NOTES ON SOME HELMINTHS IN THE COLLECTION OF THE ZOOLOGICAL SURVEY OF INDIA

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The present notes deal with some of the Helminth material recently collected or received for identification from different sources and incorporated in the collection of the Zoological Survey of India. Records of only such species are included here as have proved of interest either on account of their structure or distribution, etc. Most of the specimens are poultry worms and fish parasites.

TREMATODA.

Fam. LEPODERMATIDAE.

Ganada clariae, Chatterjee

1933. *Ganada Clariae*, Chatterjee, *Bull. Acad. Sci.* U.P. (India) III, pp. 35-36.

Six specimens of this parasite, along with a few individuals of the unsegmented cestode, *Lytocestus indicus*, were found by Mr. J. J. Dutta (Lecturer in Zoology, College of Science, Nagpur) in the intestines of a fish, *Clarias batrachus*, at Nagpur. This little fluke reveals some interesting variations from the typical specimens. The following differences are particularly noteworthy :—

(1) Oral sucker is distinctly larger than the ventral.
(2) Prepharynx is comparatively long.
(3) Vitellaria may or may not extend beyond the ovary.
(4) The shape and relative size of the two testes are extremely variable. They are oval to elongate; in some specimens the longitudinal axis of the posterior testis is even slightly more than double its width. The anterior testis is always smaller than the posterior.
(5) The intertestial space also varies considerably; in some of the specimens the testes are absolutely close together, while in others, there is a wide space between the two.

Fam. ISOPARORCHIDAE.

Isoparorchis hypselobagri (Billet).

1936. *Isoparorchis hypselobagri*, Bhalerao, *J. Helminth.*, XIV, pp. 17-19.

Five specimens were obtained from the liver of a fish, *Wallagonia attu*, caught in the Dhubelbundh tank at Salebhata, in the Patna State (Orissa)* They are of varying sizes. This parasite has been recorded from the neighbouring provinces, but not from this region so far.

The same host also harboureda nematode worm *Porrocaecum* sp. in its intestines.

*Chauhan, B.S. *Rec. Ind. Mus.* XLV, pp. 267-283 (1947).

CESTODA.

Fam. Anoplocephalidae.

Paronia sp.

1930. *Paronia*, Southwell, *Fauna Brit. India*, Cestodes, II, pp. 46-49.
1935. *Paronia*, Bhalerao, *Imp. Counc. Agri. Res. Mono.* No. 6, pp. 129-130.

Paronia columbae is the only species of this genus that has been recorded from India in pigeons from Bengal. The present specimens were collected by Mr. S. L. Zargar, from the intestines of fowls, at Gondia (C.P.) and Khandwa. They were found along with three or four specimens of *Ascaridia galli* at both the localities. The collection from Khandwa also contained three Specimens of *Heterakis gallinae*. Unfortunately, the segments of these parasites are too gravid to render their specific identification possible. In specimens of both the collections the proglottids have two sets of genital organs and the uterus extends beyond the lateral excretory vessels.

Fam. Davaineidae.

Raillietina (Raillietina) tetragona (Molin).

1930. *Raillietina* (R.) *tetragona*, Southwell, *Fauna Brit. India*, Cestodes, II, pp. 74-75.
1942. *Railleitina tetragona*, Hughes and Schultz, *Bull. Okla. Agri. & Mech. Coll.* XXXIX (8), Res. Mem. No. 2, p. 19.

This parasite, though occurs very commonly in fowls, in the Central Provinces has not so far been recorded. Several specimens of this tapeworm were obtained by Mr. Zargar, from the intestines of a *Deshi* pullet and other fowls, at the Military Poultry Farm, Nagpur.

Raillietina (Raillietina) sp.

Numerous specimens of this worm were collected by Mr. Zargar from the intestines of a dove at Nagpur. Their rostellum has a double row of hooks of uniform size and suckers are also armed with many rows of minute spines, but no definite specific identification of these tapeworms is possible on account of the segments being too gravid.

Cotugnia cuneata var. nervosa Meggitt.

1925. *Cotugnia cuneata* var. *nervosa*, Moghe, *Rec. Ind. Mus.* XXVII, p. 431
1930. *Cotugnia cuneata* var. *nervosa*, Southwell, *Fauna Brit. India*, Cestodes, II, p. 107.

