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# Types of Flatidae XXV (Homoptera, Fulgoroidea). Review of Melichar Types and Determinations from Breddin Collection at Deutsches Entomologisches Institut, Müncheberg

With 9 figures

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## Summary

Type specimens of 17 species named by Melichar from the Breddin collection were examined. Valid status for 12 holotypes and 3 lectotypes was confirmed. New designations were given to *Ormenis despecta* MELICHAR Lectotype male and *Dascalia albomaculata* MEDLER Paralectotype female. Holotype female of *Nephesa spumans* BREDDIN was not found. Taxonomic data on syntypes from various sources recorded by Melichar in original publication were integrated during type selections.

## Zusammenfassung

Typen von 17 Arten, beschrieben von Melichar aus der Breddin Sammlung, wurden überprüft. Der gültige Status von 12 Holotypen und 3 Lectotypen ist bestätigt. Neu designiert sind ein Lectotypus-Männchen für *Ormenis despecta* MELICHAR und ein Paralectotypus-Weibchen für *Dascalia albomaculata* MEDLER. Der Holotypus (Weibchen) von *Nephesa spumans* BREDDIN wurde nicht gefunden. Taxonomische Daten über Syntypen, veröffentlicht von Melichar in den Originalbeschreibungen, wurden bei den Typenfestlegungen berücksichtigt.

## Introduction

The monumental monograph on the family Flatidae by Melichar, 1901-1902, was enabled in large part by loans of specimens from collections in European Museums. The Gustav Breddin collection of Flatidae was one of the valuable smaller collections examined by Melichar. The catalog of the collection by GAEDIKE (1971) recorded 8 holotypes and one syntype of species named by Melichar, including 5 species of *Dascalia* from South America. This collection is present at DEI Museum, Müncheberg.

Dispositions of type materials and identifications normally were recorded by Melichar according to loan sources.

Voucher specimens also were retained in Melichar's personal collection. MEDLER (2003a) reported on voucher specimens ex Breddin's collection that were retained in Melichar's collection located at present in the Moravian Museum, Brno, Czech Republic.

Most of the primary types are females. Representative male specimens associated with type females were used for illustration of genitalia. Such specimens bear a blue plesiotype label. This term has no status under taxonomic rules, but the label identifies the specimen in relation to published data, and enables accurate identification by future workers.

Acronyms sensu ARNETT, et al. (1993) are used to specify the various museums where type materials of Breddin are located.

BPBM	Bernice P. Bishop Museum, Honolulu, Hawaii, USA.
DEIC	Deutsches Entomologisches Institut, Müncheberg, Germany.
HNHM	Hungarian Natural History Museum, Budapest, Hungary.
MMBC	Moravian Land Museum, Brno, Czech Republic.
NHMG	Museum d'histoire naturelle, Geneva, Switzerland.
NHMW	Naturhistorisches Museum, Wien, Austria.
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden.
ZMAN	Zoologisch Museum, Universiteit van Amsterdam, The Netherlands.
ZMUC	Zoological Museum, University of Copenhagen, Denmark.

## Measurement parameters

Length in mm overall in lateral view from anterior margin of head to posterior margin of tegmen. v (vertex), f (frons) from dorsal apex to frontoclypeal suture; p (pronotum), m (mesonotum) along the dorsal midline; t (tegmen) from basal margin to center of apical margin; (pcl) postclaval sutural margin from apex of clavus to intersection with convex arc of sutural angle, or to tip of sutural angle. Width. v (vertex) transversely along intergenal carina or maximum width above eyes; f (frons) maximal point, usually near antennal insertions; t (tegmen) at maximal point between costal and sutural margins at apex of clavus.

The spine formula gives sequence of metatibial lateral spine(s); metatibial apical spines; metatarsal 1 basal spines.

## Catalogue

Species are listed in alphabetical sequence, along with original and present generic combinations.

*albomaculata*, *Dascalia*, MELICHAR, 1902: 150, pl. 7, fig. 4, habitus (n. sp.).

GAEDIKE, 1971: 315 (syntypus, DEI).

Paralectotype ♀, Brasil: Espirito Santo, Bahia, DEI, here designated.

