

# Types of Flatidae XIII, lectotype designations and taxonomic notes on African species in the Zoological Museum of the HUMBOLDT-University Berlin

(Homoptera, Fulgoroidea)

By

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With 25 figures in the text

## Abstract

Type specimens of 31 African species of Flatidae named by JACOBI, KARSCH, MELICHAR, and SCHMIDT, were examined. The genital characters of 25 holotype, lectotype or plesiotype males were illustrated.

New combinations: *Gyariella cuspidata* (MELICHAR), from *Gyaria*; *Cryptoflata obsoletus* (MELICHAR), from *Paranotus*; *Flatida ochreata* (MELICHAR), from *Flatina*; *Phylliana praetextus* (MELICHAR), from *Paranotus*.

New synonymies: *Flatina chloris* MELICHAR, a junior synonym of *Flatidissa furcigera* (HAGLUND); *Ormenis fuscula* MELICHAR, a junior synonym of *Ulundia madagascariensis* (SIGNORET).

Type specimens of African Flatidae in the HUMBOLDT University Zoological Museum were examined in connection with research on this family. The African types were based on materials described by KARSCH, 1890, MELICHAR 1901, 1902, JACOBI, 1917, and SCHMIDT 1912d. An earlier study of types in the HUMBOLDT Museum from Southeast Asia was reported by MEDLER, 1986e.

Subsequent to publication of the METCALF Catalog, 1957, research on the taxonomy of African flatids was reported by FENNAH, 1958, SYNAVE, 1954, 1962, and MEDLER, 1988c. These workers illustrated characters of the male genitalia to help with identifications of species. The present work extends knowledge on the male genitalia with respect to historical type specimens of Flatidae. In cases where the extant types were females, a male plesiotype was selected for dissection and illustration of the genitalia.

The authenticity of syntypes was verified by reference to data recorded in original publications. To better establish the historical status of types, label data associated with each syntype were recorded precisely by the following format: (1), (2), (3), etc., indicates the sequence of labels on the pin from top to bottom. A slash (/) shows the separation of the printed or written lines on each label. Lastly, a red label with my hand printed lectotype designation, or yellow label with my paralectotype designation, was attached to the respective specimens.

Measurements on the vertex (v), frons (f), pronotum (p), mesonotum (m), tegmen (t) and postclaval sutural margin (pcl) were made with a binocular microscope. The ocular scale units were converted to mm and the data presented in standardized format. For example: Measurements (\*, °) from plesiotype and holotype — Length: overall; v; f; p; m; t; pcl. Width: v; f; t.

The number of diagnostic black-tipped spines on the hind leg were recorded in sequence by formula; namely, the lateral and apical tibial spines and spines on the apical margin of the first tarsal segment; e.g., 1:6:6, 2:5:7, etc.

## Acknowledgements

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## Format for Alphabetical list of types

The types are listed by their specific name, with the original generic name-combination placed in parentheses ( ) after publication date. The genus name placed in square brackets [ ] represents the name used in the METCALF Catalogue, 1957. All lectotypes and paralectotypes designated below are considered to be validated at date of this publication. In a few applicable cases reference is made to an earlier designation published previously.

**angulinum** SCHMIDT, 1912d, p. 97 (*Phleboterum*) [PHLEBOTERUM].

Lectotype ♂ — (1) Nyassa-See/Langenburg/3. X.—4. XI. '98/FÜLLEBORN S.; (2) Type [orange label]; (3) *Phleboterum*[*angulinum*]/SCHMIDT/\* E. SCHMIDT/determ. 1912. [Dissected.]

Paralectotype ♀ — (1) D. O. Afrika/5. X. Amani 07/VOSSELER S. O.; (2) Type [orange label]; (3) *Phleboterum*[*angulinum*]/SCHMIDT/♀ EDM. SCHMIDT/determ. 1912.

Localities and sexes were associated correctly on SCHMIDT's determination labels, but these data were reversed in the original publication.

Measurements (♂, ♀) from lectotype and paralectotype — Length: overall 10.0, 13.0; v 0.66, 0.83; f 1.54, 1.83; p 0.54, 0.50; m 2.16, 2.32; t 8.13, 10.29; pcl 2.99, 3.32. Width: v 1.25, 1.41; f 1.49, 1.74; t 4.32, 5.64. Spine formula: lectotype and paralectotype each 2:7:9.

The lectotype genitalia are illustrated (Fig. 18).

**bicoloripes** KARSCH, 1890, p. 68 (*Latois*) [LATOIS].

Lectotype ♀ [left leg missing] — (1) Type [orange label]; (2) West Madagascar/HILDEBRANDT/*Latois bicoloripes* K./Type.

Paralectotype [no abdomen, no right leg] ♀ — (1) Type [orange label]; (2) West Madag/HILDEBRANDT; (3) West Madagascar/HILDEBRANDT/*Latois bicoloripes* K./Type.

Plesiotype ♂ — Madagascar/Prov. d'Analalava/Maromandia/R. DECARY 1923, Paris Museum.

Measurements (♂, ♀) from plesiotype (Paris Museum) and lectotype — Length: overall 8.0, 8.0; v 0.46, 0.33; f 1.16, 1.16; p 0.29, 0.29; m 1.66, 1.66; t 6.81, 6.47; pcl 2.16, 2.16. Width: v 0.95, 0.91; f 1.08, 1.16; t 3.65, 3.65. Spine formula: plesiotype 2:7:7; lectotype 2:7:8.

The genitalia of the plesiotype are illustrated (Fig. 14).

MELICHAR, 1901, p. 258, placed *bicoloripes* as a junior synonym of *Latois suturalis* SIGNORET, and this synonymy was accepted by the METCALF Catalog, 1957. However, several species of *Latois* are known to me on the basis of male genitalia, and the synonymy may be overturned when the male status of *suturalis* is determined.

**binotata** MELICHAR, 1901, p. 216 (*Flatina*) [FLATINA].

Holotype ♀ — (1) Type [orange label]; (2) 3106; (3) N. Kamerun/Johann-Albrechtshöhe/L. CONRADT S./14. I. 96; (4) *binotata* n. sp./MELICHAR.

Measurements from holotype — Length: overall 14.0; v 0.50; f 1.49; p 0.75; m 2.49; t 11.62; pcl 2.99. Width: v 0.66; f 0.75; t 7.47. Spine formula: 2:8:6.

**canaliculatus** KARSCH, 1890, p. 69 (*Aulophorus*) [AULOPHORINA].

Holotype ♀ [head and pronotum missing] — (1) Type [orange label]; (2) Delagoabai/R. MONTEIRO; (3) Delagoabai/R. MONTEIRO/*Aulophorus canaliculatus* K./Type.

