

Order Hemiptera, families Meenoplidae and Kinnaridae

Michael R. Wilson

INTRODUCTION

The Kinnaridae and Meenoplidae are two small families of planthoppers (Fulgoromorpha), both distributed in the tropics and subtropics. The two families are considered to be closely related (Emeljanov, 1984; Bourgoin, 1997), based on the features of the external morphology and structure of both male and female genitalia. They are both superficially similar to some Cixiidae.

The Meenoplidae are found only in the Old World, with around 130 species described. A few species in the genera *Meenoplus* and *Anigrus* are found in the west Palaearctic region, as well as the genus *Nisia*, which has been found in United Arab Emirates.

The Kinnaridae with around 80 species currently described, are recognised in both the Old and New World, predominantly from the tropics and sub tropics. Several genera are recorded in the Palaearctic region, including two from the Canary Islands (Remane, 1985), and several species from Iran, USSR and Afghanistan (Emeljanov, 1984). The discovery in the UAE of three species in the genus *Perloma* is remarkable, since the genus is known only by a few species based on a small number of specimens.

MATERIALS AND METHODS

The majority of specimens studied have been collected by Tony van Harten. They have been removed from alcohol either by critical point drying or by careful air drying and mounted on card points. Some additional specimens were collected in Oman by B. Skule.

Holotypes and some paratypes of the new species are deposited in National Museum of Wales (NMWC). Additional and duplicate material is deposited in BMNH, ZIN, and the United Arab Emirates Invertebrate Collection (UAEIC).

Unless otherwise noted specimens listed have been collected by A. van Harten. Abbreviations used in text LT= light trap, MT = Malaise trap, WT = water trap.

SYSTEMATIC ACCOUNT

Family Meenoplidae

Genus *Nisia* Melichar, 1903

Nisia nervosa (Motchulsky 1863)

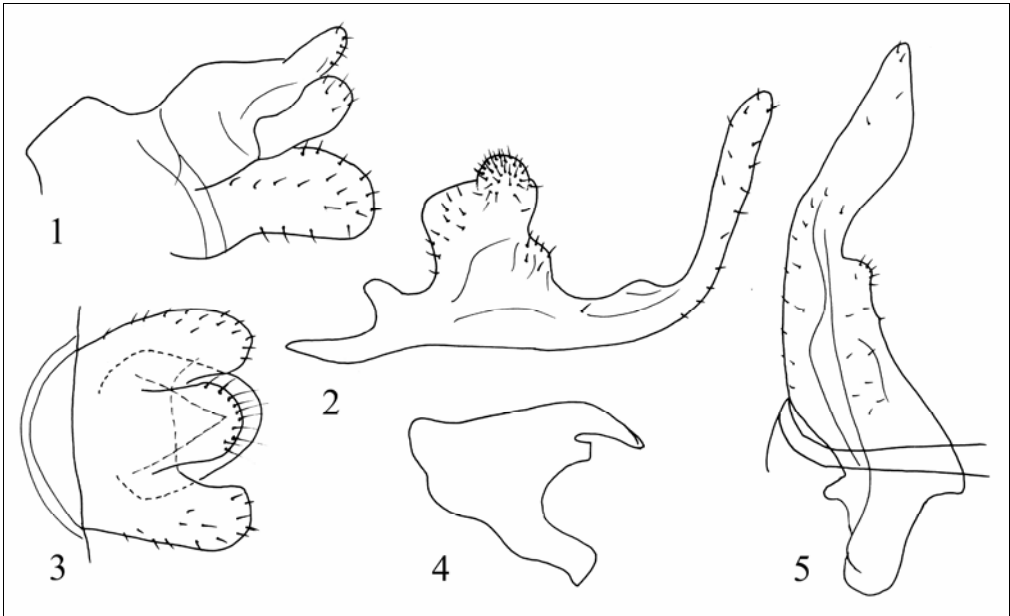
Plate 1

Specimens examined: Wadi Shawkah, 1♂, 31.x–11.xi.2006, WT, Wadi Wurayah farm, 2♀, 15–30.iii.2009, LT. OMAN: Sayq, 22°30'W 59°86'E, 2♀, 5.vii.1995, at light, leg. B. Skule (NMWC).

Remarks: This species is widely distributed across the Palaearctic region from the Canary Islands to China, into Africa and the tropical areas of SE Asia and the Pacific. Genitalia structure in the males seems to be variable enough that some separate species have been described (e.g. Tsaour et al., 1986). Wilson (1981) highlighted the need to study the variation across the range of this taxon. Host records usually involved Cyperaceae, including *Cyperus rotundus*.



Plates 1-3. 1: *Nisia nervosa* (Motchulsky), habitus. 2-3. *Perloma brunnescens* (Emeljanov). 2: Habitus; 3: Face. (Photograph © James Turner / NMWC)



Figures 1–5. *Perloma brunnescens* (Emeljanov). Male genitalia. 1: Anal segment, lateral view; 2: Paramere, lateral view; 3: Anal segment, dorsal view; 4: Aedeagus, lateral view; 5: Paramere, ventral view.

