

Two new genera of the family Issidae (Homoptera: Cicadina: Fulgoroidea) from North America

Два новых рода семейства Issidae (Homoptera: Cicadina: Fulgoroidea) из Северной Америки

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КЛЮЧЕВЫЕ СЛОВА: Cicadina, Issidae, Fulgoroidea, *Kathleenium*, *Exortus*, новые роды.

ABSTRACT. Two new genera of the family Issidae are described from North America: *Kathleenium* gen.n. (type species: *Hysteropterum cornutum* Melichar, 1906) and *Exortus* gen.n. (type species: *Hysteropterum punctiferum* Walker, 1851).

РЕЗЮМЕ. Описаны два новых рода семейства Issidae из Северной Америки: *Kathleenium* gen.n. (типовой вид: *Hysteropterum cornutum* Melichar, 1906) и *Exortus* gen.n. (типовой вид: *Hysteropterum punctiferum* Walker, 1851).

In the course of a revision of the family Issidae sensu lato started recently, characteristics of the family Issidae sensu stricto and European issid genera on the base of external morphology, including structure of the male and female genitalia, were published [Gnezdilov, 2003a, b]. According to Gnezdilov [2003a], the genus *Hysteropterum* s.str. comprises 6 species distributed only in the Mediterranean and Central Europe. Up to now, 18 species belonging to the genus *Hysteropterum* sensu lato were recorded from North America [Doering, 1938; Caldwell, 1945; Metcalf, 1958; O'Brien, 1988]. In the present study, 4 American species of *Hysteropterum* s.l. were examined. *Hysteropterum cornutum* Melichar, 1906 and *H. sepulcralis* Ball, 1935, on the one hand, and *H. punctiferum* Walker, 1851 and *H. fuscumaculosum* Doering, 1938 on the other hand are closely related to each other, but clearly differ from *H. punctiferum*. All mentioned species differ from members of the genus *Hysteropterum* s.str. in a number of features, that allow me to treat these species as representatives of two separate genera. Further investigation is needed to identify the taxonomic position of other American "*Hysteropterum*" species.

The material examined is deposited in the collections of the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia, and Zoological Museum of Moscow State University, Moscow, Russia.

Kathleenium gen.n.

Type species: *Hysteropterum cornutum* Melichar, 1906.

DESCRIPTION. Metope gradually narrowing to clypeus; its upper margin with trapezoid concavity, so that upper angles of metope protruding. Metope with median keel continuing on postclypeus and with sublateral keels scarcely convex, subparallel. Median and sublateral keels of metope not joining at its upper margin. Coryphe transverse, 4–6 times as wide (measured between eyes) as long (measured along median line), its surface concave, posterior margin concave. Pronotum with median keel or without keel, its anterior margin convex. Scutellum with median keel or without keel. Fore wing broad, widely rounded apically, not narrowing to apex, with narrow hypocostal plate narrowing to wing base; R2 M2 CuA1. Clavus of fore wing with more or less keel-shaped first anal vein. Hind wing rudimentary. Hind tibia with single lateral tooth and 4 intermediate sole setae apically. Metatarsomere I with 3 (2+1) intermediate sole setae apically.

Male. Pygofer with weakly convex hind margin. Anal tube elongate. Anal column short. Dorso-lateral lobes of phallobase fused dorso-apically, scarcely narrowing apically (in lateral view), without processes. Ventral lobe of phallobase long, but not reaching apices of apical processes of aedeagus, wide, rounded apically. Aedeagus with a pair of S-shaped, tapering, lying horizontally and directed to aedeagal base ventral hooks. Apical processes of aedeagus broad (in lateral view), well sclerotized. Style massive, with weakly convex hind margin, without incision between hind margin and capitulum; caudo-dorsal angle widely rounded (in lateral view). Capitulum broad, narrowing apically (in dorsal view), with distinct apical tooth and lateral tooth in the shape of a wide plate.

