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## Types of Flatidae (Homoptera) XXI. Review of Melichar Types in the Zoological Museum, Copenhagen, with lectotype designations

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Lectotypes and paralectotypes are designated for flatid planthoppers described by Melichar. The genitalia of lectotype males are illustrated. **NEW SYNONYMY:** *Ormenis striolata* var. *suturalis* Melichar is a junior synonym, not a variety, of *Ormenis striolata* Melichar [Anaya]. *Ormenis umbrosus* Melichar is a junior synonym of *Ormenis nigrolimbata* Fowler [Anormenis].

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### INTRODUCTION

The monumental revision of Flatidae that was published by Melichar (1901, 1902) was made possible by loans from various European Museums, including the Zoological Museum, University of Copenhagen. Conventional morphological characters of body and tegmina relied upon by Melichar served well to help develop the classification system still used in the family. However, subsequent research has shown that better understanding of taxa at the species level requires knowledge of the male genitalia. Also, it is necessary to properly define the status of syntypes by designating lectotypes in extant series. In most cases Melichar recorded the depository of type materials. Those cited in the Copenhagen Museum are reported on in this article.

To help preserve the historical record, information from type specimens was recorded exactly as given on labels, which are numbered in sequence of (1), (2), etc. The lines of print or writing on a label are separated by a slash (/).

### Measurements

To provide comparable data, all morphometrical measurements are reported in mm according to the following standardized format: Length: overall; v (vertex); f (frons); p (pronotum); m (mesonotum); t (tegmen); pcl (postclaval sutural margin); t (tegmen). Width: v (vertex); f (frons); t (tegmen). Parameters of the tegmen measurements were illustrated by Medler (1991, fig. 1).

The number of black-tipped spines on the hind leg are indicated by formula; namely, the sequence of metatibial lateral spine(s): metatibial apical spines: metatarsal I basal spines; e.g., 1:5:7, 2:6:8, etc.

### Acronyms of Museum Citations

- BUDA Hungarian Natural History Museum, Budapest, Hungary.  
IRSN Institut royal des Sciences naturelles, Brussels, Belgium.  
PARIS Museum national d'Histoire naturelle, Paris, France.  
RMS Naturhistoriska Riksmuseet, Stockholm, Sweden.  
WIEN Naturhistorisches Museum, Vienna, Austria.

## CATALOGUE

Specimens are listed alphabetically by specific name, author, reference to original publication, and the original generic name-combination in parentheses (). Where applicable, the status of the name in the Metcalf (1957) Catalogue is indicated in brackets [].

**albicosta** Melichar, 1902, p. 77 (*Ormenis*) [*Anaya*]

Lectotype ♂ here designated - Chovry Nicobar/Galatea. The lectotype genitalia are illustrated (Fig. 5).

Paralectotypes - 6 ♂, 2 ♀, Nicobar Islands: Chovry, Chovry Min, Chovry Maj / Galatea, variously.

All specimens have the ivory costal margin in strong contrast to the dark brown tegmen.

Measurements: lectotype ♂, paralectotype ♀, from Chovry Nicobar - Length: overall 7.0, 8.0; v 0.17, 0.17; f 1.00, 1.08; p 0.33, 0.37; m 1.66, 1.83; t 5.96, 6.81; pcl 1.83, 1.99. Width: v 0.71, 0.83; f 0.95, 1.04; t 2.99, 3.32. Hind leg spine formula: 2:6:7 in each sex.

Discovery of syntypes at Copenhagen necessitates a change in status of the syntype ♀ at RMS that was erroneously designated as holotype by Medler (1986b, p. 325); here corrected to paralectotype.

The labels indicate that specimens were collected during a stopover at the Nicobar Islands during the around the world voyage of the Danish corvette Galatea 1845-1847.

