

## A new species of *Gallobelgicus* DISTANT, 1906 from Taiwan (Insecta: Heteroptera: Reduviidae: Saicinae)

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### Abstract

*Gallobelgicus heissi* sp.n. (Heteroptera: Reduviidae: Saicinae) is described based on micropterous males and females from Taiwan. Species groups within *Gallobelgicus* are discussed, the species related to *G. heissi* sp.n. are keyed.

**Key words:** Heteroptera, Reduviidae, Saicinae, *Gallobelgicus*, new species, Taiwan.

### Zusammenfassung

*Gallobelgicus heissi* sp.n. (Heteroptera: Reduviidae: Saicinae) wird basierend auf mikropteren Männchen und Weibchen aus Taiwan beschrieben. Artengruppen innerhalb von *Gallobelgicus* werden diskutiert. Ein Bestimmungsschlüssel für die mit *G. heissi* sp.n. verwandten Arten wird präsentiert.

### Introduction

The saicine assassin bug genus *Gallobelgicus* was described by DISTANT (1906), and was placed erroneously into the subfamily Harpactorinae in the original description and in the subsequent redescription by the same author (DISTANT 1911). BERGROTH (1913) transferred the genus to Saicinae, and described an additional species from the Philippines. MILLER (1957) redefined, redescribed, revised and keyed the genus together with establishing two new closely related genera, providing descriptions of two new species of *Gallobelgicus*, recognizing altogether only three species in the genus (apparently overlooking BERGROTH's paper). A further species was added by ISHIKAWA (2003), with a diagnosis of the genus. The genus currently contains five species, namely *G. monticolus* MILLER, 1957 (India), *G. nigrovittatus* ISHIKAWA, 2003 (Thailand), *G. saevus* BERGROTH, 1913 (the Philippines, subsequently reported from Hawaii probably based on introduced or misidentified specimens), *G. siamensis* MILLER, 1957 (Thailand), and *G. typicus* DISTANT, 1906 (Sri Lanka, subsequently reported from P.R. China).

Among unidentified reduviids from Taiwan, kindly provided for us by Dr. Ernst Heiss (Innsbruck), males and females representing an undescribed micropterous species of *Gallobelgicus* were found. The species is described as new in the present paper.

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## Material and methods

External structures were examined using a stereoscopic microscope (Opton 47 50 52 – 9901). Drawings were made using a camera lucida. Measurements were taken using a micrometer eyepiece. Male genitalia were examined after short boiling in 10% KOH solution.

## Taxonomy

### Genus *Gallobelgicus* DISTANT, 1906

*Gallobelgicus* DISTANT, 1906: 370. Type species by original designation: *Gallobelgicus typicus* DISTANT, 1906.

DISTANT 1911: 216 (redescription); BERGROTH 1913: 233 (redescription, subfamily placement); MILLER 1957: 247 (redescription, key to species); ISHIKAWA 2003: 45 (diagnosis).

**Distribution.** Species of *Gallobelgicus* were reported to occur in South (India and Sri Lanka) and Southeast Asia (P.R. China, Thailand), and the Pacific (the Philippines, Hawaii); the genus is new to Taiwan.

### *Gallobelgicus heissi* sp.n. (Figs. 1–15)

**Type material. Holotype** (♂): "TAIWAN, 1400 m. \ Fenchiu, 25.v.1977 \ J. u. S. Klapperich lgt." [printed] (specimen mounted on card), deposited in the Hungarian Natural History Museum, Budapest. — **Paratypes:** same locality label as the holotype (1 ♂, male genitalia dissected, phallus preserved in plastic microvial with glycerine, pinned with the specimen; deposited in coll. E. Heiss, Innsbruck); "TAIWAN, 1400m. \ 9.iv.1977 \ FENCHIHU \ J. u. S. Klapperich lgt." [printed] (1 ♀, deposited in coll. E. Heiss, Innsbruck); "TAIWAN, 2400m. \ 14.iv.1977 \ ALISHAN \ J. u. S. Klapperich lgt." [printed] (1 ♀, deposited in the National Museum of Natural Science, Taichung).

