

# Notes on Planthoppers of the Tribe Hemisphaeriini (Homoptera, Fulgoroidea, Issidae) from Vietnam with a Description of a New Genus and a New Species

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**Abstract**—A new genus and a new species of the tribe Hemisphaeriini Melichar of the family Issidae Spinola are described from Northern Vietnam. Lectotype of *Hemisphaerius interclusus* Noualhier, 1896 is designated. New data on the distribution and ecology of *H. interclusus* and *H. hippocrepis* Constant et Pham, 2011 in Southern Vietnam are provided.

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The tribe Hemisphaeriini Melichar, 1906 is the second largest group in the family Issidae. The representatives of the tribe are distributed mostly in the Oriental Region. Only 3 genera comprising 12 species have been recorded from Vietnam until now (Melichar, 1906; Gnezdilov and Constant, 2012): the genus *Hemisphaerius* Schaum, 1850 with 9 species, the genus *Gergithus* Stål, 1870 with 2 species, and the monotypical genus *Macrodaruma* Fennah, 1978. Only 3 species of the genus *Hemisphaerius* have been recorded from Southern Vietnam (Melichar, 1906; Constant and Pham, 2011). Unfortunately, *Hemisphaerius interclusus* Noualhier, 1896 described from Cambodia (Noualhier, 1896) and recorded later from Saigon (= Ho Chi Minh) by Melichar (1906) is missing from the list of planthoppers of the family Issidae of Vietnam (Gnezdilov and Constant, 2012). My collections from the Cat Tien National Park confirm the presence of this species in Southern Vietnam. Judging by the collection material available, the extremely voluminous Issidae fauna of Vietnam is still incompletely known.

The new genus and the new species described below clearly differ from all the known genera and species of the tribe in a bulged metope. The new genus, similarly to most genera of this tribe, in particular, the genus *Hemisphaerius* (Chan and Yang, 1994; Constant and Pham, 2011), is characterized by an asymmetrical penis.

Data on the ecology of representatives of the tribe Hemisphaeriini are meager. *Hemisphaerius cattiensis* Constant et Pham, 2011 and *H. hippocrepis* Constant et Pham, 2011 both recently described from Southern Vietnam were collected in a forest (Constant and Pham, 2011). According to my observations in the Cat Tien National Park (monsoon tropical semi-deciduous forest), *H. hippocrepis* occurs on plants of the undergrowth under the forest canopy, including the forest roadsides. Another species collected by me, *H. interclusus*, on the contrary, usually occurs on open sunlit areas, in particular, along roads and in the glades, on *Saccharum spontaneum* (L.) (Poaceae).

Judging by the characteristic type of the coloration (green with longitudinal red stripes on the head and fore wings), *H. interclusus* is closely related to *Hemisphaerius coccinelloides* (Burmeister, 1834) described from the Philippines, and to *H. formosus* Melichar, 1913 from Taiwan. The two latter species may be associated with grassy communities similarly to *H. interclusus*. At any rate, *H. coccinelloides* was described from a farm (Hazienda) on Luzon Island (Burmeister, 1834).

The material examined is deposited in the following collections: the Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (ZIN); Museum national d'Histoire naturelle, Paris, France (MNHN); Royal Belgian Institute of Natural Sciences, Brussels, Belgium (RBINS).