Family **Kinnaridae**

Tribe **Adolendini** Emeljanov, 1984

Genus *Perloma* Emeljanov, 1984 (= *Emeljanopleroma* Koçak, 1986)

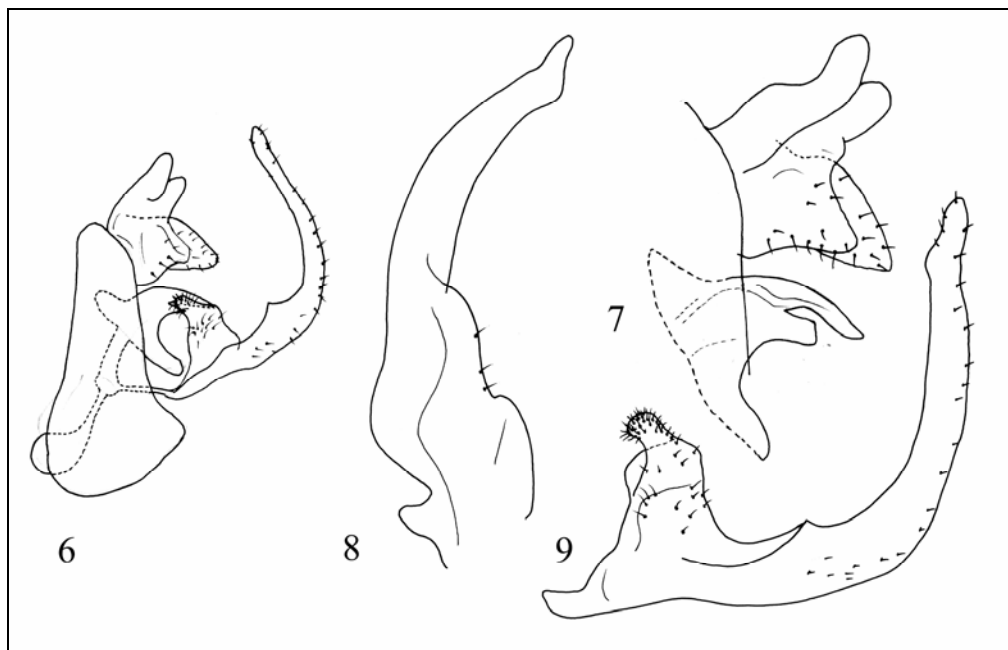
(*Propleroma* Emeljanov, 1984 preoccupied (Koçak, 1986), replacement name *Emeljanopleroma*. Synonymized with *Perloma* by Emeljanov, 2006.)

The genus was described by Emeljanov (1984) for *Perloma brunnescens* and another species, *P. zarudnyi*, both from Iran. He also transferred two species, *boroumandi* Dlabola, 1981, and *satrapa* Dlabola, 1981, to the genus (as *Propleroma*). Van Stalle (1986) described *Propleroma atrifasciata* from Somalia, the first record of the genus in Africa.

Brief description (based on Emeljanov, 1984):

Males and females. General habitus cixoid, head small, narrower than pronotum, body moderately dorso-ventrally flattened. Forewings sloping roof-like at rest. Vertex small, constricted anteriorly, its breadth from behind almost the same as its length. Frons divided into two parts, the upper one narrow and compressed between the eyes. Lateral carinae prominent and parallel at junction of vertex and frons, dilating towards the clypeus (Plate 2). Median carina present on post clypeus. Three ocelli present, median ocellus at lower margin of frons. Pronotum short, lateral parts broader. Scutellum with three distinct carinae, lateral carinae virtually parallel, slightly divergent posteriorly.

Colour: Light to darker brown overall, legs lighter. Head dark brown, antenna lighter. Forewings with variable amounts of brown markings across veins and small patches on veins basally (see Plate 1)



Figures 6–9. *Perloma longistyli* nov. spec. Male genitalia. 6: Pygophore, lateral view; 7: Aedeagus and anal segment, lateral view; 8: Paramere, ventral view; 9: Paramere, lateral view.

Male genitalia. In lateral view pygophore dilated ventrally. Anal segment with short blunt ended lobes. Aedeagus cylindrical, short with curved process above. Parameres long and curved, with inflated lobes at base, which cover the aedeagus, or shorter and less curved (in *P. madaqensis* nov. spec.)

Remarks: The three species discussed here are very similar externally and with similar patterns of forewing markings. They differ primarily based on the male genitalia structure. Females cannot yet be reliably distinguished from each other.

Size: 4–5 mm.

Perloma brunnescens (Emeljanov, 1984)

Plates 2–3, Figures 1–5

Specimens examined: Hatta, 1♂, 8–26.v.2006, LT. Sharjah-Khor Kalba, near tunnel, 1♂, 7–22.iii.2006, LT; 1♂, 31.v–vi.2006, LT. Wadi Madaq, 19♂, various dates in 2006, LT & WT. Wadi Wurayah farm, 2♂, 15–30.iii.2009, LT.