Plesiotype ♂ — Afr. du Sud, Bedford River, 5. I. 1949, Brussels Museum.

Measurements (♂, ♀) from plesiotype (Brussels Museum) and headless holotype — Length: overall 7.0, ..; v 0.46, ..; f 1.08, p 0.42, ..; m 1.08, 1.49; t 5.96, 7.14; pcl 1.66, 1.49. Width: v 0.66, ..; f 0.91, ..; 2.32, 3.07. Spine formula: plesiotype 1:6:11; holotype 1:7:10.

The plesiotype genitalia are illustrated (Fig. 25).

**chloris** MELICHAR, 1901, p. 215 (*Flatina*) [FLATINA].

Holotype ♂ — (1) Type (orange label); Kamerun, Lolo=/dorf. 19. II. 95./L. CONRADT; (3) 13104; (4) *chloris* n. sp./MELICHAR det.

Measurements from holotype — Length: overall 17.0; v 0.54; f 1.49; p 0.75; m 2.66; t 14.77; pcl 3.32. Width: v 0.75; f 0.95; t 8.80. Spine formula: 2:7:5.

The holotype genitalia are illustrated (Fig. 1). This species is a junior synonym of *Flatida furcigera* HAGLUND, based on similar characters illustrated by MEDLER, 1988c, fig. 9; new synonymy; FLATIDISSA METCALF, new combination.

**circellaris** MELICHAR, 1901, p. 217 *Flatina* [FLATINA].

Holotype ♂ — (1) Type [orange label]; (2) 13114; (3) S.O. Kamerun/Lolodorf/L. CONRADT 95 [blue label]; (4) *Flatina/circellaris*/MELICHAR det.

Measurements from holotype — Length: overall 16.0; v 0.62; f 1.66; p 0.75; m 2.66; t 12.95; pcl 3.49. Width: v 0.66; f 0.75; t 7.64. Spine formula: 2:9:7.

The holotype genitalia are illustrated (Fig. 3).

**collaris** JACOBI, 1917, p. 539 (*Phalaenomorpha*) [MELICHITONA].

Holotype ♀ — (1) Madagascar; (2) Fénérive/VOELTZKOW; (3) A. JACOBI/Typus [pink label]; (4) *Phalaenomorpha/collaris*/JAC/A. JACOBI determ.

Plesiotype ♂ — Madagascar/Forêt d'Ambre/et Maevatanama/CERONI 1907, Paris Museum.

The distinctive appearance of the holotype in dorsal view was shown very well by JACOBI, 1917, fig. 11. Valvula III is narrowed, with four strong teeth apically.

Measurements (♂, ♀) from plesiotype (Paris Museum) and holotype — Length: overall 13.5, 15.0; v 1.25, 1.33; f 1.83, 1.99; p 0.83, 0.83; m 2.24, 2.16; t 10.29, 11.92; pcl 2.99, 2.99. Width: v 0.83, 1.00; f 1.25, 1.33, t 4.65, 5.31. Spine formula: plesiotype 2:6:9; holotype 2:6:8.

The plesiotype genitalia are illustrated (Fig. 23). The plesiotype agrees closely with the holotype in external appearance, except that vein S of the plesiotype is more strongly displaced against vein M by the prominent bulla and apparently fused in a short M + S stem.

**crassivenosa** KARSCH, 1890, p. 65 (*Flata*) [EUMELICHARIA].

Holotype ♀ — (1) Type [orange label]; (2) Congo/POGGE; (3) *Flata crassivenosa*.

Plesiotype ♂ — Congo, San-Benito, Guiral, #5323, 1885, Paris Museum.

Measurements (♂, ♀) from plesiotype (Paris Museum) and holotype — Length: overall 16.0; 39.0 (spread); v 0.50, 0.66; f 1.74, 2.24; p 0.66, 0.87; m 2.66, 3.49; t 14.50,

