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LXXIX.—A synopsis of the sharks of the family Cestraciontidae

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Norfolk Broads; as the result I can unhesitatingly pronounce them to belong to the common species *C. lacustris*, originally discovered by Allman in the docks of London and Dublin.

This is the first record of the genus from Africa. In Lake Qurun the hydroid was found in a variety of positions: on water-weeds, on tamarisk-stumps, and on the under side of rocks and large stones at the water's edge; in the latter position, shaded from the light, the colonies reached their greatest development.

The chief feature of the *Cordylophora* from Lake Qurun is the great vigour of the colonies, the hydrocaulus in some attaining the height of 8 or 9 cm.; branches of the third order are common and as many as three or four gonophores are frequently found below one lateral hydranth. The great development of the colonies is no doubt due to the salinity of the water, which, although not very high (1·34 per cent.), evidently suits the hydroid admirably, and the *Cordylophora* certainly shows no tendency to invade the freshwater canals which enter the lake; I made a careful examination of reeds and logs of wood at the mouth of the "Wadi," and never found the hydroid in this situation.

Cordylophora lacustris has not been recorded from the Nile; its occurrence in the Birket el Qurun is therefore of great interest, the lake being nearly 150 miles inland, and at the present day without communication with the sea except by means of that river.

Geological evidence, however, shows that in late Pliocene times the depression in which Lake Qurun is situated must have been of the nature of a large brackish fjord in communication with the Mediterranean; it seems therefore possible that *Cordylophora* first established itself in the district at that period. This seems all the more probable when we consider the present habitat of the species in broads and estuaries.

LXXIX.—*A Synopsis of the Sharks of the Family Cestraciontidae.* By C. TATE REGAN, M.A.

THE Cestraciontidae may be diagnosed as sharks with two dorsal fins, each preceded by a spine, an anal fin, five gill-openings on each side, the last two or three above the base of the pectoral fin, oro-nasal grooves, and the pterygo-quadrate articulated to the præorbital region of the cranium.

Two genera may be recognized.

1. GYROPLEUROIDUS.

Gyropleurodus, Gill, Proc. Ac. Philad. 1869, p. 482.

Tropidodus, Gill, l. c.

Anterior teeth cuspidate. Lateral teeth carinate, longer but not much broader than the anterior ones; jaws rounded anteriorly, the rami divergent from the short symphyses; supraorbital ridges ending abruptly a little behind the orbits.

Three species.

Synopsis of the Species.

I. Length of first gill-opening equal to its distance from the third.

Origin of first dorsal a little in advance of the posterior

end of the base of pectoral. 1. *francisci*.
Origin of first dorsal far behind the base of pectoral 2. *quoyi*.

II. Length of first gill-opening not less than its distance

from the fourth 3. *galeatus*.

1. *Gyropleurodus francisci*.

Cestracion francisci, Girard, Proc. Ac. Philad. 1854, p. 196; Günth. Cat. Fish. viii. p. 416 (1870).

Gyropleurodus francisci, Gill, Proc. Ac. Philad. 1862, p. 492; Jord. & Everm. Bull. U.S. Nat. Mus. xlvii. 1896, p. 20.

Heterodontus francisci, Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, iii. 1878, p. 315, pl. xxvi.

Supraorbital ridges strong, nearly vertical. Origin of first dorsal a little in advance of the posterior end of the base of pectoral. Small rounded blackish spots on head, body, and fins.

Hab. California.

In the British Museum two specimens, 195 and 330 mm. in total length.

2. *Gyropleurodus quoyi*.

Cestracion quoyi, Fréminv. Mag. Zool. 1840, pl. iii.; Günth. Cat. Fish. viii. p. 416 (1870).

Cestracion pantherinus, Valenc. Zool. 'Venus,' Poiss. p. 320, pl. x. fig. 2 (1855).

Heterodontus quoyi, Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, iii. 1878, p. 316.

Gyropleurodus quoyi, Jord. & Everm. Bull. U.S. Nat. Mus. xlvii. 1896, p. 21.

Evidently closely allied to *C. francisci*, but with larger spots and with the first dorsal much further back, its origin far behind the base of the pectoral.

Hab. Galapagos Islands.

3. *Gyropleurodus galeatus*.

Cestracion galeatus, Günth. Cat. Fish. viii. p. 416 (1870).

Heterodontus galeatus, Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, iii. 1878, p. 313, pl. xxv.

Supraorbital ridges very strong, directed obliquely outwards. Origin of first dorsal above the posterior end of the base of pectoral. Interorbital region and back in front of dorsal fin blackish; a broad blackish bar below the eye; back with some dark transverse bars, one at the base of each dorsal fin most prominent.

Hab. New South Wales.

In the British Museum four specimens, 135 to 750 mm. in total length, including the type of the species.

2. CESTRACION.

Heterodontus (non *Heterodon*, Palisot de Beauvois), Blainville, Nouv. Bull. Sc. 1816, p. 121.

Cestracion, Cuv. Règne Anim. ii. p. 129 (1817).

Anterior teeth cuspidate, sometimes unicuspid in the adult; lateral teeth considerably enlarged, not keeled in the adult; rami of the jaws meeting in long symphyses, so that the anterior enlarged lateral teeth are near to those of the other side; supraorbital ridges gradually decreasing in height posteriorly.

Four species.

Synopsis of the Species.

