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## THE DISCOVERY OF THE INTERMEDIATE HOST FOR THE TREMATODE *MOLINIELLA ANCEPS* (TREMATODA, ECHINOSTOMATIDAE) IN UKRAINE

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**The Discovery of the Intermediate Host for the Trematode *Moliniella anceps* (Trematoda, Echinostomatidae) in Ukraine.** Kudlai O. S. — The freshwater molluscs *Lymnaea stagnalis* (Linnaeus, 1758) are first reported as intermediate hosts of the trematode *Moliniella anceps* (Molin, 1859) Hübner, 1939, the parasite of meadow birds (Rallidae), in Ukraine (Dneprodzerzhynsk Reservoir, Poltavaska oblast). Description and figure of metacercariae are provided.

**Key words:** Trematoda, *Moliniella anceps*, intermediate host, Gastropoda, *Lymnaea stagnalis*.

**Обнаружение промежуточного хозяина трематоды *Moliniella anceps* (Trematoda, Echinostomatidae) на территории Украины.** Кудлай Е. С. — Впервые для *Moliniella anceps* (Molin, 1859) Hübner, 1939, паразита пастушковых птиц (Rallidae), установлен промежуточный хозяин на территории Украины — пресноводный моллюск *Lymnaea stagnalis* (Linnaeus, 1758). Материал собран из Днепродзержинского водохранилища (Кременчугский р-н, Полтавская обл.). Приведено описание метацеркарий.

**Ключевые слова:** Trematoda, *Moliniella anceps*, промежуточный хозяин, Gastropoda, *Lymnaea stagnalis*.

### Introduction

During the investigation of the parasites of freshwater molluscs from the genus *Lymnaea* in Dneprodzerzhynsk Reservoir (Kremenchug region, Poltavaska oblast) we have found the larval trematodes at the stage of metacercaria in *Lymnaea stagnalis*. Seven of 20 examined molluscs were infected. Detailed study of the metacercariae structure resulted in their identification as *Moliniella anceps* (Molin, 1859) Hübner, 1939 (Trematoda, Echinostomatidae). Marites of *M. anceps* parasitize mainly the meadow birds (Rallidae), and only once were recorded in mallard, *Anas platyrhynchos*, (Anatidae) (Iskova, 1985). In western Palaearctic, metacercariae of *M. anceps* were reported from Germany (Hübner, 1939), France (Dubois, 1929), Latvia (Lange, 1970), Lithuania (Ališauskaitė, 1958; Kiselienė, 1964, 1968), Russia (Sudarikov et al., 2002), Kazakhstan (Butenko, 1967; Smirnova, 1967; Smirnova, Ibrasheva, 1967) in molluscs *Lymnaea stagnalis*, *L. starobogatovi*, *L. corvus*, *L. palustris*, *Physa fontinalis*, *Planorbis planorbis*, *Planorbarius corneus*, *Bithynia tentaculata* and other species of the genera *Lymnaea*, *Physa*, *Planorbarius*, *Anisus*, *Viviparus*.

In Ukraine, the intermediate host of this parasite has not been known yet. Description of the metacercariae found is presented herein.

### Material and methods

Material used in this study was collected from infected molluscs *L. stagnalis* in Dneprodzerzhynsk Reservoir (Kremenchug region, Poltavaska oblast) in October, 2008. Molluscs were collected manually. The trematode larvae were found in the hepatopancreas and other tissues of molluscs. Morphology of the metacercaria was investigated in alive and stained specimens according to the generally accepted methods (Ginezinskaja, 1968; Sudarikov et al., 2002). Metacercariae were investigated under low-magnification microscope MBS — 6, and light microscopes “Zeiss Axiolab” and “Leica DM LB2”. Upon fixation in 70% alcohol, the trematodes were stained in acetocarmine and mounted in Canada balsam. The drawings were made with the aid of drawing tube mounted on the microscope “Leica DM LB2”.

