

Summary

The genus *Apisa* Walker, 1855 belongs to the order Lepidoptera, family Erebidae and subfamily Arctiinae, tribe Syntomini. It includes 13 known species (the newest catalog in **Pańnik & Przybyłowicz, manuscript**). The distribution range of the genus includes central and southern Africa and the Arabian Peninsula. One species, *A. manetti*, is known from Libya but its actual range is impossible to scarcity of material.

The study organisms are medium-sized nocturnal lepidopterans with a wingspan of 2-4.5 cm, a very uniform gray-ochre coloration and a pattern reduced to faintly visible darker lines along the wing veins.

The present dissertation consists of a thematically coherent series of three articles (**Przystalkowska [=Pańnik], 2022; Zootaxa**); (**Pańnik i in., 2023; Arthropod Systematics & Phylogeny**); (**Pańnik & Przybyłowicz, manuscript**). It examines the hypothesis of a number of cryptic species occurring within *Apisa*, some taxa of which are undescribed. The results of analysis of morphological and molecular data confirm also that all examined species belong to the genus *Apisa*.

For molecular studies, three markers were used, one mitochondrial and two nuclear: the first subunit of cytochrome oxidase (COI), the wingless gene (WG) and ribosomal protein S5 (RpS5).

Altogether 300 specimens were morphologically analyzed. Prior to more detailed analyses, they were photographed and the wing length and wingspan were measured. 238 genital preparations of males and females were made. The morphological study confirmed the monophyly of *Apisa*. An autapomorphy of the genus that is present in all its representatives is the absence of an arolium between the tarsal claws. This is described and illustrated using SEM photography. It is emphasized that absence of arolium distinguishes the genus *Apisa* from all other genera of Syntomini that are phylogenetically closely related.

By comprehensive morpho-genetic analysis, it was possible to redescribe several species and describe three new ones (*A. atrovenosa*, *A. asipa*, *A. diversa* **sp. nov.**), confirming the hypothesis that the genus *Apisa* is indeed a complex of cryptic species.

The study proves that the current division into three subgenera *Apisa* s. str., *Parapisa* Kiriakoff, 1952 and *Dufraneella* Kiriakoff, 1953, based on the morphological structure of the uncus and the length of the process of valva, is artificial and these features diversified

independently in different groups of species. A species delimitation analysis (ASAP) indicates the presence of 18 hypothetical species within the studied group of specimens.

The conclusions emphasized the important point that in the case of a group as morphologically homogeneous as this and yet still characterized by a significant degree of morphological variation, the application of an integrative approach alone does not solve all systematic and phylogenetic problems.

The research presented here represents a coherent revision that expands and organizes the current state of knowledge on the systematics and phylogeny of the genus *Apisa*. The results provide a foundation for further research using more sophisticated analytical techniques.

Particularly intriguing and unresolved issues are the biology and behavior of the different species as well as the studies of pheromones, which would certainly contribute to an even better understanding of such a morphologically homogeneous group of lepidopterans as is represented by the genus *Apisa*.