GORDIUS AQUATICUS LARVAE FOUND IN THE LAMPREYS LAMPETRA PLANERI (BLOCH) AND L. FLUVIATILIS (L.)

During an investigation of lamprey populations in South Sweden carried out by the first author in 1976, larval lampreys from the Rörum South River and those of the Stampen Stream were found to be infected by gordiid larvae (Nematomorpha) encysted on the gut surface of the hosts. In the Rörum South River 89% of the larval lampreys were infected in June (n = 210) with a mean burden in the infected ones of 6.7 gordiids per lamprey. There were no differences in infestation ratio between *L. planeri* and *L. fluviatilis* nor between males and females. In August (n = 119) the incidence had decreased to 71% on average being somewhat lower in *L. planeri* than in *L. fluviatilis*. The mean burden then was 7.6 in *L. fluviatilis* and 4.3 in *L. planeri*. In the Stampen Stream, where the lampreys (only *L. planeri* present) were infected as well with the nematode *Cucullanus truttae* (Fabr.), the incidence of gordiids in August (n = 122) was 32% and the mean burden of the infected lampreys was 2.0. Usually less than 10 gordiid larvae per host were observed, but occasionally as many as 62 (the Rörum South River) and 12 (the Stampen Stream).

The gordiid larvae (Fig. 1) were located in small whitish lens-shaped cysts 0.21—0.47 mm in diameter, the cyst wall being 0.024—0.030 mm thick. The size of one larva removed from one of the cysts was 0.135 × 0.024 mm, the length of stylets was 0.021 mm. Although the proboscis of all specimens examined was invaginated, making it difficult to observe the exact arrangement of the spines, the structure of the larval body corresponds generally to the description of the preinfective larvae of *Gordius aquaticus* Linnaeus, 1766 as given by Dorier (Trav. Lab. Hydrob. Pisc. Grenoble 22: 1—184, 1930). According to Hyman (The invertebrates: Acanthocephala, Aschelminthes, and Entoprocta. The pseudocoelomate Bilateria, Vol. III. New York, Toronto, London 1951) the gordiid larvae hatch in water after which they penetrate into almost any small aquatic animals, but may continue development only in an appropriate host — usually an insect. Poinar and Doelman (J. Parasitol. 60: 327—335, 1974) state that the carrier hosts may be not only invertebrates but also amphibians and fish in both of which gordiid cysts have been found. Although *G. aquaticus* have been mainly found to develop in aquatic beetles (*Dytiscus*), its encysted preinfective larvae have been frequently recorded from several fish species. Villot (Ann. Sci. Natur. Zool. et Paléont. 11 (No. 3): 1—44, 1881) and Linstow (Arch. Mikroskop. Anat. Entwicklungsgeschichte 31: 747—763, 1898) found larvae of *G. aquaticus* also in the brook lamprey, *Lampetra planeri*. This host was later experimentally infected with larvae of *G. aquaticus* by Dorier (op. cit.). The river lamprey, *Lampetra fluviatilis*, however, has up till now been unknown as a host for *G. aquaticus*.

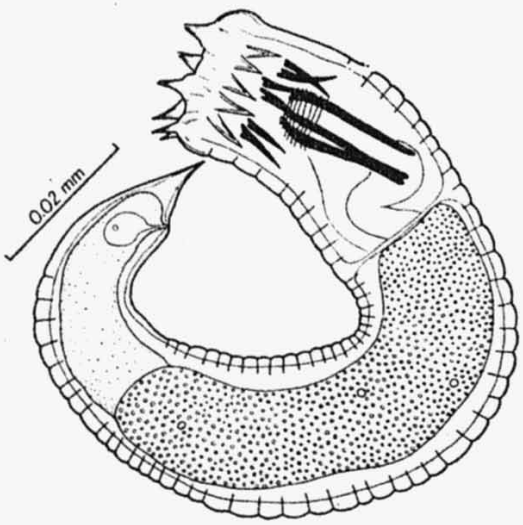

Fig. 1. Larva of *Gordius aquaticus* L. from lampreys.

It may be concluded that the preinfective larvae of *Gordius aquaticus*, along with the larvae of the nematode *Cucullanus truttae* seem to be frequent parasites of European lampreys.

B. MALMQVIST and F. MORAVEC,
Department of Animal Ecology, University of Lund, Lund; Institute of Parasitology, Czechoslovak Academy of Sciences, Prague