



FIGURE 1. *Holographis tolantongensis* (Hernández M. y Tenorio L. 6948). a, Habit, $\times 0.5$; b, Leaf and section of stem, $\times 3.3$; c, Portion of inflorescence, $\times 3.5$; d, Corolla cut open to show androecium, $\times 3.5$; e, Style, $\times 4.6$.

Holographis tolantongensis exhibits the following unique combination of characters: opposite leaves, bracts with the abaxial surface pubescent, pinkish-purple corollas with the external surface glabrous, and calyces 7.5–10 mm long. The only other species of *Holographis* known from Hidalgo, *H. ehrenbergiana*, has mostly whorled leaves and yellow corollas.

***Holographis caput-medusae* T. F. Daniel, sp. nov.**
(Figures 2, 4)

TYPE.—MEXICO. Guerrero: along road from Petatlán to Camalotito, 9.8 km SW of Camalotito. 8 March 1987. T. F. Daniel and B. Bartholomew 4918 (Holotype: CAS!; isotypes: K!, MEXU!, MICH!, NY!, US!).

Herba perennis usque ad 4 dm alta. Caules juniores pubescentes trichomatibus inconspicuis

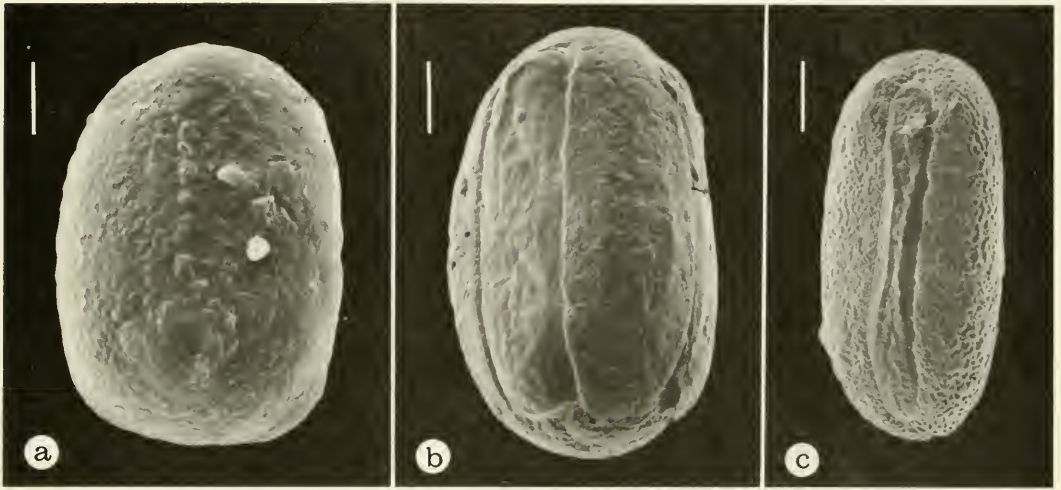


FIGURE 2. Scanning electron micrographs of pollen of *Holographis*. a, *H. tolantongensis* (Hernández M. and Tenorio L. 6948), scale equals 6 μ m; b, *H. caput-medusae* (Daniel and Bartholomew 4918), scale equals 6 μ m; c, *Holographis leticiana* (Torres C. et al. 637), scale equals 7.5 μ m.

retrorsi eglandulosi usque ad 0.1 mm longis. Folia verticillata in quoque nodo quatuor sessilia vel subsessilia, lamina anguste elliptica vel elliptica vel ovato-elliptica vel obovato-elliptica 30–97 mm longa 10–40 mm lata 2.1–6-plo longior quam latior margine plana. Inflorescentia spicata, bracteae lanceolatae 6–8 mm longae 0.8–1.2 mm latae apice longiattenuatae recurvatae, bracteolae lanceolatae 6–8 mm longae 0.5–1 mm latae apice longiattenuatae recurvatae. Calyx 8.5–10 mm longus, corolla albida et rosea 11–14 mm

longa extus pubescens, stamina 3.5 mm longa, stylus 6.5–7.5 mm longus. Capsula 8–9 mm longa puberula. Semina 2.2–3 mm longa, 1.8–2 mm lata.

