

A new genus of the family Acanaloniidae (Homoptera: Fulgoroidea) from the Caribbean Basin

Новый род семейства Acanaloniidae (Homoptera: Fulgoroidea) из Карибского бассейна

V.M. GNEZDILOV

В.М. ГНЕЗДИЛОВ

Zoological Institute of the Russian Academy of Sciences, 1 Universitetskaya Emb., St Petersburg 199034, Russia.
E-mail: vmgnezdilov@mail.ru, vgnezdilov@zin.ru

A new genus, *Bulldolonia* gen. nov., is established for three species earlier assigned to the genus *Acanalonia* Spinola, 1839: *Acanalonia depressa* Melichar, 1901, *A. brevisfrons* Muir, 1924, and *A. impressa* Metcalf et Bruner, 1930. Lectotype is designated for *A. depressa*.

Установлен новый род, *Bulldolonia* gen. nov., для трёх видов, ранее относившихся к роду *Acanalonia* Spinola, 1839: *Acanalonia depressa* Melichar, 1901, *A. brevisfrons* Muir, 1924, и *A. impressa* Metcalf et Bruner, 1930. Обозначен лектотип для *A. depressa*.

Key words: Homoptera, Fulgoroidea, Acanaloniidae, systematics, new genus, new combinations, lectotype designation, Neotropical Region

Ключевые слова: Homoptera, Fulgoroidea, Acanaloniidae, систематика, новый род, новые комбинации, обозначение лектотипа, Неотропическая область

INTRODUCTION

Recently the family Acanaloniidae Amyot et Serville, 1843 was redefined (Gnezdilov, 2012) as comprising only four American genera: *Acanalonia* Spinola, 1839, *Batusa* Melichar, 1901, *Chlorochara* Stål, 1869, and *Philatis* Stål, 1862. However the family still needs a revision. The genera listed above are distinguished by the shape of metope, coryphe, and forewings and the carination of metope and coryphe. These features are important for the generic delimitation because according to the illustrations published by Caldwell and Martorell (1950), Fennah (1967), and Freund and Wilson (1995) all mentioned genera are rather uniform in structure of the male genitalia, having the phallobase with a pair of long apical processes directed downwards, the style with a wide plate and a small capitulum. These characters are treated as the main synapomorphies of the family Acan-

loniidae sensu stricto (Gnezdilov, 2007, 2012: fig. 5). A further study was necessary to find out the generic patterns of the genitalic structures.

The genus *Acanalonia* Spinola is the largest genus of the family, which includes more than 60 species (Freund & Wilson, 1995). Thus this is an attempt to start a revision of the species currently combined in the genus *Acanalonia* – apparently a polyphyletic unit which is in need of serious morphological and phylogenetic investigations.

MATERIAL AND METHODS

Terminology of the head and the hypocoastal plate of the forewings follows Emeljanov (1971, 1995). Type material examined is deposited at the Museum für Naturkunde, Berlin, Germany (formerly Zoologisches Museum, Humboldt Universität). Pictures of *Bulldolonia depressa* (Melichar, 1901) are made using a Leica Z16 APOA with a Leica

video camera DFC490. Images are produced using the software Leica Application Suite ver. 3.7, Auto-Montage Essentials, and Adobe Photoshop.

TAXONOMY

Order **HOMOPTERA**

Superfamily **FULGOROIDEA**

Family **ACANALONIIDAE**

Genus ***Bulldolonia* gen. nov.**

Type species: *Acanalonia depressa* Melichar, 1901.

Diagnosis. The border between metope and coryphe indistinct, both without intermediate carinae (Figs 2–3). Coryphe + metope is depressed from above (Figs 1–3), with nearly lobe-shaped lateral keels (Fig. 3). Metopoclypeal suture acutely angulate. Ocelli present. Pro- and mesonotum with no carinae. Scutellum is separated by a groove. Forewings widely rounded apically (almost straight) (Fig. 1), without hypocostal plate. Basal cell large, radius bifurcate, median at least pentafurcate, cubitus anterior simple (R 2 M 5 (main branches) CuA 1). Clavus long, almost reaching the wing apex. Hind tibia with 7 teeth apically and with no lateral teeth. First metatarsomere with 2 latero-apical and 7 intermediate teeth in the entire row.

Comparison. The type species of the genus *Acanalonia* Spinola, *Acanalonia servillei* Spinola, 1839, is characterised by a rather flat metope and rather distinct transverse coryphe both with the median carina (Spinola, 1839) (Figs 4–5). This condition of the metope and the coryphe has to be treated as character states of *Acanalonia* sensu stricto and, accordingly, all other species described up to now in the genus have to be tested across these features. Three species from the Caribbean islands combined in the genus *Bulldolonia* gen. nov. have a peculiar depressed coryphe + metope, with indistinct border between them, both missing the median carina (Figs 1–3) which in our opinion

are good synapomorphies for this group of species and these are the arguments to erect a new genus for accumulating these species and separating them from other species of the genus *Acanalonia* as well as from other genera of the family Acanaloniidae (*Batusa* Melichar, *Chlorochara* Stål, and *Philatis* Stål) which have convex metope and rather distinct elongate coryphe with angulate anterior margin.

