

The first record of *Aspidogaster limacoides* Diesing, 1834 (Aspidogastridae: Aspidogastrea) in Poland

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ABSTRACT. *Aspidogaster limacoides* Diesing, 1834 was identified in two specimens of roach (*Rutilus rutilus* L.) from middle Odra River (Lower Silesia, SW Poland). As the species is new to the Polish parasitofauna, a description, measurements and figure are presented.

Key words: *Aspidogaster limacoides*, Aspidogastrea, Poland, roach.

Introduction

Among *ca* eighty species of Aspidogastrea presently known, only two species, *Aspidogaster conchicola* von Baer, 1826, common parasite of pericardial cavity of mussels, rarely found in fish as well as *A. limacoides* Diesing, 1834, typical intestinal parasite of fish, occur in Europe. Data on occurrence of *A. limacoides* are very scarce. Confirmed data originate from the former USSR area, where *A. limacoides* was found in *Leuciscus cephalus*, *L. idus*, *Abramis brama*, *Gobio gobio*, *Rutilus rutilus*, *Acipenser nudiiventris*, *Sander lucioperca*, *Ophiocephalus argus*, *Gobius melanostomus* and *Neogobius melanostomus* [1–3] and from Iran [4]. In Europe *A. limacoides* was recorded from Austria — from *Barbus barbus* [5, 6], Turkey — from *Vimba vimba* [7], Hungary — from *Barbus barbus* [8] as well as from Germany, Romania and Ukraine [9–11]. Hitherto records from Poland concern *A. conchicola* only [12].

Material and methods

During parasitological studies on the roach from middle Odra River, 39 specimens of fish were subject to standard parasitological dissection. The fish originate from the locality in Wały Śląskie near

Wrocław (Lower Silesia, SW Poland). Isolated aspidogastrids were preserved in 70% ethyl alcohol, stained in borax carmine, and differentiated in acidic ethyl alcohol. Subsequently they were dehydrated in graded alcohol series, treated with clove oil and mounted in Canada balsam. Measurements are given in micrometers. The specimens are deposited in the collection of the Department of Zoology and Ecology, University of Environmental and Life Sciences in Wrocław, Poland.

Results and Discussion

Aspidogaster limacoides Diesing, 1834 (Fig. 1)

Host: *Rutilus rutilus* L.

Locality: Odra River in Wały Śląskie, Lower Silesia (SW Poland); 12.05.2006.

Site of infection: intestine.

Prevalence and intensity of infection: 2/39 (5.1%), single specimens.

Description (based on 2 specimens): Body elongate, muscular, tapering at both ends, 3443–3807 long and 1742–1801 wide. Maximum width recorded at the level of gonads. Typical oral sucker lacking. The mouth situated on anterior margin of the body. Ventral adhesive disc bears four longitudinal rows of alveoli and marginal organs. The total number of alveoli on disk 62; (15 suctorial pits in

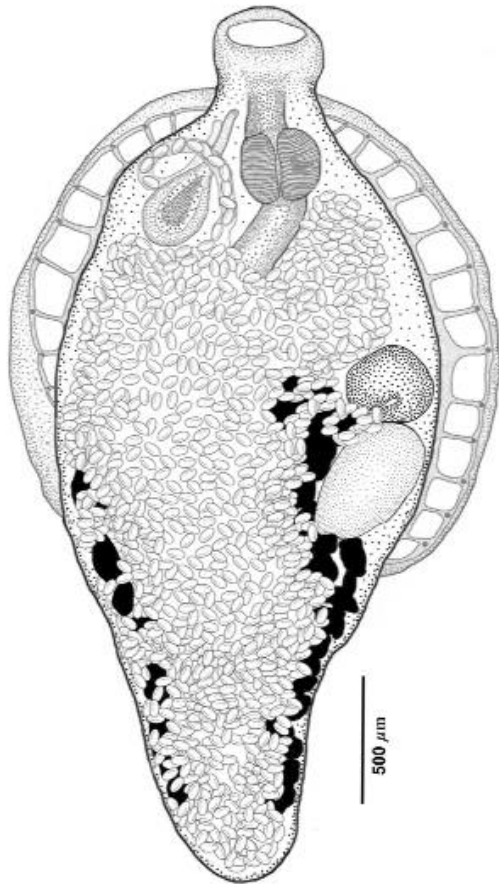


Fig. 1. *Aspidogaster limacoides* Diesing, 1834, from *Rutilus rutilus* L., dorsal view.

each row, with one at each end of the disk). Pharynx large, slightly oval, 302×315 and 372×321 , strongly muscular. Intestine simple, with single caecum, in large parts covered with uterus. Testis single, elongate and large 623×361 and 651×372 , postovarian. Ovary reniform, equatorial, $504\text{--}562$ long and $225\text{--}258$ wide. Cirrus sac large, 573×223 and 635×258 , situated transversely, distal part of sac much narrower than the proximal part. Genital pore at or beyond the level of anterior end of pharynx. Uterus very long, with numerous eggs, fills posterior half of the body, in anterior part of the body — forms numerous coils. Vitellarium follicular, beginning in midline and forming two lateral groups in hindbody. Left vitellarium slightly shorter than the right one. Eggs numerous, relatively large, 71 ($68\text{--}75$) long and 41 ($37\text{--}46$) wide.

Remarks. Both species of *Aspidogaster* occur sympatrically in Europe. Common occurrence of *A. conchicola*, in the lack of information on *A. limacoides* could be the reason for incorrect identifica-

tion of both species. The host specificity, according to which *A. conchicola* parasitizes only in pericardial cavity of mussels and *A. limacoides* — in fish intestine, has been one of the criterion most often applied in species determination. According to the published data [2, 13, 14, 15] both species are found in fish and molluscans which can make the criterion mentioned above only helpful. Due to this, the main character which allows to differentiate both species is the number of alveoli on the adhesive disc. Skrjabin [1] presents the list of six species of *Aspidogaster* parasitizing in fish and molluscans. The host specificity and the number of alveoli are taken into account in his monograph. Skrjabin [1], Bauer [2] and Bykhovskaya-Pavlovskaya et al. [16] inform that the number of alveoli in *A. conchicola* is always higher than 110, while in *A. limacoides* it is never higher than 70. Studies of Gao et al. [15], with the use of scanning electron microscope confirm the difference mentioned above. In the material considered in the present studies, the number of alveoli is 62. The pits are located in four longitudinal rows, 15 alveoli in each row plus one at each end of the disc.

Besides the morphology of the disc, other anatomical data are congruent with those provided by the Russian authors. Differences apply only to biometrical data. Size of both specimens found as well as the metric data concerning majority of the organs are bigger than those presented by Skrjabin [1], who was the only author who provided the full biometrics of *A. limacoides*. In particular, differences apply to the width of the body (1771 vs. 950) and the measurements of pharynx (337×318 vs. 270×210), cirrus sac (604×240 vs. 405×260) and ovary (533×241 vs. 385×270). Due to the irregular shape of cirrus sac, and especially reniform ovary, the results of measurements can depend on the place, in which they were taken. In the own material the maximum width of both organs is presented; discrepancies in the body width or in measurements of pharynx can be due to the way of fixation.

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