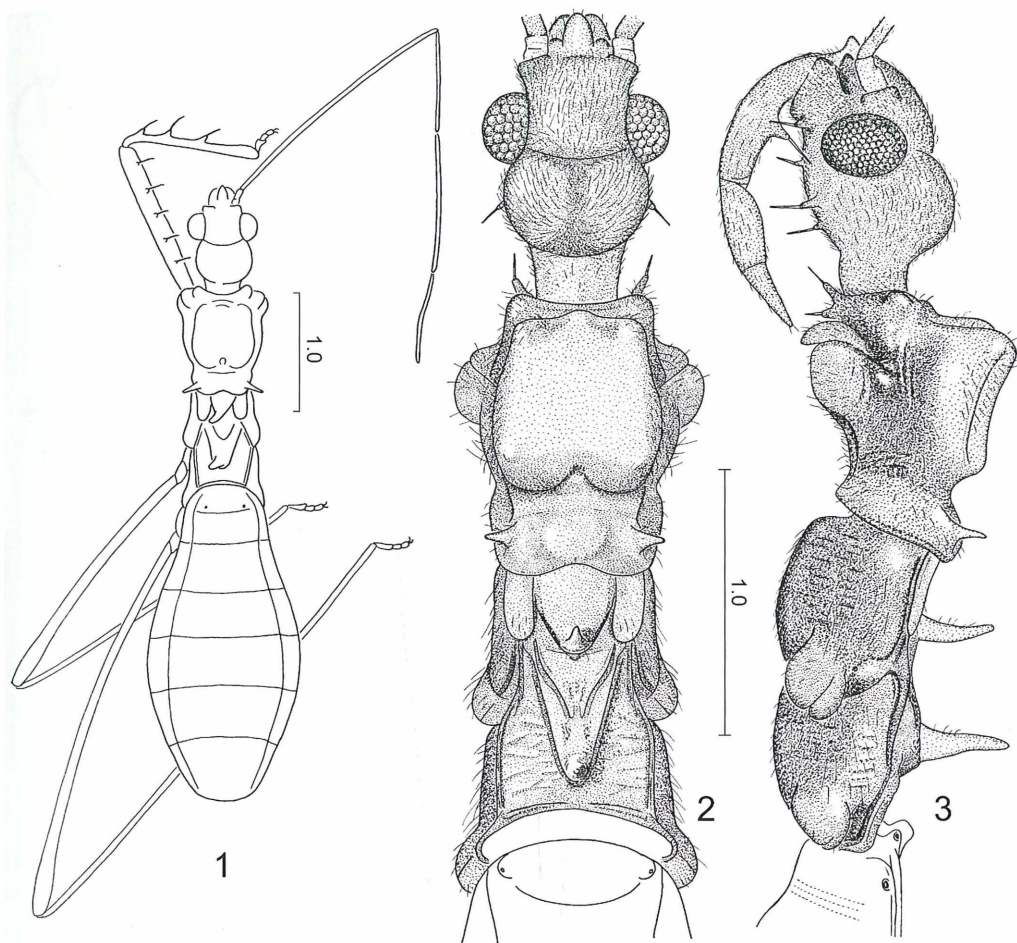
**Type locality.** Taiwan: Chiayi County, Fenchiu ( 奮起湖 ).

**Diagnosis.** Readily distinguished from all other known congeners by the combination of the following characters: micropterous; anterodorsal series of fore femur consisting of 7 spiniferous processes, ventral series consisting of approximately 30 very small spines between large spiniferous processes; fore tibia with 3 spiniferous processes; legs with long, semierect and erect pilosity; phallus as in Figs. 14–15.

