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sun's rays. The day after, all, more or less, showed strong symptoms of decay, except *Couchia*, which alone exhibited little or no change. It would be quite superfluous to detail here every day's appearance during the fortnight the experiment lasted. Suffice it to say that at the end of that period scarcely anything remained but the flattened, dried-up, skinny, and all but colourless skeletons of the lot, save the little beauty, who still stood wonderfully out, being little the worse in appearance. True, the eye was sunk and dull, and the softer portion of its body a little, but only a little, shrivelled. Its colours too, except the green, were nearly as vivid as when it was first laid out, or when it used to dart, like a silver arrow, through the waters of the deep.

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Catalogue of the Reptiles of British Birma, embracing the Provinces of Pegu, Martaban, and Tenasserim; with descriptions of new or little-known species. By W. THEOBALD, JUN., Geological Survey of India. Communicated by G. BUSK, Esq., Sec. L.S.

[Read November 7, 1867.]

IN preparing the present catalogue, my object has been twofold:—first the correct discrimination of the species authentically known to be from Birma, amongst those contained in the somewhat lengthy list of reptiles generally referred to the “East Indies”; and secondly the description of such new species as have occurred to me, or such additional details of known species as my opportunities may have enabled me to gather.

The present catalogue is based mainly on specimens examined by myself, the few instances being noted where I have not seen the animals. The great majority of the specimens have been collected by myself, and the descriptions drawn up from them while fresh, which has enabled me to make some corrections in the work of my eminent predecessor in this subject, Dr. Günther, whose monograph has been of inestimable value to me, and to worthily supplement which, by the present communication, I shall regard as my chief praise.

The specimens alluded to in the present catalogue are, with few exceptions, either in the Museum of the Asiatic Society of Bengal (now incorporated with the Imperial Museum in Calcutta) or in

my own private collection, and have at various times been brought together, mainly through the exertions of the late Major Berdmore and myself, and a few others, whose names are recorded in my 'Catalogue of Reptiles in the Museum of the Asiatic Society of Bengal' (now publishing in Calcutta). In 1855 I collected largely in Tenasserim; and the bulk of the collections was forwarded to Calcutta; whilst, during the past four years, I have been confined to Pegu. Hence it comes to pass that I am personally more thoroughly acquainted with the fauna of Pegu than with that of the Southern Provinces, though, happily, Major Berdmore was so energetic a collector in Martaban and Tenasserim, as to leave little to be desired, so far as the efforts of a single individual, not himself a naturalist, can go. It is, however, a source of much regret to me, whilst penning this catalogue, that Birma can boast of so few men possessing the energy and zeal of the above-named gentleman; for, with a few exceptions, the utmost apathy on scientific subjects prevails among the European residents in Birma, whether in civil, military, or mercantile employ.

Touching the distribution of species, British Birma presents an interesting field of inquiry, as it forms a sort of debateable ground, wherein the Indian fauna proper meets and commingles with that of the Malay peninsula. Thus, in Pegu, we have the Bengal forms *Daboia Russellii*, *Passerita mycterizans*, *Ptyas mucosus*, *Tropidonotus stolatus*, *Lycodon aulicus*, &c., alongside of such south-eastern forms as *Naja tripudians* (without spectacles), *Tragops prasinus*, *Ptyas korros*, *Xenopeltis unicolor*, *Ablabes melanocephalus* \* (?), &c., and, amongst lizards, *Varanus dracæna*, *Riopa albopunctata*, *Hemidactylus maculatus*, with *Draco maculatus*, *Tropidophorus Berdmorei*, and *Ptychozoon homalocephalum*. The distribution, too, of the Testudinata of Birma is somewhat remarkable. Many of the estuary species of Emydidae and Trionycidae are common to both Birma and Bengal, whilst others and the known Testudinidae are confined to the province and the Malay regions, with two remarkable exceptions—*Manouria emys*, recorded by Günther, from the Murray River, Australia, and *Emys trijuga*, which ranges from Java, through Pegu, to India and Ceylon, (though unrecorded as yet in Bengal). *Manouria*, I should perhaps add, is one of the species I have, as yet, not myself seen in Birma; but two specimens were forwarded by Lt.-Col. Phayre

\* Vide p. 49.

to the Asiatic Society, from Birma, though that officer is unhappily unable to remember any particulars of their capture; so that no doubt can exist that Birma is its authentic habitat. The few species I have not had an opportunity of examining and those with doubtful habitats are marked with two asterisks \* \*.

The list of Hydrophidæ, I have extracted from Günther's 'Catalogue,' for the sake of completeness; but they are beyond the scope of my personal observation.

The following is a general abstract of the present catalogue compared with Dr. Günther's.

In Dr. Günther's 'Catalogue,' fifteen Chelonians are recorded from the Birmese province; the present catalogue embraces twenty, one only being new. The additional species are:—*Testudo platynotus*, *Batagur trivittata*, *B. Bermorei*, *Trionyx Phayrei*, n.s., and *Pelochelys Cantori*. Of Saurians and Emydosaurians, Dr. Günther has recorded thirty-three species; the present catalogue contains thirty-nine, four being new—*Riopa anguina*, n.s., *Doryura gaudama*, n.s., *D. Karenorum*, n.s., *Hemidaetylus Mortoni*, n.s. Of Ophidians, Dr. Günther enumerates fifty-two; in the present list there are sixty-four, of which nine\* are new—*Simotes cruentatus*, n.s., *S. amabilis*, Günth., *S. Theobaldi*, Günth., *Ablabes bistrigatus*, Günth., *Coluber Nuttalli*, n.s., *Tyleria hypsirrhinoides*, n.g. and n.s., *Dipsas ochraceus*, n.s., *Pareas modestus*, n.s., *Fordonia bicolor*, n.s.—or, in all, an addition of twenty-three species of reptiles to the one hundred of Dr. Günther's list, of which fourteen are new.

## Class REPTILIA.

### Order Chelonia.

#### Family TESTUDINIDÆ.

##### TESTUDO, *Oppel*.

###### T. ELONGATA, Blyth.

Colour pale yellow, black-mottled, with no trace of rays. In aged specimens the shell is almost entirely pale yellow without markings. Head yellow, with the soft skin of the eyes and nostrils fleshy pink. Two large frontal shields in front of the eyes, and a large vertical.

The measurements below are the length of the thorax,

\* *Vide* p. 49.

breadth of the thorax, and length of the sternum,—the measurements taken round the curves in inches and decimals.

a. Adult male	. . 11.75	b. Adult female	. . . 11.60
	9.40		10.00
	7.00		6.50

Both these specimens are from Tonghu, and aged; but the species occurs a trifle larger. The shell of the male is considerably expanded in its pelvic diameter, and narrow in front. In the female the sides are more parallel. The young are more globose.

c. Young female	. . . . . 4.90
	4.90
	3.40

The umbilical foramen (unossified) was rhomboidal, and half an inch across. This species is very common in Pegu and Tenasserim; specimens, however, from Pegu do not usually attain the size of some from the southern provinces. Günther gives 13 inches as the limit (it not being stated if this measurement is in a straight line, or round the curve of the shell), whilst in Pegu I have never measured any shell of more than 12 inches. This species displays the curious habit (first recorded by Capt. T. Hutton in the case of *T. elegans*) of butting an opponent when two animals happen to meet; and the nuchal margin of the shell, in old animals, is frequently much chipped in consequence.

*T. PLATYNOTUS*, Blyth (J. A. S. 1863).

This species is closely allied to *T. elegans*, of which it may be either regarded as a well-marked local *race*, or rather, I think, as its representative in Pegu. It differs from the Indian species in being uniformly larger, and in having the top of the shell very flat—in many cases remarkably so, though individuals occur abnormally arched. Colour black, finely yellow-rayed; the first vertebral and last costal plates 5-rayed, the last vertebral and first costals 7-rayed. Tail ending in a spinal scale. Pupil large, dark, with a narrow brown iris. Head yellow, with one large vertical and two large occipital scales. The other scales small, irregular, and polygonal. Jaws dark, tridentate in front. Specimens do not often exceed 10.50, measured in a straight line.

The young are much more arched, and devoid of the flattened back, so characteristic of the adult.

a. Young female . . . . .	5·90
	5·80
	5·60

The nuclei were smooth; umbilical cicatrix closed.

This Tortoise is common in upper Birma, but only found close to the frontier within British territory (Pegu). Its shells, however, are imported from above the frontier, and used to measure oil by the retail vendors in Rangoon and other towns. It is unknown in Lower Pegu or Tenasserim, where *T. elongata* replaces it.

The land and freshwater Testudinata are a favourite article of food with all classes in Birma, save such as have embraced Islam, or Jews. *Testudo platynotus* and *T. elongata* are generally obtained in the hot season, when the grass jungles and forest are set on fire, and the animals revealed by the flames, which not only dislodge them, but clear the ground of all leaves and such light shelter, beneath which they lie concealed. Numbers, of course, perish miserably in the flames, whilst a few escape; and it is not rare to obtain animals bearing on them scars and marks of former burnings, which they have survived. At other seasons they are occasionally sought for with dogs, who are very sagacious and eager in the pursuit not only of game, but of Tortoises also and the large *Varani*.

*Batagur Bermorei* is captured in incredible numbers in the inundated plains of lower Pegu, which on drying up are covered over with thick grass. About March or April this is set on fire; and the scorched animals are picked up by dozens, or sought for amongst the unconsumed tufts beneath which they have retreated.

*Cyclemys orbiculata* is found in the hill-streams, some men, especially the Karens, being very expert in detecting their haunts, which are much the same as those of the soft Turtles (Trionycidæ). In hunting for the soft Turtles in the hill-streams, the men use a long iron fork, such as an old iron ramrod sharpened at one end, or a stout strip of Bamboo, which they thrust down for a foot or two in the soft vegetable sludge and decayed leaves found along the margin of deep pools in the hill-streams. If the fork touches a Turtle concealed below, the motion of the animal is felt: a cautious examination is then made with the hand, and a fish-hook is cleverly inserted in the soft part of the mantle about the tail, then another, and even three or four, if the animal is large. A steady haul is now made, and out comes the Turtle, wildly floundering, and

snapping at every thing within its reach with pertinacious ferocity.

Sometimes, when the animal is large, or the water deep, a stake is held over the animal's back and, with a few well-delivered blows of a mallet, driven through both shells. Woe betide the limb, however, which comes within reach of the infuriated animal! I saw the top of one man's toe bitten clean off by a *Trionyx Phayrei* which was being "staked;" and as these animals are both active and ferocious, it is always advisable to send a bullet through their brain as soon as possible. So tenacious of life, however, are these creatures, that their heads bite vigorously after being completely dis severed from their bodies.

The natives eat all sorts indiscriminately; and perhaps the flesh of even the highly carnivorous soft Turtles may be palatable; Günther, however, is mistaken in saying of the pond-tortoise, "They are not used as food by man, the flesh of most species having a very disagreeable smell" (Rep. Brit. Ind. p. 21), since, waiving the point how far the teeming millions of Birma and the adjoining regions deserve to be regarded as human, as regards their diet, I can from personal experience say that the flesh of almost all our Emydidæ is excellent. The smell of the raw meat may be nauseous, but so is the smell of fish; but this is quite lost in cooking; and cutlets made of it are not only eatable, but delicate eating. *Batagur baska* is, I am credibly informed, largely used for making Turtle soup in Calcutta; and I imagine a real Turtle not unfrequently in the City of Palaces enacts the rôle of the hairdresser's Bear,—the actual victim, in either case, being one more easily procurable. Of course the real Turtle (*Chelonia virgata*) is brought to Calcutta, chiefly from the Straits—more frequently the "Loggerhead" (*Couana olivacea*), which abounds in the Bay of Bengal; but the humbler though still meritorious "Baska," more frequently, I imagine, than either, forms the basis of the soup which alike delights the *gourmet* of Chouringhee or of Guildhall. According to Mr. Blyth, the "Baska" is kept alive in tanks for the market. In the tidal creeks of the Irawadi estuary, large numbers, not only of the Baska (*Tetraonyx*) are captured, but also of the eminently handsome *Batagur trivittata*, in large baskets with a falling door (something like a mousetrap) set to catch large fish. A quiet reach is selected, with a more or less sloping bank, covered with grass above midwater-mark. On this bank, at or below midwater-mark, these large baskets are firmly staked; and, when



the flood-tide makes, the dropping door is raised and lightly set with a few bricks attached to it, to cause its sudden fall on anything entering. Large fish are most commonly taken, but Turtle also; and, as they are visited every tide, and great numbers are set, the amount of fish taken is collectively very considerable.

The marine Turtles are caught either accidentally in the fishing-stakes, or the females are taken by men in ambush in sandy places where they come to deposit their eggs; the privilege of collecting which is farmed out by government to particular parties, who, looking to the eggs rather than the animals, do not, as a rule, molest the females. The Loggerhead (*Couana olivacea*) is the commonest species on the coast. It oviposits in March and April; and one I opened contained over 260 unshelled eggs, besides 103 perfect eggs which it had deposited before it was captured. The eggs are white, spherical; the shell somewhat coriaceous and resilient. Diameter 1.55, weight 625 grains. This species is very abundant on the Arakan coast.

*Chelonia virgata* and *Caretta squamata* are far less common; and few Europeans in Birma have any suspicion that the Loggerhead is not the real Turtle, or could discriminate one from the other. *Dermatochelys coriacea* also occurs on the coast; and a fine specimen was forwarded by Major S. R. Tickell to the Asiatic Society in Calcutta. When alive it was covered over with numerous white spots, like splashes of whitewash, which have since disappeared.

#### Family GEOMYDIDÆ.

*Emydidæ* with a concave sternum in the male, indicating more terrestrial habits than the typical *Emydidæ*. Eggs large, elongate, few in number.

#### MANOURIA, Gray.

M. EMYS, M. & Schl. \* \*

*Testudo Phayrei*, Blyth, teste Günther.

This species I have never met with; but two specimens were forwarded to Mr. Blyth by Lt.-Col. Phayre, either from Arakan or, more probably, Maulmain, of which a few fragments alone remain in the As. Soc. Mus. in Calcutta.

GEOMYDA, Gray.

G. GRANDIS, Günther.

Colour of the animal pale muddy-olive, profusely spotted with dull orange. Colour of the shell above very dark brown, almost black, below finely black- and yellow-rayed. In adult shells very little ray-marking is to be seen on the thorax, save towards the edges; and the shell is usually much eroded or incrustated with weeds.

a. Adult male, from Pegu.    b. Adult female.

15·00	13·75
11·00	12·00
13·00	11·50

This species is not abundant either in Pegu or Tenasserim. The eggs are laid in December, and are exceedingly large and strong, four in number; and the empty shell weighs 165 grains, measurement 2·56 × 1·60. The female digs a hole about 9 inches deep in the most unfrequented forest, often in very stony soil, and, although she deposits many eggs in the season, yet only lays four at one time, differing in this respect from the more typical Emydidae, and approaching *Testudo*. Pegu specimens would seem to run uniformly smaller than the Gamboja race, as I have never noted one so large as Günther's type, viz. 17 inches.

CUORA, Gray.

