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FIRST FINDING OF BAT PARASITE *PYCNOPORUS MACROLAIMUS* (DIGENEA, LECITHODENDRIIDAE) IN THE UKRAINE

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First Finding of Bat Parasite *Pycnoporus macrolaimus* (Digenea, Lecithodendriidae) in the Ukraine. Tkach V. V. — Morphology of a rare digenean *Pycnoporus macrolaimus* found in *Pipistrellus kuhli* from the Kherson Region, Ukraine, is described. This is a most Eastern point of the distribution of this species and its first record in the Ukraine. Presence of the tegumental armament in this species is confirmed. Generic allocation of the species in the genus *Pycnoporus* is considered temporary because of the unresolved problem of the differentiation between genera of lecithodendriids parasitic in bats.

Key words: Digenea, Lecithodendriidae, *Pycnoporus macrolaimus*, morphology, systematic position.

Первая находка в Украине паразита рукокрылых *Pycnoporus macrolaimus* (Digenea, Lecithodendriidae). Ткач В. В. — Описано строение редкой трематоды *Pycnoporus macrolaimus*, обнаруженной у *Pipistrellus kuhli* в Херсонской обл., Украина. Это первая находка данного вида в Украине и наиболее восточная точка его ареала. Подтверждено наличие у *P. macrolaimus* тегументальных шипиков. Принадлежность данного вида к роду *Pycnoporus* рассматривается как временная ввиду нерешенной проблемы родовой дифференциации лецитодендриид, паразитирующих у рукокрылых.

Ключевые слова: Digenea, Lecithodendriidae, *Pycnoporus macrolaimus*, морфология, систематическое положение.

Introduction

Until now, 3 species of the genus *Pycnoporus* have been reported from the territory of the Ukraine, namely *P. heteroporus, P. megacotyle* and *P. acetabulatus* (Tkach et al., 1983, 1985; Sharpilo, Iskova, 1989). The re-examination of the collection material has shown that the report of Tkach et al. (1983) on the finding of *P. acetabulatus* in the Ukraine was based on the erroneously specimen of *P. megacotyle* distorted during fixation. Thus, the genus *Pycnoporus* was represented in the Ukrainian fauna by two species only. A single specimen of *Pycnoporus macrolaimus* was found among several other digenean species (*Plagiorchis koreanus, Parabascus semisquamosus, P. lepidotus, Lecithodendrium linstowi, Prosthodendrium chilostomum, P. longiforme, Pycnoporus heteroporus, P. megacotyle, Allassogonoporus amphoraeformis*) in the material from a bat *Pipistrellus kuhli* collected in the Gola Pristan' district, Kherson Region, Ukraine (46° 27' 28" N; 31° 59' 20" E). *P. macrolaimus* is a very rare species previously known only from Germany, Switzerland and Egypt. Taking into account that our finding is a most Eastern point of the species distribution area and its first record in the Ukraine, the brief description of the specimen from the Ukraine is provided below. The specimen was stained with iron acetocarmine, dehydrated in ethanol, and mounted permanently in Canada balsam. The preparation is deposited in the collection of the Department of Parasitology, Institute of Zoology, Kyiv. All measurements are in millimetres.

Pycnoporus macrolaimus (von Linstow, 1894) (fig. 1)

Small digeneans, body length 0.64, width at the level of the ventral sucker 0.17; body length/width ratio 3.76. Body spindle-like, slightly tapered at both extremities. Tegument relatively thick, with densely arranged very small spines gradually diminishing in size posteriorly, extending to near posterior extremity of the body. Spination is absent only at the edges of suckers and genital pore.

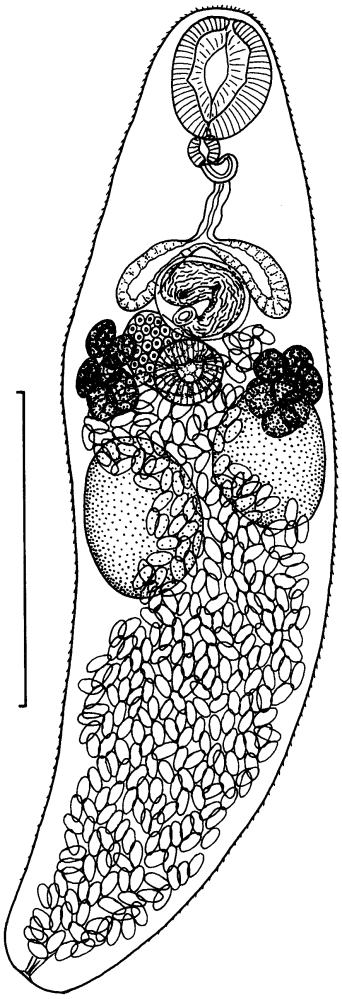

Fig. 1. *Pycnoporus macrolaimus* from *Pipistrellus kuhli.*

Рис. 1. *Pycnoporus macrolaimus* от *Pipistrellus kuhli.* Масштабная линейка 0,2 мм.

