

Fishes.—Evermann has revised⁴ the North American Suckers of the genus *Pantosteus* and recognizes the species *plebeius*, *virescens*, *generosus*, *discobolus* and a new species *jordani* from the upper Missouri Basin.

Reptiles and Batrachia.—Cope catalogues⁵ eight species of Batrachia, 5 of turtles, 8 of lizards and 13 of snakes collected in northwestern Texas. The region appears to be interesting as the meeting ground for several geographical districts. The absence of *Sceleporus* from the collections is due to the absence of timber.

Davenport records the persistence⁶ of the right root of the subvertebral artery in an alligator 28 cm. long, and figures two cases of the persistence of the ductus botalli in the same animal.

Mammalia.—At a meeting of the London Zoological Society, M. Tegetmeier exhibited the feet of some Australian rabbits to show an adaptation which is gradually being brought about to a new mode of locomotion. The rabbits are becoming climbers, and often ascend trees in their search for food; their feet are growing slighter and the claws longer and sharper. (*Revue Scientifique*, Mar. 1893.)—Mr. G. S. Miller reports that *Zapus insignis*, hitherto known only from New Brunswick and Nova Scotia, is locally common in the eastern United States. As the original description was based on three specimens faded by grease and age, he redescribes the species in the *Proceeds. Biol. Soc. Washington*, April, 1893.

Notes on the Classification of the Cryptodira.—In the June number of the AMERICAN NATURALIST, 1890, I have given a classification of the Testudinata, distinguishing four sub-orders—*Amphichelydia*, *Pleurodira*, *Cryptodira*, *Trionychia*.

To-day I shall give a more detailed classification of the living forms of the Testudinata belonging to the Cryptodira.

CRYPTODIRA.

No free nasals, a parieto-squamosal arch present or absent; descending processes of prefrontals connected with vomer; stapes in an open groove, of the quadrate or covered by the quadrate behind; pterygoids narrow in the middle, without wing-like lateral expansions, separating

⁴Bull. U. S. Fish Comm. 1892, p. 51, 1893.

⁵Proc. Phila. Acad. 1892, p. 331.

⁶Bull. Mus. Comp. Zoology xxiv, no. 2, 1893.

quadrate and basisphenoid; epipterygoid free or not free; dentary bones united. Cervical vertebræ with rudimentary transverse processes in front of vertebra; the posterior cervicals with double articular faces; sacral ribs well-developed and connected with centrum and neuroids. Pelvis free from plastron and carapace. Epiplastra in contact with hyoplastra; entoplastron oval, rhomboidal or T-shaped, a more or less complete series of peripherals more or less connected with the ribs.

I.—CHELONIOIDEA.

A parieto-squamosal arch; no foramen palatinum between palate and maxillary; articular faces between the sixth and seventh cervical plane; nuchal with a distinct process on the lower side for the articulation with the neuroid of the eighth cervical; no lateral processes of nuchal. One biconvex cervical vertebra.

1. *Cheloniidæ*.

Skull with descending processes of parietals; limbs paddle-shaped; claws one or two. *Chelonia*, *Thalassochelys*, *Caretta*, *Lepidochelys*.

2. *Dermochelyidæ*.

Skull without descending processes of parietals; limbs paddle-shaped; no claws. Bony carapace dissolved into numerous mosaic-like pieces. *Dermochelys*.

II.—CHELYDROIDEA.

No parieto-squamosal arch; a foramen palatinum between palate and maxillary; articular faces between the sixth and seventh cervicals not plane; nuchal without lower process, but with more or less strong lateral process underlying the peripherals; one biconvex cervical; a complete series of inframarginals.¹

1. *Dermatemydidæ*.

Frontals not excluded from orbit; maxillary without connection with quadratojugal; squamosal without connection with postfronto-orbital; mesogastroid well-developed, separating completely entopubes and entoischia; number of peripherals 11; an entoplastron. Number of neuralia incomplete; the posterior pleurals not meeting in median line. *Dermatemyis*.

2. *Chelydridæ*.

