

February 9, 1864.

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

Mr. Tegetmeier exhibited experiments in a new mode of pinioning wild birds, by which they might be prevented from injuring their plumage.

The following papers were read:—

1. ON A NEW SPECIES OF MEGAPODE. BY G. R. GRAY.

(Plate VI.)

I have had placed in my hands a specimen of a bird (preserved in spirits) from the Island of Nina Fou\*, which, on examination, has proved to be a new species of the remarkable genus *Megapodius*. The specific characters are as follows:—

*MEGAPODIUS PRITCHARDII*. (Pl. VI.)

Young female. Slaty black †, with the base of most of the feathers white; wings (imperfect, the quills having been mostly cut away) with the first quill fuscous black; the rest are apparently white, probably fuscous black at their tips; upper tail-coverts white; tail fuscous black; abdomen pale fuscous black or slaty; cheeks and upper part of the neck vermilion-red, slightly feathered with small scattered black plumes; bill bright yellow; tarsi and toes pale yellow; claws blackish lead-colour.

Length, from tip of bill to end of tail, 12 or 13 inches.

The specimen from which the description was taken was obtained by Mr. W. T. Pritchard at Nina Fou, which island is situated about halfway between the Feejee Islands and the Samoan Islands, and is far removed to the northward of the Friendly or Tonga Islands, yet it is considered to form part of this latter group. This somewhat isolated island is said to be of small size, of a volcanic origin, and peculiarly liable to eruptions and earthquakes. The natives informed him that the bird “laid 200 eggs, and piled them one above another in the shape of a pyramid, the last egg forming the apex.” This statement Mr. Pritchard “hesitated to believe; but the natives reiterated it.” The bird lives in the bush, runs very fast, and does not fly any distance at a time.

It so happens that the Nina Fou bird was lately recorded in the ‘Proceedings of the Zoological Society’ (1862, p. 247), from information obtained by Mr. Bennett of Capt. McLeod, who stated that the bird was known to the natives by the name of “Mallow;” and it lives in the scrubs in the centre of the island, about the margin of a

\* Onooafow, or Proby Island, or Hope Island, or Good Hope Island.

† Mr. Bennett says, “of an uniform blackish-brown colour.” While Mr. Pritchard remarks it to be “of a brownish blue.”

large lagoon of brackish water, which has the appearance of having been an extinct crater; the birds lay their eggs on one side only of the lagoon, where the soil is composed of a sulphur-looking sand; the eggs are deposited from 1 to 2 feet beneath the surface.

This latter account is in accordance with the known habits of several of the species of this genus, and Mr. Pritchard was right in doubting the correctness of the marvellous and most improbable story related to him by the natives. It is only by the permission of the king or chief that the eggs or birds can be procured, which is also the case in other localities.

The natives of the Tonga Islands informed Mr. Pritchard that the bird was "not found on any of their islands, except Nina Fou." There is, however, in the British Museum an egg, with the provisional name of *Megapodius burnabyi*, which agrees with the description of the Nina Fou egg. It was obtained by Lieut. Burnaby, R.N., at the Hapace Islands, which is the centre cluster of the three groups usually considered to form the Friendly or Tonga Islands. The bird of the Hapace Islands may, when made known, prove to be a species closely allied to the *Megapodius pritchardii*, if not the same.

The subjoined list of species of the *Megapodidæ* is given to show which of them are contained in the British Museum. This is denoted by (B.M.) being placed after the localities whence the specimens have been received.

1. TALEGALLUS CUVIERI, Less.

New Guinea, Dorey (B.M.); Aru Islands.

2. TALEGALLUS LATHAMI (Gray).

Australia, North, West, and South (B.M.).

3. MEGACEPHALON RUBRIPES (Quoy & Gaim.).

Celebes, Menado (B.M.).

M. Teysmann, in his "Reise nach den Molukken," published in vol. x. of 'Bonplandia,' makes a remark which seems to imply that there are two species bearing a horn-like projection.

4. LEIPOA OCELLATA, Gould.

Australia, South (B.M.) and West.

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5. MEGAPODIUS FREYCINETI, Quoy & Gaim.

*Tetrao novæ guineæ*, Gm., juv.?

*Oriolus coturnix*, Scop.

*Coturnix novæ guineæ*, G. R. Gr.

*Megapodius*, juv., G. R. Gr.

*Alecthelia urvili*, Less.

New Guinea; Island of Waigiou; Mysol; Kaioa; Batchian (B.M.); and Morty Islands.

## 6. ? MEGAPODIUS QUOYII, G. R. Gr.

Gilolo, South (B.M., juv.).

Perhaps only a local variety; but the young state differs from that of the former.

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## 7. MEGAPODIUS FORSTENI, Temm.

Amboina (B.M.); Ceram (B.M.); Bouru; Banda?

## 8. MEGAPODIUS MACGILLIVRAYI, G. R. Gr.

Louisiade Archipelago, Duchateau Isles (B.M.) and Pig Island.

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## 9. MEGAPODIUS REINWARDTII, Wagl.

New Guinea, Dorey (B.M.), River Oetanata; Aru Islands (B.M.); Ké Islands (B.M.).

## 10. MEGAPODIUS TUMULUS, Gould.

Australia, North (B.M.); Islands in Endeavour and Torres Straits; Craincross Island (B.M.).

## 11. MEGAPODIUS RUBRIPES, Temm.

Amboina (B.M.).

## 12. MEGAPODIUS GOULDII, G. R. Gr.

Lombok (B.M.); Flores (juv. B.M.)?

## 13. MEGAPODIUS NICOBARIENSIS, Bl.

Nicobar Islands.

The adults of the last five species closely assimilate to one another; but the young birds exhibit differences in colour and markings, yet in general appearance they bear a great resemblance to each other.

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## 14. MEGAPODIUS CUMINGII, Dillw.

Philippine Islands, Manilla (B.M.); Labuan; Borneo.

## 15. MEGAPODIUS GILBERTII, G. R. Gr.

Celebes, Menado (B.M.).

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## 16. MEGAPODIUS WALLACEI, G. R. Gr.

Gilolo, East (B.M.); Ternate; Bouru.

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## 17. MEGAPODIUS LA-PEROUSI, Quoy &amp; Gaim.

Ladrone or Marian Islands, Guam, Botta, and Tinian.

