

A new species of *Raglius* Stål (Heteroptera: Rhyparochromidae) from Israel

ASSAF NIR

Ma'ale Hazofim 23, Ramat Gan, Israel. E-mail: assafnb@gmail.com

ABSTRACT

A new species, *Raglius noga* n. sp., from the Lower Galilee, Israel, is described and illustrated, with a habitus photo.

KEYWORDS: Heteroptera, Rhyparochromidae, Rhyparochromini, *Raglius*, Israel, New Species

INTRODUCTION

Raglius Stål comprises medium-sized species belonging to the *Rhyparochromus* complex which was ranked in recent works either as genus (e.g., LeQuesne, 1957) or subgenus within the genus *Rhyparochromus* (e.g., Wagner, 1961; Péricart, 1998). Wagner (1961) in his monograph on the *Rhyparochromus* complex was the first to revise this group based on the genitalia, overall including seven species in *Raglius*. In his work *Raglius* was considered as a subgenus of *Rhyparochromus* mainly based on the type of the genitalia of *R. vulgaris*. Wagner (1961: 85) rejected LeQuesne (1957) idea to consider *Raglius* as a valid genus arguing that some characteristics represent transitional forms between *Raglius* and *Rhyparochromus* s. str. Péricart (1998: 263) based his *Raglius* classification on external characters and transferred three species to the subgenus *Rhyparochromus*. Later in his catalogue Péricart (2001: 190) treated the *Rhyparochromus* complex as a genus for practical purpose, but suggested that a worldwide revision is needed. According to Péricart (2001) the Israel fauna consists of three *Raglius* species: *R. alboacuminatus*, *R. confusus* and *R. zarudnyi*.

MATERIALS AND METHODS

Terminology essentially follows Schuh and Slater (1995) except the following terms: Diatone is the width of the head in dorsal view across and including the eyes. Pronotal width is the widest part of pronotum, measured near the posterior margin. Pronotal ratio is pronotal width divided by the width across the anterior margin. All measurements were rounded up to two digits after the decimal point. Proportions were first calculated with original measurement and only the result rounded up. The Holotype and some paratypes are deposited in the National Collection of Insects at Tel-Aviv University. The rest of paratypes will be kept at the author's private collection. The drawings were done

with Adobe Illustrator based on microscope photos. The geographic coordinates of the collecting locality were retrieved from the Google map site (maps.google.com).

TAXONOMY

Raglius noga Nir, n. sp.

(Figs. 1–8)

Diagnosis

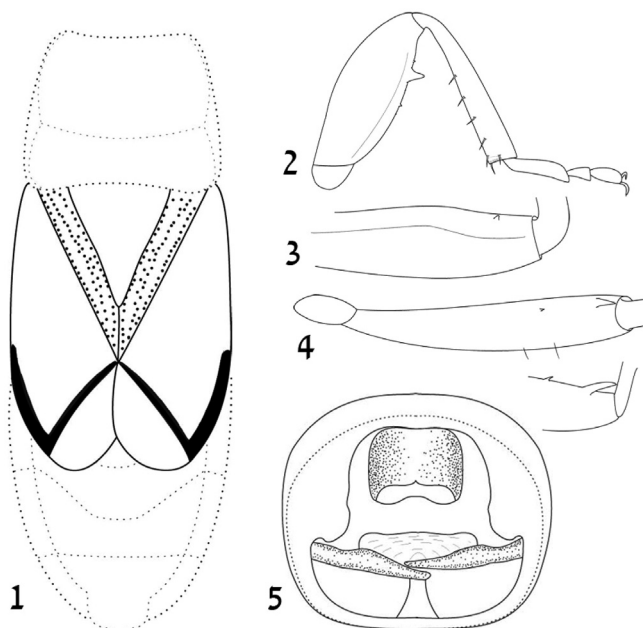
This species is easily separated from other *Raglius* species by the unicolorous black hemelytral membrane and the bright ochreous corium with black narrow posterior margins approximately along its distal third.

Péricart's (1998: 188, couplet 19(20)) key to subgenera of the *Rhyparochromus* complex can be modified to include *Raglius noga* by adding "*sauf Rh. noga*" to the sentence "*Membranes marquées d'une tache blanche apicale*" (translated to: "*Membranes marked with a white apical spot (except Rh. noga)*") (See Remarks below).

