

**A NEW SPECIES OF *HARMSTONIA*  
(DIPTERA: DOLICHOPODIDAE) FROM BOLIVIA**

HAROLD ROBINSON AND NORMAN E. WOODLEY

(HR) Department of Botany, National Museum of Natural History, P.O. Box 37012, Smithsonian Institution, Washington, DC 20013-7012, U.S.A.; (NEW) Systematic Entomology Laboratory, PSI, Agricultural Research Service, U.S. Department of Agriculture, % National Museum of Natural History, Smithsonian Institution, P.O. Box 37012, MRC 168, Washington, DC 20013-7012, U.S.A. (e-mail: nwoodley@sel.barc.usda.gov).

---

**Abstract.**—*Harmstonia ichilo* Robinson and Woodley, new species, is described from Ichilo Province, Santa Cruz Department, Bolivia and is the first record for the genus in South America.

**Key Words:** *Harmstonia*, Bolivia, South America

---

The genus *Harmstonia* was described by Robinson (1964) on the basis of two species from the eastern United States. The genus has some of the key characters of *Micromorphus* Mik, especially the mesoscutum with a flattened posterior slope and an absence of acrostichal setulae. However, *Harmstonia*, with its large male genital capsule and diverging  $R_{4+5}$  and M veins of the wing differs strikingly from *Micromorphus*, and the two genera are not now considered to be particularly closely related. Eleven additional species were described by Robinson (1967), mostly from Mexico, with a species from Costa Rica and another from the Lesser Antilles. Four more species were added by Robinson (1975), two from Jamaica and two from Panama. A species described in the genus by Botosaneanu and Vaillant (1973) from Cuba was transferred to *Enlinia* Aldrich by Robinson (1975) because of the wing venation and the presence of acrostichals, in spite of some unusual features and its larger than usual size. Until now, *Harmstonia* had not been reported from the continent of South America, although it was expected to occur there.

In November 2003, on a field trip to Bolivia, N. E. Woodley collected a species of *Harmstonia* in the lowlands of eastern Bolivia in Santa Cruz Department. The series was mostly females, but one specimen was a male, which allows the following description.