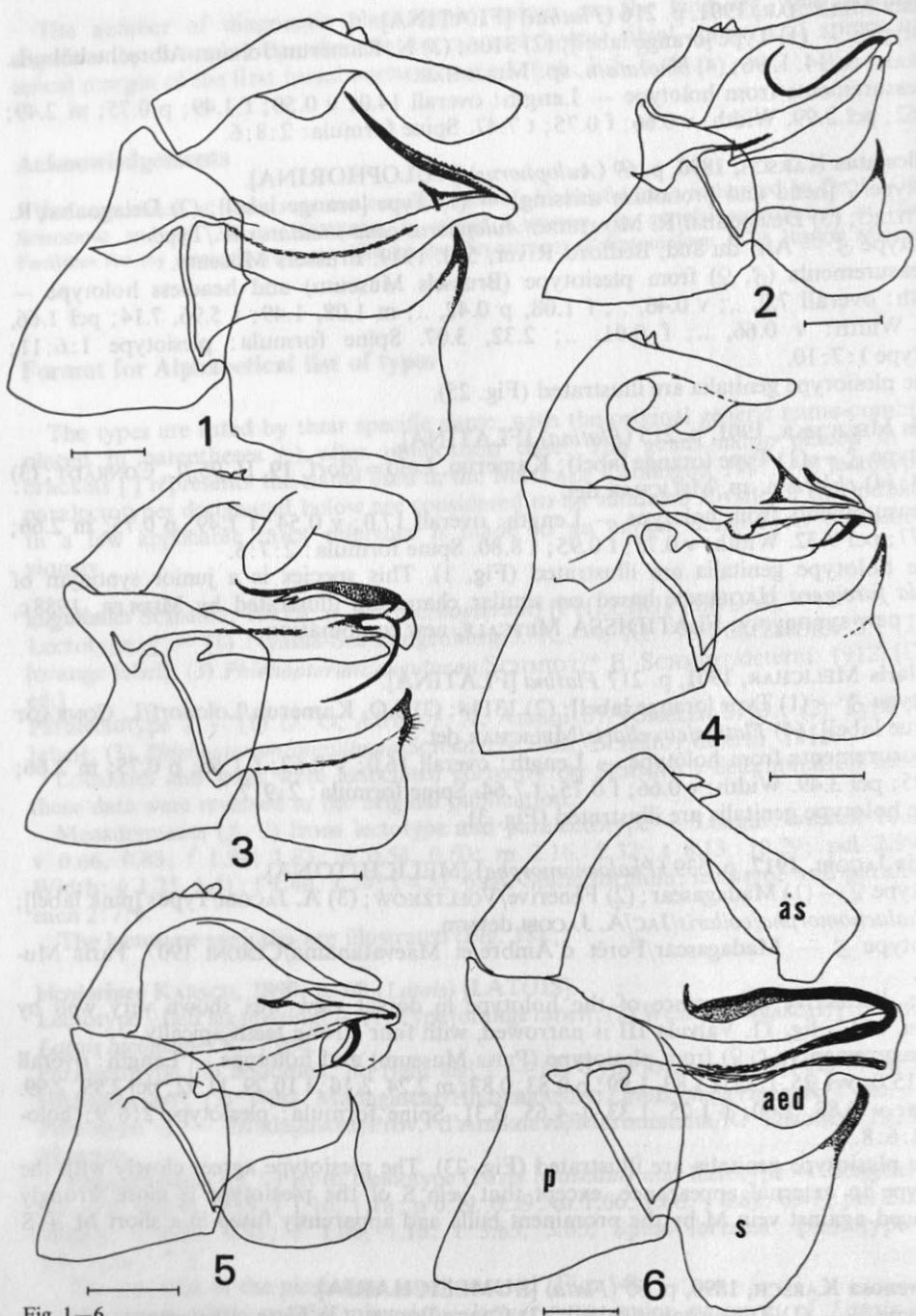


Fig. 1-6

Left lateral view of male genitalia. 1, *Flatina chloris* MELICHAR [*Flatidissa*]. 2, *Flatina flavescens* MELICHAR. 3, *Flatina circellaris* MELICHAR. 4, *Flata superba* MELICHAR [misidentified, = *Flatida pallida* (OLIVIER)]. 5, *Flata superba* MELICHAR [*Flatida*]. 6, *Flatina ochreata* MELICHAR [*Flatida*]. aed = aedeagus, as = anal segment, p = pygofer, s = style. Scale = 0.5 mm

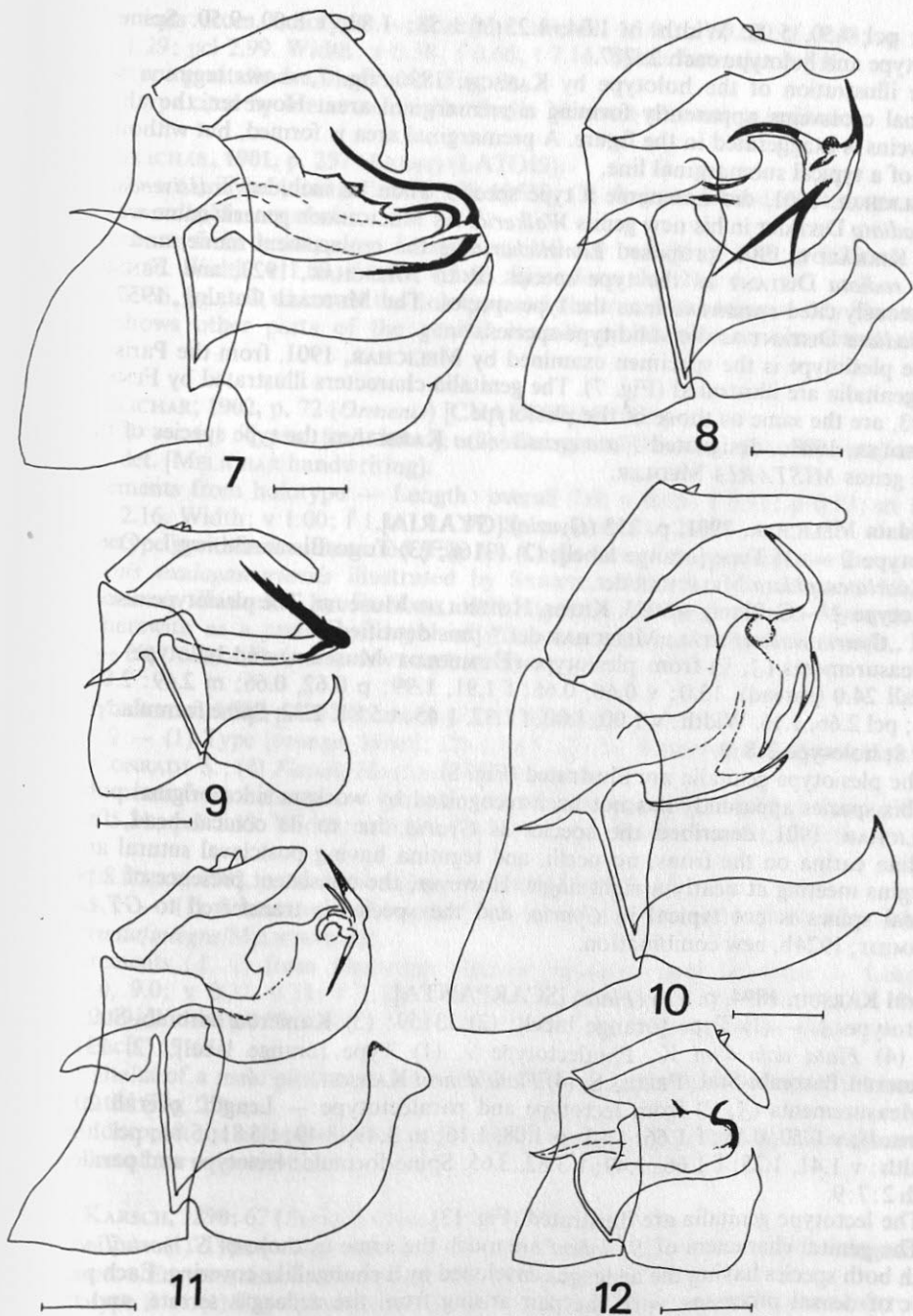


Fig. 7-12

Left lateral view of male genitalia. 7, *Flata crassivenosa* KARSCH [*Mistaria*]. 8, *Gyaria cuspidata* MELICHAR [*Gyariella*]. 9, *Paranotus trivirgatus* KARSCH. 10, *Flata nigritarsis* KARSCH [*Gyarina*]. 11, *Conoprosthius limbipunctatus* KARSCH [*Gyaria*]. 12, *Ormenis parvula* MELICHAR [*Panormenis*]. Scale = 0.5 mm

17.75; pcl 4.50, 5.00. Width: v 1.04, 1.25; f 1.58; 1.83; t 8.00, 9.50. Spine formula: plesiotype and holotype each 2:7:7.

The illustration of the holotype by KARSCH, 1890, fig. 7, shows tegmina with dense terminal crossveins apparently forming a premarginal area. However, the alignment of crossveins is exaggerated in the figure. A premarginal area is formed, but without development of a typical submarginal line.

