

low, varied with black beneath; the hinder margin entire. Vertebral plates bluntly keeled in front; the first pentangular, twice as long as broad, narrow in front, and gradually narrower and truncated behind; the second elongate, suddenly narrowed and produced behind and rounded at the end; the third smaller than the second, pentangular, notched in front, narrow, acute, with a sharp prominent keel behind; the fourth elongate, oblong, twice as long as broad, six-sided, suddenly contracted and produced in front.

*Hab. Assam.*

This species is most like *Pangshura tecta*; but the shell is much more ventricose, and the first vertebral plate is much narrower and longer compared with its width, and the second vertebral plate is very differently shaped, as is also the fourth; but this may be an unusual variation. But the lightness, thinness, and ventricose character of the shell marks it as a peculiar species. The fourth, sixth, eighth, and especially the tenth marginal shields have the upper edge produced and more or less extended up between the sutures of the costal shields.

5. On the Family *Dermatemydæ*, and a Description of a living Species in the Gardens of the Society. By Dr. J. E. GRAY, F.R.S. &c.

(Plate XLII.)

Mr. Bartlett has sent to me to-day (August 6th) four living freshwater Tortoises to examine and name, recently purchased for the Society's collection, which, I am informed, came from the Laguna de Terminos in Yucatan.

They consist of two specimens of *Cinosternon* with a black head and a yellowish spot over the nose (but as yet I must own I do not know the characters of the species of this genus), an adult specimen of *Emys ornata* (the latter animal would not extend its neck, so that I could not see the colour of his head and neck; but it snapped most furiously at every thing that came within a few inches of it, and as rapidly withdrew its head), and a young specimen of what I take to be *Dermatemys abnormis* of Mr. Cope, which has not before come under my observation.

In the 'Proceedings' of the Society for 1847, p. 55, I described the shell of a large freshwater Tortoise which had been presented to the Society by Lieut. Mawe, R.N., who found it in "South America" in 1833, under the name of *Dermatemys mawii*. It is peculiar, having the sterno-costal suture covered with four large distinct plates; and I stated that it in this respect agreed with *Platysternon*, but that it had a very differently formed shell and had much the external appearance of *Phrynops geoffroyi*, but there was no appearance of any scar on the inner surface of the sternum for the attachment of the pelvis, and that it had no intergular plate.

PROC. ZOOLOG. SOC.—1870, No. XLVIII.

The shell here described was presented to the British Museum by the Zoological Society, and is figured in the 'Catalogue of Shield Reptiles in the British Museum,' tab. 21.

In the 'Catalogue of Tortoises in the British Museum,' and in the 'Catalogue of Shield Reptiles,' I formed a particular section in the family *Emydæ* for *Platysternon* and *Dermatemys*, because they had these additional plates on the sterno-costal suture. The group contains two families: the *Dermatemydæ* are essentially water Tortoises, with broadly webbed feet; the *Platysternidæ* are amphibious, and they have strong narrowly webbed toes and the front of the fore legs covered with large plates.

M. Auguste Duméril, in the 'Catalogue Méthodique des Reptiles' described, in 1851, a species under the name of *Emys berardii* from two specimens in the Museum of Paris, said to have come from South America. In the 'Archives' of the museum, vol vi., for 1852, he redescribes and figures the species, observing that one of the specimens in the Museum was received from "Lieut. Maw." This must have been obtained from the Zoological Society, and is doubtless a fellow specimen to the one I described, and is said to have come from South America without any special habitat; and the other was brought by Captain Berard directly from the fresh waters of "Vera Cruz, Mexico." This species is very briefly and indistinctly described in both works, and the figure is by no means good. Probably M. Berard's specimen must be in a bad state; for the shell is described as covered with fine "irregular rugosities." The indications of division of shields, especially the dorsal ones, are very indistinct.

He figures the mouth, showing the alveolar surfaces of both jaws (t. xv. f. 4), but does not describe it. In the form of the mouth and the obscure streak from the back of the head, and the gular plate showing no indications of a central suture, it agrees with the specimen now in the Zoological Gardens, but is evidently an old specimen, while that which we have is young. M. Duméril does not take any notice, either in the description or figure, of the existence of any sterno-costal shields; indeed the sutures of them seem to be entirely obliterated in the aged specimen he figures; and he separates it from the *Emys trivittata* (that is, an Indian *Batagur*) by the absence of the three black bands and the difference of its origin.