*Leptodascalia albomaculata*, METCALF, 1957: 450 (catalog); MEDLER, 1993: 38 (syntype not found, HNHM); MEDLER, 1994b: 98, fig 1 (lectotype ♂ genitalia, Brasil: Bahia, ZMUC); MEDLER, 2003b: 592 (paralectotype ♀, America merid, MHNG).

*antiqua*, *Poeciloptera*, STÅL, 1862: 12 (n. sp.);

MELICHAR, 1902: 146 (*Dascalia*), ♂, 2 ♀, Brasil: Espirito Santo, Breddin Collection; det Melichar, DEI).

*Paradascalía antiqua* METCALF, 1957: 446 (catalog); MEDLER, 1994a: 216, fig 10, male genitalia (lectotype ♂, Brasil: Rio Janeiro, NHRS).

Measurements: Lectotype ♂, Length: Overall 13.0 mm; v 0.13; f 1.37; p 0.66; m 2.99; t 10.62; pcl 3.32; Width: v 1.16; f 1.49; t 4.81. Hind leg spine formula: 2:6:9.

Taxonomic note: *Paradascalía antiqua* STÅL was designated senior synonym of *Paradascalía fallaciosa* STÅL and *Paradascalía fuscoconspersa* STÅL by MEDLER, 1994a: 217.

Lectotype genitalia illustrated Fig. 7 is reproduction from MEDLER, 1994a, Fig. 10.

*aurantiomaculata*, *Lechaea*, MELICHAR, 1901: 234, pl. 6, fig. 11 (n. sp.);

GAEDIKE, 1971: 315 (Holotype ♀, Nordcelebes: Toli-Toli, Fruhstorfer, DEI);

*Lechaea* METCALF, 1957: 70 (catalog); MEDLER, 1990: 172, fig 58 (plesiotype ♂, Celebes: Minahasa, ZMAN).

Measurements: Holotype ♀. Length: Overall 27.5; v 0.66; f 2.16; p 0.91; m 4.15; t 22.41; pcl 4.15. Width: v 1.37; f 1.66; t 4.15. Hind leg spine formula: 2:5:6.

Taxonomic note: *Lechaea aurantiomaculata* MELICHAR is a junior synonym of *Flata labeculata* DISTANT, 1892: 284, (n. sp.); *Lechaea labeculata*, METCALF, 1957: 71 (catalog); MEDLER, 1990: 172, fig 58 (n. synonymy); *Circumdaksha labeculata* MEDLER, 1991: 6, fig 2 (n. comb.).

*breddini*, *Dascalia*, MELICHAR, 1902: 147, pl 9, fig 21 (n. sp.);

GAEDIKE, 1971: 315 (*Dascalia*, holotype ♀, Brasil: Minas Geraes, Fruhstorfer, DEI).

*Paradascalía breddini*, METCALF 1957: 446 (catalog).

Measurements: Holotype ♀. Length: Overall 15.0 mm; v 0.33; f 1.66; p 0.66; m 3.65; t 12.28; pcl 2.82; Width: v 2.16; f 2.32; t 5.64. Hind leg spine formula: 2:6:7.

*confusa*, *Dascalia*, MELICHAR, 1902: 151 (n. sp.);

GAEDIKE, 1971: 315 (Holotypus ♀, S.America: Itaitaba, DEI). Tegmen of the holotype is illustrated, Fig. 3.

*Dascaliomorpha confusa* METCALF, 1957: 450 (catalog).

Measurements: Holotype ♀. Length: Overall 9.0 mm; v 0.50; f 1.16; p 0.66; m 1.99; t 8.13; pcl 2.16; Width: v 1.00; f 1.25; t 4.32. Hind leg spine formula: 1.7.7.

*consocia*, *Atracis*, MELICHAR, 1902: 181, pl. 9, fig. 15 (n. sp.);

MEDLER, 2003a: 346 (Holotype, ♀, N.O.Sumatra: Tebingtinggi, Schultheiss, ex Bred-din collection, MMBC).

*Atracis* METCALF, 1957: 481 (catalog).

*Cerfennia consocia*, MEDLER, 2003a: 346 (n. comb.)

Taxonomic note: *Atracis consocia* is a junior synonym of *Atracis tabida* GERSTAECKER, 1895: 34; METCALF, 1957: 496 (catalog); *Cerfennia tabida* MEDLER, 1996: 75, figs 3, 36 (n. comb.).