MELICHAR, 1901, did not name a type species when he included *crassivenosa* KARSCH and *radiata* DISTANT in his new genus *Walkeria*. As MELICHAR's generic name was preoccupied, KIRKALDY, 1906, proposed *Eumelicharia* as the replacement name, and designated *Flata radiata* DISTANT as the type species. Both MELICHAR, 1923, and FENNAH, 1958, erroneously cited *crassivenosa* as the type species. The METCALF Catalog, 1957, correctly lists *radiata* DISTANT as the valid type-species.

The plesiotype is the specimen examined by MELICHAR, 1901, from the Paris Museum. The genitalia are illustrated (Fig. 7). The genitalia characters illustrated by FENNAH, 1958, fig. 93, are the same as those of the plesiotype.

MEDLER, 1988c, designated *Flata crassivenosa* KARSCH as the type species of the monobasic genus *MISTARIA* MEDLER.

**cuspidata** MELICHAR, 1901, p. 253 (*Gyaria*) [GYARIA].

Holotype ♀ — (1) Type [orange label]; (2) 13168; (3) Togo/Bismarckburg/L. CONRADT S.; (4) *Gyaria/cuspidata*/MELICHAR det.

Plesiotype ♂ — Cafferei, #5073, KREBS, HUMBOLDT Museum. The plesiotype also bears the label „*Gyaria walkeri* STÅL, MELICHAR det.“ [misidentified].

Measurements (♂, ♀) from plesiotype (HUMBOLDT Museum) and holotype — Length: overall 24.0 (spread), 13.0; v 0.66, 0.66; f 1.91, 1.99; p 0.62, 0.66; m 2.49: 2.82; t 9.63, 5.64; pcl 2.66, 1.16. Width: v 1.00, 1.00; f 1.37, 1.45; t 5.81, 2.32. Spine formula: plesiotype 2:6:8; holotype 2:8:9.

The plesiotype genitalia are illustrated (Fig. 8).

This species apparently has not been recognized by workers since original publication. MELICHAR, 1901, described the species as *Gyaria* due to its conical head, full length median carina on the frons, no ocelli, and tegmina having postclaval sutural and apical margins meeting at nearly a right angle. However, the consistent presence of 2 posttibial lateral spines is not typical in *Gyaria*, and the species is transferred to *GYARIELLA* SCHMIDT, 1924b, new combination.

**dohrni** KARSCH, 1894, p. 116 (*Flata*) [SCARPANTA].

Lectotype ♂ — (1) Type [orange label]; (2) 13159; (3) Kamerun/Barombi-Stat./PREUSS S.; (4) *Flata dohrni* K. Paralectotype ♀, (1) Type [orange label]; (2) 13159; (3) Kamerun/Barombi-Stat./PREUSS S. (4) *Flata/dohrni* KARSCH.

Measurements (♂, ♀) from lectotype and paralectotype — Length: overall 20.0, 36.0 (spread); v 0.50, 0.58; f 1.66, 1.83; p 1.08, 1.16; m 3.49, 3.49; t 5.81; 5.81; pcl 1.99, 1.83. Width: v 1.41, 1.25; f 1.66, 1.49; t 3.82, 3.65. Spine formula: lectotype and paralectotype each 2:7:9.

The lectotype genitalia are illustrated (Fig. 13).

The genital characters of *S. dohrni* are much the same as those of *S. mortuifolia* STÅL, with both species having the aedeagus enveloped by a channellike covering. Each part has a pair of dorsal processes, with the pair arising from the aedeagus serrate, and the other pair smooth.

**flavescens** MELICHAR, 1901, p. 217 (*Flatina*) [FLATINA].

Lectotype ♂ — (1) Type [orange label]; (2) 13112; (3) Kamerun/Hinterland/Jaunde-Stat./ZENKER S. [blue label]; (4) *Flatina flavescens*/n. sp./MELICHAR.

Measurements from holotype — Length: overall 15.0; v 0.62; f 1.45; p 0.75; m 2.49; t 11.29; pcl 2.99. Width: v 0.58; f 0.66; t 7.14. Spine formula: 2:8:6.

The lectotype genitalia are illustrated (Fig. 2).

The ♀ syntype cited by MELICHAR in the Berlin Museum was not examined.

**frontalis** MELICHAR, 1901, p. 257 (*Latois*) (LATOIS).

Holotype ♂ — (1) Type [orange label]; (2) 10535; (3) Anjoani/Comoren/HILDEBRANDT; (4) *Latois/frontalis*/MELICHAR det.

Measurements from holotype — Length: overall 6.0; v 0.25; f 0.95; p 0.25; m 1.66; t 5.81; pcl 1.66. Width: v 1.08; f 1.33; t 2.66. Spine formula: 2:6:6.

SYNAVE, 1956, fig. 4, dissected the holotype and illustrated its aedeagus. My illustration (Fig. 17) shows other parts of the genital capsule in addition to characters of the aedeagus.

**fuscula** MELICHAR, 1902, p. 72 (*Ormenis*) [CHAETORMENIS].

Holotype ♂ — (1) Typus [red label]; (2) Delagoabai/HAYNE; (3) *Ormenis/fuscula*/MELICHAR det. [MELICHAR handwriting].

Measurements from holotype — Length: overall 7.0; v 0.25; f 0.91; p 0.33; m 1.66; t 5.64; pcl 2.16. Width: v 1.00; f 1.16; t 1.99. Spine formula: 2:8:8.

The holotype genitalia are illustrated (Fig. 19). Characters of the genitalia are the same as *Chaetormenis madagascariensis* illustrated by SYNAVE, 1956, fig. 12–13, and *Ulundia madagascariensis* illustrated by FENNAH, 1958, fig. 108. *Ormenis fuscula* MELICHAR is disposed herewith as a junior synonym of *Elidiptera madagascariensis* SIGNORET. New synonymy; *ULUNDIA* DISTANT, new combination.

**haglundi** MELICHAR, 1901, p. 247 (*Flatida*) [FLATIDISSA].

Holotype ♀ — (1) Type [orange, label]; (2) 13163; (3) N. Kamerun/Joh:Albrechtshöhe/II. 96/L. CONRADT S.; (4) *Flatida/Haglundi*/MELICHAR det.

Measurements from holotype — Length: overall 35.0 (spread); v 0.50; f 1.66; p 0.83; m 3.32; t 5.31; pcl 1.33. Width: v 0.83; f 1.04; t 3.32. Spine formula: 2:7:6.

**integra** MELICHAR, 1902, p. 63 (*Camerunia*) [CAMERUNIOLA].

Holotype ♀ — (1) Kamerun, Lolo=/dorf 15. vi. 95/L. CONRADT [dark blue label]; (2) *Kamerunia/integra*/MELICHAR det.

