

## A NEW *HYDROMETRA* SPECIES FROM ARGENTINA (HETEROPTERA: HYDROMETRIDAE)

PABLO J. PEREZ GOODWYN

Instituto de Limnología "Dr. Raúl A. Ringuelet", CC 712, 1900, La Plata, Argentina

### ABSTRACT

A new Hydrometridae species, *Hydrometra quadrispina*, is described here. The most distinctive characteristics are: Male VIIIth abdominal segment bears 4 ventral spines, a dorsal white stripe runs all along the body in both sexes, and the anteclypeus is broad and slightly pointed. Several other differences were found between this species and the sympatric *H. argentina* Berg and *H. sztolemani* Jaczewski. *Hydrometra quadrispina* seems to have a very restricted distribution in a relict of the marginal forest in Punta Lara (Buenos Aires, Argentina). This area is threatened by a future bridge project to Uruguay.

Key Words: Neotropical, new species, systematics

### RESUMEN

Una nueva especie de Hydrometridae, *Hydrometra quadrispina* es aquí descrita. Los caracteres más distintivos son: Segmento VIII del macho con 4 espinas ventrales, una banda blanca corre dorsalmente a lo largo de todo el cuerpo en ambos sexos, y el anteclípeo es ancho y apenas puntiagudo. Varias otras diferencias fueron encontradas entre ésta especie y las simpátricas *H. argentina* Berg y *H. sztolemani* Jaczewski. *Hydrometra quadrispina* parece tener una distribución muy restringida en un relicto de la selva marginal en Punta Lara (Buenos Aires, Argentina) estando este ambiente amenazado por el proyecto de un puente a Uruguay.

According to Bachmann (1976, 1998), three Hydrometridae species are found in Argentina: *H. argentina* Berg, 1879, *H. sztolemani* and *H. fruhstorferi* Hungerford & Evans, 1934. The latter was recorded only from the Northeast of the country, quite near Brazil (Misiones). *H. sztolemani* has a wide distribution, being recorded from Brazil and Paraguay to Buenos Aires, Argentina (35°S). *H. argentina* also has a broad range throughout the Neotropical region, from Panama and Trinidad and Tobago Islands to Argentina (where it is the most common species); it is the southernmost of Neotropical Hydrometridae species (Rio Negro province, 37°S, according to Bachmann, 1976).

The Neotropical Hydrometridae were revised by Hungerford & Evans (1934) together with those of the world. Scattered information was provided by Drake (1950, 1953, 1954). A later complete checklist and description of some new species was given by Drake & Lauck (1959). Bachmann published a short paper with brief descriptions of the Argentinean species (1976). The latest information concerning this family in Argentina is summarized by Bachmann (1998).

*Hydrometra quadrispina* Perez Goodwyn, **New Species**

Terminology of morphology follows that of Polhemus & Polhemus (1995) and Polhemus and Lansbury (1997) based in Andersen (1982).

Color: Dorsal ground color when alive dark green (fuscous when fixed), females lighter than males, with white stripe running all along mid dorsal line of body, in both sexes (Fig. 1). Ventral ground color yellowish brown, fuscous narrow stripe, more evident in females, runs along mid line from little behind third pair of coxae approximately to intersegmental line between VIIth and VIIIth abdominal sternite. Body stippled by tiny brown tubercles, except abdominal tergites as well as the dorsal thorax mid line, which are bare, following white stripe. Thin bright setae scattered over entire body.

Head following described pattern, white stripe being wider immediately after antennal tubercles, almost reaching sensory bristles. Antennal tubercles shining dark brown, as well as base of sensory bristles. Anteclypeus white, with its border dark brown in dorsal view. Maxillary plate white, gular lobe translucent (Figs. 2 and 3).

Pronotum lighter than thorax, posterior boundary delineated by even lighter color.

Legs yellowish brown, with distal portion of femora and tibiae darker. Tarsi almost black.