*despecta*, *Ormenis*, MELICHAR, 1902: 80, pl 4, fig 22, tegmen (n. sp.);

Lectotype ♂, Südamerika: Manicare, DEI, here designated.

Lectotype tegmen Fig. 1, and genitalia Fig. 8 are illustrated.

*Ormenis despecta*, METCALF, 1957: 291 (catalog).

Measurements: Lectotype ♂. Length: Overall 13.0 mm; v 0.42; f 1.33; p 0.66; m 2.82; t 12.45; pcl 3.65; Width: v 1.83; f 1.83; t 6.31. Hind leg spine formula: 2:6:8.

Taxonomic note: The ♂ specimen at DEI is considered a valid syntype. Melichar's lapsus in publication of a female type is indicated by the published 14-15 mm size range, whereas the lectotype measures 13 mm. The type locality is probably Brazil: Manicore [Manicare], 5.48 S 61.16 W.

*marginata*, *Dascalía*, MELICHAR, 1902: 152 (n. sp.);

GAEDIKE, 1971: 315 (Holotype, ♀, S. America: Itaitaba, DEI). Holotype tegmen is illustrated, Fig. 2.

*Dascaliomorpha* METCALF, 1957: 451 (catalog).

Measurements: Holotype ♀. Length: Overall 10.0 mm; v 0.54; f 1.16; p 0.58; m 2.16; t 8.80; pcl 2.32; Width: v 0.83; f 1.16; t 4.48. Hind leg spine formula: 1.6.6.

Taxonomic note: The ♀ from Portorico, det *marginata* by Melichar at MMBC was designated paralectotype in error by MEDLER, 2003a: 350.

*nexa*, *Uxantis*, MELICHAR, 1902: 165 (n. sp.);

Holotype, ♀, Papua New Guinea: Finschhafen, ex Breddin collection, MMBC (MEDLER, 2003a: 351).

*Uxantis*, METCALF, 1957: 468 (catalog).

*Atracis*, MEDLER, 1988: 18 (comb.)

Taxonomic note: *Uxantis nexa* MELICHAR is a junior synonym of *Atracis pyralis* (GUERIN-MENEVILLE) 1831, pl 10; METCALF, 1957: 493 (catalog); MEDLER, 2001: 86 (synonymy).

*nigrolimbata*, *Ormenis*, FOWLER, 1900: 55, pl 7, figs 19, 19a; (n. sp.)

Holotype ♀, Panama: Bugaba, Champion, BMNH.

MELICHAR, 1902: 79 (Centralamerika, Cumbase, Faro Yurimaguas, in Breddins collection).

*Anormenis nigrolimbata*, METCALF, 1957: 305 (catalog).

Taxonomic note: Specimens of *nigrolimbata* recorded by Melichar in Breddins collection are represented only by a female from Sud-America: Faro, MMBC.

*nigromarginata*, *Ormenis*, MELICHAR, 1902: 77, pl 7, fig 2; n. sp.).

GAEDIKE, 1971: 315 (Holotype, ♂, S. America: Peru, Cumbase, DEI)

*Anormenis nigromarginata* METCALF, 1957: 306 (catalog).

The holotype genitalia are illustrated, Fig. 4.

Measurements: Holotype ♂. Length: Overall 12.0 mm; v 0.17; f 1.33; p 0.58; m 2.32; t 9.96; pcl 2.32; Width: v 1.66; f 1.83; t 5.81. Hind leg spine formula: 2:7:8.

*ornata*, *Dascalía*, MELICHAR, 1902: 151, pl. 7, fig 2, habitus (n. sp.);

GAEDIKE, 1971: 316 (Holotypus ♀, Brasil: Faro, DEI).

*Anadascalìa ornata*, METCALF, 1957: 455 (catalog).

Measurements: Holotype ♀. Length: Overall 11.0 mm; v 0.42; f 1.49; p 0.50; m 2.32; t 8.80; pcl 1.49; Width: v 1.16; f 1.49; t 3.98. Hind leg spine formula: 2:6:6.

*planus*, *Flatoides*, MELICHAR, 1902; 217, Pl. 9, fig. 20, habitus (n. sp.).

*Phalaenomorpha planus*, METCALF, 1957: 519 (catalog).

Lectotype, ♀, Brazil: Espirito Santo, Haglund, NHRS (MEDLER, 1994a: 223).