- I. Supraorbital ridges moderate, ending above first gill-opening; dorsal fins with free edges slightly concave posteriorly; interorbital region crossed by a single dark bar.

Back with a nearly continuous blackish longitudinal band.

Back with dark cross-bars, alternately broad and narrow.

- II. Supraorbital ridges low, ending in advance of first gill-opening; dorsal fins with free edges more deeply concave posteriorly; interorbital region crossed by a pair of dark bars.

Extreme width of the pair of interorbital bars (from the anterior edge of the first to the posterior edge of the second) much greater than the diameter of eye

Extreme width of the pair of interorbital bars equal to the diameter of eye

1. *Cestracion philippi*.

Squalus philippi, Schneid. Bloch's Syst. Ichth. p. 134 (1801).

Heterodontus philippi, Blainv. Nouv. Bull. Sc. 1816, p. 121; Duméril, Elasmobr. p. 424 (1865); Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, iii. 1878, pls. xxii.-xxiv.

Cestracion philippi, Cuv. Règne Anim. ii. p. 129 (1817); McCoy, Prodr. Zool. Vict. pl. cxiii. (1886).

Cestracion philippi (part.), Günth. Cat. Fish. viii. p. 415 (1870).

Supraorbital ridges rather stronger, lateral teeth a little larger and dorsal fins a little lower than in *C. japonicus*. Greyish; a dark blotch on the snout; a blackish interorbital bar as broad as the eye, continued and expanded below the eye; a broad median blackish band from interorbital region to first dorsal fin, dividing posteriorly and giving rise on each side to a narrow vertical bar which expands on the pectoral fin; a longitudinal stripe from this bar to the pelvic fin; a broad median blackish band between the dorsals and from second dorsal to caudal.

Hab. New South Wales, Victoria, and Tasmania; New Zealand?

In the British Museum four specimens, 330 to 1000 mm. in total length.

2. *Cestracion japonicus*.

Cestracion philippi (non Schneid.), Müll. & Henle, Plagiost. p. 76, pl. xxxi. (1841); Schleg. Faun. Japon., Poiss. p. 304 (1850).

Heterodontus zebra (non Gray), Bleek. Verh. Bat. Gen. xxvi. 1854, p. 127.

Heterodontus philippi, var. *japonicus*, Duméril, Elasmobr. p. 424 (1865).

Cestracion philippi (part.), Günth. Cat. Fish. viii. p. 415 (1870).

Cestracion japonicus, Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, viii. 1883, p. 428, pl. xx.

Heterodontus japonicus, Jord. & Fowler, Proc. U.S. Nat. Mus. xxvi. 1903, p. 599.

Very close to *C. philippi*, but with the coloration quite different. Pale yellowish or greyish; back with dark brown cross-bars, alternately broad and narrow; a dark blotch on the snout; an interorbital bar, broader than the eye, continued below the eye.

Hab. Japan.

In the British Museum four specimens, 390 to 680 mm. in total length.

3. *Cestracion zebra*.

Cestracion zebra, Gray, Zool. Misc. p. 5 (1831).

Heterodontus zebra, Macleay & Macleay, Proc. Linn. Soc. N. S. Wales, x. 1885, p. 673, pl. xlv.

Cestracion philippi (part.), Günth. Cat. Fish. viii. p. 415 (1870).

Yellowish, with alternate double and single dark brown transverse bars corresponding respectively to the broad and narrow bars of *C. japonicus*. A V-shaped mark on the snout, followed by a vertical bar on each side; a pair of

interorbital bars, continued below the eye, the anterior edge of the eye corresponding to the posterior part of the first bar.

Hab. China.

In the British Museum three specimens, 305 to 780 mm. in total length.

4. *Cestracion amboinensis*.

Heterodontus zebra (non Gray), Bleek. Act. Soc. Sc. Neerland. i. 1856, Amboyna, p. 71.

Cestracion philippi (part.), Günth. Cat. Fish. viii. p. 415 (1870).

Cestracion amboinensis, Regan, Ann. & Mag. Nat. Hist. (7) xviii. 1906, p. 436.

Dorsal fins more elevated than in any other species. Cross-bars narrower and separated by wider interspaces than in *C. zebra* and each split into two. Anterior edge of first interorbital bar corresponding to anterior edge of eye.

Hab. Amboyna.

In the British Museum one specimen, type of the species, 580 mm. in total length.

LXXX.—*Additions to the Hymenopterous Genera Myzine and Plesia.* By ROWLAND E. TURNER, F.Z.S., F.E.S.

THE genera *Myzine* and *Plesia*, though differing widely in the female sex, are not distinguishable with any certainty in the males, though those species in which the basal segment of the abdomen is very long and slender or nodose towards the apex may be referred with certainty to *Plesia*, and those in which it is very short and as broad as the second, almost sessile, are equally certainly the males of *Myzine*. The genus *Myzine* does not occur in America, and there is little difficulty in distinguishing the males of the Asiatic species; but in South Africa, where both genera occur plentifully, some of the males cannot be assigned to either group with any confidence. The length of the basal joint of the posterior tarsi is no certain guide, as Saussure, who suggests that some use may be made of that character, recognizes.

The two genera are most strongly represented in Africa, but the species of *Plesia* are fairly numerous in America, and *Myzine* is well represented in the Mediterranean fauna and in Western Asia. No species of either genus is recorded from the Australian or Austro-Malayan regions; for *Myzine*