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On some arctic Holothurida

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the centrum; this is also the case with the Cretaceous serpent. When we examine the vertebræ from above, the costal tubercle appears immediately outside of and a little behind the diapophysis, reminding us of what is seen in *Aerochordus*. The process of the neural spine is united to the diapophysis by a slightly excavated line. The neurapophysis is robust, and the neural spine broad, tolerably high, and flattened at its upper margin, which must have given attachment to a powerful ligament; this neural spine occupies the greater part of the length of the centrum, as in the Crotalians. The inferior surface of the centrum is flattened, which recalls the vertebra of the Amphisbænians; we may also recognize the absence of any hypapophysial tubercle, as in the Typhlopian, which, as is well known, form the passage from the Ophidians to the Saurians.

The Cretaceous serpent, at present the most ancient known Ophidian, presents such manifold analogies that it is not possible to refer it to one rather than another of the great divisions accepted for existing snakes; it indicates the existence as early as the Cenomanian epoch of a peculiar genus, which we propose to name *Simoliophis*, giving the species the denomination *S. Rochebruni*, from the name of the zealous naturalist to whom the discovery of this interesting type is due.—*Comptes Rendus*. Oct. 18, 1880, p. 671.

On some Arctic Holothurida.

By MM. D. C. DANIELSEN and J. KOREN.

Among the Holothurida obtained by the Norwegian arctic expedition of 1878, the authors notice some new forms, and indicate certain points in the synonymy of previously described species. One of the former is described as the type of a new genus under the name of *Kolga hyalina*, the generic name being derived from that of one of the daughters of the goddess of the sea in the old northern mythology. The genus belongs to Théel's family Elpididæ, and is characterized as follows:—

Genus *KOLGA*, g. n.

Body bilateral. A buccal disk, furnished with ten tentacles, turned towards the ventral surface. Anal aperture on the dorsal surface (near the posterior extremity). On the anterior part of the back a projecting collar, furnished with papillæ. Just in front of this (and usually concealed by it) are two apertures, one for the generative organs, the other for the stone-canal. Feet on both sides of the body and around its posterior extremity. Sexes separate. No intestinal appendages (lungs).

Kolga hyalina, sp. n.

Body 50 millims. long, 15–20 high, and 12–15 broad. Back very convex; on the collar six transversely arranged papillæ, of which the two middlemost are the longest. Sixteen long, thick, almost retractile feet, five on each side and six around the posterior end. Skin of the body diaphanous. Tentacles five-lobed, each lobe trifid.

Hab. Station 295, 71° 59' N. lat., 11° 40' E. long., at a depth of 1110 fathoms, temperature – 1° 3 C., in *Biloculina*-ooze; Station 303,

75° 12' N. lat., 3° 2' E. long., at a depth of 1200 fathoms, temperature $-1^{\circ}6$ C., in brown mud. Feeds chiefly upon Diatoms and Foraminifera, swallowing the fine mud in which these creatures live in extraordinary abundance. The skin is transparent with a whitish tinge, so that in places where it is compressed it appears quite white. The five-lobed leaf of the tentacles, especially the part fringed with spicules, is deep orange-yellow. Buccal disk orange-yellow, with a darker, nearly brown ring round the mouth.

Myriotrochus Rinkii, Steenstrup*.

This species has been described under the same name by Lütken†, Stimpson‡, Selenka§, and Semper||; but Théel's *Myriotrochus Rinkii*, from Nova Zembla¶, is regarded by MM. Koren and Danielssen as identical with *Chirodota brevis*, Huxley**, of which *Oligotrochus vitreus*, M. Sars††, is also a synonym.

ACANTHOTROCHUS, g. n.

Body cylindrical, apodal, rounded at the posterior extremity. Sexes separate; no intestinal appendages (organs of respiration). Skin furnished with two kinds of differently formed calcareous wheels. The one kind has winged radii, and teeth issuing from the inner margin of the periphery; the other kind of wheel is more than twice as large, and has also winged radii; but from the outer margin of the periphery there spring long teeth turned inwards. Twelve digitate tentacles, which can be concealed in the body.

Acanthotrochus mirabilis, sp. n.

Body 10–12 millims. long, cylindrical, widened and rounded off at the hinder extremity. Mouth and anal aperture central. Skin transparent, beset throughout with two different kinds of wheels. Those of one kind are stalked, small, furnished usually with eleven radii, and from the inner margin of the periphery spring generally two triangular teeth between each two radii. The larger wheels have usually 8–11 radii; and from the outer margin of the periphery spring long pointed teeth, equal in number to the radii. Twelve tentacles, furnished with three divided digitate leaves. Five longitudinal muscles. Skin in the living animal perfectly transparent, with fine glistening points, which under the lens are found to be calcareous wheels. The margins of the tentacles brownish.