External and internal boundaries of connexivae dark brown, forming 4 lines along abdomen in dorsal view, except for VIIIth segment. Lateral dark brown stripe running along ventral boundary of connexiva. VIIth tergite, all VIIIth segment, and proctiger clothed with long hairs. Male VIIIth sternite bearing rounded depressions, one

on each side of ventral mid line, both bare with hairs, lighter than ground color (Figs. 4 and 5).

Structure: all measurements are given in mm.

Overall length ♂:  $9.90 \pm 0.30$ ; ♀:  $11.10 \pm 0.40$ .

Head long ( $2.57 \pm 0.25$ ), wider at antennal tubercle ( $0.38 \pm 0.02$ ). Maxillary plate quadrangular, not prominent but distinctly colored. Gular lobe large, rounded, and covering base of rostrum. Rostrum exceeding ocular line, about  $0.625$  of postoculus. Antecolus to postoculus ratio  $1.72 \pm 0.15/0.88 \pm 0.20$ . Interoculus slightly narrower than width of eye ( $0.13/0.16$ ) bearing longitudinal furrow, more evident in females. Anteclypeus moderately large, conical, blunt. Antennal formula I, II, III, IV ( $0.43 - 1.05 - 2.10 - 1.10$ ).

Prothorax with row of pits the anterior lobe, forming collar (Fig. 1), few irregularly scattered pits on posterior lobe. Pronotum length  $1.45 \pm 0.20$ , remainder of thorax  $1.25 \pm 0.15$ . Distance between coxae I and II:  $0.70$ , between coxae II and III:  $1.35$ . Anterior and middle acetabulae each with one pit on anterior and posterior parts. Proportions of legs as follows: Femur, tibia, tarsal I, tarsal II, tarsal III. Fore leg:  $2.37/2.65/0.07/0.22/0.22$ . Middle leg:  $2.95/3.0/0.07/0.27/0.26$ . Hind leg:  $3.40/4.25/0.07/0.24/0.23$ .

Abdomen length. ♂:  $4.40 \pm 0.20$ ; ♀:  $5.50 \pm 0.20$ . Male posterior boundary of VIIth segment lined by setae, setting off bristle collar (Fig. 5). Female VIIth and VIIIth tergites covered by long hairs, VIIth sternite bearing pair of tufts of slender, faint hairs on both sides of mid line (Figs. 6 and 7).

Male terminalia as shown in Figs. 4 and 5. The VIIth sternite bears "spines" (tufts of setae resembling spines, following cited authors), all about same size, projected caudad; the external ones nearer proximal edge of VIIth segment (Figs. 4 and 5).

Distribution: Known only from type locality. Argentina, Buenos Aires, Ensenada, Punta Lara marginal forest, pond by the road, shaded by trees, and most of the year covered by pleuston. ( $34^{\circ}47', 05'S$ ;  $58^{\circ}00', 49'W$ ) about  $0.5$  km away from the Rio de La Plata estuary.

Examined material: all micropterous, no brachypterous or macropterous forms were found. Holotype ♀ 28/XII/97, allotype ♀ 28/XII/97 (MLP). Paratypes 3 ♀ 28/XII/97 P. P. Goodwyn (MLP); 1 ♂ 19/XII/97, Ellenrieder; 2 ♂ 17/XII/97; 4 ♀ 3/I

98 P. P. Goodwyn (MACN), 1 ♂ 12/IV/98 (ZSM) P. P. Perez Goodwyn.

The holotype, allotype and 6 paratypes are deposited in the Museo de La Plata (MLP). 6 paratypes in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia" (MACN), and 1 paratype in the Zoologische Staatssammlung München, Deutschland.

#### DISCUSSION

*Hydrometra argentina* is found over a wide range, but was almost absent in these small shaded ponds of the forest. Nevertheless it was the only species present just  $1$  km. away, in sunny ponds, shaded only by bushes. Occasionally, *Hydrometra sztolcmani* was found in both kinds of environments.