Etymology. Generic name is derived from “Bulldog” because of the characteristic shape of depressed metope similar to bulldog face in consonance to *Acanalonia*. Gender feminine.

Composition and distribution. The genus comprises three species known from the Virgin Islands, Puerto Rico, and Cuba (Melichar, 1901; Muir, 1924; Metcalf & Bruner, 1930). Despite of external similarity of these species I prefer to treat them as distinct species rather than synonyms until the male genitalia of the species are examined and compared in details.

***Bulldolonia depressa* (Melichar, 1901),
comb. nov.**
(Figs 1–3)

Acanalonia depressa Melichar, 1901: 190; 1902: 251, taf. 1, fig. 6.

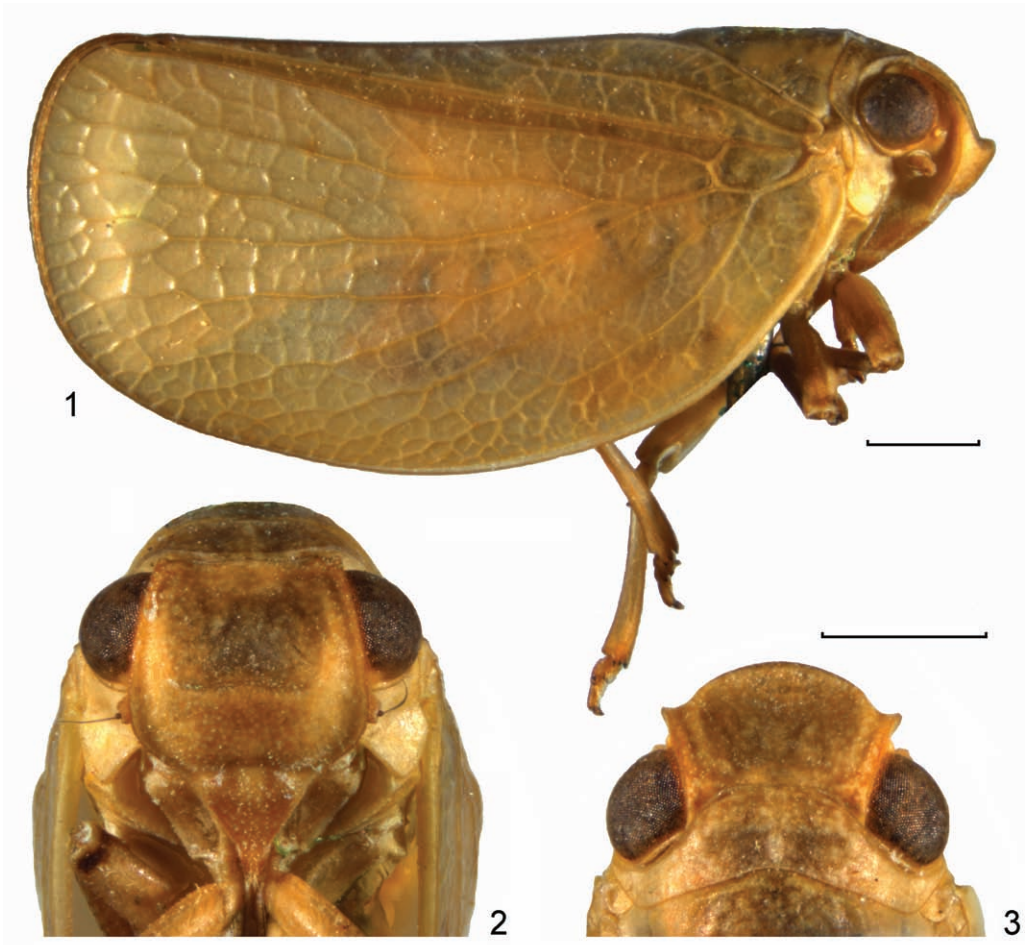
Acanalonia depressa: Fennah, 1949: 52, pl. 4, figs 18–19.

Acanalonia brevifrons: Caldwell & Martorell, 1950: 265, pls. 52, 53.

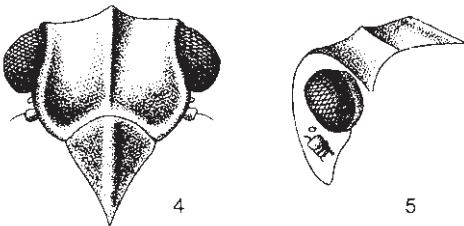
Type material examined. United States Virgin Islands: Female (lectotype, here designated), “type” (red printed), “Cat. Mo 5147” (handwritten), “St. Jean. St. Thomas, Moritz” (blue-green, handwritten), “*Acanalonia depressa* Melichar det” (handwritten); female (paralectotype), “type” (red printed), “5147” (printed), “St. Jean. St. Thomas, Moritz” (blue-green, handwritten), “*Acanalonia depressa* Melichar det” (handwritten).

