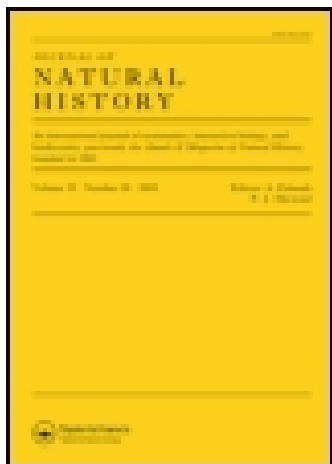


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Note on the anatomy of *Comatula rosacea*

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that it is the same as a small Lemuroid in spirits that we have lately purchased, labelled "La plus petite Macque de Madagascar entre Manham et Ténériffe."

It agrees with Buffon's figure in all particulars, especially in the acuteness and prominence of the nose beyond the lips. As the animal has only been described from a stuffed specimen, I may add:—The muzzle naked, having a central longitudinal groove on the underside to the border of the lip; the whiskers are long; the ears are rather large, about half the length of the head from their front edge, rather naked, with short close hairs on the outer surface. The hind legs and feet are strong.

The head is $1\frac{3}{8}$ inch long, the body $3\frac{3}{4}$ inches. The tail is cylindrical, $3\frac{3}{8}$ inches long, covered with close hair, and with scattered, longer, soft hair near the end. The hind leg is $1\frac{1}{2}$ inch long, and the hind foot $1\frac{1}{8}$ inch long, when the animal is measured taken out of spirit.

The examination of the skeleton has proved this animal to be the *Azema Smithii*; and, like this, it has the nose and the intermaxillary bones produced not so much as in the *Galago Demidoffi*. This prominence of the intermaxillaries at once distinguishes it from *Murilemur murinus*, which is otherwise very like it and comes from Madagascar, the skull of which is also at once known by the existence of a large round perforation on each side of the hinder edge of the palate, well figured by Mr. Mivart, and not found in the skull of either *Azema Smithii* or *Galago Demidoffi*.

Note on the Anatomy of Comatula rosacea. By E. PERRIER.

Last summer, at the laboratory of experimental zoology of M. Lacaze-Duthiers, at Roscoff (Finisterre), I endeavoured to clear up the obscure points which still exist in the anatomy of the *Comatulæ*, the last remains of the rich fauna of Crinoids presented to us by geological strata. Our *Comatulæ* are provided with ten arms, arranged in pairs, and radiating round a disk, upon which is placed a visceral sac containing the digestive apparatus. The arms are furnished on each side with a row of alternate *pinnules*, each joint of the arms bearing a pinnule upon one of its sides. The pinnules seem to be a repetition on a small scale of the arms themselves, but they do not bear secondary pinnules.

On the disk we see two orifices—one central, which is the mouth; the other lateral, corresponding to the interval between two pairs of arms, and situated at the extremity of a sort of fleshy chimney terminated by eight lobes; this is the anus. Round the mouth there is a vascular ring, which, opposite to the base of each pair of arms, emits a vascular branch; and this, bifurcating at the base of each pair, furnishes each arm with a canal called the *radial* or *tentacular canal*. The vascular ring in the intervals between the five primary radial canals gives origin, on its inner margin, to eight or ten contiguous digitiform tentacles, which are largest at the middle of each interval, and become smaller in the neighbourhood of the

canals which separate them. In traversing the disk the latter canals also give origin to small, simple, and alternate digitiform tentacles. The five radial canals of the disk cut off five sectors upon it. If we examine the integument upon each of these sectors, we find it perforated with about twenty perfectly circular orifices, irregularly arranged, about 0.005 millim. in diameter, and bordered by an epithelial ring of which the cells are 0.001 millim. in diameter. These orifices lead into little ovoid cæca, lined with the same epithelium; I do not know what may be the function of these singular organs. The very young *Comatula* only presents one of them in each sector; their number consequently increases greatly with the age of the animal. Some of the orifices touch each other, as if their multiplication took place by a longitudinal division of preexistent cæcal organs. The tegumentary membrane of the disk is lined internally with a number of calcareous plates, of irregularly circular form, often marked with annular striæ, and presenting a sort of central star thicker than the plate itself, and having its arms sometimes bifurcated. Some of the plates are destitute of stars; others are perforated; their study may be of some importance in specific determinations. These plates and the cæcal organs just described have not previously been indicated, so far as I am aware.