Female. Sternum VII with concave hind margin. Anal tube elongate, weakly narrowing to widely rounded apex (in dorsal view), weakly convex (in lateral view). Anal column short. Gonopods without keels. Furca well sclerotized, with short basal part. Proximal part of posterior connective laminae of gonapophyses IX convex, with notch (in lateral view). Distal parts of these laminae straight, turned to median line of gonapophyses (in dorsal view). Lateral fields flat. Median field with deep incision, a pair of large marginal lobes and a small lobe at the base of incision. Hind margin of gonocoxa VIII lobe-shaped and straight. Endogonocoxal process gradually narrowing to broad and rounded apex. Apical group of

anterior connective lamina of gonapophyse VIII consists of 3 large teeth; lateral group includes 4 teeth with short keels.

COMPOSITION. The genus comprises 3 species: *Kathleenium cornutum* (Melichar, 1906), **comb.n.** from USA (California, Colorado, Nevada, Utah, Idaho, Arizona, New Mexico) [Doering, 1938], *Kathleenium sepulcralis* (Ball, 1935), **comb.n.** (*Hysteropterum sepulcralis*) from USA (Arizona, New Mexico) [Doering, 1938] and Mexico (Coahuila, Hidalgo) [Caldwell, 1945], and *Kathleenium bufo* (Van Duzee, 1923), **comb.n.** (*Hysteropterum bufo*) from USA (Arizona) and Mexico (Sonora) [Ball, 1935]. No material of the last species was examined.

COMPARISON. The new genus clearly differs from the genus *Hysteropterum* Amyot et Serville, 1843 in the following features: upper margin of metope with trapezoid concavity; median and sublateral keels of metope not joining at its upper margin; fore wing with narrow hypocostal plate; hind tibia with single lateral tooth; dorso-lateral lobes of phallobase without subapical processes; ventral hooks of aedeagus S-shaped, lying horizontally; style massive, without incision between hind margin and capitulum; distal parts of posterior connective laminae of gonapophyses IX straight, turned to median line of gonapophyses; lateral fields flat; median field with deep incision, a pair of large marginal lobes and a small lobe at the base of incision.

ETYMOLOGY. The generic name is derived from the name of noted American homopterist Kathleen C. Doering.

EXAMINED SPECIES.

Kathleenium cornutum (Melichar, 1906)

MATERIAL. ♂, USA, Utah, Fernow Valley, Coll. R.W. Fautin, 21.VII.1940; ♀, same locality, 18.VIII.1940.

Kathleenium sepulcralis (Ball, 1935)

MATERIAL. ♀, USA, New Mexico, Magdalena, 7000 ft., 14.VII.1935 (Dobrzhansky).

Exortus **gen.n.**

Type species: *Hysteropterum punctiferum* Walker, 1851.

DESCRIPTION. Metope with median keel continuing on postclypeus and sublateral keels. Median and sublateral keels of metope joining at its upper margin. Coryphe transverse, 2–3 times as wide as long, its surface concave, anterior margin protruding, obtusely angulate; posterior margin with obtusely angulate concavity. Pronotum with anterior margin convex, elevated, except in the middle. Fore wing covered with short setae, broad, narrowing to apex, rounded at apex, with wide hypocostal plate; R2 M2 CuA1. Hind wing rudimentary. Hind tibia with 1–2 lateral teeth and 6–8 intermediate socle setae apically. Metatarsomere I with 6–7 intermediate socle setae apically.

Male. Pygofer with weakly convex hind margin. Anal tube elongate, narrowing basally and apically, with truncate apex (in dorsal view). Anal column short. Dorso-lateral lobes of phallobase not fused dorso-apically, scarcely narrowing apically (in lateral view), with tooth-shaped processes on ventral margin in apical part. Ventral lobe of phallobase long, but not reaching apices of apical processes of aedeagus, widened apically; apex rounded. Aedeagus with a pair of strongly curved, pointed ventral hooks. Apical processes of aedeagus broad, well sclerotized. Style massive, with hind margin weakly convex, but becoming slightly concave before capitulum, without incision between hind margin and capitulum; caudo-dorsal angle widely rounded (in lateral view). Capitulum broad, narrowing apically (in dorsal view), with distinct apical tooth and wide plate-like lateral tooth.

