

# NEW GENERA AND NEW SPECIES OF THE TRIBE ELICINI (HEMIPTERA: FULGOROIDEA: TROPIDUCHIDAE) WITH KEY TO TROPIDUCHID GENERA KNOWN FROM MADAGASCAR

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**Abstract.**— The family Tropicuchidae Stål in Madagascar according to distribution and relationships of genera is discussed. A key to all tropiduchid genera as well as the checklist of species known from Madagascar are proposed. Two new genera of the tribe Elicini Melichar, *Bolitropis* gen. nov. with 6 new species (*B. irwini* sp. nov., *B. montanus* sp. nov., *B. olsufievi* sp. nov., *B. imperator* sp. nov., *B. strobilus* sp. nov., *B. synavei* sp. nov.) and *Bambomada* gen. nov. with a single new species *B. flava* sp. nov. are described.



**Key words.**— Fulgoroidea, Tropicuchidae, Elicinae, planthoppers, brachyptery, new genus, new species, Madagascar, key

## INTRODUCTION

Tropicuchidae Stål, 1866 belong to the issid-like planthoppers and to so-called higher Fulgoroidea (Shcherbakov 2006). The taxa described below are externally very similar to the members of the family Issidae Spinola, 1839 according to their short fore wings and box-shaped body. However according to their male genitalia, all of them are clearly members of the family Tropicuchidae *sensu* Gnezdilov (2007, 2013a). The rounded ovipositor gives the reason to place these genera and species in the tribe Elicini Melichar, 1915 (= Gaetuliina Fennah, 1978) of the nominative subfamily Elicinae Melichar, 1915. The current classification of the family Tropicuchidae was recently reviewed by Gnezdilov (2013a) and accordingly, a short

historical and graphical review of the Elicini was recently proposed (Wang *et al.* 2015). Issidae *sensu stricto* are still unknown from Madagascar and “replaced” here by subbrachypterous Tropicuchidae, Nogodinidae Melichar, 1898, and Ricaniidae Amyot *et* Serville, 1843 illustrating the issidisation phenomenon as an adaptation of different families to similar natural circumstances (Gnezdilov 2013b).

The study of tropiduchid fauna of Madagascar started about 150 years ago by V. Signoret (1860) with the description of five new genera currently distributed into four different tribes: *Conchyoptera* Signoret, 1860 (Eporini Fennah, 1982), *Durium* Stål, 1861 [replacement name for *Acrometopus* Signoret, 1860] (Eutropistini Kirkaldy, 1906), *Exphora* Signoret, 1860, *Riancia* Signoret, 1860 (Elicini Melichar, 1915), and

*Trienopa* Signoret, 1860 (Trienopini Fennah, 1954). Later, Jacobi (1917) recorded one more genus, *Numicia* Stål, 1866 representing one more tribe (Catuliini Melichar, 1914). In 1958 Fennah recorded the monotypical Elicini genus *Laberia* Stål, 1866 – originally described from Mauritius Island as verified on the type label of *Laberia palliata* Stål, 1866 deposited in the Stockholm Museum and noted “Mauritius, Stevens” while put in doubt by Williams (1981) in his revision of Tropicuchidae of Mascarenes. Finally, Gnezdilov (2013a) described one more new monotypical genus, *Chrysopuchus* Gnezdilov, 2013, still representing a sixth Madagascan tribe (Chrysopuchini Gnezdilov, 2013). At the species level, Melichar (1899, 1906, 1914), Jacobi (1917), Lallemand (1950), Synave (1966), Junkiert and Walczak (2015), and Junkiert *et al.* (submitted) described several more new species in the genera *Exphora*, *Numicia*, *Riancia*, and *Trienopa*.

Below we describe two new genera – one monotypical and another one with 6 new species. Thus totally six tropiduchid tribes with 30 species in 10 genera are currently known from Madagascar (see the list below).

## MATERIAL AND METHODS

The terminology of the head follows Anufriev and Emeljanov (1988), the terminology of the male genitalia follows Gnezdilov (2003) and Gnezdilov *et al.* (2014), those for ovipositor – Bourgoïn (1993) and Gnezdilov (2002) and those for fore wing venation – Bourgoïn *et al.* (2015). The genital segments of the examined specimens were macerated in 10% KOH and figured in glycerine jelly using stereomicroscope Mikmed-1. Photographs of the specimens were made using Leica MZ8 with JVC video camera KY F70B, drawings of head and wings were made using Leica MZ95. The images are produced using the software Synoptics Automontage and Photoshop®.

Type specimens of the species described below are deposited in the following collections:

- CASC – California Academy of Sciences, San Francisco, USA;
- RBINS – Royal Belgian Institute of Natural Sciences, Brussels, Belgium;
- MNHN – Muséum national d’Histoire naturelle, Paris, France;
- NHMB – Naturhistorisches Museum, Basel, Switzerland;
- ZIN – Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia.

## TAXONOMY

### Checklist of tropiduchid taxa known from Madagascar

Family Tropicuchidae Stål, 1866

Subfamily Tropicuchinae Stål, 1866

Tribe Catuliini Melichar, 1914

Genus *Numicia* Stål, 1866

= *Kusuma* Distant, 1906, syn. fide Ghari, 1976: 9.

= *Magama* Distant, 1910, syn. fide Melichar, 1914:

44.

*N. dorsalis* Jacobi, 1917

*N. punctula* Melichar, 1914

Tribe Chrysopuchini Gnezdilov, 2013

Genus *Chrysopuchus* Gnezdilov, 2013

*C. nigrolineatus* Gnezdilov, 2013

Tribe Eutropistini Kirkaldy, 1906

Subtribe Duriina Fennah, 1954

Genus *Durium* Stål, 1861

nom. nov. pro *Acrometopus* Signoret, 1860

*D. punctipes* (Signoret, 1860)

Tribe Eporini Fennah, 1954

Subtribe Clardeina Fennah, 1954

Genus *Conchyoptera* Signoret, 1860

*C. unicolor* Signoret, 1860

Tribe Trienopini Fennah, 1954

Genus *Trienopa* Signoret, 1860

= *Eriphyle* Stål, 1861 (as subgenus fide Melichar, 1906: 227)

= *Ivinga* Distant, 1911, syn. fide Gnezdilov, 2007: 296.

*T. ambigua* Melichar, 1906

*T. flavida* Signoret, 1860

*T. elongata* Melichar, 1906

*T. janssensi* Lallemand, 1950

*T. varicolor* Melichar, 1906

Subfamily Elicinae Melichar, 1915

Tribe Elicini Melichar, 1915

Genus *Erphora* Signoret, 1860

= *Siopa* Jacobi, 1917, syn. fide Synave, 1966: 70.

= *Siopaphora* Metcalf, 1952, nom. nov. pro *Siopa* Jacobi, 1917

*E. ambatolaonaensis* Junkiert et Walczak, 2015

*E. constanti* Junkiert et Walczak, 2015

*E. fumivenosa* (Jacobi, 1917)

*E. guerinii* Signoret, 1860

*E. ifanadiensis* Synave, 1966

*E. longipennata* Lallemand, 1950

*E. perinetensis* Synave, 1966

*E. similis* Synave, 1966

*E. stroinski* Junkiert et Walczak, 2015

*E. succinae* Lallemand, 1950

Genus *Laberia* Stål, 1866

*L. palliata* Stål, 1866

Genus *Riancia* Signoret, 1860

*R. longirostrum* Signoret, 1860

*R. panorpaeformis* Melichar, 1899

Genus *Bolitropis* gen. nov.

*B. irwini* sp. nov.

*B. montanus* sp. nov.

*B. olsufievi* sp. nov.

*B. imperator* sp. nov.

*B. strobilus* sp. nov.

*B. synavei* sp. nov.

Genus *Bambomada* gen. nov.

*B. flava* sp. nov.

### Key to tropiduchid genera known from Madagascar

1. The border between coryphe (vertex) and metope (frons) indistinct. Hind tibia with a single lateral spine . . . . . *Chrysopuchus* Gnezdilov
- . The border between coryphe (vertex) and metope (frons) keel-shaped. Hind tibia with 2–5 lateral spine . . . . . 2
2. Costal margin of fore wing with ear-shaped process bearing marginal setae (Gnezdilov 2013a: Fig. 4P) . . . . . *Trienopa* Signoret
- . Costal margin of fore wing without such process . . . 3

3. Fore wings well developed, far exceeding the abdomen apex . . . . . 4
- . Subbrachypterous (Figs 1, 2, 5, 6, 9, 10) . . . . . 7
4. Forewings with dense reticulate venation trough whole length. Metope with full median carina and sublateral carinae developed only in its upper part (below coryphe) . . . . . *Laberia* Stål
- . Forewings without such dense reticulate venation. Metope with only median carina . . . . . 5
5. Ovipositor elongate (gonoplares elongately rectangular) . . . . . *Numicia* Stål
- . Ovipositor rounded (gonoplares hemispherical) (Figs 4, 8) . . . . . 6
6. Visible part of rostrum nearly as long as clypeus (or slightly longer) in lateral view (Signoret 1860, Fig. 4b) . . . . . *Erphora* Signoret
- . Visible part of rostrum twice as long as clypeus in lateral view (Signoret 1860: Fig. 5b) . . . . . *Riancia* Signoret
7. Coryphe almost 4 times as long as wide between the eyes with a callus on the top. First metatarsomere 2.5 times as long as second metatarsomere. Pedicell elongately cylindrical, almost twice as long as wide . . . . . *Conchyoptera* Signoret
- . Coryphe transverse or 2–3 times as long as wide between the eyes, without callus. First metatarsomere nearly as long as second metatarsomere or twice longer. Pedicell almost globular . . . . . 8
8. Forewings with longitudinal veins not furcating (simple) and without visible transverse veins. Fore and middle femora and tibiae foliately flattened . . . . . *Durium* Stål
- . Forewings with longitudinal veins furcating and with many transverse veins between them. Fore and middle femora and tibiae not flattened . . . . . 9
9. Coryphe transverse (Fig. 30). Metope with only distinct median carina (Fig. 29). Hind wings well developed, bilobed (Fig. 20) . . . . *Bambomada* gen. nov.
- . Coryphe elongate, 2–3 times as long as wide medially (Figs 22, 23, 25, 27). Metope with median and sublateral carinae (Figs 21, 24, 26, 28). Hind wings rudimentary (Fig. 18) . . . . . *Bolitropis* gen. nov.