C. AMBOINENSIS, Daud.

Colour above black (Günther says brown; but both my specimens are rather black than brown) with pale vertebral lines. Below pale primrose-yellow, with a black blotch at the outer posterior angle of each plate, both ventrals and marginals. Günther says that this species attains 8 inches, without specifying if straight or round the shell; but two specimens procured by me measured as below, both from Pegu.

a. Adult male . . . .	9·75	b. Adult female . . . .	10·00
	9·00		9·50
	6·75		8·00

This species is not an abundant one in Pegu; and the above are the only two I ever procured.

Family EMYDIDÆ.

*Emydinae* with the sternum flat in both sexes.

## CYCLEMYS, Bell.

The characters of the genus, as given by Bell, must be corrected thus :—*Sternum divided into two quasi-lobes by a perfectly mobile osseous suture corresponding to the transverse cartilaginous suture of Cuora.* This osseous suture is formed by the permanent non-union of the pectoral and abdominal bones of the shell, and is most developed in aged specimens, in which it becomes visible externally by a carious fossa traversing the external plates, and which may be noticed faintly in the fig. of the type *C. Oldhami* in Günther's 'Reptiles of Brit. Ind.'

*C. ORBICULATA*, Bell (young).

*C. dentata*, Gray (adult).

*C. Oldhami*, Gray, P. Z. S. (adult).

This species was not unjustly regarded by Mr. Bell as a very curious one, and as affording a link between the box-tortoises and the more typical *Emydidæ*. Strangely enough, its describer overlooked the fact of its possessing the very curious pseudo-hinge, the homologue of the ligamentous hinge of *Cuora*, although in this species the motion of the two portions of the sternum is very limited, owing to its being the result merely of the permanent non-union of the toothed suture of the pectoral and abdominal bony plates, and not of a special ligamentous division. In the very young animal this transverse pseudo-hinge is imperceptible; but the motion of the plates develops it as the animal grows, so that in half-grown specimens it is perceptible enough, and, in adult or aged ones, is often marked externally by a carious fossa. Drs. Gray and Günther have equally overlooked or misunderstood this peculiarity, though in Günther's specimen (type of *C. Oldhami*) it is sufficiently discernible, which specimen was procured alive by myself, and correctly identified by Mr. Blyth, before it was forwarded by Dr. Oldham to the British Museum\*.

*a.* Young . . . . . 3.50

Shell orbicular, expanded, strongly keeled. Posterior margins strongly toothed. Tail 0.75. Nuchal plate small, squarish. Colour pale olive; each plate radiately brown-rayed from a large supero-posterior granular umbo. The umbo of the marginal plates postero-marginal. Pupil round, black. Iris greyish yellow, brown-

\* See Gray in Proceedings of Zoological Society, May 12, 1863, where of *Cyclemys* he remarks "the lobes are only moveable in the young state."

spotted. Skin of neck yellow, lined with brown; of body yellow. In specimens of this size the transverse pseudo-hinge is quite undeveloped.

b. Half-grown . . . . . 5.00

Sternum deep brown or blackish, yellow-rayed. The yellow iris much encroached on by the brown colour of the spots. Sternal suture distinct.

c. Aged . . . . . 7.75

Shell smooth, all markings effaced. Colour uniform reddish brown, rather marbled beneath with paler. Sternal pseudo-hinge very plain, indicated externally by a carious line or fossa across the abdominals. Pupil round, black. Iris deep umber-brown (the yellow ground of the young being quite overspread by the brown spots, in nonage only partially developed). Back very flat, but keeled over the tail.

d. The largest specimen in the Mus. As. Soc. at Calcutta, from Tenasserim.

8.50

7.50

7.00

This species is pretty common in the hill-streams of Pegu and Tenasserim. It is active in its movements, and the flesh is excellent. The stomachs of many which I have opened have contained vegetable matters and the fruit of *Ficus glomerata* or other figs. The eggs are elongate-oval or, rather, cylindrical, very large for the animal, and four in number.

EMYS, *Cuvier*.

E. TRIJUGA, Schw.

a. Adult female . . . . . 12.50

10.50

9.60

Colour black, with the keels and sides of the belly yellow (abraded?). Colour of body dirty olive-grey. Head yellowish, but without markings. Jaws not serrated. Claws very long.

This specimen was captured at Tonghu; and specimens have been obtained by Mr. Blanford in the Arakan Hills, about the same parallel; but it is rare, or wanting in Lower Pegu. Its distribution, however, is very remarkable, as it occurs in Java, Southern India, and Ceylon; and I could detect no difference between Java specimens, forwarded by the Batavian Society, and

those from Birma or Ceylon. One Madras specimen had no nuchal plate, which was, of course, a mere individual peculiarity.

*E. crassicollis*, Bell.

*E. nigra*, Blyth, J. A. S. xxiv, 713.

<i>a.</i> Old animal . . . . .	7.50
	6.60
	5.50

Colour deep clouded olive-brown, tending to blackish above; and below, without markings, but paler here and there. Nuchal very minute, triangular, with the base in front. First vertebral 5-sided, very elongate, truncate behind. Second, third, and fourth vertebrals 4-sided, mushroom-shaped. Front side semicircular, as long as a side and base. Base very narrow. In young specimens the vertebrals are lozenge-shaped, quite unlike the mushroom-shape they assume in the adult. Young three-keeled.

This species is pretty common in the Tenasserim valley; but it is not, I think, quite certain that it is not a closely allied species to *E. crassicollis*; in which case Blyth's name, *E. nigra*, must be adopted.

BATAGUR, Gray.

*B. trivittata*, D. et B.

<i>a.</i> Adult male . . . . .	20.40
	18.25
	16.60

A nuchal plate always present.

Animal pale yellow, with upper surface of limbs dusky. Neck yellow. Head covered with a smooth vascular skin, when alive of a deep flesh-red or carnation tint, but instantly fading on death to a waxy white. Behind the nostrils, on the forehead, a black lozenge-shaped plate, elongate behind. Shell above pale olive-green, with three conspicuous pitchy-black bands down the back (sometimes united at their ends), with some black marks about the margin. Beneath pale orange-yellow. Iris straw-coloured, blotched with reddish orange.

<i>b.</i> Adult female . . . . .	23.40
	21.60
	21.40

Animal uniform greenish olive, with a lozenge-shaped plate on the forehead, as in the male, but without any of the naked vascular

skin which adorns the other sex. Shell above and below uniform deep umber-brown, without any markings whatever.

This species abounds within the tidal portions of the Maulmain rivers, the Irawadi and Salween, mainly affecting deep clear-water reaches, where grass grows to midwater-mark, on which these animals seem to subsist. They are of timid disposition, and in the main herbivorous; their dung somewhat resembles that of a donkey or some herbivorous mammal. The female oviposits on the sand-banks near Zalon, on the Irawadi, near the top of the tideway, in January and February; and the right of collecting the eggs is farmed out by Government; and it is not easy therefore to procure the females, who are protected by the lessee of the banks through fear that they might desert the spot if molested. The eggs are white and cylindrical, 2.60 long, twenty-five in number, and weigh each 965 grains. It will be seen that they differ proportionally very much, if compared with the eggs of the Sea-Turtle (*Couana*), being one-third larger, whilst the animal is two-thirds smaller; but the amount of eggs laid by either is proportionally very similar, being, roughly speaking, 64,000 to 24,000 grains, which is about the proportion the animals bear to one another

$$(625 \times 103 = 64375. \quad 965 \times 25 = 24125).$$

The male is unquestionably *Emys trivittata*, D. et B.; but the female seems hitherto unknown to Europeans. The male is not only strikingly beautiful when alive, but, as above shown, differs materially from the female, which is considerably the larger of the two. The male (from its smaller size perhaps) is somewhat frequently trapped in the baskets set for fish, as before noticed; but live specimens are very difficult to procure, as the Talain fishermen have an invincible prejudice against selling them—that is, to a European, who will kill them,—though they will readily enough dispose of them to a brother Buddhist, to liberate as a work of merit. I have been refused myself, and have waited and seen the animal sold to a Birman for one-fourth of the sum I had proffered in vain. Of course this was annoying; but it is most unjust to resent what is really a most creditable trait in the seller's character. The Turtle so sold is taken down to the water's edge and ceremoniously requested to once more betake himself to the river, his back being perhaps first ornamented with a few sheets of gold leaf as a mark of respect, and to augment the merit of the benevolent action, which, done in obedience to the behest of Buddha, will ensure a commensurate reward for the doer in another state of

'existence. Should no purchaser appear, the fisherman will take the animals to his home, and perhaps turn them loose for the night. If any escape, well and good; if not, the animals are sacrificed to the Nâts, and the flesh eaten without compunction. The dead animals they will freely dispose of; but it is supposed that the Nâts would deeply resent the sale for slaughter of one of these animals to a foreigner or Kalá. By a strange omission, Günther, though he alludes to this species (Rept. Brit. Ind. p. 41), does not include it in his list; doubtless the recorded habitat, "Bengal," of the type specimen is an error due to the specimen having been shipped from Bengal—unless the term "Bengal" must be liberally interpreted as a synonym of British India, by no means an unlikely supposition.

**B. LINEATA, Gray.**

This species is somewhat scarce in Pegu, though perhaps commoner at Maulmain; but I refer a young animal to it which Capt. Foster shot near Tonghu, and obligingly presented me with.

a. Half-grown . . . . .	12:60
	11:60
	10:60

Colour above smoky olive-grey. Below pale yellow.

**B. AFFINIS, Cantor \* \*.**

This species probably ranges into Tenasserim or Pegu, though I have never met with it. It is evidently most closely allied to *B. trivittata*; but the sexes have not been described in detail, and the absence of a nuchal plate sufficiently proves its specific distinctness. It probably affords an instance of a closely allied representative species, as *Testudo platynotus*, Blyth, does of the Indian *T. elegans*, Sch.

**B. BERDMOREI, Blyth.**

*Emys ocellata*, D. et B. apud Blyth, J. A. S. xxiv. 645.

*E. ocellata*, D. et B. apud Günther, Reptile Catalogue, p. 24.

Nuchal oblong, twice as long as broad. First four vertebrals subequal, squarish; second and third the largest, broader than long. Shell high, round, and smooth, with wavy surface; pattern of the bony plates showing through the extremely thin horny covering. Sternum flat, obtusely but distinctly keeled at the sides, the outward sloping surface of the sternum being three-fourths as broad as its ventral portion between the keels. A

pale yellow superciliary streak from the snout, and another below the eye. Colour of shell above pale greenish olive, each costal plate with a dark spot in the centre, surrounded by a pale areola. The vertebrals similarly ornamented posteriorly, and obtusely keeled, particularly the three front plates, and more prominently in young than old animals. Beneath uniform pale yellow.

a. Adult . . . . 9·50  
 8·75  
 7·75

(7·10. Breadth of sternum.)

This species is extremely abundant in Pegu and Tenasscrim, and is excellent eating. It is essentially aquatic, and closely allied to *E. ocellata*, D. et B., but is more globose than that species, which it represents in Pegu, where *E. ocellata*, D. et B., is not found, whilst on the other hand *B. Berdmorei*, Blyth, is unknown in Bengal. Günther appears to have confounded the two species; his own description of *Emys ocellata*, D. et B., being based on a specimen of *B. Berdmorei*, Blyth, from Mergui. He also remarks that the figure in the *Erpétologie générale* is "not good" which of course is explained by its referring to another species than the one he was describing. In a 'Catalogue of the Reptiles in the Asiatic Society's Museum in Calcutta' (now publishing) I have given a figure of each species, on one plate, for comparison\*.

TETRAONYX, Lesson.

T. LESSONI, D. et B.

*Batagur baska*, Gray.

Common in Pegu. A large specimen, in the Museum of the Asiatic Society of Bengal, measures

21·10

19·40

18·00

It is essentially herbivorous, and of very timid, inoffensive disposition compared with the Trionycidae, though it can bite severely if provoked.

PLATYSTERNUM, Gray.

P. MEGACEPHALUM, Gray.

a. Very young. Shell 2 inches. Tail 2·25.

\* *Vide* p. 49.



Colour fleshy grey; each of the costal shields with a central black tubercle; beneath bright reddish-orange, with a little black about the sutures. Head dark-mottled, with a black-edged yellow stripe behind the eye. Iris pale yellow. This species is rare in Pegu, and seems confined to the streams in the hills east of Tonghu, falling into the Sittang and Salwin. I have only received two young specimens, both from this quarter, through the kindness respectively of Lt.-Col. Phayre (the Chief Commissioner of the Province) and Captain Harrison, Deputy Commissioner of Shuighin, from the living one of which the above description was taken.

### Family TRIONYCIDÆ.

#### EMYDA, *Gray*.

##### E. GRANOSA, Schöpf.

This species is pretty common in Pegu and Tenasserim, breeding in Pegu in December.

#### TRIONYX, *Geoffroy*.

##### T. GANGETICUS, Cuv.

Common in Pegu.

##### T. PHAYREI, Theobald.

Capite typico, faciali forma forsan rotundiore. Sterni sculptura modica, sive reticulationibus minoribus quam in *T. gangetico*. Sculptura ad latus regulariter reticulata, sed vertebrali regione post secundas costas parum dilatata sive incrassata. Thorace valde cartilagineo, vix ullis (præter ad latus) tuberculis osseis armato. Colore supra olivaceo, lineis fuscis eleganter marmorato, subter flavescente pallido.

*Habitat* in fluminibus montium Arakanensium, prope Bassein.

*Trionyx javanicus*, *ornatus*, and *subplanus*, doubtless occur in the province; but I have not personally examined specimens.

This is a somewhat aberrant species in some respects, and was at first confounded by me with *Chitra indica*, of Günther's Monograph, from the precise resemblance which the marbling of the upper part bore to that figure. Since, however, examining the specimens in the British Museum, I find that the animals are very different. The true *Chitra* of Gray (Proceedings Zool. Soc. Feb.

23, 1864, p. 17), does not to my knowledge occur in Birma. The *Chitra indica* figured in Günther's Monograph is, on the authority of Dr. Gray, his *Pelochelys Cantori*. The skull of the present species cannot readily be distinguished from that of *T. gangeticus*, though to my view it seems more arched, and rounded in profile. The thorax resembles that of *T. gangeticus*; but the sternum presents a remarkable difference in the development of the bony plates, and more nearly, in general characters, approaches to *Dogania subplana*, Gray. The osseous tubercular surface, however, is less developed and more feebly sculptured (the age and size of the specimen considered) than in any of its allies, and at a glance serves to discriminate the present species from them.

- a. Adult. Length . . . . . 21.00 inches.
- Breadth. . . . . 14.50 "
- Length of osseous sternum 12.50 "

Granulation of sternum not very coarse, less so than in *T. gangeticus*, on the sides regular, but coarser and larger along the centre of the back behind the second pair of ribs. Thorax highly cartilaginous, and almost devoid of bony callosities save at the margin, where the granulations are slightly developed. Colour during life dark dull brown, handsomely lined, as in Günther's figure, *l. c.* Below yellowish white. Captured in a hill-stream on the Arakan hills in the Bassein district.

Named in compliment to Lt.-Col. Sir A. P. Phayre, late Chief Commissioner of British Birma.