About eight specimens of this worm alone were collected by Mr. Zargar from the intestines of a pigeon at Gondia (C.P.). Moghe found these worms in association with *Raillietina* (*Raillietina*) *nagpurensis*, in every one of the thirty to forty pigeons, he examined. Southwell puts the species of this genus into two groups, one with "Rostellum, much smaller than suckers" and the other, with the "Rostellum approximating in size to suckers" He includes the species *cuneata* in the latter group. In all the specimens, in the present collection, the rostellum is much larger than the suckers.

Fam. HYMENOLEPIDAE.

Hymenolepis gracilis (Zeder) Cohn.

1930. *Hymenolepis gracilis*, Southwell, *Fauna Brit. India*, Cestodes, II, pp. 130-131.

1940. *Hymenolepis gracilis*, Hughes, *Bull. Okla. Agri. & Mech. Coll.*, No. 8, p. 13.

1941. *Hymenolepis gracilis*, Hughes, *Trans. Amer. Micro. Soc.* LX, p. 412.

Species of the genus *Hymenolepis* have not been recorded from ducks from the Central Provinces. Mr. Zargar obtained two specimens of *H. gracilis* for the first time from this region. He found them in the intestines of a duck in association with another species of the same genus, *Hymenolepis oweni*, at Nagpur. The specimens are contracted and measure about 6-10 mm. in length and 0·5 mm. in width (maximum). The number of rostellar hooks is eight.

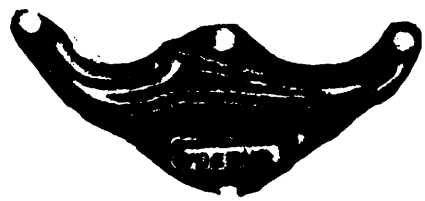
Hymenolepis oweni Moghe.

1933. *Hymenolepis oweni*, Moghe, *Parasit* XXV, pp. 337-39.

Many specimens of this parasite were collected by Mr. Zargar from the intestines of a duck at Nagpur, along with those of *Hymenolepis gracilis*. These are much larger examples than the last species; their length being 29-53 mm. and maximum width about 1.0 mm. Suckers are armed but the number of rostellar hooks is only nine in each of the two scolices that I have in the collection. Moghe had collected his specimens from *Philomachus pugnax* L., from Nagpur.

Hymenolepis sp.

This collection of specimens of the genus *Hymenolepis* has proved of special interest. They have the number of rostellar hooks only six. It is a larger form like *H. oweni*, the size of some of the pieces with me being 30-40 mm. in length and about 1.5 mm. in breadth.



TEXT-FIG. 1.—*Hymenolepis* sp., shape of a rostellar hook.

Other noteworthy points are the presence of a sacculus accessorius, a very long cirrus sac, with a big internal vesicula seminalis and a voluminous receptaculum seminis. Specific identification of specimens has not been made definite as, unfortunately, I have only one scolex at my disposal. The shape of a rostellar hook is as shown in Text-fig. 1. Its length is 58·4 μ, the blade measuring 20·0 μ.

These specimens were also obtained by Mr. Zargar, from the intestines of a duck, at Nagpur.

Cestode sp. (Immature)

Four oval cysts, containing immature cestodes, were collected from the liver of a fish host, *Ophicephalus punctatus* at Salebhata in the Patna State. Their maximum measurements are 6·4×4·0 mm.

NEMATODA.

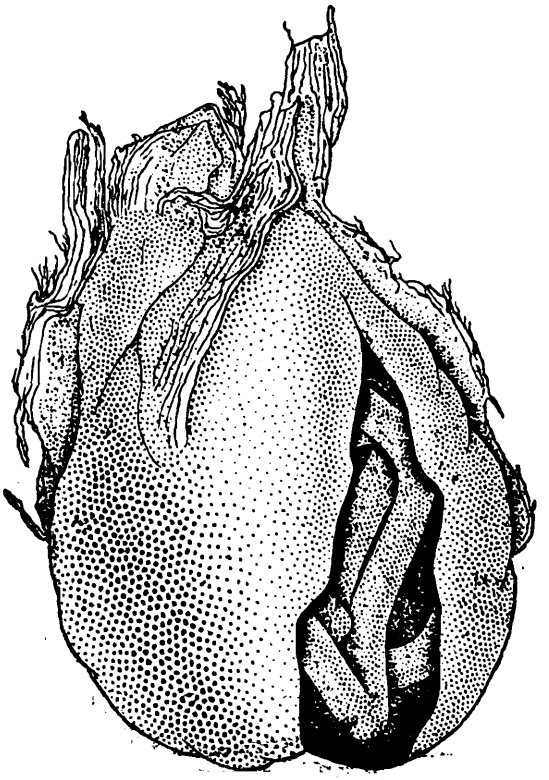
Fam. Ascaridae.