Hab. Station 283, 73° 47' N. lat., 14° 21' E. long., in 767 fathoms, temperature $-1^{\circ}4$ C., *Biloculina*-ooze; Station 295 (see *Kolga hyalina*); Station 312, 74° 54' N. lat., 14° 53' E. long., in 658 fathoms, temperature $-1^{\circ}2$ C., brown and green mud.

* Vidensk. Meddel. naturh. Foren. Kjob. 1851, pp. 55–60.

† *Ibid.* 1857, p. 21.

‡ Synopsis Marine Invert. Arct. Exp., Proc. Acad. Nat. Sci. Phil. 1863, p. 138.

§ Zeitschr. f. wiss. Zool. xvii. (1867) p. 367.

|| Reisen im Archip. der Phil., Holothuria, i. p. 24 (1867).

¶ Appendix to Sutherland's 'Journal of a Voyage to Baffin's Bay,' &c., vol. ii. p. 221 (1852).

** Note sur quelques Holothuries des Mers de la Nouvelle Zemble (Upsal, 1877).

†† Vidensk. Selsk. Forhandl. 1865, p. 200, and in 'Fauna littoralis Norvegiæ,' Heft 3, p. 49.

Molpadia borealis, M. Sars, with which *M. violacea*, Studer, is probably identical, is referred by the authors to their genus *Trochostoma*, as also *Haplodactyla arctica*, Marenzeller. Allied to these is a new genus with two new species.

ANKYRODERMA, g. n.

Body cylindrical. Anterior end transversely cut off. Buccal disk furnished with fifteen tubular processes, alternating with fifteen oblong depressions, in which there are fifteen papilliform tentacles. The posterior extremity produced into a tail-like process. Cloacal aperture surrounded by five papillæ. Skin furnished with perforated papillæ, together with singular calcareous bodies consisting of five to six spatulate calcareous rods arranged in a stellate form, from the centre of which rises a calcareous anchor. No feet. Two intestinal appendages.

Ankyroderma Jeffreysii, sp. n.

Body elongated, cylindrical. Caudiform process long. Tentacles extremely small, furnished with three papillæ, of which the middle one is the largest. Genital papilla large, prominent. Calcareous bodies in the skin of three forms,—anchors attached to spatuliform calcareous rods, perforated calcareous plates with crowns, and oval claret-coloured bodies, placed in groups. The colour of the skin in the living animal is greenish with a violet tinge from the scattered red points, or sometimes dark violet. The anterior end of the body has a white pentagonal ring, within which is the white buccal disk with white tentacles. The genital papilla in part yellowish white, in part full yellow; caudiform prolongation white.

Hab. Station 260, Porsangerfjord in 127 fathoms, temperature 3°·5 C., and 261 Tanafjord in 127 fathoms, temperature 2°·8 C., on a muddy bottom; Station 262, Tanafjord in 148 fathoms, temperature 1°·9 C., ooze; Station 372, 97° 59' N. lat., 5° 40' E. long., in 459 fathoms, temperature —1° C., on bluish-grey mud.

Ankyroderma affine, sp. n.

Body cylindrical. The caudiform process shorter than in the preceding. Tentacles extremely small, with three papillæ. Genital papilla not prominent. On the surface of the skin tolerably regular rows of anchors attached to spatuliform calcareous rods. Among these are some peculiar calcareous branches, from the common starting-point (central point) of which there rises either a three-knobbed crown or a long calcareous spicule, or some exceedingly variously formed perforated calcareous plates with crowns; and in the deeper layer of the skin a great quantity of colourless more or less rounded bodies consisting of a conglomerate of calcareous prisms. Skin greenish; buccal disk and caudal point white.

Hab. Station 290, 72° 27' N. lat., 20° 51' E. long., in 191 fathoms, temperature 3°·5 C., sandy clay.

The genus *Trochostoma*, Dan. & Kor., includes *T. Thomsonii*, D. & K., with no cloaca; and with cloaca *T. boreale*, M. Sars, *T. arcticum*, Marenz., and *T. (Molp.) ooliticum*, Pourt.—*Nyt Magazin für Naturv.* Bd. xxv. pp. 83–140, pls. i.–vi.