Measurements (♂, ♀) from plesiotype (BISHOP Museum) and holotype — Length: overall 8.0, 9.0; v 0.33, 0.33; f 1.12, 1.16; p 0.42, 0.46; m 1.66, 1.66; t 6.81, 7.30; pcl 2.82, 2.49. Width: v 0.79, 0.83; f 1.00, 1.00; t 3.32, 3.49. Spine formula: plesiotype and holotype each 1:5:6.

The genitalia of a male plesiotype from the Tai Forest, Ivory Coast, Bishop Museum, are illustrated (Fig. 22).

The condition of the holotype did not allow determination of the number of teeth on the 3rd valvulae of the ovipositor.

**latifrons** KARSCH, 1890: 67 (*Euryprosthius*) (EURYPROSTHIUS).

Lectotype ♀ — (1) Type [orange label]; (2) Madagascar/HILDEBRANDT; (3) Madagascar/HILDEBRANDT/*Euryprosthius latifrons*/KARSCH. Type (genitalia/vial).

Paralectotype ♀ — (1) Type [orange label]; (2) S. Central/Madagascar/HILDEBRANDT; (3) *Euryprosthius latifrons*; (4) S. Central Madagascar/HILDEBRANDT/*Euryprosthius lati-/frons* KARSCH/Type.

Plesiotype ♂ — Madagascar, Fort Dauphin, CH. ALLUAUD, Paris Museum.

Measurements (♂, ♀) from plesiotype (Paris Museum) and lectotype — Length: overall 8.0, 7.0; v 0.17, 0.13; f 1.16, 0.91; p 0.33, 0.17; m 1.66, 1.66; t 6.81, 6.64; pcl 1.33,

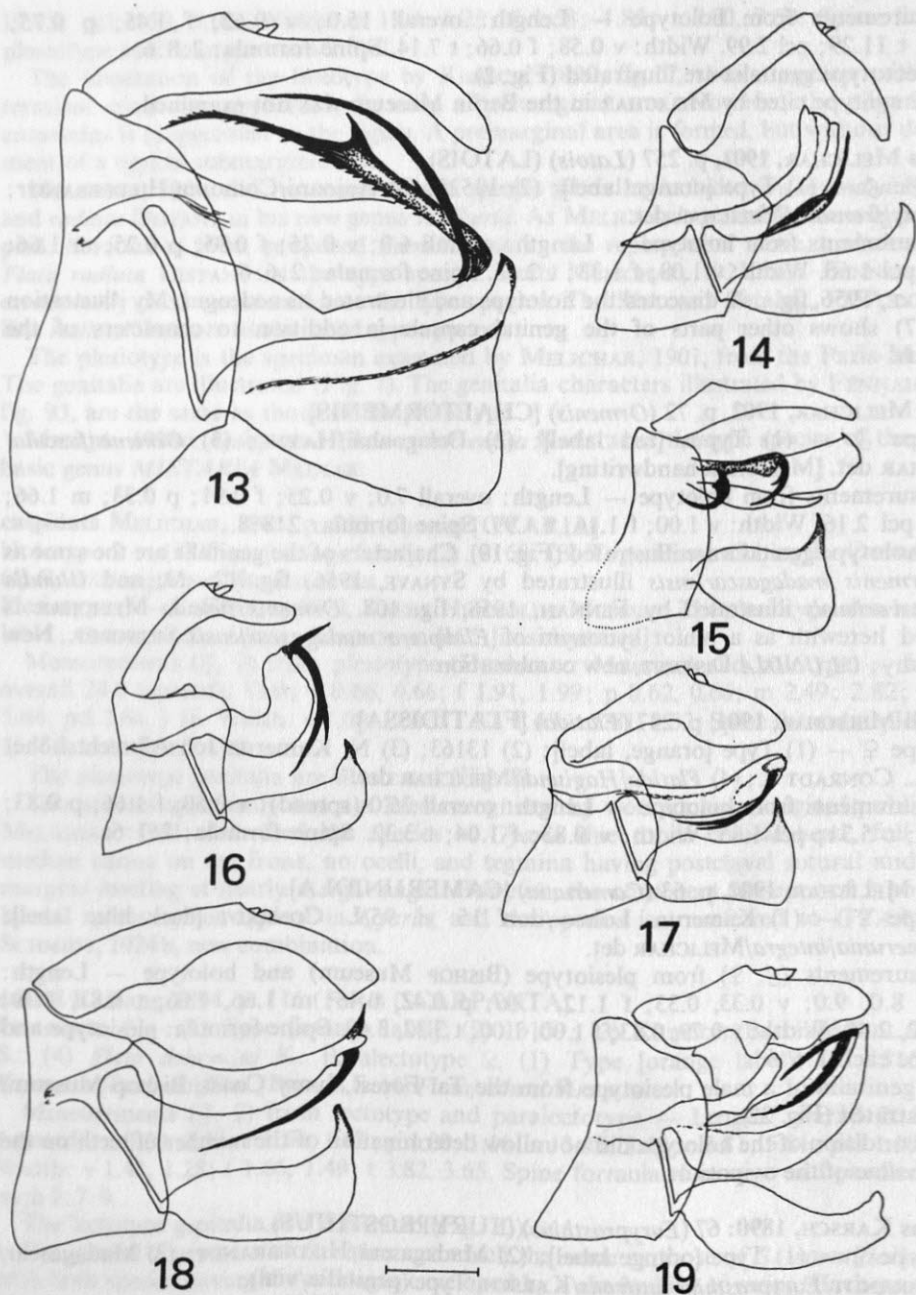


Fig. 13-19

Left lateral view of male genitalia. 13, *Scarpanta dohrni* KARSCH. 14, *Latois bicoloripes* KARSCH. 15, *Phaedolus quadripunctatus* KARSCH. 16, *Euryprosthium latifrons* KARSCH. 17, *Latois frontalis* MELICHAR. 18, *Phleboterum angulinum* SCHMIDT. 19, *Ormenis fuscula* MELICHAR [*Ulundia*]. Scale = 0.5 mm



2.49. Width: v 1.58, 1.37; f 1.91, 1.62; t 2.66, 2.66. Spine formula: plesiotype 2:6:6; lectotype 2:6:5.

The lectotype genitalia are illustrated (Fig. 16).

**limbipunctatus** KARSCH, 1890, p. 69 (*Conoprosthius*) [GYARIA].

Lectotype ♀ — (1) Type [orange label]; (2) 536; (3) Pungo/A. v. HOMEYER; (4) *Conoprosthi*=/us *limbi*=/punctatus K.; (5) *Gyaria limbi*=/punctata (K.)/MELICHAR det.