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18. MEGAPODIUS PRITCHARDII, G. R. Gr.

Island of Nina Fou (B.M.).

19?. MEGAPODIUS BURNABYI, G. R. Gr.

Hapace Islands (egg, B.M.).

20?. MEGAPODIUS STAIRII, G. R. Gr.

Samoan Islands (egg, B.M.).

21?. MEGAPODIUS? ANDERSONI, G. R. Gr.

New Caledonia.

Among other localities in which these birds are found, may be recorded all the islands that compose the group known as the New Hebrides. Mr. Bennett especially refers to Sandwich Island, where, he says, one of the species is known by the name of "Tarboosh;" while at Tanna, another of this group, a similar bird is denominated in English the "Bush-fowl."

They also inhabit the Salomon Islands, as eggs, certainly of a species of this genus have been brought lately from them; and Mr. Bennett states that living specimens were obtained by Mr. Dawson at the Island of Sava or Russell Island\*. Further, Downing, in his "List of the Birds of Norfolk Island," mentions a bird under the appellation of "Guinea Fowl," which may prove eventually, when found, to be a species of Megapode!

## 2. NOTICE OF A NEW SPECIES OF TURACUS FROM EASTERN AFRICA. BY G. R. GRAY.

A new species of the interesting genus *Turacus* has just been brought by the Rev. C. Livingstone from the Manganja Highlands of East Africa, where it was obtained at an elevation of 3000 or 4000 feet above the sea.

It approaches the *Turacus albocristatus* in its general appearance, but the crest differs in form, being as it were bicrested; viz. the plumes from the crown are long and narrow, thus forming a crest pointed posteriorly, while those on the occiput are very short and closely set upon it. All the plumes of both parts are tipped with white. The rest of the plumage is very similar to that of *Turacus albocristatus*; but the feathers of the back and wings are margined with shining golden green instead of bluish green, as is seen on the latter-mentioned species.

I propose the name of *Turacus livingstonii*, as a slight acknowledgment of that gentleman's merit in adding so interesting a species to our knowledge of this showy genus.

\* This island is not to be found in any map or geographical dictionary that I am acquainted with, nor even in any of the missionary works treating especially on the islands of the South Seas.

Two other species of this family are contained in the Expedition's collection, viz. *Turacus porphyreolophus* and *Coliphimus concolor*. The former differs in having a larger space of rich golden green on the sides of the head, while the rufous tint is entirely wanting on the breast. The second species also offers some slight variations, viz. the crest and throat are of a lighter colour. Thus both species differ in some respects from the specimens obtained in the Cape Colony; but, I suppose, they will come within the category of local varieties.

### 3. ON A NEW SPECIES OF PRIONOPS. BY G. R. GRAY.

I beg to lay before the Meeting the description of a new species of *Prionops*, which has been obtained during the Zambesi expedition.

#### PRIONOPS TRICOLOR.

Black; back, rump, wing-coverts, and tertials purplish grey; quills fuscous black, from the second to the tenth quills crossed interiorly with a white oblique band; vent, under tail-coverts, and tips of the tail-feathers white; on the latter the white decreases in width from the outer to the central feathers, where it exhibits only a small spot on each feather.

The frontal plumes covering the nostrils are short, turned upwards, and slightly curved backwards in front of the eyes, like those of the *Prionops talacoma*, which latter species, with the new one, were sent in the first series of birds as from Tette.

The eyes are surrounded by serrated fleshy rings. The bill and feet red; the former is tipped with yellow.

Length 7" 6<sup>'''</sup>; wings 5<sup>''</sup>.

This new species is allied to *Prionops retzii*, but it is without the white rump, and the tips of the tail-feathers are white on both webs.

There are six species now known of the genus *Prionops*; they consist of

- P. plumatus*, Shaw.
- P. poliocephalus*, Stanley.
- P. concinnatus*, Sundev.
- P. talacoma*, A. Smith.
- P. retzii*, Wahlb.
- P. tricolor*, G. R. Gr.

The allied genus, *Sigmodus*, contains three species, viz.

- S. caniceps*, Temm.
- S. rufiventris*, Bp.
- S. scopifrons*, Peters.

All the species of these two genera are confined to the continent of Africa.

4. THIRD CONTRIBUTION TO OUR KNOWLEDGE OF BATRACHIANS  
FROM AUSTRALIA. BY DR. A. GÜNTHER.

(Plate VII.)

The following is a continuation of two other papers treating on the same subject; they were published in the 'Annals and Magazine of Natural History,' 1863, p. 26, and in the 'Proceedings' of this Society, 1863, p. 249.

MIXOPHYES (g. n. RANIDARUM).

Habitus as in *Rana*, the head being broad and large; legs of moderate length. Tongue circular, not notched behind; vomerine teeth in two series; lower jaw without tooth-like apophyses. Openings of the Eustachian tubes narrower than the choanæ; tympanum distinct. Fingers free, none opposite to the others; interdigital membrane between the toes well developed; fifth toe moveable to its base; a long, compressed, subsemicircular tubercle at the metatarsus. Male with a single subgular sac, which is not visible externally.

MIXOPHYES FASCIOLATUS. (Pl. VII. fig. 1.)

This Batrachian approaches the true Frogs more closely than any other known from the Australian region; its habitus is that of *Rana*, but the head is disproportionally large and broad. The snout is obtusely rounded, with the canthus rostralis gradually descending in a gentle curve, and with the loreal region obliquely flattened. The nostril is scarcely below the canthus, midway between the eye and the end of the snout. The eye is large, prominent. Cleft of the mouth very wide, much broader than long. The vomerine teeth are in a nearly straight line, between the anterior angles of the choanæ; the two series being separated in the middle by a narrow space. Two long slits on the side of the tongue lead into the subgular sac. The tympanum is nearly as large as the eye. With the exception of a very slight fold above the tympanum, the skin is perfectly smooth.

Fingers tapering, rather slender. The length of the body equals the distance between vent and heel, but it is much more than the length of the remaining foot. Toes two-thirds webbed, so that the three outer phalanges of the fourth toe remain free.

Upper parts brownish olive, with a darker cross band between the hinder half of the superciliaries. A black band runs along the canthus rostralis, widening on the foremost part of the snout below the nostril, and is continued behind the eye, above the tympanum; sides of the body with round brown or black spots; legs with numerous black cross bands, which are most distinct on the hinder side of the fore legs and on the anterior side of the hind limbs. Lower parts uniform white; throat of the male brownish.