Professor Owen in 1853, in the 'Monograph of the Fossil Chelonians of the Wealden Clay and Purbeck Limestone,' published by the Palæontological Society, published a genus under the name of *Pleurosternon*, which he characterizes thus:—"Testa depressa, lata, complanata; sternum integrum, ossibus undecim compositum, per ossicula marginalia cum testa conjunctum, scutis submarginalibus inter scuta axillaria et inguinalia positis." He does not make any reference to my genus *Dermatemys*; but the character here given is the exact counterpart, though in other technical terms, of that genus which was published four years previously; but in the description of one of the species he observes:—

"In addition to the axillary and inguinal plates there are three

scutes, and the under borders of the fifth, sixth, and seventh marginal scutes; these superadded scutes I propose to call 'submarginal scutes.' The *Platysternon megacephalum*, or large-headed Terrapin of the Chinese swamps, presents a corresponding but single supplementary 'submarginal scute' upon the under part of each lateral production of the plastron." This statement about *Platysternon* is entirely erroneous; for that genus, as well as *Dermatemys* and *Pleurosternon*, has three small "submarginal scutes" between the abdominal and marginal plates (see Proceedings of the Zoological Society, 1831, p. 106, where the genus was originally described, and the 'Catalogue of Shield Reptiles,' p. 49). The *Pleurosterna* are found in the freshwater limestone of Purbeck; and Professor Owen divides them into four species. I am still inclined to retain the genus, and I think that probably, when we have more materials, we shall find that the fossil genus will form a distinct group of the family.

Mr. Agassiz, in his 'Contributions to the Natural History of the United States,' published in 1857, probably misled by Duméril's figure, observes:—" *Emys berardi*, Dum. et Bib., seems also to belong to this genus (*Ptychemys*), judging from the description and figure of the jaws published by A. Duméril, 'Archives du Museum,' vol. vi. p. 251, t. 15" (vol. i. p. 434).

The British Museum having received from Mr. Salvin a specimen of *Dermatemys*, which he obtained in Guatemala, I published in the 'Proceedings of the Zoological Society,' 1864, p. 125, a history of the genus and a description of the animal, which, unfortunately, was not in a very good state, as it had accidentally got dry through the evaporation of the spirit and had again been placed in spirit.

In the 'Proceedings of the Academy of Natural Sciences' for 1868, p. 119, Mr. Cope describes a new species under the name of *D. abnormis*, from the Belize River, Yucatan, sent by Dr. Parsons, which differs in having the gular plates united and the vertebral plates broader than long. He observes that one species of *Dermatemys*, the *D. mavei*, is recognized by Dr. Gray as inhabiting Venezuela and Mexico. The same species, according to the same author, has been subsequently named *Emys berardii* by Prof. Duméril; and he further remarks, "I have not had an opportunity of seeing South-American specimens; but the excellent figure and descriptions of Gray render it certain that the individuals from that country, on which the species are based, really belong to another species from those of Mexico. The collection of the Smithsonian Institution furnishes another species from Belize, which I have hitherto identified as the same; the species may be thus distinguished." In a table he gives the characters by which he proposes to discriminate three species, *D. abnormis*, *D. berardii*, and *D. mavei*.

I do not know why he described his second species under the name of *D. berardii*; for none of the characters which he gives to his species are to be found either mentioned in M. Duméril's descriptions or shown in M. Duméril's plate. I have no specimen possessing such characters as he gives to the species.

I believe that the genus *Dermatemys* will be the type of a new family, which may be called *Dermatemydæ*, and thus characterized.

#### Fam. DERMATEMYDÆ.

Skull:—the head moderate, rather high, covered with a thin, soft, continuous skin; temples with small polygonal shields; zygomatic arch distinct; tympanum large, covered with a granular skin. Eyes lateral; iris circular, narrow. Nose produced, conical; nostrils apical, flesh-coloured. Beak strong: upper beak coloured like the skin of the head, hard; lower beak strong, hooked in front. Alveolar surface of the upper jaw with a triangular ridge parallel to the outer edge of the jaw, and with a short separate transverse ridge in front, separated from the front of the beak by a deep pit. Lower jaw with three or five strong teeth in front, which fit into the pit in front of the upper jaw. The alveolar surface flat, with a deep central groove along each side. Chin not bearded. Thorax oblong, the hinder edge expanded and slightly reflexed, covered with very thin, membranaceous shields, which have the areola in the young animals on the hinder margin. Sternum flat, united to the margin by a bony symphysis, rounded in front and notched behind. Sternal shields twelve, very thin, membranaceous. The gular plates small, triangular, sometimes united into a single plate, with three additional intramarginal plates on the suture between the triangular axillary and the band-like inguinal plates between the small abdominal and marginal plates. The cavity of the shell scarcely contracted at the opening. The legs short, fringed on the outer side, granular. Toes weak, broadly webbed. Tail short, thick, angular, with ridges of spines and a horny tip.