Paralectotype ♀ — (1) Type [orange label]; (2) Pungo/A. v. HO=/MEYER; (3) *Conoprosthius/limbipuncta*=/tus K.; (4) *Gyaria limbi*=/punctata (K.)/MELICHAR det.

Plesiotype ♂ — Angola, 10.914, Dundo, X, 1953, A DE BARROS MACHADO (Brussels Museum).

Measurements (♂, ♀) from plesiotype (Brussels Museum) and lectotype — Length: overall 13.5; 11.5; v 0.66, 0.62; f 2.16, 1.83; p 0.66, 0.58; m 2.99, 2.49; t 11.29, 9.79; pcl 2.66, 2.82. Width: v 1.00, 0.79; f 1.54, 1.33; t 5.96, 5.81. Spine formula: plesiotype 1:7:6; lectotype 1:6:9.

Species of the genus GYARIA are known reliably only by examination of male genitalia, such as presented by SYNAVE, 1954, 1962. As lectotype and paralectotype are each female, precise definition of this species depends on characters of the plesiotype genitalia that are illustrated (Fig. 11).

**major** MELICHAR, 1901, p. 258 (*Latois*) [LATOIS].

Holotype ♀ — (1) Type [orange label]; (2) 13174; (3) West Madag/HILDEBRANDT; (4) West-Madag=/gaskar/HILDEBRANDT; (5) [illegible label]; (6) *Latois/major*/MELICHAR det.

Measurements from holotype — Length: overall 12.0; v 0.33; f 1.37; p 0.33; m 2.16; t 9.30; pcl 3.65. Width: v 1.16; f 1.37; t 4.98. Spine formula: 2:6:9.

**nigritarsis** KARSCH, 1890, p. 65 (*Flata*) [GYARINA].

Lectotype ♂ — (1) Type [orange label]; (2) 13169; (3) Pungo. ALEXAN=/DER VON HO=/MEYER; (4) *Gyarina/nigritarsis*/K. [MELICHAR handwriting].

Paralectotypes 2 ♂ — (1) Type [orange label]; (2) 13169; (3) Pungo./A. v. HO=/MEYER; (4) *Flata nigri*=/tarsys K.; (5) *Gyarina nigri*=/tarsis (K.)/MELICHAR det. [One ♂ has additional yellow label, 535].

Paralectotypes 2 ♀ — (1) Type [orange label]; (2) 13169; (3) Pungo./ALEXAN=/DER VON HO=/MEYER; (4) *Flata/nigritarsis* K.; (5) *Gyarina nigri*=/tarsis (K.)/MELICHAR det.

Measurements (♂, ♀) from lectotype and paralectotype — Length: overall 14.0; 15.0; v 0.37, 0.42; f 1.66, 1.83; p 0.58, 0.62; m 2.49, 2.66; t 11.79, 13.28; pcl 3.32, 3.32. Width: v 0.95, 0.95; f 1.29, 1.33; t 6.64, 6.97. Spine formula: lectotype 2:7:9; paralectotype 2:6:8. Among paralectotypes, the metatarsal apical spines were variable, ranging from 5 to 9.

The lectotype genitalia are illustrated (Fig. 10). The characters are similar to those of a Congo specimen illustrated by FENNAH, 1958, fig. 94.

The very short conical head, distinctive black fore and middle tibiae, and convex tegmina at both costal and sutural angles, serve to distinguish this species.

**nigrovenosa** MELICHAR, 1901, p. 201 (*Ityraea*) [ITYRAEA].

Holotype ♀ — (1) Type [orange label]; (2) 13069; (3) S. Kamerun/Lolodorf/L. CONRADT S./27. III.—7. X. 95; (4) o; (5) *Ityraea/nigrovenosa*/n. sp./MELICHAR det.

The prothorax and abdomen have suffered damage by dermestid attack.

Measurements from holotype — Length: overall 59.0 (spread); v 1.00; f 2.24; p 1.33; m 4.65; t 9.13; pcl 2.49. Width: v 1.08; f 0.66; t 4.98. Spine formula: holotype 2:11:7.

This large and colorful species may be recognized by the conspicuous black veins shown in the holotype illustration by MELICHAR, 1902, fig. 4. Incidentally, his figure does

