

ECOLOGICAL-PARASITOLOGICAL CHARACTERISTICS OF THE SWALLOW (*Hirundo rustica*) CESTODE FAUNA IN UKRAINE

Salamatin, R.^{1,2}, Korniyushin, V.², Malega, O.²
Cielecka, D.¹, Grytner-Zięcina, B.¹

¹Department of General Biology and Parasitology,
Medical University of Warsaw Chałubiskiego 5, 02-004 Warsaw
Poland

²I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine
B. Chmielnicki 15, 01601, Kyiv
Ukraine

ruslan@salamatin.eu

ABSTRACT

The host-species has been studied mostly at two points: Lebedivka village (Kiev region) and Kaniv (Cherkassy region) and, partly, in some other localities. A total of 207 individuals were examined (77 juvenile and 130 adults). The Cestode infestation appeared to be significantly lower than in other Swallow/Martin species — invasion extension is $27.47 \pm 6.01\%$ (in juveniles only $15.98 \pm 7.81\%$, in adults $35.06 \pm 8.07\%$).

Key words: cestode fauna; ecology; parasitology; swallow; Ukraine

RESULTS

Twenty helminth species have been recorded in the Swallow (1, 2), including ten cestode species (Table 1). Apart from eight dilepidide, one hymenolepidide (*Passerilepis passeris*) and one biuterinide (*Notopentorchis* sp.) cestode species were recorded. The cestodean fauna core is rather small and consists of only two species: *Angularella beema*, which is dominant in this host, and *Vitta riparia*. The rest are incidental swallow parasites occurring very rarely. Among them some unusual for swallow species such as *Sobolevitaenia anthusi* (a parasite of motacillids pipit, wagtail and some other passeriform birds), *P. passeris* (a parasite of Turdinae and rarely of other passeriform birds) and *Notopentorchis* sp. (a parasite of apodiform

birds). All of them were found only once and only as juvenile specimens (scolecex).

Only three cestodean species were found in juvenile birds. All of them are common with adults. The core is represented by a single species, *A. beema*, which is subdominant, two others (*Vitta riparia*, *V. sp.*) are rare and each were found once.

The adult swallow cestodean fauna is substantially richer — nine species, and its faunal core includes two species — *A. beema* and *V. riparia*. The remainder belongs to an incidental category.

A fairly complete material for the cestodean fauna structure has been evaluated in a local swallow population, its age peculiarities and seasonal changes have been collected in a Lebedivka colony. 112 birds were examined (41 juvenile and 71 adult). The cestode invasion extension is only $31.01 \pm 8.40\%$. The ratio of the Cestoda invasion extension to the Trematoda invasion extension is 0.37. Juvenile bird infestation by Cestoda and Trematoda is not so inferior to that in adults ($71.19 \pm 13.12\%$ and $84.07 \pm 8.09\%$ and $26.58 \pm 12.76\%$ and $34.63 \pm 10.75\%$, respectively).

The cestoda and trematoda invasion extension ratio is almost similar (0.33 and 0.39). Of seven cestoda species found in swallow of this colony, two form the core of the cestodean fauna: *A. beema* (invasion extension $24.97 \pm 7.84\%$; average invasion intensity = 4.74 specimens) and *V. riparia* (invasion extension $7.70 \pm 4.64\%$; average invasion intensity = 1.00 specimen). Provided that the former is equally common in both, juvenile and adult birds, the later is common parasite of adults and rare in juveniles.

One more rare parasite species has been found in juvenile birds — *Vitta* sp. Their cestodean fauna consists thus of only three species, whereas seven species were recorded in adult birds, five of which were found only once. In their number four species characteristic of swallows may be considered as rare, and *S. anthusi* as an incidental parasite of these birds.

The seasonal dynamics of the swallow cestode infestation is pretty peculiar. A relatively high invasion extension is indicated in May — $43.46 \pm 14.34\%$. In June these indices experience a sharp downfall — $10.60 \pm 7.57\%$ — due to the adult birds low infestation ($19.84 \pm 13.69\%$) and complete lack of cestodes in juvenile swallows. However, in July the cestode infestation rises in both juvenile ($23.41 \pm 13.90\%$) and adult ($37.21 \pm 13.25\%$) birds, reaching $30.83 \pm 10.02\%$ and staying practically at this level ($31.50 \pm 14.67\%$) in August ($29.03 \pm 17.84\%$ in juvenile and $38.79 \pm 22.45\%$ in adults).

The swallow cestode fauna has certain regional peculiarities. Large swallow samples were examined from small colonies in different regions of Ukraine — in the forest (Polissya) and forest-steppe (Lisostep) zones (a total of 38 specimens) and in the steppe (33 specimens). In total 71 swallow specimens were examined. The total cestode infestation of this sample was $29.69 \pm 10.36\%$. The helminth fauna structure was the same, characteristic for swallow — the cestode and trematode invasion extension relation is 0.50.

In the case where the northern regions and steppe zone are taken separately, then some substantial differences become noticeable, similar to those indicated for Sand and House Martins. The first sample is closer by its indices to the Lebedivka colony — the cestode invasion extension is $34.08 \pm 14.45\%$. The cestode/trematode invasion extension ratio is equal to 0.41.

A completely different structure is characteristic of the swallow helminth fauna in southern (mostly coastal) regions. The cestode infestation is notably lower — $26.93 \pm 14.10\%$ and cestode/trematode invasion extension ratio is 0.73.

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Table 1. The swallow cestode fauna structure (207 individuals examined)

Cestode species	No. birds invaded	Invasion extension
<i>Angularella beema</i>	43	21.31 ± 5.50
<i>Hirundinicola parvirostris</i>	1	1.39 ± 1.30
<i>Hirundinicola</i> sp.	1	1.39 ± 1.30
<i>Vitta rustica</i>	4	2.81 ± 2.05
<i>V. riparia</i>	9	5.18 ± 2.87
<i>V. magniuncinata</i>	2	1.86 ± 1.59
<i>Vitta</i> sp.	2	1.86 ± 1.59
<i>Notopentorchis</i> sp.	1	1.39 ± 1.30
<i>Passerilepis passeris</i>	1	1.39 ± 1.30
<i>Sobolevitaenia anthusi</i>	1	1.39 ± 1.30
Total cestodes	56	27.47 ± 6.01

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