

RESEARCH NOTES

НАУЧНЫЕ ЗАМЕТКИ

FIRST FINDING OF *MORISHITIUM POLONICUM* (TREMATODA, CYCLOCOELIDAE) IN *TURDUS MERULA* AND *COCCOTHAUSTES COCCOTHAUSTES* IN RUSSIA

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The trematode *Morishitium polonicum* has been recorded for the first time from passerine birds in Russia (National Park «Smolny», Republic of Mordovia, Russia). Fifteen mature specimens were found in the air sacs of *Turdus merula* and *Coccothraustes coccothraustes*. A morphological description and photos of the examined trematode are given. *Coccothraustes coccothraustes* is detected as a new host of this trematode.

Key words: Common blackbird, Cyclocoelidae, Hawfinch, National Park «Smolny», trematodes

A complex parasitological research of vertebrates in the National Park «Smolny» was conducted from June 2018 to June 2019. There were collected ten mature trematodes from the air sacs of one male of *Turdus merula* Linnaeus, 1758 and five of one male of *Coccothraustes coccothraustes* (Linnaeus, 1758) on 1st May 2019 in the vicinity of the village Obrezki (Ichalki district, Republic of Mordovia, Russia) (Fig. 1).

The extracted parasites were immobilised by heating in a saline solution. Next, the trematodes were stained with acetic carmine, dehydrated, cleared in clove oil and mounted in Canada balsam. The helminths were identified, guided by dichotomous keys of Dronen & Tkach (2014) and Dronen & Blend (2015). Morphometric measurements of the parasite body length and width, oral sucker width, pharynx width, cirrus sac length, ovary width, testes width and the eggs' length and width were obtained. All measurements were given in millimeters (Table).

Description of trematodes from *Coccothraustes coccothraustes* (5 specimens)

Trematodes with an elongated lanceolate body, narrowed towards the anterior end, rounded posteriorly and flattened dorsoventrally (Fig. 2). The rudimentary oral sucker present, the ventral sucker absent. The mouth subterminal and following to a circular shaped pharynx. The prepharynx relatively short. The pharynx following to a thin oesophagus, which goes into caeca bifurcation. Intestinal branches reach the body end where they joined.