### DESCRIPTION OF NEW TAXA

Family Tropicuchidae Stål, 1866

Subfamily Elicinae Melichar, 1915

Tribe Elicini Melichar, 1915

*Bolitropis* gen. nov.

*Type species.* *Bolitropis montanus* sp. nov., here designated.

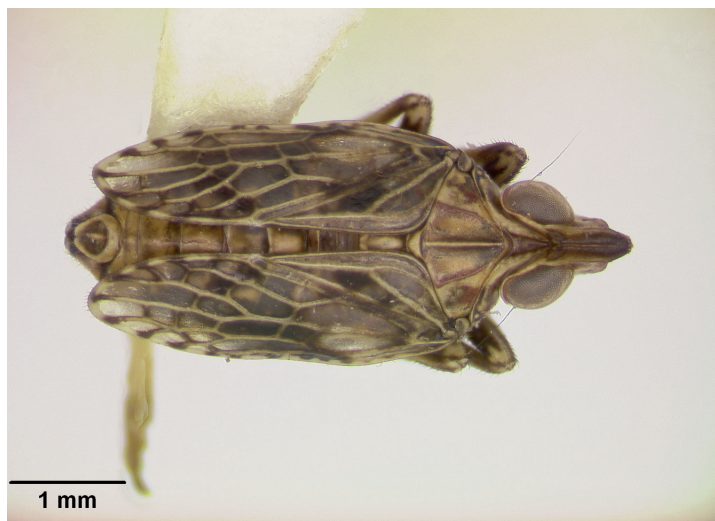


**Etymology.** Generic name is derived from the combination of Greek noun “βόλι” (bullet) and the name of family – Tropicuchidae referring to the general shape of the body with a head. Masculine in gender.

**Diagnosis.** Metope long and narrow, with strong median and sublateral carinae. Coryphe long and narrow, narrowing apically. Fore wings slightly narrowing apically, reaching only the apex of abdomen, with narrow costal area bearing transverse veins and small hypocostal plate basally; clavus long, far exceeding wing middle, open. Hind wings rudimentary. Hind tibia with three lateral spines. First metatarsomere with two

latero-apical spines and 10–11 intermediate spines. Phallobase half as long as aedeagus, with pair of long and narrow lateral processes on its ventral lobe and large dorsal process attached to inner side of phallobase by its basal part.

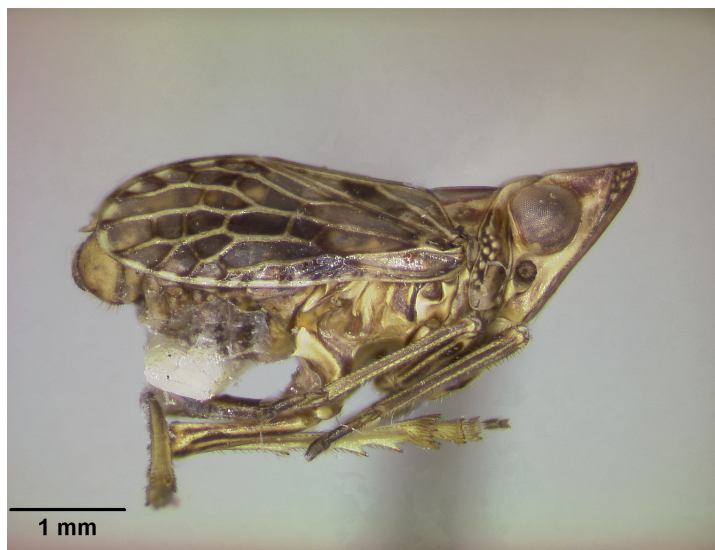
**Description.** Metope long and narrow, with strong median and sublateral carinae, joined at its apical margin (Figs 3, 7). Coryphe long and narrow, narrowing apically (Figs 1, 5). Postclypeus large, with distinct median and lateral carinae. Anteclypeus with distinct only median carina. Ocelli absent. Pedicel globular. Coryphe and pronotum concave medially. Rostrum



1



3



2



4

Figures 1–4. *Bolitropis montanus* sp. nov., female paratype. (1) Habitus, dorsal view; (2) same, lateral view; (3) anterior part of body, frontal view; (4) ovipositor, ventral view. Total length of the specimens: 4.5–5.1 mm.

reaching hind coxae. Pronotum with strongly convex anterior margin and strongly concave posterior margin. Paradiscal fields of pronotum very narrow. Paranotal lobes of pronotum wide. Mesonotum longer than pronotum, with median and lateral carinae. Tegulae without keels. Fore wings nearly oval, with narrow costal area bearing transverse veins and small hypocostal plate basally (Figs 1, 2, 5, 6, 17). Clavus long, far exceeding wing middle, open (CuP and Pcu + A<sub>1</sub> running to its apex). Cubitus posterior and first anal vein uniting distad of middle of clavus. Fore wings with setae along anterior and caudal margins. Basal cell rounded, veins raised. Cubitus anterior with two branches, radius (ScP+R) and median (MP) with 2–3 branches; net of transverse veins between longitudinal ones forming reticulate venation. Hind wings rudimentary, narrowly oval (Fig. 18). Hind tibia with three

lateral spines. First and second metatarsomeres nearly equal in length. First metatarsomere with two latero-apical spines and 10–11 intermediate spines bearing long subapical setae. Second metatarsomere with two latero-apical spines only. Ventral surface of first and second metatarsomeres with hair-like setae. Arolium of pretarsus not exceeding the claws, with two narrow and long sclerotized dorsal plates.

**Male terminalia.** Phallobase usually short (except *Bolitropis olsufievi* sp. nov.), half as long as aedeagus, with pair of long and narrow, pointed apically, lateral processes on its ventral lobe and large dorsal process attached to inner side of phallobase by its basal part, all processes directed dorsally. Aedeagus curved at nearly right angle (in lateral view), usually with pair of nearly triangular or narrow subapical processes directed ventrally. Ventral surface of the



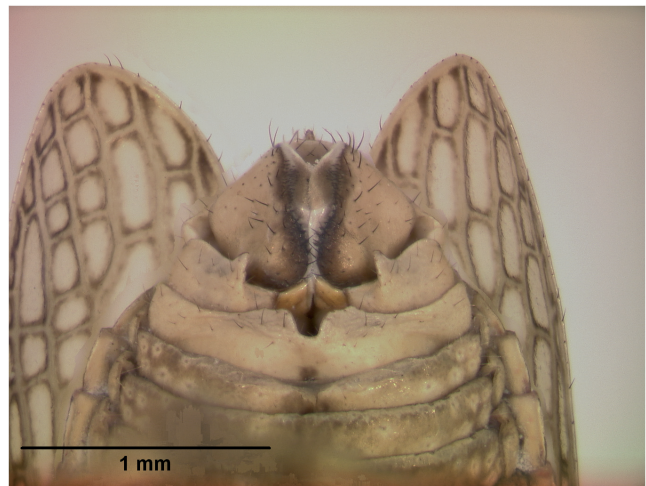
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Figures 5–8. *Bolitropis irwini* sp. nov., female paratype. (5) Habitus, dorsal view; (6) same, lateral view; (7) anterior part of body, frontal view; (8) ovipositor, ventral view. Total length of the specimens: 4.2–5.1 mm.



aedeagus with rows of teeth. Style with straight or convex hind margin, capitulum rudimentary. Lateral tooth of style well developed, curved at very acute angle to style plate, finger-shaped.

**Female terminalia.** Hind margin of sternite VII deeply concave. Gonoplacs rounded and convex. Anal tube short and wide, narrowing apically. Paraproct long. Hind margin of gonocoxa VIII triangularly projecting distally (Figs 4, 8).

**Distribution.** Antananarivo, Fianarantsoa and Toamasina Provinces.

**Compositon.** The genus comprises six species described below, externally similar each to other, but differ mainly in the structure of male genitalia.

**Key to *Bolitropis* species**

- 1. Coryphe three times as long as wide (Figs 22, 27) ..... 2
- Coryphe twice as long as wide (Figs 23, 25) ..... 3

- 2. Coryphe with distinct long median carina, lateral margins weakly concave medially (Fig. 22). Metope with sublateral carinae turned inside above the clypeus (Fig. 21). Metopoclypeal suture distinct through its whole length. Pygofer with medially concave hind margin. Phallobase with wide, rounded apically dorsal process ..... *B. montanus* sp. nov.
- Coryphe with weak median carina, lateral margins subparallel medially (Fig. 27). Metope with sublateral carinae subparallel above the clypeus (Fig. 28). Metopoclypeal suture distinct only laterally. Hind margin of pygofer strongly convex, with basal concavity. Dorsal phallobase process elongately triangular ..... *B. strobilus* sp. nov.
- 3. Coryphe with lateral margins subparallel medially (Fig. 23). Metope with sublateral carinae turned outside above the clypeus (Fig. 24) ..... 4
- Coryphe with lateral margins weakly concave medially (Fig. 25). Metope with sublateral carinae subparallel above the clypeus (Fig. 26) ..... 5



