



Redescription of *Holarctias rufinularia* (Staudinger, 1901), with notes on the taxonomy and relationships of *Holarctias* Prout, 1913 (Lepidoptera: Geometridae: Sterrhinae)

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Abstract

The types of a little known species *Holarctias rufinularia* (Staudinger, 1901) are illustrated for the first time and re-described, and misidentifications of this species are corrected. Photos of the types of *Acidalia rufularia* Eversmann, 1851, and *Acidalia rufociliaria* Bremer, 1864, are published for the first time. Species composition, diagnosis and relationships of the genus *Holarctias* Prout, 1913 are discussed.

Key words: Geometridae, *Holarctias*, *Holarctias rufinularia*, redescription, systematics, relationships

Introduction

The genus *Holarctias* Prout, 1913, is represented by a few Siberian and North American species which are adapted to a boreal and subarctic environment. The genus is treated as a synonym of *Scopula* Schrank, 1802, by some authors (Covell, 1983; Parsons & al., 1999: 863; Sihvonen, 2005), but I consider it a separate taxon following the recent opinion of Hausmann (2004). This genus has been reviewed several times (Prout, 1913, 1934, 1935; Sterneck, 1941; McGuffin, 1967a, 1967b, Hausmann, 2004). For the most part these publications concentrated on discussion of the taxonomic rank of *Holarctias*, and distinguishing *Holarctias sentinaria* (Geyer, 1837) and *Holarctias rufinaria* (Staudinger, 1861). However there is one more taxon, *rufinularia* Staudinger, 1901, which was described very shortly by Staudinger in the famous "Catalog der Lepidopteren des Palaearctischen Faunengebietes" as a variety of *Acidalia sentinaria* from "Ost Sajan": "*minor, al. rufus nigrescenti-venatis et discintius lineatis (fere clathratis)*", i.e. smaller, with reddish-brown wings with distinct blackish veins and transverse lines, which form an almost latticed pattern. Following the original retreatment *rufinularia* was considered as a subspecies of *H.* (or *Scopula*) *sentinaria* by Prout (1913), Parsons *et al.* (1999) and Sihvonen (2005).

The first researcher to examine the genitalia of "*rufinularia*" was Sterneck (1941). He did not find any structural differences between them and *rufinaria*, and concluded that "the *rufinularia* agreed with *rufinaria* structurally completely and therefore it merely has to be regarded as a form of it" (translated from German by E. Beljaev) (Sterneck, 1941: 31). Before Prout had been published this interpretation of *rufinularia* based the personal information from Sterneck (Prout, 1935 (1934–39)).

Kostjuk first examined syntypes of *rufinularia*. He formally erected *rufinularia* to specific rank and established a new combination *Holarctias rufinularia* (Staudinger, 1901) (Kostjuk & Golovushkin, 2003). However he did not publish any comment in support of these nomenclatural changes. Hausmann (2004) provides diagnostic features of *H. rufinaria*, *H. rufinularia* and *H. sentinaria* as a separate species. His treatment of *H. rufinularia* is consistent with Sterneck's opinion, but, in contrast to Staudinger's diagnosis, Hausmann considered *H. rufinularia* to be a large and light form.

My examination of the syntypes of *rufinularia* has demonstrated that the treatment of this taxon by Sterneck and Hausmann was incorrect. Judging from Sterneck's note on *rufinularia*, he examined small mountain specimen(s) of *rufinaria*, which inhabit the East Sayan Mountains together with true *rufinularia* and have a coloration of