

New records of digenean flukes (Trematoda) in birds in Poland

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ABSTRACT. Eleven new records of digenean species are reported in birds in Poland, i.e. *Tylodelphys immer* found in *Gavia stellata*, *Strigea vanderbrokiae* in *Pernis apivorus*, *Echinostoma academica* in *Numenius arquata*, *Echinochasmus euryporus* in *Buteo buteo*, *Patagifer parvispinosus* and *Petasiger grandivesicularis* in *Tachybaptus ruficollis*, *Notocotyloides petasatus* in *Calidris alpina*, *Plagiorchis arcuatus* in *Corvus cornix*, *Leyogonimus polyoon* in *Gallinula chloropus* and *Fulica atra*, *Lyperosomum alaudae* in *Sylvia atricapilla* and *Alauda arvensis*, and *Collyricloides massanae* in *Turdus merula*. The latter finding constitutes a new host record (globally).

Key words: new species, Digenea, Trematoda, birds, Poland

Introduction

According to current literature data, 338 trematode species have been reported in Poland, and of these 187 taxa constitute parasites of birds [1]. The above checklist also covered the findings of digeneans collected by Prof. W. Wiśniewski in the Masurian Lake District in the 1950s, but published only recently [2]. The number of trematode species parasitizing birds in Poland is rather poor compared, for example, with the digeneans noted in the Czech Republic and Slovakia, amounting to 248 and 128 species reported, respectively [3]. Parasites of common bird species have been well studied, but new helminth species are still being discovered during the migration or immediately after right the migration. The species *Mosesia sittae* and *M. microsoma* confirmed in thrushes during the migration period can serve as an example [4]. Information about parasites in birds which nest very rarely in our country is understandably scant [5].

Material and methods

The present paper describes the material collected in Poland by Dr. Jerzy Okulewicz within 1974–2004, mainly from the area of Lower Silesia. It comprises cleared and stained microscopic preparations with full documentation. Species of the following orders were hosts for these parasites: Passeriformes (*Alauda arvensis*, *Corvus cornix*, *Sylvia atricapilla*, *Turdus merula*); Charadriiformes (*Calidris alpina*, *Numenius arquata*); Gruiformes (*Fulica atra*, *Gallinula chloropus*); Accipitriformes (*Buteo buteo*, *Pernis apivorus*); Gaviiformes (*Gavia stellata*) and Podicipediformes (*Tachybaptus ruficollis*). The honey buzzard (*Pernis apivorus*) and eurasian curlew (*Numenius arquata*) deserve special attention as they are among the very few breeding birds in which parasitic fauna have not been studied in Poland as yet.

Results

The following 11 digenean species belonging to 8 families, not recorded hitherto in the fauna of Poland, were confirmed in the studied birds:

Diplostomidae Poirier, 1886

Tylodelphys immer Dubois, 1961

Host: *Gavia stellata*

Locality/date (day-month-year): Jelenia Góra /22.01.1977

Site: small intestine

Material: 779 specimens

Geographical distribution: Holarctic Region (Czech Republic, USA)

Remark: specific to divers, also in *Strix varia*

Authors: [3,6]

Strigeidae Railliet, 1919

Strigea vanderbroekae Dubois, 1966

Host: *Pernis apivorus*

Locality/date: Wrocław/15.08.2000

Site: duodenum

Material: 23 specimens

Geographical distribution: the Netherlands, Czech Republic

Remark: characteristic of birds of prey of the species *Pernis apivorus*. Described in the Netherlands.

Authors: [7–9]

Echinostomatidae Looss, 1899

Echinostoma academica Skriabin, 1915

Host: *Numenius arquata*

Locality/date: Tczew/02.09.1977

Site: intestine, duodenum

Material: 23 specimens

Geographical distribution: Europe: European part of Russia, Ukraine, Danube Delta

Remark: in *Calidris alpina*, *Limosa limosa*

Author: [10]

Echinochasmus euryporus (Looss, 1896)

Host: *Buteo buteo*

Locality/date: Wrocław/17.03.1974

Site: small intestine

Material: 54 specimens

Geographical distribution: Europe (Belarus, Czech Republic, Kaliningrad Region, Ukraine, Russia), Asia, Africa, western Siberia

Remark: parasite of birds of prey (*Buteo buteo*, *Circus aeruginosus*, *C. macrourus*, *Milvus milvus*, *M. migrans*), rare in herons (*Ardea cinerea*, *Egretta alba*, *E. garzeta*)

Authors: [11–13]

