

REPTILIA

CHELONIA

TESTUDINIDAE

1. *Batagur baska*, Gray

A young specimen from the lower reaches of the Patani River.

2. *Damonla subtrijuga*, Schlg. & Müll.

Lower reaches of Patani River.

3. *Oyclemys amboinensis*, Daud.

Kampong Jalor.

'Also common in the pools on Cape Patani, where it is frequently kept as a pet by the Malay children; its fat is used as a medicine for fever.'

4. *Oyclemys platynota*, Gray

Kampong Jalor.

5. *Oyclemys annandalli*, sp. nov.

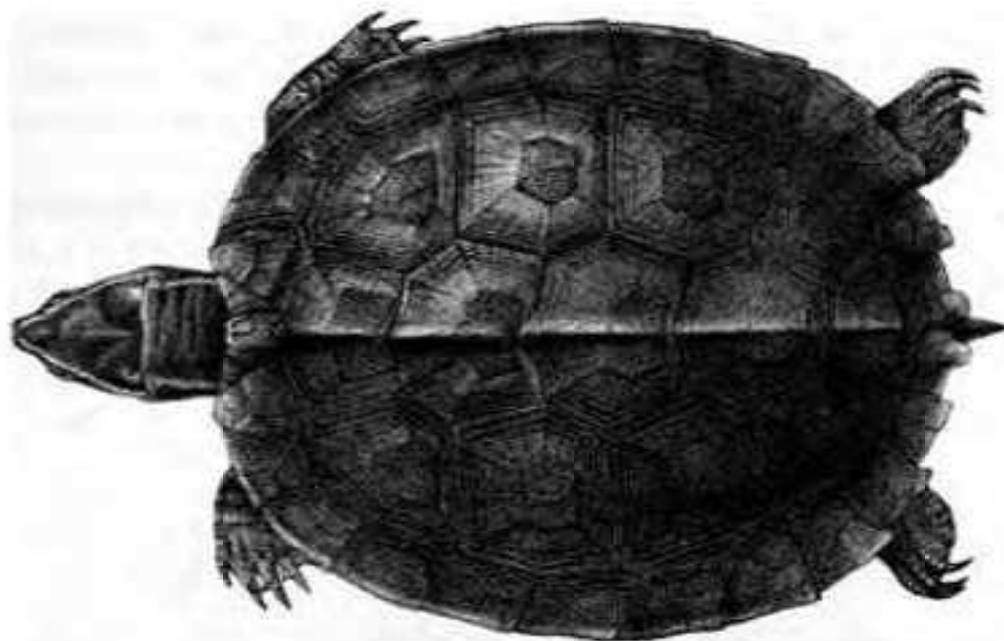
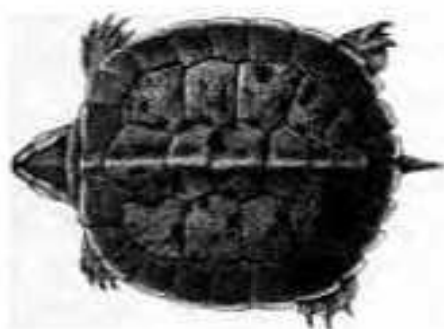
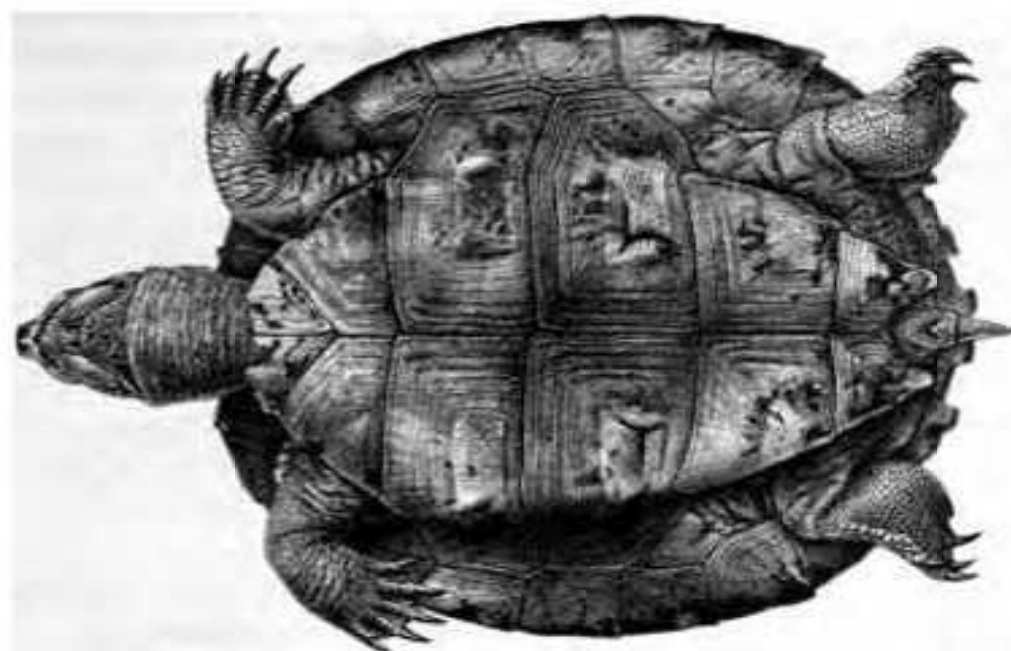
(Plates VII and VIII)