Perennial herb to 4 dm tall. Young stems inconspicuously pubescent with retrorse, eglandular trichomes up to 0.1 mm long concentrated in two vertical lines to glabrous. Leaves whorled (four/node), sessile to subsessile, petioles (if present) up to 1 mm long, blades chartaceous, narrowly elliptic to elliptic to ovate-elliptic to ob-

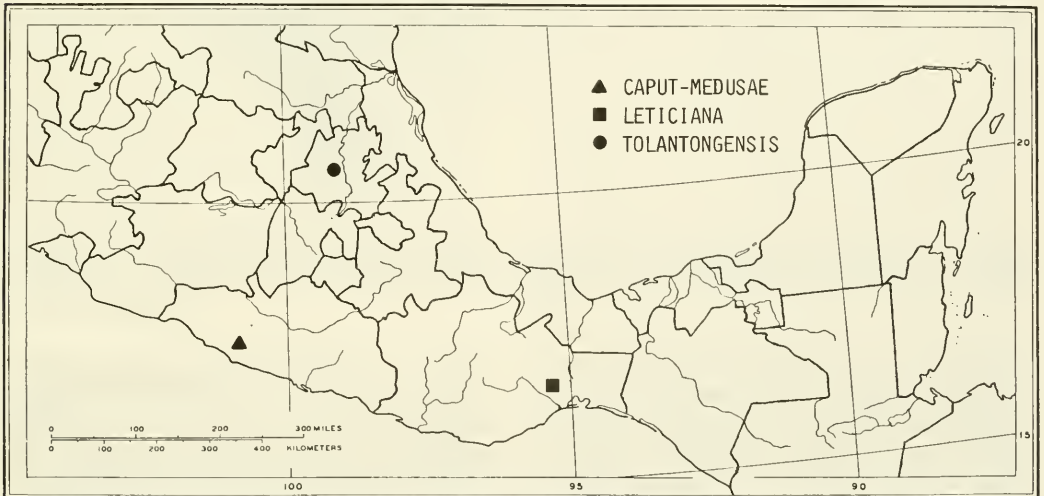


FIGURE 3. Map showing distribution of *Holographis caput-medusae*, *H. leticiana*, and *H. tolantongensis*.



FIGURE 4. *Holographis caput-medusae* (Daniel and Bartholomew 4918). a, Habit, $\times 0.5$; b, Inflorescence, $\times 3.4$; c, Corolla, $\times 3.6$; d, Corolla cut open to show androecium, $\times 4.3$; e, Capsule, $\times 4$; f, Seed, $\times 11.5$.

ovate-elliptic, 30–97 mm long, 10–40 mm wide, 2.1–6 times longer than wide, acuminate at apex, attenuate nearly to or to the node at base, adaxial surface sparsely pubescent with coarse, antrorse, eglandular trichomes 0.2–0.5 mm long, abaxial surface glabrous or nearly so, margin entire to somewhat undulate, flat. Inflorescence of axillary

spikes to 3 cm long, flowers opposite at nodes, rachis evenly and densely pubescent with straight, eglandular trichomes to 0.05 mm long. Bracts lanceolate, 6–8 mm long, 0.8–1.2 mm wide, abaxial surface pubescent like rachis, apex long-attenuate and recurved. Bractlets lanceolate, 6–8 mm long, 0.5–1 mm wide, approximately equal

in length to bracts, pubescent like bracts, apex long-attenuate and recurved. Calyx 8.5–10 mm long, lobes equal in length and slightly overlapping one another, pubescent like bracts, long-attenuate and recurved at apex, margin hyaline proximally. Corolla whitish with pink lines on lower lip, horizontal during anthesis, 11–14 mm long, pubescent on external surface with eglandular trichomes 0.05–0.1 mm long, tube 5–7 mm long, upper lip 4.5–5.5 mm long with linear-elliptic lobes 4.5–5.5 mm long, lower lip 6–7 mm long with elliptic to obovate lobes 3–4.7 mm long. Stamens 3.5 mm long, filaments pubescent, thecae 1.3–1.6 mm long, pollen (observed in *Diaphane*) prolate, 34–42 μm long (polar diameter), 25–27 μm wide (equatorial diameter), 1.4–1.6 times longer than wide, colpi distinct; staminode 0.6 mm long, pubescent at apex. Style 6.5–7.5 mm long, sparsely pubescent; stigma unequally bilobed, 0.2–0.3 mm long. Capsule 8–9 mm long, puberulent with trichomes less than 0.05 mm long. Seeds subelliptical to subrectangular in outline, 2.2–3 mm long, 1.8–2 mm wide, surfaces covered with hairlike papillae to 0.1 mm long.