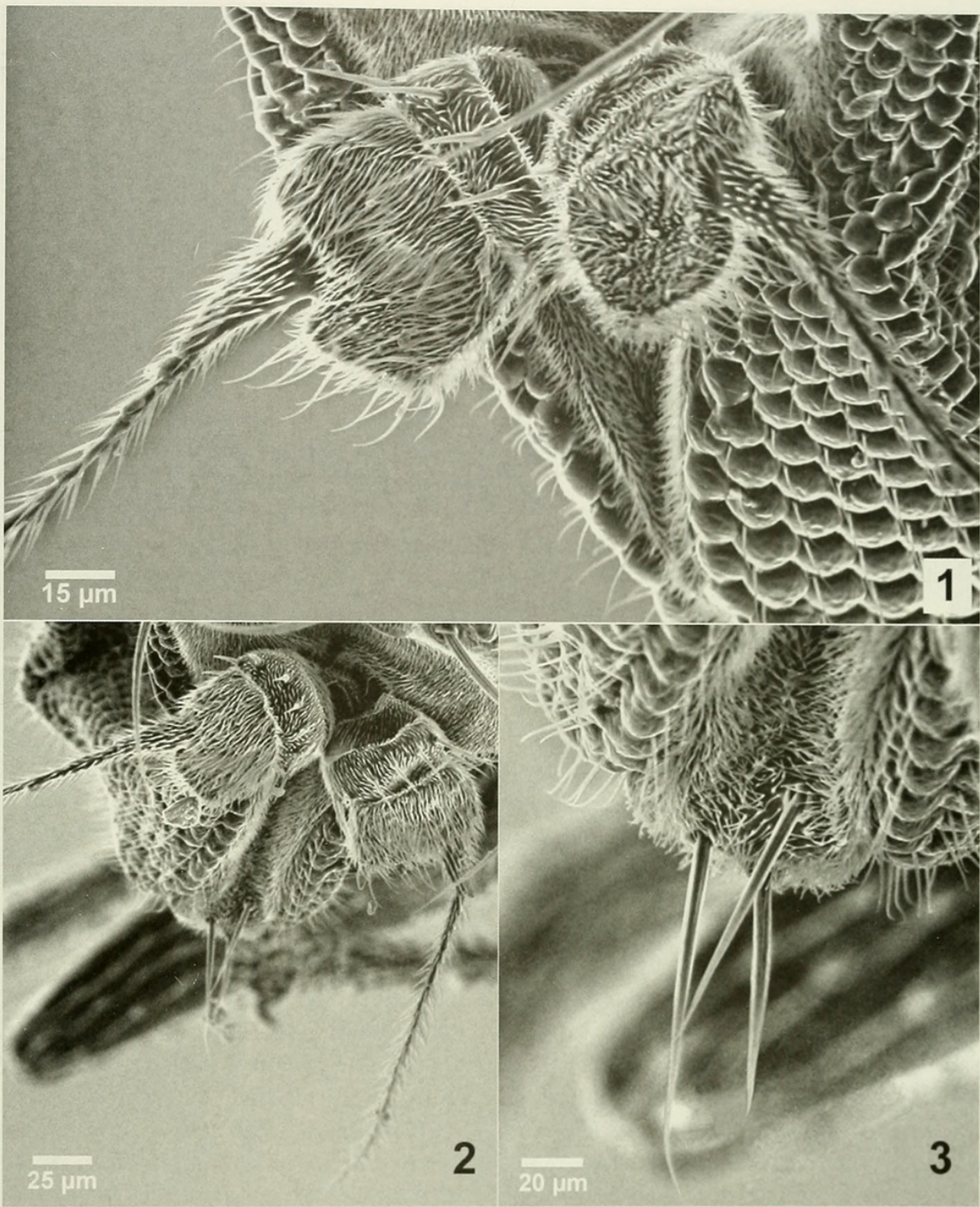
***Harmstonia ichilo* Robinson and  
Woodley, new species**  
(Figs. 1–7)

**Male.**—Length 1 mm; wing 1.1 mm by 0.4 mm.

Front dark green with brownish pollen; face covered with brownish pollen, triangular, with eyes narrowly contiguous in lower part. Palpi and proboscis brownish. Antenna (Fig. 1) black; scape without bristles, pedicel short-annuliform, ringed with short bristles; first flagellomere broadly oblong with slight lobe below arista, nearly truncate; arista with short pubescence. Orbital setulae small, black.

Thorax dark green, slightly metallic with brownish pollen, pollen denser on sides; mesoscutum short, strongly gibbous, distinctly flattened on posterior slope (Fig. 4,