9



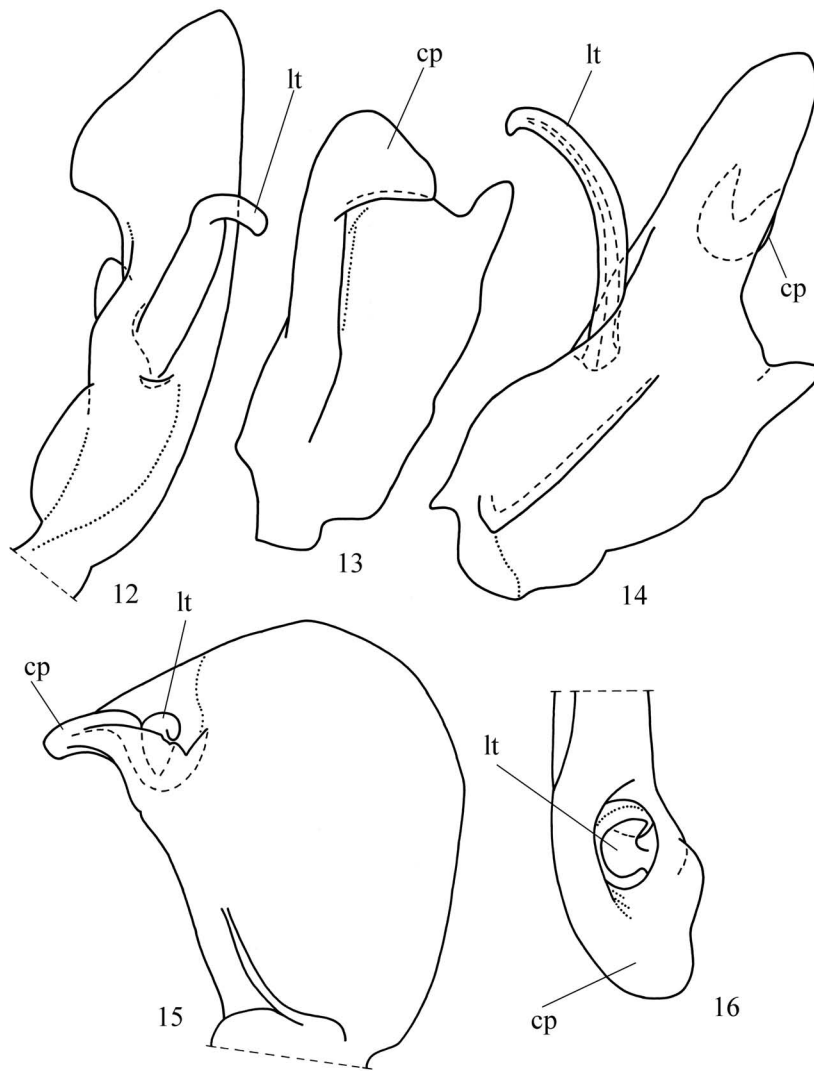
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10

Figures 9–11. *Bambomada flava* sp. nov., holotype. (9) Habitus, dorsal view; (10) same, lateral view; (11) anterior part of body, frontal view. Total length of the specimen: 6.0 mm.

4. Male anal tube almost square (Fig. 41). Paraproct exceeding apical margin of anal tube. Lateral processes of ventral phallobase long, reaching the base of subapical process of aedeagus (Fig. 39). Dorsal process of the phallobase long, almost reaching aedeagal apex. Aedeagus wider (in lateral view) ..... *B. imperator* sp. nov.
- Male anal tube longer, 1.5 times as long as wide (Fig. 47). Paraproct not exceeding apical margin of the anal tube. Lateral processes of ventral phallobase lobe short, far not reaching the base of subapical process of aedeagus (Fig. 44). Dorsal process of the phallobase far not reaching aedeagal apex. Aedeagus narrow (in lateral view) ... *B. synavei* sp. nov.
5. Dorsal phallobase process sharply narrowed before the apex (in dorsal view) (Fig. 51). Aedeagus enlarged below ventral phallobase lobe (Fig. 50). Aedeagus with subapical processes situated below dorsal phallobase process (in lateral view) (Fig. 49) ..... *B. olsufievi* sp. nov.
- Dorsal phallobase process gradually narrowed before the apex (in dorsal view) (Fig. 66). Aedeagus enlarged above ventral phallobase lobe (Fig. 65). Aedeagus with subapical processes situated above dorsal phallobase process (in lateral view) (Fig. 64) ..... *B. irwini* sp. nov.



Figures 12–16. Tropiduchidae, style. (12–14) *Tropiduchus arisba* Fennah; (15–16) *Ephora* sp. (12) Apical view; (13) caudal view; (14, 15) lateral view; (16) capitulum of style, dorsal view. Abbreviations: lt – lateral tooth of style; cp – capitulum of style.

*Bolitropis montanus* sp. nov.

(Figs 1–4, 17, 21–22, 31–37)

**Etymology.** Species epithet refers to the habitat of the species and derived from Latin “montanus” meaning species from the mountains.

**Diagnosis.** Coryphe three times as long as wide, with distinct long median carina and lateral margins weakly concave medially. Metope with sublateral carinae turned inside above the clypeus; metopoclypeal suture distinct through its whole length. Pygofer with medially concave hind margin. Male anal tube deeply concave apically, almost bilobed. Phallobase with wide, rounded apically dorsal process. Aedeagus with pair of long and narrow subapical processes, narrowing apically, but not pointed.

**Description.** Total length: males – 4.1–4.8 mm; females – 4.5–5.1 mm.

Metope long and narrow, with strong median carina, extending to post- and anteclypeus, and sublateral carinae joined at its apical margin and turned inside above metopoclypeal suture which is raised and distinct throughout its length (Figs 3, 21). Postclypeus with strong lateral carinae. Ocelli absent. Coryphe long

and narrow, depressed, weakly narrowing apically, lateral margins keel-shaped and weakly concave laterally, anterior and posterior margins acutely angulate (Figs 1, 22). Coryphe with distinct median carina. Pronotum depressed, anterior margin strongly convex, acutely angulate, posterior margin obtusely angulate. Paradiscal fields of pronotum very narrow. Paranotal lobes of pronotum wide. Mesonotum longer than pronotum, with median and lateral carinae. Fore wings narrowly rounded apically (Figs 2, 17), costal margin weakly concave, veins raised. Radius (ScP+R) and cubitus anterior (CuA) each with two branches, median (MP) with 2–3 branches. Intermediate transverse veins: costaradial 4–6; interrarial 1–3; radio-medial 5–6; intermedial 1–3; mediocubital 3–4; intercubital 2–3.

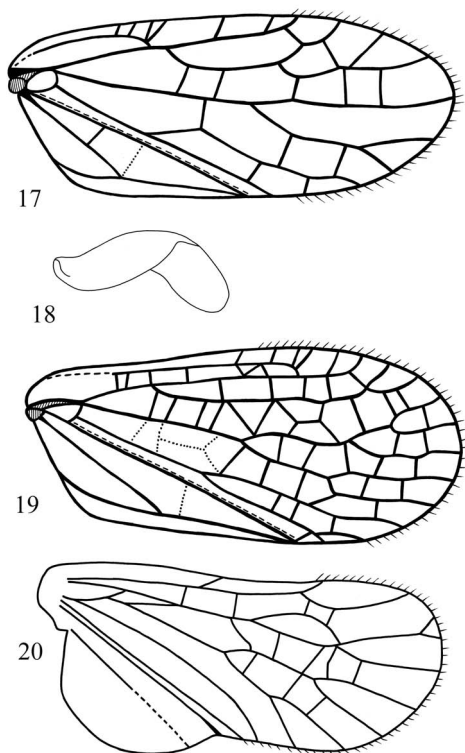
**Coloration.** General coloration light yellow with brown, dark brown or black spots and stripes. Metope dark brown or black apically between lateral margins and sublateral carinae and light brown or brown below except yellow sublateral carinae. Genae yellow with brown or dark brown spots. Pedicel brown to black. Post- and anteclypeus brown laterally and sometimes frontally except yellow carinae. Coryphe and pronotum brown, dark brown or black apically and medially and light yellow laterally. Paradiscal fields and paranotal lobes of pronotum partly brown with light traces of sensory pits. Mesonotum sometimes brown between median and sublateral carinae. Fore wings transparent, with light yellow veins bordered with brown, dark brown or black lines. Legs with dark brown longitudinal lines and spots. Apices of third metatarsi and claws dark brown. Apices of spines black. Abdominal tergites dark brown laterally and yellowish brown medially.

Male: abdominal sternites and genital segments light yellow.

Female: abdominal sternites excluding sternum VII dark brown with sometimes yellow median parts. Sternum VII yellow. Anal tube light yellow. Genital segments yellow with brown spots.

