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3. ON SOME NEW SPECIES OF FRESHWATER TORTOISES FROM NORTH AMERICA, CEYLON AND AUSTRALIA, IN THE COLLECTION OF THE BRITISH MUSEUM. BY DR. J. E. GRAY, F.R.S., F.R.G.S. ETC.

Fam. I. EMYDIDÆ.

The freshwater Tortoises which have been referred to the genus EMYs, as it is at present constituted, may be divided into two very distinct genera; and this is the more advisable as it is extremely difficult to distinguish the American species of which it is composed, and the separation of any of them by organic characters must facilitate the process. The genera may be thus named and defined:—

1. EMYs.

The lower jaw rounded beneath, and covered with, the hinder part of the horny beak; the toes strong, covered with broad band-like scales.

This genus includes *E. ornata*, *E. scripta*, *E. Holbrookii*, and many other species, both Asiatic and American.

2. PSEUDEMYs.

The lower jaw flattened beneath and covered with a soft skin. The toes weak, slender, covered with small scales above, and very broadly webbed.

1. *Pseudemys concinna*.

2. *P. serrata*.

The genera *Batagur* and *Malaclemys* have nearly similar feet, and they appear, like *Pseudemys*, to be the most aquatic animals of the family.

The species which have hitherto been referred to the genus CISTUDO differ considerably in their habits, some being nearly terrestrial and others almost exclusively aquatic. The examination of the animal shows that there are good external characters by which they may be divided into natural groups agreeing with their habits and their geographic distribution.

I. The more terrestrial have the front of their legs covered with thick, imbricate, triangular scales, the toes only slightly webbed, and the sternum broad, hiding the legs when withdrawn, as—

1. CISTUDO.

The head rhombic, the forehead flat, and eyes lateral: confined to N. America; as

C. Carolinensis, with four, and *C. Mexicana*, with only three toes on the hind feet.

2. LUTREMYs.

The head oblong, depressed, with the eyes on the upper part of the cheek. Found in Europe, as *L. Europæa*.

II. The more aquatic kinds have the front of the legs covered with small scales and some broad, transverse, lunate plates; the toes webbed. They are confined to Asia; as

3. CUORA.

The head rhombic, the eyes lateral, the sternal lobes broad, hiding the legs when contracted, as *C. Amboinensis* and *C. trifasciata*.

4. CYCLEMYS.

The head depressed, eyes subsuperior, the sternal lobes rather narrow, not hiding the legs when contracted, as *C. dentata* and *C. platynota*. The latter species was referred to the genus *Testudo* by F. Müller, and when I first described it I considered it as an *Emys*, but the examination of a series of specimens of different ages shows that it is a species of Box Tortoise nearly allied to *C. dentata*.

It has been hitherto believed that there was only a single species of the genus KINOSTERNON, as now restricted, found in the United States; and all the adult specimens I have received from that country are, I must own, exceedingly alike, so much so that I cannot undertake to say that we have adult specimens of more than a single species. On examining the young specimens of this genus from the United States, in the Museum Collection, it is evident that there are at least three most distinct species found in that country, which probably in their eroded and discoloured adult state are so alike as to be mistaken for one another.

They may be thus described:—

1. KINOSTERNON PENNSYLVANICUM.

Head brown-dotted; temples with two parallel distant streaks of white spots, from the upper and lower edge of the orbit, and a third streak across the lower jaw; neck white-dotted; back deep brown; lower side of marginal shields, the axillary and inguinal plates and each of the sternal plates with a large yellow spot; sternum broad, rounded before and behind.

Hab. North America, Florida, *E. Doubleday, Esq.*

2. KINOSTERNON HIPPOCREPIS.

Head brown, with a broad white streak on each side, from the end of nose over the eyebrows to the sides of the nape; back pale and sternum brown; dorsal shield with a single apical and some scattered black spots; under side of each marginal and sternal plate rather paler in the middle; sternum rather broad, rounded in front and slightly truncated behind.

K. Pennsylvanicum, Holbrook, N. Amer. Herp. t. 21.

Hab. North America, New Orleans, *E. Doubleday, Esq.*

3. KINOSTERNON PUNCTATUM.

Head brown, minutely white-dotted, without any streaks; the back brown, discal shield with a very distinct apical, and some scattered black spots; margin with a very narrow white line; under side whitish,

with minute scattered black dots and line; sternum narrow, contracted at each end, and with straight sides behind, rather truncated in front and more distinctly and broadly so behind.