Specimens of this Frog have been sent by Mr. Krefft from the

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1 *Mixophyes fasciolatus*. 2 *Pterophrynus affinis*.  
3 *P. tasmaniensis*. 4 *P. lævis*.





Clarence River; the following are the dimensions of an adult female :—

	lines.
Length of the body . . . . .	33
Width of the mouth . . . . .	14
Length of the fore limb . . . . .	23
——— of the third finger . . . . .	7
——— of the hind limb . . . . .	54
——— of the entire foot . . . . .	23
——— of the fourth toe . . . . .	15½

PTEROPHRYNUS AFFINIS. (Pl. VII. fig. 2.)

Habit as in *Camariolius varius*, Peters, but with the snout longer and more pointed; the canthus rostralis is rather distinct between eye and nostril, and is strongly deflexed in front. Upper parts smooth, the lower coarsely granulated. Eye rather large, not much shorter than the snout. Tongue narrow, ovate, entire behind; vomerine teeth none, but there is a short, scarcely perceptible osseous ridge in front of the orbital groove. Toes not fringed; tarsus with a longitudinal fold of the skin; metatarsus with two minute tubercles. The length of the body is more than the distance between vent and metatarsal tubercles. Upper parts reddish olive, with a double series of irregular blackish spots along the back; a black band runs from behind the eye along the side of the body towards the loin, a blackish streak along the canthus rostralis. Lower parts whitish.

	lines.
Length of the body . . . . .	12
——— of the hind limb . . . . .	16
——— of the fourth hind toe . . . . .	5
Distance between vent and knee . . . . .	4½

*Hab.* Western Australia.

Having found in the collection of the British Museum a specimen of *Pterophrynus verrucosus*, Lütken, I convinced myself that the slight swelling of the skin between the angle of the mouth and the shoulder is not produced by an accumulation of glands, so as to deserve the name of a parotoid. The processes of the sacral vertebra are so slightly dilated, that they might be described as cylindrical; however, each process terminates in a cartilage, which is very distinctly dilated. On comparing this Frog with the *Camariolius* of Peters, I came to the conclusion that both these genera must be united; for although Professor Peters describes the processes of the sacral vertebra as narrow, I find them in *Camariolius varius*, Peters, as slightly dilated as in *Pterophrynus*. Probably any one who had no opportunity of observing the following species would have overlooked the dilatation of those processes in the species mentioned. *P. lavis* has them very distinctly dilated, and *P. affinis* and *P. tasmaniensis* are, in this respect, intermediate between these extreme forms. They form only one genus, which, perhaps, must be still further extended; for, whilst none of the species mentioned

are provided with vomerine teeth, several specimens in our collection, which, perhaps, are the *Cystignathus georgianus* of D. & B., and which can scarcely be generically separated from our *Pterophryni*, have those teeth well developed. Tschudi has proposed the name of *Crinia* for the last-named species.

**PTEROPHRYNUS TASMANIENSIS.** (Pl. VII. fig. 3.)

Very similar to *Camariolius pictus*, Peters; upper and lower parts nearly entirely smooth, with scarcely any trace of flat tubercles. Snout rounded in front, somewhat pointed, sloping downwards in a gentle curve from the nostrils. Eye of moderate size, rather longer than its distance from the nostril. Tongue narrow, ovate, entire behind; vomerine teeth none. Toes fringed; *tarsus without longitudinal fold*; metatarsus with two minute tubercles. The length of the body equals the distance between vent and metatarsal tubercles. Upper parts blackish brown, with a more or less distinct broad reddish-olive band running from behind the eye towards the loin; lower parts beautifully rose-coloured, largely marbled with black; the pre-anal parts black.

	lines.
Length of the body . . . . .	13
——— of the hind limb . . . . .	19
——— of the fourth hind toe. . . . .	6
Distance between vent and knee . . . . .	5

*Hab.* Van Diemen's Land.

**PTEROPHRYNUS LÆVIS.** (Pl. VII. fig. 4.)

Habit as in *Pseudophryne*; snout rather short and rounded, with the canthus rostralis obtuse. Eye considerably shorter than the snout. Upper and lower parts perfectly smooth. Tongue narrow, ovate, entire behind; vomerine teeth none. Tympanum very small, covered not only by the skin, but also by muscle. Toes not fringed, without subarticular tubercles; neither a tarsal fold nor metatarsal tubercles are present. The length of the body is not much less than that of the hind limb. Brownish olive; small yellow spots are scattered over the upper parts; numerous brown spots on the belly and on the lower side of the hind limb.

	lines.
Length of the body . . . . .	13
——— of the hind limb . . . . .	16
——— of the fourth hind toe. . . . .	$5\frac{1}{2}$
Distance between vent and knee . . . . .	$4\frac{2}{3}$

*Hab.* Van Diemen's Land.

**LITORIA WILCOXII.**

Snout of moderate length, somewhat pointed in front, the distance between the front angles of the orbits being equal to that between the eye and the extremity of the snout. Canthus rostralis angular; nostril much nearer to the end of the snout than to the eye. Tym-

panum very distinct, half the size of the eye. Skin perfectly smooth; a fold across the chest; belly granulated. Vomerine teeth in two oblique short series between the anterior part of the choanæ; tongue entire behind. Openings of the Eustachian tubes much narrower than the choanæ. Limbs rather slender: the third finger is longer than the fourth. The length of the body is a little less than the distance between vent and heel. Tarsus with a lateral fold of the skin; metatarsus with two small tubercles. Toes three-fourths webbed; the length of the fourth toe is a little less than one-half of that of the body. Disks rather small.

Upper parts greyish olive, indistinctly marbled with darker; a dark cross band between the eyes. A black band runs from the snout along the canthus rostralis, and is continued behind the eye, through the tympanum, to behind the axil. Sides of the belly and hinder side of the thigh yellow, marbled with black.

	lines.
Length of the body . . . . .	19
Width of the cleft of the mouth . . . . .	$6\frac{2}{3}$
Length of the fore limb . . . . .	$13\frac{1}{2}$
——— of the third finger . . . . .	$4\frac{1}{2}$
——— of the hind limb . . . . .	35
——— of the entire foot . . . . .	15
——— of the fourth toe . . . . .	9

Two specimens were sent by Mr. Krefft; they were collected at the Clarence River by James F. Wilcox, Esq., to whom science is indebted for many valuable acquisitions from that country.

