

**The Australasian genus *Scotocyma* Turner
(Lepidoptera, Geometridae, Larentiinae)**

Olga Schmidt

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Larentiinae occur worldwide, are diverse and usually mesophilous, preferring temperate abiotic conditions. The Australasian genus *Scotocyma* is rather atypical for the subfamily because it occurs mainly in the tropics and subtropics. The genus comprises 11 species: *S. albinotata* (Walker), *S. legalis* (Warren), *S. mimula* (Warren), *S. miscix* Prout, *S. manusensis* Prout, *S. scotopepla* Prout, *S. asiatica* Holloway and the recently described species *S. samoensis* Schmidt, *S. rutilimixta* Schmidt, *S. sumatrensis* Schmidt, and *S. longiuncus* Schmidt. The main results of the revision of the genus *Scotocyma* are as follows: (1) keys to species and distribution maps are provided; (2) a phylogenetic analysis is performed to test the monophyly of the genus; (3) the distribution patterns of the species are examined; (4) a biogeographic discussion is included; (5) the tribal position of the genus is clarified and the relationships to closely related genera are discussed.

The following characters are diagnostic for the genus *Scotocyma*. Labial palpus is thick, short, curved, with the terminal segment small, blunt. Antenna is simple in both sexes. The seventh abdominal segment in males bears coremata, consisting of eversible hair tufts in a long, broad pocket bearing a narrow, finger-shaped appendix. A thin, weakly sclerotised ring between the seventh and the eighth segments is present, with a small medial sclerite attached. The ansa of a tympanal organ has a small, simple scoloparium. In the male genitalia uncus is sclerotised, with its base modified; tegumen is usually with short, sclerotised, sometimes serrated, arms; valva is narrowed medially, comb-like structures set on the

valval sacculi; vinculum has no distinct saccus; calcar is present, with broad hood-shaped membrane connected to its basis; aedeagus is thick, short, with its coecum oblique-rounded. In the female genitalia antrum is large, sclerotised, somewhat funnel-shaped, longitudinally folded; ductus bursae is shortened, membranous; corpus bursae has patches of sclerotisation on its dorsal side, with a large diverticulum; signum is large, usually a patch of inwardly directed spicules on ventral side.

The new phylogenetic analysis confirmed the monophyly of the genus *Scotocyma*. According to the analysis, the species (*S. albinotata* + *S. legalis*) + *S. samoensis* are grouped in one clade. The defining characters are: teeth on lateral tegminal arms strongly developed; folds in antrum rather broad, two or three on each side. The second clade comprises the species *S. asiatica* + *S. sumatrensis*. The characters defining the second clade are: brownish median band in the forewing underneath with medial projection outwards narrowly rounded; medial spot at the termen in forewing underneath large, higher than wide, marginally speckled with darker scales. The third clade is not resolved and comprises the species *S. rutilimixta* + *S. scotopepla* + *S. longiuncus*. The defining character is: teeth on lateral tegminal arms in males moderately developed. The sister-clade is (*S. manusensis* + *S. mimula*). The defining characters are: medial spot at the termen in the forewing underneath medium-sized, square, with distinct edges, signum in the corpus bursae of females shifted to the side.