

## FOUR UNDESCRIBED SPECIES OF WATERSTRIDERS (HEMIP.-GERRIDÆ).

C. J. DRAKE AND F. C. HOTTES  
*Iowa State College, Ames, Iowa.*

This paper contains the descriptions of four new species of waterstriders of the family Gerridæ. Of these, two are known only from Colorado, one from Colorado, Utah, Iowa and Oregon, and the other ranges from Colorado to Maine. Dr. H. B. Hungerford and Dr. Herbert Osborn have kindly permitted the writers to study the specimens of Gerridæ in the collections of the University of Kansas and the Ohio State University.

### *Gerris (Limnoporos) notabilis*, n. sp.

Very closely related to *G. rufoscutellatus* Latr. but separated from it by its much larger size, longer legs, the more prominent carina of the pronotum, and the difference in the proportional lengths of the antennal segments. In *rufoscutellatus* the posterior margin of the sixth segment is more truncate and widely excavated and the apical spines do not usually reach the end of the second genital segment; in *notabilis* the last dorsal segment and connexivum of the abdomen are more roundly excavated and the apical spines are stouter, longer, and generally reach to the tip, or a little beyond the tip of the last genital segment. Length, male, 15-16 mm.; female, 15.5-16.1 mm.; width, male, 2.2 mm.; female, 2-2.32 mm.

Very elongate, moderately robust, rufescent or ferrugineous; head, a large spot on each side of the pronotum in front, sides of pronotum and nervures of hemelytra blackish brown; body beneath densely clothed with long silvery hair. Antennæ brown at the base, growing blackish brown towards the tips; first segment considerably longer than any of the others, second segment much shorter than the first and longer than third or fourth, the fourth a little shorter than the second and a little longer than the third; other characters about the same as in *rufoscutellatus*.

*Male:* The intermediate and posterior legs much longer than in *rufoscutellatus*, the posterior margin of the first genital segment beneath nearly truncate; antennæ longer than in the female.

*Female:* Very similar to the female of *rufoscutellatus*, but larger, with longer legs; the connexivum terminating in a stouter and longer spine.

*Holotype*, macropterous male, *allotype*, macropterous female, taken on a small pond, elevation 9,300 feet, Pingree Park, Colorado, August 18, 1924, by the authors, in the collection of C. J. Drake. *Paratypes*: Pingree Park, Colorado, August, 1924, by Dr. P. B. Lawson and Prof. R. H. Beamer, and by the authors, August 18 to 24, 1924; Estes Park, Colorado, August 27, 1924, by the authors; Corvallis, Oregon, June 1, 1899; Ames, Iowa, July 24, 1924, by C. J. Drake; Emery County, Utah, July 30, 1922, and September 13, 1921, by Mrs. Grace Wiley.

This species ranges from Oregon to Iowa and inhabits ponds and lakes. It is very closely related to *Gerris rufoscutellatus* Latr.; on account of its antennal and genital characters and much longer legs, it seems best to consider *notabilis* a distinct species rather than a variety of *rufoscutellatus*.

*G. notabilis*, n. sp., was taken in company with *G. pingreensis*, n. sp., at Pingree Park and Estes Park, Colorado; with *G. comatus*, n. sp., *G. buenoi* Kirk., *G. marginatus* Say, *G. rufoscutellatus* Latr., *G. remigis* Say, *Trepobates pictus* H. S., *Metrobates hesperus* Uhl., *Rheumatobates rileyi* Bergr., *Mesovelgia mulsanti* White, *Microvelia borealis* Bueno, and *Merragata foveata* Drake, at Ames, Iowa.

*Gerris (Aquarius) nyctalis*, n. sp.

Differs from *G. remigis* Say by its darker color and shorter body, legs and antennæ, especially the first segment. Length, male, 11.9–12.4 mm.; female, 11.5–13 mm.; width, 2.6–3.2 mm.