I take this opportunity of remarking that *Hyla aurea*, Less., has the first finger opposite to the three others, and that therefore it ought to be referred to the genus *Litoria*.

#### HALOPHILA PLATYDACTYLA.

This species is very similar to *H. vitiana*, Bibr., but distinguished by the very broad terminal disks of the fingers, which are as large as the tympanum. In the form of its head it agrees with the other species mentioned; the tympanum is not quite half as large as the eye; the choanæ and openings of the Eustachian tubes are small, and the minute vomerine teeth form only a very short oblique series behind the choanæ. The skin is perfectly smooth. The first finger is shorter than the others. The length of the body is more than the distance between vent and heel. Toes with a rudimentary web, and with the terminal disks much smaller than those of the fingers; the third toe is longer than the fifth; metatarsus with two minute tubercles. Uniform brownish violet above; light brownish below.

Length of the body 16 lines, of the hind limb 22 lines, of the fourth toe 7 lines, of the fore limb  $11\frac{1}{2}$  lines.

The locality where this species has been obtained is not known, but it is probable that it came from one of the Feejee Islands.

5. OBSERVATIONS ON THE GEOGRAPHICAL DISTRIBUTION OF THE SPECIES OF *VOLUTA* AND *CYMBIUM* IN THE AUSTRALIAN SEAS. BY GEORGE FRENCH ANGAS, CORR. MEM.

New Holland may well be regarded as the metropolis of the *Volutilidæ*, no less than twenty-eight or twenty-nine of the seventy species of the genus *Voluta* already known to us, and some half-dozen species of the allied genus *Cymbium*, having their habitat in the Australian waters. Under the term Australia I include New Caledonia, New Zealand, and the adjacent islands, which may fairly represent one geographical province or area, throughout which this family develops itself in a large number of species. Having had frequent opportunities, during my researches both in Australia and New Zealand, of determining the exact geographical range of many of the *Volutes*, I have been induced to embody my observations in the following notes on such species as are inhabitants of the Australian Seas.

1. *VOLUTA* (*SCAPHA*) *MAGNIFICA*, Chemnitz.

This noble species, one of the largest of the genus, is peculiar to the east coast of Australia, south of the tropic of Capricorn. Its most northern limit appears to be about Port Curtis and Moreton Bay, where a tubercled variety was found by the late Mr. S. Stutchbury, of which I have seen two examples. In the sheltered harbours of Brisbane Water and Port Jackson, where it seems to attain its maximum size, it is found half burying itself amongst the weed and ooze on a sandy or muddy bottom, often in shallow water below tide-mark. My largest specimen, from Vacluse Bay, in Sydney Harbour, measures nearly 1 foot in length; and the one in the British Museum, from the same locality, presented by Capt. Sir Everard Home, is still larger. This species occurs as far south as Woollongong and Jervis Bay, which I judge to be near its southern limit. As might be expected from so large and conspicuous a species, it is now becoming rare in Port Jackson, and fine specimens in good condition are very difficult to obtain.

2. *VOLUTA* (*SCAPHA*) *FUSIFORMIS*, Swainson.

This scarce and elegant *Volute* belongs to Tasmania and the islands of Bass's Straits; I have never met with it either in New South Wales or South Australia. In most of the specimens which have been obtained, the papillary apex is wanting. The specimens from King's Island and other parts of Bass's Straits are larger, thicker, and more ventricose than those from Southern Tasmania.

3. *VOLUTA* (*SCAPHA*) *RUTILA*, Broderip.

From the north-east coast of Australia. My specimen was obtained near Cape York, during the cruise of H.M.S. 'Rattlesnake,' and is not tubercled.

## 4. VOLUTA (SCAPHA) PIPERITA, Sowerby.

This lovely species is extremely rare: I do not think there are half a dozen specimens in Europe. Its habitat (till lately unknown) is Woodlark Island, whence the two fine examples in my own collection were obtained by H.M.S. 'Iris.'

## 5. VOLUTA (SCAPHA) PULCHRA, Sowerby.

An exquisitely beautiful Volute, of which a specimen in a live state was found at Heron Island, on the north coast of Australia, by my friend Mr. J. Macgillivray, and is now in the National Collection.

## 6. VOLUTA (SCAPHA) DESHAYESII, Reeve.

This gorgeously blood-spotted Volute has only been known to collectors during the last few years. Previously to its being described by Mr. Reeve in the 'Proceedings of the Zoological Society of London,' I had received several specimens from the tortoiseshell and bêche-de-mer traders, who visit the islands to the north-east of Sydney. It appears to come from the north coast of New Caledonia, and (although at one time I saw some hundreds lying on the deck of a small schooner in Sydney, and was obligingly offered as many as I liked to take by the captain) is still a species much valued by collectors in Europe.

## 7. VOLUTA (SCAPHA) NORRISII, Sowerby.

King George's Sound, Western Australia. Rare. This species differs from the common *V. nivosa* in being shorter and broader, with a very dark aperture, and in having the whorls coronated at the angle.

## 8. VOLUTA (SCAPHA) NIVOSA, Lam.

Peculiar to the west coast of Australia, where it ranges abundantly from Swan River to Sharks' Bay. At the latter place a small yellowish variety occurs, in which the snow-flake markings are nearly obsolete.

## 9. VOLUTA (SCAPHA) MARIA-EMMA, Gray.

This species is most probably from the north-west coast of Australia. At present I believe it is unique in the Cumingian collection.

## 10. VOLUTA (SCAPHA) MAMILLA, Gray.

Several specimens of this large and remarkably papillose shell have lately been obtained in Tasmania. A fragment, evidently belonging to this species, was found on the beach at Kangaroo Island, in South Australia, amongst a heap of débris and broken shells.

## 11. VOLUTA (SCAPHA) PACIFICA, Solander.

There are two or three very marked varieties of this species, which is pretty generally distributed along the shores of the north island of New Zealand. About Hokianga, on the west coast, I have met with

it nodulous and elongated. At the Bay of Islands there is a smooth variety, more ventricose, and richly coloured.

12. *VOLUTA (SCAPHA) GRACILIS*, Swainson.