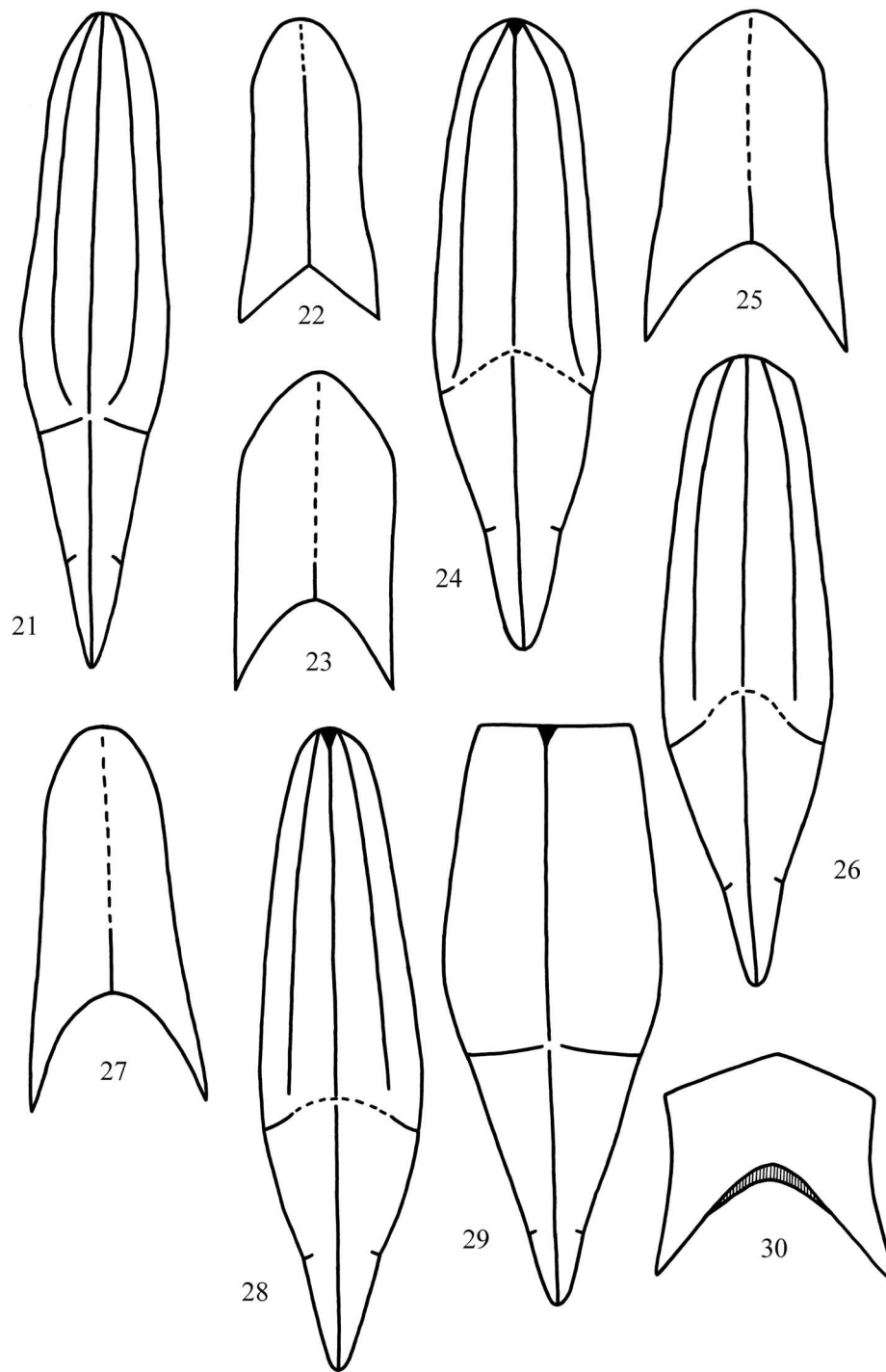
**Male terminalia** (Figs 31–37). Pygofer with medially concave hind margin (Fig. 31). Anal tube deeply concave apically, almost bilobed (in dorsal view) (Figs 36, 37). Paraproct 0.3 times as long as anal tube. Phallobase with wide, rounded apically dorsal process (Fig. 32). Ventral phallobase lobe short (reaching half of aedeagus length), with apical margin slightly concave and relatively short lateral processes (Fig. 33). Aedeagus with pair of long and narrow subapical processes, narrowing apically, but not pointed, situated in upper third of the aedeagus length, almost reaching phallobase by their apices. Plate of style wide, with widely convex hind margin (Figs 34, 35).

**Female terminalia.** Hind margin of sternite VII with rectangular median concavity (Fig. 4). Anal tube wide, rounded, narrowing apically, sometimes truncate.



Figures 17–20. Wings. (17) *Bolitropis montanus* sp. nov., female paratype (Anjavidilava), fore wing; (18) *B. irwini* sp. nov., holotype, hind wing; (19–20) *Bambomada flava* gen et sp. nov., holotype, fore and hind wings. Total length of the specimens: 4.3–6.0 mm.





Figures 21–30. Coryphe and metope. (21–22) *Bolitropis montanus* sp. nov. (23–24) *B. imperator* sp. nov. (25–26) *B. olsufievi* sp. nov. (27–28) *B. strobilus* sp. nov. (29–30) *Bambomada flava* sp. nov. (21, 24, 26, 28, 29) Metope; (22, 23, 25, 27, 30) coryphe. Total length of the specimens: 4.0–6.0 mm.

**Type material.** Madagascar: **Fianarantsoa Province: Holotype**, ♂, Andringitra Centre, zone sommitale, Pic Bory, 2600 m, 12.XI.1970, "Museum Paris / Madagascar Centre / mission C.N.R.S. / R.C.P. n° 225", "BFAM", MNHN(EH) 3973 (MNHN).

**Paratypes:** Madagascar: **Fianarantsoa Province:** Andringitra Centre, "Museum Paris / Madagascar Centre / mission C.N.R.S. / R.C.P. n° 225": 4♂♂, 1♀, zone sommitale, Pic Bory, 2600 m, 12.XI.1970, "BFAM", MNHN (EH) 3972, 3974, 3975, 3976, 3977 (MNHN); 1♀, plat. Andohariana, 2000–2100 m, 9.XI.–10.XII.1970, "Museum Paris / Madagascar Centre / mission C.N.R.S. / R.C.P. n° 225", MNHN(EH) 4003 (MNHN); 1♀, plat. Andohariana, 2000–2100 m, 9.XI.–10.XII.1970, MNHN(EH) 4004 (MNHN); 3♂♂, 3♀♀, same data, "HFAM 1", MNHN(EH) 3979–3984 (MNHN); 9♂♂, 10♀♀, same data, "HFAM 2", MNHN(EH) 3978, 3985–4002, (MNHN, ZIN); 1♀, zone sommitale, cirque Boby, 2500 m, 23–29.XI. 1970, MNHN(EH) 4009 (MNHN); 2♂♂, 2♀♀, same data, "HFAM", MNHN(EH) 4005–4008 (MNHN); 2♂♂, same data, "FBHP", MNHN(EH) 4010, 4011 (MNHN); 1♀, Andringitra Est, Anjavidilava, 2000 m, 18.XII.–15.I.1971, "FDSMP", MNHN(EH) 4012 (MNHN); 1♂, 1♀, Parc National d'Andringitra, Plateau d'Andohariana, 35.9 km 205° Ambalavao, 2000 m, S 22°09'08" E 046°53'57", malaise trap in ericoid thicket, 15.IV.2006, "BLF 13755", "CASENT 8107968", L. B. Fisher *et al.* (CASC). **Antananarivo Province:** 1♀, Andebadeba, 4 km from Arivonimamo, Uapaca forest, 1600 m, 19°0.29' S 47°8.55' E, malaise trap, 3-7.X. 2007, "MA-46-01", M. Irwin & R. Harin'Hala leg. (CASC).

**Distribution.** Madagascar: Antananarivo and Fianarantsoa Provinces.

***Bolitropis strobilus* sp. nov.**

(Figs 27–28, 55–62)

**Etymology.** The species name is formed according to the specific strobile-like structures of the aedeagus.

**Diagnosis.** Coryphe three times as long as wide, with weak median carina, lateral margins subparallel medially. Metope with sublateral carinae subparallel above the clypeus; metopoclypeal suture distinct only laterally. Hind margin of pygofer strongly convex, with basal concavity. Dorsal phallobase process long, reaching the aedeagal apex, flattened dorso-ventrally apically. Lateral processes of ventral phallobase lobe long, curved, slightly enlarged subapically arrowhead-shaped.

**Description.** Total length: male – 4.9 mm; female – 5.4 mm.

Metope with sublateral carinae subparallel above the clypeus. Metopoclypeal suture distinct only laterally (Fig. 28). Coryphe about 3 times as long as wide,

weakly narrowing apically, with weak median carina, anterior margin acutely angulate (Fig. 27).

**Coloration.** General coloration light yellow. Metope and postclypeus with reddish median carina. Metope dark brown between lateral margins and sublateral carinae. Postclypeus with light brown transverse stripes. Coryphe, pronotum and mesonotum dark brown medially except light yellow median carina of mesonotum. Mesonotum with reddish lateral carinae. Cells of fore wings with light brown frames inside. Abdominal tergites and sternites brown to dark brown with light yellow basements of sternal setae. Legs with longitudinal dark brown stripes. Apices of spines black. Gonoplares light yellow.

**Male terminalia** (Figs 55–62). Hind margin of pygofer strongly convex, with basal concavity (Fig. 55). Anal tube slightly longer than wide, with strongly concave apical margin (Figs 61, 62). Paraproct long, 0.5 times as long as anal tube. Phallobase short, nearly half as long as aedeagus. Dorsal phallobase process long, reaching the aedeagal apex, flattened dorso-ventrally apically, pointed (Fig. 59). Apical margin of ventral phallobase lobe concave (Fig. 57). Lateral processes of ventral phallobase lobe long, curved, slightly enlarged subapically arrowhead-shaped and pointed (Fig. 56). Aedeagus enlarged laterally, in shape of two lateral strobiles covered by teeth, above apical margin of ventral phallobase lobe. Aedeagus with pair of rod-shaped processes internally, visible above its apex (Figs. 56, 58). Two lines of teeth on ventral surface of aedeagus, converging apically (Figs 57, 58). Subapical processes of aedeagus elongately triangular, with curved, pointed apices, situated in apical third of aedeagus length. Plate of style rather narrow, with straight hind margin (Fig. 60).

**Female.** Unknown.

**Type material.** **Fianarantsoa Prov.:** **Holotype**, ♂, Madagascar, Andringitra Centre, "Museum Paris / Madagascar Centre / mission C.N.R.S. / R.C.P. n° 225", plat. Andohariana, 2000–2100 m, 9.XI.–10.XII.1970, "HFAM 2", MNHN(EH) 4013 (MNHN). **Paratype:** 1♀, labelled as holotype, MNHN(EH) 4014 (MNHN).