Hab. North America.

There are several specimens of the first species of different ages, from various parts of the States, in the British Museum; I have therefore retained for it the more general name; and two young specimens and a half-grown one of the second species, and only a single young specimen of the third species; the latter is so distinct, by the narrow form of its sternum, from the other two, that it might be referred to the genus *Aromochelys* if the pectoral plates were not triangular; it may be considered as the species passing towards that genus, and I should think that the adult animal must differ considerably from the common form of *K. Pensylvanicum*.

AROMOCHELYS.

The Musk Tortoise, or, as it is more commonly called, the Stinkpot of North America, is easily distinguished from the other *Kinosterna* by the narrowness of the sternum and the humeral plates being square, like the pectoral one, instead of triangular, as they are in *K. scorpoides* and *K. Pensylvanicum*. For this reason I have proposed to divide them into a distinct group under the name of *Aromochelys*.

I am the more inclined to do so, as there are two most distinct species in the British Museum Collection, which have either been confounded together by the American naturalists, or have been most unaccountably overlooked. They may be thus defined:—

1. AROMOCHELYS ODORATA.

Head moderate, with two streaks from the nose, one above and the other under the eyes, to the side of the neck; the back oblong-convex, the vertebral line rather flattened; the gular plate small, triangular, the humeral plate rather oblique, shield brown, purple-brown spotted.

Holbrook, N. Amer. Herpet. t. 22.

Hab. United States and Louisiana.

2. AROMOCHELYS CARINATA.

We have four specimens of this species in the Museum Collection. Cat. Tortoises B.M. t. 20 a.

Head very large, black-dotted, without any lateral streaks; back oblong, very high, the vertebral line high and acutely keeled the whole length, shields grey-brown, spotted and lined with purple-brown; the gular plate very small, linear, transverse marginal, the humeral plate square, transverse, parallel to the pectoral plates.

Hab. North America, Louisiana.

There are two species of North American Tortoise which are referred to the genus CHELYDRA, which are so differently organized that they are evidently the types of two very distinct genera, which may be thus characterized:—

1. CHELYDRA.

Head moderate, rather depressed, covered with a soft skin, chin bearded, neck granular; back with two slight keels; marginal plates in a single series.

Chelydra serpentina.

2. MACROCHELYS.

Head large, angular, contracted in front, covered with symmetrical horny plates, neck with several series of spinose warts; back with three sharp continued tubercular keels; the lateral marginal plates in a double series.

M. Temminckii.

Fam. II. CHELYDIDÆ.

When Australia was first visited by Sir Joseph Banks, he brought home with him from New Holland a freshwater Tortoise, which Dr. Shaw described under the name of *Testudo longicollis*. This has been made the type of the genus CHELODINA. Recent travellers in Australia have shown that the genus is distributed over the country; each part appears to have a species peculiar to itself. In Capt., now Sir George Grey's Travels, I described and figured a species from Western Australia under the name of *Chelodina oblonga*. In a collection which we have lately received from Haslar Hospital, there are two very large specimens of the genus sent from Swan River by the late Mr. Collie, which, though similar in several respects to *Chelodina oblonga*, may be considered as a distinct species, which I shall proceed to shortly characterize.

The species of the genus hitherto described have the thorax covered with very thin smooth shields, so transparent that a peculiar black reticulated appearance, which exists between the shields and the bones of the thorax, can be distinctly seen through them. This character is common to *C. longicollis* of New Holland, *C. oblonga*, and Mr. Collie's species from Swan River, which I propose to call, in honour of my late friend and excellent collector—

1. CHELODINA COLLIEI.

The shield oblong, elongate, contracted and revolute on the sides; under side uniform pale yellow.

Hab. Swan River, *Alexander Collie, Esq.*

This species agrees with *C. oblonga* in the uniform colour of the back and sternum, which is only varied by the dark lines of the netted appearance before referred to; but it is easily known from that species by its larger size, the much narrower shape, and the lateral margin becoming strongly revolute, and the edge over the hinder limb raised up and rather expanded.

The British Museum have lately received, with some other specimens, from the Australian continent—but unfortunately the special habitat was not indicated—the shell of a Tortoise which has all the characters of the genus as at present defined, except that, instead of

the shields on the thorax being thin, submembranous and semitransparent, they are thick, horny and concentrically grooved like the shields of many other genera. It is not accompanied by the head or limbs of the animal, so we have not the means of determining if they offer any characters which, with the peculiar structure of the shell, might render it desirable to form it into a separate genus. It may be defined and thus named :—

2. CHELODINA SULCATA.

Shell depressed, roundish ovate, brown; shield horny, thick, distinctly concentrically grooved.