A miniature species, differing in form and style of painting from the preceding, of which I have seen a few specimens from New Zealand only.

13. *VOLUTA (SCAPHA) SOPHIA*, Gray.

From the north coast of Australia, very rare. Mr. Murphy, of Sydney, possesses a very fine example of this species, which he obtained at Port Essington, when in company with the expedition of the late lamented Leichardt. One or two specimens have also been collected by H. M. surveying-ships on the north coast.

14. *VOLUTA (VOLUTELLA) FLAVICANS*, Gmel.

This species (*V. volvacea* of Lamarck) occurs also at Port Essington, whence my specimens were obtained. It probably extends northwards to New Guinea and the adjacent islands.

15. *VOLUTA (VOLUTELLA) PAPILOSA*, Swains.

This ponderous and handsomely marked shell is one of considerable rarity. Worn and dead examples, however, may frequently be met with on the beaches at Encounter Bay and Kangaroo Island in South Australia, and in several parts of Tasmania and Bass's Straits. In the adult state the outer lip is often extremely thickened; and the apex in the young shell somewhat resembles that of *V. mamilla*, on a smaller scale.

16. *VOLUTA (VOLUTELLA) FULGETRUM*, Broderip.

This fine species is also rare, and inhabits similar localities to the preceding, *V. papillosa*. The first specimen was brought to Europe from Port Lincoln by Flinders's Expedition, and afterwards realized a large sum at the sale of the Tankerville Collection. By far the finest example of *V. fulgetrum* yet obtained, both for size and brilliancy of colour, was dredged at Tunby Bay, in Spencer's Gulf, on the edge of a sandbank, and is now in my collection. In the British Museum are two specimens of this species, presented by my friend Mr. Harvey, of Port Lincoln, labelled as being from "Port Lincoln, Torres Straits"!

17. *VOLUTA (VOLUTELLA) ROSSINIANA*, Bernardi.

From New Caledonia, rare.

A very elegant species, somewhat resembling *V. imperialis* of the Philippines.

18. *VOLUTA (AMORIA) UNDULATA*, Lam.

This common species has a wider range of distribution than most of the genus. It occurs in Port Jackson, on the east coast, where it

is very rare, and extends round the south coast of Australia as far to the westward as Swan River. In Tasmania and Bass's Straits, where it is very abundant, the shells are of a darker colour and stouter than those from Port Lincoln, which are of a pale ivory tint and more elongated.

19. VOLUTA (AMORIA) EXOPTANDA, Sowerby.

This extremely rare Volute was first described by Mr. Lovell Reeve from a unique specimen in the collection of the Rev. Mr. Crotch. Miss Saul has shown me a second specimen, in a worn state, having been picked up on the beach at Port Elliott, in South Australia, by some children, who used it as a toy with other broken shells. On their arrival in England, the "much-to-be-desired" Volute was eagerly rescued by Miss Saul, and now holds a distinguished place in that lady's cabinet.

20. VOLUTA (AMORIA) VOLVA, Chemnitz.

This species (*V. pallida* of Gray) occurs freely along the west coast of Australia, especially about Swan River. *V. volva* has been confounded with *V. turneri* and *V. prætexta*, from the north and east coasts, by some authors; but I regard them as being each specifically distinct, besides belonging to widely different localities.

21. VOLUTA (AMORIA) RETICULATA, Reeve.

An extremely rare species, somewhat allied to the last, but banded and beautifully reticulated with chestnut-brown. The few specimens already known have been brought from the neighbourhood of Sharks' Bay, Western Australia.

22. VOLUTA (AMORIA) TURNERI, Gray.

A delicate longitudinally striped species from North-east Australia.

23. VOLUTA (AMORIA) PRÆTEXTA, Reeve.

A small reticulated species from the north coast of Australia.

24. VOLUTA (AMORIA) MACULATA, Swainson.

This rare and elegantly spotted shell, of which but few specimens are known, has its locality to the north of Queensland. I possess one example, which was obtained on the beach at Port Curtis.

25. VOLUTA (AMORIA) MARMORATA, Swainson.

Another very scarce species of a graceful *Cymba*-like form, from Port Stephens and Port Macquarie, on the east coast of New South Wales.

26. VOLUTA (AMORIA) ZEBRA, Leach.

A common species at Port Curtis and the mouth of the Richmond River, on the east coast of Australia. The *V. lineata* of Leach is a variety of this species.

27. *VOLUTA (LYRIA) MITRÆFORMIS*, Lamarck.*V. multicosata*, Broderip.

South Australia, on banks of sandy mud in Spencer's Gulf and Gulf St. Vincent. Large and richly coloured specimens are occasionally washed on shore near the Semaphore at Port Adelaide, in a tolerably good state. Those found at Port Lincoln are smaller and paler in colour. I possess a specimen of the latter variety from the beach at Buffalo Mouth, South Africa, though I do not find the species included in Professor Krauss's 'Süd-Afrikanische Molusken.'

28. *VOLUTA (LYRIA) NUCLEUS*, Lamarck.

The smallest of the Australian Volutes, of which I have obtained specimens from the north-east coast, near Cape York.

29. *VOLUTA (LYRIA) DELICIOSA*, Montrouzier.

A small, compact, delicately marked species from New Caledonia. It is very closely allied to *V. cassidula* from Japan.

30. *MELO GEORGINÆ*, Gray.

Moreton Bay and Swan River.

31. *MELO UMBILICATUS*, Brod

Moreton Bay.

32. *MELO DIADEMA*, Lam.

Port Essington.

33. *MELO MUCRONATUS*, Sow

Moreton Bay.

34. *MELO BRODERIPII*, Gray.

Torres Straits.

35. *MELO MILTONIS*, Gray.

Swan River.

## 6. DESCRIPTION OF A NEW SPECIES OF GULL FROM TIBET.

BY J. GOULD, Esq., F.R.S., ETC.

*CHROICOCEPHALUS TIBETANUS*, Gould.

Head light chocolate-brown, deepening into black on the nape, sides of the head, and fore part of the neck; back and wings delicate grey; shoulders and edge of the wing pure white; first two primaries black, with an oblong patch of white occupying the basal portion of the outer web and the corresponding portion of the inner web for about half its breadth, and with an oval patch of white near the tip;







1  
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J. Wolf. del., et lith

M & N Harbart imp.