**Distribution.** Madagascar: Fianarantsoa Province.

***Bolitropis imperator* sp. nov.**

(Figs 23–24, 38–42)

**Etymology.** Species name is derived from the Latin analogue of collector surname – Keiser.

**Diagnosis.** Coryphe twice as long as wide, with lateral margins subparallel medially. Metope with sublateral carinae turned outside above the clypeus. Hind margin of pygofer strongly convex, with basal concavity. Male anal tube almost square. Lateral processes of ventral phallobase lobe long, reaching the base of

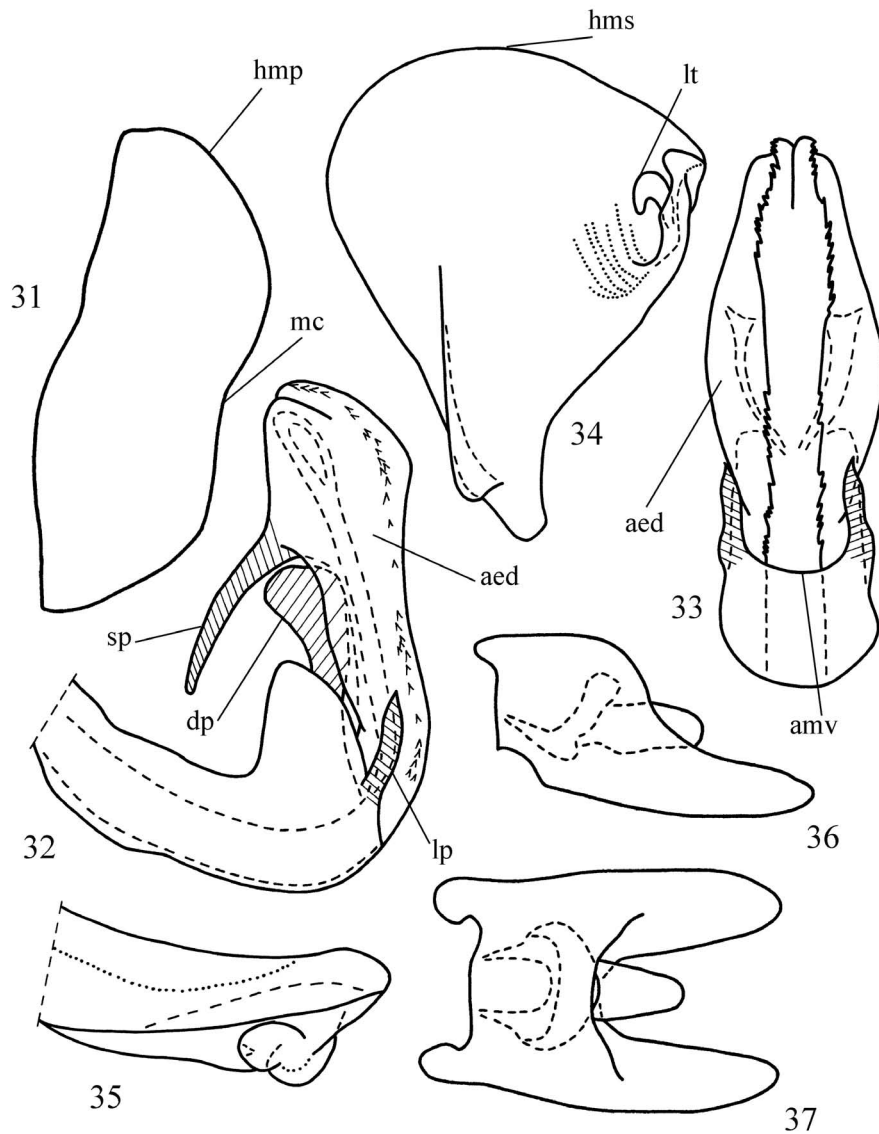
subapical processes of aedeagus. Dorsal process of the phallobase long, almost reaching aedeagal apex.

**Description.** Total length: males – 4.0 mm.

Metope with sublateral carinae turning outside above clypeus (Fig. 24). Coryphe relatively short, nearly twice as long as wide, with lateral margins parallel each to other and acutely angulate anterior margin (Fig. 23). Coryphe with short median carina visible only basally or with carina indistinct. Metopoclypeal suture distinct only laterally. Fore wings widely rounded apically, with costal margin convex. Cubitus anterior

(CuA) with two branches, radius (ScP+R) and median (MP) each with 2–3 branches. Intermediate transverse veins: costaradial 2–5; interrarial 4–6; radio-medial 5–9; intermedial 2–6; mediocubital 4–5; intercubital 2.

**Coloration.** General coloration light yellow. Coryphe and pronotum brown to dark brown apically and medially and light yellow laterally. Metope and post-clypeus with red median carina. Metope with sublateral carinae framed by brown to dark brown stripes. Genae around scapus light brown. Pedicel light brown to dark brown. Clypeus with light brown stripes.

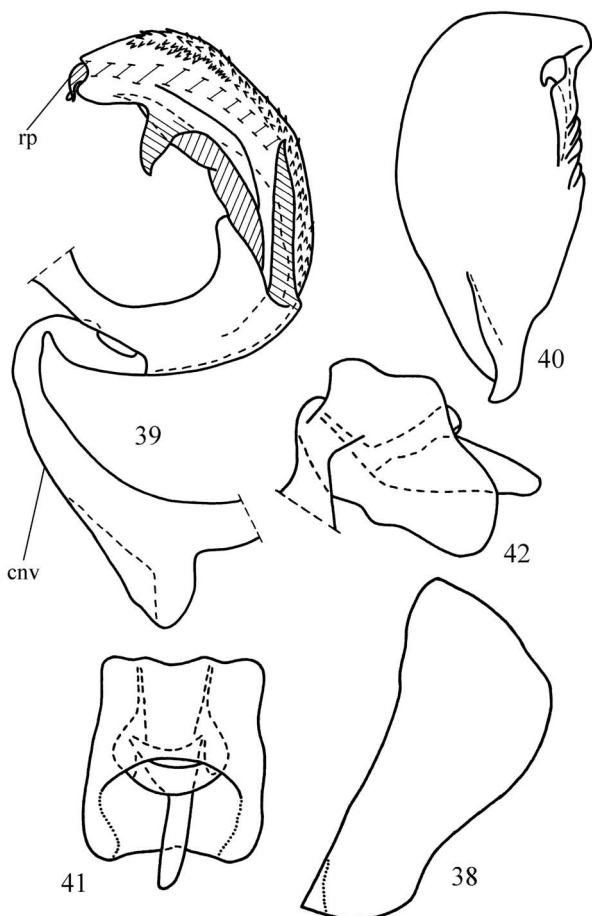


Figures 31–37. *Bolitropis montanus* sp. nov., male genitalia. (31) Pygofer, lateral view; (32) penis, lateral view; (33) penis, ventral view; (34) style, lateral view; (35) capitulum of style, dorsal view; (36) anal tube, lateral view; (37) anal tube, dorsal view. Abbreviations: hmp – hind margin of pygofer; mc – marginal concavity of pygofer; sp – subapical processes of aedeagus; dp – dorsal phallobase process; lp – lateral process of ventral phallobase lobe; amv – apical margin of ventral phallobase lobe; hms – hind margin of style; lt – lateral tooth of style; aed – aedeagus.

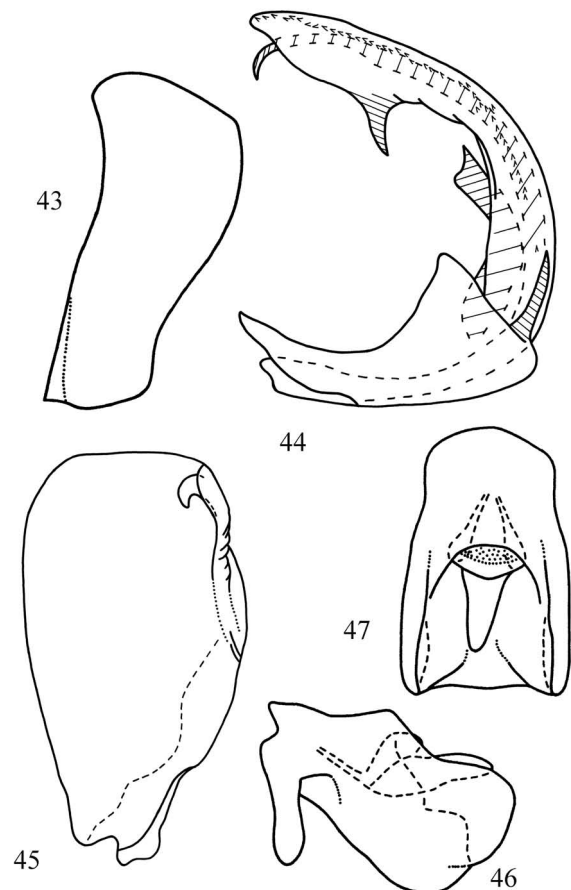


Mesonotum yellow, with median carina bordered with brown. Fore wings with veins bordered with thin light brown stripes. Paradiscal fields and paranotal lobes of pronotum partly brown with light traces of sensory pits. Abdominal tergites dark brown laterally. Abdominal sternites yellow. Legs with light brown longitudinal lines. Apices of third metatarsi and claws dark brown. Apices of spines black.

**Male terminalia** (Figs 38–42). Hind margin of pygofer strongly convex, with basal concavity (Fig. 38). Anal tube nearly square, slightly longer than wide, weakly concave apically in dorsal view (Figs 41, 42). Paraproct long, half as long as anal tube. Ventral phallobase lobe short, reaching half of aedeagus length, with very long and narrow, pointed apically, lateral processes, almost reaching by their apices, half of aedeagus length (Fig. 39). Apical margin of ventral phallobase lobe slightly concave. Dorsal phallobase process very long, nearly reaching apex of aedeagus,



Figures 38–42. *Bolitropis imperator* sp. nov., male genitalia. (38) Pygofer, lateral view; (39) penis, lateral view; (40) style, lateral view; (41) anal tube, dorsal view; (42) anal tube, lateral view. Abbreviations: cnv – connective; rp – rod-shaped processes.



Figures 43–47. *Bolitropis synavei* sp. nov., male genitalia. (43) Pygofer, lateral view; (44) penis, lateral view; (45) style, lateral view; (46) anal tube, lateral view; (47) anal tube, dorsal view.

with a lobe above the phallobase margin. Aedeagus with pair of nearly triangular subapical processes situated at upper third of aedeagus length, and with pair of rod-shaped processes internally having apices visible above apex of aedeagus. Plate of style rather narrow, with straight hind margin (Fig. 40).

**Type material.** Madagascar: **Antananarivo Province: Holotype**, 1♂, Fia, Ivato, 17.I.[19]58, F. Keiser (NHMB). Paratype. 1♂, Tan., Andronobe, 14.I.[19]58, F. Keiser (NHMB).

**Distribution.** Madagascar: Antananarivo Province.

*Bolitropis synavei* sp. nov.  
(Figs 43–47)

**Etymology.** Species name is dedicated to late well-known Belgian hemipterist Henri Synave (1921–1981) who published some works on Madagascan entomofauna.