Belongs to the first section of the genus, including *C. platynota*, *dhor*, and *moubosi*, characterized by the plastron not completely closing the shell and being emarginate posteriorly, and by the separated posterior margin of the carapace. Agrees with *C. platynota* in having the suture between the pectoral shield and the marginals longer than that between the abdominal and the marginals, but differs chiefly in the stronger bicuspid beak, the denticulate border of the upper jaw, the more slender zygomatic arch of the skull, the larger axillary shield, the smaller anal shields with a deeper notch between them, and, normally, in the absence of a sixth vertebral shield.

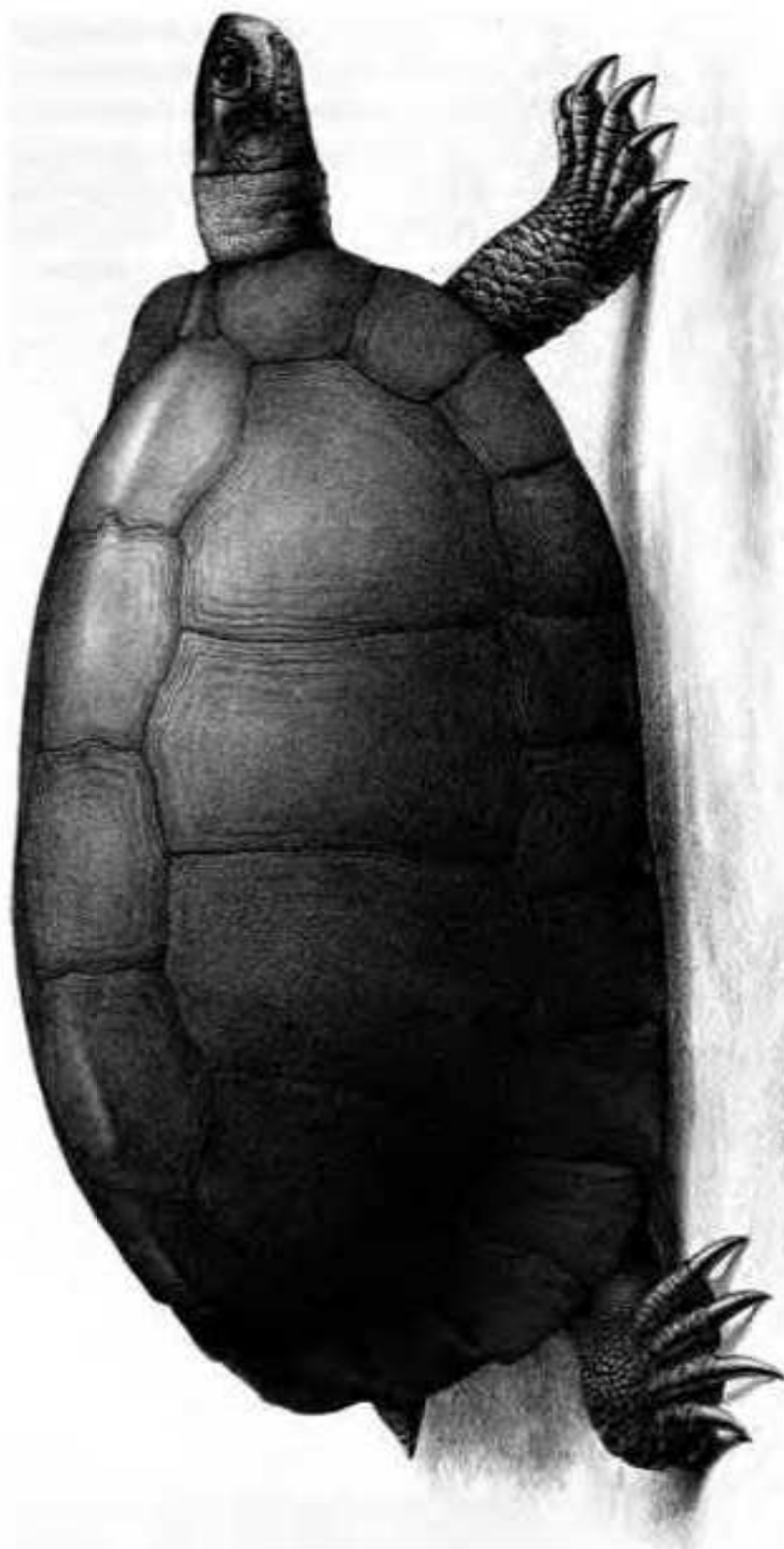
This species, with which I have much pleasure in connecting the name of Mr. ANNANDALE, is founded on three specimens from Kampong Jalor; two young in spirit, and a large male, preserved dry, with skin and skeleton.