DISTRIBUTION AND PHENOLOGY.—Known only from the seaward slopes of the Sierra Madre Sur in western Guerrero (Fig. 3) in a region of tropical dry forest at an elevation of approximately 150 m. Flowering and fruiting: March.

Holographis caput-medusae is unique in the genus by virtue of its relatively long, attenuate-recurved bracts, bractlets, and calyx lobes. These give the dense spikes a medusoid appearance. *Holographis caput-medusae* is the third species of the genus to be found in Guerrero. Unlike the other two, *H. argyrea* and *H. hintonii*, it occurs in the Pacific lowlands. The holotype was collected in a weedy thicket rich in Acanthaceae, including: *Aphelandra scabra* (Vahl) Smith, *Carlownrightia arizonica* A. Gray, *Dicliptera resupinata* (Vahl) Juss., *Elytraria imbricata* (Vahl) Pers., *Henrya insularis* Nees, *Odontonema auriculatum* (Rose) T. Daniel, *Ruellia albiflora* Fernald, *Tetramerium nervosum* Nees, and *Tetramerium tenuissimum* Rose.

***Holographis leticiana* T. F. Daniel, sp. nov.**

(Figures 2, 5)

TYPE.—MEXICO. Oaxaca: Distr. Tehuantepec, subida al Cerro Guiengola por la ladera S donde está la fábrica de cal, 25 October 1986, *M. Leticia Torres C., R. Torres C., y C. Martínez 637* (Holotype: MEXU!; isotypes: CAS!, and others to be distributed).

Frutex usque ad 1 m altus. Caules juniores puberuli trichomatibus glandulosis 0.05–0.2 mm longis. Folia verticillata in quoque nodo quatuor petiolata, lamina ovata vel ovato-elliptica 17–82 mm longa 9–27 mm lata 1.5–3-plo longior quam latior margine plana. Inflorescentia spicata, bracteae lanceolatae vel lanci-subulatae 2.5–4 mm longae 0.9–1.1 mm latae apice attenuatae erectae, bracteolae subulatae 2.3–3.5 mm longae 0.5–0.7 mm latae apice attenuatae erectae. Calyx 4–5 mm longus, corolla rosea 9.5–14.5 mm longa extus pubescens, staminia 5.5–6.5 mm longa, stylus 7–9.5 mm longus. Capsula 11–17 mm longa glabra. Semina 5–5.5 mm longa, 3.8–4.5 mm lata.

Shrub to 2 m tall. Young stems evenly puberulent with retrorse, eglandular trichomes 0.05–0.2 mm long. Leaves whorled (four/node), petiolate, petioles 2–17 mm long, blades chartaceous, ovate to ovate-elliptic, 6–90 mm long, 4–42 mm wide, 1.5–3 times longer than wide, acute to acuminate at apex, acute to attenuate at base, surfaces pubescent with straight to subflexuose to antrorse, eglandular trichomes to 0.2 mm long, margin entire to subundulate, flat. Inflorescence of axillary spikes to 2.5 cm long, flowers opposite at nodes, rachis evenly and densely pubescent with erect to downward pointing, eglandular trichomes 0.1–0.2 mm long. Bracts lanceolate to lance-subulate, 2–4 mm long, 0.9–1.1 mm wide, abaxial surface pubescent with erect to subflexuose or downward pointing, eglandular trichomes to 0.2 mm long, apex attenuate, erect. Bractlets subulate, 2–3.5 mm long, 0.5–0.7 mm wide, shorter than or equal to bracts, pubescent like bracts, apex attenuate, erect. Calyx 3–5 mm long, lobes equal in length and slightly overlapping one another, lanceolate, pubescent like bracts, attenuate and erect at apex. Corolla greenish-white with pinkish or maroon stripes on lower lip, more or less vertical during anthesis, 9.5–14.5 mm long, pubescent on external surface with glandular and eglandular trichomes 0.05–0.2 mm long, tube 2.5–5 mm long, abruptly expanded into a throat 2.5–3.5 mm long, upper lip 3–5.5 mm long with triangular lobes 1–1.5 mm long, lower lip 4.5–7 mm long with obovate lobes 2.5–5 mm long. Stamens 5.5–6.5 mm long, filaments pubescent, thecae 2–2.6 mm long, pollen (observed in *Diaphane*) prolate, 32–39 μm long (polar diameter), 22–25 μm wide (equatorial diameter), 1.3–1.8 times longer than wide, colpi distinct; staminode 0.7–1.2 mm long, sparsely