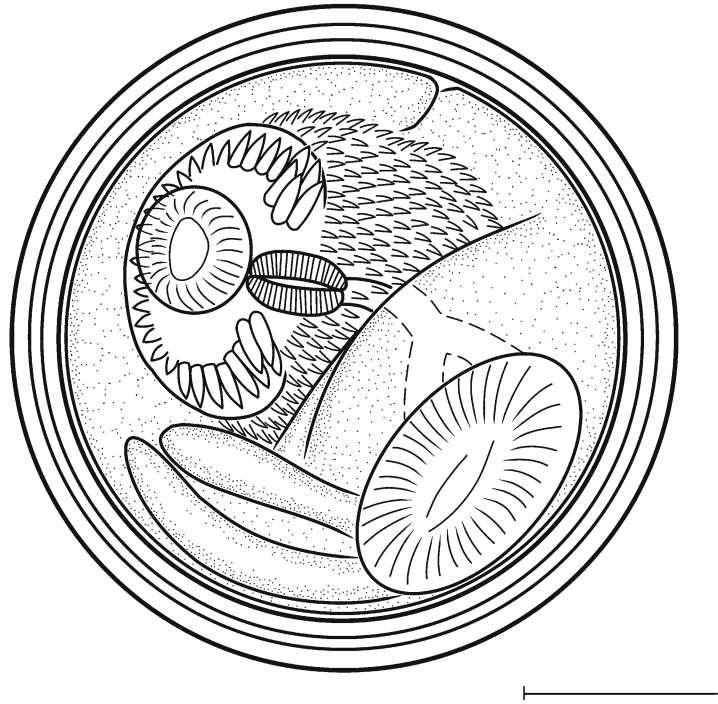


Fig. 1. Metacercaria of *Moliniella anceps*. Scale bar 0.1 mm.

Рис. 1. Метациркария *Moliniella anceps*. Масштабная линейка 0,1 мм.

## Results and discussion

Metacercariae are located in the spherical cyst, 0.3–0.4 mm in diameter (fig. 1). The cyst wall has different number of layers at different stages of maturation (maximum five). The thickness of the cyst wall varies from 0.020 to 0.035 mm. The metacercarial body is covered with spines 0.01 mm long, which look like scales. They are most frequently observed in the anterior part of the body. The body inside cyst is rolled in a thick ball which fills the whole volume of the cyst. The anterior part of the body bears large adoral disc (0.100–0.138 x 0.150–0.185 mm) with 35 spines. Spines are 0.019–0.025 long and 0.004 mm wide. Five corner spines are situated on each side. The other 25 spines are arranged in two rows without basal interval. Oral sucker is subterminal, 0.050–0.075 mm long and 0.045–0.080 mm wide. Prepharynx 0.026–0.034 mm long is well seen in alive metacercaria. Pharynx is 0.048–0.055 mm long and 0.028–0.045 mm wide. Ventral sucker is 0.105–0.150 mm long and 0.115–0.175 mm wide. Lateral vessels of the excretory system reach the anterior edge of the adoral disc.

**Table 1. Morphometry of *Moliniella anceps* metacercariae (mm)**

**Таблица 1. Вариации размеров (мм) органов метациркаррий *Moliniella anceps***

Characters	Our data	In Rieh (1927; after Skrjabin, 1956)	In Sudarikov et al. (2002)
Diameter of the cyst	0.300–0.398	0.37–0.40	0.267–0.405
Thickness of the cyst wall	0.020–0.035	—	0.026–0.028
Size of the adoral disk	0.100–0.138 x 0.150–0.185	—	0.103–0.190 (width)
Size of the oral sucker	0.050–0.075 x 0.045–0.080	0.09–0.1 (diameter)	0.055–0.082 x 0.052–0.069
Size of the pharynx	0.048–0.055 x 0.028–0.045	—	0.030–0.051 x 0.030–0.042
Size of the ventral sucker	0.105–0.150 x 0.115–0.175	0.15 (diameter)	0.162 (diameter)

In the area between the disk and the ventral sucker the vessels are branched in the form of “herring-bone”.

To identify the metacercaria we took into consideration the fact that some characters (the number of spines on the adoral disk, their location and size) in metacercaria of echnostomatids remained unchanged in adult trematodes. The position and size of spines in the metacercaria found corresponded to those of marites of *M. anceps* and metacercaria of this species, described in the literature (Rieh, 1927; Hübner, 1939 cit. after Skrjabin, 1956; Sudarikov et al., 2002). The differences in size of separate organs were insignificant (tabl. 1).

Experimental infection of the one-day-old chicken by metacercaria of *M. anceps* was not successful. This confirms the narrow host specificity of this trematode species mentioned by F. Rieh (1927; cit. after Skrjabin, 1956).

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