The head of these animals has much the appearance of *Batagur*, and the shell has a certain resemblance to those of that genus.

The form of the sternum might be mistaken for that of an *Hydraspis*; but it will be found that what looks like the intergular plate is, in fact, the small gular plates, which are sometimes separate, but usually united together, there being only six pairs of plates, without any anterior additional one.

#### *Synopsis of the Genera.*

1. DERMATEMYS. Crown flat. Vertebral shields elongate, the first the shortest. The gular plates separate or united.
2. CHLOREMYS. Crown convex. Dorsal shields wider than long. The gular plates united.

#### 1. DERMATEMYS.

Head flat above, rather keeled on the sides. The crown narrow and produced behind. Temples with small polygonal shields. Thorax convex. Nuchal shield distinct, short. First vertebral plate as broad as long; second, third, and fourth longer than broad; the fifth narrow and produced in front, broad behind. Gular plates

small, separate or united together into one plate. Intramarginal plates three on each side; the hinder in contact with the abdominal and femoral plates. Abdominal plate long. Axillary plate distinct. Tail conical, with a central ridge of spines on its upper surface, and some scattered tubercles on the sides converging towards the point.

### 1. DERMATEMYS MAWII.

Gular plates very small, separate.

*Dermatemys mawii*, Gray, P. Z. S. 1847, p. 56; Cat. Shield Rept. p. 49, t. xxi.

*Dermatemys mawei*, Cope, Proc. Acad. Nat. Sc. Phil. 1868, p. 120.

*Hab.* South America (*Mawe*).

B.M.

### 2. DERMATEMYS SALVINII.

The gular plates united into a single narrow triangular plate; sides of the head and neck and upper surface of the feet olive, darker-spotted. In spirits.

*Dermatemys salvinii*, Gray, P. Z. S. 1864, p. 126 (animal).

*Hab.* Guatemala (*Salvin*).

B.M.

I cannot see any other difference between these two species except the form and union of the gular plates. I believe this is permanent; but we require more specimens to establish the fact. The head and sides of the neck of Mr. Salvin's specimen, in spirit, are pale olive with numerous darker spots; and the feet have some similar spots. There is a little difference in the size of the intermarginal plates of the two specimens, but not more than shown on the two sides of Mawe's original specimen.

Mr. Cope describes his *T. berardii* thus:—"One gular, and an intergular behind it; four or five inner marginals, the posterior in contact with femoral and abdominal; when only four, the median elongate; vertebral scuta much longer than broad; no dorsal keel; abdominal scuta equal or broader than those adjoining." I suppose that this character is from a Mexican specimen. M. A. Duméril's plate does not show any of them. The existence of any gular plate would indicate an irregularity in the specimen, or a structure which has not hitherto occurred to me, and, if normal, would remove the species to *Hydraspidae*.

### 2. CHLOREMYS.

Head rather convex above. Thorax rather depressed, broad. Nuchal shield distinct and short. Vertebral plates keeled; the first as broad as long; the second, third, and fourth broader than long; the fifth rather narrowed in front. The gular plates small, united into one narrow triangular shield. The intramarginal plates three on each side; the hinder largest and not, or only slightly, in contact with the femoral plate. Axillary plate triangular. Inguinal band-like, transverse. Tail conical, very short, granular.

The intramarginal plates are sometimes divided in halves on one or both sides.

**CHLOREMYX ABNORMIS.** (Plate XLII.)

Animal and shell olive above and white below; upper part and sides of the head and neck blackish olive, with a pale streak from the back of the eye, over the ear, along the side of the neck.