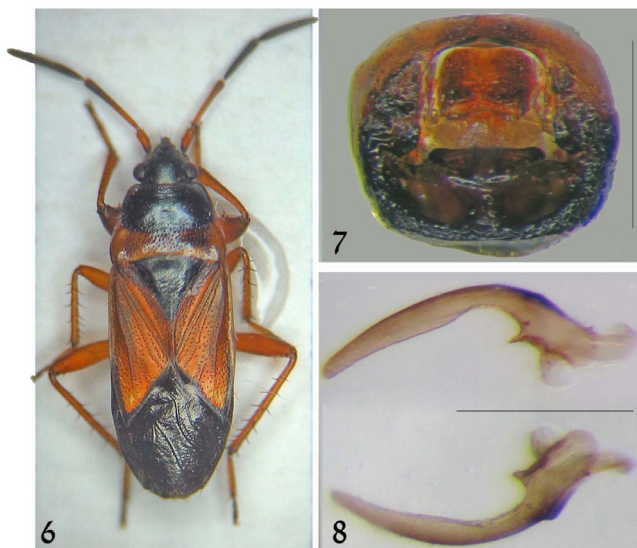
Description

Habitus: Brachypterous (Fig. 1) or macropterous (Fig. 6), oblong, glabrous, dorsally shiny black and vivid ochreous. **Head:** Black, very shallowly punctuated with fine appressed hairs. Jugae shorter than tylus. **Antenna:** Segment I stouter than others, exceeding tylus, ochreous with black base; segment II ochre, sometimes with faint dark basal ring; segments III and IV black. **Rostrum:** Reaching, sometimes slightly exceeding mid coxa. Segment I blackish; segment II ochre; segments III and IV ochrish brown (Coloration may appear so due to discoloration after reacting with the glue). **Pronotum:** Shiny, glabrous, distinctly trapezoidal in macropterous specimens (Fig. 6), more rectangular in brachypterous specimens (Fig. 1). Anterior lobe black, not punctuated, sometimes with indistinct shallow dimples. Posterior lobe ochre, distinctly punctuated, more or less in the same plane as anterior lobe, transverse furrow indistinct; humeral angles slightly swollen. **Scutellum:** Black and punctuated, margins along clavus and apex sometimes slightly depressed. **Clavus:** With 3 somewhat irregular rows of punctuation. Medial and intermediate rows more parallel and closer to each other than intermediate to lateral row (Fig. 1). Coloration ochre, brighter between intermediate and lateral rows. **Corium:** Shiny, glabrous with only very few bristles, unicolorous ochre, posterior margin and distal third of exocorium narrowly black, distinctly punctuated along veins. **Membrane:** Unicolorous black. **Legs:** Unicolorous ochre; forefemur ventrally with distinct large tooth and few additional irregular small denticles (Fig. 2); mid femur with subapical small denticle sometimes indistinct (Fig. 3); hind femur with subapical large tooth, in male sharply bent toward femur apex (Fig. 4), in female shorter and less bent; tarsomeres II and III darker than tarsomere I. **Abdomen:** Completely black. **Pygophore:** Wider than high (Figs. 5, 7) ventrally with transverse wrinkles. Parameres as in Fig. 8.

Measurements: **Male** (N=1 brachypterous): Body length 4.67 mm. Diatone 0.89 mm. Vertex 0.57 mm. Vertex/Diatone 0.64. Antennal segments I–IV 0.39, 0.77,



Figs. 1–5. Male *Raglius noga* n. sp. 1. Hemelytra and clavus of brachypterous form. 2–4. right legs. 2. Front leg, posterior view. 3. Mid femur, anteroventral view. 4. Hind femur in ventral (top) and posterior (bottom) views. 5. Pygophore.



Figs. 6–8. *Raglius noga* n. sp. 6. Female, macropterous, habitus. 7. Pygophore. Scale bar = 0.5 mm. 8. Male, left paramere in two views. Scale bar = 0.25 mm.

0.77, 0.77–0.92 mm, respectively. Pronotal ratio 2.7. Pronotal width 1.35 mm. Hind tarsomeres I–III 0.60, 0.19, 0.20 mm, respectively.

Females (N=1 brachypterous; N=3 macropterous): Body length 5.29–5.66 mm. Diatone 0.96–1.04 mm. Vertex 0.65–0.66 mm. Vertex/Diatone 0.62–0.69. Antennal segment I–IV 0.39–0.42, 0.88–0.91, 0.74–0.77, 0.77–0.93 mm, respectively. Pronotal width of brachypterous specimen 1.56 mm, of macropterous specimens 1.64–1.85 mm. Pronotal ratio of brachypterous specimen 3, of macropterous specimens 3.54–4.00. Hind tarsomeres I–III 0.60–0.68, 0.15–0.19, 0.19–0.20 mm, respectively.

Material Examined

Holotype ♂: ISRAEL: Ma'agar Even, 32°43.30'N, 35°11.52'E, 1.xi.2008, A. Nir. Paratypes: Same locality data as holotype (4♀); all collected on the ground. The holotype is in good condition, glued to a rectangular card and pinned together with a genital microvial.

Remarks

Of the five available specimens, three show some degree of antennal deformation, a well known phenomenon in Heteroptera (Balazuc, 1951). Two females and the only male have only three segments in one antenna. These deformed segments were excluded from the measurements.