Oral sucker subterminal, 0.077×0.064. Round ventral sucker 0.043 in diameter, situated anterior to middle of body. Distance between centres of suckers 0.18. Prepharynx not observed, Pharynx almost round, 0.021×0.019. Oesophagus 0.050. Intestinal bifurcation immediately anterior to cirrus sac. Caeca short, not reaching lateral sides of body and vitellarium, right caecum reaches the anterior margin of ovary. The lumen of caeca is narrow, the intestinal epithelium is thick.

Testes oval, situated obliquely in the middle of body just posterior to the ventral sucker; left testis anterior to right. Left testis 0.099×0.070, right testis 0.102×0.073. Genital atrium median immediately anterior to the ventral sucker. Pseudo cirrus sac is almost round, 0.064×0.056, enclosing a coiled simple seminal vesicle.

Ovary oval, 0.070×0.051, situated to the left from the ventral sucker and partly overlapped by the latter. Ootype situated immediately posterior to the ovary. Seminal receptacle and Laurer's canal not observed because of the numerous uterine loops, overlapping the area. Vitellarium consists of two clusters of several large round or oval follicles situated symmetrically exactly at the level of ventral sucker on either side of the body. Numerous loops of uterus fill postacetabular part of body, partly overlapping testes and vitellarium. Metraterm not well defined. Eggs numerous, operculate, 0.019–0.020×0.010–0.011.

Discussion

Until now, *P. macrolaimus* was found in *Pipistrellus kuhli, P. pipistrellus* and *Nyctalus noctula* (von Linstow, 1894; Looss, 1907; Dubois, 1960; Odening, 1964). However, literature data and our finding indicate that *Pipistrellus kuhli* is probably a preferred host for this digenean. This may explain why *P. macrolaimus* has not been found previously in the Ukraine. Although the helminth fauna of bats in the Ukraine is relatively well known and *N. noctula* and *P. pipistrellus* are among the best studied hosts (Tkach, 1988, 1989), material from *P. kuhli* was not available before the present study.

The morphology of the specimen found in the Ukraine corresponds quite well to the descriptions of the material of *P. macrolaimus* from Western Europe (Dubois, 1960; Odening, 1964). Our data confirm the presence of the tegumental spination in this species reported by Odening (1964), but not mentioned by other authors. Odening (1964) wrote that the spination was observed in the living specimens, but not seen in the whole mounts. Despite their tiny size, the tegumental spines in our specimen of

P. macrolaimus were readily observed in the total preparation under high magnification, especially using the interference contrast optics. Taking into account the small size of the spines, it can be supposed that they were overlooked by previous authors or some specimens could eventually have the spines lost prior or during fixation.

It must be pointed out that the generic allocation of *P. macrolaimus* as well as some other species belonging now to the genus, may be considered temporary at the current state of our knowledge of the group phylogeny. *P. macrolaimus* is a type species of the subgenus *Pycnoporus* (*Lecithoporus*) members of which have the oral sucker larger than ventral, the situation opposite to that in the typical subgenus, *P.* (*Pycnoporus*). Because of this feature the monophyly of the genus can be doubted. Besides, the existing generic diagnoses of most genera of Lecithodendriidae parasitic in bats do not allow to allocate certain species confidently. For instance, the main features differentiating genera *Prosthodendrium, Pycnoporus* and *Lecithodendrium* are the position of the vitellarium and testes. Some species demonstrate, however, the intermediate pattern of the reproductive system organs position. The example of such species is *Prosthodendrium hurkovaae* which has both testes and clusters of vitelline follicles situated at the level of the ventral sucker which permitted some authors to consider it as *Prosthodendrium* (Dubois, 1960; Odening, 1964; Tkach et al., 1985; Sharpilo, Iskova, 1989) or *Pycnoporus* (Yamaguti, 1971). However, as the results of molecular phylogenetic study (Tkach et all., in press) demonstrate, this species very probably does not belong to anyone of these two genera being in fact most close to *Lecithodendrium*. In connection with this example it can be mentioned that the vitellarium in *P. macrolaimus* is situated at the same level as in *P. hurkovaae* and testes are only slightly shifted posteriorly. All this indicates that the problem of the genus concept and validity of different morphological criteria in Lecithodendriidae from bats remains actual and needs new approaches to its solution.

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