I have made the arms of the *Comatula* the subject of particular study. Their calcareous skeleton is formed of pieces of an hourglass-shape, having at the lower part of their anterior margin a certain number of spines, which prevent the complete reversal of the joints upon each other. It is surrounded by a sheath of soft tissues, which is developed laterally into a membranous lamella, festooned on each side in such a manner that the festoons of one side alternate with those of the other; between two consecutive festoons there is always a group of three unequal tentacles, the largest of which is towards the extremity of the arm. These tentacles, which are all extremely mobile, present no external orifice; they bear two or three rows of papillæ terminated by a small dilated head, which bears three slender rigid and divergent setæ. The three tentacles of each group spring by a common branch from the tentacular canal. The largest tentacle exactly separates two festoons from each other; the two smaller ones repose upon the festoons, to which they partially adhere; and this has led Prof. Wyville Thomson to think that they formed part of it and opened into the tentacular canal by a different orifice from that of the large tentacle.

The tentacular canal adheres to the vibratile epithelium of the upper surface of the arms; it is composed of two envelopes, separated by brilliant stellate corpuscles; and these two envelopes assist in the formation of the walls of the tentacles. Seen in profile they simulate the appearance of two or even three superimposed vessels beneath the tentacular canal, which is the cause of the notions that have hitherto prevailed as to the organization of the *Comatulæ*. There is, however, absolutely no other canal in the arms of the *Comatula*, although this canal does not rest directly upon the skeleton, but is separated from it by a vacant space, which is more or less apparent

according to the state of flexure of the arms, and which is nothing but the prolongation of the general cavity. It is to this cavity that Dr. Carpenter has given the name of the *coeliac canal*. The calcareous joints are besides enveloped by a delicate membrane, beneath which are seen stellate conjunctive corpuscles. The tentacular canal terminates cæcally in the arms and in the pinnules, a little beyond the middle of the antepenultimate calcareous joint. Muscular fibres unite the groups of tentacles to the point where they spread into three branches; a muscular ribbon also runs all along the median line of the arms beneath the epithelium of the ambulacral furrow. Each tentacle, moreover, has its proper muscles, situated between the external epithelium and the first envelope proceeding from the tentacular canal. We cannot, therefore, accept the opinion of Professor Wyville Thomson, who regards the tissues of the *Comatulæ* as sarcodic.

I could find no trace of a nervous system.

I have cut off the arms of several of these animals, and witnessed their regeneration, which takes place very rapidly.—*Comptes Rendus*, March 17, 1873, p. 718.

On Mammalia from the Neighbourhood of Concordia, in New Granada.

By Dr. J. E. GRAY, F.R.S. &c.

Mr. Edward Gerrard, Jun., has just received a series of Mammalia from Concordia or Antioquia, which is very interesting as showing that several species have a more northern distribution on the western side of the subtropical part of South America north of the equator.

1. *Ateles ater*. A fine large specimen.
2. *Cebus hypoleucus*. A large specimen, with the upper part of the forearms white.
3. *Nyctipithecus Commersonii*. Like the other monkeys of a large size.
4. *Nasua dorsalis*, Gray, P. Z. S. 1866, t. xvii. There are four specimens of this species, of different ages, but very nearly alike. The younger one is the darkest, and most resembles the single one figured, on which was established the species, which the present specimens confirm.
5. *Galera barbata*. The specimen is peculiar for having a white lunar mark on the front of the back; but this mark is not quite symmetrical, and most probably accidental.
6. *Grisonia vittata*. The specimen is of very large size, larger than those we usually have from Demerara.
7. *Didelphys cancrivora*.
8. *Erethizon rufescens*, Gray, P. Z. S. 1865, p. 321, t. xi. Only one specimen of this species before known; and this confirms the habitat (Columbia) assigned to it, and also the distinctness of the species, and enables us to examine its skull.
9. *Dasyprocta nigra*, Gray, Ann. & Mag. Nat. Hist. 1842; Zool.