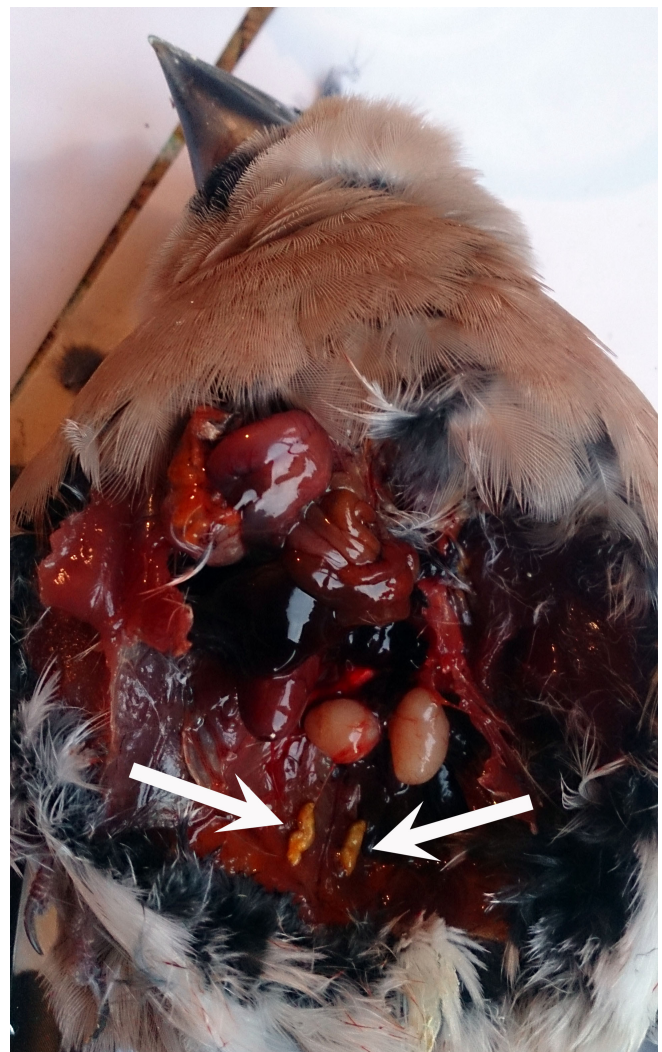


Fig. 1. Trematodes *Morishitium polonicum* in coelomic cavity of *Coccothraustes coccothraustes* male.

Table. Morphometric measurements of *Morishitium polonicum* from *Turdus merula* and *Coccothraustes coccothraustes*. Percentages of body length shown in brackets

Measurements, mm	<i>Turdus merula</i> (10 trematodes)		<i>Coccothraustes coccothraustes</i> (5 trematodes)	
	min–max	average	min–max	average
Body length	6.902–8.254	7.704	6.250–8.075	7.275
Body width	2.000–2.650	2.269	1.815–2.453	2.099
Oral sucker width	0.169–0.232	0.196	0.181–0.266	0.214
Pharynx width	0.204–0.232	0.218	0.193–0.266	0.220
Pharynx/oral sucker ratio	1:1		1:1.03	
Cirrus sac length	0.236–0.324	0.291 (3.8%)	0.193–0.315	0.256 (3.5%)
Ovary width	0.222–0.348	0.304	0.259–0.296	0.274
Testes width	0.370–1.000	0.588	0.386–0.667	0.510
Testes width/ovary width	1:1.9		1:1.9	
Intertesticular space	0.533–0.963	0.714 (9%)	0.630–0.681	0.652 (9%)
Posttesticular space	0.444–0.830	0.662 (8.6%)	0.548–0.954	0.727 (9.9%)
Egg length	0.090–0.134	0.113	0.079–0.126	0.101
Egg width	0.047–0.071	0.060	0.043–0.069	0.057

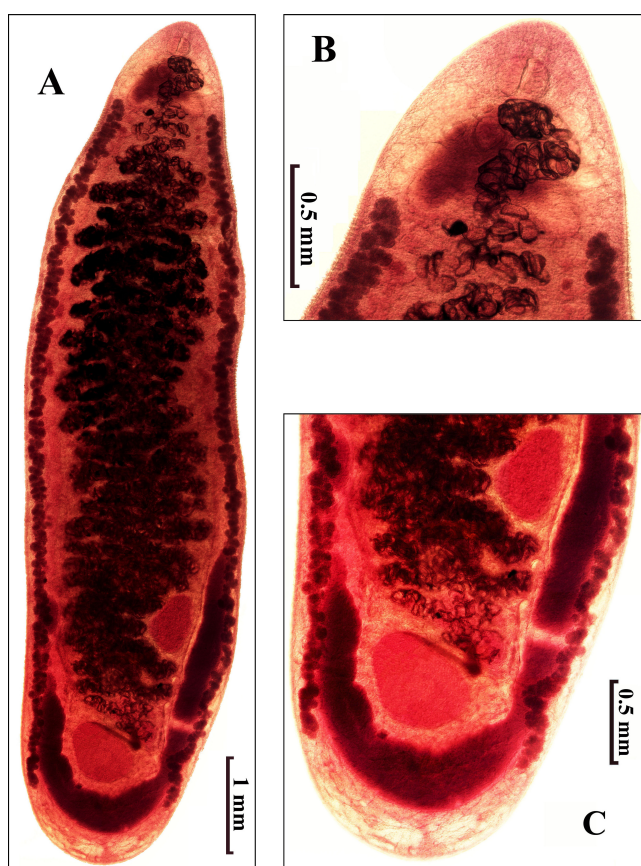


Fig. 2. *Morishitium polonicum* found in *Coccothraustes coccothraustes*. A – general image of *M. polonicum*; B – anterior end of the body showing the rudimentary oral sucker, the pharynx, genital pore and the eggs in uterus; C – posterior end of the body showing two oval-shaped testes, an intertesticular circular ovary placed between the testes about the same line as the testes, two caeca joined posteriorly and two vitelline fields not confluent posteriorly.