A. Description of the Young.

Carapace depressed and unicarinate, with serrated posterior margin, vertebral shields broader than long, as broad as or a little narrower than the costals, first as broad, or nearly as broad, as the second. Plastron narrower than the opening of the shell, with deeply notched hind



CYCLEMYS ANNANDALII, YOUNG. ($\frac{2}{3}$ NAT. SIZE).



CYCLEMYS ANNANDALII ($\frac{2}{3}$ NAT. SIZE).



lobe, and connected with the carapace by a distinct bridge, the width of which is contained twice-and-a-half in the length of the plastron; axillary and inguinal shields large, the suture between the pectoral shield and the marginals longer than that between the abdominal and the marginals, the suture between the pectoral shields as long as or a little shorter than that between the abdominals, the suture between the humeral shields shorter than that between the gulars, and that between the anals shorter than that between the femorals. Hook of the upper jaw bicuspid. Digits extensively webbed, claws long, curved, sharp. Front part of the jaw with broad, band-like transverse shields. Carapace dark brown, spotted with black in the young, plastron and lower surface of marginal shields yellowish, with symmetrical dark-brown markings in the young. Head and upper surface of the neck dark-brown; a yellowish streak on each side of the head, from the upper surface of the snout to the neck, passing above the eye and the tympanum, another, higher up, and parallel with the lower, on the temple, on the neck, lower jaw and edge of upper jaw, yellowish.

Of the two specimens, one (a) is newly born, the other (b) considerably older.

(a) Length of shell, 60 mm.; width, 55 mm.; depth, 28 mm. Shields rugose; an additional shield intercalated between the fourth and fifth vertebrae, and another between the fourth costal and the fifth vertebral. Vertebral keel and edge of marginals yellow; roundish black spots irregularly disposed on the vertebral and costal shields; marginal shields blackish above, speckled with lighter in their proximal third. Plastron with a complicated dark pattern with rounded outlines, between which are dark vermiculations; similar markings cover the bridge and the greater part of the lower surface of the marginals.

(b) Length of shell, 145 mm.; width, 117 mm.; depth, 67 mm. Shields with concentric grooves and radiating ridges around the rugose portion.

Traces of the symmetrical dark markings of the younger specimen can be observed on the plastron.