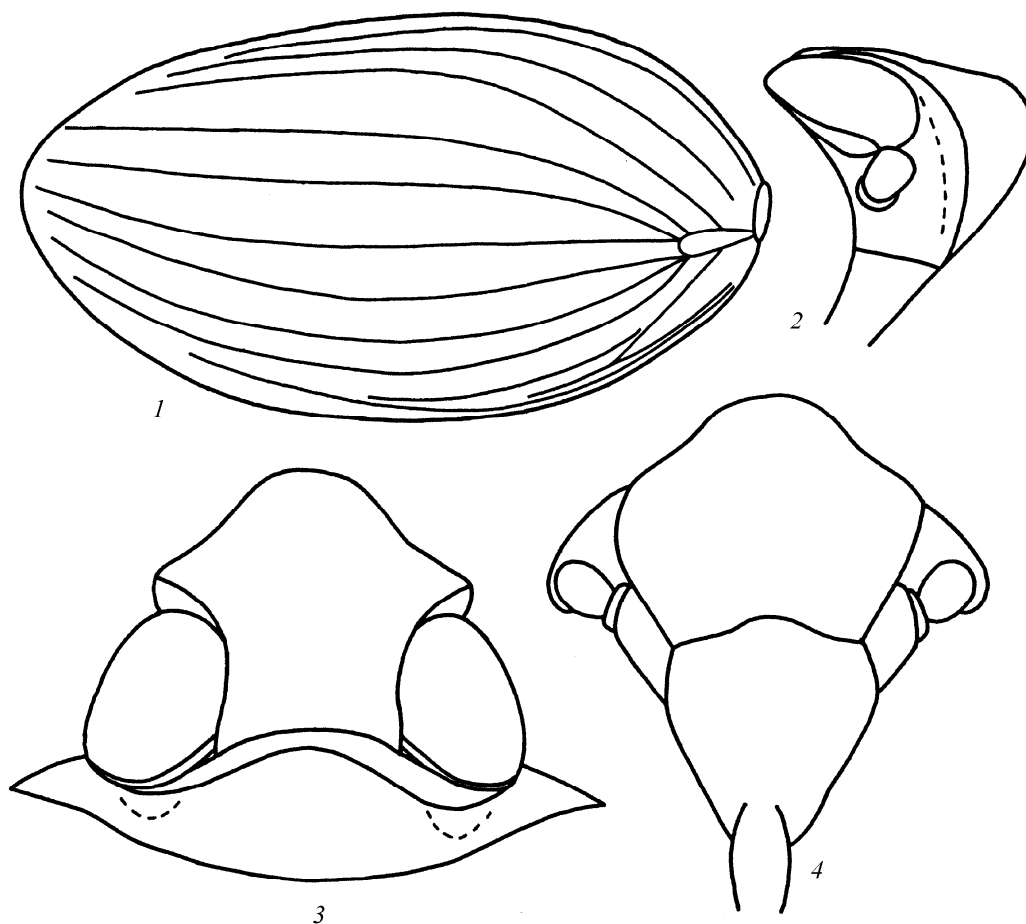


Fig. 1. *Bolbosphaerius belokobylskiji* gen. et sp. n.: (1) fore wing, lateral view; (2) head, lateral view; (3) head and pronotum, dorsal view; (4) head, front view.

FAMILY ISSIDAE SPINOLA

Subfamily ISSINAE Spinola

Tribe **Hemisphaeriini** Melichar

Genus ***Bolbosphaerius*** Gnezdilov, gen. n.

Type species *Bolbosphaerius belokobylskiji* Gnezdilov, sp. n.

**Description.** Metope rather wide, without intermediate carinae, with large bulge at center (Fig. 1, 3, 4). Lateral carinae of metope raised, hanging over eyes as weak peak. Postclypeus large, flattened anteriorly, leveling with lower part of metope (Fig. 1, 2, 4). Metopoclypeal suture slightly convex. Metope and coryphe converging at obtuse angle of about  $180^\circ$  (lateral view) (Fig. 1, 2). Border between metope and coryphe strongly smoothened. Eyes elongate. Ocelli absent. Pedicel slightly widened upward. Coryphe