### Description. Micropterous male.

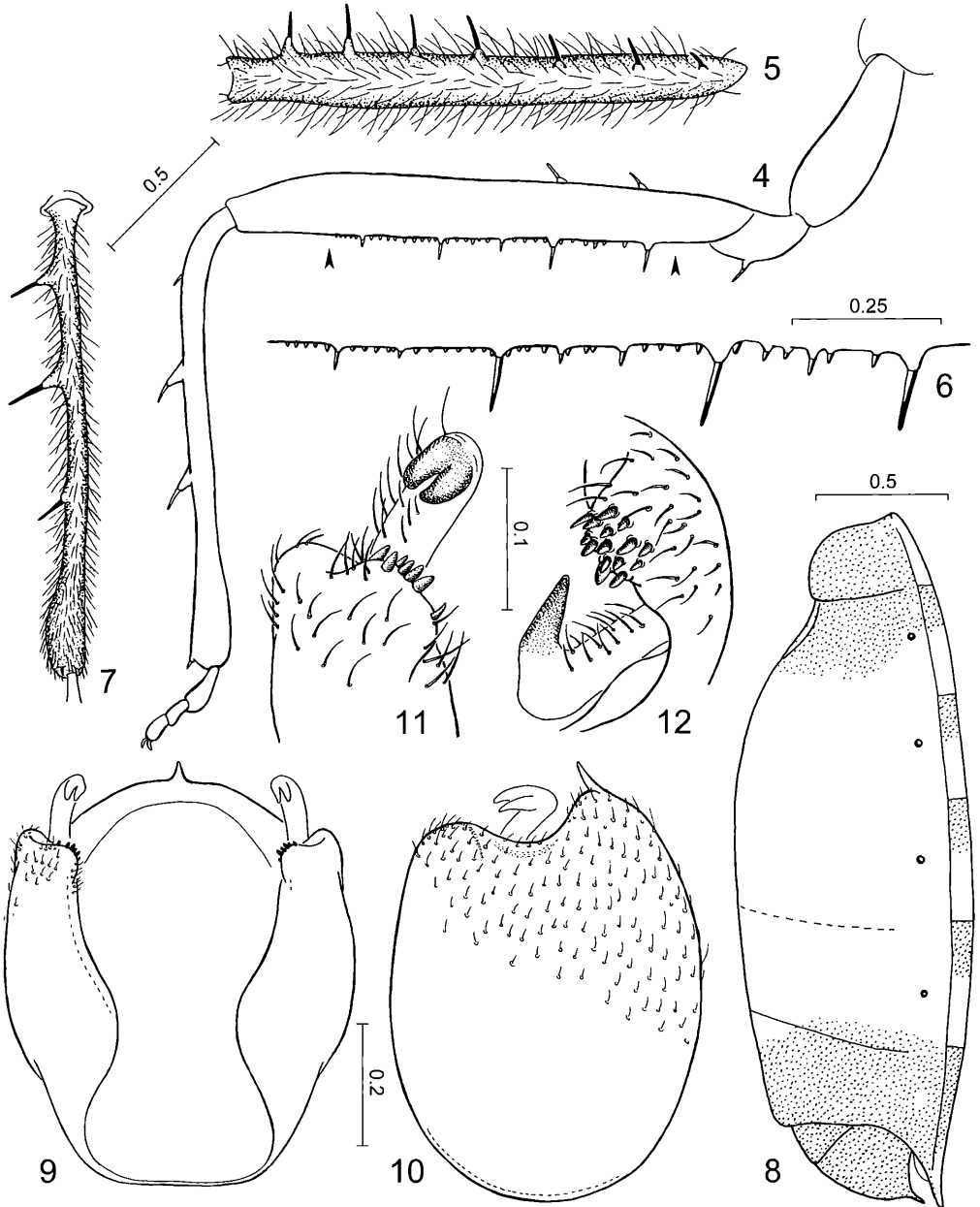
**Colour.** Body colour light brown; head, lateral side of pronotum, most parts of meso- and metathorax, abdominal mediotergites II and VII, basal 1/3–2/3 of laterotergites III–VII, sternite II, sternite III basally, sternite VI apically, most part of sternite VII, abdominal segment VIII and pygophore dark brown; labium brown, visible segments I and II gradually lightened towards apex; antennal segment I light brown with dark brown subapical annulus, segments II–IV dark brown; coxa, trochanter, and femur of fore leg light brown, tibia and tarsus yellowish; mid and hind legs yellowish brown; all femora with faint dark brown subapical annulus.

