First record of the genus *Issopulex* (Hemiptera: Fulgoroidea: Caliscelidae) from Madagascar

Первое указание рода *Issopulex* (Hemiptera: Fulgoroidea: Caliscelidae) с Мадагаскара

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Issopulex gloriosus China et Fennah, 1960 (Fulgoroidea: Caliscelidae) is recorded for the first time from Madagascar (Toliara Province). Habitus photos of the species are provided.

Issopulex gloriosus China et Fennah, 1960 (Fulgoroidea: Caliscelidae) впервые указан из провинции Толиара на Мадагаскаре. Даны фотографии этого вида.

Key words: Afrotropical Realm, Toliara Province, Glorioso Islands, faunogenesis, Auchenorrhyncha, Fulgoroidea, Caliscelini, *Calampocus*, *Issopulex*, *Savanopulex*, new record

Ключевые слова: Афротропическое царство, провинция Толиара, Острова Глорьёз, фауногенез, Auchenorrhyncha, Fulgoroidea, Caliscelini, *Calampocus*, *Issopulex*, *Savanopulex*, новое указание

INTRODUCTION

The monotypic genus *Issopulex* China et Fennah, 1960 (type species: *Issopulex gloriosus* China et Fennah, 1960) was described from the Glorioso Islands in the Mozambique Channel situated around 160 km to North-West of Madagascar (China & Fennah, 1960). Below this genus and species are recorded for the first time from Madagascar (Toliara Province).

The knowledge of Madagascan Caliscelidae still is in its infancy. The family was recorded for the first time from the island just six years ago (Gnezdilov & Bourgoin, 2009). Two years later two more genera and species were added (Gnezdilov, 2011a, 2011b). Including the new record below, the Madagascan fauna of the family Caliscelidae comprises nine species in eight genera belonging to the tribes Augilini Baker, 1915 known also from Indo-Malayan Realm, and the tribe Caliscelini Amyot et Serville, 1839 natively widely distributed in Old World (Gnezdilov, 2013a). The first tribe is represented by two monotypic genera and the second tribe by seven species in six genera. All the genera are endemic to Madagascar except *Afronaso* Jacobi, 1910 (Caliscelini) which has two more species in continental Africa and *Issopulex*, recorded here.

MATERIAL AND METHODS

The terminology of the head and pronotum follows Anufriev & Emeljanov (1988) and spinulation of the first metatarsomere and the male genitalia – Gnezdilov et al. (2014).

The specimens examined are from the collections of the Museum national d'Histoire naturelle, Paris, France (MNHN) and the Natural History Museum, London, United Kingdom (BMNH).

The photos were taken by Nikon SMZ 1500 with a Nikon digital sight DS-U1, view command on the computer with ACT-2U and then assembled with Combine Z5 and Adobe Photoshop CS3 Extended 10.0.

RESULTS

Family **CALISCELIDAE**

Subfamily **CALISCELINAE**

Tribe **CALISCELINI**

Genus ***Issopulex*** China et Fennah, 1960

Type species: *Issopulex gloriosus* China et Fennah, 1960 (by original designation).

Remarks. The globular body shape of *Issopulex* China et Fennah is very similar to *Savanopulex* Dlabola, 1987, known from two species from the Republic of the Congo, Nigeria, and Sudan, and the monotypic *Calampocus* Gnezdilov et Bourgoin, 2009 – from Madagascar (Fianarantsoa Province). However these two genera are very distinctive in the structure of the penis (see differences summarised in the key by Gnezdilov & Bourgoin, 2009). Additionally, *Savanopulex* is characterised by the indistinct (weak) sublateral carinae on the metope (Gnezdilov & Bourgoin, 2009, fig. 25) and *Calampocus* – by the presence of a single intermediate spine on the first metatarsomere. In contrast *Issopulex gloriosus* has no traces of sublateral carinae on the metope and no intermediate spine on the first metatarsomere and also it is characterised by a peculiar shagreen surface of the metope, coryphe, pro-, and mesonotum (Figs 1, 3, 5, 7).

Issopulex gloriosus China et Fennah, 1960 (Figs 1–7)

Type material examined (MNHN). *Holotype*, male (dissected), "I. Glorieuses, 16–17.IX.58, R. Paulian" (printed), "Institut scientifique Madagascar" (printed), "Museum Paris, MNHN(EH) 16567" (printed), "Type" (printed, white circle with red frame), "Type Issopulex gloriosus China & Fennah (handwritten in ink) Det. R.G. Fennah (printed)".

Paratypes. 1 male, "I. Glorieuses, 16–17. IX.58, R. Paulian" (printed), "Institut scientifique Madagascar" (printed), "Museum Paris, MNHN(EH) 18757"; 1 female (with no fore wings), "I. Glorieuses, 16–17.IX.58, R. Paulian" (printed), "Institut scientifique Madagascar" (printed), "Museum Paris, MNHN(EH) 18758" (printed).