PELOCHELYS, Gray.

P. CANTORI, Gray.

For the identification of this species I am indebted to Dr. Gray. My only specimen was given to me, stuffed, by Col. Tickell, from Arakan.

*Table of distribution of Birmese Testudinata.*

- \**Testudo elongata*, Blyth..... Tenasserim; Pegu; Birma.
- \**T. platynotus*, Blyth ..... Northern Pegu; Birma.
- \**Manouria emys*, M. & Sch. ... Martaban (?).
- \**Geomyda grandis*, Gray ..... Tenasserim; Pegu.
- \**Cuora amboinensis*, Daud..... Tenasserim; Pegu.
- \**Cyclemys orbiculata*, Bell ..... Tenasserim; Pegu.

<i>Emys trijuga</i> , Schw.....	<i>Northern Pegu</i> ; Birma; Arakan.
* <i>E. crassicollis</i> , Bell.....	<i>Tenasserim</i> .
* <i>Batagur trivittata</i> , D. et B. ...	<i>Martaban</i> ; <i>Pegu</i> .
<i>B. lineata</i> , Gray.....	<i>Martaban</i> .
* <i>B. Berdmorci</i> , Blyth.....	<i>Tenasserim</i> ; <i>Pegu</i> ; Birma (?).
<i>Tetraonyx Lessoni</i> , D. et B. ...	<i>Tenasserim</i> ; <i>Pegu</i> .
* <i>Platysternum megacephalum</i> , Gray.....	} <i>Martaban</i> ( <i>Pegu</i> ).
<i>Emyda granosa</i> , Schœpff. ....	
<i>Trionyx gangeticus</i> , Cuv. ....	<i>Pegu</i> .
* <i>T. Phayrei</i> , Theobald.....	<i>Pegu</i> .
<i>T. javanicus</i> , Schw.....	
<i>T. ornatus</i> , Gray.....	
<i>T. subplanus</i> , Schw.....	
<i>Pelochelys Cantori</i> , Gray.....	<i>Arakan</i> .
<i>Caouna olivacea</i> , Esch. ....	} <i>Coast of Arakan and Tenasserim</i> .
<i>Chelonia virgata</i> .....	
<i>Caretta squamata</i> , L. ....	
<i>Dermatochelys coriacea</i> , L. ...	

Species marked with an asterisk in this Table do not range to Bengal or India. Localities in italics are those from which the specimens quoted in this catalogue have come.

## Order EMYDOSAURIA.

### Family CROCODILIDÆ.

#### *CROCODILUS*, Cuvier.

##### *C. PALUSTRIS*, Less.

*C. bombifrons*, Gray.

*C. trigonops*, Gray.

##### *a.* Length 12 feet.

Colour pale olive, conspicuously black-spotted. Dorsal plates in six rows. Girth round chest 5 feet. This animal was killed at Thait-mio; but the species is rare in Pegu, as I have never there seen a second example, though in Bengal it is extremely common. The head of this animal measured 24·60 inches. A head of an animal 18 feet long, in the As. Soc. Mus., measured 26·20, whilst the largest head in the As. Soc. Mus. was 29·00, which we may safely infer belonged to an animal not much under 30 feet in length.

I am indebted to Capt. Plant, Deputy Commissioner of Thait-mio, for this specimen. The animal had seized and destroyed a man; on which the Birmese, after staking the mouth of the stream, attacked it with their formidable knives, or "Dahs," completely severing the spine at the nape and loins. The body was brought into Thait-mio, and soon disappeared amongst the crowd, as the flesh of crocodiles is highly esteemed in Birma as food.

C. POROSUS, Schn.

Dorsal plates in eight rows.

The coloration is much as in the last species; but it is distinguishable at a glance, by its much more elongate muzzle. It is an extremely abundant species in Pegu and Tenasserim, but less common in lower Bengal, as I infer from the few samples of it in the As. Soc. Museum. It attains a length of about 30 feet; but individuals of this size are rare. The female is said to deposit her eggs on sandy islands or the banks of rivers, and to guard them jealously till hatched. The young are extremely fierce, and bite with great severity, as their teeth are sharp as needles. Accidents are far from rare; and some spots have a bad reputation, probably from the depredations of some wary old stager, since a very large animal will generally monopolize a wide district, driving away or even devouring any of his own race who venture within his territory. The breeding-season is in the rains, about June (I am told); and at this season the larger animals are specially bold and dangerous, and will even attack passing boats. Lieut.-Col. Phayre informed me of an old Karen chief, well known to him, who was carried off by one of these animals in the Salwin river near Maulmain, the animal rising close to the canoe, and sweeping the Karen, who was its sole occupant, into the river with a blow of its tail. The poor man not long before this had shown Col. Phayre a few pieces of pyrites rolled up in the corner of his turban as a charm against Crocodiles.

The late Dr. Morton, of Rangoon, told me of a somewhat similar case. A poor woman was lying asleep in the moonlight, in a small fishing-canoe with a flush deck, when a crocodile was seen to rise alongside and with one sweep of its tail upset her into the water, and instantly disappear with her.

Another instance occurred near Rangoon, where a woman was seized and drowned by one of these animals in a stream not more than 3 feet deep; and when the body was recovered next day, one

foot had been torn off. As remarked by Cantor, these animals are found in the sea, but more usually, I suspect, in or near the mouth of some tidal channel or estuary; and on the Arakan coast, I have been cautioned by the Birmese not to loiter near the water after dusk, for fear of crocodiles. Night is the time when they are most on the alert, to surprise any animals which may come down to drink; and as darkness closes in, one or perhaps more of these creatures may be seen stealthily swimming about the broad tranquil river-reaches, almost invisible, save as a dark streak in which none but the practised eye would recognize so formidable a foe.

GAVIALIS, *Geoffroy* \* \*.

G. GANGETICUS, Cuv.

Blyth states that this species occurs in Birma; but I cannot discover on what authority, neither have my inquiries enabled me to verify it. Major MacMaster gave me a young specimen in spirits in Rangoon which had been sold among the effects of a Bengal officer; but as no native whom I have ever questioned was acquainted with the animal, I am disinclined to admit the species into the present list. It is most probable that the record of its occurrence was based on an *imported* specimen.

Order SAURIA.

Family MONITORIDÆ.

VARANUS, *Merrem* (part.).

V. NEBULOSUS, Gray.

a. Adult male. Rangoon.

Colour pale reddish brown, mingled with yellow, and yellow-spotted. No marking beyond some indistinct streaks about the nape, and dark bands towards the extremity of the tail. Head yellow.

a. Body 15·00. Tail 22·50. Total 37·50.

b. adult female. Shuighin.

Body 20·00. Tail 32·00. Total 52·50.

V. DRACÆNA, L.

Colour above uniform dark blackish brown, with here and

there a pale scale, but no markings (that is, in the adult). Terminal half of tail yellowish.

*a.* Body 14·00. Tail 24·00. Total 38·00. Tonghu.

Pretty generally diffused in Birma.

Young animals are more highly coloured, and are ornamented with yellow ocelli, and dark streaks.

#### V. FLAVESCENS, Gray.

Günther records this species from Pinang; and Major Berdmore has sent it from Mergui; but I have never obtained a specimen in Pegu, though it is of course found there.

Large specimens are not often procurable, as they are much sought after by both Birmese and Karens as choice articles of food. They are chiefly hunted with dogs, whose scent enables them to discover the large Varans in the hollow trees in which they habitually shelter themselves. A Birman, though ordinarily a lazy man, will think nothing of cutting down and breaking up a large tree in which one of these creatures has sought refuge. When captured, if not immediately required, the animal's fore feet are bent round over its back, a few of its toes broken, and the lacerated sinews, partly drawn out, are tied together into a knot, so as to render the animal helpless. The *Varani* deposit their eggs in the ground, usually selecting a deserted White Ants' nest. The eggs are cylindrical, with tapering ends, of a dirty-white colour and leathery texture (those of *V. dracæna* are two inches long), and, being esteemed an uncommon luxury, sell dearer than fowls' eggs. They are oily and feculent-looking, though devoid of any nauseous odour; and some Europeans eat them with pleasure.

#### HYDROSAURUS, Wagler.

##### H. SALVATOR, Laur.

Colour above brownish black, limbs yellow-spotted. Four transverse bands of yellow rings or ocelli across the back. Base of the tail rather streaky, mottled yellow and black, and then alternately broadly banded yellow and black. Beneath yellow. Throat black-spotted. The markings are clearest in young specimens.

*a.* Adult. Body 32·50. Tail 45·50. Total 78·00.

Procured by Lieut.-Col. Phayre near Rangoon.

*b.* Young female. Body 16·50. Tail 23·75. Total 40·25.

## Family LACERTIDÆ.

*TACHYDROMUS, Daudin.**T. SEX-LINEATUS, Daud.*

I have taken this lizard at Mergui, and also in the Arakan hills, and near Myanoung. It is, however, a scarce species in Birma.

All my specimens were smaller than Günther's largest, which was:—Body 2·50. Tail 11·50. Total 14·00.

## Family ZONURIDÆ.

*PSEUDOPUS, Merrem.**P. GRACILIS, Gray.*

*Oplicept tessalatus*, Blyth, J. A. S. xxii. 665.

Two specimens are in the Asiatic Society's Museum, from Rangoon; but I have never procured the species myself.

## Family SCINCIDÆ.

Section *a*. Scales keeled.*TROPIDOPHORUS, Duméril et Bibron.**T. BERDMOREI, Blyth.*

*Aspris Berdmorei*, Blyth, J. A. S. xxii. 650.

*a*. Adult female. Body 3·50. Tail 3·75. Total 7·25.

One very large anterior frontal, larger than the vertical. Two small triangular postfrontals, with their apices only touching. A large but narrow six-sided vertical. Two moderate anterior occipitals, and two large posterior ones, enclosing a minute central shield. Four very large superciliaries with some small scales beneath. Upper labials six, the fourth being the largest. Lower labials four, the first being the largest. Scales of the back well keeled, of the sides more faintly, and of the belly smooth, with crenated margins. Limbs small. Tail with a series of large scales beneath.

Colour pale olive-brown, with rather irregular broadish oblique transverse bars of pale red, black-margined. Sides, throat, and tail white-spotted. Belly yellow. This specimen was captured in the Pegu range, some 40 miles above Rangoon. Its habit is

stout; and the head is peculiarly compressed anteriorly, and bulged behind, quite unlike Günther's figure of *T. microlepis*, from which and *T. cochinchinensis* it is clearly distinct.

The scales are dull and lustreless, and the coloration peculiar for a Skink. It harbours under half-immersed stones, and enters the water and gravel freely.

*TILIQUA, Gray.*

*T. RUFESCENS, Shaw.*

This is so widely diffused a species that it seems desirable to describe the race found in Pegu, as it may probably differ in some respects from Indian specimens. Colour above dark rich bronze-brown, the back, above, being bordered with a pale stripe. Sides above dark, verging in some specimens to blackish, and white-spotted. Down the back, from nape to tail, run five black lines, formed by the edges of the rows of scales. Lower part of sides and belly yellowish white, or yellowish. Throat bluish-white. In the breeding-season the throat and sides of the male are deeply suffused with red. The coloration of this species is somewhat variable as to tint; and some individuals have black or black and white spots; but the above characters are pretty constant. Scales 3-keeled.

<i>a.</i> Adult male.	Body 3·70	<i>c.</i> Adult female.	Body 4·70
	Tail 7·10		Tail 5·90
	—————		—————
	10·80		10·60
<i>b.</i> „ „	Body 4·50	<i>d.</i> „ „	Body 3·75
	Tail 6·50		Tail 7·00
	—————		—————
	11·00		10·75

All from Pegu. This species is viviparous; and both the above females contained a few undeveloped eggs, the largest about the size of hemp-seeds. An adult female, captured in July near Shuighin, contained several well-developed embryos. Cantor says the females deposit "6-12 yellowish-white oval cylindrical eggs, half an inch in length." This is, I believe, an error, but is explained by Cantor's confounding the next species (which is oviparous) with the present. *T. multicarinata*, Kuhl, is evidently "the young with 5-7 keels" of *T. rufescens* apud Cantor, though it is not included even as a synonym in Günther's 'Catalogue.'



## T. MULTICARINATA, Kuhl.

*Euprepis macularius*, Blyth.*T. rufescens*, Shaw (young), apud Cantor.

Colour pale bronze, black-spotted; spots long and streaky. From nose to tail a broad black band on either side, white-margined above. Lower parts white. Scales 7-keeled.

a. Adult female. Pegu.

Body . . . . .	3·20
Tail . . . . .	4·20
	7·40

This is very similar to the last, but smaller, and not so common in Pegu. It differs, too, in being oviparous, though the eggs are smaller than what Cantor states (if not a misprint).

Section b. Scales smooth.

## HINULIA, Gray.

## H. MACULATA, Blyth.

*Lissonota maculata*, Blyth (*Mabouia*, Günther).

An active species, very abundant in the Pegu forests.

## EUMECES, Wiegmann (part.).

## E. BOWRINGI, Günther.

A single specimen, taken at Thaiet-mio, accords so closely with Günther's description that I have no doubt of its identity. My specimen, however, has a minute lobule in front of the ear. Colour above dark olive, with a brilliant blue iridescence when alive. An inconspicuous white streak from the eye down either side of the back, bordered below with black, rather broken up along the tail.

## RIOPA, Gray.

## R. ALBO-PUNCTATA, Gray.

Colour of body pale yellowish-brown, paler below, with two narrow black lines enclosing a pale streak on each side from nape to tail. Belly whitish. Tail yellow, dusky above. Sides of neck and chest conspicuously white-dotted.

a. Body . . . . .	2·00	b. 2·10	c. 1·80
Tail . . . . .	2·25	2·30	2·60
	4·25	4·40	4·40

Common in Pegu.

*R. ANGUINA*, Theobald. Scutis occipitalibus quinque, quorum tria anteriora similia, duoque posteriora paulo majora sunt. Scutis superciliaribus quatuor, subæqualibus, quintoque minutissimo postea locato. Artubus minimis. Colore corporis supra brunneo, nullis maculis, subter pallido. Cauda flavescente.

A *R. Hardwicki* et *R. punctata* differt artubus minoribus.

Ab *Eumeces isodactylo* differt artubus minoribus et translucente palpebra, et a *R. albo-punctata* distinguatur tribus occipitalibus æqualibus.

*Habitat* in provincia Pegu (Tonghu, Rangoon, &c.). Satis frequens.

Supranasals contiguous, just separating the nostril from the præfrontal. Superciliaries four, with a very small scale-like plate behind. Occipitals five. The anterior occipitals and central moderate, equal. The posterior occipitals large, forming a suture with the fourth superciliary and the small posterior scale. Limbs very small. Toes small, unequal. Hind limbs as long as from snout to ear. Fore limbs a trifle less, scarcely reaching to the ear. Colour uniform brown above, with no markings. Tail yellowish. Length 4 inches. Forests of Tonghu and about Rangoon, where it is not rare.

