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RESEARCHES AMONG ANNELIDS.

Rev. HILDERIC FRIEND,

Ocker Hill, Tipton, Staffordshire.

1.—A New Yorkshire Worm.

Fridericia striata (Lev.). During a flying visit to Bradford in January, I took the opportunity to spend a few minutes at Apperley, where, in former years, I had frequently observed a large variety of terrestrial and aquatic annelids. The season of the year was unfavourable, as most of the worms had gone into winter quarters, but I was able not only to obtain some specimens of the true Tubifex (*Tubifex rivulorum* Lam.), but also to identify a new British species of white worm. This proves to be the striate Enchytræid *Fridericia striata* (Lev.), first described in 1883 by Levinsen under the name *Enchytræus striatus,* and placed under *Fridericia* by Michaelsen in 1889. It was then known only as a Continental worm, its homes being Denmark and Germany. In 1896, however, Dr. H. Ude, of Hanover, published an account of some worms collected by Dr. Michaelsen during his foreign travels, and among them he found sundry specimens which he did not hesitate to place under this heading. They were from three different stations in Monte Video, and from Lota, in South America. It would be strange, therefore, if the worm were absent from the British fauna. The worm is about $\frac{3}{8}$ inch in length, of a dull, somewhat opaque grey colour, but showing a pure opaque white where the eggs are located in the neighbourhood of the girdle segments. There are 45 to 50 segments in the body, and the setæ are in four bundles, each of which consists of six to eight bristles. They are arranged according to the usual pattern in this genus. I have not detected any chlorophyll bodies in the skin, but in the front segments there are vacuoles arranged in irregular rows, usually three in each segment, which might possibly at other seasons of the year show a different appearance. Possibly, if Levinsen's statement is accurate, the chlorophyll is accumulated in summer, and used up in winter. Should this assumption be correct, we have a very interesting new field for research. Chlorophyll does occur in *Anachæta*—a member of the same family. See Beddard's 'Monograph of Oligochæta,' p. 354. One of the most striking features, so far as I have yet observed, is the enlargement of the intestine in segment 9, so as to give it the appearance of a gizzard. I regret that, though I have several

of the memoirs of Dr. Michaelsen and Ude, I have not been able to consult their diagnoses of this species, so that I cannot tell whether or not this point has been noticed in the Continental forms. Perhaps, when the spring arrives, some collector would send me more material from Apperley, to enable me to make a more complete examination.

2.—Worms New to Science.

The pressure of work has prevented me hitherto compiling and publishing a list of the new species of aquatic and microscopic worms, upon which I have been working at intervals during the past two or three years. There are two, however, which are of such interest that I give a brief preliminary account of them, in order to stimulate research.

(1) ***Limnodrilus wordsworthianus*** Friend. This species was found by me at Old Carlisle, near Wigton, Cumberland. It has all the characteristics of a *Limnodrilus*, and comes very near to *L. hoffmeisteri* Clap. It is found in mud at the roots of water plants, and looks like a *Tubifex* or *Stylodrilus*. When taken it coils up like the former, but under the microscope is quickly seen to differ from each of the foregoing. From *Tubifex* it is at once distinguished by the absence of capilliform setæ, while it lacks the characteristic penis of *Stylodrilus*, and has more than two setæ in the bundles of the anterior segments. It is two to three inches in length, but owing to its habit of coiling up when under observation, it is very difficult to obtain exact measurements without killing the specimens. The blood-tufts in the epidermis are fully developed. The head is pointed, the prostomium being about the length of the first segment. The setæ are all uncinate, four to six in each bundle anteriorly, two in the posterior portion of the body. The chitinous penis-sheaths are trumpet-shaped, and about four times as long as broad. The brain is rounded off behind, a kind of squared circle; but in the living worm the appearance changes with every convolution. The nephridia in the front part of the body are covered with vesicular cells. Delicate papillæ cover the prostomium, and extend to the peristomium. This, I believe, is a feature not recorded for other species.

(2) ***Marionia appendiculata*** Friend. A worm of peculiar interest found in backwash at Askham, near Furness. Its most striking peculiarity, and one which is, so far as I am aware, unique in this group of annelids, is the presence of a pair of beautiful ciliated rosettes, connected with and forming the

external orifices of the spermathecæ. They are found on the ventral sides of the body between segments 4 and 5, and cannot be overlooked. Another point of interest is the presence of two distinct forms of lymph corpuscles. In this respect it comes near to *M. crassa* (Clap.), and it is possible that eventually these two species will serve as the basis of a new genus. At present they do not perfectly fit in either with *Pachydrilus* or *Marionia*. I hope to throw more light thereon during the present year.

NOTE—GEOLOGY.

Erratic Boulder in Cheshire.—One hundred and fifty yards or so south of Mr. Williamson's farmstead at Old Alderley, at an angle of the lane leading to the house, is a large, sub-angular block of granite (?), much too large to have been brought there from any distance, one would think. Would it not be well that it should be inspected and measured, and a sample bit taken for microscopical examination? Probably it has been moved out of an adjacent field, but I had not then (10th Nov. 1897) time to make enquiry.—JAMES EARDLEY MASON, Norfolk House, Lincoln, 2nd Feb. 1898.

[Will some Cheshire or Lancashire glacialist examine, and report results to this journal?—EDS. NAT.]

NOTE—FUNGI.

A New Lincolnshire Fungus.—At a meeting of the Nottingham Naturalists' Society held on January 11th, the Vice-President (Mr. W. Stafford, M.B.) exhibited specimens of a very handsome cup-shaped fungus obtained by him a few days previously at Colsterworth, near Grantham (Nat. Hist. Div. 15 S.). On the following day I sent these specimens to Mr. Carleton Rea, M.A., Secretary of the British Mycological Society, who identified the species as *Otidea cochleata* Fackl. As it is not included in Mr. Arnold Lees' 'Outline Flora of Lincolnshire,' the occurrence of this fungus in the county is perhaps worth recording.—J. W. CARR, M.A., F.L.S., University College, Nottingham, 25th Jan. 1898.

NOTE—MOLLUSCA.

Occurrence of *Achatina acicula* in Lincolnshire.—About three years ago a quantity of sand, soil and gravel was removed from the allotments near the Lincoln hospital to the grounds of Mr. Ramsden, the manager of the Greetwell Iron Works, for the purpose of gravelling the drive. The mixed character of the gravels necessitated them being sifted, and a small heap of the rejectamenta, consisting of a mixture of calcareous loam, oolitic and liassic debris and sand still remains in front of the house undisturbed. It is essentially arenaceous, the proportion of carbonate of lime to sand being as 3 : 7.

While engaged in examining with the microscope the finer constituents of the heap I found several specimens of *Achatina acicula*, three of which I submitted for identification to Mr. W. Denison Roebuck. They are very small, the largest measuring 2 mm. and the smallest 1 mm. The position in which they were found is situate on the Oolitic plateau at a height of about 150 feet above the bed of the Witham valley. Mr. Roebuck kindly determined the specimens, and as he remarks that this is the first time that *Achatina* has been recorded for Lincolnshire, this note may not be without some interest to Lincolnshire conchologists.—J. H. COOKE, 18th Jan. 1898.

[The specimens submitted for identification were but fragments, the two largest consisting of but the two lowest whorls, and the smallest of but one.—W.D.R.]