Apterous form: Pronotum blackish, sparsely pubescent, with the posterior margin broadly rounded, the median carina distinct, the median anterior stripe yellowish brown. Antennæ moderately long, blackish; first segment distinctly shorter than in *remigis*, twice the length of the second, the second very slightly longer than the third and the fourth a little longer than the second. Abdomen above blackish, the pubescence sparse and extremely short, each of the last four segments usually with a longitudinal, discal, bluish gray streak; connexivum broad, with a very small, brownish spot along the outer margins between each segment; terminating in a broad, stout, moderately long spine, the tip of which projects slightly inwardly and upwardly. Legs moderately long, blackish above, the tips of intermediate and hind femora extending a little beyond the tip of the abdomen. Body beneath brownish black, prosternum, coxæ and part of trochanters yellowish or brownish.

*Male*: Venter broadly flattened; sixth segment distinctly depressed in the middle, the posterior margin raised and very deeply, broadly and roundly notched, fringed with rather long, yellowish hairs. Genital segments blackish, the first segment with the median ridge narrower than in *remigis*.

*Female*: Venter distinctly broader than in *remigis*; genital segments blackish; pronotum very broadly rounded posteriorly.

Macropterous form: Pronotum with anterior lobe depressed, especially in the middle; humeri large and prominent; posterior margin not so broadly rounded as in the apterous form. Hemelytra reaching almost to tip of first genital segment, the nervures brownish black and sparsely pubescent.

*Holotype*, apterous male, and *allotype*, apterous female, taken in U. S. National Park, near Estes Park, Colo., August 27, 1924, by the authors, in collection of Carl J. Drake. *Morphotype*, macropterous female, collected with holotype. *Paratypes* and *morphotypes* collected with holotype in collections of Iowa State College, Colorado Agricultural College, and the authors. This species was collected about nine miles from Estes Park, on a small beaver pond along the Bear Lake road. It was taken in company with *G. pingreensis*, n. sp. and *G. comatus*, n. sp.

*Gerris (Gerris) comatus*, n. sp.

Size and general aspect very similar to *G. marginatus* Say and *G. alacris* Hussey; male readily distinguished from either of these by the two prominent tufts of long hair, one on each side of the first ventral genital segment; the omphalium of the metasternum is prominent, but not as large or as prominent as in *alacris*. The female is rather hard to distinguish from the female of *marginatus*, but the first genital segment above is a little broader, and the terminal spine of the connexivum is a little more blunt, the tips of the spines usually darker and clothed with longer hairs. Length, male, 7.3–8.2 mm.; female, 8–8.9 mm.; width, male, 2.3–2.5 mm.; female, 2.6–2.8 mm.

General color of body, legs and antennæ very similar to *G. marginatus*; in the macropterous form hemelytra slightly variable in length and either reach almost to, or more or less cover the first genital segment. The hemelytra in the brachypterous form do not completely cover the fifth abdominal segment. The apterous form is unknown. The proportional lengths of the antennal segments are almost identical with *marginatus*.

*Male*: The sixth dorsal segment deeply, broadly and roundly emarginated, terminating in very short spines. Venter indistinctly carinate, the third, fourth, fifth and sixth segments somewhat depressed; sixth segment deeply and roundly excavated. First genital segment with the sides deeply depressed and with a prominent tuft of long hair in each depression.

*Female*: Very closely allied to the female of *marginatus*, the terminal spines of the sixth segment slightly shorter, a little more blunt and clothed with longer hair; first genital segment above slightly shorter and broader than in *marginatus*.