This species is allied to *R. Hardwicki*, Gray, and *R. punctata*, L., but has smaller limbs. It is also very close to *Eumeces isodactylus*, but has a transparent lower eyelid and smaller limbs. The three equal occipitals form a good character to distinguish it from its allies. In *R. albo-punctata*, Gray, the central or fifth occipital is very small.

#### SENIRA, <sup>4</sup>Gray.

*S. BICOLOR*, Gray.

A single specimen of a lizard, which I referred to this species, was captured by me under a log at Kengpadi, north of Rangoon. The specimen has been mislaid; but it is either the above or a closely allied species.

## Family GECKOTIDÆ.

Section *a.* Fingers and thumbs clawless.PHELSUMA, *Gray.**P. ANDAMANENSE*, Blyth, J. A. S. xxix. p. 108.

Colour bright emerald-green, bluish on tail. Tongue red. Pupil round.

*a.* Adult male. Body . . . . 2·10  
Tail . . . . , 2·70=4·80.

This very anomalous Geckoid lizard is common at the Andamans, and, according to Colonel Tytler, of diurnal habits, freely enduring the noonday sun; its habits, however, require to be more fully studied.

Section *b.* Thumbs clawless.GECKO, *Gray.**G. GUTTATUS*, Daud.

Colour pale grey, slaty over the head, with four or five transverse bands of white spots across the body. Body and limbs red-spotted. Belly white, red-spotted. Twelve longitudinal rows of large tubercles down the back, of a red colour, save where the tubercle emanates from a white spot, when the tubercle is white also.

This animal, the "Touk-te" of the Birmese, is very common in houses, and, in thinly inhabited parts, in trees. Its extremely sonorous cry is one of the first things which startles the visitor, and, when it echoes through the wooden roof, on a still night, is really calculated to alarm the timid. The eggs are spherical, though not quite regular in shape, and very strong, and cemented six or eight together, in hollow trees or the interior of buildings. The natives dread the animal somewhat, which when seized opens its mouth to its full extent and looks very savage and bites very sharply, but is of course quite unaggressive, and even useful in destroying vermin, devouring even young rats, as I am credibly informed.

Günther says this is "the most common species in *British India*"; but it is unknown in India; and Birma can no more be termed "India" than Aden or Hongkong. A few specimens have

of late years been taken at Dacca and near Calcutta; but the animal is certainly not indigenous in lower Bengal, though probably introduced by the shipping, and now in process of naturalization.

G. STENTOR, Cantor.

*G. Verreauxii*, Tytler.

This fine lizard is not rare at the Andamans, whence I have received specimens from the late Dr. Morton, Civil Surgeon of Port Blair. It is not, however, exclusively found there, as the common Gecko is perhaps rather the more abundant of the two.

PTYCHOZOOM, *Kuhl.*

P. HOMALOCEPHALUM, Creveldt.

This interesting lizard has been taken by the late Major Berdmore in the Martaban district. I have also received it from Tennasserim, through the kindness of Lt. Beavan.

PERIPIA, *Gray.*

P. PERONI, D. et B.

a. Adult male. Body . . . . 2.30  
Tail . . . . 2.30 = 4.60 inches.

Colour grey or yellowish grey, clear and translucent during life, with a few obscure markings, and some pale scattered freckles down the back. Beneath white.

Tail tapering, lanceolate, constricted at the base, then bulging. The femoral pores vary from thirty-seven to forty-two.

This species is not rare at Rangoon.

Section c. Fingers and thumbs clawed.

DORYURA, *Gray.*

D. BERDMOREI, Blyth.

*Leiurus Berdmorei*, Blyth, J. A. S. xxii. p. 646.

Back with minute, equal, granular, scales. Tail depressed, tapering, slender, convex above, flattish beneath, with a denticulate margin and plates beneath. Colour grey, with some indistinct dark markings about the head, and a dark stripe from behind the

eye, forming a conspicuous interrupted or cateniform band down each side, and continued down the tail.

*a.* Adult. Body . . . . 2  
Tail . . . . 2=4 inches.

*Hab.* Common in houses about Rangoon and Pegu.

The type specimen was from Mergui; but Blyth's description was so brief that I have given a more complete one, from living examples.

*D. GUADAMA*, Theobald.

*Tergo granuloso, squamis granulosis, parvulis, æqualibus induto.*

*Cauda super convexa, subter planiore, granulosa, scutis subcaudalibus tamen centrali serie additis; marginibus minute denticulatis; segmentata, segmentis postea, ad marginem, spina parvula haud facile notanda armatis. Latere carinato, cutis tamen expansio deest. Ventris squamæ subcirculares sunt, sublævigatæ, punctis minutissimis fuscis notatæ. Foraminibus femoralibus novemdecim, linea leviter curvata positus, pubis regione ab invicem paullum distantibus. Colore cinereo, maculis vix ullis notato.*

*Habitat* Tonghu (valle Sittangensi); haud frequens.

Back covered with minute equal granular scales. Tail convex above, flattish below, covered above and along its lower margins with granular scales, with a median series of large plates below. Segmented, edge minutely denticulate with an obsolete marginal spine at the hind edge of each segment. Sides keeled, but no expansile fold of skin. Belly covered with smooth roundish scales, some minutely black-dotted. Femoral pores nineteen on each thigh, in a slightly curved line, the two lines slightly separated on the pubes. Colour grey, with no definite markings. Same size as the last. This species I have found at Tonghu, and I think I have received it from Port Blair.

*D. KARENORUM*, Theobald.

*Mas.*—*Tergo granuloso, plurimis tuberculis pallidis, subæquidistantibus, sive lineis circa viginti longitudinalibus positus ornato. Corporis latere carinato. Cute postfemorali paullum laxato. Cauda super convexa, segmentata, marginibus acutis, denticulatis, paucis parvulis spinis transverse armata. Scuta mentalia quatuor sunt; quorum primum par suturam*

format; secunda tamen mentalia suturam tantum formant cum parte scuti labialis secundi. Foraminibus femoralibus decem vel duodecim indistinctis femoribus singulis, pubis regione scutis nonnullis paullo majoribus separatis. Colore cinereo, tergo et artubus notis fuscis evanescentibus ornato. *Femina* haud differt, nisi tuberculis spinisque valde minoribus sive obsoletis.

*Habitat* ad Karen-choung, prope Tonghu, valle Sittangensi, haud frequens.

<i>a.</i> Adult male.	Body . . . .	2·10
	Tail . . . .	2·10=4·20 inches.

Back granular, regularly shagreened with about twenty longitudinal rows of small whitish tubercles. Sides keeled. Tail convex above, sharp-edged, denticulate, segmented. Segments transversely bordered with small spinous tubercles across the top, the marginal tubercle being the largest. Beneath, a central row of large plates with a margin of granular scales on each side. Seven or eight labial shields. Four chin-shields: the first pair form a suture together behind and with the first labial; the second pair are separate, and form a suture only with part of the second labial. Behind them are a few large granular scales. Skin of ham slightly expanded. Colour grey, with dark streaks along the back and limbs, which fade after death. No distinct femoral pores existed in this specimen, but only some ten or twelve faint pittings on each thigh, separated by some larger smooth scales in the pubic region.

*b.* Adult female. Similar to *a*, but the tubercles and spines less developed.

Both specimens were captured alive by me at Karen-choung, above Tonghu; and it would seem to be a scarce species.

#### HEMIDACTYLUS, *Cuvier*.

##### H. FRENATUS, Sch.

Femoral pores twenty-seven to thirty-five, in an uninterrupted line.

Adult male.	Body . . . .	2·10
	Tail . . . .	2·00=4·10.

This species is pretty common throughout Pegu.

## H. MACULATUS, D. et B.

Femoral pores thirty-two, in a nearly continuous line.

a. Adult male. Body . . . .	2·90
Tail . . . .	2·60=5·50

Several specimens were once taken by me at Prome; but it is a somewhat rare species in Pegu.

## H. MORTONI, Theobald.

Tergo regulariter granuloso, paucis minutissimis tuberculis sparse ornato. Spinis, tuberculisve conspicuis nullis. Scutis mentalibus duobus, quadratis, suturam formantibus, sed rostrali partim separatis. Colore, super nigrescente cinereo, nigris punctis, albisque maculis majoribus large dispersis, macula singula sex albis granulis formata. Cauda nigris lineis transverse signata.

*Hab.* Teikgyie.

Back covered with equal granular scales, with a single tubercle here and there just perceptibly larger than the rest. No conspicuously arranged tubercles or spines, and so far resembling *Doryura*, but with the tail of *Hemidactylus*. Two large chinshields, squarish, and forming a suture, but partly separated by the lower rostral. Colour above dark brown, mottled pepper-and-salt, with black spots, and small white rosettes of six white scales each. Tail black, barred above. Named in compliment to the late Dr. Morton, Civil Surgeon of Port Blair.

a. Young male. Length 3·50. Taken under a log at Teikgyie, north of Rangoon.

## PUELLULA, Blyth.

## P. RUBIDA, Blyth.

This curious species is not rare at the Andamans.

## NAULTINUS, Gray.

## N. VARIEGATUS, Blyth, J. A. S. xxviii. 279: Maulmein.

Blyth describes a second species, *N. fasciolatus*, from Subathoo; but having examined both types I do not consider it quite certain that the differences they present may be more than sexual. A better series is required to settle the point. (See 'Catalogue of Reptiles in the Museum of the Asiatic Society of Bengal.')

Family AGAMIDÆ.

DRACO, *L.*

*D. MACULATUS*, Gray.

This species is not rare in Tenasserim, and ranges through Pegu to the frontier, though it is not common so far north.

*D. TÆNIOPTERUS*, Günther.

Tenasserim.

*DILOPHYRUS*, *Gray.*

*D. GRANDIS*, Gray \* \*.

This species has been recorded from Rangoon; but I have never myself found it in Pegu.

CALOTES, *Cuvier.*

*C. VERSICOLOR*, Daud.

<i>a.</i> Adult male.	Body . . . .	3·75
	Tail . . . .	11·00=14·75
<i>b.</i> Adult female.	Body . . . .	2·75
	Tail . . . .	8·25=10·00

Very common in Pegu and Tenasserim. Günther does not mention the two black occipital specks, which, however, are among the most constant markings—if, indeed, they are ever absent.

*C. EMMA*, Gray.

<i>a.</i> Body . . . .	3·75
Tail . . . .	10·00=13·75

This modestly coloured species is rather scarce in Pegu, but more plentiful, I believe, in Tenasserim.

*C. MYSTACEUS*, *D. et B.*

Adult male.—Dark ruddy brown, with a conspicuous white band from the nostrils to behind the shoulders, in some specimens reaching to the base of the tail. Body sometimes marked with white dots, or blotches, or large rusty patches. Seasonally, or under excitement, head, gular sack, and entire fore part of the body deep ultramarine blue, which in spirit fades at once to green, which colour eventually disappears also.



<i>a.</i> Adult male.	Body . . . .	4·25
	Tail . . . .	6·00=10·25
<i>b.</i> Adult female.	Body . . . .	4·50
	Tail . . . .	8·50=13·00

This female was taken near Tonglu in July, and contained eight eggs. She was nearly as highly coloured as a male, and the largest individual of this species I have ever seen; and Günther is indubitably mistaken in supposing it ever attains, as he says, to two feet in length.

The species is common throughout Pegu and Tenasserim.

#### *ACANTHOSAURA, Gray.*

##### *A. ARMATA, Gray.*

This species is not rare in Tenasserim; but I have not remarked it in Pegu.

##### *A. CAPRA, Günther.*

A single specimen, which I refer to this species, was taken near Rangoon by a Karen; but it must be scarce in Pegu. The general coloration was sombre; but a thin line down the throat and the vertebral ridge were bright orange.

#### *TIARIS, Duméril et Bibron.*

##### *T. SUBCRISTATA, Blyth, J. A. S. xxix. p. 109.*

<i>a.</i> Adult.	Body . . . .	3·50
	Tail . . . .	8·50=12·00

Very common at the Andamans.

#### Family UROMASTICIDÆ.

*Agaminæ* which are burrowers and herbivorous. *Uromastix* and *Leiolepis* form a very natural family, quite distinct from the *Agamidæ*, among which they have been hitherto classed. Their food is vegetable, and they are of social and gregarious habits, forming, in favourable places, colonies or warrens like rabbits.

#### *LEIOLEPIS, Cuvier.*

##### *L. REEVESII, Gray.*

Colour pale reddish-brown, with numerous dark-ringed orange spots. Sides sharply barred with black and bright orange alter-

nately. Tail pale greenish-brown, minutely yellow-dotted above, underside pale yellowish. Eye oval, black, brown-ringed. Tail seasonally suffused with red. Femoral pores eighteen in each thigh, slightly separated on the pubes.

a. Adult male. Body . . . . . 6·00  
Tail . . . . . 11·50=17·50

Larger specimens are, however, met with.

This lizard is called "Padát" by the Birmese, and is generally distributed in Tenasserim and Pegu, where it is much esteemed for food. It is herbivorous, of timid disposition, and of social and gregarious habits, burrowing in the sandy and dry forests. It feeds much on the small flower, like an orange and white crocus, which springs up so plentifully in the dry forests in March. It is essentially terrestrial, and a burrower, and never ventures on trees; so that Cantor was mistaken in supposing that it applied its expansile ribs to the same use as the Dragons. What function the expansile ribs and lax skin serve, I do not know; but they are assuredly not used for flight, as the animal, when alarmed, hurries with good speed to its burrow as any other lizard might, but without attempting to ascend a tree and thence take flight as the Dragons do. Cantor, however, I think, only studied the animal in captivity, and *primá facie* his supposition was reasonable enough.

A noteworthy trait of the lizards of this family (Uromasticeidæ) is their *physiognomy*, which is eminently *sheepish* and *resigned*—speaking of course of the expression of the living animal, which is described to a hair by the verse of Ovid,

"Animal sine fraude doloque,

Innocuum, simplex."

*Table of distribution of Birmese Sauria.*

Varanus nebulosus, Gray .....	Tenasserim; Pegu.
V. dracæna, L. ....	Tenasserim; Pegu.
V. flavescens, Gray .....	Tenasserim; Pegu.
Hydrosaurus salvator, Laur.....	Tenasserim; Pegu.
*Tachydromus sex-lineatus, Daud..	Tenasserim; Pegu.
Pseudopus gracilis, Gray. ....	Pegu.
*Tropidophorus Berdmorei, Blyth.	Tenasserim; Pegu.
Tiliqua rufescens, Shaw .....	Tenasserim; Pegu.
T. multicarinata, Kuhl .....	Tenasserim; Pegu.
*Hinulia maculata, Blyth .....	Pegu.
*Eumeces Bowringi, Günther.....	Pegu.

