

may be readily distinguished from either by its elongated snout, which allies it to the four species first mentioned. Of these, *S. laticaudatus* is separated by its larger size, shorter hair, browner colour, nearly white belly, and still longer muzzle; *S. rufigenis* by the brilliant rufous of its cheeks and the underside of its tail; *S. Pernyi* by its similarly rufous tail; and *S. Berdmorei* by the black and white longitudinal stripes with which its body is ornamented. No other species that I can find have any close relationship to the new form discovered by Mr. Everett, in whose honour I have very great pleasure in naming it.

XXI.—*On the Anatomy of Horny Sponges belonging to the Genus Hircinia, and on a new Genus.* By H. FOL*.

THE genus *Hircinia* was created by Nardo in 1833 for certain horny sponges possessing two systems of fibres—some coarse and analogous to those of the bath-sponge (*Euspongia*), and others very fine and numerous, resembling the elastic fibrillæ of the connective tissue of Vertebrates. The structure of these fibrillæ was investigated by Lieberkühn, O. Schmidt, and F. E. Schulze, who showed that they do not anastomose, but terminate in all directions in rounded swellings. The two latter authors, however, like Kölliker and Hyatt, considered that these fibrils probably belonged to a parasite or to a commensal of these sponges. It was for this reason that the family Filiferæ was actually abandoned; so that Vosmaer, in his monograph of the Spongiariæ, does not recognize a single genus belonging to this family, and suppresses it.

Sections which I have made of specimens of *Hircinia variabilis* and *Hircinia* sp. n., from the neighbourhood of Nice, have enabled me to solve the disputed question of the origin and nature of the fibrillæ, and this in a sense opposed to that of recent authors.

On making a series of somewhat thick transverse sections of a specimen macerated for a few hours only, so as to separate the epithelia while leaving the connective tissue untouched, we see at once in the clearest possible way that the fibrils are not disposed at random, as would be the case were we dealing with a parasite, but form a system of incomplete septa, which alternate with the fibres of the skeleton, with

* Translated from the 'Comptes Rendus des Séances de l'Académie des Sciences,' tome cx., June 9, 1890, p. 1209 *et seq.*

which they but rarely come into contact. If we choose, for the purpose of cutting sections, a portion in process of rapid growth, we shall find in the place of the fibrillæ large tracts of fusiform cells which clearly belong to the connective tissue of the sponge. Lower down these tracts spread out, and nascent fibrils are observed on which the fusiform cells are disposed like a string of beads. Further on still the cells have atrophied, and there only remains their product, the fibril.

The authors mentioned were therefore wrong in holding without a particle of proof that the fibrils were the work of an unknown parasite; on the contrary, they form an integral part of the sponge. The family Filiferæ must be reinstated, as being the surest and best characterized division of all those which have been made in the order of Horny Sponges.

There is met with in abundance in the waters round Nice a blackish sponge of large size, which I cannot discover has ever been described. This sponge adheres tenaciously to rocks exposed to the open sea, at depths of from 10 to 30 metres, and it can only be collected by aid of the diving-dress. It attains the size of a man's head. In colour it is of the neutral tint of water-colour painters; it is shining, and is provided with numerous conuli, which are more widely separated than in *Hircinia*, but less so than in *Spongelia*, and with a very small number of large oscula. If left to itself in an aquarium a larger number of oscula open after a few hours; these are very minute and are situated between those already mentioned.

This sponge is friable, owing to the fact that the fibres of its skeleton are wide apart; but its tissue is very dense and in section reminds one of calf's sweetbread. It consists for the most part of a compact and almost indestructible connective tissue, in which are lodged canals and flagellated chambers, disposed as in *Euspongia*.

There is much difficulty in eliminating this tissue by maceration; but after doing so, there remains a skeleton of very coarse fibres, widely separated, but anastomosing and affecting a regular disposition. These fibres are hollow, composed of several concentric sheaths, and enclose, in their axis only, numerous foreign bodies of large size, such as grains of sand, pieces of the skeleton of other animals, &c.

This sponge, then, comes between *Spongelia* and *Aplysina* by reason of its skeleton; by its tissue, which offers a much greater resistance to the action of chemical agents than that of *Aplysina*, it recalls the *Chondrosiæ*; while by its canal-

system it is allied to *Hircinia* and *Euspongia*. It occupies an intermediate position between the known types.

I bestow the name *Sarcomus** on this new genus, which appears to me to deserve a new family. The species from the environs of Nice I designate *Sarcomus Georgi*†.

XXII.—*Notes from the St. Andrews Marine Laboratory (under the Fishery Board for Scotland).—No. XII.* By Prof. M'INTOSH, M.D., LL.D., F.R.S., &c.

1. Preliminary Note on the Occurrence of the Pelagic Annelids and Chætognaths in St. Andrews Bay throughout the Year.
2. On the British Species of *Spinther*.
3. On the Young Stages of the Gunnel (*Centronotus gunnellus*).

1. *Preliminary Note on the Occurrence of the Pelagic Annelids and Chætognaths in St. Andrews Bay throughout the Year.*

The following remarks on the pelagic Annelids of the Bay of St. Andrews are preliminary, and formed indeed part of a survey of the whole pelagic forms from fishes downwards during the year 1888—especially in their relation to the fisheries ‡.

So far as regards the marine *Polychaeta* the contrast with southern waters is marked, since hitherto there has been an absence of such typical pelagic Annelids as the Alciopidæ, so well described by Greef §, or the Syllidians, which have lately received the careful attention of Viguier ||. The only adult pelagic forms, indeed, are *Autolytus* and the sexual forms of the Nereides. All the others are larval, postlarval, and young stages of Annelids, and thus fall under the temporarily pelagic group. They often occur in large numbers and probably exercise an important function in connexion with the food of post-larval and young fishes, for it is well known that

* From *σάρκωμα*, a fleshy excrescence.

† Named after Georges Guessler, a very skilful diver employed by me, and who obtained for me the first specimen of this sponge. Since then I have often collected it myself.

‡ I have the same acknowledgment to make as in the previous note (XI.) in regard to the assistance given me in the examination of the various nets by Mr. J. Pentland Smith, M.A., B.Sc.

§ "Untersuchungen über Alciopiden," Nova Acta L. C. 39.

|| "Sur les Animaux inférieurs, II. Annelides Pelagiques," Archiv. Zool. Expér. 2^e sér. iv. p. 347.



Fol, Hermann. 1890. "XXI.—On the anatomy of horny sponges belonging to the genus *Hircinia*, and on a new genus." *The Annals and magazine of natural history; zoology, botany, and geology* 6, 172–174.

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