B. Description of the Adult Male.

Shell three times as long as deep, once and two-thirds as long as broad; its posterior border much less strongly serrated than in the young; shields nearly smooth, with the vertebral keel merely indicated on the fourth and fifth vertebral shields; second and third vertebral shields as long as broad, about two-thirds the width of the corresponding costals; plastron deeply concave, the relative proportions of the shields as in the young. Upper jaw with two very strong median cusps, and a very distinct denticulation

along the whole border. The interdigital web appears to have been less developed than in the young. Tail nearly as long as the head. Shell black, with yellow markings over the marginal shields and on the plastron, the latter forming a broad median band; head blackish, vermiculate with yellowish, but without longitudinal bands.

Length of shell, 380 mm., width, 245 mm., depth, 130 mm.

'Numerous specimens were brought to us at Kampong Jalor by natives, who frequently keep this tortoise in captivity, boring a hole in the posterior margin of the carapace, and tying a string, passed through this, to their house-posts. We were prevented from preserving more than one large specimen by the bulk, and by the difficulty experienced in killing tortoises. The adult appears to be largely terrestrial in habits, but it is probable that the young are aquatic. The species probably attains a bulk considerably greater than that of our adult specimen.'

6. *Cyclemys dhor*, Gray

A young specimen from Kampong Jalor.

7. *Geocemyda spinosa*, Gray

A young specimen from Kampong Jalor, another from the Batang Padang district.

'Common in the flooded rice fields of the Patani States.'

8. *Testudo pseudemys*, sp. nov.

(Pl. IX)

Shell much depressed, its depth one-third to two-fifths its length; anterior and posterior margins reverted and strongly serrated; nuchal shield present, rather large, broader than long; supracaudal shields two, embracing a deep notch; discal shields concentrically striated and more or less concave; vertebrals much broader than long, at least as broad as the costals, the second, third, and fourth, with the antero-lateral side not half as long as the postero-lateral. Plastron large, gular region more or less produced and notched, hind lobe deeply notched; width of the bridge one-third to two-fifths the length of the plastron; pectoral shields meeting on the median line, the suture between them measuring one-seventh to one-third the length of that between the humerals; axillary shield very small, inguinal large. Head rather small; temporal arch narrow, slender, its width not more than one-fifth the diameter of the orbit; two large prae-frontal shields and a large frontal; jaws not hooked, not denticulate, the alveolar surface of the upper jaw with a feeble median ridge. Limbs with very large bony, imbricate tubercles, some of



TESTUDO PSEUDEMYX. ($\frac{1}{2}$ NAT. SIZE).

W. A. P. 1897

which, on the front of the fore limb and on the heel, are pointed and spine-like; a group of bony tubercles on the back of the thigh, the central ones very large and conical. Tail of male ending in a divided, claw-like bony tubercle. Yellowish or pale brown, dark brown or blackish on the periphery of the dorsal shields and on the anterior border of the marginals; young with the carapace speckled with blackish; plastron yellow or brown and yellow; head and limbs yellow, more or less variegated with dark brown.



FIG. 1. Skull of *Testudo pseudemys*. Two-thirds natural size.

These tortoises agree in colour and general appearance with the shell from Siam described by Dr. GUNTHER as *Geomyda impressa*, but they differ from it, as well as from all specimens of *Testudo emys* examined by me, in having the antelateral side of the vertebral shields so much shorter than the postero-lateral. The skull of *Geomyda impressa* is unknown, but that of *Testudo emys* and that of *Testudo phayrii* differ from that of *Testudo pseudemys*



FIG. 2. Skull of *Testudo emys*. Two-thirds natural size.

in the much wider temporal arch, as may be seen by the annexed figure, taken from a specimen from Sarawak.

Two specimens, from the Batang Padang district, South Perak (1,000 feet to 2,000 feet), in the collection, the shell of the larger measuring 255 mm., that of the other 100 mm. I have besides examined a specimen from the Larut Hills, Perak (4,000 feet altitude), obtained by Mr. A. L. BUTLER in 1900, and a young specimen from Thao, Kasia Hills (3,200 feet

to 4,500 feet), collected by the late Mr. L. FEA, and which I first referred to *Testudo emys*.¹

