Duroides Melichar, 1906 – first New World genus of the tribe Parahiraciini (Hemiptera: Issidae)

V.M. Gnezdilov

Zoological Institute, Russian Academy of Sciences, Universitetskaya Emb. 1, 199034 Saint Petersburg, Russia; e-mails: vgnezdilov@zin.ru, vmgnezdilov@mail.ru

ABSTRACT

Duroides globosus Melichar, 1906, type species of the genus Duroides Melichar, 1906, known after a single female from Brazil, is redescribed and placed in the tribe Parahiraciini Cheng et Yang, 1991 according to well developed bilobed hind wings, with deep cubital cleft. This is the first record of the tribe Parahiraciini from the New World treated before mostly as Oriental endemic.

Key words: Issidae, Issinae, morphology, Neotropics, systematics

INTRODUCTION

The genus Duroides Melichar, 1906 was erected in the family Issidae for three species known from Brazil and Chile (Melichar 1906) – Duroides globosus Melichar, 1906 (type species), D. costatus Melichar, 1906, and D. planifrons (Spinola, 1852). The last species later was transferred to the family Dictyopharidae as the type species of the genus Myrophenges Fennah, 1965 (Fennah 1965) which was finally placed in the family Achilidae (Emeljanov 1993). Despite that Melichar (1906) in the key to species of the genus Duroides, separated the type species of the genus, D. globosus, by its foliately flattened fore legs (in fact femora and tibiae), D. costatus, which does not show this character according to Melichar (1906: 241), apparently congeneric as the photos of the holotype of this species, deposited in the Hungarian Natural History Museum (Budapest, Hungary), examined by me, demonstrate the same structure of the head (metope and coryphe) and forewing vena­tion, with peculiar lobe-shaped caudo-dorsal angle of clavus. Probably different structure of fore legs
in *D. globosus* and *D. costatus* (fore legs not visible on the photos) is due to sexual dimorphism as these species were described after female and male accordingly.

Hitherto the genus *Duroides* Melichar was listed in the tribe Issini Spinola, 1839 (Metcalf 1958; Gnezdilov 2013) or in the tribe Thioniini Melichar, 1906 (Bourgoin 2019) of the family Issidae, however, my examination of the holotype of *D. globosus* Melichar, deposited in the Naturhistorisches Museum of Wien (Austria), showed that this species has well-developed bilobed hind wings, with a deep cubital cleft which is a character of the tribe Parahiraciini Cheng et Yang, 1991 (Gnezdilov and Wilson 2007; Gnezdilov 2017a). This tribe, erected for a single genus (Cheng and Yang 1991) and currently comprising 24 genera with around 80 species (Gnezdilov 2013, 2015, 2017a; Bourgoin 2019) was never recorded before from New World, but was treated as limited in its distribution by the Oriental and Eastern Palaeacric Regions (Gnezdilov 2013, 2016). Below *Duroides globosus* Melichar is redescribed and its characters are compared with other Parahiraciini.

**MATERIAL AND METHODS**

The photographs of the specimen were taken using the microscope Leica MZ9.5 and a Leica DFC 490 camera. Images were produced using Helicon Focus V. 6.7.1 and Adobe Photoshop software. The drawings were produced using the same microscope with camera lucida attached.

Morphological terminology follows Anufriev and Emeljanov (1988) and Gnezdilov (2003) and taxonomy of the family Issidae follows Gnezdilov (2013, 2017b). Label information is quoted, with “/” indicating new line and “//” indicating next label.

**SYSTEMATICS**

**Family Issidae Spinola, 1839**

**Subfamily Issinae Spinola, 1839**

**Tribe Parahiraciini Cheng et Yang, 1991**

**Genus *Duroides* Melichar, 1906**


**Type species:** *Duroides globosus* Melichar, 1906, by subsequent designation (Metcalf 1958).

**Duroides globosus** Melichar, 1906 (Figs 1–13)

*Duroides globosus* Melichar 1906: 242, fig. 59.

**Type material examined.** Holotype, female, Brazil: “Helmr. / Brasil. [printed]” // “globosus M. [handwritten in ink] / det. Melichar. [printed]” // “Duroides. [handwritten in ink]”.

**Supplementary description.** Metope wide and long, nearly parallel-sided, weakly convex, densely covered with pustules, with very weak median carina running from its upper margin to its middle and with traces of sublateral carinae; upper margin concave (Figs 3, 11). Postclypeus slightly flattened frontally, without carinae. Metopoclypeal suture distinct, obtusely angulate. Pedicel sphaeric. Ocelli rudimentary. Coryphe transverse, nearly twice as wide as long; anterior margin almost straight; posterior margin concave, with median groove; lateral margins keel-shaped (Fig. 1). Coryphe and metope joint at obtuse angle (in lateral view) (Fig. 2). Rostrum short, nearly reaching hind coxae, with almost equal in length 2nd and 3rd segments, last one narrowing apically (Fig. 10). Pronotum slightly longer than coryphe at midline, without carinae; anterior margin convex; posterior margin weakly concave medially. Paradiscal fields of pronotum wide. Paranotal lobes wide, enlarged downwards, densely covered with pustules (Fig. 12). Mesonotum slightly longer than pronotum, with median groove and tiny lateral carinae. Tegulae large. Fore wings just covering ab-
New World Parahiraciini

