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A NEW HUMAN TAPEWORM.

(Tænia confusa n. sp.)

AN ENTOZOON, PROBABLY OF ORDER CESTOIDEA.

BY HENRY B. WARD, PH. D., PROFESSOR OF ZOOLOGY, UNIVERSITY OF NEBRASKA.

Somewhat more than a year ago a tapeworm was sent me which at first sight appeared decidedly unlike either *Tænia saginata* or *Tænia solium*. It showed the slender form and more delicate appearance of the latter, but was in length of segments even decidedly larger than the former species. Some notes were made at the time, and then, on account of pressure in other directions, laid aside to await opportunity for further study. This winter I received a second specimen which at once recalled the first, and on comparison was seen to be identical with it. A series of measurements was made from the entire length of the specimen, and comparison with those given for the familiar species in Leuckart* strengthened the belief that this was an unknown form of the genus. One of my students is at present engaged in a detailed description of this specimen, and closer study shows beyond question the specific rank of the form. It seems proper, however, that, in advance of this detailed study, some general description of the form should be published, in order to call attention to the existence, in this region at least, of a species hitherto unknown or confused with one of the familiar species. We are especially desirous of obtaining more material, and take this occasion to beg that specimens of tapeworm be sent from all regions for identification and study. The University will gladly pay the cost of transportation on such material.

* Parasiten des Menschen, II. Aufl. Leipzig, 1879-93.

Thus far only two specimens of this species have been seen, and both were taken from residents of Lincoln. One of them has been almost entirely destroyed in making slides and sections, but the other is still nearly entire, and from it were taken the general measurements which are given in the following. The total length of this specimen must have been about 500 cm. The terminal proglottids, just ready to be separated, are from 5 to 3.5 mm. in width. They are, as represented in figure 1, of nearly uniform breadth throughout

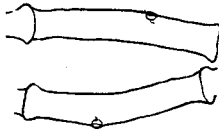


FIG. 1.—Two segments from end of chain, *Tenia confusa* n. sp.
Natural size.* (Original.)

their entire length, save that close to the end a prominent widening is found, to which the subsequent proglottid is attached. The sexual pore is easily seen, though it does not project markedly beyond the margin of the segment. One meter anterior to the end of the specimen the proglottids measure 15 mm. long and 7.5 mm. wide, and a meter further anterior they are just about 9 mm. square. In the anterior third of the worm the segments are 4.5 mm. long by 3.5 mm. wide, and near the anterior end 1 to 1.4 mm. long by 0.8 to 1 mm. wide. In general, then, it may be said to be much slenderer than *Tenia saginata*, never attaining the broad form which is so striking near the middle of the chain in specimens of this latter species. Cross sections show that the new form is much less muscular, and in fact more like *Tenia solium*, from which it differs, however, in many evident respects. A positive diagnosis of the species may be made from these terminal segments alone, by the size and shape,

* By error in reproducing this figure the segments are only nine-tenths natural size.

which, as the table appended to the article shows, are sufficiently unlike corresponding parts in the two familiar forms of *Tænia* to be distinguished without great difficulty.

The most striking peculiarity of the new species, however, is the head. Unfortunately, this was present only in one specimen. The long, very slender neck has no region which fails to show the boundary lines of the proglottids. It is crowned by a small head (Figure 2), which measures only 0.3 mm. in diameter. The four suckers are distinct, but not



FIG. 2.—Head of *Tænia confusa* n. sp. Highly magnified, \times about 125. Drawn with Abbe camera. Leitz Oc. 2, Obj. 5. (Original.)

prominent, and produce no apparent break in the outline of the head. Most striking, however, even under a low power, is the rostellum, which lies drawn into a pit at the anterior apex of the head. It is thimble-shaped and measures 0.05 mm. wide by 0.07 mm. long; it is covered by six or seven close rows of minute hooks, which decrease in size from the apex of the structure toward the base. Owing to the thickness of the muscular mass about the hooks and to their diminutive size, it was not possible in the single specimen to

determine exactly their size and shape. One recognizes, however, without difficulty, the clear, highly refractive appearance characteristic of such chitinous structures. The diminutive size of the head led me at first to suspect that it was altogether lacking in this specimen. It is probable that the rostellum, with its mass of hooks, gives a firm hold on the intestinal wall of the host, and the parasite may be evacuated only with great difficulty. Accurate diagnoses and records of methods employed in removing the worm are necessary to determine the effect of the ordinary remedies on this new species. It is by no means certain that it will yield to the same treatment as the well-known species.

A table of measurements for the three species of *Tænia*, which are found as adults in the human alimentary canal, is appended for convenience in diagnosis. The measurements for the familiar species are taken from Leuckart. The specific name *confusa* is proposed for this new form.

	<i>T. confusa.</i>	<i>T. saginata.</i>	<i>T. solium.</i>
Length of entire specimen.....	5 m.	4-8 m.	2-3 m.
Length of terminal proglottids...	27-35 mm.	18-20 mm.	10-12 mm.
Width of terminal proglottids...	5-3.5 mm.		
Greatest width of chain.....	8-9 mm.	12-13 mm.	7-8 mm.
Diameter of head.....	0.3 mm.	1.5-2 mm.	1 mm.
Diameter of suckers.....	0.12-0.15 mm.		

Dr. Parkhurst: This paper is one of great interest to me, because I believe I have encountered a worm of this peculiar variety.

About five years ago I remember of being called to see a lady who had been passing some segments of tapeworm; and from the description the professor has given us, I am satisfied it was of the same variety. It was certainly like it, in being very hard to expel, for I repeatedly used all of the well known tænicides in vain, but finally succeeded by giving the patient, as a last resort, this treatment—which will probably meet with severe criticism; however, it proved successful: I gave her four ounces of spirits of turpentine, combined with the same amount of castor oil at one dose. [Laughter.]