<i>Riopa albo-punctata</i> , Gray.....	Tenasserim; Pegu.
* <i>R. anguina</i> , Theobald .....	Pegu.
* <i>Senira bicolor</i> , Gray .....	Pegu.
* <i>Phelsuma andamanense</i> , Blyth.	Andamans.
* <i>Gecko guttatus</i> , Daud. ....	Tenasserim; Pegu.
* <i>G. Stentor</i> , Cantor .....	Andamans.
* <i>Ptychozoon homalocephalum</i> , Cre. ....	Tenasserim; Martaban (Pegu).
<i>Peripia Peroni</i> , Gray.....	Tenasserim; Pegu.
* <i>Doryura Berdmorei</i> , Blyth.....	Tenasserim; Pegu.
* <i>D. gaudama</i> , Theobald .....	Pegu.
* <i>D. Karenorum</i> , Theobald .....	Pegu.
<i>Hemidactylus frenatus</i> , Sch. ...	Pegu.
<i>H. maculatus</i> , D. et B. ....	Pegu.
* <i>H. Mortoni</i> , Theobald.....	Pegu.
* <i>Puellula rubida</i> , Blyth .....	Andamans.
* <i>Naultinus variegatus</i> , Blyth ...	Pegu (Maulmain).
* <i>Draco maculatus</i> , Gray .....	Tenasserim; Pegu.
* <i>D. tæniopterus</i> , Günther .....	Tenasserim.
* <i>Dilophyrus grandis</i> , Gray .....	Rangoon.
<i>Calotes versicolor</i> , Daud. ....	Tenasserim; Pegu.
* <i>C. Emma</i> , Gray .....	Tenasserim; Pegu.
* <i>C. mystaceus</i> , D. et B. ....	Tenasserim; Pegu.
* <i>Acanthosaura armata</i> , Gray ...	Tenasserim.
* <i>A. capra</i> , Günther .....	Tenasserim; Pegu.
* <i>Tiaris suberistata</i> , Blyth .....	Andamans.
* <i>Liolepis guttatus</i> , Cuv. ....	Tenasserim; Pegu.

Species marked with an asterisk do not range to Bengal or India.

Localities in italics are those from which specimens quoted in this catalogue have come.

## Order OPHIDIA.

### Suborder I. Serpentes colubri innocui.

#### Family TYPHLOPIDÆ.

##### TYPHLOPS, Wagler.

T. HORSFIELDII, Gray.

I have captured this species at Mergui.

T. BRAMINUS, Daud.

Generally distributed throughout Birma.

Family LYCODONTIDÆ.

LYCODON, *Boie*.

L. AULICUS, L.

Generally diffused through Pegu and Tenasserim.

TETRAGONOSOMA, *Günther*.

T. ATROPURPUREUM, Cantor \* \*.

Mergui.

Family XENOPELTIDÆ.

XENOPELTIS, *Reinwardt*.

X. UNICOLOR, Rein.

Colour above, when alive, uniform steel-blue; beautifully iridescent. The ground-colour is dark-brown, as described by Günther; but during life the prevailing hue is intense blue, which fades soon after immersion in spirits. Beneath white. Scuta dark-edged. In young specimens a white collar.

a. Adult. Body . . . .	30·25
Tail . . . .	2·75=33·00

This snake is common in Lower Pegu and the Tenasserim Provinces, and is very malignly beautiful, though of repulsive physiognomy. The skin is loose and thick. Its habits are nocturnal. The following illustrates its ferocious nature:—I once remarked a *Ptyas mucosa* some 5 feet in length, in the hedge of the Circuit-house of Bassein. On running downstairs, the snake had vanished, but in searching I saw its tail sticking out of a hole beneath a wooden plant-case. Do what I might, I could not drag it out, as it seemed held fast within. I therefore with some trouble overturned the plant-case, and then saw that the unlucky *Ptyas* was firmly pinned by a large *Xenopeltis*, into whose hole it had unwittingly entered. The *Xenopeltis* seemed about 4 feet in length, but, on perceiving itself uncovered, released its hold of the *Ptyas* and made its escape.

Family PYTHONIDÆ.

PYTHON, *Daudin*.

P. RETICULATUS, Schn.

a. Half-grown animal. Body . . .	132·25
Tail . . .	12·40=144·65.

Colour during life clear grey, superbly reticulated with black,

and with a rich glossy lustre. The grey colour of the back is seen as a series of oblique lozenges separated by black, and yellow-margined. Yellow is also interspersed on the interstitial black ground between the lozenges, and on the sides forms irregular ocelli. The minor details of pattern irregular and variegated. Head yellow, with a median narrow black streak, and two black dots on the occiput. This animal was taken alive in the Pegu range, and the species is pretty common in Pegu and Tenasserim. The gall-bladder is esteemed for medicine; and the flesh is eaten by the Karens, and indeed *looks* white and tempting. A snake of this size is capable of swallowing a Barking Deer (*Stylloceras*); and, according to report, a full-grown one will swallow a doe Sambur (*Rusa*), though I imagine such a case is very rare. That a full-grown one could swallow a man I have no doubt, but I never heard of one doing so.

According to native testimony, this snake is of a very harmless and timid disposition, and when disturbed buries its head in its own coils without attempting to injure its assailants.

Many fables are current among the Karens about snakes and animals, and some which correspond to, or, as some might put it, corroborate the story of the fall in Genesis; but as these stories come to us mainly through Missionary spectacles, they are (without any imputation of motives) to be received *cum grano*. For example, as regards the narrative of Eve and the serpent, the Karen analogue represents the Python as having decoyed Eve into his den, where she employed her time in impressing on her host's back the beautiful design it bears to the present day. Another legend is, that formerly all snakes were poisonous, but when the great Father was about to introduce human beings on the earth, the snakes were questioned as to how they would behave. The Cobra replied that he would not bite without provocation which should bring tears into his eyes, and he was consequently allowed to retain his venom; but the Python and others replied that they would bite, with or without provocation, as pleased themselves. For their arrogant answer the great Father drove them into the water, where their venom was dissolved, and their descendants to this day remain harmless. Another story is also told of how the once venomous Python came to lose his poison. The Python, say the elders, was once so poisonous that, if he only bit the dust where a man had trod, the man died; but as the Python never saw the result, he asked the crow to watch what happened. Shortly a

party of Karens passed, and the Python bit the print of the foot of one of the party, whilst the crow accompanied the party home to note the result. In a short time he returned, and told the Python that, so far from his bite having any ill effect, he found the whole village had devoted itself to feasting and drinking, and that the day had been passed in merriment (such being the Karen fashion on a death or burial), whereon the Python, in a rage, voluntarily spat up all his venom, and his descendants have since remained harmless. (Rev. F. Mason.)

Family TORTRICIDÆ.

*CYLINDROPHIS, Wagler.*

*C. RUFUS, Laur.*

<i>a. Adult.</i>	Body . . . .	24.50
	Tail . . . .	6.50 = 31.00. Thait-mio.

This species is not plentiful, but occurs throughout Pegu and Tenasserim.

Family CALAMARIDÆ.

*CALAMARIA, Boie.*

*C. SIAMENSIS, Günther\*.*

<i>a. Half-grown.</i>	Body . . . .	4.35
	Tail . . . .	0.40 = 4.75.

No azygos shield in contact with the anterior chin-shields. Colour fleshy-grey, with eleven very narrow longitudinal black lines down the back; the vertebral and alternato lines rather thicker than the rest. Head dark, with a yellow collar behind, followed by a second black-edged yellow collar, after a dark interspace less than the length of the head. Occipitals yellow, with a black spot. Tail minutely yellow-tipped, with two broad band-like yellow blotches on one side and three on the other. Beneath white; yellowish on chin.

Captured near Hlain, under a log.

*b.* No azygos shield in contact with the anterior chin-shields. Colour above uniform dark-brown, with a blue iridescence. A dark vertebral line and faint traces of other longitudinal lines not well made out, owing to the dark ground-colour. A conspicuous dark median line beneath the tail, but no spots. An

\* I defer to Dr. Günther's judgment as regards these specimens, which I had myself assigned to *C. quadrimaculata*, D. & B.

imperfect yellow collar crosses the occipitals, and a better-developed one a little further down the neck. Beneath whitish. Lips yellow. This specimen, which is larger than the last, was captured at Tonghu, and presented to me by the Rev. F. Mason, in spirit. The head very closely agrees with Günther's figure of *C. siamensis*, the coloration less completely. Specimen *a* seems to correspond with the description of the type; and the two seem merely individuals of one species, with not more differences of coloration than fall within specific limits.

### Family OLIGODONTIDÆ.

#### SIMOTES, *Duméril & Bibron.*

##### S. BICATENATUS, Günther.

<i>a.</i> Adult male. Body . . . .	14.50
Tail . . . .	7.00=21.50.

Colour uniform brown, with a very narrow pale vertebral stripe, and some very indistinct oblique dark markings, from some of the scales of the back being black-edged. A dark saddle-shaped mark across the frontals, an arrow-shaped mark on the crown, and a narrow fillet forming a half-collar on the throat. Scuta black-dotted.

*b.* Adult female. Like the last.

<i>c.</i> Adult male. Body . . . .	20.75
Tail . . . .	3.00=23.75.

Pale reddish-brown, salmon-coloured on the sides. A narrow pale vertebral stripe, not one scale broad, bordered by a dark band, with a second dark band below it, along the sides. Belly white, salmon-red in the centre. Scuta black-dotted, and head symmetrically ornamented as in specimen *a*.

<i>d.</i> Adult. Body . . . .	20.75
Tail . . . .	3.00=23.75.

Uniform brick-red, with black edges to some of the scales of the back. Belly yellowish, with largish but ill-defined spots at the ends of the scuta.

All these are described from life. This species is very common in Pegu and Tenasserim. My largest specimen was given me by Lt. Beavan, from Tenasserim; it was of the type and colouring of *a*, and measured

Body . . . . .	27.50
Tail . . . . .	4.00=31.50

*S. AMABILIS*, Günther\*.

A young specimen was taken by me in the Arakan Hills.

*S. CRUENTATUS*, Theobald.

Squamis ordinibus septemdecim. Nasalibus magnis. Lorcali parvo. Anteoculari uno. Postocularibus duobus. Analibifido. Labialibus superioribus septem, quarto quintoque orbem tangentibus. Oculo modico, pupula magna, nigra.

Colore fusco, absque notis. Ventre flavescenti-pallido, sed scutorum marginibus fusco tinctis, et magnis maculis nigris quadratis ornato. Sub cauda læte rubro, sive cruentato, aliquando nigro maculato et anali nigro. Capite lineis symmetricis notato (generis modo).

Aliquando quatuor lineæ valde fuscæ tergo adsunt, duabus angustis juxta vertebrae, reliquisque latioribus ad latus infra positis. Specimina tamen raro inter se colore aut aspectu distant.

*Habitat* ad Rangoon, satis frequens. Longitudine 15 unc.

Scales in seventeen rows. Nasals large. Loreal small. Anteocular one. Postoculars two. Anal bifid. Upper labials seven, the fourth and fifth entering the orbit. Eye moderate. Pupil large, black. Habit more slender than in *S. bicatenatus*. Tongue red.

a. Adult male. Body . . . 13·00  
Tail . . . 2·25=15·25.

Colour above uniform umber-brown, without markings, the colour extending over the edges of the ventral plates. Beneath yellowish white, with numerous square black blotches. Tail beneath bright red, mottled with black. Head symmetrically marked.

b. Adult female. Body . . . 12·00  
Tail . . . 1·60=13·60

Coloured as in the last, save the anal, which was bright red, with a deep-black bar behind it.

Some specimens have a narrow dark line down each side of the spine, and a similar one below, on the sides; but the coloration and markings vary very little.

\* *Vide* Annals and Magazine of Natural History for June 1868.



It is a common species in lower Pegu, and numerous about Rangoon.

It is very closely allied to *S. taniatus*, but differs in its single anteocular, bifid anal, and colouring.

*S. THEOBALDI*, Günther\*.

The type was taken at Rangoon.

Family CORONELLIDÆ.

ABLABES, *Duméril & Bibron*.

*A. BISTRIGATUS*, Günther†.

*α*. Young specimen. Body . . . 7.80  
Tail . . . 3.00 = 10.80.

Head black, emitting on either side a distinct black band continued to the tip of the tail. Two yellow spots on the nape. A yellow dot on each occipital and some yellow marks about the head. A chain of black spots on the neck, continued, as dots, to the tip of the tail. Back ruddy brown, the red tint fading towards the tail; sides greyish. Belly yellow. Anal divided. My specimen was taken alive near Prome, and is the only one I have ever seen.

*A. SCRIPTUS*, Blyth.

*Coronella scripta*, Blyth.

Scales in thirteen rows. Loreal one, much smaller than a postocular. Posterior frontals broader than long. Upper labials eight, the third, fourth, and fifth entering the orbit. A long narrow temporal forms a suture with both postoculars, and with the sixth and seventh labials. Seventh labial largest, more than twice as broad as the temporal.

Colour above brown, a few black dots on each side of the spine, on the anterior portion of body. A black mark under the eye, followed by a white upright border involving the postoculars. A black-bordered white patch on the last upper labial, and a white collar on the nape. Beneath white.

This species is nearly allied to *A. baliodirus*, Boic. The type specimen, in the museum of the Asiatic Society of Bengal, was forwarded by Major Berdmore from Martaban.

\* *Vide* Annals and Magazine of Natural History for June 1868. † *Ibid*.

## A. SAGITTARIUS, Cantor\*\*.

This species I have not seen; but Günther records it from Pinang and India.

## PSAMMOPHIS, Boie.

## P. CONDANARUS, Merr.

*Phayrea Isabellina*, Theobald, MSS.\*

Scales smooth, subequal, hexagonal. Nasal oblong, reaching to the top of the head, pierced somewhat superiorly by a moderate nostril, with an oblique slit to the first labial. Eye full; pupil round.

Head elongate, not very distinct from the neck. Scales in seventeen rows, the abdominal row larger than the rest. Loreal one, moderate; antecular one; postoculars two. Upper labials eight, fourth and fifth entering the orbit, sixth largest. Pupil black; iris brown. Above yellowish.

a. Adult male.	Body . . .	27.50
	Tail . . .	8.75=36.25.

Colour buff or yellowish Isabelline brown, with a dark stripe, two scales broad, down either side of the back from head to tail, and a broader dark stripe on either side of the belly. Belly yellowish, colour strongly contrasted, the lower edge of the dark side-stripe passing through the middle of the abdominal row of scales. This specimen was taken alive at Maubee, above Rangoon. This species is nowhere plentiful. It inhabits grass-land and paddy-fields, and is very active in its movements.

\* Since the present paper was read, the arrival of my specimens in England has enabled Dr. Günther to point out the identity of *Phayrea* with *Psammophis condanarus*. My description does not, however, require modification, and will stand as authentic for the Pegu race. In Dr. Günther's description of this species, he says "Nostril in the middle between two shields;" and this caused me to overlook the identity of the Pegu Snake with *P. condanarus*, as I must still maintain that fresh Pegu specimens examined by me have had the nostril centrally situated in a single oblong shield, *divided only below, but undivided above, and with its upper margin continuous*. Doubtless some specimens may either naturally or accidentally possess divided nasals; but in the best and freshest specimens examined by me in Pegu such has not been the case. The coloration of specimens from Continental India, as described by Günther, varies too from that observable in Pegu, where I have never remarked any black markings whatever.

## Family COLUBRIDÆ.

COLUBER, *Linnaeus*.

## C. NUTHALLI, Theobald.

*C. pictus*, Carlyle, MS. (in part).

