif. Batrach.

Habitat, Maldonado and Bahia Blanca.

This curious little species has been described by Weigman under the present name,—by Tschudi under the generic name of *Chaunus*, and fully by Bibron, who retained the name originally given to it by Weigman. It now remains only to correct, from Mr. Darwin's notes, some points respecting the colours, which had been mis-stated in consequence of the action of the spirit in which the specimen had been preserved. The colour of this curious miniature representation of a Toad, is "ink black," excepting the palms and soles of the feet, a large transverse spot across the posterior part of the abdomen, two smaller ones near the middle, and in some specimens a few scattered little spots, all of the most intense vermilion red. There is one specimen from Bahia Blanca which has also some small "buff-orange" spots on the upper part.* Mr. Darwin observes that "the appearance of the vermilion colour is as if the animal had crawled over a newly painted board;" and he adds—"This Toad inhabits the most dry and sandy plains of Bahia Blanca, where there is no appearance of water ever lodging." The other specimens were taken at Maldonado, where it inhabits the sand-dunes near the coast. Mr. Darwin threw one into a pool of fresh-water, but he found it could hardly swim, and he thinks, if unassisted, it would have been soon drowned.

This species is diurnal in its habits, and may be daily seen under a scorching sun, crawling over the parched and loose sand. M. D'Orbigny brought specimens from Monte Video.

DIMENSIONS.

| | In. | Lin. |
|-----------------------------------|-----|------|
| Length of the head and body | 1 | 0 |
| of the anterior extremities | 0 | 5 |
| of the posterior extremities..... | 0 | 8 |

GENUS—UPERODON. *Bibr.*UPERODON ORNATUM. *Mihi.*

PLATE XX.—Fig. 6.

Capite multò latiore quam longiore. Dorsò olivaceo, maculis fuscis, albo marginatis.

Habitat Buenos Ayres.

DESCRIPTION.—Head more than half as broad again as it is long, and equal in breadth to half the entire length of the head and body. Muzzle rounded. Nostrils oval, opening upwards and a

* This specimen from Bahia Blanca has a much smoother skin than the others; but from its similarity in all other characters there can be no doubt of its specific identity with them.

little outwards. Eyes rather large, the upper eyelids forming perfect flaps, which entirely cover the eyes. Body rounded, very broad. The shoulders and thighs wholly concealed by the skin of the body. Limbs very short. The anterior feet very broad. The toes somewhat depressed, very short, bordered with a fold of skin. Hinder feet with the toes more depressed and more distinctly bordered. Back covered with small glands.

COLOUR.—The colour of the upper surface is dark olive, becoming lighter at the sides, and having numerous dark brown spots, which are round, oval, elliptical, or irregular, of very various sizes, placed somewhat symmetrically, and each bordered with a whitish or yellow line. Beneath pale, excepting the throat, which is black.

I have ventured to consider this remarkable amphibian as specifically distinct from *U. marmoratum* of Bibron; a conclusion to which I have been almost imperatively led, by the fact of its inhabiting a different hemisphere from all known specimens of that species. The other was found by M. Leschenault in the interior of the peninsula of India: the specimen from which the present description is taken was obtained by Mr. Darwin at Buenos Ayres. Notwithstanding the similarity of the two species, which is so great as to have led Mons. Bibron to consider them as identical, I could not assent to such an anomaly as the existence of an animal, at once so rare and possessed of such limited powers of locomotion, in two regions so widely remote. I have not the opportunity of comparing the specimens of the former species with the present, but, even from Mons. Bibron's description, I believe that I can discover sufficient discrepancies between the animals, to bear me out in the view I have taken. These discrepancies I venture to place in the following tabular view, and leave zoologists to form their own conclusions.

UPERODON MARMORATUM.

“La tête offre en arrière une largeur à peu près égale à son longueur totale, laquelle entre pour le quart environ dans l'étendue de l'animal.”

“On pourrait considérer la peau comme étant parfaitement lisse, si l'on ne voyait éparses sur le dessus du tronc un certain nombre de verrues glanduleuses d'un assez grand diamètre relativement à la grosseur de l'animal, mais fort peu saillantes ou à peine convexes.”

“Les parties supérieures de ce Batracien présentent sur un fond olivâtre, d'énormes tâches brunes, toutes confluentes, ou s'anastomosant diversement.”*

UPERODON ORNATUM.