Patagifer parvispinosus Yamaguti, 1933

Host: *Tachybaptus ruficollis*

Locality/date: Wrocław/ 12.11.1975

Site: small intestine

Material: 41 specimens

Geographical distribution: Palearctic Region (Bulgaria, Czech Republic, Moldova)

Remark: specific for *Tachybaptus*

Authors: [14,15]

Petasiger grandivesicularis Ishii, 1935

Host: *Tachybaptus ruficollis*

Locality/date: Oława/8.11.1975

Site: small intestine

Material: 106 specimens

Geographical distribution: Palearctic Region (Bulgaria, Czech Republic, Germany, Hungary)

Remark: specific to *Tachybaptus*

Author: [15]

Pronocephalidae Looss, 1899

Notocotyloides petasatus (Deslongchamps, 1824)

Host: *Calidris alpina*

Locality/date: Gdańsk/5.09.2004

Site: caecum

Material: 2 specimens

Geographical distribution: Europe (Britain, Czech Republic, France)

Remark: rare parasite of marine shorebirds

Author: [3]

Plagiorchidae Lühe, 1901

Plagiorchis arcuatus Sthrom, 1924

Host: *Corvus cornix*

Locality/date: Jelcz n. Wrocław/8.06.1985

Site: oviducts

Material: 13 specimens

Geographical distribution: Europe (Czech Republic, Germany, Kaliningrad Region, Russia)

Remark: parasite of the bursa Fabricii and oviducts of fowls, waders, and passerine birds (*Alauda arvensis*)

Authors: [3,13]

Lecithodendriidae Odhner, 1911

Leyogonimus polyoon (Linstow, 1887)

Host: *Gallinula chloropus*, *Fulica atra*

Locality/date: Środa Śląska n. Wrocław/ 21.08.1977

Site: duodenum, intestine

Material: 84 and 112 specimens

Geographical distribution: Europe (Czech Republic, Germany, Slovakia), western Siberia, North America

Remark: parasite of coots and moorhens

Authors: [16–20]

Dicrocoelidae Looss, 1899

Lyperosomum alaudae (Strom et Sondak, 1935)

Host: *Sylvia atricapilla*, *Alauda arvensis*
 Locality/date: Wrocław/23.04.1997
 Site: ductus choledochus
 Material: 4 and 9 specimens
 Geographical distribution: Europe (Czech Republic, Kaliningrad Region, Ukraine)
 Remark: parasite of passerine birds (*Alauda arvensis*, *Corvus monedula*, *Sylvia atricapilla*)
 Authors: [3,13,21]

Collyriclidae Ward, 1917

Collyricloides massanae Vaucher, 1969

Host: *Turdus merula*

Locality/date : n. Kępno/22.03.1981

Site: intestinal wall (duodenum and intestine)

Material: 106 specimens

Geographical distribution: Europe (the Netherlands, Czech Republic, Spain)

Remark: rare parasite of passerine birds (*Sturnus vulgaris*, *Certhia familiaris*) and mammals (*Apodemus flavicollis*)

Authors: [3,21,22]

Discussion

Digenean trematodes in birds connected with a water environment, for example Charadriiformes, Gaviiformes, Gruiformes, and Podicipediformes, have been studied more than once in Poland [e.g. 23–29]. Studies were also conducted on predatory birds [e.g. 26,30, 31] and passerines [e.g. 26,32–35]. However, the 11 species of Digenea presented here are new to the fauna of Poland. It is worth focusing on two new species of Digenea for which birds found in Poland are new hosts. These are *Echinostoma academica* (Echinostomatidae), which was found in *Numenius arquata* and noted for the first time in this host species, and *Collyricloides massanae* (Collyriclidae), found in *T. merula*. Especially the latter is interesting as the single representative of this trematode family hitherto found in Poland, i.e., *Collyriclum faba* (Bremser, 1831). It is a cutaneous trematode confirmed in two passerine bird species, the robin *Erithacus rubecula* and redstart *Phoenicurus ochruros*, in the Tatra and Bieszczady Mountains [36].

In one of the male individuals of *T. merula* caught in March 1981, probably in the middle of the spring migration, 106 individuals of *Collyricloides massanae* were found in cysts on the surface of the intestine. This is a rare parasite of Passeriformes birds and of small rodents in Europe. This species has been described in the forest mouse *Apodemus*

flavicollis in France [21]. The first finding of this species in birds (the starling *Sturnus vulgaris*) was in the Netherlands by Borgsteede and Smit [22]. It was also recorded in the Czech Republic with one individual of *Certhia familiaris* [3]. In addition, the species *Notocotyloides petasatus*, which was found in *Calidris alpina* in September, 2004, during the autumnal bird migration, is a rare parasite of marine shorebirds in Europe.

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