I have lately examined a rather large number of specimens of *Testudo emys*, from the Malay Peninsula and from Borneo, and doubts, similar to those expressed by Dr. VON LIDTH DE JEUDE,² have arisen in my mind as to the specific identity of *Testudo phayrii* and *Geoemyda impressa*. The type of the former having been carefully figured by ANDERSON,³ and the skull of its co-type by GRAY,⁴ it is possible to form a correct idea of the specimens with which to compare the new material. Both the tortoises brought home by Messrs. ANNANDALE and ROBINSON agree with *Testudo phayrii* in the shape and proportions of the plastral shields, and in having the nuchal shield much wider than long, but the carapace is more flattened, more of the lateral marginal shields being visible when the shell is viewed from above, and the second and third vertebral shields have a different shape, their antero-lateral borders being much shorter than the postero-lateral. The greater depression might be merely due to age, the type of BLYTH's species measuring 510 mm. in shell-length. As to the second differential character, it appears to me to be of specific importance, and, coupled with the difference in the temporal arch, suffices to separate *T. pseudemys*.

In all the specimens,⁵ four in number, which agree with *T. emys* in having the pectoral shields of plastron more or less widely separated from each other, the antero-lateral border of the second and third vertebral shields is as long as the postero-lateral, or but slightly shorter; this is quite irrespective of the great difference in shape which these shields undergo with age, the shells at my disposal varying from 120 to 480 mm. in length. With one exception (the type of *Manouria fusca*, GRAY, from Penang), all these specimens have the nuchal shields as long as broad, or longer than broad.

Judging from the figure given by GRAY, the skull of *T. phayrii* is identical with that of *T. emys*; and as the extent of the pectoral shields is a character subject to considerable variations according to ANDERSON, whose figures show a gradual passage between the two extreme types, I think it best to provisionally maintain the species *T. emys* in the sense in which I have taken it in the *Catalogue of Chelonians* published in 1889.

‘The two specimens of *Testudo pseudemys* were taken on a jungle path at dusk, within a few yards of one another. When alarmed they drew in their

1. *Ann. Mus. Genova* (2) xiii, 1893, p. 312.

2. *Notes Leyd. Mus.* xvii, 1895, p. 197.

3. *Proc. Zool. Soc.*, 1871, p. 426.

4. *Proc. Zool. Soc.*, 1869, p. 470 (*Scapula falconeri*).

5. Mostly from Borneo; three from Penang, two from the Larut Hills, Perak.

heads, but when lifted from the ground became very vicious, hissing, stretching out their necks and attempting vigorously to bite, their whole demeanour differing from that of specimens of *T. emys* I have seen in captivity in the Malay Peninsula.'

9. *Testudo elongata*, Blyth

Kampong Jalor.

'Several specimens were brought us by natives at Kampong Jalor, and they said it was common among the granite rocks of a hill in the neighbourhood, named Bukit Bubu (Bald Hill), never being found in the vicinity of water. They called it *kura-kura mas*, or 'gold tortoise,' because of the bright yellow colour of parts of the shell. In life the soft parts are of a pallid and slightly yellowish flesh-colour, and in all the specimens we saw, the nose was pink and inflamed, owing to the head and neck having been used as a lever to right the animal when it had been turned on its back.'

CHELONIDAE

10. *Chelone mydas*, L.

11. *Chelone imbricata*, L.

Both the green turtle and the hawksbill occur at the mouth of the Patani River. 'Their eggs, a perquisite of the Malay raja, are collected in enormous numbers, both on Cape Patani and more especially on certain small islands off the coast, a little to the north; but it is difficult to know what the turtles feed upon here, as the sea in these parts is almost devoid of sea-grass and large algae.'

EMYDOSAURIA

CROCODILIDAE

12. *Tomistoma borneensis*, Schl. & Müll.

A gavial-like crocodilian was observed by Mr. ROBINSON, lying on a log in the Sungkei River, between Jeram Kawan and Sungkei, South Perak.

13. *Crocodilus porosus*, Schn.

Jambu, Jhering.

'The distribution of this crocodile in the Patani States is somewhat local, probably because it needs muddy banks on which to sun itself. It is abundant on the Jambu River, which is little more than a tidal creek, the larger specimens, as a rule, staying some distance up stream, but occasionally descending to the sea. On the lower reaches of the Patani River it is scarce,

1. *Kura-kura* is their general name for tortoises, but the large species of *Cyclemys* are called *lelagu*, while land tortoises are known as *baning*, and the Trionychidae as *labi-labi*. N. A.