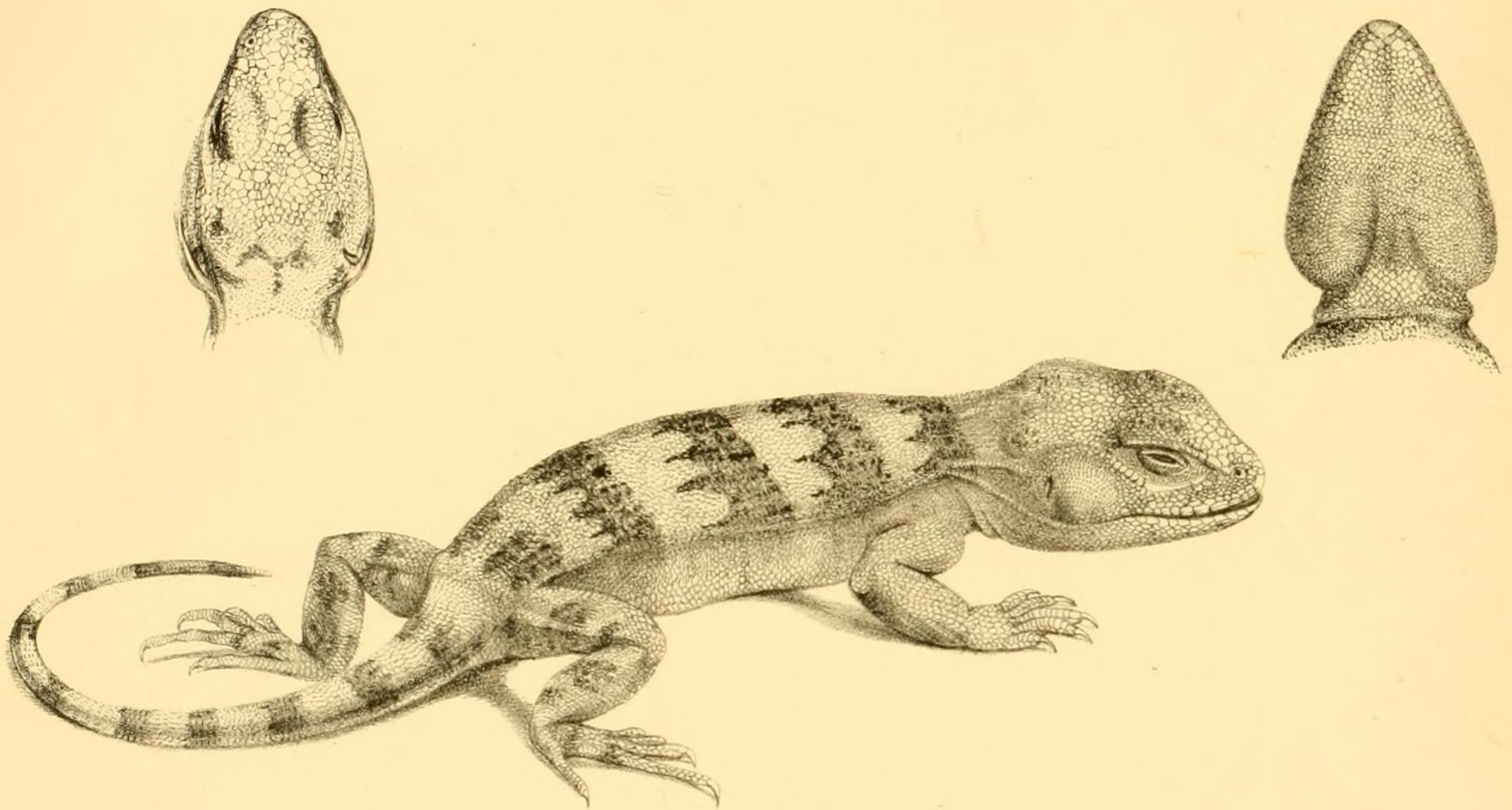
Head fully half as broad again as it is long, and equal in breadth to half the total length of the animal.

Back covered with numerous *small* glandular tubercles, notably elevated.

All the spots on the back are quite distinct, not in any way passing into each other or connected, and each encircled by a white line.

* Bibr. Rept. VIII. p. 749.

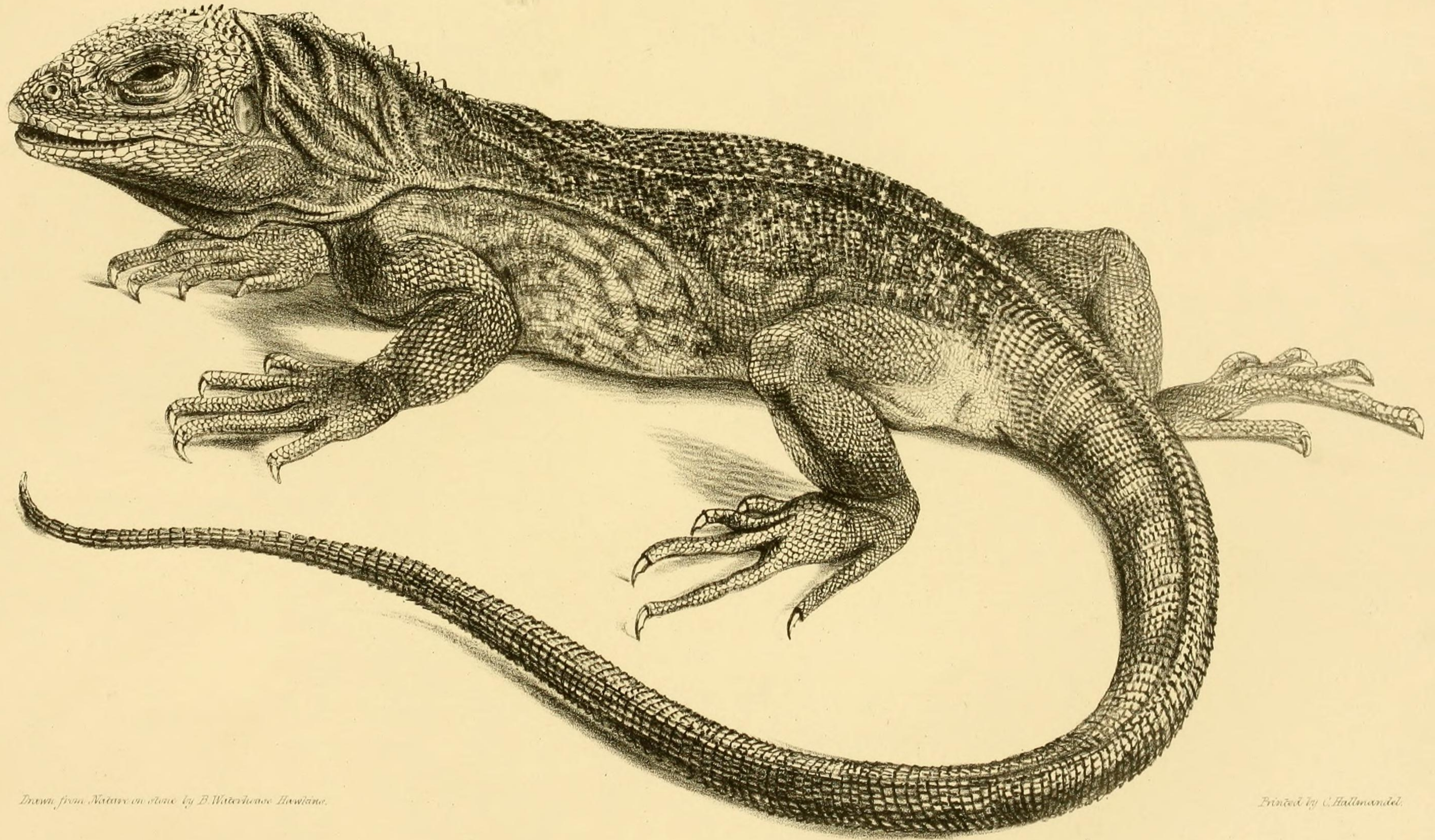
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Old Bailey.