*Holotype*, macropterous male, and *allotype*, macropterous female, taken on small pond, Y. M. C. A. Conference grounds, Estes Park, Colorado, August 27, 1924, by C. J. Drake and F. C. Hottes. *Morphotypes*; male, taken on Sandusky Bay,

Cedar Point, Ohio, July, 1912, by C. J. Drake, and female, from Mirror Lake, O. S. U. Campus, Columbus, Ohio, Sept. 10, 1913, by C. J. Drake. Many *paratypes* and *paramorphotypes* from U. S. National Forest, Estes Park, Colorado, August 27, 1924, by the authors; Ames, Iowa, July 24, 1924, by C. J. Drake, H. M. Harris and F. C. Hottes; Ames, Iowa, October 18, 1924, by authors; Colorado, long winged male No. 2021; Buckeye Lake, Ohio, June 20, 1916, and June 30, 1916, by C. J. Drake; Sandusky, Ohio, July, 1912, by C. J. Drake; Columbus, Ohio, September 19, 1913, by C. J. Drake; Rice Lake, Wisconsin, August 28, 1912, by A. C. Burrill, collected sweeping; Bar Harbor, Maine, July 29, 1916, by Herbert Osborn.

*Paratypes* in the collections of Iowa State College, Colorado Agricultural College, Ohio State University, H. M. Harris and the authors. *Paramorphotypes* in the collection of the authors.

This species has been confused in collections with *G. marginatus* Say. The males are very distinct and not easily confused with *marginatus* or other allied forms.

*Gerris (Gerris) pingreensis*, n. sp.

Allied to *G. buenoi* Kirk. and with similar color markings on the pronotum, but readily separated from it by the shorter basal segment of the antennæ, the distinct median carina of the pronotum and the much differently formed sixth ventral and genital segments of the male. Length, male, 9–9.85 mm., female, 9–10 mm.; width, male, 2–2.2 mm., female, 2.1–2.5 mm.

Antennæ moderately long, brownish black; first segment a little longer than the fourth and subequal to the second and third conjoined; third segment slightly shorter than the second. Legs moderately long, blackish above and brownish beneath. Pronotum broader, more deeply pitted and more roughened than in *G. buenoi*, the posterior margin very broadly rounded; sparsely clothed with extremely short, golden pubescence; anterior lobe with the short discal and the marginal stripes brownish; body beneath blackish, with rather short, silvery hairs; genital segments brownish or brownish black. Rostrum reaching to the mesosternum, the apical segment smooth and blackish.

Macropterous form: Humeri prominent, the margin beneath brownish. Hemelytra not completely covering the genital segments; nervures blackish brown, the pubescence sparse and extremely short.

Apterous form: Pronotum much more flattened, and the carina more prominent than in winged specimens; anterior lobe strongly depressed on each side of median line; posterior margin very broadly rounded and slightly carinate.

*Male*: Venter broadly, concavely depressed, with a median, longitudinal carina; sixth segment with the deep, broad furrow becoming wider and deeper posteriorly, as deeply but not as widely notched as *buenoi*. Genital segments and ventral projection of first segment narrower than in *buenoi*. Connexivum terminating in a broad and very short spine.

*Female:* Venter somewhat flattened; in the apterous female, first abdominal segment above with a prominent tubercle. Connexivum terminating in a broad, moderately long, upwardly projecting spine, the tip of which is black.

*Holotype*, macropterous male, and *allotype*, macropterous female, taken on a small pond, elevation 9,300 ft., Pingree Park, Colorado, August 18, 1924, by the authors, in the collection of Carl J. Drake. *Morphotypes*, apterous male and female, collected with types. Several hundred *paratypes* and *paramorphotypes*: Pingree Park, August 16-23, 1924, by the authors; Pingree Park, August 18-23, 1924, by Doctor P. B. Lawson and Professor R. H. Beamer; Estes Park, and U. S. National Forest near Estes Park, August 27, 1924, by the authors. *Paratypes* and *paramorphotypes* in the collections of Iowa State College, Kansas State University, Colorado Agricultural College, Ohio State University, U. S. National Museum, and the authors. This species is very abundant on ponds and small lakes in high altitudes. It was taken in company with *G. nyctalis*, n. sp. and *Gerris* sp. at Pingree Park, and with *G. nyctalis*, n. sp. and *G. comatus*, n. sp. in Estes Park and in the U. S. National Forest.