When comparing the pronotum of macropterous and brachypterous forms it can be easily seen that the pronotum of the macropterous form has a much wider posterior part (Fig. 6) so it is more trapezoidal than the pronotum of the brachypterous forms (Fig. 1). Horváth (1876: 722) and many others suggested that this character could result from the development of flight muscles, which are more massive in individuals with fully developed wings. To demonstrate the differences, a pronotal ratio is presented in the measurements section, which is three in brachypterous and more than 3.5 in macropterous forms.

Discussion

The classification of the new species within the *Rhyparochromus* complex is not without problems. The parameres (Fig. 8) are of the *R. vulgaris* type, which place it within *Raglius* sensu Wagner (1961). However, according to Péricart's revision (1998) this type of parameres is also found in a few species of *Rhyparochromus* sensu Péricart (1998). When comparing the genitalia of the new species to those of species in both genera it is obvious that the only similar genitalia are those of *Raglius alboacuminatus*. A careful comparison was done with a specimen of *R. alboacuminatus* which was found together with the holotype, and indeed the two species share several similarities. Both species are equipped with a very strong and curved tooth on the hind femur which according to Wagner (1961:79) is a distinct characteristic of *Raglius alboacuminatus* and *R. zarudnyi*. The pygophores of both species are wider than high and with transverse ventral wrinkles. The parameres of both species are simple, with more or less similar appearance, except for a sharp, tooth-like, sensory lobe in *Raglius noga* (Fig. 8) compared to a blunt lobe in *R. alboacuminatus*. According to Péricart (1998: 263) *Raglius* can be separated from

Rhyparochromus by the following characters: Hind femur equipped with one or more teeth, mid tibia almost always pale, and membrane of hemelytron with a white apical spot. The morphology of the new species agrees with the first two diagnostic characters of *Raglius* by having a subapical tooth on the hind femur (Fig. 4) and an entirely uniform ochre legs. However, the new species lacks the *Raglius* diagnostic character of a white apical spot on the membrane. This character had been used by both Péricart and Wagner to facilitate identification of genera but is, in fact, variable. Other commonly used characters of *Raglius* are the black spot in the middle of the corium (sometimes missing), black humeral angles and black mid and hind femora (except in *R. alboacuminatus josifovi*), all are lacking from the new species. As mentioned in the introduction, the *Rhyparochromus* complex needs a revision on a worldwide basis and favorably a DNA study. Until then, and according to the arguments above, I tentatively place the new species in *Raglius* and consider it to be the sister species to *R. alboacuminatus*.

Biology

The specimens comprising the type series were found as a group, active on the ground between low grasses in mid day. The type locality, Ma'agar Even, is an artificial water reservoir in the Lower Galilee, Israel. The reservoir is located in a valley, surrounded by cultivated fields and a few hills with scattered oak trees which are used as pasture for domestic livestock such as sheep and goats.

Etymology

I take special pleasure in naming this species after my daughter, Noga.

ACKNOWLEDGMENTS

I would like to thank Amnon Freidberg for reviewing earlier drafts of the manuscript and Ariel-Leib-Leonid Friedman for supporting my research (both from the Department of Zoology, Tel Aviv University).

REFERENCES

- Balazuc, J. 1951. La teratology des Hémiptères et groupes voisins. *Annales de la Société entomologique de France* 120: 17–66.
- Henry, T.J. 1997. Phylogenetic analysis of the family groups within the infraorder Pentatomomorpha (Hemiptera: Heteroptera), with emphasis on the Lygaeoidea. *Annals of the Entomological Society of America* 90: 275–301.
- Horváth, G. 1876. Die Hemipteren-Gattung *Plinthisus* (Westw.) Fieb. *Verhandlungen der Zoologisch-Botanischen Gesellschaft in Wien* 26: 721–736.
- Le Quesne, W.J. 1957. A practical key to the British genera of Rhyparochrominae. *The Entomologist's Monthly Magazine* 92: 337–341.
- Péricart, J. 1998. *Faune de France 84c. Hémiptères Lygaeidae euro-méditerranéens*. Fédération Française des Sociétés de Sciences Naturelles. 414 pp.

- Péricart, J. 2001. Lygaeidae. Pp. 35–220. In: Aukema, B. and Rieger, C. (eds.). *Catalogue of the Heteroptera of the Palaearctic Region*, Vol. 4. The Netherlands Entomological Society, Amsterdam, 346 pp.
- Schuh, R.T. and Slater, J.A. 1995. *True Bugs of the World. (Hemiptera: Heteroptera)*. Cornell University Press, Ithaca, New York, xii + 336 pp.
- Wagner, E. 1961. Zur Systematik der Gattung *Rhyparochromus* Hahn, 1826 (Hem. Het. Lygaeidae). *Deutsche entomologische Zeitschrift N.F.* 8: 73–116.