MUSTELA AUREIVENTRIS

the remaining quills white, largely tipped and broadly margined along the inner web with black; remainder of the plumage, comprising the neck, under surface, upper and under tail-coverts, pure white; bill, legs, and feet coral-red; nails black.

Total length 16 inches, bill 2 inches, wing  $12\frac{1}{2}$  inches, tail 5 inches, tarsi  $2\frac{1}{5}$  inches.

*Hab.* Tibet.

*Remark.* This fine and very distinct species belongs to that section of the *Laridæ* which comprises the well-known Black-headed Gull, *C. ridibundus*, but cannot be confounded with that or any other species, the broad black mark in the centre of its first two primaries, together with its larger size, serving at once to distinguish it. It was brought from Tibet by Major W. E. Hay, F.Z.S.

#### 7. DESCRIPTION OF A NEW MUSTELA FROM QUITO.

BY DR. J. E. GRAY, F.R.S., ETC.

(Plate VIII.)

Mr. Gould has transferred to the British Museum the skin of a small *Mustela* which he received from Quito, along with a new species of Humming-bird, which he has lately described.

It is very distinct from any we have previously seen. It is about the size of the European Weasel (*Mustela vulgaris*).

MUSTELA AUREOVENTRIS. (Pl. VIII.)

Dark brown; chin and side of the throat white; throat, chest, inside of fore legs, and belly golden yellow; whiskers black; tail rather tapering, as long as the body; the soles of the hind feet hairy; the pad of the toes bald, callous, hairy on the sides; ears rounded, hairy. Length of body and head 6 inches, of tail  $4\frac{1}{4}$  inches.

*Hab.* Ecuador.

#### 8. NOTES ON SOME MAMMALIA, WITH THE DESCRIPTION OF A NEW GOLUNDA, FROM WESTERN AFRICA. BY DR. J. E. GRAY, F.R.S., ETC.

In the 'Proceedings of the Zoological Society' for 1862, p. 8, Mr. Andrew Murray has described a Bat from Old Calabar under the name of *Sphyrocephalus labrosus*.

The British Museum has just received from Western Africa a young specimen of a Bat which evidently belongs to the same species; and, as it differs in several particulars from the adult, I herewith send a short account of its peculiarities:—

The wings of this specimen, like all young Bats, are not completely developed, the fingers being short and the bones soft and flexible. The bald disk at the end of the nose is by no means so much deve-

loped as in the adult; indeed the face differs only from the usual appearance of a Pteropine Bat in having the end of the nose rather broader, more bald, and in there being a deep groove with a slight fold of skin on the hinder side of it on each side of the muffle; and the front of the lower lip is reflected and bent down, with a slight notch in its middle. The nostrils are tubular and rather far apart. The



upper surface of the nose is rather swollen, convex, with a central longitudinal and some transverse wrinkles; the surface of this large swollen part is only covered with short hairs, and is scattered with slender, rather short, erect, black bristles.

*Epomophorus whitei*, Bennett.

A white tuft of short soft hairs at the base of the front side of the ear; a tuft of white short hairs covering a deep pouch on the side of the shoulder.

*Hab.* Shupanga, on the Zambesi.

Dr. Kirk has presented to the Museum two specimens of this species; they are both males.

“They eat figs, coming out just for an hour or so in the evening and then retiring into dark places.”

The lips are very thick and rather dependent on the side, forming a very large pouch on the side of the mouth. The nostrils are moderately convolute on the outer side of the muffle, which is divided by a deep central notch, which extends down to the edge of the lip.

In the ‘Proceedings of the Royal Physical Society of Edinburgh’ for March 28, 1860, Mr. Andrew Murray, under the title of “Contributions to the Fauna of Old Calabar,” has indicated two new genera of Mammalia. He has most kindly transmitted to the British Museum the specimens on which these observations were founded. I have been enabled, by comparison with other specimens, to determine what I consider them to be. The following are Mr. Murray’s notes:—

“*Anahyster* (new genus of Otter) *calabarius*, Murray,” *l. c.* p. 157.”

“Its dentition differs from that of our Common Otter (*Lutra vulgaris*) in having one fewer premolar in the upper jaw. Mr. Murray had submitted it to Professor Owen, who believes it to be a non-

descript, and that it approaches *Enhydra* of Fleming (Phil. of Zool.) in having the first premolar suppressed above, but that the latter has also the first premolar suppressed below; it has, however, six incisors in the upper jaw; while the Sea-Otter (*Enhydra*) has only four in the adult state, which the specimen in question has."

"It would appear to form an intermediate link between the true Otter and the Sea-Otter; and its habitat in an estuary may therefore perhaps be thought suitable enough."

The skull transmitted by Mr. Murray exactly agrees in external form and disposition of the teeth with *Aonyx* of Lesson; but it differs from the specimen of the skull of *Aonyx* in the British Museum in the suppression of the front upper false grinders; but this may be only accidental, or peculiar to the West African form of that genus.

I have never seen any other specimen of a skull or a skin of the genus *Aonyx* from the west coast of Africa; so I cannot say whether it differs in any other character from the *Aonyx* of the Cape of Good Hope.

*Aonyx* differs greatly in the external form of the skull from both *Lutra* and *Enhydra*. I am inclined to regard *Anahyster* as a synonym of *Aonyx*.

The skull of *Aonyx* is well figured in De Blainville's 'Ostéologie,' plate 8 of the genus *Mustela*.

"*Rhinomus soricoides* (nov. gen., nov. spec.?), Murray, *l. c.* p. 159."

"This is a very puzzling little animal; it has the appearance of a Shrew, with its long snout, but is in reality a mouse. Its dentition is somewhat peculiar, having a process behind them like the cusp of a carnivorous tooth. It is pentadactylous both before and behind; and as all the allied genera and species have four fingers before and five behind, Mr. Murray considered that there was no alternative but to make a genus for its reception."

The specimen described is a *Sorex*, allied to, if not the same as, *Sorex myosurus*, the cusp on the lower incisor tooth being the usual form of the cutting-teeth of that genus, so that *Rhinomus* must be reduced to a synonym of *Sorex*.

