
A New Species of *Hedyotis* (Rubiaceae) from Jalisco, Mexico

Edward E. Terrell

Department of Plant Biology, University of Maryland, College Park, Maryland 20742, U.S.A.

ABSTRACT. *Hedyotis macvaughii*, a new species from Jalisco, Mexico, is described and compared with related taxa. It is a small wiry-stemmed perennial herb with filiform leaves, small funnelform flowers, and non-crateriform seeds.

Among specimens lent by MICH was a previously unnamed species collected by Rogers McVaugh in Jalisco, Mexico. It is here described as a new species of *Hedyotis*.

Hedyotis macvaughii Terrell, sp. nov. TYPE: Mexico. Jalisco: steep mountain sides 3–10 km generally E on the road to Mina del Cuale from the junction 5 km NW of El Tuito, Mpio. de Cabo Corrientes, elev. 850–1150 m, 16–19 Feb. 1975, R. McVaugh 26426 (holotype, MICH). Figures 1, 2.

Herba perennis rhizomata. Caules 15–20 cm alti erecti. Folia filiformia. Inflorescentia diffusissima. Corolla alba infundibuliformis 3.0–4.5 mm longa. Capsulae subglobose 1–2 mm longae. Semina 0.3–0.5 mm longa compressa ellipsoidea hilo punctiformi in crista ventrali.

Perennial herbs with slender rhizomes. Stems 15–20 cm tall, subterete, erect, very slender, wiry, glabrous, widely and diffusely branched, internodes numbering ca. 5–6. Leaves 6–20 mm long, 0.3–0.7 mm wide, filiform, with 2 inconspicuous grooves beneath, obtuse, glabrous above and beneath. Stipules to 1 mm long and wide, inconspicuous, entire or few-toothed. Inflorescences widely spreading, diffuse, to ca. 15 cm wide, with many filiform branches, flowers heterostylous, in many 2–5-flowered cymes, pedicels filiform, to ca. 15 mm long. Calyces glabrous; lobes 4, 0.4–0.8 mm long, 0.2–0.5 mm wide, broadly lanceolate, obtuse. Corollas 4-lobed, 3.0–4.5 mm long, funnelform, white; tubes 2.0–2.7 mm long, 0.5–0.6 mm wide at base; lobes 1–2 mm long, 0.5–1.5 mm wide, ovate. Anthers 4, ca. 0.5–0.8 mm long. Pollen colporate type A. Stigmas 2-branched, ca. 0.5 mm long, linear. Pin flowers with stigmas slightly exerted at corolla throat, anthers located at $\frac{1}{3}$ – $\frac{1}{2}$ point of corolla tube. Thrum flowers with anthers slightly exerted at corolla throat, stigma not seen. Capsules 1–2 mm long and wide, subglobose, thin-walled, straw-colored, $\frac{3}{4}$ – $\frac{7}{8}$ inferior, apices rounded or truncate, dehiscence lo-

culicidal. Seeds several per capsule, 0.3–0.5 mm long, 0.2–0.35 mm wide, brown, dorsiventrally moderately compressed, in outline broadly elliptic, oblong, or ovoid, sometimes irregularly angulate, non-crateriform, dorsal side almost smooth or obscurely reticulate, convex, ventral side finely reticulate, hilum punctiform on acentric hilar ridge, ridge obtuse or acutish, low to rather high, testa with areoles single or double walled. Chromosome number unknown.

Hedyotis macvaughii (spelling in accordance with Greuter et al., 1994: Rec. 60 C.4.(a)) is somewhat geographically isolated from related species that occur to the eastward in Mexico, as there are no records of *Hedyotis* or *Houstonia* species occurring in Jalisco, Colima, Michoacán, or Nayarit (Standley, 1918; Terrell, 1991).