New record (BMNH). **Madagascar**, *Toliara Prov.*: "Bereboka 60 km", 18–23 May 1983, "B.M. 1983-201" (coll. N.E. Morondava, J.S. Noyes and M.C. Day), 2 females.

DISCUSSION

Tropical Caliscelidae are very rare in natural history collections with almost all described species known only from their type specimens. The presence of this group on small oceanic islands opens the question of how the family dispersed and particularly the relationships between the faunas of Madagascar and Continental Africa. An example of such group is *Issopulex gloriosus* distributed on Glorieuses, the madreporic archipelago (7 km²) consisting of two islands connected by a sand bank submerged at high tide, and several small rocky islets; an old coconut plantation occupies 15.000 ha on Grande Glorieuse, and the vegetation on the smaller Île du Lys consists of evergreen bushlands and thickets covering 30% of the islet (Kohler, 2013). *Issopulex*, as well as *Afronaso*, are both flightless and could apparently only be distributed across the ocean on "islands of plants", but not by wind. Distribution by land bridges between Madagascar and Africa is excluded as the two were separated in Middle Jura (~160 millions years ago: Rabinowitz et al., 1983) apparently long before the Caliscelidae originated; according to molecular data it is recent group of higher Fulgoroidea (Urban & Cryan, 2007). Interestingly, other family, Issidae Spinola, from the issidoid group of families to which Caliscelidae belongs, also with flightless forms, is totally absent on Madagascar (Gnezdilov, 2013b, 2013c).