E. Waterhouse Hawkins del.

Printed by C. Hullmandel.

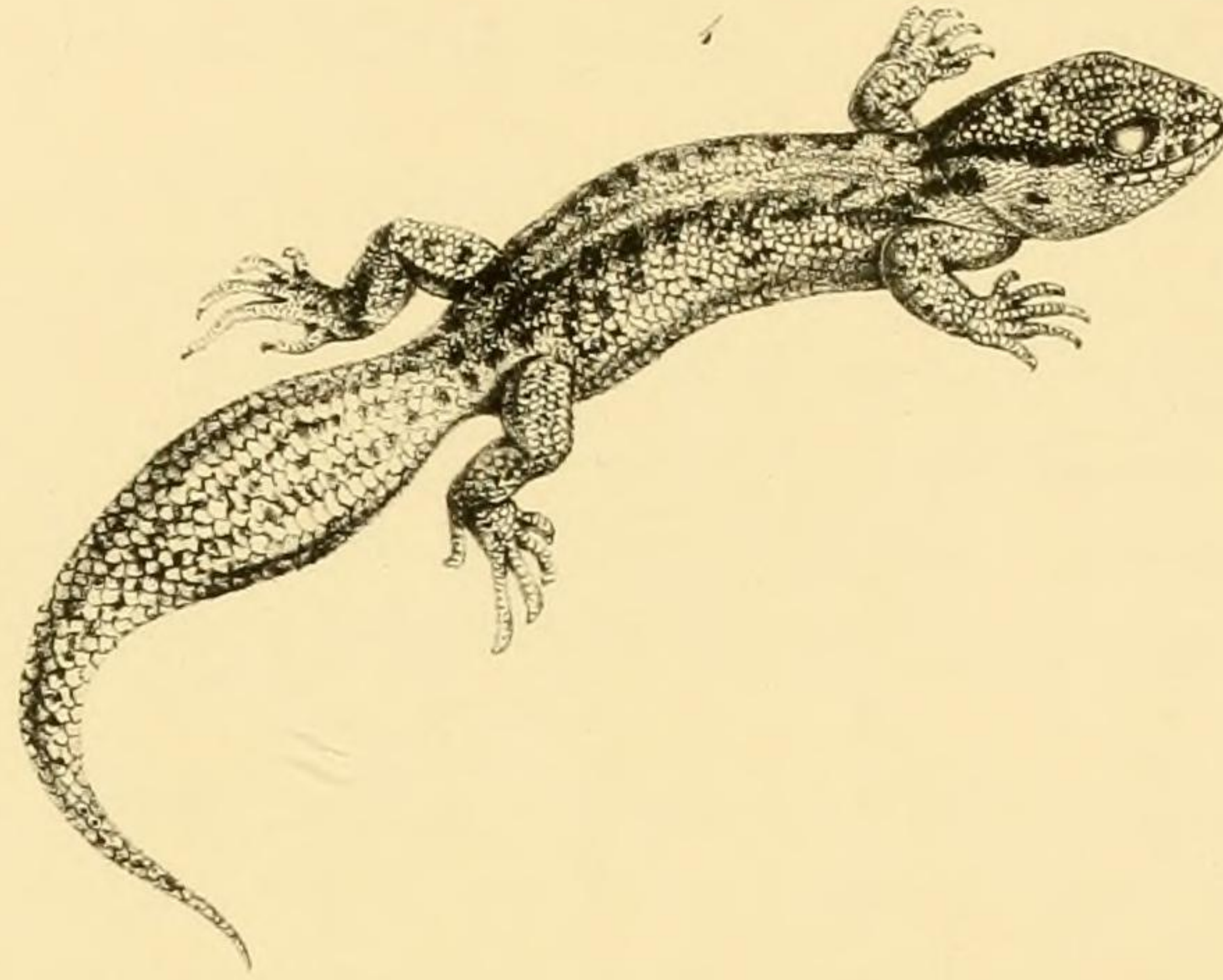
Diplolamus Bibronii. Nat. Size.



Drawn from Nature on stone by B. Waterhouse Hawkins.

Printed by C. Hullmandel.