The new species is distinct in its morphology. It is a small wiry-stemmed perennial herb with filiform leaves and small funnelform flowers (Fig. 1). The seeds (Fig. 2) lack any kind of ventral depression or cavity, hence are non-crateriform. They are moderately dorsiventrally compressed and have a punctiform hilum on a low to rather high hilar ridge. These seed characters ally the new species with *Hedyotis* rather than *Houstonia*, which has crateriform seeds, or *Oldenlandia*, which has distinctive 3-angled (trigonal) or conic seeds (Terrell, 1991).

Lewis (Terrell et al., 1986) recognized three types of pollen aperture structure, based on the extent of thinning of the nexine in the equatorial region. Two of these types, colpororate and colporate type B, occur in *Houstonia*, whereas *Hedyotis* and *Oldenlandia* have predominantly colporate type A. For *Hedyotis macvaughii*, Lewis (pers. comm., May 1995) reported the occurrence of colporate type A pollen.

There are three species that superficially resemble or might be confused with *Hedyotis macvaughii*: *Hedyotis asperuloides* Bentham, *Houstonia palmeri* A. Gray, and *Houstonia longifolia* Gaertner. *Hedyotis asperuloides* of Baja California, Mexico, is a small annual with corollas 3–11 mm long, anthers 1.0–1.3 mm long, stigma branches 1.0–1.4 mm long, capsules 1.3–5.0 mm long that are turbinate,



Figure 1. Holotype (MICH) of *Hedyotis macvaughii* Terrell, with inflorescence enlarged (top).