**Structure.** Body elongate, abdomen elliptical (Fig. 1). **Body surface and pilosity.** Inte-

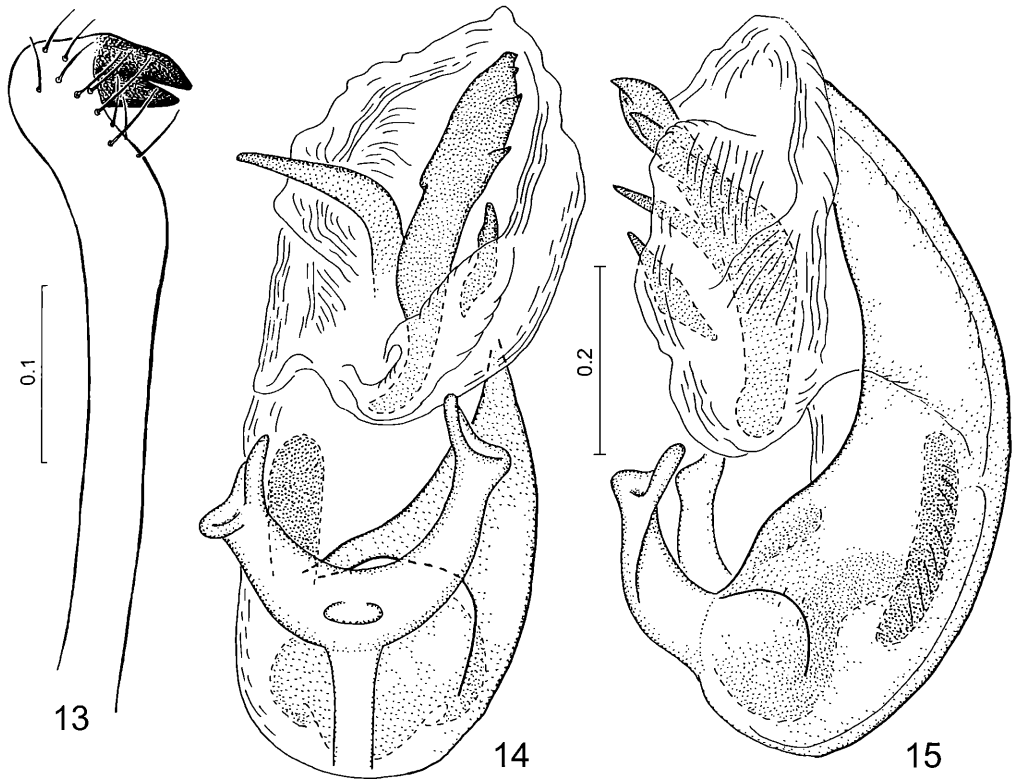


Figs. 1–3: *Gallobelgicus heissi* sp.n., male; (1) habitus, (2) head and thorax, dorsal view, (3) same, lateral view. Scales in mm.

gument subshining to shining; generally smooth, with rough transverse wrinkles on thorax laterally and on metanotum, and with fine transverse wrinkles on base of abdominal dorsum; densely covered with short, semierect hairs, with scattered long, semierect to erect hairs on lateral side of pronotum and on pterothoracic pleuron (Figs. 2, 3); antenna with fine and short, adpressed to semierect hairs; fore legs densely covered with long, semierect to erect hairs (Figs. 5, 7); femora of mid and hind legs with fine, erect hairs about as long as diameter of respective segments; tibiae of mid and hind legs with adpressed pilosity. **Head** (Figs. 2, 3) elliptical, about 1.4 times as long (excluding clypeal process) as wide, 1.9–2.0 times as wide across eyes as interocular distance, armed with four pairs of spiniferous processes ventrolaterally; anteoculus about 0.7 times as long as postoculus; postoculus globose, with a shallow longitudinal depression along meson; clypeus produced into a short, conical, blunt process; eyes semiglobular, not reaching dorsal and ventral outlines of head in lateral aspect. Labium stout, attaining fore



Figs. 4–12: *Gallobelgicus heissi* sp.n., male; (4) left fore leg, (5) left fore femur, dorsal view, (6) ventral armature of left fore femur (section between arrows in Fig. 4), (7) left fore tibia, dorsal view, (8) abdomen, lateral view, (9) pygophore, dorsal view, (10) same, lateral view, (11) paramere and margin of pygophore, dorsal view, (12) same, posterior view. Scales in mm.