slightly transverse (about 1.5 times as wide as long along midline), its anterior margin weakly arcuately convex, posterior margin weakly emarginate (Fig. 1, 3). Coryphe with pair of large shallow depressions along midline. Pronotum wide, short, without carinae, with arcuate anterior margin and with weakly convex posterior margin. Paradiscal areas narrow; paranotal lobes wide, without carinae. Mesonotum about 1.5 times as long as pronotum, without carinae; scutellum not separated. Tegulae large, oblong-oval. Fore wing oblong-oval, without hypocostal plate; basal cell narrow and long. Veins: costa isolated,  $Sc + R$  2 ( $R_1$  short),  $M$  3–4,  $CuA$  2,  $CuP$  1,  $Pcu$  1,  $A_1$  1,  $A_2$  1 (Fig. 1, 1). Venation on right and left wings differing in details: branches of mediane arising nearly from one point of basal cell ( $M$  3), or originating as 2 branches forking later ( $M$  4); branches of anterior cubitus ( $CuA$ ) arising from one point of basal cell or having short

common stem forking at some distance from basal cell. Longitudinal veins of fore wing relief, with alveolate microsculpture and weak cross-venation between them in distal part of wing. Hind wing projecting beyond apex of abdomen, with rich cross-venation. Hind tibia with 2 lateral spines in dorsal part and with 6 apical spines. 1st metatarsomere twice as long as 2nd, with 2 latero-apical and 4 intermediate spines in entire row; 2nd metatarsomere only with 2 latero-apical spines.

Male genitalia (Fig. 2). Pygophore with convex posterior margin (Fig. 2, 1). Anal tube wide, widened distally and narrowed again toward apex (dorsal view) (Fig. 2, 2). Apex of anal tube deflexed in form of shallowly emarginate bill (Fig. 2, 3). Anal column short, about 1/4 length of anal tube, narrow. Stylus with emarginate posterior margin, caudo-dorsal angle rounded (Fig. 2, 8). Capitulum of stylus on long neck, wide, bifurcate apically (dorsal view) (Fig. 2, 9); lateral tooth wide, with narrow process in lower part. Neck of stylus with prominence at base of capitulum. Connective large, bucket-shaped (Fig. 2, 7). Penis large, asymmetrical, slightly arcuately curved. Ventral lobe wide, gradually narrowed toward apex, shifted far onto right side (Fig. 2, 4, 6). Left and right dorso-lateral lobes differing in shape: left lobe larger, less sclerotized and pigmented in dorsal part, with large horn-shaped process in dorsal part and with small spiniform process near middle laterally (Fig. 2, 4, 5); right lobe well sclerotized and pigmented, appearing as horn-shaped apical process (Fig. 2, 6). Dorsal side of penis with small spiniform process near middle. Apical processes of aedeagus obtused apically, covered with spines. Aedeagus with 2 ventral hooks bifurcate apically (Fig. 2, 6).

**Etymology.** The generic name is formed by the Greek words “βολβός” (a bulb) and “σφαίρα” (a sphere), by analogy with *Hemisphaerius*, in order to emphasize the main distinctive character of the genus, its convex metope. Gender masculine.

*Bolbosphaerius belokobylskiji* Gnezdilov, sp. n.  
(Figs. 1, 2)

**Material.** Vietnam. Holotype: ♂, “Hoa Binh Province, Mai Chau, Pa Co, 1100 m, 28.IV.2002, S.A. Belokobylskij leg.” (ZIN).

**Description.** Rostrum and clypeus brownish pale yellow. Lower part of metope pale yellow with dark

brown stripe along metopoclypeal suture. Upper part of metope together with its convexity and also coryphe, mesonotum, and fore wing yellowish brown. Radius and median vein of fore wing pale yellow. Genae pale yellow below antennae, black above antennae. Scapus and pedicel dark brown. Paranotal lobes dark brown, nearly black at apices. Pronotum brown to dark brown. Mesepisterna and mesepimera dark brown. Fore and middle coxae pale yellow, hind coxa brown. Fore and middle trochanters pale yellow, hind trochanter yellowish brown. Fore and middle femora pale yellow with dark brown to black longitudinal stripes and apices. Fore femur with brown spot on inner side. Fore and middle tibiae pale yellow with dark brown longitudinal stripes along outer margins. Hind femur and tibia yellowish dark brown, tibia paler apically. Apices of spines black. Abdominal tergites and sternites brown. Styli brown with black posterior margins and caudo-dorsal angles.