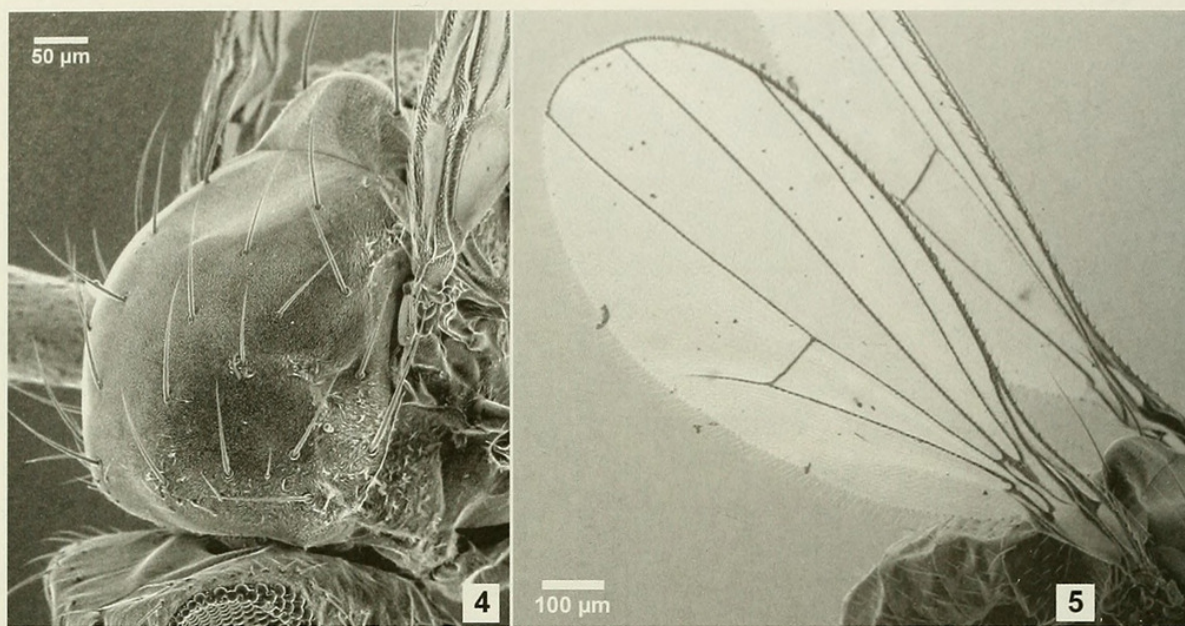
Figs. 1–3. ESEM views of *Harmstonia ichilo*. 1, Antennae and narrowed face of male. 2, Antennae and broadened face of female. 3, Setae on face of female.

as in female); setae dark; acrostichals lacking; 5 strong pairs of dorsocentrals; scutellum with 2 strong, widely separated bristles, without small setula on lateral margin.

Coxae, femora, tibiae and most of basitarsi pale; fore tarsus from tip of second segment, and middle and hind legs from tip of basitarsi, dark; hind coxa with small ex-

ternal bristle. Femora without longer setae ventrally. Lengths of parts of legs as follows: Fore leg: tibia, 0.32 mm; tarsomeres 1–5, 0.12, 0.07, 0.06, 0.05, 0.06 mm; middle leg: tibia 0.45 mm; tarsomeres 1–5, 0.06, 0.10, 0.07, 0.05, 0.06 mm; hind leg: tibia, 0.5 mm; tarsomeres 1–5, 0.14, 0.2, 0.1, 0.06, 0.06 mm.





Figs. 4–5. *Harmstonia ichilo*. 4, Thorax of female showing depressed area before scutellum and lack of acrostichal setae. 5, Wing.

Wing (Fig. 5, as in female) oval, hyaline, veins brownish, veins  $R_{4+5}$ , M and CuA diverging from base, essentially straight; crossvein dm-cu perpendicular to M, subequal to or slightly longer than last of section of CuA (Fig. 5 does not show this well because the wing is at a slight angle, making dm-cu appear shorter than the last section of CuA). Calypter brown with black bristles; halter pale brown.

Genital capsule large, extending well forward under the abdomen, blackish brown, with little pollen; cercus (Figs. 6, 7) pale brown, S-shaped, borne from dorso-apical corner upward along truncate apex of capsule, broadened cleaver-like distal part with irregular long bristles along margins, without inflated basal part; gonopods projecting forward, with stout terminal spur; aedeagal sheath stout, curving strongly to end near bases of cerci; small lamella-like surstylus exposed along ventral margin of gonopod.

Female.—Similar to male but eyes not contiguous below, face with 2–4 small setae near middle (Figs. 2, 3), and first flagellomere of antenna slightly more truncate below arista (Fig. 2). Lengths of parts of legs as follows: Fore leg: tibia, 0.32 mm; tarsomeres 1–5, 0.12, 0.07, 0.05, 0.04, 0.06

mm; middle leg: tibia, 0.42 mm; tarsomeres 1–5, 0.17, 0.1, 0.04, 0.05, 0.07 mm; hind leg: tibia, 0.475 mm; tarsomeres 1–5, 0.125, 0.15, 0.1, 0.06, 0.07 mm.