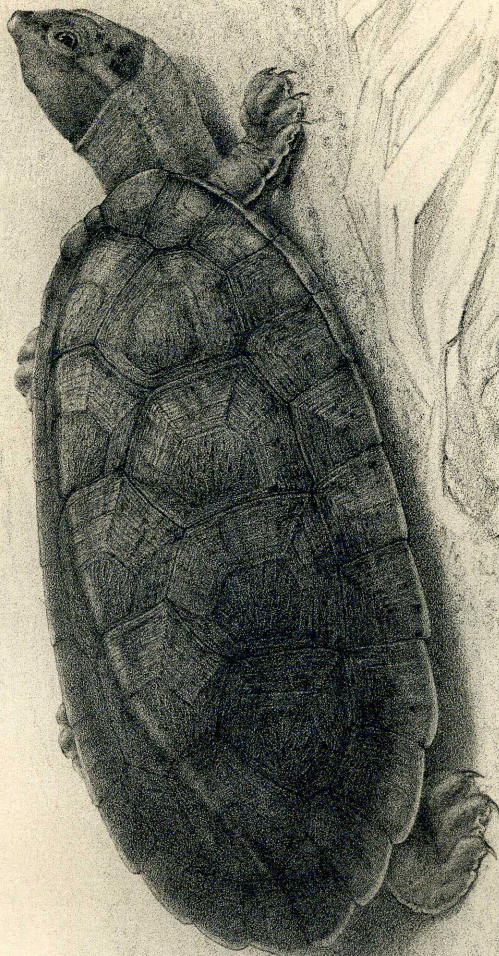
*Dermatemys abnormis*, Cope, Proc. Acad. Nat. Sc. Philad. 1868, p. 120.

*Hab.* "Yucatan, Belize River (*Dr. Parsons*)."

Mr. Cope's, as well as the one in the Gardens, is a young specimen; but he observes, "I cannot suppose the vertebral scutes become as narrow or the carapace as fully ossified in maturity as in the other species." In the colouring of the head it resembles the figure of *M. Auguste Duméril*, but not in any other character.

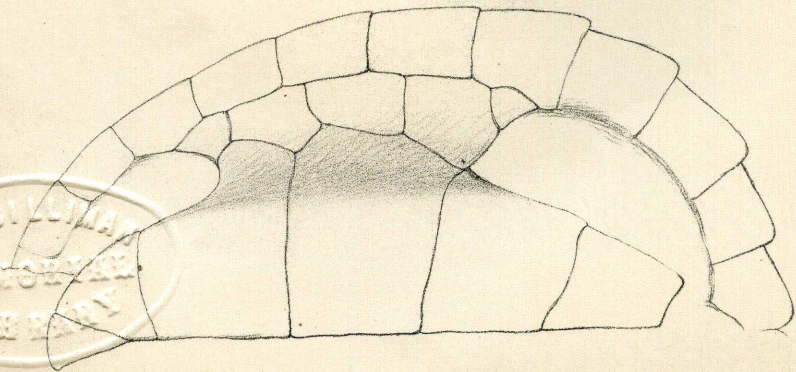
The young living specimen in the gardens of the Society, about 4 inches long, is dull olive-brown above, and pale yellowish beneath. The lower surface of the marginal plates olive, the sternal and submarginal shields being uniform white. The tail is very short, conical, rudimentary. Head black-olive; the end of nose red; the upper beak is of the same colour as the head, and looks as if covered with skin; but this is not the case, for it is very hard. The lower beak paler. There is a very indistinct, broad, rather irregular pale streak from the back edge of the eye along the back of the neck. The nuchal plate very small. Dorsal scutes very thin. The areolæ large, granular; those of the vertebral plates in the middle of the hinder margin of the shield; those of the costal plates rather above the middle of the hinder margin of the shield; of the marginal plates on the hinder outer margin of each shield as visible below as above, rather on the outer edge of the middle of the hinder part of the sternal plate, and quite on the hinder outer margin of the intramarginal plates. The skin of the neck and feet covered with small scales. The outer edge of the legs with a well-marked fringe; the front edge of the fore legs with numerous, very narrow, slightly curved band-like shields. The toes slender, covered above with narrow band-like plates, very broadly webbed to the claws. Claws 5.4, black, slender, and acute. Pupil black, surrounded by an olive iris, without any black spot on the side as in American *Terrapins*. The submarginal plates seem liable to vary in form and number; for in this specimen they differ on the two sides. On the right side there are seven: the first, which is probably an axillary plate, is small; then follow three moderate-sized, the middle one of which is divided across (this is clearly an accidental division); then there is a small triangular plate between the last and the transverse band-like inguinal plate. On the left side, which I should say had the normal structure, there is a rather larger axillary plate: three submarginal plates, the hinder being the largest, and a transverse band-like inguinal plate.





Monter Brœ imp.

CHLOREMYS ABNORMIS.



G. H. Ford.

