

A Remarkable New Species of *Rhagovelia* Mayr from the Philippines (Heteroptera: Veliidae).

By
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Up to the present 13 species of the world-wide distributed genus of *Rhagovelia* Mayr have been described from the Philippines (Lundblad 1936 and 1937, Drake 1948, Hungerford & Matsuda 1961). None of the species is so far reported outside these Islands.

The new species described below belongs to the subgenus *Rhagovelia* s. str. (Matsuda 1956) and is in the female remarkable in having a dorso-caudally directed projection of the seventh tergite, a structure not previously described in the genus. The species comes from Zamboanga, Mindanao, and was present in the collections of the Zoological Museum of Copenhagen.

Rhagovelia (s. str.) *aberrans* sp. nov.

(Figs. 1-2).

Size: Apterous male holotype 2.73 mm long; width of head 0.70 mm; width across mesoacetabula 1.25 mm. Apterous female allotype 2.98 mm long; width of head 0.76; width across mesoacetabula 1.33 mm.

Length of body in apterous paratypes ranges from 2.70 to 2.83 mm (males) and 2.90 to 3.12 mm (females).

Colour: Dorsal surface of body dull, black to brownish-black except for a reddish-yellow transverse, rectangular spot on anterior margin of pronotum; lateral parts of anterior lobe of pronotum and lateral parts of each abdominal tergites covered with a grayish pubescence. Venter and pleura grayish except for distal ends of acetabula which are yellow. Antennae and legs black to brownish-black except for basal third of first antennal segment which is yellow.

*) 1 unit = 0.025 mm.

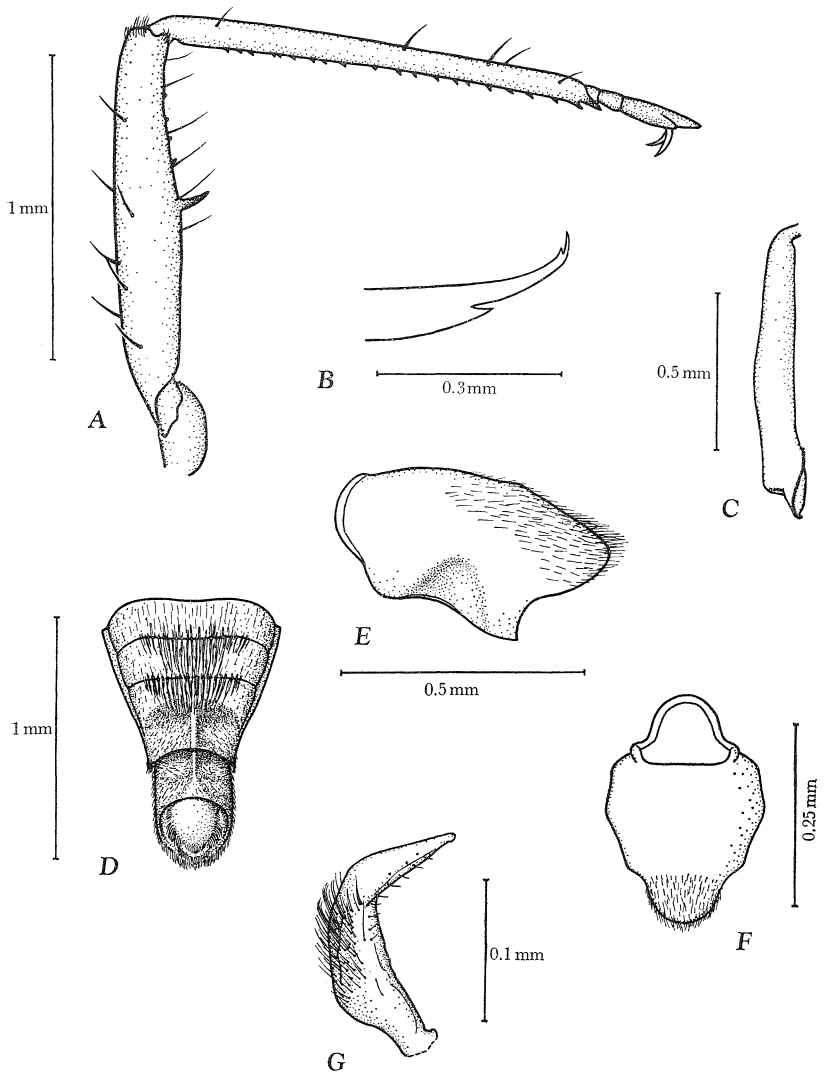


Fig. 1. *Rhagovelia* (*s. str.*) *aberrans* sp. nov. Apterous male. A. Hind leg; most of the hairs omitted. B. One of the claws of middle leg. C. Front tibia with apical comb of teeth; all hairs omitted. D. Ventral view of last three abdominal sternites and genital segments. E. First genital segment, lateral view. F. Anal cone, dorsal view. G. Right paramere.