#### GOLUNDA PULCHELLA, n. s.

Blackish brown; chin, throat, inner side of limbs, and beneath greyish white; head grizzled with yellowish-white hairs; back with six rows of small oblong spots, almost continuous, forming narrow lateral streaks; outside of limbs with smaller pale spots, which are separated in the middle of the back by a well-defined black streak; tail as long as the body, naked, with short scattered adpressed hairs.

*Hab.* West Africa (*Mr. Gould*); Central Africa (*Capt. Speke*).

This species is somewhat like *G. barbara* of North Africa, but the streaks of nearly continuous spots are very much smaller and narrower.

I received the specimen above-described from Mr. Gould. There is in the British Museum an imperfect skin of the same species, which was presented by Capt. Speke as coming from Unyamuezi. Capt. Speke's specimen is not so brightly coloured, and the vertebral streak is not so broad and distinct.

*AULACODUS SWINDERNIANUS.*

*Hab.* The delta of the Zambesi, on the Sand-Islands.

The flesh is much praised; said to be very similar to the Cavies of South America (*Dr. Kirk*).

Dr. Kirk has sent to the Museum two foetal specimens of this animal with their membranes.

9. NOTES ON SOME NEW LIZARDS FROM SOUTH-EASTERN AFRICA, WITH THE DESCRIPTIONS OF SEVERAL NEW SPECIES.  
BY DR. J. E. GRAY, F.R.S., ETC.

(Plate IX.)

Dr. John Kirk has most kindly sent to the British Museum a series of Lizards, Snakes, Insects, and other animals collected during the Zambesi expedition, under H. M. Consul the Rev. Dr. Livingstone. As the series of Lizards contains some species which do not appear to have been previously inserted in the 'Systematic Catalogue,' I forward an account of them to the Society.

*GERRHOSAURUS ROBUSTUS*, Peters, Monatsb. 1854, p. 618.

*Hab.* Tette (*Peters*; *Dr. Kirk*).

Dr. Peters gives the word *Caaiia* as the name of this Lizard; but, Dr. Kirk informs me, that word simply means "I do not know," which was probably what the native said when he asked him what they called it.

Common near Tette. The native told Dr Kirk that it entered fowl-houses and killed the fowls, and that it bit very hard.

This species agrees in general appearance with the Lizard figured in Dr. Andrew Smith's 'Illustrations of the Zoology of South Africa,' under the name of *Gerrhosaurus bibronii*; but the head of the Tette specimen is dark brown like the body, and is spotted with white; while in Dr. Smith's species the head is figured as uniform red-brown.

*TEIRA ORNATA*, n. s.

Blackish brown above (in spirits), with three narrow continuous streaks from the occiput to the base of the tail; head with small symmetrically curved white lines; sides of the head and body with numerous erect, more or less sinuous, white cross bands; chin and beneath white; tail pale reddish brown; ventral shields six-rowed; the throat with a slight fold of a single series of rather larger flat



1



2

1 *Euprepis kirkiti*  
 2 *Homodactylus turneri*

W.W. 1871





scales; under the ears, scales small, granular, smooth; of the tail elongate, keeled.

*Hab.* South-Eastern Africa (*Dr. Kirk*).

#### LYGODACTYLUS, n. g.

Toes free, all clawed, slender, and subcylindrical, with a series of small scales beneath at the base rather dilated ovate, and with two series of regular transverse plates, separated by a central groove beneath, at the end; the thumb (of the hind foot, at least) large. Head, body, and tail covered with uniform granular scales. Tail cylindrical, tapering; front of the vent granular. Labial shields large, in form equal, smaller behind, with a large shield in front of the chin.

This genus agrees with *Thecadactylus* in the form of the plate beneath the toes; but the toes are freer, and the bases of the toes are slender and subcylindrical. It differs from *Ædura* and *Strophura* in the plates under the toes being of a uniform size, and closely imbricate.

#### LYGODACTYLUS STRIGATUS, sp. nov.

Grey brown (in spirits) above; crown vermiculated and marbled with black; chin and beneath white, with a black streak commencing from the nostril and continued, enclosing the eye, on the side of the neck and front of the body; tail pale brown; scales on the back very minute, of the crown rather larger; upper labial shields narrow; the lower labial shields 7.7, the four in front of each side larger, becoming gradually smaller; chin-shield six-sided, with two or three smaller shields on each side behind it.

*Hab.* South-Eastern Africa (*Dr. Kirk*).

Body and head  $1\frac{1}{2}$  inch long; tail 1 inch.

#### HOMODACTYLUS, n. g.

The toes free, broad, depressed, rather broader and rounded at the ends; thumb broad like the toes; all granular at the base, and with a single series of broad transverse plates beneath the dilated end, and without any free compressed terminal joints or claws. Back with large tubercles. Tail with rings of large tubercular scales. No pre-anal nor femoral pores.

This genus is like *Phelsuma* in the form of the toes; but the thumb is dilated at the end like the toes; the back is tubercular, and the tail ringed and tubercular.

In the latter character it resembles *Tarentola*, which has the same habit of living in houses; but it has no compressed joints on the middle toes of the hands and feet.

#### HOMODACTYLUS TURNERI, sp. nov. (Pl. IX. fig. 2.)

Pale brown; head blackish, tubercular; back with sixteen longitudinal series of large oblong, more or less keeled, black-brown tubercles, with a central series of much smaller similar tubercles down the

vertebral line. The outer side of the limbs with similar tubercles, which are largest on the outer side of the fore legs and hinder side of the thighs and hind legs. Tail with rather distant rings of similar, but rather more acute tubercles, which make six longitudinal series on the base of the tail; underside pale brown, with smooth subequal scales; chin with three band-like shields in front.

*Hab.* South-Eastern Africa (*Dr. Kirk*). In the houses.

Var. or junior?

Pale brown, with the tubercles paler and with some opaque-white tubercles intermixed. Head with four longitudinal brown streaks up the face to the forehead; a brown streak on the upper margin of the temple, five unequal, rather irregular, dark bands across the back, and with some more obscure paler bands across the tail. The toes appear scarcely so much dilated; but in other respects they are like the two larger dark specimens.

I have named this species in honour of J. Aspinall Turner, Esq., M.P., who has done so much to make known the zoology of Western Africa, and formed such a fine collection of insects, especially of *Coleoptera*.

M. Auguste Duméril, in the 'Revue et Mag. de Zoologie' for 1851, describes and figures a Nocturnal Lizard, which had been received from Senegal, under the name of *Stenodactylus caudicinctus* (p. 478, t. 13).

