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ON *CASTRONODUS* LARVAE FROM THE DEFINITIVE HOST, *SUNCUS MURINUS* (NEMATODA: SPIRUROIDEA)

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Abstract. Encysted and unencysted larvae belonging to the genus *Castronodus* Singh, 1934 are described from the definitive host, *Suncus murinus sindensis*. The free larva is reported for the first time from kidney and it is felt that the larvae undergo a course of migration before settling down in their permanent location.

Out of nine musk-shrew, *Suncus murinus sindensis* Anderson, 1877, examined for nematode infection during August 1967 at Jodhpur, India, two were found to harbour a number of encysted and one an unencysted larva belonging to the spirurid genus *Castronodus* Singh, 1934. Besides these, occasionally, a few nematodes belonging to the genus *Capillaria* Zeder, 1800 and, invariably, cestodes belonging to the genus *Hymenolepis* Weinland, 1858 were also met with. SRIVASTAVA and PANDE (1964) briefly described a free *Castronodus* larva from the stomach content of the definitive host. In the present study, however, the free larva was encountered in the right kidney and it is felt that this location may be of some significance in the life history of this worm which has not been worked out so far.

Castronodus larvae

(All measurements are in millimeters)

Encysted (Fig. 1). The cysts were found attached practically everywhere, e.g. stomach, intestine, rectum, mesenteries, gall bladder, diaphragm, nerve fibres, etc. These were, however, most abundant on the stomach and the rectum. In one of the hosts the infection was very heavy and 74 cysts were counted. The fibrous cyst is about 0.745×0.67 averaging about 0.035 in thickness. Usually there is only one larva in each cyst but from one four larvae were recovered. One encysted larva was studied after freeing it from the cyst. The details are as follows: Length 2.775; maximum thickness 0.1. Funnel-shaped pharynx 0.044 long and 0.022 wide at the beginning, narrowing down posteriorly to 0.015. Oeso-

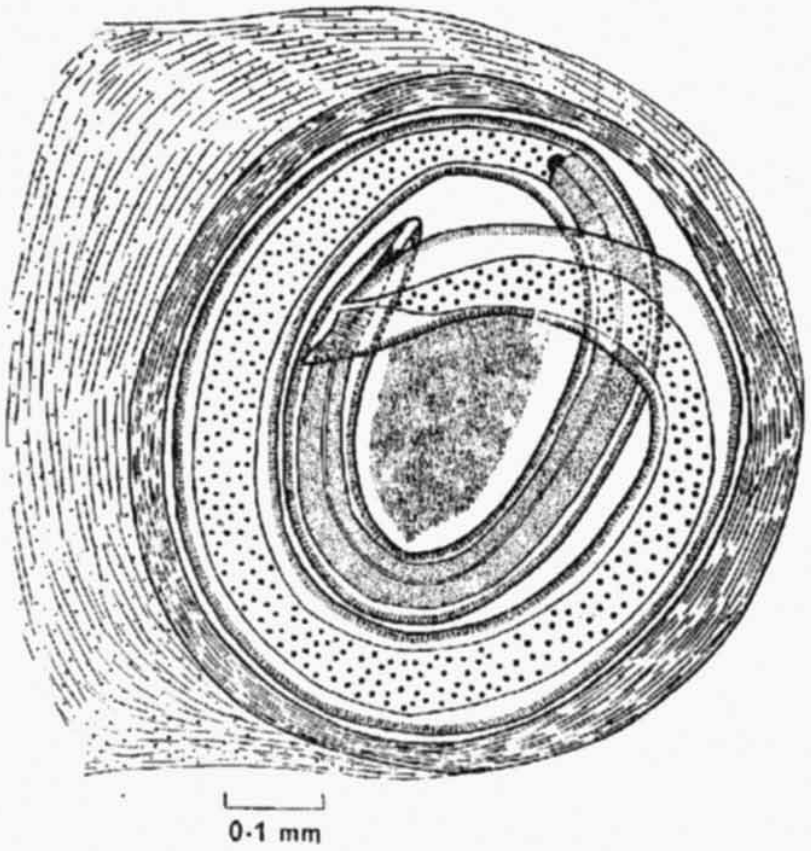

Fig. 1. Encysted *Castronodus* larva in the cyst attached to mesentery.

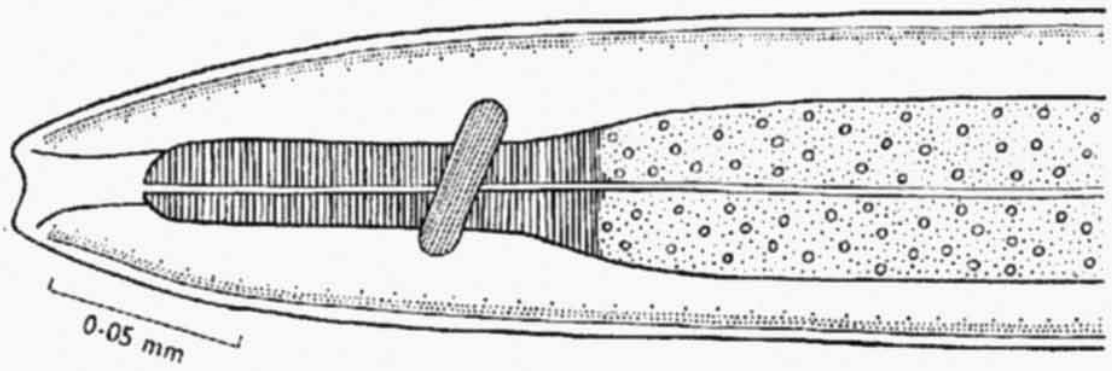

Fig. 2. Unencysted *Castronodus* larva, anterior region.