**albomaculata** Melichar, 1902, p. 150, pl. VII, fig. 4 (*Dascalia*) [*Leptodascalia*]

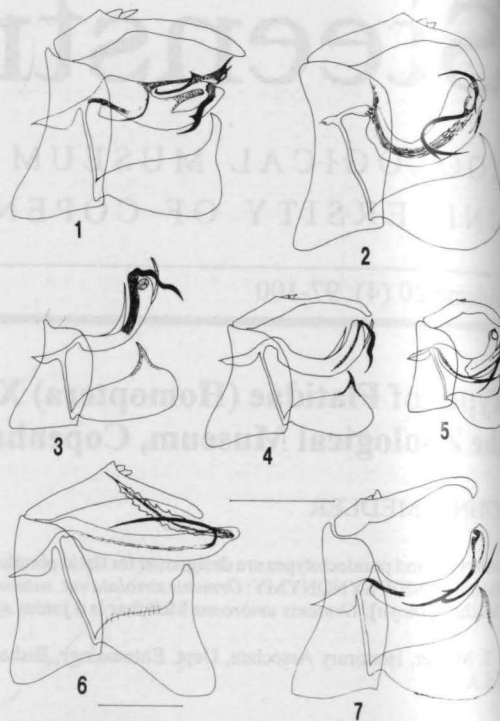
Lectotype ♂ here designated - (1) Mus Western.; (2) Bahia/albomaculata Mel./Mel. det. The lectotype genitalia are illustrated (Fig. 1).

Measurements: lectotype ♂ - Length: overall 11.25; v 0.25; f 1.29; p 0.50; m 2.49; t 8.80; pcl 3.32. Width: v 1.29; f 1.58; t 4.32. Hind leg spine formula: 2:6:7.

**albopunctulata** Melichar 1902, p. 104 (*Nephesa*)

Paralectotypes 2 ♀ - (1) Mus./Western; (2) Batavia/April 1816; albopunctata [sic!]/Mel. det.

A paralectotype ♀ from Java is at IRSN (Medler, 1987b). Genitalia of the lectotype ♂ from Java at WIEN were illustrated by Medler (1987a, fig. 3).



Figs 1-7. Male genitalia. 1, *Dascalia albomaculata* Melichar, 1902, lectotype; 2, *Ormenis umbrosa* Melichar, 1902, holotype; 3, *Ormenis striolata* Melichar, 1902, lectotype; 4, *Ormenis suturalis* Melichar, 1902, lectotype; 5, *Ormenis albicosta* Melichar, 1902, lectotype; 6, *Dermoflata rotundata* Melichar, 1901, lectotype; 7, *Neoceris corniculatus* Melichar, 1902, paralectotype. Scale bars = 1 mm.

**corniculatus** Melichar 1902, p. 132, pl. VII, fig. 19; (*Neoceris*) [*Deoceris*]

Paralectotype ♂ - (1) Caracas/Mus Drews/corniculatus Mel./Mel. det.

Measurements from paralectotype ♂: Length: overall 9.0; v 0.29; f 1.33; p 0.46; m 1.99; t 7.30; pcl 2.49. Width: v 1.12; f 1.33; t 2.99. Hind leg spine formula: 2:6:7.

Melichar described this species from Caracas and Puerto Cabello. Syntypes were cited as male and female, but in fact both syntypes are males. Melichar's illustration of the external appearance apparently was based on the male syntype from Puerto Bello at WIEN, therefore, it was selected as lectotype. The syntype male from Caracas is here designated as paralectotype. Its genitalia (Fig. 7) have the same characters as the lectotype.

**distincta** Melichar, 1902, p. 82 (*Ormenis*) [*Ormenoides*]

Paralectotype ♀ here designated - (1) Type [red label]; (2) Corrientes/Will. Lorense/distincta det. Mel. The tegmina apices are broken off at the claval apex. Spines 2:7:8.

Corrientes is a place name in Argentina. The lectotype female from Brazil with Signoret and Melichar determination labels is at WIEN.

**dotatus** Melichar, 1902, p. 222, pl. VIII, fig. 12 (*Flatoides*) [*Flatoidinus*]

Paralectotype (no abdomen) - (1) type [red label]; (2) Patria ign./dotatus/Mel. det.

The unknown provenance of the paralectotype and its poor condition does not permit positive identification. However, study of the genitalia of a syntype male deposited at RMS should provide the data necessary for recognition of the species.

**rotundata** Melichar, 1901, p. 246, pl. II, fig 1., pl. IV, fig 24 (*Dermoflata*).

Lectotype ♂ here designated - (1) Pulo Penang/rotunda/ta Mel./Mel. det.; (2) Mus/Western. Its genitalia are illustrated (Fig. 6). A paralectotype ♀ is at PARIS (Medler, 1986a, p. 167).

Measurements: lectotype ♂ - Length: overall 19.0; v 0.33; f 1.25; p 1.00; m 2.66; t 14.28; pcl 4.32. Width: v 1.08; f 1.25; t 9.96. Hind leg spine formula: 1:6:6.