**Diagnosis.** Coryphe twice as long as wide, with lateral margins subparallel medially. Metope with sublateral carinae turned outside above the clypeus. Hind margin of pygofer convex, with basal concavity. Male anal tube 1.5 times as long as wide. Lateral processes of ventral phallobase lobe short, far not reaching the base of subapical process of aedeagus. Dorsal process of the phallobase far not reaching aedeagal apex. Aedeagus narrow (in lateral view).

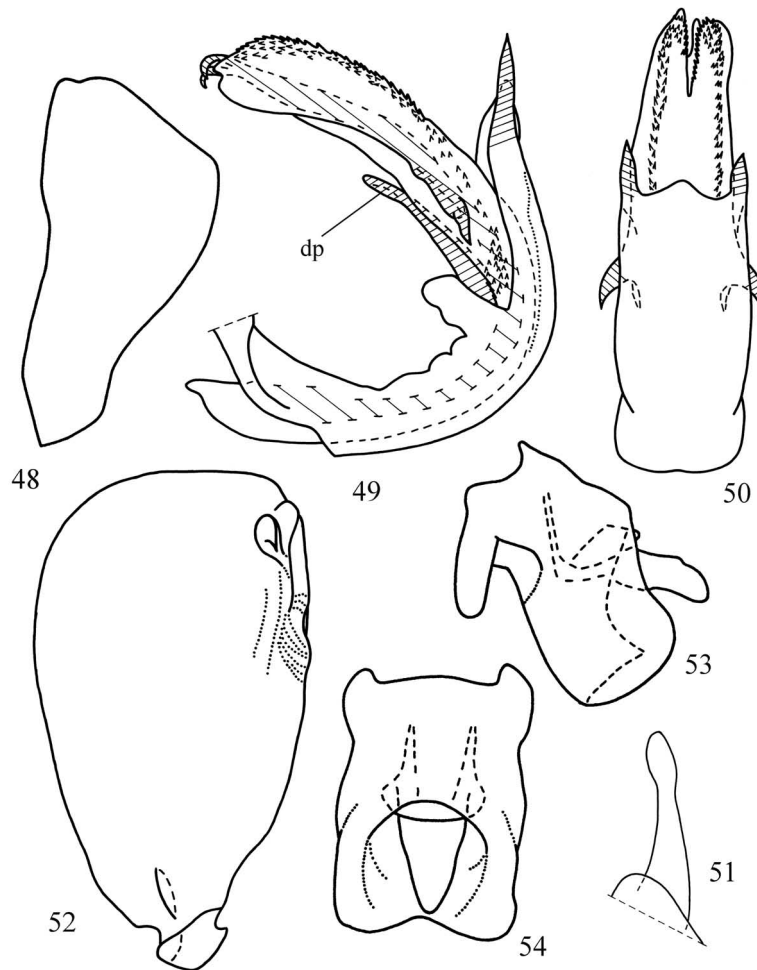
**Description.** Total length: 4.7 mm.

Coryphe relatively short, nearly twice as long as wide, with lateral margins parallel and acutely angulate anterior margin. Coryphe with very weak median carina. Metope with sublateral carinae turning outside above clypeus. Metopoclypeal suture distinct only laterally. Fore wings with reticulate venation. Radius (ScP+R) with three branches, furcating in basal half of wing; median (MP) with four branches, first furcation

near wing middle; cubitus anterior (CuA) with two branches, furcating in basal half of wing. Pronotum concave medially, its lateral margins keel-shaped. Hind tibia with 9 apical spines.

**Coloration.** General coloration light yellowish brown. Median carina of metope and lateral carinae of mesonotum brown reddish. Coryphe with dark brown spot medio-apically.

**Male terminalia** (Figs 43–47). Hind margin of pygofer convex, with basal concavity (Fig. 43). Anal tube twice as long as wide, apical margin concave (Figs 46, 47). Paraproct 0.3 times as long as anal tube. Phallobase short, 0.3 times as long as aedeagus. Dorsal phallobase process relatively wide, pointed apically, nearly reaching half of aedeagus length. Lateral processes of ventral phallobase lobe narrow, relatively long, pointed apically (Fig. 44). Apical margin of ventral phallobase lobe slightly concave. Subapical



Figures 48–54. *Bolitropis olsufievi* sp. nov., male genitalia. (48) Pygofer, lateral view; (49) penis, lateral view; (50) penis, ventral view; (51) dorsal phallobase process, dorsal view; (52) style, lateral view; (53) anal tube, lateral view; (54) anal tube, dorsal view. Abbreviations: dp – dorsal phallobase process.

processes of aedeagus relatively short, pointed apically. Aedeagus narrow (in lateral view), with pair of rod-shaped processes internally, well visible above aedeagus apex. Plate of style rather narrow, with straight hind margin (Fig. 45).

**Female.** Unknown

**Type material.** Madagascar: Holotype, ♂ [locality unknown] (IRSNB).

**Distribution.** Madagascar.

***Bolitropis olsufievi* sp. nov.**

(Figs 25–26, 48–54)

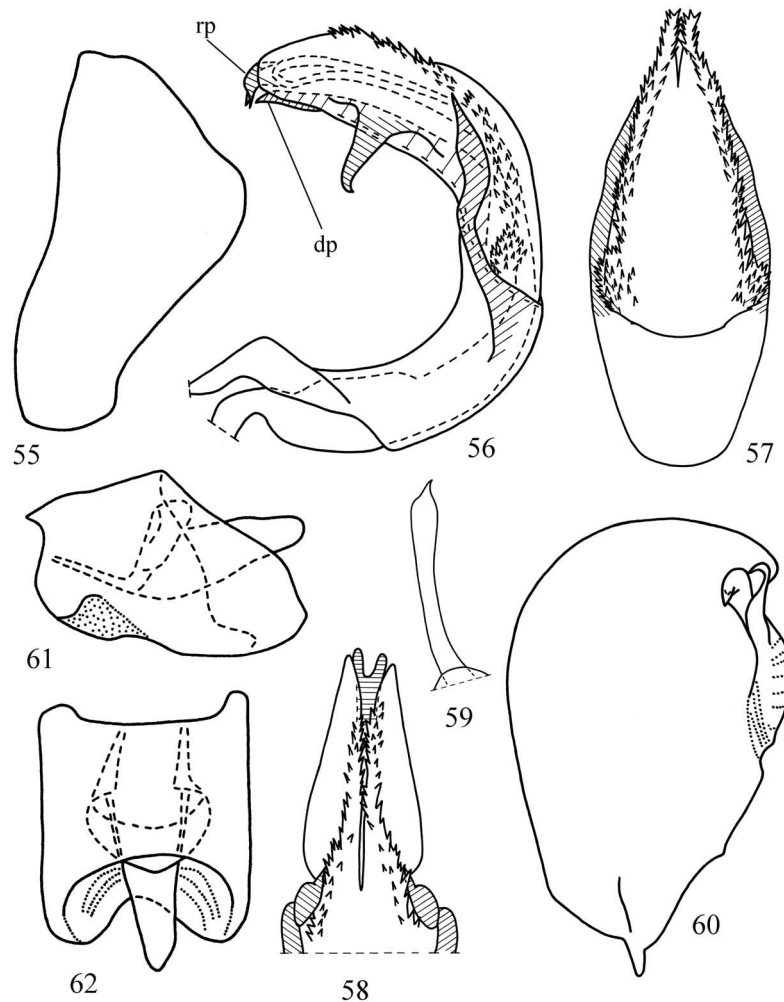
**Etymology.** Species name is dedicated to Russian entomologist Grigoriy Vasil'evich Olsufiev who moved

to France and spent almost 30 years of his life collecting in Madagascar. He died in Antananarivo in 1957.

**Diagnosis.** Coryphe twice as long as wide, with lateral margins weakly concave medially. Metope with sublateral carinae subparallel above the clypeus. Hind margin of pygofer convex, with basal concavity. Dorsal phallobase process sharply narrowed before the apex. Aedeagus enlarged below ventral phallobase lobe, with subapical processes situated below dorsal phallobase process.

**Description.** Total length: males – 4.7–5.0 mm; females – 5.2–5.4 mm.

Metope with sublateral carinae subparallel above the clypeus (Fig. 26). Coryphe relatively short, nearly twice as long as wide, with lateral margins weakly concave medially, and acutely angulate anterior margin;



Figures 55–62. *Bolitropis strobilus* sp. nov., male genitalia. (55) Pygofer, lateral view; (56) penis, lateral view; (57) penis, ventral view; (58) apex of aedeagus, ventral view; (59) dorsal phallobase process, dorsal view; (60) style, lateral view; (61) anal tube, lateral view; (62) anal tube, dorsal view. Abbreviations: dp – dorsal phallobase process; rp – rod-shaped processes.



with weak median carina (Fig. 25). Metopoclypeal suture distinct only laterally.

**Coloration.** General coloration light yellow. Metope and postclypeus with reddish median carina. Median and sublateral carinae of metope framed by dark brown stripes. Coryphe and pronotum dark brown medially. Mesonotum with reddish lateral carinae. Cells of fore wings with dark brown frames inside. Femora with dark brown longitudinal stripes. Apices of spines black.

