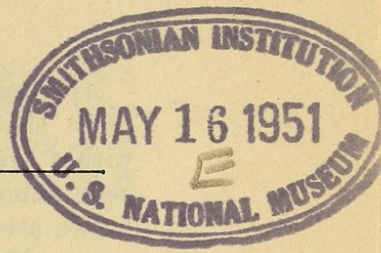


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



NEW NEOGAEAN WATER-STRIDERS (HEMIPTERA-VELIIDAE)

BY CARL J. DRAKE

The small water-striders of the genus *Microvelia* Westwood, family Veliidae, are not very well known for the Americas. This paper contains the descriptions of seven new species from the neotropical region. The unit of measure employed in the various formulae may be converted into millimeters by dividing by eighty. The types of the new species are in the collection of the author.

Microvelia munda, sp. new

Macropterous form: Very small, dark brown or dark fuscous with a transverse, interrupted, bluish flavous band on front margin of protergum and five or six white spots on hemelytra. Body beneath dark fuscous with bluish tinge.

Size: Length, 1.55 mm.; width, 0.60 mm.

Head: Width across eyes, 0.40 mm. Velvety dark fuscous with impressed median line. Antennae dark brown with basal segment pale, shortly pilose; formula—I, 13; II, 9; III, 14; IV, 25. Rostrum brown with terminal segment dark.

Thorax: Wider than long (50:40, male) (60:44, female). Hind margin of protergum pale with pits visible; median line not very discernible; humeri feebly raised. Legs brown with coxae, trochanters, base of femora above and entire surface beneath testaceous, clothed with short pale hairs. Femora scarcely thickened. unarmed in both sexes; length of hind femora, 0.40 mm.; tibiae, 0.30 mm., long; both middle and hind tarsi with first segment distinctly shorter than second. Hemelytra dark brown with six white marks (outer basal stripe widening apically; inner basal stripe narrower, sometimes interrupted so as to form two spots; three ovate spots just beyond the middle; and an ovate, median, subapical spot); outer margin of hemelytra at base without long hairs.

Abdomen: Length, 0.80 mm. Connexiva brown, largely concealed by hemelytra.

Male narrower than female; venter and genital segments unarmed; genital segments retracted into last venter; first segment above and behind beset with bristly brown hairs.

Type (male) and *allotype* (female), Canal Zone, Panama, Feb. 10, 1939, C. J. Drake.

Separated from *M. summersi* D. & H. and *M. marginata* Uhler by antennal proportions and prominent hemelytral markings.

MAY 14 1951

Microvelia crinata, sp. new

Apterous form: Small. dark brown to dark fuscous-brown with some small silvery spots. Legs with unusually long pale hairs. Protergum with a broad, transverse, brownish band (faintly interrupted at middle) near anterior margin; mesotergum with a shorter, broader, rectangular, brown area; metatergum with a shorter and narrower brown area. Abdomen a little variable in color, usually largely dark brown, sometimes mostly brown; a spot on the side of each thoracic division, one on each side of first two and the last three tergites, and one on each connexival segment silvery. Body beneath brown to testaceous with some scattered silvery hairs.

Size: Length, 2.15 mm.; width, 0.75-0.85 mm.

Head: Width across eyes, 0.35 mm. Deep velvety brown with the characteristic impressed black lines. Rostrum whitish with apex dark fuscous. Antennae rather long, slender, shortly pilose, brown with the basal segment whitish; segments I and II only slightly incrassate, the latter slenderer; III and IV very slender, nearly equal in thickness; formula—I, 26; II, 21; III, 40; IV, 40.

Thorax: Protergum short, not produced over mesotergum, the transverse brown band more or less interrupted at the middle; mesotergum short, about twice as long as metatergum; metatergum nearly as long as protergum, with very little silvery pubescence. Legs brown with coxae, trochanters, base above and entire ventral surface of femora whitish; tibiae beneath pale testaceous. All femora and tibiae of both sexes with unusually long whitish hairs (in both sexes), which stand at right angles to the surface at points of origin; fore femora moderately incrassate, feebly stouter near base than other pairs, the pale hairs nearly one and a half times as long as the diameter of the segment; hind femora not quite as thick as fore pair, most of the long hairs two or slightly more times the diameter of the segment in length; hind femora with long hairs around twice as long as diameter of segment; middle and fore tibiae with both long and short hairs, the long hairs about twice as long as the segment at point of origin on basal half, thence much shorter apically. First tarsal segment of middle legs feebly shorter than second; second tarsal of hind legs scarcely longer than first.