Distribution. Virgin Islands (Melichar, 1901; Fennah, 1949; Caldwell & Martorell, 1950).

Note. Melichar (1901) mentioned in the original description male and female as the types which are deposited at the Museum



Figs 1–3. *Bulldolonina depressa* (Melichar, 1901) (lectotype): 1 – lateral view; 2 – frontal view; 3 – head, dorsal view. Scale bar: 1 mm.



Figs 4–5. *Acanalonia servillei* Spinola, 1839, head: 4 – frontal view; 5 – dorso-lateral view (after Spinola, 1839).

für Naturkunde (Berlin, Germany). The material mentioned above corresponds to this description except the sex of the specimens – in the Museum für Naturkunde there are only two females. Apparently Melichar misidentified the sex of one of the specimens or he had more specimens for study. To stabilise the nomenclature in the group (ICZN 1999: Art. 74), a lectotype is here designated for the specimen listed above and accordingly the other specimen from the type series becomes a paralectotype.

Caldwell and Martorell (1950) illustrated a specimen from St Thomas (Virgin Islands) – type locality of *Bulldolonina depressa* under the name *Acanalonia brevis*.

frons Muir, 1924. The latter species was described from Puerto Rico (Muir, 1924).

***Bulldolonia brevifrons* (Muir, 1924),
comb. nov.**

Acanalonia brevifrons Muir, 1924: 467, pl. 12, figs 5, 5 a–b.

Distribution. Puerto Rico (Muir, 1924).

***Bulldolonia impressa*
(Metcalf et Bruner, 1930), comb. nov.**

Acanalonia impressa Metcalf et Bruner, 1930: 408, pls. 21, 22, 25.

Distribution. Cuba (Metcalf & Bruner, 1930).

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REFERENCES

- Caldwell J.S. & Martorell L.F. 1950. Review of the Auchenorrhynous Homoptera of Puerto Rico. *The Journal of Agriculture of the University of Puerto Rico*, **34**(2): 133–269.
- Emeljanov A.F. 1971. New genera of planthoppers of the families Cixiidae and Issidae (Homoptera, Auchenorrhyncha) from the fauna of the USSR. *Entomologicheskoe Obozrenie*, **50**(3): 619–627. (In Russian with English summary). English translation published in *Entomological Review*, **50**(3): 350–354.
- Emeljanov A.F. 1995. On the problem of classification and phylogeny of the family Delphacidae (Homoptera, Cicadina) taking into consideration larval characters. *Entomologicheskoe Obozrenie*, **74**(4): 780–794. (In Russian with English summary). English translation published in *Entomological Review*, **75**(9): 134–150.
- Fennah R.G. 1949. On a small collection of Fulgoroidea (Homoptera) from the Virgin Islands. *Psyche*, **56**(2): 51–65.
- Fennah R.G. 1967. Fulgoroidea from the Galapagos Archipelago. *Proceedings of the California Academy of Sciences*, Ser. 4, **35**(4): 53–102.
- Freund, R. & Wilson, S.W. 1995. The planthopper genus *Acanalonia* in the United States (Homoptera: Issidae): male and female genitalic morphology. *Insecta Mundi*, **9**(3–4): 195–215.
- Gnezdilov V.M. 2007. On the systematic positions of the Bladinini Kirkaldy, Tonginae Kirkaldy, and Trienopinae Fennah (Homoptera, Fulgoroidea). *Zoosystematica Rossica*, **15**(2): 293–297.
- Gnezdilov V.M. 2012. On the composition and distribution of the family Acanaloniidae Amyot et Serville (Homoptera, Fulgoroidea). *Entomologicheskoye Obozreniye*, **91**(3): 157–161. (In Russian with English summary).
- International Code of Zoological Nomenclature. Fourth Edition. The International Trust for Zoological Nomenclature c/o the Natural History Museum, London, 1999, XXIX + 306 pp.
- Melichar L. 1901. Monographie der Acanaloniiden und Flatiden (Homoptera). *Annalen des k. k. Naturhistorischen Hofmuseums*, **16**: 178–258.
- Melichar L. 1902. Monographie der Acanaloniiden und Flatiden (Homoptera) (Fortsetzung). *Annalen des k. k. Naturhistorischen Hofmuseums*, **17**: 1–253. Plates 1–9.
- Metcalf Z.P. & Bruner S.C. 1930. Cuban Fulgorina. 1. The families Tropiciduchidae and Acanaloniidae. *Psyche*, **37**: 395–424.
- Muir F. 1924. New and little known fulgorids from the West Indies (Homoptera). *Proceedings of the Hawaiian Entomological Society*, **5**(3): 461–472.
- Spinola M. 1839. Sur les Fulgorelles, sous-tribu de la tribu des Cicadaïres, ordre des Rhynogotes. Suite. *Annales de la Société Entomologique de France*, **8**: 339–454, plates 1–8.

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