

## Esperiana Memoir 2

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### Revision und Phylogenie der Gattungsgruppe *Crypsotidia* Rothschild, 1901, *Tachosa* Walker, 1869, *Hypotacha* Hampson, 1913, *Audea* Walker, [1858] 1857 und *Ulotrichopus* Wallengren, 1860 (Lepidoptera, Noctuidae, Catocalinae)

von

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#### Summary

The revision of the genre *Crypsotidia* Rothschild, 1901; *Tachosa* Walker, 1869; *Hypotacha* Hampson, 1913; *Audea* Walker, [1858] 1857 and *Ulotrichopus* Wallengren, 1860 with a total of 89 species resulted in the following taxonomical changes. One synonym at the genus level is found: *Cremopalpus* Strand, 1909 syn. nov. of *Crypsotidia* Rothschild, 1901. One genus is described as new: *Archaeopilicornus* gen. nov..

The status of three species is revised: *Ulotrichopus stertzi* (Püngeler, 1907) stat. rev., *Crypsotidia wollastoni* Rothschild, 1901 stat. rev., *Ulotrichopus sumatrensis* A.E.Prout, 1928 stat. rev. and one nude name is found: "*U. catocaloides* Strd." nomen nudum.

11 synonyms at the species level are found: *Crypsotidia griseola* Rothschild, 1921 syn. nov. of *Crypsotidia mesosema* Hampson, 1913, *Crypsotidia conifera* Hampson, 1913 syn. nov. of *Crypsotidia maculifera* (Staudinger, 1898), *Tachosa malagasy* Viette, 1966 syn. nov. of *Tachosa acronyctoides* Walker, 1869, *Audea humeralis* Hampson, 1902 syn. nov. of *Audea tegulata* Hampson, 1902, *Audea hypostigmata* Hampson, 1913 syn. nov. of *Audea bipunctata* Walker, [1858] 1857, *Audea endophaea* Hampson, 1913 syn. nov. of *Audea hemihyala* Karsch, 1896, *Audea postalbida* Berio, 1954 syn. nov. of *Audea melaleuca* Walker, 1865, *Ulotrichopus leucopasta* Hampson, 1913 syn. nov. of *Ulotrichopus stertzi* (Püngeler, 1907) stat. rev., *Ulotrichopus glaucescens* Hampson, 1913 syn. nov. of *Ulotrichopus stertzi* (Püngeler, 1907) stat. rev., *Ulotrichopus tessmanni* Gaede, 1936 syn. nov. of *Ulotrichopus pseudocatocala* (Strand, 1918), *Ulotrichopus macula reducta* Prout, 1922 syn. nov. of *Ulotrichopus macula* (Hampson, 1891).

Four new combination are introduced: *Crypsotidia inquirenda* (Strand, 1909) comb. nov., *Tachosa guichardi* (Wiltshire, 1982) comb. nov., *Archaeopilicornus lucidus* (Pinhey, 1968) comb. nov., *Ulotrichopus fatilega* (Felder & Rogenhofer, 1874) comb. nov..

24 species and one subspecies are described as new: *Crypsotidia gigantea* spec. nov., *Crypsotidia clytieformis* spec. nov., *Crypsotidia bibrachiata* spec. nov., *Crypsotidia piscicaudae* spec. nov., *Crypsotidia postfusca* spec. nov., *Crypsotidia bullula* spec. nov., *Crypsotidia digitata* spec. nov., *Hypotacha antrum magna* spec. nov., *Hypotacha soudanensis* spec. nov., *Hypotacha alba* spec. nov., *Hypotacha fractura* spec. nov., *Audea jonasi* spec. nov., *Audea paulumnodosa* spec. nov., *Audea luteoforma* spec. nov., *Audea tachosoides* spec. nov., *Audea kathrina* spec. nov., *Audea blochwitzii* spec. nov., *Audea albiforma* spec. nov., *Audea nigrior* spec. nov., *Audea watusi* spec. nov., *Ulotrichopus varius* spec. nov., *Ulotrichopus meyi* spec. nov., *Ulotrichopus usambaraensis* spec. nov., *Ulotrichopus pseudomarmoratus* spec. nov., *Ulotrichopus phaeoleucus griseus* ssp. nov..

Taxa excluded and transferred to other genre: *Audea albifasciata* Pinhey, 1968 comb. nov. with *Catephia* Ochsenheimer, 1816 (Noctuidae: Catocalinae), *Ulotrichopus maccwoodi* Hampson, 1913 syn. nov. of *Catocala sponsalis* Walker, [1858] 1857 (Noctuidae: Catocalinae).

The geographical distribution, male and female genitalia, and adults of all revised species are illustrated. The phylogenetic interpretation is based only on morphological apomorphies. Cladograms generated by the software program PAUP 4.0 were produced for all morphological data which are typological marks as well plesiomorphies as apomorphies. The results are illustrated in an extra chapter.

Phylogenetic hypotheses are presented for each genus and the hold group and illustrated as phylogramms. They based on apomorphies and differ from the cladogramms. Any genus is characterised by its autapomorphies. The phylogeny of the examined group showed that *Tachosa* and *Hypotacha* are adelphotaxa; both together are the adelphotaxon of *Crypsotidia*. *Archaeopilicornus* gen. nov. is a probable adelphotaxon of *Audea*. This preferred phylogenetic interpretation has been made more difficult due to the existence of many characters within this genus which can be found in the other genera as well. The genus *Ulotrichopus* forms a monophylum with the genus *Catocala*. Both genera have a common ancestor, but it has to be considered that they are polyphyletic. The minimal morphological differences and parallel developments make it very difficult to

elucidate the complex phylogeny without further investigation. The confusion of some characters within the genitalia of species of *Ulotrichopus* and *Catocala* supports the suspicion that some species are descendants of older radiation. The phylogeny of the three characterised monophyla within the tribe Catocalini can not be finally reconstructed because there are many parallelisms in other genera of the subfamily, which have to be investigated separately.

The monophylum Catocalini within the subfamily Catocalinae (Noctuidae) is newly characterised by six autapomorphies: secondary, ventral sclerotisation of 8th segment (sinus vaginalis), existence of genuine valvula, muscle 7 insert at the harpe, muscle 5 split (two insertion points at vinculum), fusion of the valva with vinculum, therefore muscle 4 is reduced, and occurrence of a corema on the outside of valva. The genre *Clytie* and *Achaea* are probably related groups.

It is assumed that the ancestors of Catocalinae originated and diversified in the tropical biome. The disintegration of the tropical forest zone up to the miocene and the panafrican fluctuation was followed by the catocaline species and is an explanation of the recent distribution of species of the examined group. The species richness within the trifine noctuids and their minimal morphological variance are evidence of their younger age and recent radiation in the open and drier landscapes.