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Programme
& Abstract
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ABSTRACT BOOK

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PARASITE LOAD OF NEMATODE SPECIES IN *Apodemus flavicollis*: EFFECTS OF HOST SPLEEN SIZE, BODY MASS, BODY CONDITION AND SEX

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Background. In wild populations of small rodents, different intrinsic and extrinsic factors affect variation in parasite burdens. The energetic status of animals has a great impact on the immune system, while environmental factors can change the relationship between infection and the host body condition. We aimed to analyse the relationship between relevant morphological traits and parasitological parameters in populations of yellow-necked mice, *Apodemus flavicollis* (Melchior, 1834).

Material and Methods. Nematode burdens were assessed in 49 *A. flavicollis*, from 7 different localities in Serbia. Morphometric data were measured for all captured mice. Spleen mass was used as a proxy of immunocompetence. The host body condition, individual parasite load (IndPL), individual parasite species richness (IndPSR), prevalence, mean abundance and mean infection intensity were calculated.

Results. A total of 12 nematode species were recorded in *A. flavicollis*. The overall prevalence of infection was very high (100%). Individual parasite species richness (IndPSR) was significantly positively correlated with body condition ($R^2=0.173$; $p=0.003$), and the same pattern was observed in both sexes. Spleen size was also significantly positively correlated with body condition ($R^2=0.344$, $p<0.005$) and body mass ($R^2=0.341$, $p<0.005$). Contrary to expected, no parasitological indices (IndPSR and IndPL) were significantly related to spleen mass.

Conclusion. Animals exhibiting better body conditions are parasitized simultaneously with a higher number of nematode species (i.e. their parasite infracommunities are richer). This could prevent any of them to become overabundant in host.

ECTOPARASITE BAT FLIES (DIPTERA: NYCTERIBIIDAE) OF SCHREIBER'S BENT-WINGED BAT AND THEIR FUNGUS PARASITE

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Background. Schreiber's bent-winged bat, *Miniopterus schreibersii*, is one of the most common cavernicolous bat species in southern Europe, often heavily parasitized with different ectoparasites thanks to its gregarious nature, i.e. forming large colonies of many thousands of densely packed animals. Flies from Nycteribiidae family are highly specialized ectoparasites of bats that live on their pelage and feed on blood.

Material and Methods. We collected ectoparasites from 168 host specimens *M. schreibersii* from eight sites in Serbia and Bosnia and Herzegovina, aiming to characterize bat flies species assemblage and identify abundance patterns. Flies were identified morphologically, and cytochrome oxidase subunit 1 (COI) sequences were used to confirm nycteribiid species identification and to further explore their genetic diversity. During the morphological examination, flies were checked for the presence of hyperparasite fungi (Ascomycota: Laboulbeniales).

Results. Three bat fly species were identified: *Nycteribia schmidlii* (210), *Penicillidia conspicua* (71), and *P. dufourii* (5). Prevalence of ectoparasite infection ranged from 58.6% to 100%, with mean abundance and intensity of infection being 1.7 and 2.3, respectively. *Arthrorhynchus* sp. fungus was found in 15 specimens of *P. conspicua* fly (21%). We report 21 (*N. schmidlii*), 12 (*P. conspicua*) and three (*P. dufourii*) COI haplotypes in these fly species, as well as relatively high haplotype and nucleotide diversities.

Conclusion. The results presented here contribute to the knowledge of rarely studied bat ectoparasite fauna in central Balkans by revealing abundance patterns, adding new barcoding sequences to the reference base, and identifying cases of hyperparasitism on bat flies from Serbia and Bosnia and Herzegovina.

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