Paralectotype, ♀, Brasil: Espirito Santo, ex Breddin collection, MMBC (MEDLER, 2003a: 352).

Measurements: Lectotype ♀. Length: Overall 16.5 mm; v 1.00; f 1.99; p 0.83; m 2.66; t 13.78; pcl 1.00; Width: v 1.08; f 1.66; t 6.14. Hind leg spine formula: 2:6:8.

*punctuliger*, *Flatoides*, MELICHAR, 1902: 215 (n. sp.);

*Phalaenomorpha punctuliger*, METCALF, 1957: 519 (catalog).

Lectotype, ♂, Brasil: Espirito Santo, Haglund, NHRS (MEDLER, 1994a: 223, fig. 20, male genitalia).

Paralectotypes, 3 ♀, Brazil: Espirito Santo, ex Breddin collection, MMBC (MEDLER, 2003a: 352).

Measurements: Lectotype ♂. Length: Overall 15.00 mm; v 0.83; f 1.66; p 0.83; m 2.66; t 12.95; pcl 1.66; Width: v 1.33; f 1.91; t 5.64. Hind leg spine formula: 2:7:11.

Taxonomic note: Lectotype genitalia illustrated in Fig. 9 is reproduction of genitalia shown by MEDLER, 1994a, Fig. 20.

*roseovenosa*, *Lechaea*, MELICHAR, 1901: 233, 1902: pl. 6, fig. 12, habitus (n. sp.).

GAEDIKE, 1971: 316 Holotype ♀, C. Celebes: Kalaena Ebene, DEI.

*Lechaea roseovenosa*, METCALF, 1957: 71 (catalog).

*Circumdaksha roseovenosa*, MEDLER, 1991: 8 (comb.)

Measurements: Holotype ♀. Length: Overall 26.0; v 0.83; f 1.99; p 1.00; m 3.65; t 21.25; pcl 2.99; Width: v 1.83; f 1.66; t 11.62. Hind leg spine formula: 2:5:7.

*scripta*, *Atracis*, MELICHAR, 1902: 188, pl 8, fig. 18, habitus (n. sp.).

*Atracis scripta*, METCALF, 1957: 495 (catalog).

*Cerfennia scripta*, MEDLER, 1996: 74 (comb., Holotype, ♀, Borneo: no specific locality, ex Breddin Collection, MMBC; plesiotype ♂ Borneo: Muller, ZMUA)).

Plesiotype genitalia are illustrated, Fig. 6.

*semifurcata*, *Flatida*, MELICHAR, 1901: 248, pl. I, figs. 13, 13a, b; habitus (n. sp.).

GAEDIKE, 1971: 316 (Holotypus, ♀, W. Africa: N. Cameroon: Johann Albrechtshohe, DEI).

*Flatidissa semifurcata*, METCALF, 1957: 59 (catalog).

Measurements: Holotype ♀. Length: Overall 25.0 mm; v 0.83; f 2.49; p 1.16; m 4.15; t 23.24; pcl 3.15; Width: v 0.91; f 1.25; t 10.79. Hind leg spine formula: 2:7:7.

*spumans*, *Nephesa*, BREDDIN 1900: 199 (n. sp.)

Holotype ♀, Celebes: Dongola, 282, DEI (not found).

*Neomelicharia spumans*, METCALF, 1957: 402 (catalog).

*Somisha spumans*, MEDLER, 1991: 19 (n. comb.).

Taxonomic note: This species was not listed by GAEDIKE, 1971. MEDLER 1991: 19, recorded a female specimen from Gorontala in Humboldt University Museum, Berlin, det *Geisha spumans* by MELICHAR.

*tortricina*, *Poeciloptera*, GERMAR 1821: 103 (n. sp.)

*Anormenis tortricina*, METCALF, 1957: 310 (catalog).