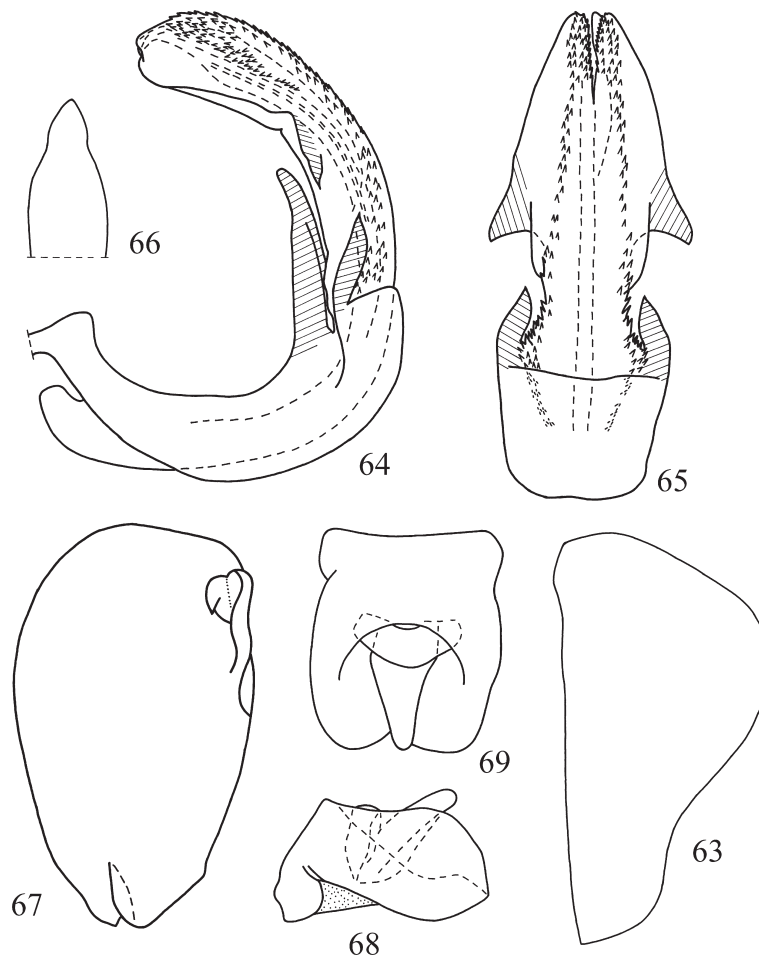
**Male terminalia** (Figs 48–54). Hind margin of pygofer strongly convex, with basal concavity (Fig. 48). Anal tube almost twice as long as wide, with apical margin obtusely concave in dorsal view (Figs 53, 54). Paraproct long, half as long as anal tube. Ventral phallobase lobe relatively long, reaching  $\frac{2}{3}$  of whole aedeagus length, its apical margin convex (Fig. 50). Lateral processes of ventral phallobase lobe relatively

short, pointed apically (Fig. 49). Dorsal phallobase process long, reaching almost  $\frac{2}{3}$  of aedeagus length, narrowing, flattened dorso-ventrally and rounded, spoon-shaped, apically (Fig. 51). Subapical processes of aedeagus pointed apically, situated nearly at half of aedeagus length. Aedeagus with pair of rod-shaped processes internally, visible above aedeagus apex. Plate of style rather narrow, with straight hind margin (Fig. 52).

**Female terminalia.** Hind margin of sternum VII deeply and narrowly concave.

**Type material.** Madagascar: **Antananarivo Prov., Holotype:** 1 ♂, Ambatolampy, 6.III.[1]932, Olsufiev (ZIN); **Paratypes:** 2 ♀ ♀, same locality, [1]932, Olsufiev (ZIN); 1 ♀, Ankaratra, 15.III.[1]932, Seyrig (ZIN); **Toamasina Prov.:** 1 ♂, Rogez, II.[1]932, Seyrig (ZIN).

**Distribution.** Madagascar: Antananarivo and Toamasina Provinces.



Figures 63–69. *Bolitropis irwini* sp. nov., male genitalia. (63) Pygofer, lateral view; (64) penis, lateral view; (65) penis, ventral view; (66) dorsal phallobase process, dorsal view; (67) style, lateral view; (68) anal tube, lateral view; (69) anal tube, dorsal view.

*Bolitropis irwini* sp. nov.  
(Figs 5–8, 18, 63–69)

**Etymology.** The species is named after its collector – Michael E. Irwin.

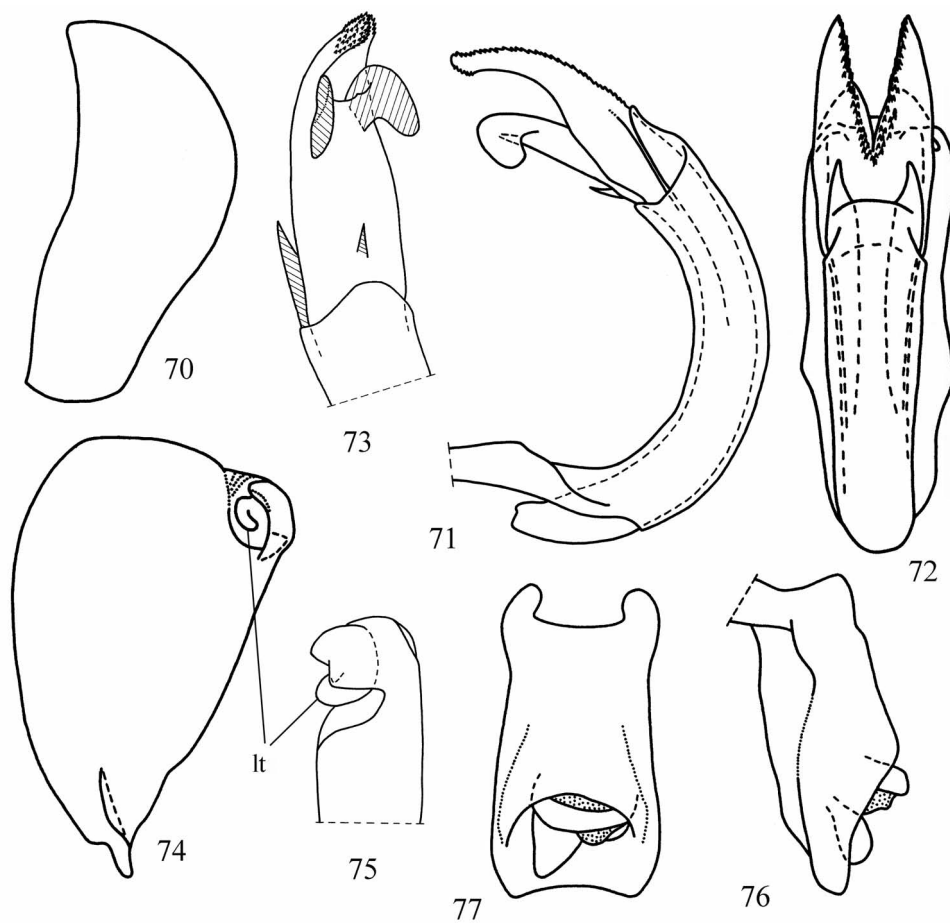
**Diagnosis.** Coryphe twice as long as wide, with lateral margins weakly concave medially. Metope with sublateral carinae subparallel above the clypeus. Hind margin of pygofer convex, with basal concavity. Dorsal phallobase process gradually narrowed before the apex. Aedeagus is enlarged above ventral phallobase lobe, with subapical processes situated above dorsal phallobase process.

**Description.** Total length: male – 4.3 mm; females – 4.2–5.1 mm.

Sublateral carinae of metope subparallel, not turning outside above metopoclypeal suture; suture distinct only laterally (Fig. 7). Median carina of metope running through post- and anteclypeus. Anteclypeus flattened laterally. Median and sublateral carinae of metope not

joined in one point apically. Coryphe twice as long as wide medially, with lateral margins slightly concave (Fig. 5). Coryphe plate depressed medially; anterior margin acutely angularly convex; posterior margin acutely angularly concave. Rostrum exceeding hind coxae (Fig. 6), with third segment slightly shorter than second one. Pronotum plate depressed medially; anterior margin acutely angularly convex. Paradiscal fields of pronotum narrow behind eyes. Paranotal lobes of pronotum large, with slightly curved apical margins. Mesonotum twice as long as pronotum, with median and lateral carinae. Hind wings narrowly oval, rudimentary (Fig. 18). Hind tibia with three lateral spines. First metatarsomere with two latero-apical and 10 intermediate spines. Second metatarsomere with only two latero-apical spines.

**Coloration.** General coloration light yellow. Metope and postclypeus with reddish median carina. Median and sublateral carinae of metope framed by dark brown stripes. Postclypeus with transverse dark brown



Figures 70–77. *Bambomada flava* gen et sp. nov., male genitalia. (70) pygofer, lateral view; (71) penis, lateral view; (72) penis, ventral view; (73) penis, dorsal view; (74) style, lateral view; (75) capitulum of style, dorsal view; (76) anal tube, lateral view; (77) anal tube, dorsal view. Abbreviations: lts – lateral tooth of style.

stripes. Coryphe, pronotum, and mesonotum dark brown medially except light yellow median carina of mesonotum. Mesonotum also with reddish lateral carinae. Hind wings light yellow. Abdominal tergites and sternites with dark brown to black patches except light yellow female sternum VII. Femora and tibiae with dark brown longitudinal stripes. Gonoplac margins dark brown.

**Male terminalia** (Figs 63–69). Hind margin of pygofer strongly convex, with basal concavity (Fig. 63). Anal tube nearly square, slightly longer than wide, weakly concave apically in dorsal view (Figs 68, 69). Paraproct long, half as long as anal tube. Ventral phallobase lobe short, reaching half of aedeagal length, with relatively short, pointed apically, lateral processes (Fig. 65). Apical margin of ventral phallobase lobe almost straight. Dorsal phallobase process long, nearly reaching half of aedeagus length, relatively wide, gradually narrowing, flattened dorso-ventrally (Fig. 66). Subapical processes of aedeagus relatively short, pointed apically, situated at second third of aedeagus length (Fig. 64). Aedeagus with pair of rod-shaped processes internally with their apices slightly visible above apex of aedeagus. Plate of style rather narrow, with straight hind margin (Fig. 67).

**Type material.** Madagascar: **Fianarantsoa Prov.:** **Holotype**, ♂, 40 km S Ambositra, Miandritsara forest, 825 m, S 20°47.56' E 47°10.54', malaise trap in low altitude rainforest, 1–10.XII.2006, “MA-29-70”, “CASLOT 038321”, M. Irwin, R. Harin'Hala (CASC).