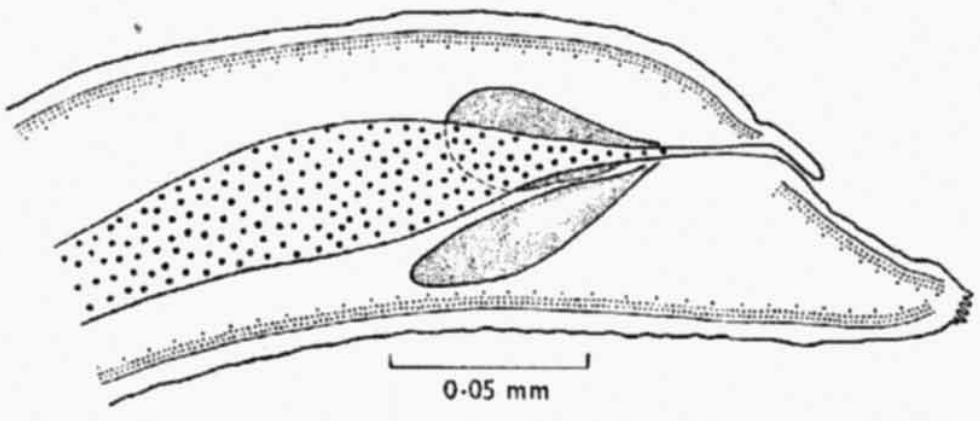

Fig. 3. Unencysted *Castronodus* larva, posterior region.

phagus 1.036 long; divided into an anterior muscular portion 0.108 long and 0.033 wide, and a posterior glandular part 0.928 long and 0.06 wide. Oesophago-intestinal valve present. Intestine 1.655 long and 0.02 wide, dilates posteriorly to about 0.3. Anus at 0.06 from posterior extremity, covered by a flap. About 8 prominences present at posterior end. Nerve ring at 0.126 from anterior extremity. Excretory pore not visible. Sex apparatus not laid down.

Unencysted (Figs. 2 and 3). Length 2.734; maximum thickness 0.11. Pharynx, funnel-shaped, 0.03 long and 0.02 wide at commencement, narrowing down posteriorly to 0.014. Oesophagus 0.898 long; muscular oesophagus 0.102 in length, widens from 0.02 at its anterior end to 0.031 at the posterior; glandular oesophagus 0.796 long and 0.06 wide. Oesophago-intestinal valve present. Intestine 1.646 long and uniformly wide, 0.02, till its termination where it dilates to about 0.031. Anus at 0.06 from posterior end, covered by a flap about 0.014 long. About 8 prominences at the posterior extremity. Nerve ring surrounds posterior portion of muscular oesophagus at 0.12 from anterior end. Excretory pore not visible. Sex apparatus not laid down.

DISCUSSION

SINGH (1934) described *Castronodus strassenii* from musk-shrew, *Suncus murinus* (*Crocidura coerulea*), and since no further species has been added to the genus it seems very probable that the larvae described above belong to this species. SRIVASTAVA and PANDE (1964) reported a free larval stage of *C. strassenii* from the stomach content of the host and also referred to an encapsulated form occurring in the sub-mucosa region of stomach observed in serial sections.

The adult *Castronodus strassenii* are found in nodules in the wall of stomach of their host and the free larva described above was recovered from kidney. It, therefore, appears likely that the larvae reaching the stomach in an intermediate host, undergo a migration before settling down in their permanent location. Such a migration has been described for the members of the closely related genus *Spirocerca* Railliet and Henry, 1911 where the larvae reach, either through the portal and pulmonary capillaries (FAUST 1927) or by direct penetration into gastric and coeliac arteries (HU and HOEPPLI 1936), the arterial system. Subsequently they find their way back into the wall of oesophagus producing the characteristic tumours. It stands to reason, thus, to conclude that *Castronodus strassenii* larvae also migrate to the arterial system and thence back to stomach. Unless such a migration is taking place it would be difficult to explain the presence of a free larva in kidney. Whether, however, the infection in kidney was accidental or it falls in the normal route of migration cannot be said at present since only one free larva was found despite diligent search for more, particularly in the supposed course of migration.

Acknowledgements

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THE IXth CONGRESS OF THE POLISH PARASITOLOGICAL SOCIETY IN KATOWICE, MAY 18—21, 1967

The Polish Parasitological Society (Polskie Towarzystwo Parazytologiczne) arranges congresses in three-year intervals in order to summarize the results of scientific research achieved in the periods between the congresses and to outline the tendencies of future research in the field of parasitology. The organizers of the Katowice congress were Prof. J. Szaflarski and Dr. W. Kucharczyk. The first day of the congress was devoted to two plenary sessions dealing with the Polish parasitology between 1964—1966 and with the biochemical problems in parasitology. On the agenda of the second day were two plenary sessions dealing with the problems of immunology in parasitology and with the epidemiology and epizootology of parasitoses. The third day of the congress was marked out for round-table discussion on trichinellosis, trichomoniasis, toxoplasmosis and gnotobiology. The congress was also attended by several outstanding foreign parasitologists: Dr. Beverley (Sheffield), Prof. Thalhammer (Vienna), Dr. Syrgabajeva (Alma-Ata), Prof. Lupascu (Bucharest), Dr. Engelbrecht (Kleinmachnow), Dr. Zardi (Rome), Dr. Ryzhikov (Moscow) and others. In conclusion of the congress Prof. P. C. C. Garnham of London was awarded the title of the Honorary Member of PTP.

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