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Advancements in species identification of the genus *Fimbriaria* (Cyclophyllidea: Hymenolepididae)

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The genus *Fimbriaria* Froelich, 1802 comprises seven species parasitic in anseriform birds. It possesses distinguishing morphological characteristics such as a diminutive scolex, a large pseudoscolex, and a fusion of individual proglottids into segments, which leads to an absence of apparent segmentation. However, the genus lacks prominent features that facilitate precise species differentiation. Due to this, the accuracy of species-level identification within the genus often raises doubts regarding published records.

This study re-examined the specimens previously identified as *F. fasciolaris* from Ukraine. As a result, four distinct species belonging to the genus Fimbriaria were identified, namely *F. fasciolaris*, *F. czaplinskii*, *F. sarcinalis*, and *F. teresae*. Also, partial sequences of the 28S and NAD1 genes were obtained for *F. fasciolaris* and *F. teresae*. Additionally, a study of cestode specimens obtained from the Department of General Biology and Parasitology collection, Medical University of Warsaw (DGBP MUW) was conducted; and a review of the published descriptions of species within the genus *Fimbriaria* was performed.

The investigation uncovered morphological features that allow more reliable species identification within the genus. These features include the size and shape of the cirrus and vagina, the number and size of spines on the cirrus basis, the relative size of the spines at the cirrus base compared to other spines on the cirrus, rigidity of the copulative part of the vagina as well as the presence or absence of internal spine-like structures on it. A key for species identification of *Fimbriaria* was suggested based on the abovementioned criteria. According to the study, the species of this genus have a wide range of host-specificity by parasitizing both "true ducks" and "diving ducks". Phylogenetic analysis of the 28S and NAD1 sequences obtained significant evidence to distinguish between examined species. Furthermore, the analysis delineated *Fimbriaria* from other genera in the Hymenolepididae family.

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