Female. Sternum VII with widely concave hind margin. Anal tube long, narrowing to rounded apex (in dorsal view).

Anal column short. Gonoplares without keels. Furca weakly sclerotized. Proximal part of posterior connective laminae of gonapophyses IX convex, with notch (in lateral view). Distal parts of these laminae turned at obtuse angle (in dorsal view). Lateral fields with semicircular flattened processes. Median field with incision and a pair of large marginal lobes. Hind margin of gonocoxa VIII lobe-shaped and straight. Endogonocoxal process gradually narrowing to apex; apical lobe narrow. Apical group of anterior connective lamina of gonapophyse VIII consists of 3 large teeth; lateral group includes 4 teeth (3 teeth with keels).

COMPOSITION. The genus comprises 2 species from the USA: *Exortus punctiferus* (Walker, 1851), **comb.n.** from Florida, Georgia, and Texas [Doering, 1938] and *Exortus fuscomaculosus* (Doering, 1938), **comb.n.** (*Hysteropterum fuscomaculosum*) from Florida [Doering, 1938].

COMPARISON. The new genus clearly differs from the genus *Hysteropterum* Amyot et Serville, 1843 in the following features: dorso-lateral lobes of phallobase without subapical processes; ventral hooks of aedeagus strongly curved; style massive, without incision between hind margin and capitulum; median field of posterior connective laminae of gonapophyses IX with a pair of large marginal lobes. The new genus is similar to the genus *Kathleenium* gen. n. in the massive style, without incision between hind margin and capitulum, but distinguished by the median and sublateral keels of metope joining at its upper margin and hind tibia with 1–2 lateral teeth.

ETYMOLOGY. The generic name is derived from the Latin *exortus* (rising).

EXAMINED SPECIES.

Exortus punctiferus (Walker, 1851)

MATERIAL. ♂ ♀, USA, Fla. [Florida], Andreas Bolter Coll. *Exortus fuscomaculosus* (Doering, 1938)

MATERIAL. 4 ♂♂, USA, Florida, Miami, 7–8.XI.1938 (Zhenzhurist).

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References

- Ball E.D. 1935. Some new Issidae, with notes on others (Homoptera, Fulgoroidea) // Bull. Brook. ent. Soc. Vol.30. No.2. P.37–41.
- Doering K.C. 1938. A contribution to the taxonomy of the subfamily Issinae in America North of Mexico (Fulgoroidea, Homoptera). Pt.2 // Univ. Kans. Sci. Bull. Vol.25. No.20. P.447–575.
- Caldwell J.S. 1945. Notes on Issidae from Mexico (Homoptera, Fulgoroidea) // Ann. Ent. Soc. America. Vol.38. No.1. P.89–120.
- Gnezdilov V.M. 2003a. [Review of the family Issidae (Homoptera, Cicadina) of the European fauna, with notes on the structure of ovipositor in planthoppers] // Chteniya pamyati N.A. Kholodkovskogo [Meetings in memory of N.A. Cholodkovsky], St. Petersburg. Vol.56. Pt.1. P.1–145 [in Russian with English summary].
- Gnezdilov V.M. 2003b. A new tribe of the family Issidae (Homoptera, Cicadina) with comments on the family as a whole // Zoosyst. Ross. Vol.11 (for 2002). No.2. P.305–309.
- Metcalf Z.P. 1958. Fulgoroidea. Issidae. General catalogue of the Homoptera. Fasc.4. Pt.15. Baltimore: Waverly Press. 561 pp.
- O'Brien L. 1988. Taxonomic changes in North American Issidae (Homoptera: Fulgoroidea) // Ann. Ent. Soc. America. Vol.81. No.6. P.865–869.