Description: As generic description given above.

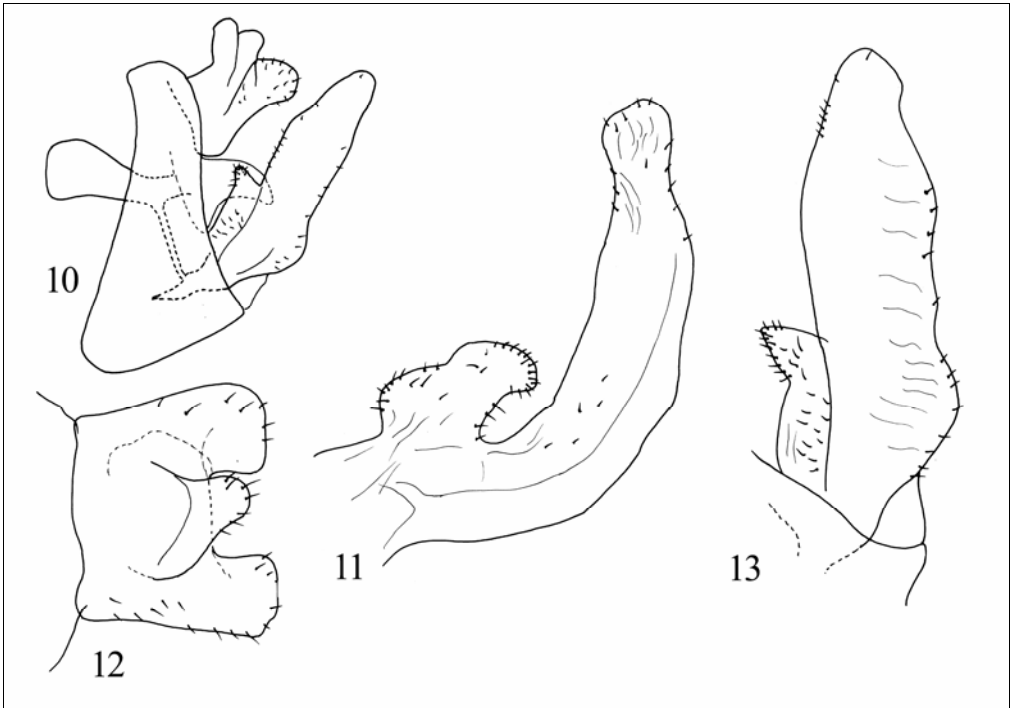
Male genitalia as shown in Figures 1–5. Parameres shorter than those in *P. longistyli* nov. spec. (especially visible in lateral view).

Distribution: *P. brunnescens* was described (Emeljanov, 1984) based on 1 male and 1 female from Iran (Karavander) collected in 1901. The species is newly recorded from the UAE.

Perloma longistyli Wilson **nov. spec**

Figures 6–9

Specimens examined: Holotype: ♂, labelled “U.A.E.: Wadi Madaq, 25°28'N 56°07'E, 26.x–9.xi.2006, WT, A. van Harten”. Deposited in the NMWC. Paratypes: 1♂, same data as holotype. 1♂, same locality



Figures 10–13. *Perloma maidaensis* nov spec. Male genitalia. 10: Pygophore, lateral view; 11: Paramere, lateral view; 12: Anal segment, dorsal view; 13: Paramere, ventral view.

but 7–14.iii.2006, WT; 2♂, same locality but 29.iii–10.iv.2006, WT. OMAN: Sayq, 22°30'W 59°86'E, 5.vii.1995, at light, leg. B. Skule (NMWC).

Description: As generic description above. Male genitalia as shown in Figures 6–9. Parameres long, thin and strongly curved.

Differential diagnosis: Separated from other species in the genus by the long, curved parameres.

Distribution: UAE and Oman.

***Perloma maidaensis* Wilson nov. spec.**

Plates 13–16

Specimens examined: Holotype: ♂, labelled “U.A.E.: Wadi Maidaq, 25°28'N 56°07'E, 22.iv–4.v.2006. LT. A. van Harten”. Paratype ♂: same data as holotype. Deposited in the NMWC.

Description: Specimens as generic description above. Male genitalia as shown in Figures 10–13. Parameres short and broadly cylindrical.

Differential diagnosis: Separated from other species in the genus by the short parameres.

Distribution: UAE.

ACKNOWLEDGEMENTS

I am pleased to thank Tony van Harten for providing the species used in this study. Thanks also to James Turner who assisted in providing habitus photographs.

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Author's address:

Dr. M.R. Wilson, National Museum of Wales, Cathays Park, Cardiff CF10 3NP, UK; e-mail: Michael.Wilson@museumwales.ac.uk