Figs. 13–15: *Gallobelgicus heissi* sp.n., male; (13) right paramere, (14) phallus, dorsal view; (15) same, lateral view. Scales in mm.

coxae; visible segment I reaching posterior margin of eye, armed with a pair of spiniferous processes dorsolaterally; visible segment II reaching base of head. Antenna long and gracile, segment I 2.3–2.4 times as long as segment II. **Thorax** (Figs. 2, 3). Pronotum 1.75–1.8 times as long as humeral width (excluding humeral processes); anterior margin slightly concave; anterior lobe distinctly longer and wider than posterior lobe, posterior margin of dorsal elevation deeply sinuate; posterior lobe reduced, transverse, posterior margin distinctly sinuate; humeral spines short. Anterolateral angles of prosternum each with 2 spiniferous processes. Mesonotum very short; mesoscutellum triangular with a stout, erect spine. Metanotum with a deep triangular impression anteriorly, and with a narrow V-shaped elevation (metascutellum) separated from lateral, slightly impressed and finely wrinkled parts of metanotum by a distinct ridge; metanotal (metascutellar) spine stout, only slightly longer than mesoscutellar spine. Pterothoracic pleuron separated from pterothoracic dorsum by distinct ridges, with fine transverse wrinkles. **Fore wings** (Figs. 2, 3) strongly reduced, tongue-shaped, not reaching apex of mesoscutellum, wing elements indistinguishable. **Legs**. Fore leg (Fig. 4) robust; femur about 10 times as long as its greatest width, about 2.9 times as long as coxa, about 1.2 times as long as tibia, anterodorsal series composed of 7 spiniferous processes (Fig. 5),

ventral series (Fig. 6) composed of 3 long and about 8 short spiniferous processes intermixed with about 30 very small spines; tibia (Fig. 7) with 3 long spiniferous processes and a small apical spine; tarsus short, length of segment I subequal to segments II and III combined. Mid and hind legs elongate. **Abdomen** (Fig. 8) elongate oval, about 2.15 times as long as wide; dorsum nearly flat; venter strongly convex; sternite III with a narrow but distinct longitudinal ridge; sternites IV and V fused, separated from sternites III and VI each only by shallow furrow; tergite VII entirely covering pygophore in dorsal aspect, posterior margin widely convex. **Male genitalia.** Pygophore (Figs. 9, 10) wide oval, with a group of about 15 small spines near insertion of paramere (Figs. 11, 12); basal and genital aperture continuous; superoposterior margin with short, spiniform median process. Paramere (Fig. 13) elongate, almost straight, subapically bent, with apical part bifurcate and acute. Phallus (Figs. 14, 15) asymmetrical; articulatory apparatus slightly asymmetrical; phallosoma long, sclerotized in left side and ventrally, with a plate-like elongate oval ventral sclerotized process in left side; endosoma membranous, with 3 sclerites; right sclerite long and narrow, distinctly bent; mid sclerite stout, with several small teeth; left sclerite minute.

**Measurements** (in mm; holotype / male paratype). Total length 5.25 / 5.50. Length of head (from apex of maxillary plate, excluding neck) 0.81 / 0.82, width across eyes 0.59 / 0.60, interocular distance 0.29 / 0.31; lengths of antennal segments I, II, III, and IV 2.28 / 2.30, 0.95 / 0.99, 1.14 / ? and ~0.80 / ? (segment IV deformed in holotype, segments III–IV missing in paratype); lengths of visible labial segments I, II, and III 0.46 / 0.49, 0.39 / 0.39, 0.32 / 0.33. Length of pronotum along meson 0.91 / 0.92, length of anterior lobe 0.72 / 0.72, of posterior lobe 0.18 / 0.20, humeral width (excluding humeral processes) 0.50 / 0.52; length of scutellum 0.23 / 0.24; length of fore wing 0.18 / 0.18. Lengths of coxa, femur, tibia, and tarsus (tarsal segments I, II, and III) of fore leg 0.63 / 0.63, 1.83 / 1.85, 1.54 / 1.57, 0.35 / 0.35 (0.18 / 0.18, 0.11 / 0.11, and 0.14 / 0.14); lengths of femur, tibia, and tarsus of mid leg 2.20 / 2.45, 2.85 / 3.03, and 0.31 / 0.31; lengths of femur, tibia, and tarsus of hind leg 3.18 / 3.30, 4.58 / 4.70, and 0.29 / ? (hind tarsus missing in paratype). Length of abdomen 2.68 / 2.77, greatest width 1.25 / 1.30.

### **Micropterous female.**

Similar to male in colour and structure, but slightly larger (total length 5.90 mm). Head about 1.3 times as long (excluding clypeal process) as wide, 1.85–1.95 times as wide across eyes as interocular distance. Abdomen relatively wider than that of male, about 2.0 times as long as wide; posterior margin of tergite VII very slightly convex.