Abdomen: Length, 1.25 mm. Connexiva more or less erect, not reflexed posteriorly; venter unarmed. Last ventral segment of male about one-half longer than the preceding segment. First genital segment plain at base, deeply broadly roundly excavated behind. Female stouter than male.

Macropterous form: Length, 2.40 mm. Velvety black with short brownish pubescence and more prominent silvery hairs and scattered hairs on surface behind humeri; silvery spots on connexiva quite conspicuous. Protergum longer than wide (76:60), moderately convex on disc. Hemelytra brownish black with two long streaks at base, three oval spots at middle and a subapical median spot brownish; without long hairs on exterobasal margin.

Type (apterous male), *allotype* (apterous female) and paratypes (2 apterous and 2 long-winged specimens), Barro Colorado, Canal Zone, Panama, Feb. 6-8, 1939, C. J. Drake.

The small size and extremely long hairs on legs of both sexes separate this insect at once from all other American species of the genus. The long hairs on legs are not as numerous and more than twice as long as in the males of *M. irrasa* Drake and Harris. The female of the latter is very broad, and does not have longly hairy legs.

***Microvelia hambletoni*, sp. new**

Apterous male: Small, black with patches of silvery pubescence or silvery hairs on base of head, protergum, most tergites and connexival segments. Body beneath black with bluish pruinose.

Size: Length, 1.62 mm.; width at base of abdomen, 0.62 mm.

Head: Width through eyes, 0.40 mm. Black with basal part covered with silvery hairs. Rostrum brownish with terminal segment blackish. Antennae moderately stout, dark brown with base scarcely paler, shortly pilose and interspersed with longer hairs; segment I considerably stouter than II, III and IV slendered than two; formula—I, 19; II, 11; III, 22; IV, 26.

Thorax: Protergum covering mesonotum, two and one-half times as wide as long (52:20), the broad flavous stripe extending laterally as far as middle of eyes and covered with silvery hairs; hind margin broadly rounded. Legs rather stout, short, clothed with pale short hairs, testaceous with femora apically and dorsal surface of tibiae brown; femora slightly swollen, unarmed in both sexes; tarsi dark apically, the basal segment in both middle and hind legs much longer (slightly more than twice) than second.

Abdomen: Length, 0.85 mm. Uniformly black with small patches of silvery hairs. Venter unarmed. Genital segment brownish beneath, darker above; first segment beneath broadly impressed at middle basally, there black, feebly emarginate behind. Apterous female unknown.

Macropterous form: Length, 2.00 mm.; width, 0.90 mm. Protergum a little wider than long (36:28); humeral angles not prominent. Hemelytra brown with prominent yellowish white marks (two long basal stripes widening apically; two spots beyond middle; and subapical spot); veins distinct, the pale spots in cells; outer margin near base with a few moderately long brownish hairs.

Type (apterous male), *allotype* (winged female) and one paratype (winged female), Tingo Maria, Peru, Sept. 9, 1944, E. J. Hambleton. In whose honor the insect is named.

The color, size and antennal formula will separate this insect from its congeners. There are also four apterous male paratypes from Nova Teutonia, St. Catarina, Brasil, June 10, 1950, Fritz Plaumann. In some ways this species almost falls into the genus *Xiphoveloidea* Hoberlandt.

***Microvelia rasilis*, sp. new**

Apterous form: Very small, testaceous with some brownish or fuscous areas; joints between segments of tergites and connexiva narrowly dark brown or fuscous. Pubescence very short, inconspicuous.

Size: Length, 1.60-1.70 mm.; width, 0.88 mm.

Head: Width across eyes, 0.41 mm. Antennae brown with basal seg-

ment paler; segment IV feebly thicker than two; formula—I, 14; II, 9; III, 15; IV, 22. Median longitudinal line scarcely visible.