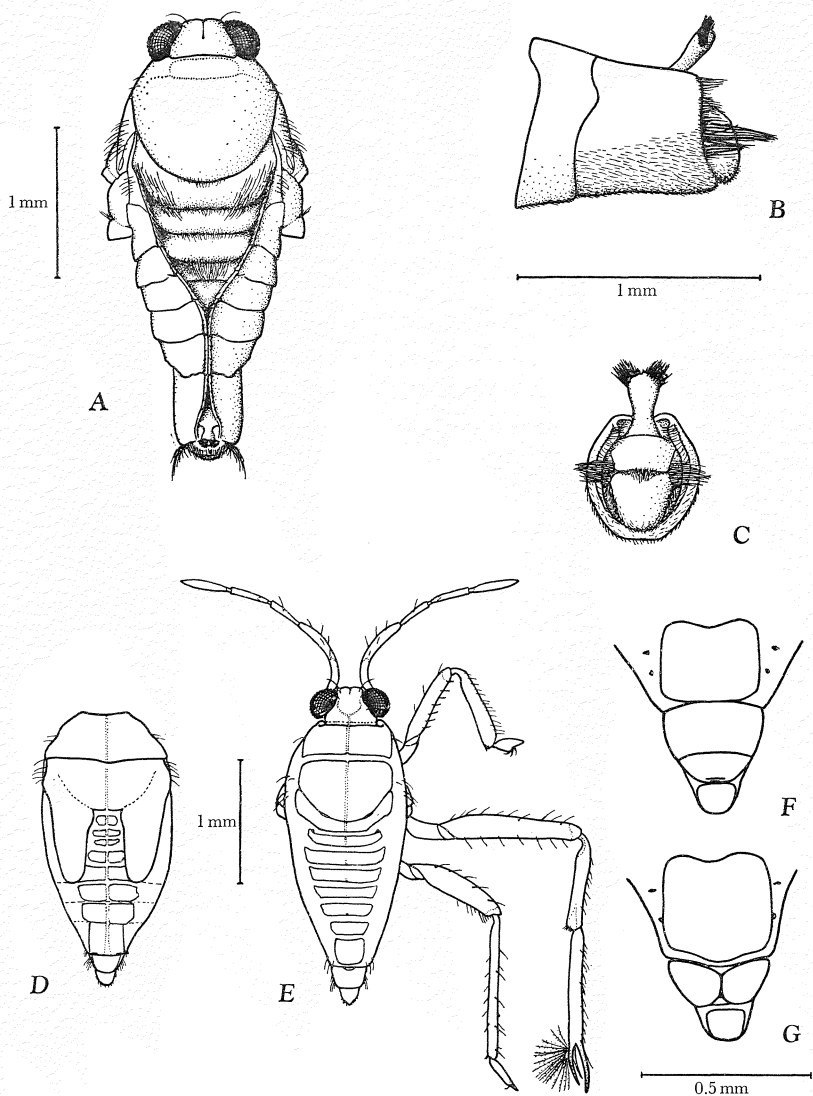


Fig. 2. *Rhagovelia* (s. str.) *aberrans* sp. nov. A-C. Apterous female. A. Apterous female allotype. B-C. Tip of abdomen as viewed from the side (B) and from behind (C) D-G. Fifth instar nymph. D. Thorax and abdomen in macropterous female. E. Apterous male. F-G. Tip of abdomen, ventral view, in apterous male (F) and apterous female (G).

Structure, apterous male: Proportional length of antennal segments: 1st:2nd:3rd:4th=30(?curved):16:17:17*). Pronotum much longer than an eye, rounded on caudal margin, exposing metanotum on sides and behind its rear margin, thus covering mesonotum entirely.

	Femur	Tibia	Tarsus
Front leg	36	38	10 (1 + 2 + 3)
Middle leg	63	45	2 : 23 : 28
Hind leg	50	57	4 (1 + 2) : 11

Anterior trochanter unarmed; anterior tibia flattened and moderately widened distally (not as broad as femur) with a comb of teeth apically (one fourth the length of the tibia) (fig. 1C). Middle trochanter unarmed; middle femur without thickened bristles proximally on rear margin; one of the claws on middle tarsus as figured (fig. 1B). Hind trochanter unarmed; hind femur (fig. 1A) moderately incrassate (width 9 units); inner surface with one long, curved spine (length 3.5 units) behind the middle; no spines proximally, distally with 4—5 very small, decreasing spines; hind tibia or inner margin with many small spines and one larger spine at the distal end.

Connexivum more or less obliquely raised. Last abdominal tergite a little longer than the preceding two segments; its caudal end scarcely broader than its base. Abdominal venter with a dense layer of long, yellowish-white hairs, especially on fifth and sixth sternite. Seventh sternite with a median longitudinal ridge and lateral depressions (fig. 1D). First genital segment longer than seventh sternite, with a median longitudinal ridge and lateral depressions (fig. 1E); apical two thirds of this segment bent downwards. Second genital segment with sides parallel, without modifications; anal cone (fig. 1F) widened on basal half; parameres (fig. 1G) slender, pointed, broad at base with apical third strongly bent.

Structure, apterous female (fig. 2A): Antennal formula: 1st:2nd:3rd:4th=30 (?curved):16:18.5:18. Thorax as in male.