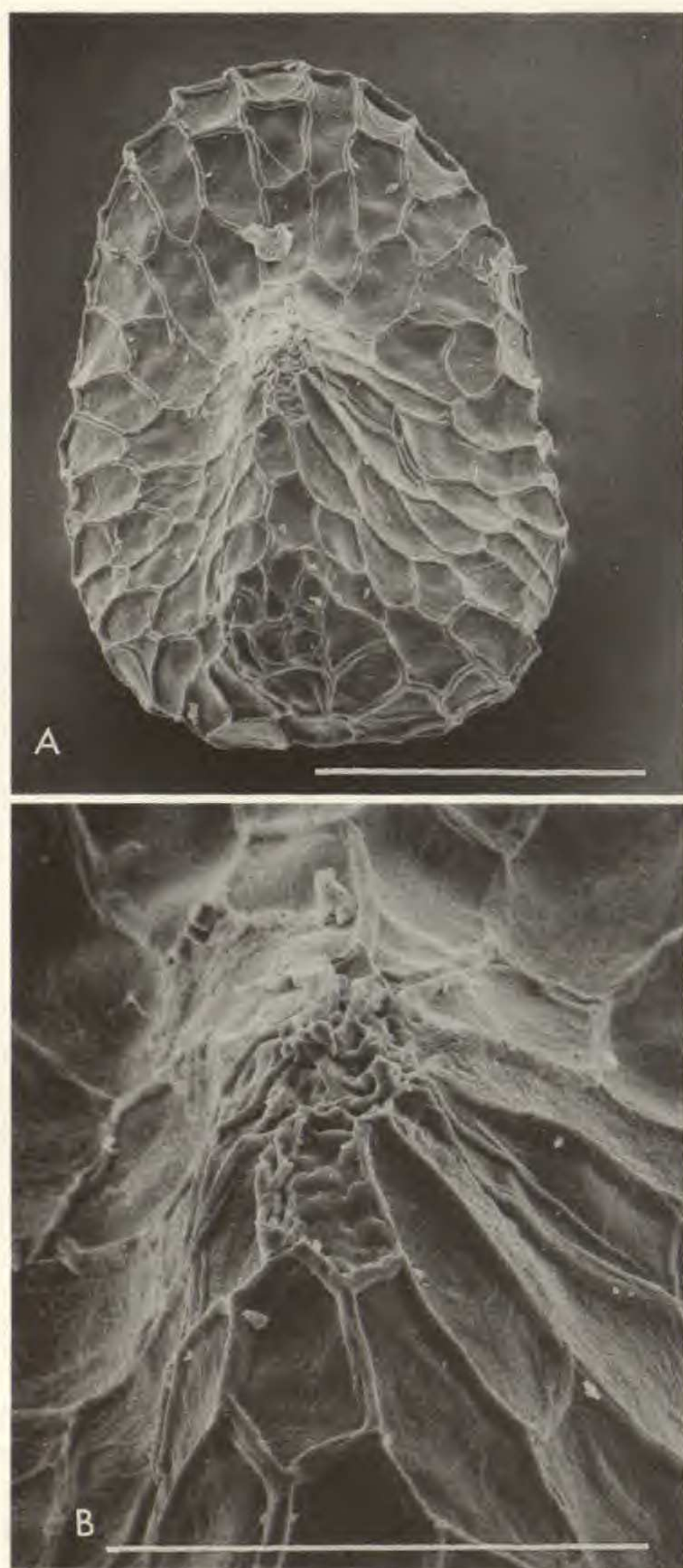


Figure 2. Scanning electron micrographs of *Hedyotis macvaughii* seeds (from holotype). —A. Ventral view showing punctiform hilum on hilar ridge, $\times 150$, bar = $200\ \mu\text{m}$. —B. Enlarged view of hilum and testa areoles (cells), $\times 500$, bar = $100\ \mu\text{m}$.

oblong, or elliptic, and seeds with a larger rounded hilar ridge. *Hedyotis macvaughii* also somewhat resembles *Houstonia palmeri* (including *H. longipes* S. Watson) of northern Mexico and *Houstonia lon-*

gifolia Gaertner of the U.S. and Canada (including *H. tenuifolia* Nuttall of the southeastern U.S.). These *Houstonia* species differ from *Hedyotis macvaughii* in several characters, including their longer corollas (usually 4–10 mm or in *H. palmeri* to 15 mm long) and crateriform seeds with a linear hilar ridge centered in a ventral depression (cup-shaped in *H. palmeri*).

The main body of *Hedyotis* species are Asian, being most numerous in India and China, and are related to *H. fruticosa* L., the type species (Jarvis et al., 1993). Terrell (1991) recognized about 20 species of *Hedyotis* in North America, of which 19 occur only in the southwestern U.S. or Mexico. The 20 species are diverse in morphology and differ variously from the Asian species. They remain in *Hedyotis* pending further study.

This new species is named for its collector, Rogers McVaugh, who has contributed much to our understanding of the Mexican flora.

Acknowledgments. I thank the curator of MICH, W. R. Anderson, for loan of the type specimen. W. P. Wergin helpfully provided access to the SEM laboratory at the U.S. Department of Agriculture, Beltsville, Maryland. I am grateful for use of the botanical facilities at the University of Maryland (courtesy of J. L. Reveal) and the Department of Botany, Smithsonian Institution. The determination of the pollen type by W. H. Lewis is much appreciated. J. J. Wurdack corrected the Latin description. This is Scientific Article No. A-6639, Contribution No. 8857, of the Maryland Agricultural Experiment Station.

Literature Cited

- Greuter, W., F. R. Barrie, H. M. Burdet, W. G. Chaloner, V. Demoulin, D. L. Hawksworth, P. M. Jørgensen, D. H. Nicolson, P. C. Silva, P. Trehane & J. McNeill. 1994. International Code of Botanical Nomenclature (Tokyo Code). Regnum Veg. 131.
- Jarvis, C. E., F. R. Barrie, D. M. Allan & J. L. Reveal. 1993. A List of Linnaean Generic Names and their Types. Koeltz Scientific Books, Königstein, Germany.
- Standley, P. C. 1918. Rubiaceae—Oldenlandieae. N. Amer. Fl. 32(1): 17–39.
- Terrell, E. E. 1991. Overview and annotated list of North American species of *Hedyotis*, *Houstonia*, *Oldenlandia* (Rubiaceae) and related genera. Phytologia 71: 212–243.
- , W. H. Lewis, H. Robinson & J. W. Nowicke. 1986. Phylogenetic implications of diverse seed types, chromosome numbers, and pollen morphology in *Houstonia* (Rubiaceae). Amer. J. Bot. 73: 103–115.