Thorax: Protergum with a few large dark pits, not very long, covering most of mesotergum, concave behind (more so in female than male), three times as wide as median length (40:12), mesotergum narrow, the exposed part about one-third of the length of protergum, with a few large pits; metatergum nearly as long as protergum. Legs testaceous with dorsal surface (save basal part of femora) brownish, clothed with short pale hairs, longer beneath on femora. Length of hind femora, 0.43 mm.; tibiae, 0.53 mm. Femora only slightly thickened; hind femora unarmed. In both middle and hind legs, the first segment faintly longer than second.

Abdomen: Length, 0.78 mm.; width at base, 0.55 mm. Connexiva slightly wider in female, turned in apically. Male with venter unarmed; first genital segment beneath short and smooth at base, broadly and roundly excavated behind; second genital segment retracted and not exposed. Winged form unknown.

Type (male), *allotype* (female) and 2 paratypes, Mexico City, D. F., Mexico, July 30, 1950, C. J. Drake.

Readily separated from other small species by the testaceous color, concave posterior margins of pro- and mesotergum. It is much shorter than *M. rufescens* Champion, and has differently formed protergum.

Microvelia recifana, sp. new

Apterous form: Small, brown with a pale quadrate spot in each side of the two basal tergites and a median spot on last two tergites; many large dark pits on dorsal and lateral surfaces of protergum, also two pits near base of head; a streak on front of head and sutures narrowly between abdominal segments blackish. Abdomen beneath blackish with prosternum, acetabula, apical part of venter and lower surface of genital segments testaceous, dorsal surface of the latter dark fuscous.

Size: Length, 1.80 mm.; width (base of abdomen), 0.75 mm.

Head: Width across eyes, 0.51 mm. Head strongly convex above, the median impressed line more prominent anteriorly in dark frontal streak. Antennae slender, shortly pilose, brown with ultimate segment dark fuscous; I quite stout; II distinctly enlarged distally; III slenderest; IV very long, slightly thicker than third formula—I, 16; II, 12; III, 17; IV, 30.

Thorax: Protergum large, covering almost all of mesotergum, with four transverse rows of large deep pits, also pits on its lateral sides, hind margin slowly broadly rounded, twice as wide as long (51:25). Legs testaceous with dorsal surface of femora beyond the middle and tibiae, and all of tarsi fuscous. Femora unarmed, middle femora feebly slenderer than other pairs. First tarsal of middle legs distinctly shorter than second; first only slightly shorter than second in hind legs.

Abdomen: Length, 1.25 mm. Abdomen moderately clothed with long brown hairs as well as more numerous short hairs; hairs on outside of connexiva as long as on tergites. Thorax with hairs on dorsal surface not as numerous as on tergites, more numerous on lateral sides. Connexiva convex on dorsal edge. Venter unarmed. Last venter of male

quite long, feebly convex behind; genital segments brownish beneath, dark fuscous above; first genital segment beneath smooth at base, very widely roundly excavated behind. Apterous female and winged forms unknown.

Type (apterous male), Recife, Bras., Aug., 1946.

This species may be distinguished from other small species of the genus by its color, hairy vesture and large, deep, pronotal pits. The protergum dorsally covers the rest of thorax, and is without a transverse frontal band.

***Microvelia lujanana*, sp. new**

Macropterous form: Small, moderately broad, dark fuscous-brown with the broad stripe on each side of median line of head and transverse pronotal stripe fairly distinct to evanescent. Hemelytra dark brown, without markings, sometimes faintly pale basally; veins feebly raised. Legs testaceous with tips of femora above, entire dorsal surface of tibiae and tarsi brown. Body beneath brown-fuscous with bluish lustre, sometimes venter brownish apically. Connexiva concolorous with pronotum.

Size: Length, 1.50-1.70 mm.; width, 0.62-0.70 mm.

Head: Width across eyes, 0.40 mm. Median impressed line not prominent; silvery pubescence on each side next to eyes. Antennae rather stout, shortly pilose, brown with base segment largely testaceous; segment I stout; II enlarged distally; III slenderest; IV, stouter than three; formula—I, 11; II, 7; III, 11; V, 17.

Thorax: Protergum distinctly longer than wide (50:42), median line feebly (or not) distinct; humeral angles feebly raised. Legs moderately stout, testaceous, largely brownish above; femora slightly thickened, unarmed; tarsal segment two of both middle and hind legs scarcely longer than one. Length of hind femora, 0.45 mm.; tarsi, 0.48 mm.