Hab. Australia.

Fam. III. TRIONYCIDÆ.

The species of this family, which have the hind legs covered with moveable flaps affixed to the sides of the hinder lobe of the sternum, named *Cryptopus* by MM. Dumeril and Bibron, may be divided into two very distinct geographic genera.

1. EMYDA, Gray.

The margins of the upper shield strengthened with bones; the sternum with three pairs of callosities and a small odd one behind the anterior pair. Asia.

2. CYCLANOSTEUS, Peters.

The margin of the upper shield flexible, without any bones; the sternum with four pairs of callosities and an odd one behind the two anterior pairs; the pair on the hinder lobes small, far apart. Africa.

It has been usually stated that the only known species of the genus EMYDA was generally distributed over India; we have in the British Museum specimens only from the Valley of the Ganges. The young specimens all agree in the head and shell being variegated.

We have lately received a specimen of this genus from Ceylon, collected by Mr. Thwaites, which differs in both the above particulars; and in the Museum of the Society there is the shell of an adult animal, sent home from Ceylon by Dr. Kelaart, which shows that it is a most distinct species. They may be thus characterized :—

1. EMYDA PUNCTATA.

Back and upper part of the head pale spotted; the odd anterior callosity small, roundish triangular; the hinder callosity of adult ovate, inner edge semicircular; of young triangular, far apart.

Hab. India, Ganges.

2. EMYDA CEYLONENSIS.

Back and upper part of the head (in spirits) dull pale olive; lips, chin and lower part of the body whitish. The odd anterior sternal

tubercle large, oblong, transverse; the hinder pair of callosities large, close, in adult nearly united, with straight parallel inner edges.

Emyda punctata, Kelaart, Prod. Faun. Ceylon. 179.

Hab. Ceylon.

Dr. Kelaart, in his work on the Ceylon animals, was not aware of the distinctness of this animal from the continental species; he observes that the head is black-lined when alive.

The new species described in this paper will be figured in the Illustrated Catalogue of Tortoises in the Collection of the British Museum, which will shortly be published.

4. DESCRIPTIONS OF TWENTY-THREE NEW SPECIES OF ACHATINELLA, COLLECTED BY MR. D. FRICK IN THE SANDWICH ISLANDS; FROM MR. CUMING'S COLLECTION.

BY DR. L. PFEIFFER.

Sect. BULIMELLA.

1. *A. NOBILIS*, Pfr. *A. testa subimperfurata, dextrorsa, turrata, solida, striatula, nitida, fulvida vel griseo-virente, saturatius strigata; spira exacte conica, apice alba, acuta; sutura leviter marginata; anfr. 6½—7 planiusculis, ultimo 2/5 longitudinis subæquante, infra medium obsolete subangulato; apertura obliqua, obauriformi, intus alba; perist. expansiusculo, margine dextro intus late labiato, columellari subadnato.*

Long. 23, diam. 11 mill.

Hab. Oahu.

2. *A. HANLEYANA*, Pfr. *A. testa subrimata, dextrorsa, globoso-conica, solida, lævigata (sub lente exilissime spiraliter striata), nitida, fulva, castaneo-radiata; spira conica, apice minuto, corneo; sutura filo crenulato marginata; anfr. 6, superis planis, sequentibus modice convexis, ultimo spiram fere æquante, rotundato; apertura obliqua, truncato-auriformi, intus alba; plica colum. supera, valida, dentiformi; perist. intus labiato, margine dextro breviter reflexo, columellari dilatato, calloso, subadnato.*

Long. 18, diam. 11 mill.

Sect. NEWCOMBIA.

3. *A. ZEBRINA*, Pfr. *A. testa imperfurata, dextrorsa, tenuiuscula, lævigata (sub lente minutissime decussata), nitida, albida, strigis fulgurantibus nigro-castaneis elegantissime picta; spira subturrata, apice obtusa, fusca; sutura filomarginata; anfr. 5 modice convexis, ultimo 3/4 longitudinis fere æquante; apertura vix obliqua, truncato-oblonga, intus lilacina; plica colum. supera, torta, callosa, vix prominente; perist. simplice, recto, fusco-limbato.*

Long. 12½, diam. 6 mill.