External recognition of this species is enabled by the illustrations of Melichar that show the unique configuration of the postclaval sutural margin of the tegmen.

**striolata** Melichar 1902, p. 94, pl. V, fig. 16 (*Ormenis*) [*Anaya*]

Lectotype ♂ here designated - (1) Type [red label]; (2) Lille Nicobar/Galatea (sic!). Paralectotypes 5 ♂, ♀ - Nicobar Islands: Kakena, Lille, Stor/ Galatea; ♀ - Nancouri Nic./Galatea/striolata Mel./Melich. det. Genitalia of the lectotype are illustrated (Fig. 3).

Measurements: lectotype ♂, paralectotype ♀ - Length: overall 8.5, 8.5; v 0.17, 0.21; f 1.20, 1.33; p 0.46, 0.50; m 1.83, 1.83; t 7.30, 7.97; pcl 1.99, 2.16. Width: v 0.95, 0.95; f 1.12, 1.16; t 3.90, 4.15. Hind leg spine formula: 2:6:6 in each sex.

Melichar's illustration helps in recognition of this species. The apical process and other characters of the aedeagus are different from those found in *Anaya albicosta*, also collected from Nicobar Islands during the visit of the Danish corvette Galatea.

**suturalis** Melichar, 1902, p. 95 (*Ormenis striolata* var.) [*Anaya*]

Lectotype ♂ here designated - (1) Type [red label]; (2) Nicobar Islands: Pulo Milu/Galatea. Paralectotypes 4 ♀ - Nicobar Islands: Pulo Milu/Galatea.

Measurements: lectotype ♂, paralectotype ♀ - Length: overall 8.5, 9.0; v 0.17, 0.21; f 1.25, 1.25; p 0.46, 0.50; m 1.99, 1.99; t 7.14, 8.13; pcl 1.83, 1.99. Width: v 0.83, 0.91; f 1.16, 1.20; t 3.82, 3.98. Hind leg spine formula: 2:6:7; 2:6:6.

The genital characters (Fig. 4) are the same as those found in *striolata*. Tegmina of several syntypes show faint remnants of the bold black markings of *striolata*. These features confirm the status of *suturalis* as a junior synonym of *striolata*. NEW SYNONYMY.

**umbrosa** Melichar, 1902, p. 74 (*Ormenis*)

Holotype ♂ - (1) Type [red label]; (2) Ind. orient./umbrosa Mel./Melich. det.

Measurements: holotype - Length: overall 11.5; v 0.17; f 1.99; p 0.54; m 2.66; t 9.30; pcl 2.99. Width: v 1.58; f 1.99; t 4.81. Hind leg spine formula: right leg missing, left leg spines not positioned for count.

The holotype is mislabeled. Its correct provenance is Central America, not "India Oriental." The external morphology and genital characters (Fig. 2) are the same as those of *Ormenis nigrolimbata* Fowler (1900). However, the overall color of the holotype is dark brown, probably chemically induced, which is not normal for the species. The tegmina color pattern is correct with regard to the black costal, apical and postclaval sutural margins and distinctive spot at the apex of the clavus. *O. umbrosus* is here designated as the junior synonym of *nigrolimbata*, which was assigned to *Anormenis* in the Metcalf (1957) Catalog. NEW SYNONYMY.

**viridana** Melichar, 1902, p. 91, pl. IV, fig. 21 (*Ormenis*) [*Leptormenis*]

Paralectotype (no abdomen) - Brasilien/T.W. Lund/viridana Mel./Mel. det.

Measurements: paralectotype - Length: overall 10.0; v 0.17; f 1.16; p 0.50; m 2.16; t 8.47; pcl 3.15. Width: v 1.08; f 1.33; t 4.32. Hind leg spine formula: 2:6:10.

The apical submarginal line of the paralectotype does not connect with the claval apex, and

does not extend to the R + C stem. This agrees with key characters used by Melichar (1923) for *Lep-tormenis*. However, it does not agree with Fig. 21 of Melichar (1902) that depicts a specimen with both submarginal lines reaching the apex of the clavus. The same applies to the lectotype male at BUDA. A study of the male genitalia of syntypes from Rio Janeiro (RMS) and Espirito Santo (BUDA) revealed two species. I have not yet recognized the syntype with the vein pattern shown in Fig. 21, but it may be present in Melichar's collection at Brno.

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