Abdomen: Length, 0.85 mm. Clothed with short pale pubescence, without markings. Hemelytra without long hairs on basal extero-lateral margins, not covering all of concolorous connexiva. Last venter longer in both male and female than preceding segment. Genital segments of male pale beneath; first segment beneath smooth, convex, the apex deeply, broadly, roundly excavated; second segment mostly inserted. Apterous form is unknown.

Type (male), *allotype* (female) and 26 paratypes, Lujan, Buenos Aires, Arg., Dec. 18, 1938, C. J. Drake. The uniform color without pronotal markings, plain hemelytra, concolorous connexiva and antennal formula distinguish this insect from closely allied species. It is longer than *M. summersi* (D. & H.), and lacks the transverse orange-flavous band found in both *M. summersi* and *M. venustatis* D. & H.

***Microvelia limaiana*, sp. new**

Apterous form: Small, rufo-brown with whitish frost on sides of pro- and mesotergum, and bluish patches on first two and last three abdominal tergites. Pubescence very short, golden, not conspicuous; long hairs on sides of body dark brown. Antennae dark fuscous-brown with basal segment largely testaceous.

Size: Length, 1.82-2.00 mm.; width, 0.65 mm.

Head: Width across eyes, 0.56 mm. Blackish with a broad brown stripe on each side of impressed median line. Antennae dark fuscous-brown with basal segment largely testaceous. Shortly pilose with a few scattered longer bristly hairs; segment IV thickest a little before the middle, strongly tapering apically; formula—I, 20; II, 16; III, 23; IV, 24.

Thorax: Protergum very large, covering all the rest of dorsal part of thorax, distinctly wider than long (58:32). Rufo-brown with the transverse flavous band quite frosty and extending laterally as far as middle of eyes; median pale stripe sometimes becoming obsolete posteriorly. Legs dark brown-fuscous, with coxae, trochanters and entire surface beneath of both femora and tibiae testaceous; tarsi entirely dark; pale hairs a little longer on lower surface of femora; all tibiae with rather long brown hairs on outer surface. Femora unarmed, only a little incrassate, the middle pair a little thinner than others; tarsal segments of both middle and hind legs practically subequal in length. Fore femora largely testaceous.

Abdomen: Length, 0.60 mm. Connexiva in female rather wide and strongly turned in apically in female so that the outer margins touch a little before the apex, beset with some long brown hairs at the base; entire abdomen apically strongly narrowed and turned up; bluish patches on some tergites in both sexes. Venter unarmed in male, last ventrite only a little longer than preceding segment; first genital segment beneath short and smooth at base, broadly and roundly excavated behind; second segment dark fuscous, largely inserted.

Macropterous form: Length, 2.25 mm.; width, 1.00 mm. Protergum large, wider than long (80:65); blackish rufo-fuscous, paler in front, with a prominent pale median, longitudinal flavous stripe; a large frosty patch on each side in front as in apterous form; pubescence very short, golden; humeral angles moderately prominent. Hemelytra blackish fuscous with the large triangular basal area clothed with long erect dark brown hairs, with hairs on outer margin a little longer, the veins not prominent.

Type (apterous male), *allotype* (apterous female) and 104 paratypes, Nova Teutonia, St. Catarina, Bras., May 10, 1950, Fritz Plaumann. Named in honor of Dr. A. Da Costa Lima, the noted Brazilian Entomologist, who has written many books and hundreds of scientific articles on the insect fauna of Brasil. One paratype was also collected at Barro Colorado, Canal Zone, Panama, Feb. 6-8, 1950, C. J. Drake.

Very different from known Brazilian water-striders, and separated by its much paler color, shorter long hairs on outer surface of tibiae, strongly reflexed connexiva and upturned apical part of abdomen in apterous female, and the hairy basal part of hemelytra in both sexes.



Drake, Carl J. 1951. "New neogaeon water-striders (Hemiptera-Veliidae)."
Proceedings of the Biological Society of Washington 64, 75–80.

View This Item Online: <https://www.biodiversitylibrary.org/item/107526>

Permalink: <https://www.biodiversitylibrary.org/partpdf/44607>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Biological Society of Washington

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.