FOLIA PARASITOLOGICA 36: 191–192, 1989.

ACTIVE MOVEMENT OF THE EGGS OF THE TAPEWORM ANONCHOTAENIA GLOBATA (LINSTOW, 1879)

Generally, the eggs of the tapeworm, order Cyclophyllidea have an anatomic structure that does not enable their active movement. Although the embryonal hooks in the oncospheres of mature eggs can protract and retract owing to their musculature (Ogren R. E., 1972: J. Parasitol. 58: 240—243), and although the oncospheres are also able to contract in some cases, an active movement of whole eggs has not been reported to date.

When the fresh eggs of the tapeworm *Anonchotaenia globata* from the host *Fringilla coelebs* L. were studied, a very active movement of whole eggs was readily observed. The eggs of this species are elongate, spindle- or "vermiform"—shaped (Cohn L., 1901: Nova Acta Leopold. 79: 269—450). The oncosphere is of a normal shape in the first stages of egg development; later, it changes to a spindle-shaped form resembling the roundworm (Nematoda) (Cerruti A., 1901: Atti Acad. Sci. Fis. Math. Napoli 11: 2—6). Our observations confirm this. The younger eggs, which are spindle-shaped or cylindrical (Ryšavý B., 1955: Věst. čs. Společ. zool. 19: 99—118), possess an easily visible oval or subspherical oncosphere the size of which is 0.010—0.012×0.008—0.009 mm; it bears 3 pairs of embryonal hooks which are 0.004 mm long (Fig. 1A). In the following stage (Fig. 1B), the oncosphere grows longer and starts to be spindle-or vermiform-shaped. In this procces the oncosphere becomes indistinct and its

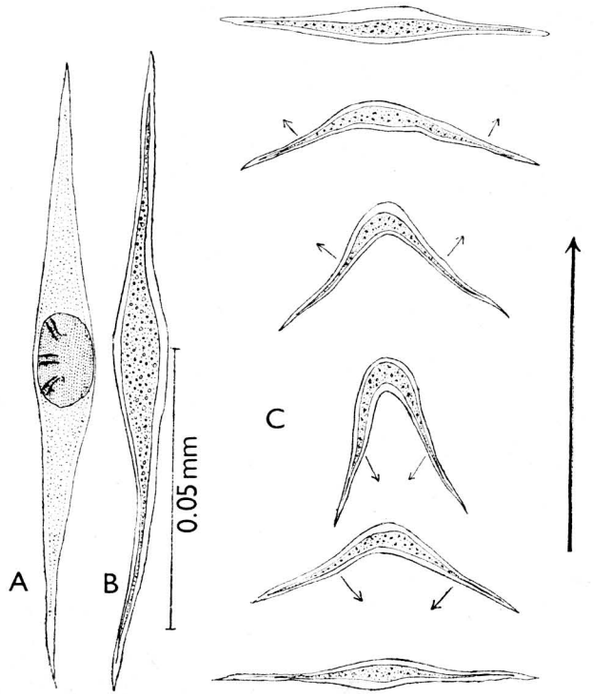

Fig. 1. The eggs of the tapeworm *Anonchotaenia globata* (Linstow, 1879). A — Immature egg, B — mature egg, C — schematic view of egg movement, direction of movement (thick arrow).

contours gradually disappear. The embryonal hooks also gradually vanish or are not visible in the granular content of the oncosphere. The fully mature eggs are 0.110—0.140 mm long and 0.012—0.016 mm wide.

When the fully mature eggs were isolated from the uterus and paruterine organ and transferred to physiological saline (0.4% NaCl), a very active movement, caused by protraction and retraction of the eggs' filamentary projections, could be observed (Fig. 1C). At a temperature of 22—24 °C the eggs moved for 15—25 minutes. After 30 minutes the eggs were motionless. The eggs of the tapeworm of superfamily Paruterinoidea penetrate from the uterus to paruterine organ according to most authors. According to Fuhrmann (Fuhrmann O., 1918: Nova Caledonia, Zoologie 2, No. 14, 399—449) and Baczyńska (Baczyńska H., 1914: Bull. Soc. Neuchâteloise Sci. Nat. 40: 187—239), this process starts after release of the mature tapeworm segments from the strobila. It is possible that the active movement of the eggs of *Anonchotaenia globata* (Linstow, 1879) enables their penetration from the uterus to paruterine organ.

It should be pointed out that the active movement of the eggs of other families (Hymenolepididae, Dilepididae) of similar shape, for example eggs of the tapeworms of genus *Diorchis*, has never been reported.

BOHUMIL RYŠAVÝ
Faculty of Sciences, Charles University, Prague