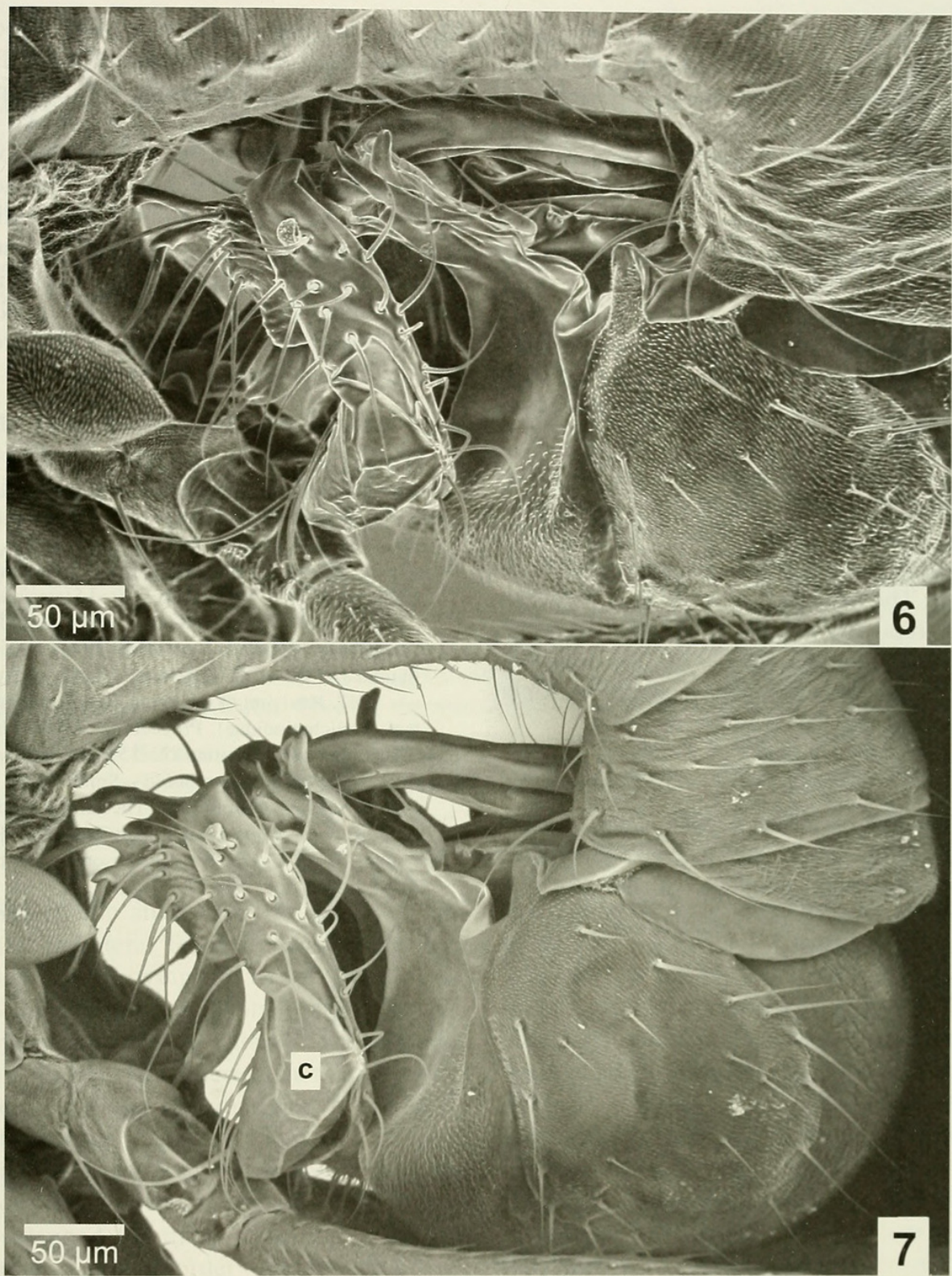
Holotype.—Male: BOLIVIA: Santa Cruz Department, Ichilo Province, Hotel Flora y Fauna, 4–6 km SSE Buena Vista, 17°29.95'S, 63°33.15'W, 400–500 m, 10 Nov. 2003, N. E. Woodley, in the National Museum of Natural History, Smithsonian Institution (USNM).