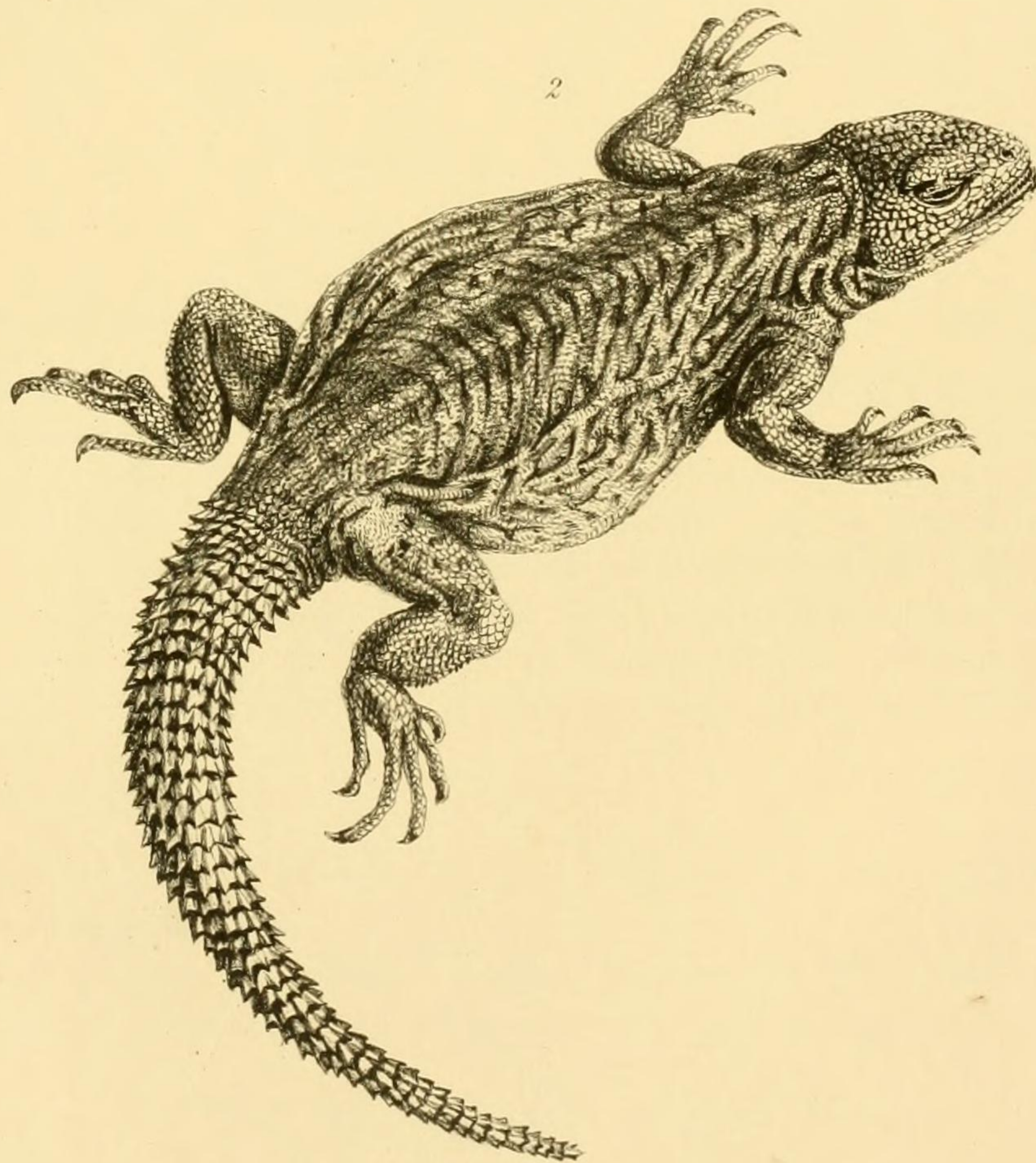
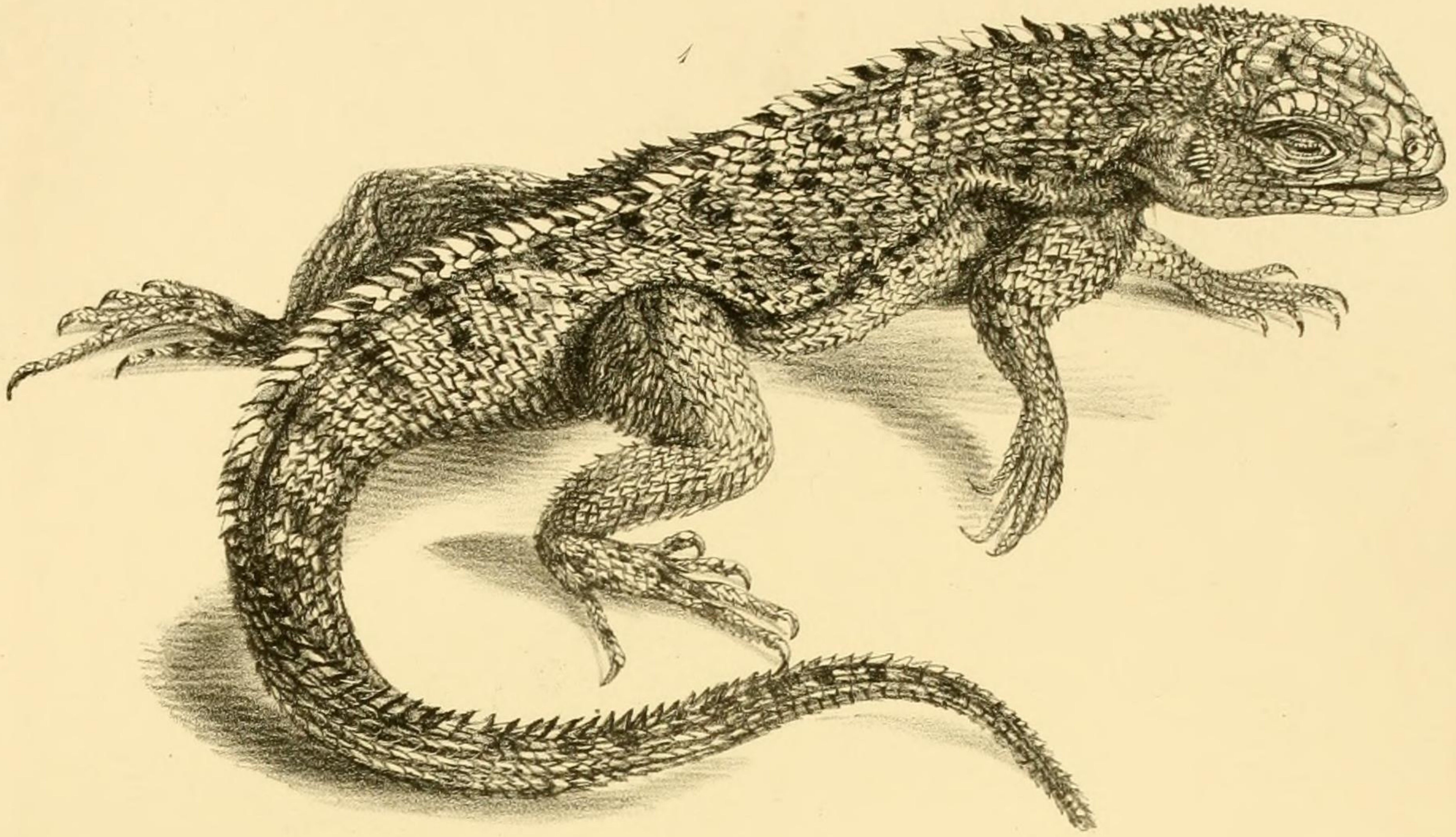
Amblygryonchus Demarlini. Nat. size.