For structure of the genitalia, see the description of the genus.

Body length of the male is 4.3 mm.

**Etymology.** The species is named after a well-known Russian hymenopterologist, Sergei A. Belokobylskij, who collected it.

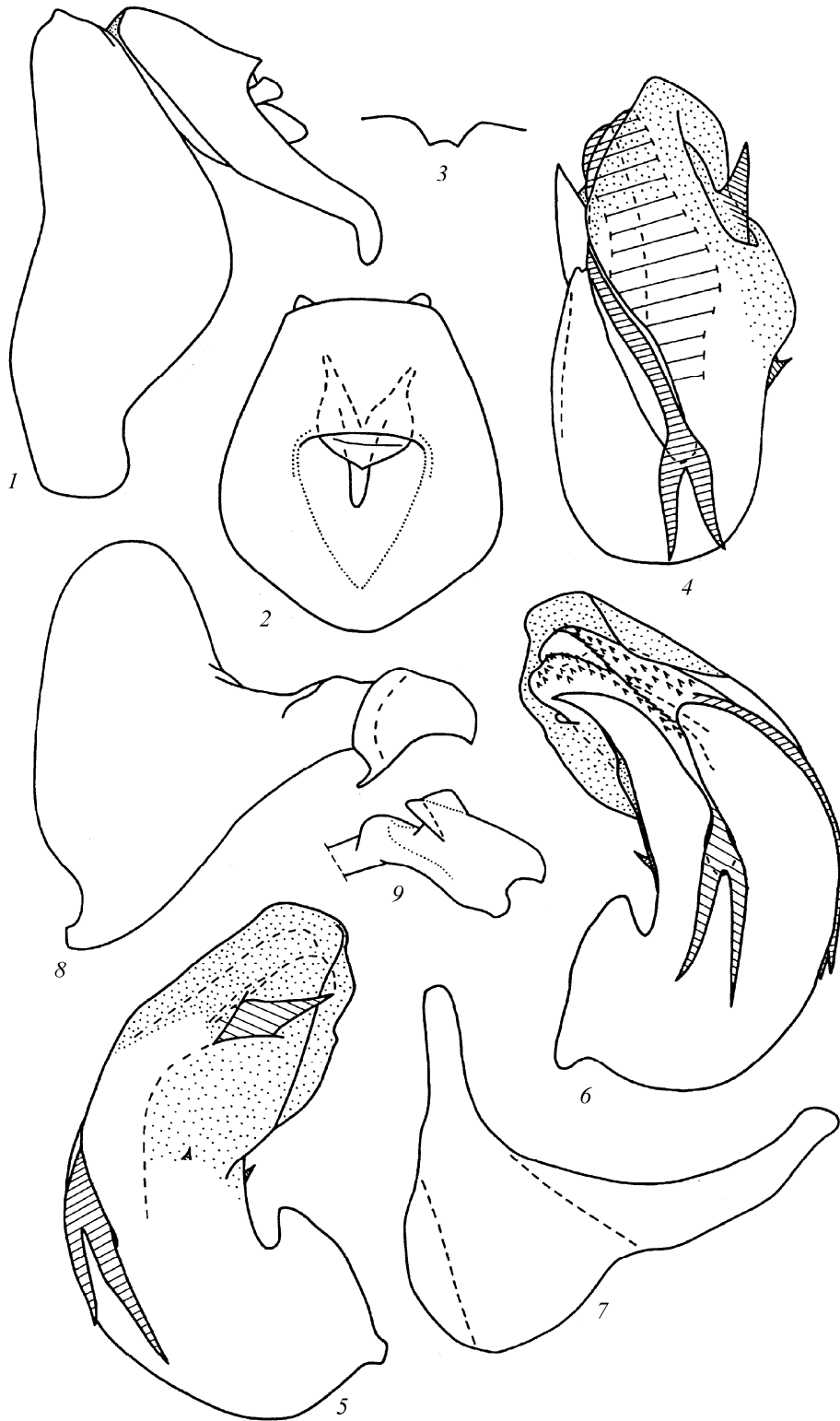
Genus *Hemisphaerius* Schaum, 1850

*Hemisphaerius interclusus* Noualhier, 1896

*Hemisphaerius interclusus* Noualhier, 1896 : 256;  
Melichar, 1906 : 93.