Paratypes.—8 Females (including allotype), same locality, date, collector, habitat as holotype (USNM, MNKM).

Etymology.—The species epithet, a noun in apposition, is based on the province in Bolivia where the type series was collected.

Remarks.—*Harmstonia ichilo* lacks distinct rows of dorsal bristles on the fore and hind tibiae, which would place the species in the typical group of the genus according to Robinson (1967). The shape of the cerci, without an inflated base, with a cleaver-like tip and without forked marginal setae resembles most closely the Mexican *H. clavicauda* Robinson. The latter species, nevertheless, has a small genital capsule borne apically on the abdomen, smaller cerci, and a thinner aedeagal sheath.





Figs. 6–7. *Harmstonia ichilo*, genital capsule and appendages of the male in slightly different views with preabdomen above and hind leg to left and below. 6, Capsule without back-scattering showing surface detail. 7, Capsule with back-spattering showing clearer outline of parts. Abbreviation: c, cercus.

The series collected by Woodley includes 8 females and only a single male. The specimens were taken along a small, partly shaded stream with steep banks in second-

ary forest. Some of the water formed still, shallow pools. The substrate was very fine, clean sand. The flies were not actually observed *in situ*, but were collected by general



sweeping at water edges along with Ephydriidae and other Dolichopodidae. The paucity of males collected apparently indicates that the sexes have slightly differing preferences in habitat, something already seen in other members of the genus. Robinson observed males of *H. intricata* Robinson in eastern North America which seemed to prefer drier parts of muddy ruts in a road, while females were found in places with some standing water. Males of *H. pectinicauda* Robinson, from the same area were only in direct sunlight while females, were not as particular.

The other Dolichopodidae collected at the site included single males of an apparently undescribed *Sarcionus* Aldrich and an apparently undescribed *Discopygiella* Robinson. The latter genus has not previously been reported from the South American continent, but the species is not described at this time because only a single specimen was obtained.

#### ACKNOWLEDGMENTS

The Philips XL30 ESEM scope used to produce the illustrations was operated by Scott Whitaker, manager of the National

Museum of Natural History SEM Laboratory. Marjorie Knowles, technician in Botany, is thanked for her work with the specimens and illustrations. NEW thanks the Entomology Department at the Museo de Historia Natural "Noel Kempff Mercado" (MNKM), Santa Cruz, Bolivia for facilitating collecting in Bolivia. We are grateful to Wayne Mathis (Smithsonian Institution) and Natalia Vandenberg and Allen Norrbom (Systematic Entomology Laboratory, USDA) for reviewing the manuscript.

#### LITERATURE CITED

- Botosaneanu, L. and F. Vaillant. 1973. Quelques Diptera Dolichopodidae nouveaux de Cuba. Résultats des Expéditions biospéologiques Cubano-Roumaines à Cuba 1: 411-424.
- Robinson, H. 1964. A synopsis of the Dolichopodidae (Diptera) of the southeastern United States and adjacent regions. Miscellaneous Publications of the Entomological Society of America 4: 103-192, figures 1-139.
- . 1967. Revision of the genus *Harmstonia* (Diptera: Dolichopodidae). Proceedings of the United States National Museum 123(3515): 1-16.
- . 1975. Bredin—Archbold—Smithsonian Biological Survey of Dominica. The family Dolichopodidae with some related Antillean and Panamanian species (Diptera). Smithsonian Contributions to Zoology 185: i-iv, 1-141.



Robinson, Harold Ernest and Woodley, Norman E. 2005. "A new species of Harmstonia (Diptera: Dolichopodidae) from Bolivia." *Proceedings of the Entomological Society of Washington* 107, 436–440.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/100258>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/40792>

#### **Holding Institution**

Smithsonian Libraries and Archives

#### **Sponsored by**

Smithsonian

#### **Copyright & Reuse**

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

Rights Holder: Entomological 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>.