Drawn from Nature in stone by Z. Waterhouse Bonville.

Printed by G. Silliman.

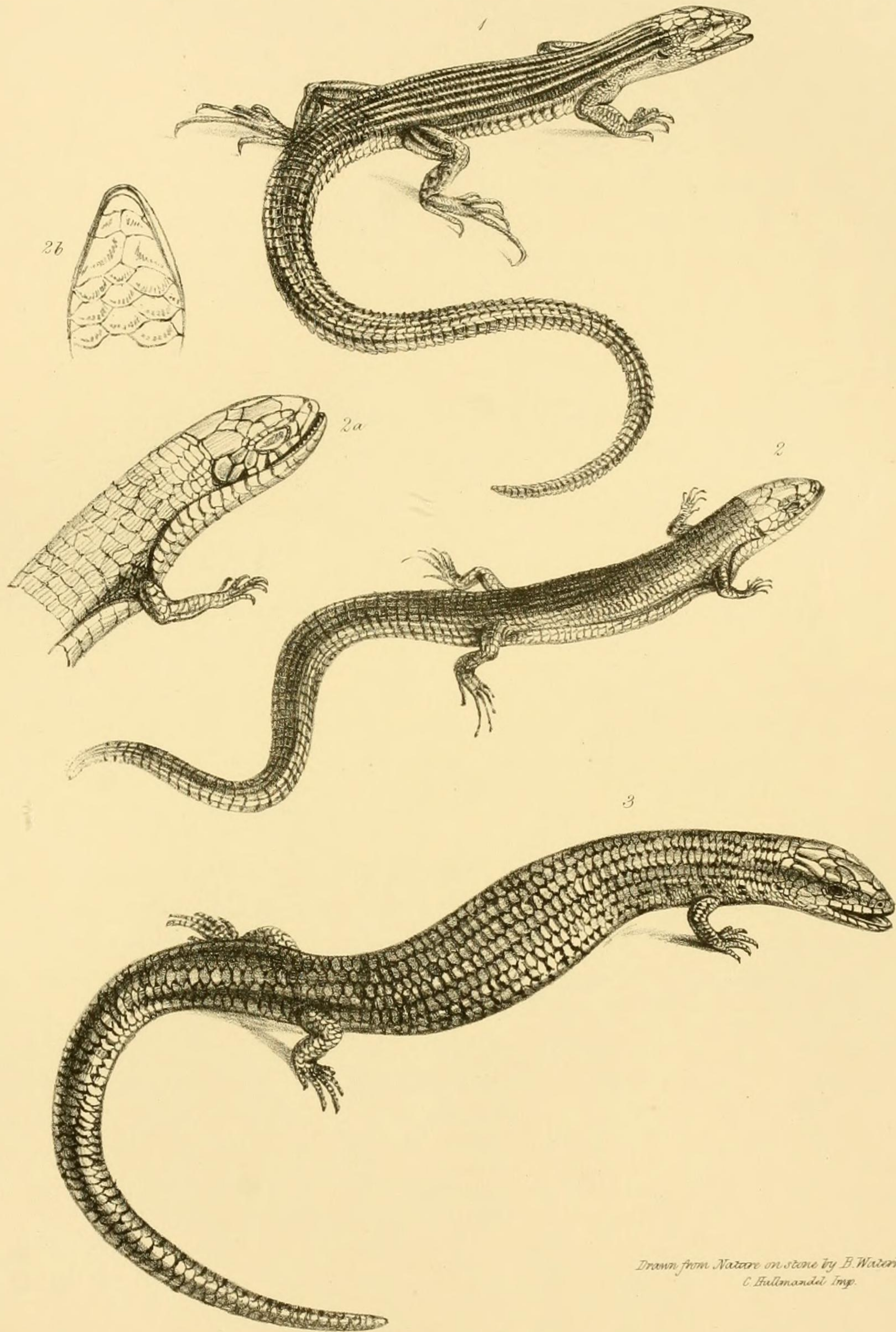
1. *Gymnodactylus Gaudichaudii*.
2. *Nautilinus Grayii*.