**Material.** Cambodia: Lectotype: ♂, “A. Pavie 1886” (MNHN). Paralectotype: ♀, “A. Pavie 1886” (MNHN). Vietnam: 2 ♂, 2 ♀, 1 larva, “Dong Nai Province, Cat Tien National Park, 11°25'N, 107°25'E, 13.XI.2012, V.M. Gnezdilov leg.” (ZIN); 2 ♂, 1 ♀, 1 larva, same locality, 18.XI.2012, V.M. Gnezdilov leg. (ZIN); 2 ♂, same locality, 23.XI.2012, V.M. Gnezdilov leg. (ZIN); 1 ♀, same locality, 24.XI.2012, V.M. Gnezdilov leg. (ZIN); 1 ♀, “Saigon, 20.XII.1923, R. Vitalis de Salvaza leg.” (RBINS).

Noualhier (1896) in the description of the species did not indicate the type specimens. In this connection, I designate here lectotype (male) from the series of syntypes in the collection of Museum national d'Histoire naturelle, Paris, according to Article 74 of the International Code of Zoological Nomenclature (ICZN, 1999).



**Fig. 2.** *Bolbosphaerius belokobylskiji* gen. et sp. n., male genitalia: (1) pygophore and anal tube, lateral view; (2) anal tube, dorsal view; (3) apex of anal tube, front view; (4) penis, ventral view; (5) penis, left view; (6) penis, right view; (7) connective; (8) stylus, lateral view; (9) capitulum of stylus, dorsal view.

***Hemisphaerius hippocrepis*** Constant et Pham, 2011

*Hemisphaerius hippocrepis* Constant and Pham, 2011 : 112.

**Material.** Vietnam: Dong Nai Province, Cat Tien National Park: 1 ♂, 11°25'N, 107°25'E, 11.XI.2012; 2 ♀, same locality, 22–25.XI.2012; 1 ♀, 11°27'N, 107°21'E, 20.XI.2012, all leg. V.M. Gnezdilov (ZIN).

The species was described from a single male from Ma Da, Dong Nai Culture and Nature Reserve in Southern Vietnam (Constant and Pham, 2011).

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## REFERENCES

1. Burmeister, H.C.C., “Rhyngota seu Hemiptera,” in *F.J.F. Meyenii Observationes Zoologicae, in itinere circum terram institutas. Novorum Actorum Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum* (1834), vol. 16, pp. 285–306.
2. Chan, M.L. and Yang, Ch.T., *Issidae of Taiwan (Homoptera: Fulgoroidea)* (Taichung, ROC, Taiwan, 1994).
3. Constant, J. and Pham, H.T., “Two New Species of *Hemisphaerius* from Vietnam (Hemiptera, Fulgoromorpha, Issidae),” *Nouv. Revue Entomol. (N. S.)* **27** (2), 109–115 (2011).
4. Gnezdilov, V.M. and Constant, J., “A Review of the Family Issidae (Hemiptera: Fulgoromorpha) in Vietnam with Description of a New Species,” *Ann. Zool. (Warszawa)* **62** (4), 571–576 (2012).
5. Melichar, L., “Monographie der Issiden (Homoptera),” *Abhandlungen der K. K. Zoologisch-botanischen Gesellschaft in Wien. Ser. 4* **3**, 1–327 (1906).
6. Noualhier, M., “Note sur les Hémiptères récoltés en Indo-Chine et offerts au Muséum par M. Pavie,” *Bull. Mus. Hist. Nat.* **2**, 251–259 (1896).
7. *The International Code of Zoological Nomenclature*, 4th edition (The International Trust for Zoological Nomenclature c/o the Natural History Museum, London, 1999).