Sub-family. Anisakinae.

Porrocaecum pristis Baylis and Daubney.

1922. *Porrocaecum pristis*, Baylis and Daubney, *Mem. Ind. Mus.*, VII, pp. 280-281.

Only two somewhat immature female specimens of this parasite were obtained by Mr. Zargar from a fish, *Wallagonia attu* (locally known as *Paran*), a considerable number of which died in October, 1945, in the tank water reservior of the Bengal Nagpur Railway, at Gondia (C.P.). One of the parasites was found encysted in the peritoneal tissue of the body cavity of the host (Text-fig. 2). Regarding the fish mortality, the Veterinary Assistant Surgeon, Gondia reports: "... an appreciable



Text-fig. 2.—*Porrocaecum pristis* Baylis and Daubney (encysted).

mortality amongst fish was recorded in a tank situated close to Gondia town. The fish used to jump out of the water and die within a couple of minutes. No exact cause of death has yet been ascertained" It was also reported that the diseased fish had no taste. Further inquiries bring out the fact that *W attu* was the only species of fish, which was affected. For want of sufficient material and detailed information, it is difficult to say whether the nematode parasites were in any way responsible for this fish mortality.

Porrocaecum sp.

A single specimen of this nematode was obtained at Salebhata, in the Patna State, from the intestines of the same host (*Wallagonia attu*) which harboured *Isoparorchis* in its liver. The structure of the anterior portion of this parasite is somewhat interesting. It is roundish in shape and has two broad-based papillae, clearly seen, projecting out. But as there is a single damaged specimen in the collection, it has not been possible to give it a specific name.

Stewart[1] recorded many unidentified nematode larvae from this fish, from various localities in India. Baylis and Daubney[2] also mention them as unspecified species of the genera *Porrocaecum* and *Contracaecum.* Their specific identity is still unknown. Therefore any study, leading to the establishment of the specific identity, particularly of the adults of these larvae, may prove of interest especially from the point of view of fisheries.

Sub-Fam. ASCARINAE.

Polydelphis sewelli Baylis & Daubney.[3]

1922. *Polydelphis sewelli*, Baylis and Daubney, *Mem. Ind Mus.*, VII, pp. 273-274.

Three specimens of this parasite, collected, from the snakes, *Natrix piscators*—chequered keelback, from Deolali, Dist. Nasik (Bombay Precy.) were sent on to the Zoological Survey of India, for study by Mr. H. S. Prater, of the Bombay Natural History Society. One of the parasites was found on a white patch along side the top of the lung of the host and the second on a similar white patch over the heart of the same host. The third worm was collected from the stomach of a second host, reported to have been kept in captivity. This specimen does not easily lend itself much to study.

Fam. HETERAKIDAE.

Ascaridia galli (Schrank) Freeborn.

1936. *Ascaridia galli*, Baylis, *Fauna Brit. India*, Nematode, I, pp. 133-36.

Five specimens of this worm were obtained by Mr. Zargar from the intestines of a fowl at Chanda (C.P.) and eight specimens, from the oesophagus, gizzard and proventriculus of a goose, at Nagpur. This is a very common parasite of Poultry both in the Central Provinces and Central India, although it has not yet been recorded. Its host-record from a goose is interesting.

Heterakis gallinae (Gmelin) Freeborn.

Specimens of this worm were collected, in association with *Paronia* sp. and *Ascaridia galli* from fowls at Khandwa by Mr. S. L. Zargar. They have also been collected from fowls at Nagpur.

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[1]Stewart, *Rec. Ind. Mus.*, X, pp. 179-181 (1914).
[2]Baylis and Daubney, *Mem. Ind. Mus.*, VII, pp. 280-81 (1922).
[3]Baylis and Daubney, *Rec. Ind. Mus.*, XXV, pp. 551-578 (1923).