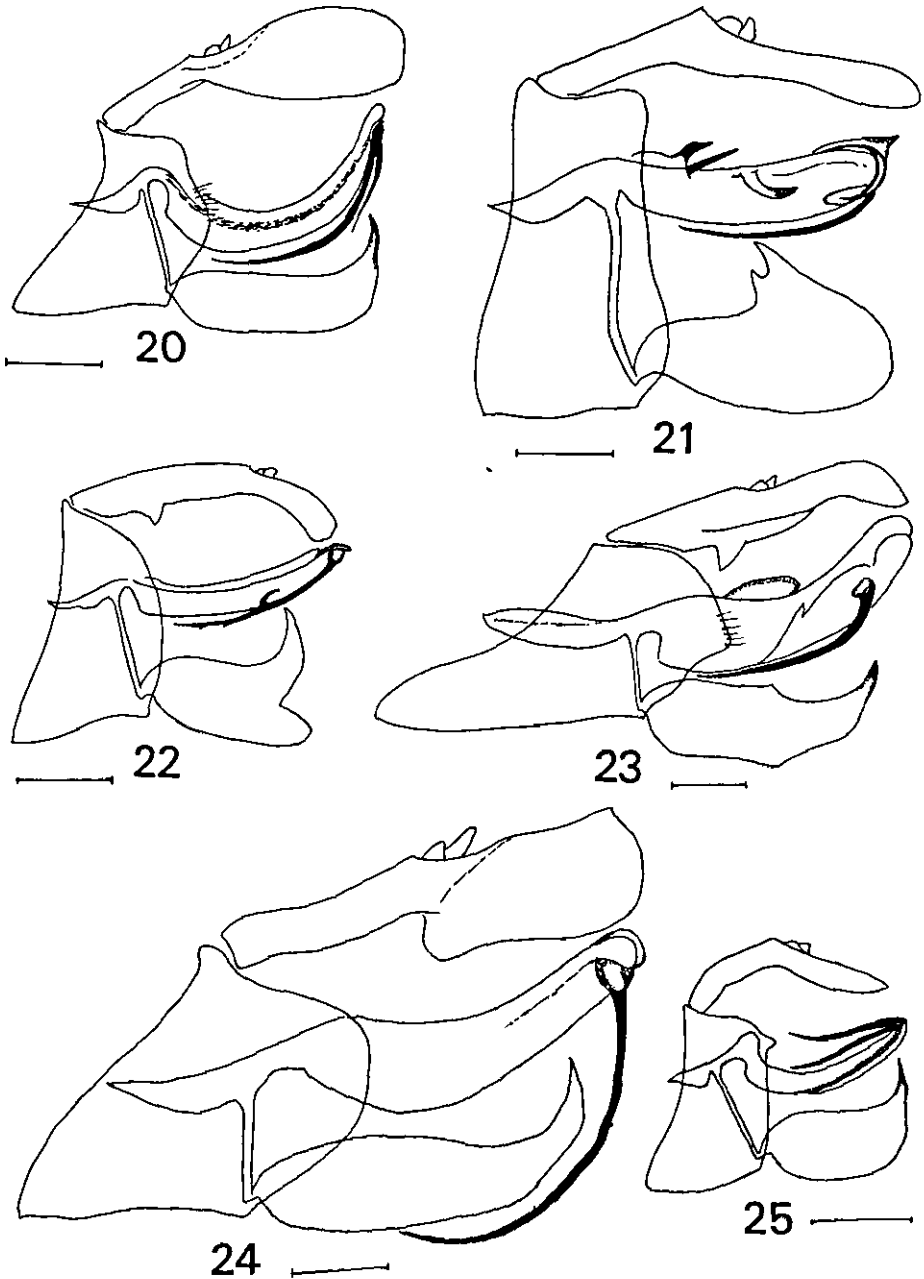


Fig. 20-25

Left lateral view of male genitalia. 20, *Flatoides sikorae* MELICHAR [*Flatoidessa*]. 21, *Urana paradoxa* MELICHAR. 22, *Camerunia integra* MELICHAR [*Cameruniola*]. 23, *Phalaenomorpha collaris* JACOBI [*Melichitona*]. 24, *Flatoides signoreti* MELICHAR [misidentified, = *Lichenopsis incriminata* (SCHMIDT)]. 25, *Aulophorus canaliculatus* KARSCH [*Aulophorina*]. Scale = 0.5 mm

not show the 4 large black spots on the mesonotum — 2 near the anterior margin and 2 latero-posteriorly. The same pattern of spots is found also on the mesonotum of closely related *I. wissmanni*.

**obsoletus** MELICHAR, 1902, p. 24 (*Paranotus*) [PARANOTUS].

Holotype ♀ — (1) 5097; (2) Sierra Leone; (3) *unipunctata*/Fulgoro *unip.*/OLIV. Enc.; (4) ? *Ormenis*; (5) xxx nicht/*adscendens* F. xx ?/xxxxx *Flata* Fx = illegible); (6) *obsoleta*/Paranotus/MELICHAR det.

Measurements from holotype — Length: overall 14.0; v 0.17; f 1.83; p 1.08; m 3.32; t 3.90; pcl 1.08. Width: v 1.16; f 1.66; t 1.99. Spine formula: 2:7:9 (left leg), 2:6:8 (right leg).

The holotype was not retained in *Paranotus*. It was transferred to *Cryptoflata* MELICHAR, based on the typical head, pronotum, and tegmen, as defined by MEDLER, 1988c; new combination. The designation of a male specimen from Sierra Leone and description of its genitalia characters will be necessary for proper understanding of the species.

**ochreatea** MELICHAR, 1901, p. 217 (*Flatina*) [FLATINA].

Holotype ♂ — (1) Type [orange label]; (2) 13113; (3) Kamerun/Lolodorf/HEYNE V.; (4) *Flatina/ochreatea*/MELICHAR det.

Measurements from holotype — Length: overall 20.0; v 0.66; f 1.83; p 0.91; m 3.49; t 17.43; pcl 3.32. Width: v 0.75; f 0.83; t 10.29. Spine formula: 2:8:7.

The holotype genitalia are illustrated (Fig. 6). The species is transferred to the genus *FLATIDA* METCALF, based on configuration of its genitalia and typical morphology of the antennae; new combination.

**paradoxa** MELICHAR, 1902, p. 167 (*Urana*) [URANA].

Holotype ♂ — (1) Madagascar/Antanarivo/SIKORA; (2) Hymenopt mimicry FALL; (3) *Urana paradoxa*/MELICHAR det; (4) Typus [red label].

The holotype has a faded appearance relative to the reproduction illustrated by MELICHAR, 1902, fig. 13.

Measurements from holotype — Length: overall 9.0; v 0.33; f 1.33; p 0.46; m 1.49; t 7.47; pcl 1.99. Width: v 0.79; f 1.00; t 2.82. Spine formula: holotype 2:7:6.

The holotype genitalia are illustrated (Fig. 21).

**parvula** MELICHAR, 1902, p. 78 (*Ormenis*) [PANORMENIS].

Holotype ♂ — (1) Type [orange label]; (2) West Mada-/gascar HILDEBRANDT; (3) *Ormenis/parvula*/MELICHAR n. sp.

The holotype sex was given as female erroneously in the original description.

Measurements from holotype — Length: overall 6.0; v 0.33; f 0.75; p 0.33; m 1.08; t 5.31; pcl 1.66. Width: v 0.62; f 0.95; t 2.82. Spine formula: 2:7:8.

The holotype genitalia are illustrated (Fig. 12).

**praetextus** MELICHAR, 1902, p. 25 (*Paranotus*) [PARANOTUS].

Lectotype ♀ — (1) Pungo/v. HOMEYER [deep blue label]; (2) *Paranotus/praetextus*/MELICHAR det.

Measurements from holotype — Length: overall 11.0; v 0.17; f 1.49; p 0.58; m 2.32; t 9.63; pcl 3.15. Width: v 1.16; f 1.41; t 5.31. Spine formula: lectotype 2:7:8.

Only 1 of the 2 ♀ syntypes cited by MELICHAR from Pungo was available for examination. Also, the syntype cited from Madagascar was not located, but predictably would not be conspecific with Congo specimens.

This species is transferred to *PHYLLIANA* METCALF; new combination. The genus contains species that are distributed in Africa and the Philippine Islands. Species assigned to the genus are closely similar in external appearance, so that examination of the male genitalia is required for precise determination.

**quadr punctatus** KARSCH, 1890, p. 68 (*Phaedolus*) [PHAEDOLUS].

Lectotype ♂ — (1) Type [orange label]; (2) West Mada/gascar/HILDEBRANDT; (3) *Phaedolus 4 punctata* K/Type.

[Vial/genitalia].

Paralectotype ♀ — (1) Type [orange label]; (2) West-Mada/gascar/HILDEBRANDT; (3) *Phaedolus 4 punctata* K/Type.

Measurements (♂, ♀) from lectotype and paralectotype — Length: overall 6.0, 7.0; v 0.37, 0.50; f 0.83, 0.95; p 0.33, 0.37; m 1.16, 1.33; t 4.81, 5.64; pcl 0.83, 1.00. Width: v 0.79, 0.83; f 1.04, 1.12; t 1.99, 2.32. Spine formula: lectotype and paralectotype each 2:6:8.