Frontals excluded from orbit; maxillary without connection with quadratojugal; squamosal in connection with postfronto-orbital; meso-

¹Some species of *Kinosternon* excepted.

gastroid well-developed, separating completely entopubes and entoischia; number of peripherals 11; an entoplastron. Number of neuralia complete; posterior pleurals meeting in median line. *Chelydra*, *Macrochelys*.

3. *Staurotypidæ*.

Frontals excluded from orbit; maxillary in connection with quadratojugal; squamosal without connection with postfronto-orbital; mesogastroid well-developed, separating completely entopubes and entoischia; number of peripherals 10; an entoplastron; number of neuralia incomplete; posterior pleurals meeting on median line. *Staurotypus*, *Claudius*.¹

4. *Kinosternidæ*.

Frontals excluded from orbit; maxillary in connection with quadratojugal; squamosal without connection with postfronto-orbital; mesogastroid reduced; number of peripherals 10; no entoplastron; number of neuralia incomplete; posterior pleurals meeting on median line. *Kinosternon*, *Aromochelys*, *Goniochelys*.

III.—PLATYSTERNOIDEA.

No parieto-squamosal arch; a foramen palatinum between palate and maxillary; articular faces between sixth and seventh cervical not plane; nuchal without lower and without a lateral process; two biconvex cervicals; a complete series of inframarginals. Skull of the type of the Chelydroideae.

Platysternidæ.

Frontals excluded from orbit; maxillary in connection with quadratojugal; jugal excluded from orbit; squamosal connected with postfronto-orbital; mesogastroid well-developed, separating completely entopubes and entoischia; number of peripherals 11; an entoplastron; number of neuralia complete. *Platysternum*.

¹ In *Claudius* the post-orbital arch is exceedingly slender; the parietal sends down a process behind the postfronto orbital to join the jugal. The zygomatic arch is also very slender, but three times as broad as the postorbital; the interorbital arch is one and a half times the diameter of the orbit. The lower jaw is strongly hooked, with the symphysis larger than the diameter of orbit. Upper jaw with a small but distinct hook, each maxillary with a very sharp lateral hook. Lower side of skull as in *Kinosternon*; palate not forming a part of the alveolar surface, the posterior nares not bridged over by palate and vomer as in *Staurotypus*. Pterygoids without any ectopterygoid process.

IV.—TESTUDINOIDEA.

No parietosquamosal arch; a foramen palatinum between palate and maxillary; articular faces between sixth and seventh cervical not plane; nuchal without lower process; two biconvex cervicals; an incomplete series of inframarginals; squamosal not connected with postfronto-orbital.

Emydidae.

Quadrates open behind; number of phalanges of second and third toe of hind foot more than two; peripherals of bridge without median processes interlocking with rib-ends; rib-ends in a groove of the peripherals.

Testudinidae.

Quadrates closed behind; number of phalanges of second and third toe of hind foot never more than two; peripherals of bridge with median processes interlocking with rib-ends.

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Two New Species of North American Testudinata.—

The following species of *Graptemys* have been described:

1. *Graptemys geographica*, Les. 1817.
2. *Graptemys pseudogeographica* (Les. MSS.), Holbrook, 1842.
3. *Graptemys oculifera*, Baur, 1890. *Science*, No. 405, pp. 262–263.
4. *Graptemys kohnii*, Baur, 1890. l. c.

GRAPTEMYS PULCHRA spec. nov.

For some years I have been acquainted with two specimens of a *Graptemys* preserved at the Smithsonian Institution. Both specimens were collected by Dr. T. H. Bean in Montgomery, Ala., and bear the number 8808. One of these is mentioned in Yarrow's Catalogue (*Bull. U. S. Nat. Mus.*, No. 24, 1883), as "*Malacoclemmys geographicus*." In 1891 I received a skull and a very large living specimen from Mr. G. Kohn, of New Orleans, La., of the same species.

The coloration of the skull and neck distinguishes this species at once from all the others. The whole space between and behind the orbits is characterized by a continuous yellow figure, which sends backward on each side behind each orbit a strong process of the same color.

The head resembles that of *Graptemys kohnii*, but is more slender. The symphysis of the lower jaw is longer and the nose projecting. In all the skulls examined the jugal is excluded from the orbit, a charac-