

PARASITES;

A TREATISE ON THE

ENTOZOA OF MAN AND ANIMALS,

INCLUDING

SOME ACCOUNT OF THE ECTOZOA.

BY

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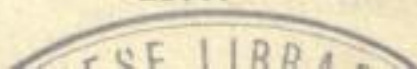
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genus, but of an altogether new family of the Hemiptera Heteroptera, coming very near to the bed-bugs (*Acanthidæ*). It is a huge sucking louse. From the discussion which followed, it seems that the parasite had several times been seen before, and was none other than E. Piaget's *Hæmatomyzus elephantis*. Excellent figures accompany Richter's and Piaget's descriptions. Notwithstanding Piaget's explanation, I think the specific name, *longirostris*, would have been a more appropriate appellation.

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The parasites of the *Rhinocerotidæ* have been even less studied than those of elephants. In 1856 Prof. Peters described a tapeworm from Bruce's rhinoceros (*R. Africanus*), which he named *Tænia gigantea*. In 1870 Dr Murie, under the provi-

sional name of *T. magna*, published a description of the strobile of the same cestode from an Indian rhinoceros (*R. unicornis*). From a total misconception of the character of the proglottides, Murie was led to suppose that the segments of the strobile were very deep as well as broad; whereas the proglottids are remarkably narrow, thus partaking of the characters of the Tæniæ of the larger herbivora in general. In a subsequent paper Peters pointed out these errors. Murie had, in fact, rolled several segments into one. In 1877 Professor Garrod encountered the same cestode in *Rhinoceros sondaicus*, and, following Peters' example, separated it from the Tæniæ proper (*Plagiotænia gigantea*). The idea of generically separating tapeworms possessing a more or less striking breadth of strobile is not one which commends itself to my view, seeing that many of the tapeworms of herbivora closely resemble the rhinoscerine cestodes in this respect. As Diesing hints, this tapeworm comes near to *T. perfoliata*, but Garrod's and Peters' figures both show that *Plagiotænia* wants the neck-lobes. The presence of cephalic appendages may be regarded as generically distinctive, but it does not appear that Blanchard separated the perfoliate tapeworm of the horse from the Tæniæ proper on this ground. Therefore, in my account of the equine tapeworms, I have not adopted his genus *Anoplocephala*. I may remark, in passing, that if the distinctions, as between armed and unarmed, or between proboscis-bearing (*Rhynchotæniada*) and non-proboscis-bearing tapeworms (*Arynchotæniada*), are to be maintained, they should be expressive of divisional or subordinate value. Dr Weinland's arrangement, having reference to the thick- and thin-shelled ova (Sclero- and Malaco-leptidota), is, perhaps, preferable. The whole subject of classification requires revision, but it should be undertaken by some helminthologists practically acquainted with a large number of cestode types. As Garrod has well observed, *Plagiotænia* enjoys a wide geographical distribution, infesting alike Indian and African hosts. Prof. Garrod, I observe, speaks of the *head* of the mature tapeworm as the *scolex*—an extension of the meaning of a term not usually recognised. In this, however, he only follows Peters' unfortunate example.

The wide distribution enjoyed by Peters' *Plagiotænia* is probably equalled by that of the rhinoscerine stomach-bot (*Gastrophilus rhinocerontis*, Owen). This parasite was originally described in 1840, and since that time it has been fre-

quently encountered both in India and Africa. To Mr Spooner Hart, of Calcutta, I am indebted for a large number of specimens; their size exceeding that of any other bots that have come under my notice. Probably this parasite infests the stomach of rhinoceroses generally; at all events, it occurs in *R. unicornis*, *R. bicornis*, and *R. simus*. At present the imago is unknown. The longest larvæ in my possession measure $1\frac{1}{8}$ "', but Brauer records specimens up to 35 mm. in length by 10 mm. in thickness. In African hosts M. Delegorgue found these parasites in prodigious numbers.

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Very little has been written respecting the parasites of the *Hippopotamidæ* and *Tapiridæ*. I think it was Livingstone who first drew attention to the fact that the river-horse or sea-cow is much infested by tapeworms, but I have not seen any published description of the worm. Dr. Murie, during his sojourn in Egypt, found a solitary bot embedded in the soft parts surrounding the eye, and judging from his figure the species is new to science. Provisionally I speak of it as the *Hypoderma Muriei*. In the paper (quoted below) Murie appends a list of all the animals in which bots have been found. Though chiefly taken from Brauer, it is useful and tolerably complete. So far as I am aware no cestodes have been described as infesting tapirs; nevertheless, at least five other kinds of helminth have been found in *Tapirus Americanus*. Of these, two are flukes (*Amphistoma asperum* and *A. pyriforme*), and three are nematodes (*Sclerostoma monostechum*, *Spiroptera mediospiralis*, and *Sp. chrisoptera*). The three species first named occupy the cæcum,

whilst the others are found in the stomach. According to Molin's description, both species occupy tuberous excrescences of the mucous membrane, thus reminding us of the similar habit enjoyed by *Sp. megastoma* in the horse. The *Sp. chrysoptera* is a comparatively large species, the males measuring an inch, and the females as much as an inch and a half in length. Both of the spiropteras were obtained from tapirs by the indefatigable Natterer, *Sp. mediospiralis* being also procured by him from the aguti. If I have read Molin correctly, as many as thirty-four examples of *S. mediospiralis* were taken from a single excrescence in the stomach of the tapir. Upwards of a hundred specimens were procured, collectively, from three similar stomach-excrescences in *Dasyprocta aguti*. These, and the other tapirine parasites above mentioned, were originally discovered in Brazil.

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The osculant position of the anisodactyle pachyderms (*Hyracidae*), formerly classed as rodents, renders it desirable that their parasites should be briefly noticed in this place. Probably these animals, zoologically speaking, come nearest to the rhinoceroses, but Prof. Owen showed that, anatomically, they possessed marked affinities with the sloths. The klipdas or dasse (*Hyrax capensis*) is infested by a tapeworm, of which hitherto the proglottides only appear to have been seen (*Tænia hyracis*, Pallas). Under the name of *Coenurus serialis* a larval cestode has been described by Gervais, the same parasite being called *Arynchotænia critica* by Pagenstecher ("Zur Naturgeschichte der Cestoden," in 'Sieb. u. Köll. Zeitschrift'). A variety of nematodes have also been observed in the Cape hyrax. Of these, the so-called *Physaloptera spirula* is classed as doubtful by Molin and Diesing. Hemprich and Ehrenberg furnished brief descriptions of four other nematodes. Two of these worms were placed in the genus *Oxyuris* (*O. pugio* and *O. flavellum*), and the other two in the new genus *Crossophorus*, which they formed for their reception (*C. collaris* and *C.*