Drawn from Nature in situ by E. Bachman Esq.

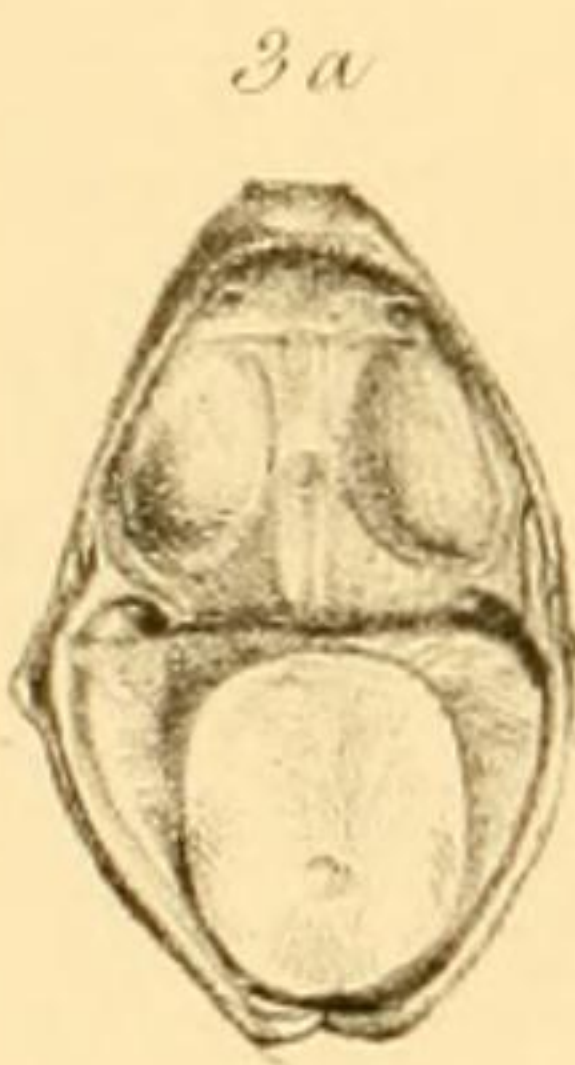
Engraved by C. H. H. H. H.

1. *Leiocephalus Grayii*.
2. *Centrura flagellifer*.



Drawn from Nature on stone by B. Waterhouse Howland.
C. Hullmandel Imp.

1. *Ameiva longicauda.*
2. 2a. 2b. *Gerrhosaurus sepiformis.* } Nat. size.
3. *Cyclodus casuarinae.*



Drawn from Nature on Stone by B. Waterhouse Hawkins

C. Hümandel Imp.

- | | | |
|----|---------------------------------|--------------|
| 1. | <i>Rana Delalandii.</i> | } Nat. Size. |
| 2. | <i>Rana Mascariensis.</i> | |
| 3. | <i>3a. Limnocharis fuscus.</i> | |
| 4. | <i>Cystignathus Georgianus.</i> | |