small and narrow. Forewing vein sequence: \( R_2 \), furcating almost at basal cell; \( M_2 \), furcating in apical fourth of the wing; \( CuA_2 \), furcating in basal third of the wing; few transverse veins (Fig. 8). Clavus 0.5 as long as whole wing, its caudo-dorsal angle cuspidal, distinctly lobe-shaped (Figs 5, 8, 9, cp). \( Pcu \) joint \( A_1 \), after middle of clavus, \( Pcu \) weakened apically. \( Pcu + A_1 \) not running to the apex of caudo-dorsal angle of clavus (Fig. 9). Hind wings well developed, bilobed, as long as fore wings, with nearly equally wide remigium and vannus and deep cubital cleft (Fig. 6). Fore and middle femora and fore tibiae foliately flattened (Figs 12, 13). Hind tibia with two lateral spines in its apical half and with 7 apical spines. Claws protruding beyond hind margin of arolium (in dorsal view). First metatarsomere slightly longer than second one, both with two latero-apical spines. Intermediate spines of first metatarsomere not visible due to contamination.

**Coloration.** Metope and paranotal lobes brown reddish, with yellow pustules (Fig. 3). Postclypeus dark brown reddish except its light yellow basal part below metopoclypeal suture. Coryphe and anteclypeus dark brown reddish (Figs 1, 3). Genae light yellow, each with red brownish oblique stripe (Fig. 2).
Each preocular field with elongate brown spot. Scapus light yellow. Pedicel brown. Rostrum with its second segment brown reddish dorsally and light yellow ventrally and its third segment light yellow, with brown reddish apex (Fig. 3). Pro- and mesonotum light yellow (Fig. 1). Fore wings brown, with light yellow areas and spots (Figs 1, 2). Hind wings and claws dark brown (Fig. 6). Fore and middle coxae dark brown to black. Hind coxae light yellow. Fore and middle femora brown reddish, with light yellow apices (Fig. 3). Fore and middle tibiae brown reddish, with light yellow lateral parts (Fig. 3). Hind femora and tibiae red brown yellowish. Hind tarsi light yellow. Apices of leg spines dark brown to black. Abdominal sternites brown yellowish. Hind femora and tibiae brown reddish, with light yellow apices (Fig. 3). Hind wings and claws dark brown to black. Hind coxae light yellow. Fore and middle coxae brown yellowish. Hind tarsi light yellow. Apices of leg spines dark brown to black. Abdominal sternites brown, with light yellow lateral parts (Fig. 7). Gonoplacs dark brown, each with large light yellow spot basally. Anal tube light yellow.

**Female genitalia.** Sternite VII with widely concave hind margin (Fig. 7). Anal tube nearly twice as long as wide basally, narrowing apically (Fig. 7). Anal column short. Gonoplas convex, rounded.

**Total length.** 5.0 mm.

**DISCUSSION**

The genus *Duroides* Melichar in the tribe Parahiraciini extremely extends the global distribution of this group – from the Oriental Region and Eastern Palaeartics to the Neotropics. Apparently in the Eocene the tribe Parahiraciini was widely distributed in the Palaeartics as confirmed by the fossil *Bolbossus bervoetsi* (Gnezdilov et Bourgoin, 2016) described from the Baltic Amber of Kaliningrad Province in Russia (Bervoets 1910; Gnezdilov and Bourgoin 2016) and started to disperse from the Oriental Region to America via the Beringian isthmus (Gnezdilov 2016) which is marked by the presence of *Rhombissus harimensis* (Matsumura, 1913) in the recent fauna of Japan (Gnezdilov and Hayashi 2016). A profound knowledge of the neotropical issid fauna, based on intensified collections in previously undersampled areas, is crucial to our understanding the evolution and biogeographical history of the Issidae.

**ACKNOWLEDGEMENTS**

I am glad to thank Dr. Herbert Zettel (Wien, Austria) for his kind permission to study the holotype of *Duroides globosus* Melichar, Dr. Péter Kóbor (Budapest, Hungary) for sending the photos of the holotype of *D. costatus* Melichar, Dr. Iliya Kabak (Pushkin, Russia) for hand-carrying the type specimen to St. Petersburg, and Prof. Dr. Hanna lore Hoch (Berlin, Germany) for critical reading of the manuscript and valuable comments. My study was funded by the Russian Foundation for Basic Research (grant No. 18-04-00065).

**REFERENCES**


Emeljanov A.F. 1993. Description of tribes of the subfamily Achilinae (Homoptera, Achilidae) and revision of their composition. Entomologichesko Obozrenie,
New World Parahiraciini


Gnezdilov V.M. 2016. Planthoppers of the family Issidae (Hemiptera, Fulgoroidea) of Western Palaearctic. Thesis of Doctoral Dissertation (Dr. Sci. habilitation), St.-Petersburg, 1–44 [In Russian].


Submitted October 19, 2019; accepted November 20, 2019.