The genital pore postpharyngeal. Cirrus sac bulb-shaped, located in the bifurcation area, and not reaching its posterior border. Two oval-shaped testes located at the posterior part of the body. The anterior testis is shifted from the median line toward the wall of caeca. The posterior testis is always larger than the anterior and lies medially in

the caeca arch. The circular ovary located between the testes about the same line as the testes. The uterus loops occupy the space between the caeca branches, not crossing them laterally. Vitelline fields in the anterior part of the body reached approximately the level of the posterior margin of the caeca bifurcation on at least one side and do not join into the posterior zone of the trematode body. The transversal vitelline duct is clearly visible and located at the level of the posterior testis (Fig. 2).

The morphological description of the trematodes found in *Turdus merula* coincides with the description of the parasites from *Coccothraustes coccothraustes*.

Based on comparing the morphology and morphometry of parasites by Dronen & Blend (2015), the trematodes found in *Turdus merula* and *Coccothraustes coccothraustes* were identified as *Morishitium polonicum* (Machalska, 1980).

According to Dronen & Blend (2015), *Turdus merula* is an additional host of the trematode. The typical host of the parasite is *Turdus philomelos* Brehm, 1831. *Morishitium polonicum* was previously registered in thrushes in Poland (Machalska, 1980; Sulgostowska & Czaplinska, 1987), Italy (Visconti et al., 1988; Bona et al., 1995; Galosi et al., 2019), the Czech Republic (Sitko et al., 2017), and Spain (Jaume-Ramis & Pinya, 2018). The parasite was also noted in Armenia, Azerbaijan, Georgia, and Uzbekistan as *Neocyclocoelum elongatum* (Harrah, 1921) (Feizullaev, 1980).

The finding of mature trematodes in *Turdus merula* and *Coccothraustes coccothraustes* in early May suggests that the infection of these migratory birds with this parasite occurred at wintering grounds. Our finding of mature *M. polonicum* is confirmed by the data of Okulewicz (2014). Recording mature helminths in adult migratory birds in spring indicates that it is an alien parasite and the infection occurred at wintering

grounds. In the Middle Volga region, populations of *T. merula* and *C. coccothraustes* are migratory. *Turdus merula* spends the winter in the Mediterranean region and Central Asia (Collar & Christie, 2019). Wintering sites of *C. coccothraustes* are in south eastern Europe, the Middle East, on the Crimea, and in the Caucasus (Clement & Christie, 2019).

The trematode *M. polonicum* is recorded for the first time from passerine birds in Russia. *Coccothraustes coccothraustes* is detected as a new parasite host.

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ПЕРВОЕ ОБНАРУЖЕНИЕ *MORISHITIUM POLONICUM* (TREMATODA, CYCLOCOELIDAE) У *TURDUS MERULA* И *COCCOTHRAUSTES COCCOTHRAUSTES* В РОССИИ

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Трематоды *Morishitium polonicum* впервые зарегистрированы у воробьиных птиц фауны России (Национальный парк «Смольный», Республика Мордовия, Россия). Пятнадцать парит были найдены в воздушных мешках *Turdus merula* и *Coccothraustes coccothraustes*. Приводятся морфологическое описание и фотографии обнаруженных трематод. *Coccothraustes coccothraustes* отмечен в качестве нового хозяина паразита.

Ключевые слова: Cyclocoelidae, дубонос, национальный парк «Смольный», трематоды, черный дрозд