SUMMARY

The lineage of the tribe Syntomini that is endemic to Madagascar constitutes one of the largest known evolutionary radiation in Lepidoptera of the island, with around 100 species deriving from a single ancestor. However, their current systematics has been shown to comprise some polyphyletic genera, and thus demands a modern revision. This applies especially to the genera *Thyrosticta* Hampson, 1898 and *Melanonaclia* Griveaud, 1964, together constituting around 1/3 of the species diversity of Madagascan Syntomini.

The presented doctoral thesis consists of a series of three articles (**Wiorek et al. 2021**, PeerJ; **Przybyłowicz, Wiorek et al. 2021**, Zoologica Scripta; **Wiorek et al.**, **manuscript**), and is based on the verification of four research hypotheses, concerning the systematics, diversity and distribution of the genera *Thyrosticta* and *Melanonaclia*, using an integrative taxonomy approach.

The molecular part of the study is based on the sequences of up to eight markers: one mitochondrial – cytochrome c oxidase I (COI), and seven nuclear – elongation factor 1 alpha (EF1a), glyceraldehyde-3-phosphate dehydrogenase (GAPDH), cytosolic malate dehydrogenase (MDH), isocitrate dehydrogenase (IDH), ribosomal protein S5 (RpS5), the wingless gene (Wgl400), and carbamoylphosphate synthase domain protein (CAD). In total, in the study were included 1016 sequences of a total length of 643 549 base pairs, which were obtained from 254 specimens (including outgroups).

The morphological and distributional analyses are based on 1402 specimens of both freshly collected and museum specimens, deposited in 12 collections. The morphological studies included genitalia dissections, wing venation preparations, and SEM visualisation of different phylogenetically informative structures, including scales and eggs – the latter described from the Madagascan Syntomini for the first time.

Obtained results confirmed that the reviewed genera are polyphyletic, and comprise nine distinct evolutionary lineages, of which seven are proposed to be described as new genera: *Skippernaclia* **gen. nov.**, *Kowalskinaclia* **gen. nov.**, *Privatenaclia* **gen. nov.**, *Julienaclia* **gen. nov.**, *Riconaclia* **gen. nov.**, *Mauricenaclia* **gen. nov.**, and *Mortinaclia* **gen. nov.**

The taxonomical status of all species was verified, including an elaboration of the intraspecific variation observed in some of them. As a result, three new species are proposed: *Skippernaclia leesi* Wiorek **sp. nov.**, *Mauricenaclia apatris* Wiorek **sp. nov.**, and *Melanonaclia ranomafana* Wiorek & Przybyłowicz **sp. nov.** Additionally, five species are considered as synonyms: *Thyrosticta incerta* **syn. nov.**, *Thyrosticta melanisa* **syn. nov.**, *Thyrosticta*

angustipennis **syn. nov.**, *Dysauxes subfenestrata* **syn. nov.**, and *Tritonaclia inauramacula* **syn. nov.** In total, 30 valid species are recognised in the study.

Although the reviewed taxa appeared to be highly diverse morphologically, it was possible to delineate clear apomorphies for each of the distinguished genera. Additionally, a set of characters with a presence/absence pattern that was stable within but varied among genera was found. Among these is the brush-like tuft of scales located at the base of the male foreleg. This structure, to our best knowledge, is reported in Syntomini for the first time, and potentially may have an androconial function.

The reviewed taxa occur broadly across in the entire span of Madagascar, but species ranges are usually restricted to different parts of the island. The highest species diversity is recorded from humid, evergreen forests of eastern Madagascar, while a few species are associated specifically with the dry to semi-arid biotopes of the southern and eastern parts of the island. The highest number of more or less sympatric species (eight) occurs in the Marojejy massif in northern Madagascar. Six species, including all three members of the genus *Privatenaclia* **gen. nov.**, are identified as local endemics, occurring only in relatively small areas in different parts of the island.

Except for general data on the preferred types of vegetation, the biology of the species covered in the thesis remains largely unknown. First records of nectaring are provided for five species, with indication of preference for Rubiaceae. The number of spermatophores or their remnants found in the dissected females indicates for the presence of polyandry in Madagascan Syntomini.

The Mauritian endemic "*Maculonaclia*" *florida* is proven to belong to the genus *Dysauxes* in which it was originally described, with the remaining species in the genus occurring only in the Palaearctic. Furthermore, the genus *Dysauxes*, the African species *Pseudonaclia puella*, and the genus *Mauricenaclia* gen. nov. are shown to constitute a monophyletic lineage named the "*Dysauxes* clade", which is inferred to have given rise to out-of-Madagascar dispersal to continental Africa and subsequently to Palaearctic.

The presented thesis constitutes a coherent revision of the diversity of a third of Madagascan Syntomini. It contributes to a better understanding of the islands' biodiversity, as well as a widening of the body of knowledge on the tribe Syntomini, arguably the least known group of tiger moths (Arctiinae).