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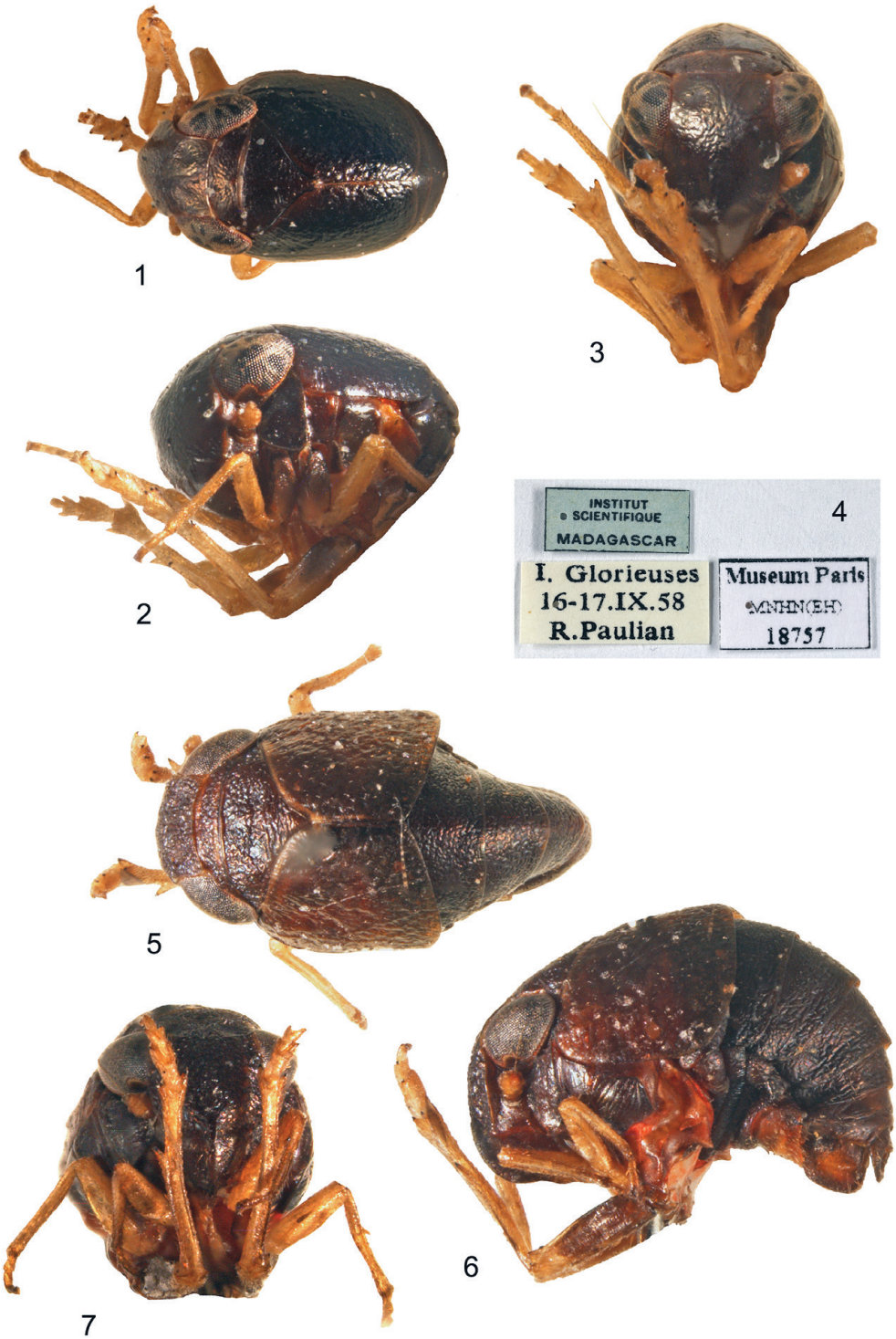
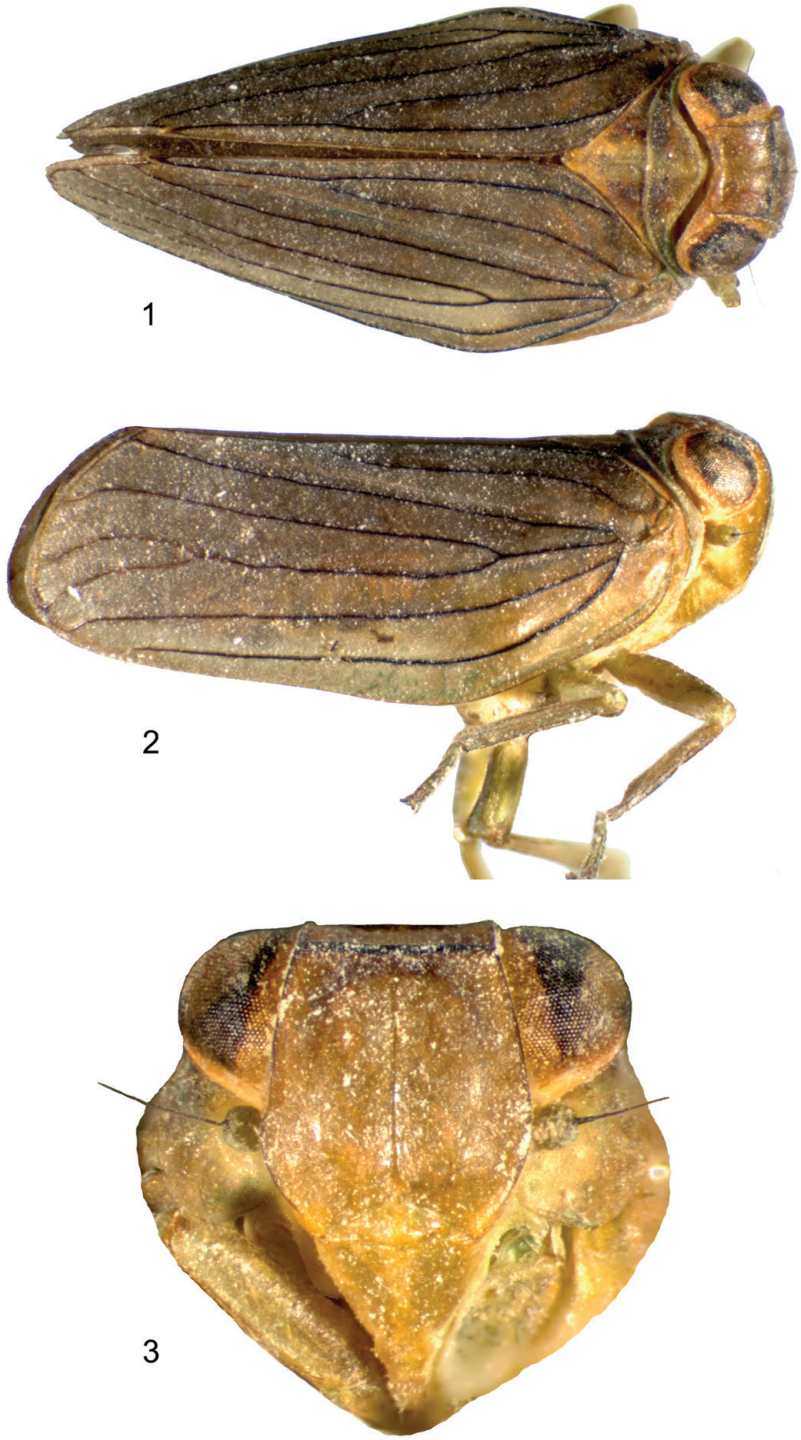


Figs 1–7. *Issopulex gloriosus* China et Fennah. **1–4**, male paratype, Glorieuses Islands (total length of specimen is 1.7 mm); **5–7**, female, Madagascar (total length of specimen is 2.1 mm); **1**, **5**, dorsal view; **2**, **6**, lateral view; **3**, **7**, frontal view; **4**, labels.



Figs 1–3. *Thionia simplex* (Germar, 1830), male, Italy. **1**, dorsal view; **2**, lateral view; **3**, frontal view. Total length of specimen is 5.2 mm.