Squamis lævibus, ordinibus viginti tribus positis. Labialibus superioribus novem, quinto sextoque orbem tangentibus. Anteooculari uno, valde magno, verticale tangente. Postocularibus duobus, parvis. Loreali parvo, longiore quam lato. Verticali magno. Superciliaribus valde magnis, verticale pæne æquantibus. Nare parvo, inter duas magnas squamas. Duobus paribus scutorum mentalium subæqualibus, et suturam formantibus cum septem labialibus. Septimo labiali inferiore multo maximo. Colore rubro-cinereo, cum quatuor ordinibus macularum nigrarum rhomboidalium, singulis maculis pallidum ocellum includentibus. Ad postremum corpus hæ maculæ obscuræ fiunt, earumque loco quatuor lineæ fuscæ lateque substitutæ sunt, duabus latis medianis, duabusque angustioribus inferius positis. Macula ovali nigra inter oculum rictumque.

*Habitat* Pegu, teste Col. Nuthall, a quo specimen unicum Mus. As. Soc. Beng. donatum fuit.

Scales smooth, in twenty-three rows. Upper labials nine, the fifth and sixth entering the orbit. Anteocular one, very large, touching the vertical. Postoculars two, small. Loreal small, longer than broad. On one side a small piece is detached from the fourth upper labial and enters the orbit. Vertical large, with subparallel sides. Superciliaries very large, almost equalling the vertical. Nostril small, between two large nasals. Lower labials twelve. Two subequal pairs of chin-shields forming a suture with seven labials. Seventh lower labial much the largest. Colour reddish-grey, with four rows of elongate, rhomboidal, intensely black spots, each enclosing a pale ocellus. These spots fade towards the hinder part of the trunk, and on the tail are replaced by four deep-brown bands—that is to say, two broad dorsal, and two narrow lateral ones, separated by narrow white bands. A conspicuous oval black spot from eye to gape.

The type of this description is in the museum of the Asiatic Society of Bengal, and was forwarded from Birma by Col. Nuthall

(probably from the Prome district). It was named in a MS. label by Mr. Carlyle, the late acting Curator; but as several species were confounded by that gentleman under this name, I have preferred describing it under the name of its discoverer.

COMPSOSOMA (*Günther*).

C. RADIATUM, Reinw.

a. Adult male.	Body . . .	59·00
	Tail . . .	14·00=73·00.

Colour pale but rich red-brown. Interstitial skin of the neck lavender, of the anterior half of the body black, with white reticulations, passing into plumbeous and pale grey towards the tail. Three inches from the head four black stripes commence abruptly, two on each side, and taper off to about the centre of the body, where they become indistinct. The central or vertebral pale interspace covers four scales in width, the uppermost black stripe three; and the lower one, after an interspace of two scales, is but one scale broad. The vertebral interspace is paler and more cream-coloured than the rest of the body. Sides of the body dark slaty, extending to the abdomen; centre of belly white, clouded with slaty. Beneath tail yellowish. Eye grey, pupil black, narrowly margined with gold. When irritated, this snake, previously to striking, compresses its neck vertically (or precisely the reverse of the Cobra, which flattens its hood horizontally), and in so doing displays the finely coloured dark interstitial skin.

b. Adult female.	Body . . .	61·50
	Tail . . .	14·00=75·50.

This snake contained a few eggs, elongate and fusiform, 2·10 long. Cantor states them to be cylindrical, and *one* inch and an eighth, which I think must be a mistake, probably a misprint for *two*.

It is common in Birma, where it is known to the Europeans as the Rat-snake, from its habit of frequenting houses in search of rats. I have sometimes been first made aware of the presence of one of these reptiles in the roof by the alarm and manœuvres of the rats, who in such cases may be seen hurrying along the rafters, and conveying their young in their mouths from one part of the roof to another, not unfrequently in their hurry, dropping a callow rat on to the table beneath.

## C. MELANURUM, Schl\*\*.

This species I have not seen; but Günther records it from Bengal and China.

## PTYAS, Fitzinger.

## P. KORROS, Rein.

a. Adult female.	Body . . . .	45·00
	Tail . . . .	25·00=70·00.

Scales smooth, on neck in fifteen, towards tail in eleven rows.

Another female, killed in June at Rangoon, measuring 47 inches, contained six eggs, each 1·60 in length.

Not an abundant species in Pegu.

## P. MUCOsa, L.

a. Adult male.	Body . . . .	65·00
	Tail . . . .	22·00=87·00.

Scales keeled in about seven rows; the rest smooth: keels usually faint and filiform. Scales on the neck in nineteen, towards the tail in fifteen rows.

This is a very common species in Birma, where it is eaten by the natives. It is the "*Lim-bwi*" of the Birmese, who do not distinguish it from the preceding.

## XENELAPHIS, Günther.

## X. HEXAHOTUS, Cantor.

This species I have procured at Rangoon. It is also recorded from Arakan, Pinang, and Singapore.

## ZAMENIS, Wagler.

## Z. FASCIOLATUS, Shaw\*\*.

Blyth records a specimen from Mergui; but I have not seen it in Pegu, where it must be rare.

## TROPIDONOTUS, Kuhl.

## T. QUINCUNCIATUS, Schl.

a. Adult female.	Body . . . .	28·50
	Tail . . . .	5·75=34·25.

Colour olive, with seven rows of dark spots down the body, the

vertebral row being nearly obsolete, and the abdominal row very strongly marked. This specimen contained thirty-four oval eggs, the size of sparrows', and exhibits the ordinary style of coloration.

b. Young male. Body . . . 14.50  
Tail . . . 7.00=21.50

Colours vivid, greenish olive, with three reticulating rows of dark spots down the back, and the sides ornamented with well-marked dark bars, at intervals of three scuta. The skin of the sides and fore part of the body bright vermilion-red. In the adult these side bars degenerate into spots. Writing from memory, my impression is that the bright-red interstitial skin is much more deeply developed in the *Tropidonoti* of Birma than is the case usually in Bengal.

This species is extremely abundant throughout the Province.

T. STOLATUS, L.

a. Adult female. Body . . . 19.50  
Tail . . . 4.50=24.00

This specimen contained eleven fusiform elongate eggs, 0.70, in May, and is the largest I have seen. Seasonally the head, neck, and sides are deeply suffused with vermilion. It is an extremely common species in the Province.

T. STRIOLATUS, Blyth.

a. Adult. Body . . . . . 22.50  
Tail . . . . . 12.00=34.50

Colour pale olive-brown. A dark patch below the eye. A conspicuous dark leaden stripe from behind the eye, over the angle of the mouth, all down the side, with a narrower stripe below it.

I have not noticed this species on the mainland, where, however, it doubtless occurs. The type came from the Andamans.

T. ANGUSTICEPS, Blyth\*\*. Arakan.

T. SUBMINIATUS, Rein.

a. Adult female. Body . . . 25.80  
Tail . . . 8.00=33.80

Colour olive-brown, passing into yellowish green on the neck and head. Interstitial skin of neck bright vermilion (seasonally).

Anterior part of body handsomely and vividly reticulated with black and yellow (after the pattern of *T. stolatus*), the coloration being equally vivid in males and females.

Another specimen, a little shorter, contained twenty eggs in November.

This species frequents the forests, and is not very common in Pegu.

*T. NIGROCINCTUS*, Blyth.

a. Adult. Body . . . . .	18.50
Tail . . . . .	7.00 = 25.50

Colour reddish brown, passing into greenish on the neck and head. A black stripe beneath and another behind the eye, and a broad black patch on each side of the neck. Along the back numerous transverse narrow black bars, not very well defined. Beneath white, dusky towards the tail. In some specimens a yellow collar is present on the neck.

This species is far from common in Pegu, and rarely so large as the dimensions above given.

*T. PUNCTULATUS*, Günth.

*Fowlea peguensis*, Theobald, MSS.

Scales smooth, in fifteen rows. Upper labials nine, the fourth and fifth entering the orbit. Anteorcular one. Postoculars three. Loreal one, squarish. Nasals two. Frontals two pairs, anterior pair small and pointed. Vertical moderate. Superciliaries and occipitals large. Anal bifid. Scales smooth, lozenge-shaped, on neck in seventeen, on body in fifteen rows. Eye large.

a. Adult male.

Above dark umber-brown, beneath white, the dark coloration of the back distinctly separated from the pale underparts. Upper labials white. A dark line down each side, formed by the dark tips of the scuta and the hind part of each supraabdominal scale.

b. Adult female.

Colour ordinary brown (not the peculiar dark umber of the male) much mottled with yellow, which, in some specimens, is the predominant hue.

This species is rather variable in colour, both sexually and individually. It appears to be intermediate between *Tropidonotus*

and *Hypsirhina*, and is not uncommon in the estuary or delta of Lower Pegu, affecting low inundated lands. This snake, not being contained in Günther's monograph, received a new name from me in my Catalogue mentioned above\*.

TYTLERIA, *Theobald*.

Aspectu *Hypsirhinæ*. Squamis lævigatis septemdecim ordinibus. Nare laterali, parvum scutum pæne dividente. Frontalibus quatuor. Loreali elongato. Anali subcaudalibusque bifidis. Oculo parvo, pupula verticali.

T. HYPYSIRHINOIDES, *Theobald*.

Frontalibus anterioribus dimidiæ magnitudinis posteriorum modiceque pentagonalibus. Nasali vix loreale æquante. Anteoculari uno, verticale tangente. Postocularibus duobus, parvis. Labialibus superioribus novem, tertio, quarto quintoque orbem tangentibus. Duo paria scutorum menta-

\* The following are the alterations and additions to the present paper, necessitated by Dr. Günther's Paper in the 'Annals and Magazine of Natural History' for June 1868; and it is much to be regretted that, on account of the delay which prevails in the publication of the Journal of the Asiatic Society of Bengal, that gentleman is unable to quote the reference of some species named by me in a Catalogue which, short as it is, has already, in spite of all efforts of mine and remonstrances, been three years in press, to the discredit of the Society and the vexation of those interested therein.

CALAMARIA SIAMENSIS, *Günther*.

Two specimens of this snake were referred by me to *C. quadrimaculata*, D. & B., and presented characters which inclined me to consider the former a synonym only; but I freely defer to Dr. Günther's judgment after his examination of my specimens.

SIMOTES AMABILIS, *Günther*.

Referred by me with doubt to *S. puncticulatus*, Gray.

S. THEOBALDI, *Günther*.

ABLABES BISTRIGATUS, *Günther*.

Referred by me very confidently to *A. melanocephalus*, Gray, but distinguished therefrom by *Günther*.

PSAMMOPHIS CONDANARUS, *Merr*.

*Pharea Isabellina*, *Theobald MSS.*, vide p. 43.

TROPIDONOTUS PUNCTULATUS, *Günther*.

*Fowlea peguensis*, *Theobald*.

TRAGOPS JAVANICUS, *Steindachner*.



lium suturam formant. Sexto labiali superiore maximo, ad medium secundi scuti mentalis tendente.

Colore rubro-brunneo, subter flavescente pallido. Longitudinis 21·00 unc. (1 uncia caudæ fracta).

Specimen captum fuit in insulis Andamanicis (Port Blair), et Societati Asiaticæ Bengalensi donatum a Lt.-Col. Tytler, insularum Gubernatore.

Aspect of *Hypsirhina*. Scales smooth, in seventeen rows. Nostril lateral, almost dividing a smallish oblong nasal. Frontals two pairs. Loreal elongate. Anal and subcaudals bifid. Eye small; pupil vertical.

Habit moderate, with much the aspect of *Hypsirhina enhydris*. Head-shields normal. Anterior frontals slightly pentagonal, half the size of the posterior frontals. Nasal a trifle smaller than the loreal. Anteoocular one, reaching to the vertical. Postoculars two, small. Vertical straight in front, sides rapidly converging behind. Superciliaries moderate, broad behind. Occipitals moderate. Upper labials nine; the third, fourth, and fifth entering the orbit. Two pairs of chin-shields touching each other. Sixth lower labial largest, reaching to the middle of the second chin-shield.

Colour uniform reddish brown above. Belly yellowish white. Length 21 inches (about an inch of tail is lost).

Presented to the Asiatic Society of Bengal, from the Andamans, by Lt.-Col. Tytler, when Governor of the settlement.

#### ATRETIUM, *Cope*.

A. SCHISTOSUM, Daud. \* \*

This species I have not met with myself in Birma.

#### XENOCROPHIS, *Günther*.

X. CERASOGASTER, Cantor \* \*

This species I have not met with myself in Birma.

## Family PSAMMOPHIDÆ.

PSAMMODYNASTES, *Günther*.P. PULVERULENTUS, *Günther*.*Dipsas ferruginea*, *Blyth*.

a. Body . . . . .	12·50
Tail . . . . .	2·75=15·25.

Colour uniform dark umber-brown, with some irregular light-reddish patches down the back, and some black spots. Head symmetrically marked. Throat, belly, and tail brown. Chest yellowish. Body bordered below with orange. Throat white-spotted, and alternate scuta white-dotted at the sides. Iris brown; pupil black, narrowly edged with gold. Captured near Rangoon.

b. Colour uniform ochraceous, with a few obsolete blackish markings along the back. Beneath bright yellowish with two (sometimes one or none) filiform dotted streaks of deep reddish brown along the sides. Captured near Rangoon. This species is somewhat variable in colour and markings. It is not rare in Pegu and Tenasserim, though specimens larger than the above are not often seen.

## Family DENDROPHIDÆ.

GONYOSOMA, *Wagler*.G. OXYCEPHALUM, *Boie*.

a. Adult male. Body . . .	66·00
Tail . . . . .	24·00=90·00.

Colour uniform grass-green, pale below. A dark loreal streak. The tail tinged with rusty ochre. This superb specimen was sent to me from the Andamans by the late Dr. Morton, Civil Surgeon of the settlement. I have myself shot nearly as fine specimens in Tenasserim, but have never procured the species in Pegu.

CHRYSOPELEA, *Boie*.C. ORNATA, *Shaw*.

a. Adult female. Body . . .	40·00
Tail . . . . .	13·00=53·00

Colour jet-black, profusely spotted with pale yellow. The coloration of this eminently handsome snake is pretty constant,

though the development of the yellow spots varies a little. In some specimens a series of red rosettes occurs down the back, or the back has merely a red tinge; but the reddish colour is merely seasonal. It is a common species in Pegu, and feeds largely on Geckos.

DENDROPHIS, *Boie*.

D. PICTUS, Gmel.

This species is rare in Pegu, but very fine and plentiful in the Andamans.

Family DRYOPHIDÆ.

TRAGOPS, *Wagler*.

T. PRASINUS, Rein.

<i>a.</i> Adult male.	Body . . . .	47·00
	Tail . . . .	24·50=71·50.

Colour bright grass-green, with a yellow side-stripe. Beneath pale green. Throat tinged with blue. Captured near Rangoon.

<i>b.</i> Adult female.	Body . . . .	27·40
	Tail . . . .	12·55=39·95.

Colour pale green. Sides yellow. Side-stripe white. Throat whitish. Belly brown. Captured near Rangoon, in March. Contained ten eggs. Another variety is less common. Colour pale grey, or greyish ochre. Interstitial skin chequered with oblique black and white bars. Beneath whitish or, towards the tail, brownish. This species is abundant in Pegu, though large specimens are somewhat rare.