Drawn from Nature on stone by B. Waterhouse Hawkins

Printed by C. Hullmandel

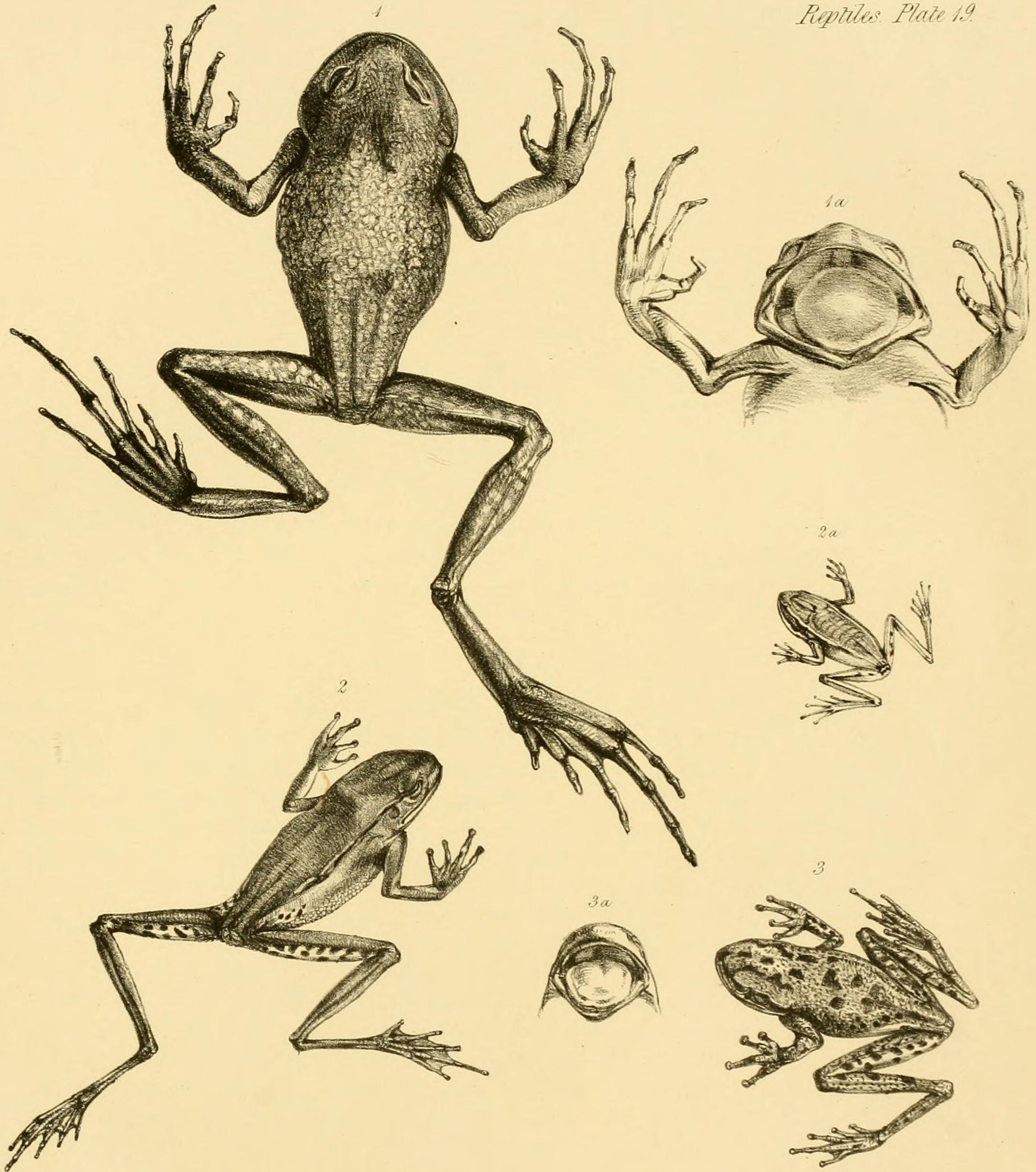
- | | | |
|----------------------------------|-------------------------------------|--------------|
| 1. <i>Borborocates Bibronii.</i> | } 1a. Mag. View of Tongue & Gullet. | |
| 2. <i>Grayii.</i> | | |
| 3. <i>Pleurodema Darwinii.</i> | | } Nat. Size. |
| 4. <i>elegans.</i> | | |
| 5. <i>bufoninum.</i> | | |



Drawn from Nature on Stone by B. Waterhouse Hawkins.

C. Haldeman del. Imp.

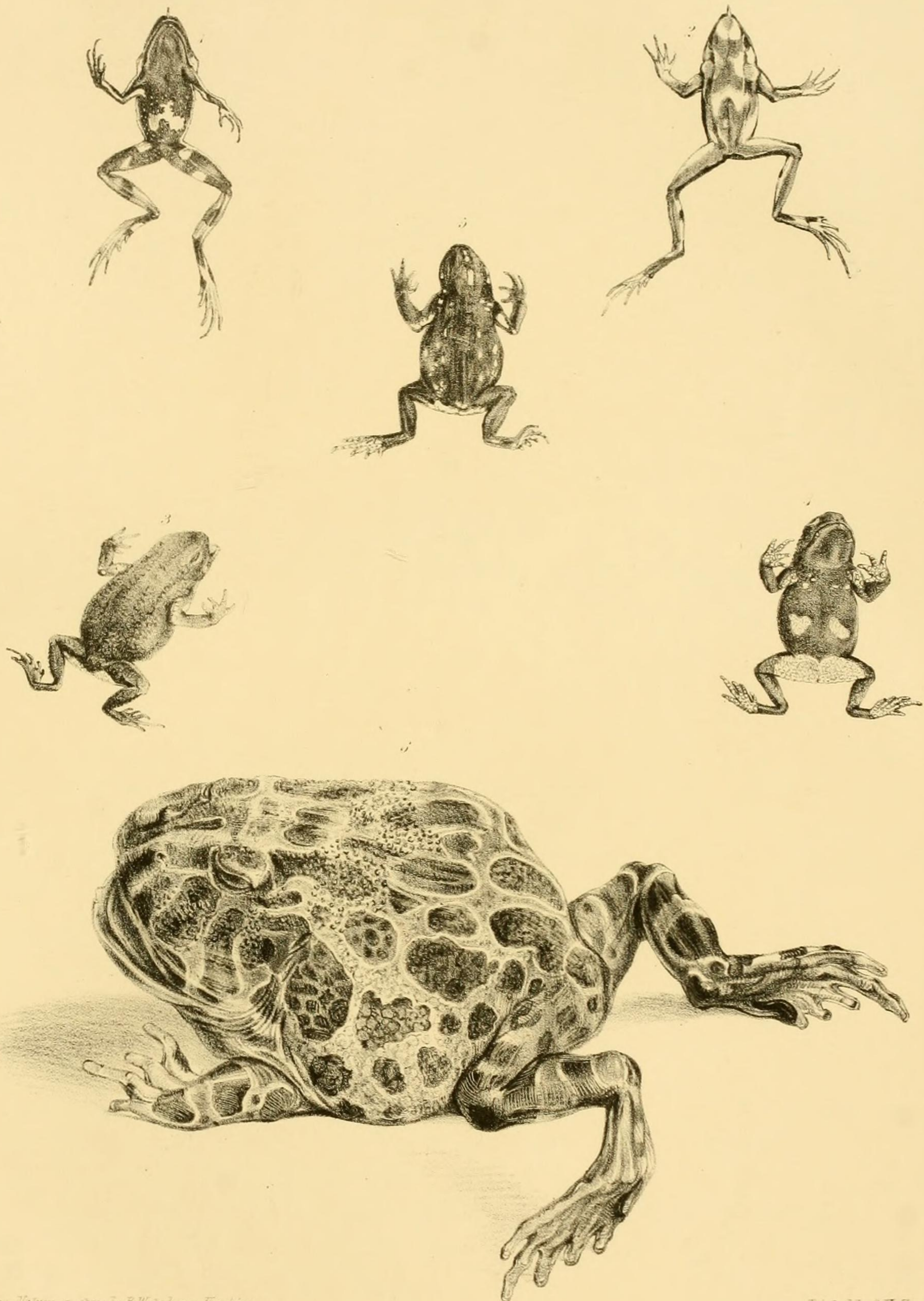
- 1. 1a. *Leiuperus salarius.*
- 2. 2a. 2b. 2c. *Ptychocephalus Americanus.*
- 3. 3a. 3b. *Alysodes monticola.*
- 4. 4a. *Litoria glandulosa.*
- 5. 5a. 5b. *Batrachyla leptopus.*