My illustration of the lectotype genitalia (Fig. 15) supplements the figure of the aedeagus that was given by SYNAVE, 1956, fig. 8.

**signoreti** MELICHAR, 1902, p. 200 (*Flatoides*) [FLATOIDESSA].

Syntype ♂ [left tegmen lost] — (1) Type [orange label]; (2) Madagascar/HILDEBRANDT; (3) *Flatoides/Signoreti*/MELICHAR det. [Vial/genitalia]. Syntype spine formula: 3:6:12.

The genitalia of the syntype are illustrated (Fig. 24). The characters are indistinguishable from those of the plesiotype of *Lichenopsis incriminata* (SCHMIDT) deposited in the Paris Museum. The misidentified syntype presents no problem in synonymy, as designation of a lectotype in the Paris Museum has preserved the name *Flatoides signoreti*.

**sikorae** MELICHAR, 1902, p. 213 (*Flatoides*) [FLATOIDESSA].

Holotype ♀ — (1) Type [orange label]; (2) Madagascar/Antaganari/vo SIKORA (3) No 123 Mim/ [illegible]; (4) Mimicry Fall No 1; (5) 10 Mark; (6) *Flatoides/Sikorae*/MELICHAR det.

Plesiotype ♂ — Madagascar, Diego-Suarez 11, CH. ALLUAUD 1893, Paris Museum.

Measurements (♂, ♀) from plesiotype (Paris Museum) and holotype — Length: overall 8.0, 13.0; v 0.50, 0.83; f 1.00, 1.66; p 0.54, 0.75; m 1.58, 2.16; t 6.14, 10.96; pcl 2.32, 3.98. Width: v 0.75, 0.87; f 1.00, 1.25; t 2.66, 4.65. Spine formula: plesiotype 2:6:6; holotype 2:6:7.

The plesiotype genitalia are illustrated (Fig. 20).

**superba** MELICHAR, 1901, p. 206 (*Flata*) [FLATIDA].

Lectotype ♂ — (1) 13081; (2) Kamerun/Hinterland/Jauna-Sta/ZENKER S.; (3) *Flata/superba/varietas*/MELICHAR det. [vial/genitalia].

Syntype ♂ — (1) 13079; (2) 17. IX. 96; (3) N. Kamerun/Johann-Albrechtshöhe/L. CONRADT S.; (4) *Flata/superba*/MELICHAR det.

Syntype ♀ — (1) 13080; (2) 11/3/96; (3) N. Kamerun/Johann-Albrechtshöhe/L. CONRADT S.; (4) *Flata super=|ba*/MELICHAR det.

The specimen from Kamerun Hinterland has been designated as lectotype to fix the name *superba*. The 2 syntypes from Johann-Albrechtshöhe are not conspecific with the lectotype. Syntypes from Sierra Leone in the Budapest Museum also were cited by MELICHAR, but have not been examined.

Measurements from lectotype — Length: overall 43.0; v 0.66; f 1.99; p 1.16; m 3.82; t 6.64; pcl 1.83. Width: v 0.79; f 0.91; t 3.82. Spine formula: 2:7:5.

The lectotype genitalia are illustrated (Fig. 5). Characters are the same as those shown for *superba* by SYNAVE, 1954, fig. 1.

The genitalia of the above misidentified syntype ♂ are illustrated (Fig. 4). The characters are the same as illustrated for *Phromnia pallida limbata* FABRICIUS by SYNAVE, 1954, fig. 6.

Externally, *Flatida superba* and *F. pallida limbata* differ in the arrangement of black markings on veins of the clavus. The spots are contiguous to vein A1 in *superba*, but contiguous to vein A2 in *pallida limbata*.

*trivirgatus* KARSCH, 1890, p. 66 (*Paranotus*) [PARANOTUS].

Lectotype ♂ — (1) Type [orange label]; (2) 5119; (3) Senegal Bay; (4) Senegal durch BUQUET; (5) *Paranotus trivirgatus* [vial/genitalia]. Paralectotypes 2 ♀ — (1) Type [orange label]; (2) Sansibar/HILDEBRANDT; (3) Sansibar/HILDEBRANDT/*Paranotus trivirgatus*/KARSCH/Type.

Measurements (♂, ♀) from lectotype and paralectotype — Length: overall 8.5, 7.0; v 0.17, 0.21; f 1.00, 0.95; p 0.54, 0.50; m 1.25, 1.33; t 6.47, 6.14; pcl 1.99, 1.99. Width: v 0.71, 0.66; f 1.08, 1.04; t 3.32, .. [♀ tegmen damaged]. Spine formula: lectotype 2:6: #, paralectotype 2:7: #. The symbol # indicates unusual development of a dense pad of hairs at the apex of metatarsal segment 1 that obscures the spines.

The lectotype genitalia are illustrated (Fig. 9). Characters of the genitalia differ from those shown by SYNAVE, 1954, fig. 12—13, for Congo specimens he named *Paranotus rufilinea* (WALKER).

*P. trivirgatus* was cataloged by METCALF, 1957, as a junior synonym of *P. rufilineus*. Specimens that I examined from Congo and Northern Rhodesia in the Brussels Museum have genitalia similar to SYNAVE's figure, being only slightly different with respect to the ventral antlerlike process arising from the aedeagus apex. This character state was a general pattern in East Africa and Congo populations, but different from a West African pattern, such as found in the lectotype of *trivirgatus*.

The unique type specimen of *Poeciloptera rufilineus* WALKER in the British Museum has no abdomen. Therefore, selection of a plesiotype male from the type locality, Port Natal, is needed to stabilize the status of this species.

Incidentally, I have seen many specimens in collections with damaged tegmina. Sections of the precostal and apical margins were lost due to fracturing along the costal vein and apical submarginal line.

*wissmanni* KARSCH, 1890, p. 65 (*Ityraea*) [ITYRAEA].

Holotype ♀ — (1) Type [orange label]; (2) 13071; (3) Östliches/thala Afrika/WISSMANN; (4) *Ityraea wissmanni*.

The holotype's abdomen has been damaged by dermestid attack. The illustration of KARSCH, 1890, fig. 6, enables recognition of the species.

Measurements from holotype — Length: overall 62.0 (spread); v 1.33; f 2.49; p 1.66; m 5.81; t 9.96; pcl 2.32. Width: v 1.16; f 0.83; t 5.31. Spine formula: 2:11:7, which is the same formula as found in the holotype of *I. nigrovenosa*.

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