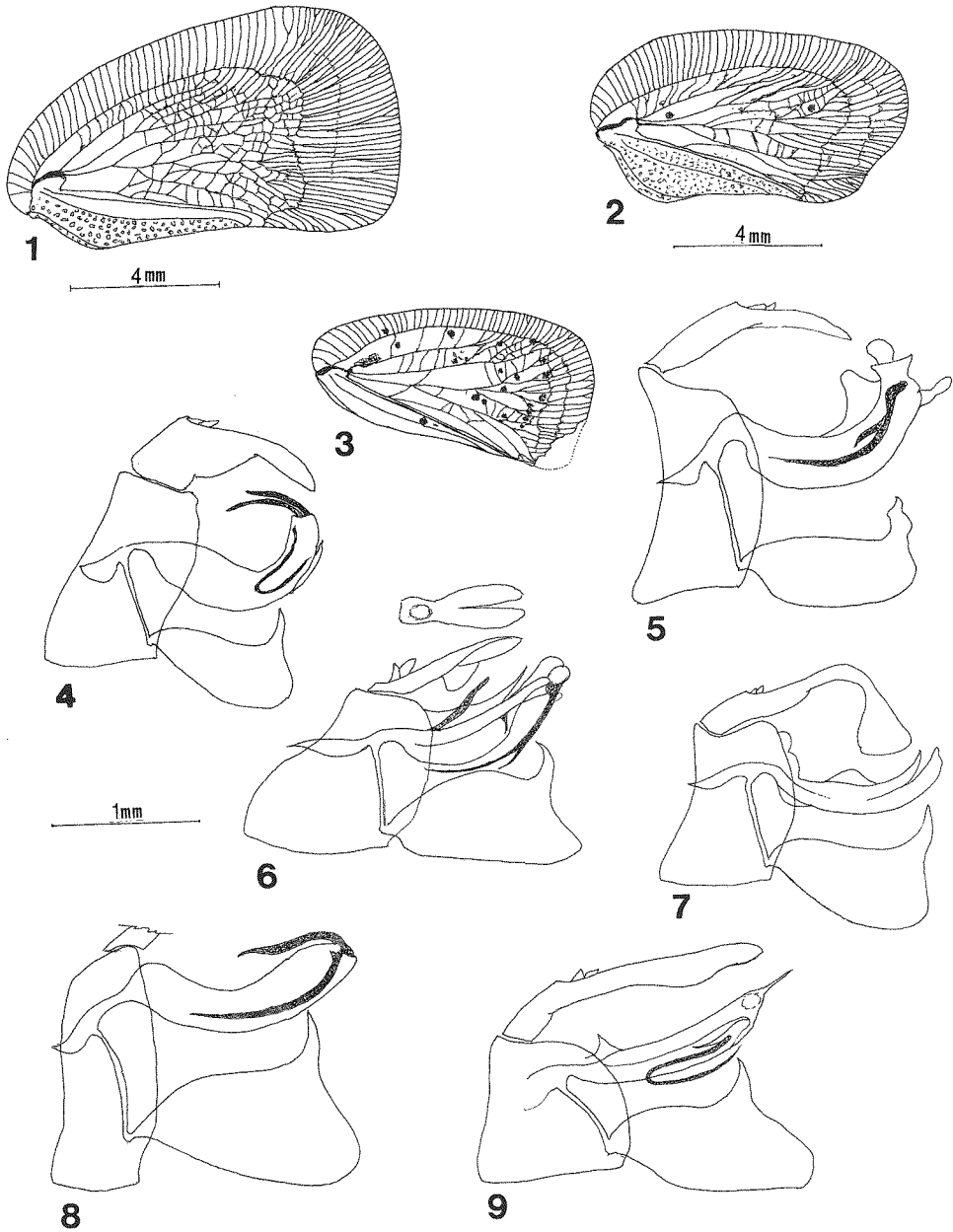
Taxonomic note: Specimens from Brazil: Espirito Santo, that were recorded by MELICHAR, 1902: 81, in personal collection, MMBC, and Breddin's collection, DEI, were not found. However, two males in Stål collection, NHRS, #103, pink label, were seen by Melichar, The genitalia of plesiotype male here designated, Brasil: Westerman, 116, is shown in Fig. 5.

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Figs. 1-3, Tegmina: 1 *Ormenis despecta* MELICHAR; 2 *Dascalimorpha marginata* (MELICHAR); 3 *Dascalimorpha confusa* (MELICHAR). - Figs. 4-9, Male Genitalia: 4 *Anormenis nigromarginata* (MELICHAR); 5 *Anormenis tortricina* (GERMAR); 6 *Cerfennia scripta* (MELICHAR); 7 *Paradascalia antiqua* (STÅL); 8 *Ormenis despecta* MELICHAR; 9 *Phlaenomorpha punctiliger* (MELICHAR).

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