Drawn from Nature on stone by B. Waterhouse Hawkins.

G. Eastman del. Imp.

1. 1a. *Hylonia sylvatica*.
2. 2a. *Hyla agrestis*.
3. 3a. *Hyla ranterii*.



Drawn from Nature on stone by B. Waterhouse Howland.

Printed by C. Hallman del.

1. 2. *Rhinoderma Darwinii.*
3. 4. 5. *Phrynosoma nigricans.* } Nat. Size.
6. *Uperodon ornatum.*

Catsp
no 253

THE
ZOOLOGY
OF
THE VOYAGE OF H.M.S. BEAGLE,
UNDER THE COMMAND OF CAPTAIN FITZROY, R.N.,
DURING THE YEARS
1832 TO 1836.

*PUBLISHED WITH THE APPROVAL OF
THE LORDS COMMISSIONERS OF HER MAJESTY'S TREASURY.*

Edited and Superintended by
CHARLES DARWIN, ESQ. M.A., F.R.S., V.P.G.S.,
NATURALIST TO THE EXPEDITION.

PART V.
REPTILES,

BY
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PROFESSOR OF ZOOLOGY IN KING'S COLLEGE.

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|---|---|

ERRATA.—In Plate XIX. for “Hylonia” read “Hylorina.”
 for “vanterii” read “Vauterii.”

P R E F A C E.

AMONGST the Reptiles and Amphibians obtained by Mr. Darwin, in the Voyage of the Beagle, there are several of great interest, not merely on account of their novelty as newly discovered species, of which there are nearly thirty, or as forming the types of genera not previously known, or of any remarkable peculiarity of form, structure, or habit, although in all these respects many of them are highly interesting; but more particularly as serving to establish or confirm several points connected with their geographical distribution.

From the structure of most of these animals and their consequent habits of life, circumscribed as they are for the most part in their locomotive powers, it might reasonably be predicated that they would, upon the whole, exhibit as distinct examples of restriction, with regard to their geographical boundaries, as any class of vertebrated animals; and that the intervention of seas and of mountains would be sufficient to limit the range of a species. Such is in fact usually the case; and not only is the same species not found in the Old and New Continents, but, with very few exceptions, not even on the opposite sides of the South American Continent, in which range Mr. Darwin's discoveries have principally been made. The occurrence, however, of *Bufo Chilensis* at Rio Janeiro and at Buenos Ayres on the eastern, and at Valparaiso and the Archipelago of Chonos on the western side of the continent, shows an extent of distribution exceedingly unusual if not absolutely unparalleled in this family. It is, however, still possible that further and more extended researches into the characters of the animals in question, and an examination of individuals from each locality at various ages, may prove that there are two species, which have been confounded with each other, and the anomaly may thus be removed.

But although the circumscribed range of a species may be accounted for by the reasons above mentioned, and others of a restrictive nature, it is not so easy to refer to any known or obvious cause the remarkable fact of a whole genus, consisting of numerous species, being thus geographically limited. Yet this is a

well-known and very common circumstance with regard to several groups of animals. In our present researches there exists a remarkable example of this fact in the genus *Proctotretus*, consisting, as is now known, of at least fourteen species, all inhabiting the western coast of South America. These facts, interesting as they are, have never been sufficiently investigated, although, it must be confessed, there are so many anomalies in relation to this subject, that we must despair of ever reducing the facts in question to any thing like fixed laws.

The close approximation of the Raniform and Hyliform groups of the Anourous Amphibia is strikingly illustrated by several new forms obtained by Mr. Darwin, which are so perfectly osculant between the two families, that it is difficult to assign them a decided location. And the addition of some bufonine forms in the family *Ranidæ*, as at present constituted, and on the other hand of some amongst the *Bufo*nidæ, which are no less raniform in their general structure and habits, render it increasingly probable that the single character of the presence or absence of superior maxillary teeth, must be considered as insufficient to constitute alone a natural distinctive family character. There are several minor points bearing upon the natural arrangement of the Anourous Amphibians, which are illustrated by the characters of some of the species now first described, which will doubtless at some future time assist in the construction of a classification of these animals, bearing at least a nearer approximation to their natural arrangement than any that has hitherto been promulgated.

The Ophidians have been placed in the hands of Mons. Bibron, who is at the present time engaged in completing his admirable history of Reptiles, by the publication of those volumes which are devoted to this order; and it must be considered a fortunate circumstance that the delay which has taken place in the appearance of that portion of his labours, has thus afforded the opportunity of embodying in so perfect a work, the numerous discoveries of Mr. Darwin in this particular department of Erpetology.

T. B.

Hornsey, Sept. 2, 1843.