**Paratypes:** Madagascar: **Fianarantsoa Prov.:** 2 ♀ ♀, 40 km S Ambositra, Miandritsara forest, 825 m, S20°47.56' E47°10.54', malaise trap in low altitude rainforest, 14.XI.–26.XII.2004, “MA-29-04”, “CASENT 8107490”, M. Irwin, R. Harin'Hala (ZIN); 1 ♀, same data, 20–27.XII.2005, “MA-29-38”, “CASENT 8107801”, same collectors (CASC); 1 ♀, same data, 26.XII.2004–5.I.2005, “MA-29-05”, “CASENT 8107493”, same collectors (CASC); 1 ♀, same data, 22.XI.–1.XII.2006, “MA-29-69”, “CASLOT 038317”, same collectors (CASC); 1 ♀, same data, 27.XII.2005–5.I.2006, “MA-29-39”, “CASENT 8107804”, same collectors (CASC); 1 ♀, same data, 5–12.I.2006, “MA-29-40”, “CASENT 8107806”, same collectors (CASC); 1 ♀, same data, 24–31.I.2007, “MA-29-76”, “CASLOT 038818”, same collectors (CASC); 1 ♀, Italaiviana, 35 km SSE of Antsirabe, Uapacca forest, 1360 m, S20°10.40' E47°05.16', malaise trap, 8–15.V. 2005, “MA-24-72”, “CASLOT 038328”, same collectors (CASC).

**Distribution.** Madagascar: Fianarantsoa Province.

***Bambomada*** gen. nov.  
(Figs 9–11, 19, 20, 29–30, 70–77)

**Type species.** *Bambomada flava* sp. nov., here designated.

**Etymology.** Generic name is derived from the combination of words “bambou” and “Madagascar” as apparently the type species of the genus occurring on bamboo. Feminine in gender.

**Diagnosis.** Metope elongate, with strong median carina. Coryphe transverse. Fore wings rounded apically, slightly exceed the apex of abdomen, with weak hypocostal plate; clavus open. Hind wings 2-lobed, with well developed remigium and vannus. Hind tibia with four lateral spines. First metatarsomere with only two latero-apical spines. Phallobase long, reaching  $\frac{2}{3}$  of aedeagus length. Lateral processes of ventral phallobase lobe relatively short, triangular.

**Description.** Metope elongate, with strong median carina extending to anteclypeus, lateral margins keel-shaped (Figs 11, 29). Upper margin of metope straight. Metopoclypeal suture straight. Postclypeus with lateral carinae. Rostrum extending to hind coxae. Ocelli present. Coryphe transverse, with keel-shaped anterior and lateral margins (Figs 9, 30). Anterior margin of coryphe convex, posterior margin strongly concave. Pronotum shorter than mesonotum, with keel-shaped anterior and posterior margins. Anterior margin of pronotum strongly convex, posterior margin strongly concave. Mesonotum with median and lateral carinae. Tegulae large. Fore wings with weak hypocostal plate and marginal setae (Figs 10, 19). Radius (ScP+R) and cubitus anterior (CuA) each with two branches, median (MP) with 4–5 branches; numerous transverse veins; clavus open. Hind wings with well developed remigium and vannus (Fig. 20). Hind tibia with four lateral spines (two large distally and two small proximally). First metatarsomere with only two latero-apical spines.

**Distribution.** Mahajanga Province.

***Bambomada flava*** sp. nov.  
(Figs 9–11, 19, 20, 29–30, 70–77)

**Etymology.** Species name is referring to the general coloration of the species.

**Description.** Total length (from the apex of head to fore wing apices). 6.0 mm.

Morphological characters as mentioned for the genus above.

**Coloration.** General coloration light yellow, somewhat greenish. Lateral margins and median carina of metope, and anterior and lateral margins of coryphe, light brown. Paranotal lobes each with dark brown elongate spot. Ocelli surrounded by red spots. Apex of rostrum, claws, and third metatarsomeres brown. Apices of spines black.

**Male terminalia** (Figs 70–77). Hind margin of pygofer convex, with basal concavity (Fig. 70). Anal tube long, more than two times as long as wide, with



apical margin slightly concave in dorsal view (Figs 76, 77). Paraproct short, 0.25 as long as whole anal tube. Phallobase long, reaching  $\frac{2}{3}$  of aedeagus length (Fig. 71). Ventral phallobase lobe slightly longer than dorso-lateral ones (Fig. 72). Lateral processes of ventral phallobase lobe relatively short, triangular. Apical margin of ventral phallobase lobe slightly convex. Aedeagus divided into two lobes – bilobed ventral one with branches narrowing apically in lateral view, and dorsal one with pair of ear-shaped apical processes and a spine above dorsal margin of phallobase (Fig. 73). Bilobed ventral aedeagal lobe with marginal teeth. Plate of style rather narrow; hind margin slightly convex (Fig. 74). Capitulum of style reduced, lateral tooth well developed, finger-shaped, turned at acute angle to plate of style (Fig. 75).

**Type material.** Madagascar: **Mahajanga Prov.:** **Holotype**, ♂, «Inst. Scient. Madagascar»/Mt. Tsaratanana, 2000 m, forêt de bambou a la limite de la forêt de mousses, X.[19]49, RP (IRSNB).

**Distribution.** Madagascar: Mahajanga Province.

## Other species examined

Tribe Tropicuchini Stål, 1863

*Tropicuchus arisba* Fennah, 1958  
(Figs 12–14)

**Material examined.** Central African Republic: 1 ♂, RCA, Boukoko, 4.9.69, M. Boulard, MNHN(EH) 7359 (MNHN).

Tribe Elicini Melichar

*Exphora* sp.  
(Figs 15–16)

**Material examined.** 1 ♂, Madagascar, 11.III.2006, forêt humide de Ranomafana, 1681 m, S 21°14.113' E 47°25.415', rég. Haute Matsiatra, A. Soulier-Perkins leg., MNHN(EH) 21883 (MNHN).

## DISCUSSION

Madagascar is well known for its highly endemic flora and fauna and belongs to so-called “biodiversity hotspots” (Myers *et al.* 2000). However within the tropiduchid genera recorded up to now from Madagascar there are only three Madagascan endemics – *Chrysopuchus* Gnezdilov, 2013, *Exphora* Signoret, 1860, and *Riancia* Signoret, 1860. Perhaps the two last

genera are synonyms as the type species of these genera are very similar externally, except comparative length of rostrum mentioned and illustrated by Signoret (1860). Examination and comparison of male genitalia structure of *Exphora guerinii* Signoret, 1860 and *Riancia longirostrum* Signoret, 1860 may solve this problem in the future. Other genera mentioned above in the list have wider distribution. Thus the genus *Durium* Stål, 1861 is also known from the Continental Africa; the genus *Trienopa* – from Continental Africa and the Seychelles; the genus *Conchyoptera* – from the Mascarenes; and the genus *Numicia* Stål, 1866 – from Continental Africa and Oriental Region (Metcalf 1954, 1958, Ghauri 1976, Williams 1981, Holzinger *et al.* 2008, Bourgoin 2015). Further investigation of Madagascan fauna will probably bring new endemic taxa to our knowledge.

The tribe Elicini to which new taxa described above are placed are characterized by hemisphaeric gonoplas without teeth or with small denticles and by anal tube with developed X segment. Another tribe of the subfamily Elicinae – Parathisciini Gnezdilov, 2013 is endemic to Afrotropical Regnum and distinguished by peculiar anal tube of females with reduced X segment (Gnezdilov, 2013a). The pattern of male genitalia of the subfamily Elicinae is rather common for the family – well developed aedeagus and short phallobase.

Externally according to the subbrachyptery *Bolitropis* gen. nov. described above is similar to monotypical African genus *Obedas* Jacobi, 1910 (Tropicuchidae, Duriina) described from Kilimandjaro (Jacobi, 1910, taf. 1, 12, 12a). However *Bolitropis* gen. nov. is clearly differs from *Obedas* by the reticulate venation of fore wings, the shorter coryphe, and the pronotum without median carina. In fact both new genera described above are closely related to the genus *Exphora* Signoret, 1860 or even derived from it by the brachypterisation and reduction of the style capitulum. Both new genera are characterized by the style with reduced capitulum. In *Exphora*, the capitulum of style still may be recognized (Fig.; see also Synave 1966, *E. ifanadiensis*, fig. 27). So, we can see the evolutionary row when the genus *Tropicuchus* Stål, 1854 (type genus of the family) has well developed finger-shaped process of the style (Figs 12, 14) which is much smaller in *Exphora* (Figs 15, 16) and new genera described. If to speak about homologies the finger-shaped process apparently is homologous with the lateral tooth of style of the Issidae where capitulum of style become more separated on the neck (Gnezdilov *et al.*, 2014, pl. 6, figs 5, 6) which is not developed yet in the Tropicuchidae. From another hand the members of the family with developed hind wings have not anastomosis between postcubitus (Pcu) and first anal vein (A<sub>1</sub>) and generally have more simple venation in contrast to Issidae which often are characterized by such

anostomosis and have transverse veins between longitudinal ones (Gnezdilov 2012). Thus we may treat Tropicuchidae as more basal group in comparison to Issidae.

Within the genus *Bolitropis* gen. nov. there are two groups of species according to the structure of male genitalia as follows. First group comprises one species (*B. montanus* sp. nov.) which is distinguished by hind margin of pygofer with median concavity (Fig. 31), almost belobed apically anal tube (Fig. 37), very long, not pointed apically sublateral processes of aedeagus (Fig. 32), and wide plate of style with convex hind margin (Fig. 34). Second group includes 5 other species of the genus. All of them are characterized by hind margin of pygofer with basal concavity (Figs 38, 43, 48, 55, 63), anal tube with concave (not bilobed) apical margin (Figs 41, 47, 54, 62, 69), rather short subapical processes of aedeagus (Figs 39, 44, 49, 56, 64), and rather narrow plate of style with straight hind margin (Figs 40, 45, 52, 60, 67). Within the second group of species *B. olsufievi* sp. nov. and *B. irwini* sp. nov. are more closely related each to another by flattened dorso-laterally dorsal phallobase lobe (Figs 51, 66) and subapical processes of aedeagus situated relatively far from aedeagal apex (Figs 49, 64).

Unfortunately there is almost no information on ecology of the taxa described above. However for *Bambomada flava* sp. nov. we may expect that this species occurs on bamboo as it was collected in bamboo forest and it is pale (probably was pale green when alive) in coloration which is typical for species living on bamboo. Long type serie of *Bolitropis irwini* sp. nov. was collected in Malaise trap in low altitude rainforest while another species of the same genus, *B. montanus* sp. nov., inhabits mountain communities above 2000 m.

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