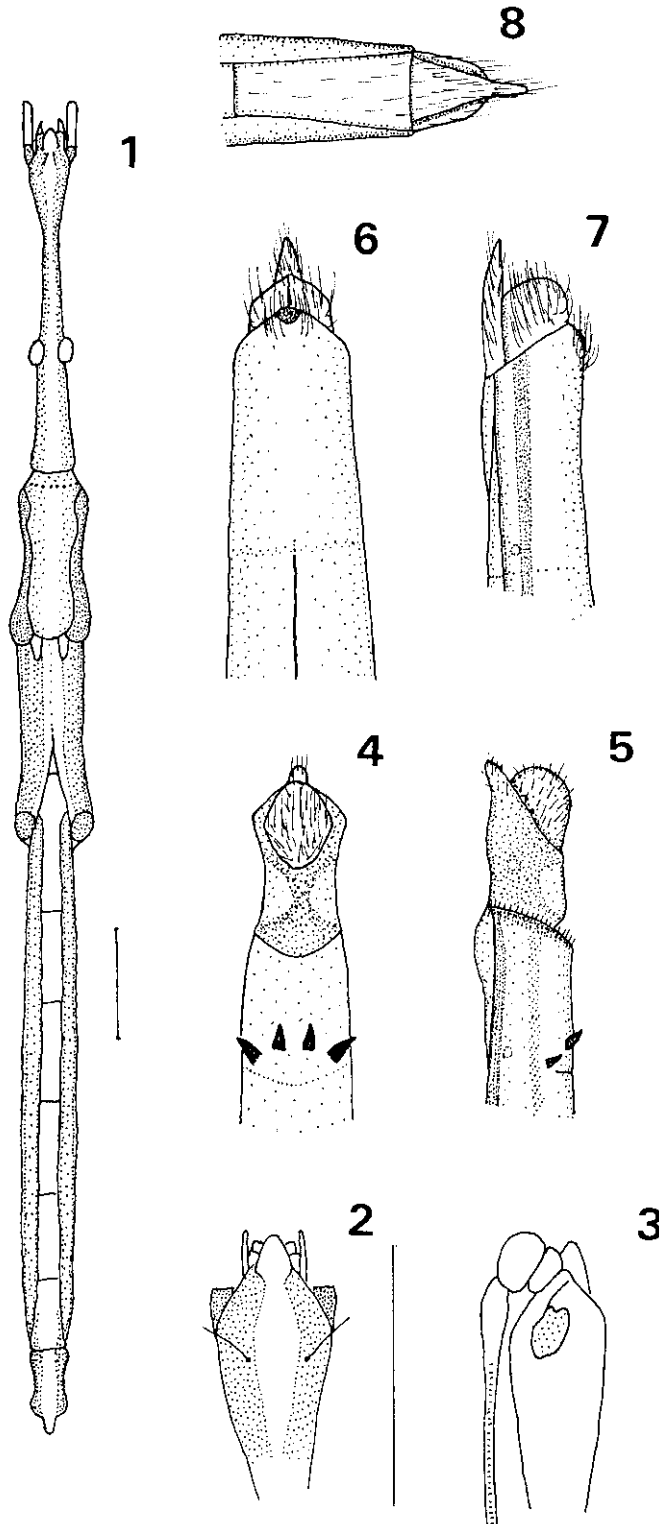
*Hydrometra quadrispina* specimens are conspicuous in the field by their white mid-dorsal line. Males are easily distinguished from both sympatric species by the presence of four spines.

Females of *H. argentina* and *H. quadrispina* are very similar, but they can be distinguished because the terminal process of *H. argentina* is slightly longer and more pointed, and the distal midventral boundary of the VIIIth segment is pointed, whereas in *H. quadrispina* it is blunt. There are slight differences in the furrow in the interoculus; that of *H. quadrispina* is more developed, particularly in females. The anteclypeus of these 2 species is distinctive; it is more slender in *H. argentina*. The maxillary plate of *H. argentina* is larger and darker. Measurements did not reveal significant differences between *H. argentina* and *H. quadrispina*, except for the tarsus II of the middle and hind legs, both are longer in *H. argentina* ( $0.38$  and  $0.40$ , respectively).