	Femur	Tibia	Tarsus
Front leg	37	38	12 (1 + 2 + 3)
Middle leg	62	45	3 : 22 : 30
Hind leg	49	60	5 (1 + 2) : 12

Front femur more slender than in male. Middle leg as in male.

Hind femur not so incrassate as in male (width 8 units), with one larger spine (length 3 units) and 0—3 small spines distally; tibia without spines on inner margin, and with a group of thickened hairs instead of a spine at the distal end.

All connexival segments raised and strongly constricted to overlap the abdominal tergites, usually meeting at the anterior margin of sixth tergite and diverging again after the posterior margin of that segment; apical margin of seventh connexival segment with long, brown hairs. Metanotum with lateral tufts of long, brown hairs; posterior margin of metanotum, first tergite and especially second tergite with long, brown hairs. First and second tergites roundly and transversely elevated; following tergites depressed. Seventh tergite with a dorso-caudally directed, tongue-shaped projection on posterior margin (as long as an eye), which apically has lateral groups of rigid hairs arranged in single rows (figs. 2B-C). Seventh abdominal sternite tubular, very long (longer than preceding three segments), covered with short yellowish-white hairs. Eighth abdominal segment with lateral tufts of latero-caudally directed, long brownish hairs; ninth abdominal segment strongly bent downwards.

A d u l t, m a c r o p t e r o u s f o r m u n k n o w n. However, in the sample there are 9 nymphs in the fifth instar with well-developed wing-pads (fig. 2D). The abdominal projection of the female is probably reduced or lost in the macropterous form.

T h e f i f t h i n s t a r n y m p h (figs. 2D-G). A great number of nymphs in the last 3 (or 4) instars are available. The length of the body in proportion to the length of the appendages varies greatly and it is very difficult to separate the instars of the apterous form with accuracy.

General colour of the sclerotized parts of the body dark brown. A U-shaped line of the vertex, basal third of first antennal segment, trochanters, apex of all the femora, base and apex of middle tibia, a median line on pro-, meso- and metanotum and on some or all of the abdominal tergites, yellowish. Without a transverse, yellow spot on pronotum.

The two sexes can be distinguished in individuals from 2.03 mm (fourth instar). The ventral abdominal segments as figured (figs. 2F-G). The tibial comb of the front leg of male more or less distinct, well-developed in old individuals of fifth instar. Femoral and tibial spines of hind leg not visible. Seventh abdominal tergite

of female without any sign of the projection so characteristic of the adult female.

In the macropterous nymphal forms (fig. 2D) the wing-pads reach the anterior margin of fifth abdominal tergite; fore- and hindwings of about equal length. Pronotum longer and broader than in apterous form, length in proportion to width 17 : 41 (macropterous female) compared with 16 : 36 (apterous female).

Measurements of the fifth instar nymph:

	Length of body	Antennae (1st:2nd:3rd:4th)	Front leg (Fe.:Ti.:Ta.)
Apterous male	101 (2.53 mm)	25:13:15:17	31:30:11
— female	102 (2.55 mm)	27:13:15:17	31:30:12
Macropterous male	95 (2.38 mm)	24:13:15.5:17	31:31:11
— female	100 (2.50 mm)	25:12.5:14:16	31:30:11
		Middle leg (Fe.:Ti.:Ta.)	Hind leg (Fe.:Ti.:Ta.)
Apterous male	101 (2.53 mm)	49:35:56	36:50:17
— female	102 (2.55 mm)	50:34:55	36:52:17
Macropterous male	95 (2.38 mm)	50:33:54	35:49:17
— female	100 (2.50 mm)	49:34:53	36:50:16

Comparative notes: This species belongs to the *minuta*-group of *Rhagovelia s. str.*, which includes *Rh. minuta* Lundblad, 1936 (N. Luzon), *philippina* Lundblad, 1936 (N. Luzon), *orientalis* Lundblad, 1937 (N. Luzon), and *mindanaoensis* Hungerford & Matsuda, 1961 (Mindanao). The members of this group are small, short and broad species with a dark appearance.

The species is apparently closely related to *philippina* and *mindanaoensis*, which, however, are larger species with somewhat different parameres and without long hairs on abdominal sternites in male. The female cannot be confused with any other known oriental species of *Rhagovelia* because of the unique projection of seventh abdominal tergite in the apterous form.

In the key to the species of *Rhagovelia* from the Philippines (Hungerford & Matsuda, 1961) the male runs down to couplet 3, but is neither *minuta* nor *mindanaoensis*. The female runs either to couplet 3 (size less than 3 mm long) or 4 (over 3 mm long) and 5 (posterior lobe of pronotum black etc.), but is easily distinguished in the apterous form.

Data on types: Described from apterous male holotype, apterous female allotype and 14 apterous paratypes (6 males and

8 females) together with 99 nymphs, all stored in alcohol and labeled: "Zamboanga; mountain-stream; 27/2 1914; Th. Mortensen". The types are dried and mounted and belong to the Zoological Museum of Copenhagen.

Acknowledgements.

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