**Measurements** (in mm; two female paratypes from Alishan / Fenchihu). Total length 5.90 / 5.90. Length of head (from apex of maxillary plate, excluding neck) 0.84 / 0.84, width across eyes 0.66 / 0.63, interocular distance 0.34 / 0.34; lengths of antennal segments I, II, III, and IV 2.30 / 2.37, 1.00 / 0.99, 1.25 / 1.27 and ? / 0.87 (segment IV missing in paratype from Alishan). Length of pronotum along meson 0.98 / 0.98, humeral width (excluding humeral processes) 0.55 / 0.56. Lengths of coxa, femur, tibia, and tarsus of fore leg 0.59 / 0.62, 1.78 / 1.85, 1.55 / 1.56, 0.39 / 0.39; lengths of femur, tibia, and tarsus of mid leg 2.33 / 2.42, 3.05 / 3.13, and 0.35 / 0.32; lengths of femur, tibia, and tarsus of hind leg 3.50 / 3.45, 4.80 / 4.65, and 0.35 / 0.34. Length of abdomen 3.10 / 3.15, greatest width 1.54 / 1.53.

**Distribution.** Taiwan.

**Etymology.** It is a pleasure to dedicate this remarkable new species to Dr. Ernst Heiss, in recognition of his outstanding contributions to various groups of true bugs, and with thanks for supporting our work on Taiwan Reduviidae.

**Discussion.** Although most described species are known only from macropterous morphs, pterygopolymorphism is not rare in Saicinae and short-wing forms occur in a number of Old World genera, see e.g. VILLIERS (1969), MALIPATIL & HOWARTH (1990), ISHIKAWA (1999). However, only macropterous morphs have been known of all described species of *Gallobelgicus* so far. Among the Old World genera taxonomically closely related to *Gallobelgicus*, short-winged forms are known only in *Pristicoris* MILLER, 1952, a monotypic genus occurring in the Afrotropical Region.

According to its original description, *G. saevus* most probably does not belong to the genus *Gallobelgicus*. The remaining species of the genus can be subdivided into two well-recognizable groups. In one of them, the ventral series of fore femur contains a great number of small spines between the large spiniferous processes (*typicus*, *nigrovittatus*), while these spines are missing in members of the other group (*monticolus*, *siamensis*). In this character, *G. heissi* sp.n. is similar to *G. typicus* and *G. nigrovittatus*. The three species can be readily distinguished by external characters using the following key (data taken from the holotype of *G. typicus* examined by the first author and from the original description of *G. nigrovittatus*):

- |   |  |                               |
|---|--|-------------------------------|
| 1 | Fore tibia with 4 spiniferous processes. Anterodorsal series of fore femur with 8 spiniferous processes. Pilosity of legs short; posterior (external) surface of fore femur only with very short, inconspicuous, decumbent hairs. Only macropterous morph known .....  | <i>typicus</i> DISTANT        |
| – | Fore tibia with 3 spiniferous processes. Anterodorsal series of fore femur with 7 spiniferous processes. Pilosity of legs longer; posterior (external) surface of fore femur with long semi-erect and erect hairs  | 2                             |
| 2 | Fore femur long and gracile, distinctly more than 10 times as long as its diameter, more than 3 times as long as fore coxa; ventral series with approximately 20 very small spines between large spiniferous processes; longest spiniferous process together with its apical spine longer than diameter of femur. Only macropterous morph known .....      | <i>nigrovittatus</i> ISHIKAWA |
|   | Fore femur shorter and thicker, about 9–10 times as long as its diameter, about 2.9–3.0 times as long as fore coxa; ventral series with approximately 30 very small spines between large spiniferous processes; all spiniferous processes together with their apical spines distinctly shorter than diameter of femur. Only micropterous morph known ..... | <i>heissi</i> sp.n.           |

*Gallobelgicus heissi* sp.n. is similar to *G. nigrovittatus* in external characters, and the two species are probably closely related phylogenetically. In addition to the differences presented in the above key, *G. heissi* sp.n. also differs from *G. nigrovittatus* in male genital characters, as follows: phallosoma sclerotized dorsally only in the left side; basal plate with much longer dorsal connectives; largest endosomal process with several small teeth; left endosomal sclerite much shorter.

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