T. FRONTICINCTUS, Günther.

<i>a.</i> Adult female.	Body . . . .	22·00
	Tail . . . .	12·00=34·00.

Colour bronze-brown. Belly dark ruddy brown, with a black lateral line, and above it a broader stripe of creamy white. This specimen contained seven fœtuses, each six inches long. It was taken in Mangrove swamps, on the Arakan coast, and is very arboreal in its habits. Other specimens were bright green, with a pale-yellowish belly, with the black lateral line broadly margined above with yellow. These specimens accord precisely with Günther's description, save that the above description is drawn up from the living animal. The species is easily recognized by its large nasal,

which stretches back and simulates an additional anterior frontal, and is by no means scarce in the Mangrove swamps on the Arakan coast.

T. JAVANICUS, Stein.

PASSERITA, Gray.

P. MYCTERIZANS, L.

a. Adult female. Body . . . . . 39·00  
Tail . . . . . 21·00=60·00.

Captured at Tonghu.

This species is scarce in Pegu; but I have seen it from Prome and Thalet-mio, and it doubtless occurs sparingly throughout the Provinces.

Family DIPSADIDÆ.

DIPSAS.

D. MULTIMACULATA.

a. Adult. Body . . . . . 28·00  
Tail . . . . . 7·00=35·00.

This beautiful species is somewhat common in Pegu and Tenasserim.

D. OCHRACEA, Theobald.

Forma gracili, compressa. Squamis cervicæ novemdecim, corpore septemdecim, et juxta caudam quindecim ordinibus. Labialibus superioribus novem, quorum quartum, quintum sextumque orbem tangunt; quinto parvo, sed sexto, septimo octavoque maximis; pupula juxta suturam quinti sextique. Colore ochraceo, seu flavescente luteo, subtus pallido.

a. Corpus . . . 27·50  
Cauda . . . 7·50=35·00. Prope Rangoon captum.

b. Corpus . . . 24·25  
Cauda . . . 5·75=30·00. Prope Maulmain captum

a Col. D. Browne. Haud differt a præcedente, ni labialibus superioribus octo tantum, quorum tertium orbem tangit.

Form slender, compressed. Scales on the neck in nineteen, on the body in seventeen, and near the tail in fifteen rows. Upper labials nine, the fourth, fifth, and sixth entering the orbit, the

fifth small, the sixth, seventh, and eighth very large. Pupil over the suture of the fifth and sixth labial.

Colour uniform dusky yellow, or ochraceous; beneath whitish. Captured near Rangoon.

Precisely similar to the last, except that an anterior labial is suppressed, so that the third labial enters the orbit.

Captured at Maulmain, and presented to me by Col. David Browne.

### Family AMBLYCEPHALIDÆ.

#### PAREAS, *Wagler*.

*P. MACULARIUS*, Blyth. (The young.)

*Aplopeltura boa*, Sch. apud Blyth (the adult).

As the young and adults of this curious snake have been referred to different genera by Blyth, I shall give a somewhat full description of the specimens in the Museum of the Asiatic Society of Bengal. But for Dr. Günther's opinion I should hardly have ventured to separate them from *P. carinata*, though some of the details do not quite correspond, *e.g.* colour &c.

*a.* Adult. Body . . . . 19·50  
Tail . . . . 4·50 = 24·00.

Body strongly compressed. Scales smooth, in fifteen rows, or slightly keeled on the back. Head high, quadrate, blunt, pug-nosed. Eye large, pupil vertical. Rostral high, but not reaching the top of the head, deeply excavated below. Nasal a large single shield, high, with the nostril pierced behind. Upper labials six or seven, the anterior ones very high and narrow. Eye bordered beneath with five, six, or seven small shields, which exclude the labials from the orbit. Loreal one, rather small. Frontals subequal, anterior ones the smallest. Superciliaries large, fully as large as a postfrontal. Vertical and occipital normal, nearly equal in size. Lower labials eight, very narrow. Three pairs of large transverse gular shields, the first forming a suture with the four front labials. Anal entire. Subcaudals divided.

Colour uniform ochraceous brown, with obsolete traces of

vertical bands down the body, and, in one specimen, traces of a white collar. Two specimens are in the Museum of the Asiatic Society of Bengal, presented by Major Berdmore, from Tenasserim.

In the young the head-shields are rather irregular. The anterior frontals are very small. In one specimen the vertical is an equilateral rhomboid. The posterior frontals in some enter the orbit. The superciliaries are large, and enter a notch between the vertical and occipitals. Occipitals extremely large. Seventh upper labial very long. The labials, additional oculars, and peculiar gular shields as in the adult. Anal entire. Subcaudals divided.

Colour rich reddish brown. Body with somewhat reticulated bars, formed by some of the scales being particoloured, white in front, and deep claret-coloured behind, giving a half banded, half spotted appearance to the snake. A conspicuous white collar on the nape, mottled with claret-red. Belly brown, spotted and mottled. Three young specimens are in the Museum of the Asiatic Society of Bengal, presented by Major Berdmore, from Martaban.

This is a very singular snake, the young differing so much from the adult as to lead Mr. Blyth to refer these to different genera. As, however, the adult has *divided subcaudals*, but *one loreal*, and *fifteen* rows of scales, it is certainly not *Aplopeltura boa*, Schl., but the adult of *P. macularius*, Blyth. I think it open to question if all the specimens do not come from the same locality, as it is strange the young and old should come from different localities; and a mistake is very likely to have occurred, as Major Berdmore collected largely in both localities.

#### P. MODESTUS, Theobald.

Capite crasso. Frontalibus parvis, posterioribus magnis, ad latus curvatis et orbem intrantibus. Superciliaribus parvis. Loreali modico. Anteoocularibus duobus parvulis. Postoculari uno parvulo. Scuto longo angustoque inter orbem et scuta labialia. Squamis lævigatis, quindecim ordinibus, quorum tres vel quinque ordines levissime carinati sunt. Anali indiviso. Subcaudalibus bifidis. Labialibus superioribus septem, e quibus quartum quintumque alta sunt, sextum vero angustum, septimumque longissimum. Scutis gularibus tribus magnis latis, Colore brunneo, subter pallide flavescente.

*Habitat* Rangoon, teste Nuthall.

Specimen unicum in Museo Soc. Asiaticæ Bengalensis in Calcutta.

Head rather thick. Anterior frontals small, broader than long. Posterior frontals large, bent over the side and entering the orbit. Superciliaries small. Loreal moderate. Anteculars two, very small. Postocular one, very small, with a band-like subocular excluding the labials from the orbit. Scales smooth, in fifteen rows, the vertebrales not enlarged, but three or five rows very faintly keeled. Anal entire. Subcaudals bifid. Upper labials seven, the fourth and fifth high, under the orbit, but separated by the intervening band-like subocular; sixth low; seventh very long, with two elongate temporals above it. Three pairs of large transverse gular shields.

Colour above uniform brown, below pale yellowish.

The type was presented to the museum of the Asiatic Society of Bengal by Col. Nuthall, from Rangoon.

### Family HOMALOPSIDÆ.

#### *FORDONIA*, Gray.

*F. BICOLOR*, Theobald.

Squamis viginti quinque ordinibus. Verticali magno, sexangulari. Occipitalibus magnis. Anteculari uno. Postocularibus duobus. Frontalibus tribus, anteriore parvo. Loreali nullo. Labialibus superioribus quinque, oculo supra quintum. Cervice squamosa. Pupula verticali. Colore flavescente cinereo, fusco maculato, maculis parvis. Ventre albo. Coloribus distincte separatis.

Corpus . . . . 9.50

Cauda . . . . 1.25 = 10.75.

*Habitat* prope Rangoon. Loco paludoso captum.

Scales in twenty-five rows. Vertical large, six-sided. Occipitals large (these are described as small in *Fordonia unicolor* \*). Antecular one. Postoculars two. Anterior frontal single, small. Loreal none. Upper labials five; eye over the fifth. Throat scaly. Pupil vertical.

\* Gray, *Viper-Snakes*, p. 77.

<i>a.</i> Body . . . .	9.50
Tail . . . .	1.25 = 10.75.

Colour yellowish grey, dark-spotted. Sides and belly white. Colours distinctly separated. Captured in a marsh near Rangoon.

This species is very closely allied to *P. unicolor*, but differs in the eye being over the fifth labial, and in colouring.

#### CERBERUS, *Cuvier*.

##### C. RHYNCHOPS, *Schn.*

This is an extremely common snake in Lower Pegu, and may be often observed fishing in the muddy estuary creeks, frequently coming up on the mud bank, with a fish in its mouth, to devour it with greater convenience at its leisure. Large specimens are rather scarce, none that I have ever seen attaining more than thirty inches.

#### HYPSSIRIINA, *Wagler*.

##### H. ENHYDRIS, *Schn.*

<i>a.</i> Adult female. Body . . . .	14.75
Tail . . . .	3.25 = 18.00.

Colour above dark hair-brown, rather olive-tinted, and with a bright blue iridescence. Down each side of the back a pale stripe from the occipitals to the end of the tail, margined above and below with a dark line. Sides and belly yellowish white. Down each side a supraabdominal stripe of pale salmon-red. Scuta and scutella dark-edged, giving rise to two lateral lines and one median one below the tail. This snake contained six eggs in March, and was taken near Rangoon.

<i>b.</i> Adult female. Body . . . .	18.50
Tail . . . .	4.00 = 22.50.

Captured at Tonghu.

This species is common in Pegu.

##### H. PLUMBEEA, *Boie*.

Colour brown, with a clearly marked dark-edged yellow stripe along either side. Belly pale grey, with a central dark cateniform stripe, formed by a dark dot in the centre of each ventral plate. A narrow dark line down each side, along the edge of the ventral



plates. This is a scarcer species than the last, as I have only seen one young specimen from Thaict-mio.

### HOMALOPSIS, *Kuhl.*

#### H. BUCCATA, L.

a. Adult male. Body . . . .	19·00
Tail . . . .	6·00=25·00.

Back brown. Sides and belly white. Thirty-four sharply defined whitish bars across the back. Alternate scuta with dark side-patches, head symmetrically marked with black. This is a very handsome snake, and generally diffused, though not so plentiful as *Hypsirhina enhydris*. It is of very stout habit, and the head-shields are often very irregular. The above specimen had five frontals, and was captured at Pegu.

### GERARDA, *Gray.*

#### G. BICOLOR, Gray.

a. Male. Body . . . .	11·00
Tail . . . .	1·50=12·50.

Colour muddy olive. Lips (except rostral plate which is dark) and lateral stripe of two and a half scales, whitish. Chin whitish. Belly pale, with the scuta dark-edged. Eye small, pupil round or slightly oval.

This snake was taken in a swamp at Rangoon, and corresponds so exactly with Gray's description that I have no doubt that the recorded habitat, "*West Indies*," in this case, as in others, is a mistake for "*East Indies*."

### HIPISTES, *Gray.*

#### H. HYDRINUS, Cantor.

a. Adult (?). Body . . . .	14·00
Tail . . . .	1·50=15·50.

Colour greenish-yellow above, broadly barred with blackish grey. Forty-four bars, as broad as the interspaces, but not reaching to the belly. Sides and belly white. This specimen I took alive close to Haingi Island. Its coloration is precisely that of a *Hydrophis*, and it is clearly an osculant form, uniting the Homalopsidæ with the pelagic serpents.

## Family ACROCHORDIDÆ.

*CHERSYDRUS, Cuvier.**C. GRANULATUS*, Schn.

<i>a.</i> Adult.	Body . . . .	20·00
	Tail . . . .	2·00=22·00.

Scales of body in over one hundred rows, irregular or polygonal, tubercular on body, bitubercular on the tail. One row of scales on each side of the median line of the belly, spinous, forming a doubly serrated ventral keel.

Colour above dark grey; the colour descending in regular stripes to the abdomen, where it insensibly fades. Belly yellowish, ascending in regular sharply defined stripes to the median line of the back. The dark and pale stripes alternate regularly; but some of the pale ones join on the back, giving rise to irregular annuli.

<i>b.</i>	Body . . . .	33·25
	Tail . . . .	3·75=37·00.

Colours similar to the last, but much duller.

This species is plentiful in the Bassein River, in salt water below Gnaputau, and, with various other sea-snakes, is frequently swept by the tide into the fishing-baskets or stakes near that village. These baskets or creels are long and conical, very narrow at the end, and made of wicker or bamboo. The broad mouth is fixed to face the ebb tide and supported by bamboos firmly driven into the river-bed. The ebb tide, running like a sluice, sweeps fish, crustacea, snakes, and even porpoises occasionally, into the broad mouths of the baskets, where they are at once jammed into a mass at the narrow end of the creel. At slack tide the fishermen push off, and take up each basket in turn and empty out its heterogeneous contents into their boats; and a rare treat it is to the naturalist to be present; but unfortunately I was only a few days in the neighbourhood, and could not profit by the abundance of riches which this locality produces, but which will well repay the attention of any resident at Bassein or that neighbourhood. This species is more nearly connected with the Hydrophidæ than the last, being as essentially aquatic as any of that family, to which, save from its wanting the poison-gland, it might be appropriately referred.

## Suborder II. Serpentes colubrini venenati.

## Family ELAPIDÆ.

HAMADRYAS, *Cantor*.

## H. ELAPS, Schl.

a. Adult female.	Body . . . .	121·00
	Tail . . . .	26·00=147·00.

Colour olive-brown, with paler cross bands deeply edged with black. Beneath white, mottled with black about the tail. Throat yellow. Caudal scuta nine; scutella eighty-three.

b. Young female. Body and tail . . . . 78 inches.

Colour uniform brown, passing into blackish on the hinder part of the trunk and tail, with about forty pale buffish bands, black-edged, and conspicuous on the tail, fainter on the body, and obsolete on the neck. Belly clouded with slaty. No yellow on throat. This snake, the "*Gnán-bok*" of the Birmese, is not rare in Birma, and is very justly dreaded by the natives, who look on it as very irascible and always ready to attack, which I believe to be a mistake, or only true at certain seasons—though a "*Gnán*" will not shun a man, as most other snakes will; and I have often watched them in bamboo clumps, without their exhibiting either fear or anger.