M. A. Duméril observes that the slender-toed Geckotians are easily divided into two genera,—the *Gymnodactyles* having slender toes, which are smooth on the edge and with small central plates beneath; while the *Stenodactyles* have each side of the toes fringed with small teeth, and the lower surface granular.

I cannot consider this an accurate account of the typical *Stenodactyles*, or, at least, of the toes of the long-known species on which the genus *Stenodactylus* of Cuvier was established; for in that animal, as is well shown in Savigny's figure in the large work on Egypt, the underside of the toes is furnished with a series of plates as in the *Gymnodactyles*, but instead of the plate being entire on the edge, as in *Gymnodactylus*, it is deeply dentated on the outer margin, which caused me, in my 'Catalogue of Lizards in the British Museum,' to form a tribe for it in the family *Geckotidæ*, under the name *Stenodactylina*, which is thus characterized:—

“E. Toes cylindrical, tapering, toothed on the sides, lower surface with denticulated cross plates” (*l. c.* p. 177).

The Lizard from Senegal, which M. A. Duméril has referred to this genus, does not agree with this character. It, indeed, has the under surface of its cylindrical tapering toes covered with small acute scales, like the soles of its feet; and therefore I think that it must be formed into a distinct genus, which will form an anomalous group among the Night Lizards, or *Geckotidæ*, characterized by this peculiarity in the toes.

The Senegal Lizard cannot be properly referred to the genus *Ste-*

*nodactylus* for another reason: the true *Stenodactyli* have the external appearance of the *Agamæ*, so much so that Geoffroy, on Savigny's plate, calls it *L'Agame ponctué*; and M. Audouin, in his 'Explanation of Savigny's Plates,' referred it to the genus *Trapelus*, under the name of *T. savignii*; while the Senegal Lizard is a typical Gecko in all outward characters except the toes, so much so that when it was first seen it was thought to be an *Eublepharis*, erroneously said to come from Africa.

I propose to call this genus

#### PSILODACTYLUS, g. n.

Toes short, subcylindrical, tapering, covered with flat scales above, and, like the palms, with small rough granules beneath; thumb like toes, but shorter; all clawed. Tail cylindrical, covered with flat scales, annularly plaited with a series of larger scales on the edge of the folds; beneath covered with subequal, flat, square scales. Pre-anal pores in a short angular line. Head depressed, covered with polygonal shields; labial shields low, broad; upper and lower rostral shields large, similar. Edge of the eyelids reflexed, expanded; pupil large. Back with series of granular tubercles, those on the side formed of three subequal, larger scales. Chin, throat, and belly with smooth polygonal scales.

This genus is very similar to *Eublepharis (hardwickii)* in external appearance and distribution of colour, but differs in the toes being very much shorter, thicker, and cylindrical and tapering, in the ends not being compressed and arched, but thick and cylindrical like the bases, and in the under surface of the toes being covered with small rough granules, like the under surface of the palm or soles of the feet. It differs also in the tubercles of the back being formed of groups of three scales; the central scales or tubercles on the middle of the back are larger than those on each side of it, but on the sides of the back the three scales are of nearly equal size.

In *Eublepharis* the toes are compressed at the end, and have a broad band-like scale beneath, and the tubercles of the back and sides are all formed of a single large scale.

#### PSILODACTYLUS CAUDICINCTUS.

*Stenodactylus caudicinctus*, A. Duméril, *l. c.*

In spirits, pale whitish; upper part of the head brown, edged with a black horseshoe-shaped band behind; cheek and side of the throat black, varied; back with two very broad irregular-edged black cross bands; tail dark, ringed.

*Hab.* W. Africa; Old Calabar?

#### EUPREPIS GULARIS, sp. nov.

Pale bronze-green brown (in spirit), with five narrow whitish streaks from the occiput continued on the base of the tail; crown of the head uniform brown; the central dorsal streak with a narrow black edge on each side, the two lateral streaks scarcely dark-edged,

the upper one arising from the back edge of the eye, and the lower from the pale scales on the upper lip; the throat, the sides of the face, and neck dark brown, white-speckled. The front edge of the ears with a few very small thin scales.

*Hab.* South-Eastern Africa.

In the 'Catalogue of Lizards in the British Museum,' I regarded these specimens from South Africa as varieties of the *Euprepis quinquefasciatus* from Western Africa; but on recomparing these specimens with other specimens received since, and with the specimens brought home by Dr. Kirk, I am convinced that they are distinct.

*EUPREPIS KIRKII*, sp. nov. (Pl. IX. fig. 1.)

Black-brown; back with three uniform well-marked yellow streaks, the middle one from the end of the nose to the base of the tail, the lateral ones from the eyebrows and continued on the side of the base of the tail, and tail-end blue. There is a streak like the others, but less distinct, on each side of the body, arising from the lips, continued across the ear-hole, and obscurely continued on the side of the base of the tail. The chin and underside of the body and base of the tail whitish; scales with three distinct keels; two series of scales between each pale streak; the ear-holes oblong, erect, open, with three very small indistinct prominences on the front edge, which are placed at unequal distances from each other.

*Hab.* Tette (*Dr. Kirk*).

This species resembles in external appearance the Blue-tailed Skink of North America; but the central dorsal streak is not forked over the head. It is very like the *E. quinquefasciatus* of Western Africa; but the dorsal streaks are not black-edged, and the central one is continued to the end of the nose. This is not the case in the latter species, which agrees with *E. kirkii* in having only two series of scales between each white streak.

Named in honour of Dr. Kirk, its discoverer.

*EUPREPIS GRANTII*, sp. nov.

Pale bronzed brown, with a broad pale whitish streak on each side of the back, continued from the eyebrows to the lower part of the tail. Sides of the head and neck with a broad blackish streak, enclosing the eye and over the ears. The upper lip and slender streak under the eye opaque white. Scales three-keeled.

*Hab.* South-Eastern Africa (*Dr. Kirk*).

*CHAMÆLEO DILEPIS*, Gray, Cat. Lizards B.M. 266.

The white band on the sides is formed of round groups of white scales of the same size and form as the other scales on the sides. There is also a triangular white spot at the angles of the mouth.

*Hab.* South-Eastern Africa (*Dr. Kirk*).