



## Revision of the genus *Pyrochlora* Warren, 1895 (Lepidoptera: Geometridae: Geometrinae)

JAAN VIIDALEPP

*Institute of Agronomy and environmental studies of the Estonian University of Life Sciences, Kreutzwaldi 1A, 51014 Tartu, Estonia. E-mail: jaan.viidalepp@emu.ee*

### Abstract

The genus *Pyrochlora* Warren is revised and three new species are described: *P. motilonia*, **sp. nov.** from Costa Rica and Nicaragua, *P. kuklase*, **sp. nov.** from mountainous Ecuador, and *P. vogli*, **sp. nov.** from Northern Venezuela. Wings pattern and genitalic structures of all five species are described and illustrated.

**Key words:** Lepidoptera, Geometridae, *Pyrochlora*, *P. motilonia* **sp. nov.**, *P. kuklase* **sp. nov.**, *P. vogli* **sp. nov.**, male genitalia, keys, geographical distribution.

### Introduction

Warren (1895: 90) described the genus *Pyrochlora* for *Phalaena Geometra rhanis* Cramer, based on external characters, such as the wing shape, build of antennae and hind legs, and short palpi. Dyar (1925: 7) characterized a second species, *P. majorcula*, as larger and paler in comparison to the type species, with two brown lines cutting the pale median area near the tornus of forewing. Prout (1932: 43) presented a more detailed review of the two known species. Pitkin (1996: 387) added a description of the genitalia of both known species, and made a comparison with the genitalic characters of the related genus *Tachychlora* Prout. External facies of *Pyrochlora* species is deceptively uniform (Figs. 1–11) and, seemingly, insufficient for species recognition. The three new species described here were discovered by routine checking of genitalia of different local populations from South America.

### Material and methods

Altogether 89 specimens and 19 genital slides (17 ♂, 2 ♀) were studied from collections as follows: IZBE, Institute of Agronomy and Environmental studies at the Estonian University of Life Sciences, Tartu, Estonia; NHMT, Natural History Museum, Tallinn, Estonia; ZSM, Zoologische Staatmuseum München, Germany; CAL, private collection of Aare Lindt, Tallinn; CAS, private collection of Allan Selin, Tallinn. Genitalic sclerites were soaked in 15% KOH solution for about 24 hours, washed with water, dehydrated in alcohol and embedded into Euparal medium. Morphological details were measured in slides and in mounted dry specimens under 40x magnification, using an ocular micrometer. When comparing wing patterns of moths from different localities, some geographical variations were found on wings below. The descaling of last abdominal sternite and measuring the antennal pectinations' length revealed further differences. Dissection of specimens from each locality confirmed the existence of five morphospecies within the genus and allopatric variation of *P. majorcula* (designated here as Form A and Form B). A further study of new material from Brazil will show how significant are the slight morphological differences between Guianan and Ecuadoran specimens of *P. majorcula*.