I was once descending the Tenasserim river in company with Professor Oldham, and saw one of these snakes on the bank. Thinking it was a *Ptyas*, I hastily sprang ashore and caught it by the tail as it was disappearing into the brushwood. My boatman, however, quickly handed me up a "*Dah*," and with two blows I severed my dangerous prize in half. That I was not bitten I attribute to the gentle manner in which I held the snake without pinching it; but the risk was great and such as it is better to avoid, as the animal measured twelve feet, and its bite would have been fatal in a few minutes. The excitement, however, generally gets the better of one's prudence when a fine specimen is to be secured, as the following instance will show. I was one evening attracted by a noise of men and dogs near my tent, and found a large crowd round a bush, in which some creature was at bay. On coming up I found it was a magnificent "*Gnán*" twelve feet long, which was making furious charges at the dogs, but was protected by the

bushes, among which it kept, from the men, who, moreover, were evidently much disinclined to come very close. Taking a stick from a boy, I directed all present to go the other side of the bush and keep quiet, whilst I stationed myself a few yards in the open. As I anticipated, in a minute or so the "Gnán," thinking the coast clear, came straight out on my side with the idea of escaping, and when he was well clear of the bushes, I made one step forward and delivered a smart blow on the neck, and before he could recover himself, I was upon him and had him firmly by the nape. He was quite unhurt, and I had a hard job to hold him, but managed to drag him to my tent, where I severed the spine with a penknife, to the admiration of the crowd, who were convinced that I had some powerful charm to enable me to overcome the dreaded "Gnán." This belief in charms which enable the owner to catch snakes, is universal in India and Birma; and only one's personal servants are convinced that the only charm requisite is coolness and skill. Unless, however, in open ground, I would not advise any one to try the experiment of catching a "Gnán," as its bite is fatal in a few minutes. A few years ago, one of these snakes was brought alive to Capt. Berdmore, at Shuighin, and a snake-charmer came up to display his command over the animal. At first (as I am told) the snake seemed cowed by the authoritative "Hah" of the man; but suddenly, through some carelessness on his part, the snake bit him on the wrist. The poor fellow at once ran off home to get an antidote, but fell down before reaching his own door, and died in a few minutes. When in Tonghu, I heard a case of an elephant being killed by one of these snakes, which I have no reason for doubting. The elephant was a fine powerful male, and was pulling down with his trunk some creepers or boughs, when a large "Gnán" which was disturbed in the tree, struck the elephant on the trunk below the eyes. The elephant at once retreated, grew faint, and died in about three hours.

*Naja, Laurenti.*

N. TRIPUDIANS, Merr.

The Birmese Cobra ("*Mwe-houk*") is a variety without spectacles, near var.  $\zeta$  of Günther's 'Catalogue;' and I have never noticed the spectacled variety, common in India, anywhere in the province. It is pretty generally diffused, but not very common, and from its nocturnal habits less often seen than many harmless

snakes. Some men will eat it; but it is not so esteemed for food as the "*Lim bwi*" (*Ptyas*). This snake is, I believe, of inoffensive habits, unless irritated, but is of course a dangerous neighbour to have in a house. Not only in Birma, where the respect for life is greatest, but in India also I have known a Cobra enticed or forced into an earthen jar and then carried by two men, across a river or some distance from the village, and liberated. The professional snake-charmers, I believe, in Birma liberate their snakes after a few weeks' captivity, to prevent, I suppose, their dying of starvation in their hands, and in deference to that tenderness for animal life which is so charming a trait of Buddhism.

ELAPS, *Schneider*.

E. MACULICEPS, Günther.

a. Adult.	Body . . . .	18'00
	Tail . . . .	1'25=19'25.

Colour uniform pale brown, with a chain of thirty-six distant not very distinct black dots down each side. Crown of the head black, giving off a broad streak behind the eye and uniting with a black collar on the nape. A subterminal black ring on the tail, and a broader one at the base expanded above into a rhomboidal escutcheon, with a narrow black median line down the tail above.

This species is rare in Pegu, the above specimen, captured by Mr. Fowle at Rangoon, being the only one I have seen.

BUNGARUS, *Daudin*.

B. FASCIATUS, Schn.

a. Adult male.	Body . . . .	59'00
	Tail . . . .	6'00=65'00.
b. Adult female.	Body . . . .	51'50
	Tail . . . .	4'50=56'00.

This snake, the "*Gnán-thán-gwin-zok*" of the Birnese, is very common in Lower Pegu. It is of very sluggish habits, and frequents moist places and the vicinity of water.

B. CÆRULEUS, Schn.

I think I have noticed skins of this species among collections made at Port Blair; but the specimens were too imperfect for me to be certain. As I have never obtained it in either Pegu or

Tenasserim, it must be extremely rare, though Berdmore has sent it from Mergui (J. A. S. xxii. p. 411), and Dr. Fayron from Rangoon (J. A. S. xxii. p. 593).

B. FLAVICEPS, Reinhardt.

I have obtained this fine species in Tenasserim, but it does not occur in Pegu.

### Suborder III. Serpentes viperini.

#### Family CROTALIDÆ.

##### TRIMESURUS, Gray.

T. CARINATUS, Gray.

Scales in twenty rows. "*Mive jouk*" or "*Mive zen*" of the Birmesco.

a. Adult female.	Body . . . . .	27·00
	Tail . . . . .	5·50 = 32·50.

Colour uniform apple-green, darker on the head and neck. Tail stained yellowish rusty. Beneath pale greenish yellow. Throat whitish, yellow-edged. Lips greenish-yellow. A strongly defined white stripe through the abdominal row of scales. Pupil black; iris yellowish. Skin deep blackish brown.

This specimen was captured in the Delta, in December, and contained thirteen eggs.

b. Adult female.	Body . . . . .	29·00
	Tail . . . . .	4·75 = 33·75.

Similar to the last, but without the side-stripe. Captured in February in Lower Pegu, and contained twelve eggs. I narrowly escaped being bitten by this snake as I was taking a stroll after dusk near my tent, in my slippers. My attention was first attracted by a rustling among the leaves, which I thought was a lizard; but as the sound continued, I looked more closely, and then perceived that it was caused by a snake, which was balancing itself in a threatening manner close in front of me, and vibrating its tail, as an angry cat might, before springing. It was too dark to distinguish what snake it was; and, thinking it was some harmless snake, I placed my foot on it and secured it, little dreaming of the hazard I was running, as the poison-fangs were five-eighths of an inch long, and would have penetrated any boot, much more a thin

slipper. It is doubtful, however, if these snakes would cause the death of a man in health, though their bite produces great suffering.

This is not an uncommon species in Birma.

*T. GRAMINEUS*, Shaw.

Scales in twenty-one rows.

<i>a.</i> Adolescent specimen.	Body . . . .	14.40
	Tail . . . .	2.90=17.30.

This specimen was taken by me at Tonghu, but it is not so common a species as the last.

*T. ERYTHRURUS*, Cantor.

Scales in twenty-one rows. Supranasals in contact.

A single young specimen was taken by me in the Farm-caves, near Maulmain; but it is not a common species in the Province.

*T. PORPHYRACEUS*, Blyth.

Scales in twenty-five rows.

<i>a.</i> Adult male.	Body . . . .	34.50
	Tail . . . .	6.00=40.50.

Colour dirty green, brown-mottled. Belly green, yellow-mottled.

<i>b.</i> Adult female.	Body . . . .	35.50
	Tail . . . .	6.00=41.50.

Colour greenish brown, mottled with green on the sides. Belly yellowish green, mottled with brown and yellow.

These specimens were forwarded to me by Dr. Morton from the Andamans.

Family VIPERIDÆ.

*DABOIA*, Gray.

*D. ELEGANS*, Daud.

This snake, which attains to nearly five feet in length, is known to the Birmese as "Mhor-bwe," and dreaded almost as much as the *Hamadryas*. It is common in the Tharawadi district, and I have seen numerous examples from near Rangoon; but it does not, I think, range into the Tenasserim Provinces. I have known one kill a Bull-Terrier in twenty minutes.

*Table of distribution of Birinese Ophidia.*

(a. Innocuous) *Colubrine Snakes.*

Typhlops Horsfieldi, <i>Gray</i> ...	Tenasserim ; Pegu.
T. Braminus, <i>Daud.</i> .....	Tenasserim ; Pegu.
Lycodon aulicus, <i>D. et B.</i> .....	Tenasserim ; Pegu.
*Tetragonosoma atropurpureum, } Cantor .....	Mergui.
*Zenopeltes unicolor, <i>Rein.</i> ...	Tenasserim ; Pegu.
*Python reticulatus, <i>Sch.</i> .....	Tenasserim ; Pegu.
*Cylindrophis rufus, <i>Laur.</i> .....	Tenasserim ; Pegu.
*Calamaria siamensis, <i>Günth.</i> ...	Pegu.
*Simotes bicatenatus, <i>Günther.</i>	Tenasserim ; Pegu.
S. amabilis, <i>Günth.</i> .....	Pegu (Arakan hills).
*S. cruentatus, <i>Theobald</i> .....	Pegu.
*Ablabes bistrigatus, <i>Günth.</i> ...	Pegu.
A. sagittarius, <i>Cantor</i> .....	{ (Pinang, Kangra, teste Gün- ther).
*A. scriptus, <i>Blyth</i> .....	Pegu (Martaban).
*Coluber Nuthalli, <i>Theobald</i> ...	Pegu.
*Compsosoma radiatum, <i>Rein.</i>	Tenasserim ; Pegu.
C. melanurum, <i>Schl.</i> .....	(Bengal, China, teste Günther).
*Ptyas korros, <i>Rein.</i> .....	
P. mucosa, <i>L.</i> .....	
*Xenelaphis hexahonotus, <i>Cantor.</i>	Rangoon.
Zamenis fasciolatus, <i>Shaw</i> .....	Mergui.
Tropidonotus quincunciatus ...	Tenasserim ; Pegu.
T. stolatus, <i>L.</i> .....	Tenasserim ; Pegu.
*T. striolatus, <i>Blyth</i> .....	Andamans.
*T. subminiatus, <i>Rein.</i> .....	Tenasserim ; Pegu.
T. angusticeps, <i>Blyth</i> .....	Arakan.
*T. nigrocinctus, <i>Blyth</i> .....	Tenasserim ; Pegu.
T. zebrinus, <i>Blyth</i> .....	Mergui.
T. punctulatus, <i>Günth.</i> .....	Pegu.
*Tytleria hypsirhinoides, <i>Theo- bald</i> .....	Andamans.
Atretium schistosum, <i>Daud.</i> ...	
Xenochrophis cerasogaster, } Cantor .....	



- |   |   |
|---|---|
| * <i>Psammodynastes pulverulentus</i> , <i>Günth.</i> ..... | } Tenasserim; <i>Pegu</i> .                               |
| * <i>Gonyosoma oxycephalum</i> , <i>Boie.</i>               | <i>Tenasserim</i> ; <i>Andamans.</i>                      |
| <i>Chrysopelea ornata</i> , <i>Shaw</i> .....               | <i>Tenasserim</i> ; <i>Pegu</i> .                         |
| <i>Dendrophis pictus</i> , <i>Gmel.</i> .....               | <i>Tenasserim</i> ; <i>Andamans</i> ; <i>Pegu</i> .       |
| <i>Tragops prasinus</i> , <i>Rein.</i> .....                | <i>Tenasserim</i> ; <i>Pegu</i> .                         |
| * <i>T. javanicus</i> , <i>Stein.</i> .....                 |   |
| * <i>T. fronticinctus</i> , <i>Günth.</i> .....             | <i>Pegu (Arakan coast).</i>                               |
| <i>Passerita myeterizans</i> , <i>L.</i> .....              | <i>Pegu</i> .   |
| * <i>Dipsas multimaculata</i> .....                         | <i>Tenasserim</i> ; <i>Pegu</i> .                         |
| * <i>D. ochracea</i> , <i>Theobald</i> .....                | <i>Tenasserim</i> ; <i>Pegu</i> .                         |
| * <i>Pareas macularius</i> , <i>Blyth</i> .....             | <i>Tenasserim</i> ; <i>Martaban</i> .                     |
| * <i>P. modestus</i> , <i>Theobald</i> .....                | <i>Pegu</i> .   |
| * <i>Fordonia bicolor</i> , <i>Theobald</i> ...             | <i>Pegu</i> .   |
| <i>Cerberus rhynchops</i> , <i>Schn.</i> ...                | <i>Tenasserim</i> ; <i>Pegu (Rangoon)</i> .               |
| <i>Hypsirhina enhydri</i> , <i>Schn.</i> ...                | <i>Tenasserim</i> ; <i>Pegu</i> .                         |
| <i>H. plumbea</i> , <i>Boie.</i> .....                      | <i>Pegu (Thaïet-mio)</i> .                                |
| <i>Ferania Sieboldi</i> , <i>Schl.</i> .....                | { (Bengal. Province Wellesley,<br>teste <i>Günther</i> ). |
| <i>Homalopsis buccata</i> , <i>L.</i> .....                 | <i>Pegu</i> .   |
| * <i>Gerarda bicolor</i> , <i>Gray.</i> .....               | <i>Pegu (Rangoon)</i> .                                   |
| * <i>Hipistes hydrinus</i> , <i>Cantor</i> .....            | <i>Pegu (Haingi Island)</i> .                             |
| <i>Chersydrus granulatus</i> , <i>Schn.</i>                 | <i>Pegu (Bassein River)</i> .                             |

(b. Poisonous) *Pelagic Snakes.**Hydrophidæ of the Bay of Bengal and adjoining Seas.**Hydrophis Jerdoni*, *Gray.**H. robustus*, *Günth.**H. cærulescens*, *Shaw.**H. cyanocinctus*, *Daud.**H. nigrocinctus*, *Daud.* .....*H. torquatus*, *Günth.**H. chloris*, *Daud.**H. Lindsayi*, *Gray.**H. atriceps*, *Günth.**H. latifasciatus*, *Günth.* ..*H. coronatus*, *Günth.**H. gracilis*, *Shaw.**H. fasciatus*, *Schneid.**H. Cantoris*, *Günth.**H. lapemoides*, *Gray.*

H. Ellioti, *Günth.*  
 H. pachycercus, *Fish.*  
 H. viperinus, *Schmidt.*  
 H. anomalus, *Schmidt.*  
 H. curtus, *Shaw.*  
 H. Hardwickii, *Gray.*  
 Enhydrina valakadyen, *Boie.*  
 Pelamis bicolor, *Schneid.*  
 Platurus scutatus, *Laur.*  
 P. Fischeri, *Jan.*

*Colubrine Snakes.*

Hamadryas elaps, *Schl.* ..... *Tenasserim ; Pegu.*  
 Naja tripudians, \*var. without }  
 spectacles ..... } *Tenasserim ; Pegu.*  
 \*Elaps maculiceps, *Günth.*..... *Pegu.*  
 Bungarus fasciatus, *Schn.* ..... *Tenasserim ; Pegu.*  
 B. cæruleus, *Schn.* ..... *Andamans.*  
 \*B. flaviceps, *Rein.* ..... *Tenasserim.*

*Viperine Snakes.*

Trimesurus carinatus, *Gray* ... *Pegu.*  
 T. gramineus, *Shaw*..... *Pegu.*  
 T. erythrus, *Cantor*..... *Pegu (Martaban).*  
 \*T. porphyraceus, *Blyth* ..... *Andamans.*  
 Daboia elegans ..... *Pegu.*

Species marked with an asterisk in this Table do not range to Bengal or India.

Localities in italics are those from which specimens quoted in this Catalogue have come.

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On *Ziphius sowerbiensis*. By W. ANDREWS, Esq., M.R.I.A.

[March 19th, 1868.]

MR. ANDREWS, M.R.I.A., of Dublin, exhibited drawings, of life-size, of the head of "*Ziphius sowerbiensis*," which were copied, and enlarged by correct measurements, from the original photographs taken of the animal, which was captured in Brandon Bay, coast of Kerry, on the 9th of March, 1864.

No specimen of this very rare Cetacean had been seen on the