*Hydrometra quadrispina* was only found only a few times in a restricted area during 2 years of intensive sampling in a place that had been sampled by former investigators for many years; thus it can be considered "rare". This environment is a relict of a previously extensive marginal forest now endangered in its southern limit by human activities. The exact collection site probably will be destroyed soon by a huge bridge that will join Argentina with Uruguay.

#### KEY TO SPECIES OF *HYDROMETRA* IN ARGENTINA

- 1 Longer than  $12.5$  mm, dark overall color, males bearing 2 semilunar tufts of hairs in the VIIth sternite. Misiones Province. . . . . *H. fruhstorferi*
- 1' Not longer than  $12$  mm, males never bearing 2 semilunar tufts of hairs in the VIIth sternite . . . . . 2
- 2 Male VIth segment with 2 large lateral processes overlapping the posterior margin of the Vth segment. Female terminal process blunt . . . . . *H. sztolcmani*
- 2' Male terminalia without processes, only bearing spines. Female terminal process pointed. . . . . 3
- 3 Both sexes with a mid-dorsal pale line, male VIIth sternite with 4 spines . . . . . *H. quadrispina*
- 3' Uniform dorsal color, male VIIth sternite with 2 spines . . . . . *H. argentina*



Figs. 1-8: *Hydrometra quadrispina* Perez Goodwyn. 1: Male dorsal habitus, legs omitted. Scale 1 mm. 2-3: Head: 2, dorsal view; 3, lateral view, antennae omitted. 4-5: Male terminalia: 4, ventral view; 5, lateral view. 6-8: Female terminalia: 6, ventral view; 7, lateral view; 8, dorsal view. Figures 2-8 scale 1 mm.

## ACKNOWLEDGMENTS

I thank A. L. Estévez, A. O. Bachmann, and M. Perez Goodwyn for helpful comments on the manuscript.

## REFERENCES CITED

- ANDERSEN, N. M. 1982. The semiaquatic bugs (Hemiptera, Gerromorpha). Phylogeny, adaptations, biogeography and classification. Klampenborg, Denmark. Scandinavian Science Press. 455 pp.
- BACHMANN, A. O. 1976. Nota sobre las Hydrometridae de la Argentina (Heteroptera). Rev. Soc. Entomol. Argentina 35(1-4): 143-146
- BACHMANN, A. O. 1998. Heteroptera acuáticos. Chapter 16. pp. 163-180. In J. J. Morrone and S. Coscarón (eds.), Biodiversidad de Artropodos Argentinos. Ediciones Sur, La Plata, Buenos Aires.
- DRAKE, C. J. 1950. New Neotropical Hydrometridae (Hemiptera). Acta Entomol. Mus. Nat. Pragae 26(379): 1-7.
- DRAKE, C. J. 1953. Synonymical data and description of a new *Hydrometra* (Hemiptera, Hydrometridae). J. Kansas Entomol. Soc. 26: 40-41.
- DRAKE, C. J. 1954. Synonymical data: Descriptions of new Hydrometridae (Hemiptera, Hydrometridae). Great Bas. Nat. 14: 61-66.
- DRAKE, C. J., AND D. R. LAUCK. 1959. Descriptions, synonymy, and check-list of American Hydrometridae. Great Basin Nat. 19(2-3): 43-52.
- HUNGERFORD, H. B., AND N. E. EVANS. 1934. The Hydrometridae of the Hungarian National Museum and other studies on the family (Hemiptera). Ann. Mus. Nat. Hungarici 28: 31-112.
- POLHEMUS, J. T., AND I. LANSBURY. 1997. Revision of the genus *Hydrometra* Latreille in Australia, Melanesia, and Southwest Pacific (Heteroptera: Hydrometridae). Bishop Mus. Occ. Papers 47: 1-67.