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## TWO NEW SPECIES OF *TRIXIS* (ASTERACEAE–MUTISIEAE) FROM PARAGUAY

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Two new species of *Trixis* are described from Paraguay. *Trixis cerroleonensis* Soria & Zardini from Occidental Paraguay is most similar to *T. ophiorrhiza* Gardn. but has much smaller phyllaries. *Trixis ravenii* Zardini & Soria from Oriental Paraguay is most similar to *T. spicata* Gardn. but has deltoid leaves decurrent at the base.

The genus *Trixis* (Asteraceae–Mutisieae) comprises 60 neotropical species ranging from the southern United States and Mexico to northern Chile, northern Argentina, and Uruguay. The genus is in need of revision; only local treatments are available (Anderson, 1972; Baker, 1884; Cabrera, 1936; Loja, 1969). During our exploration work in Paraguay, we have found two new species, which we describe here.

***Trixis ravenii*** Zardini & Soria, sp. nov. TYPE: Paraguay. Amambay: Arroyo Estrella, 22°20'S, 56°20'W, 7 May 1989, Soria, *Bacigalupo & Fortunato 3825* (holotype, FCQ). Figure 1.

Herba 0.50–1 m. Caule partim alato inferne simplici, superne ramoso. Folia sessilia deltoidea denticulata, dorso dense breviter pubescentia supra laxa pilosa. Capitula spicata. Involucrum campanulatum 6–11 mm longum, bracteis lanceolatis dense pilosis, extimis paucis. Flores 5. Achenia cylindrica pilosa rostrata. Pappus albus.

Herbs 0.50–1 m tall, erect, the individual stems with few branches. Stems partially winged, 3–5 mm wide, pilose. Leaves sessile; blades 3–6 cm long, 2–6 cm wide, rhomboid or deltoid, acute, decurrent at the base, pilose below, sparsely pilose to hispidulous above; margins denticulate; midrib and nerves prominent below. Inflorescence spike-like. Accessory bracts 2–3, 5–8 mm long, 2–3 mm wide, lanceolate or ovate, acuminate, pilose below, convex, margin entire; midrib and nerves prominent above. Phyllaries in two series, the outside 2–3, 6–8 mm long, 2–3 mm wide, margin entire, acuminate, pilose below, midrib and nerves prominent below; the inside 5–6, 10–11 mm long, 2 mm wide, lanceolate to ovate, pilose below, margin entire, apex acuminate, midrib and nerves

prominent above. Receptacle 4–5 mm wide. Florets 5. Tube of the corolla 5–6 mm long, 0.1–0.2 mm wide at the base, 1 mm wide at the mouth, glabrous or with few trichomes or glandular hairs; outer lip 1.5–2 mm long, 0.1 mm wide, glabrous or with few hairs, flat; lobes of the inner lip 1.5–2 mm long, 1–1.5 mm wide at the base, glabrous or with few trichomes at the apex. Filament 1.5–2 mm long. Anthers 4.5–5 mm long, appendages 0.5–1 mm long; thecae 2.5–3 mm long; tails 1–1.5 mm long. Style 5.5–6 mm long below the bifurcation, the branches 1–1.5 mm long. Achenes rostrate, 3–7 mm long, 0.3–0.5 mm wide, covered with glandular and nonglandular hairs. Pappus 7–9 mm long.

*Trixis ravenii* is a distinctive species, most similar to *Trixis spicata* Gardn. from Central Brazil, which has winged stems and oblong leaves.

We dedicate this species to Peter H. Raven for his efforts in institutionally establishing Paraguayan botany 10 years ago.

***Trixis cerroleonensis*** Soria & Zardini, sp. nov. TYPE: Paraguay. Chaco: Cerro León, 8 Aug. 1983, *Hahn 1555* (holotype, PY; isotype, MO). Figure 2.

Frutex dense piloso et glanduloso. Caule haud alato. Folia sessilia ellipticis vel lanceolatis denticulata. Capitula corymbosa. Involucrum campanulatum 1.3–1.5 mm longum, bracteis linear-lanceolatis, extemis paucis. Flores 20–30. Achenia cylindrica pilosa rostrata. Pappus albus.

Shrubs 1–1.5 m tall, erect. Vegetative parts, accessory bracts and phyllaries with glandular and nonglandular hairs. Stems not winged, glandular and pilose; internodes (0.1–)0.5–1.5 cm long. Leaves sessile; blades 2.5–10 cm long, 1.5–2 cm wide, usually elliptical or lanceolate to oblanceolate, acuminate, attenuate at the base, glandular and pilose above, glandular and sericeous below; margin denticulate; midrib and nerves prominent below. Inflorescence a corymb; peduncles 1–2.5 cm long, glandular and sericeous. Accessory bracts 5–6; 10–20 mm long, 2–6 mm wide, lanceolate

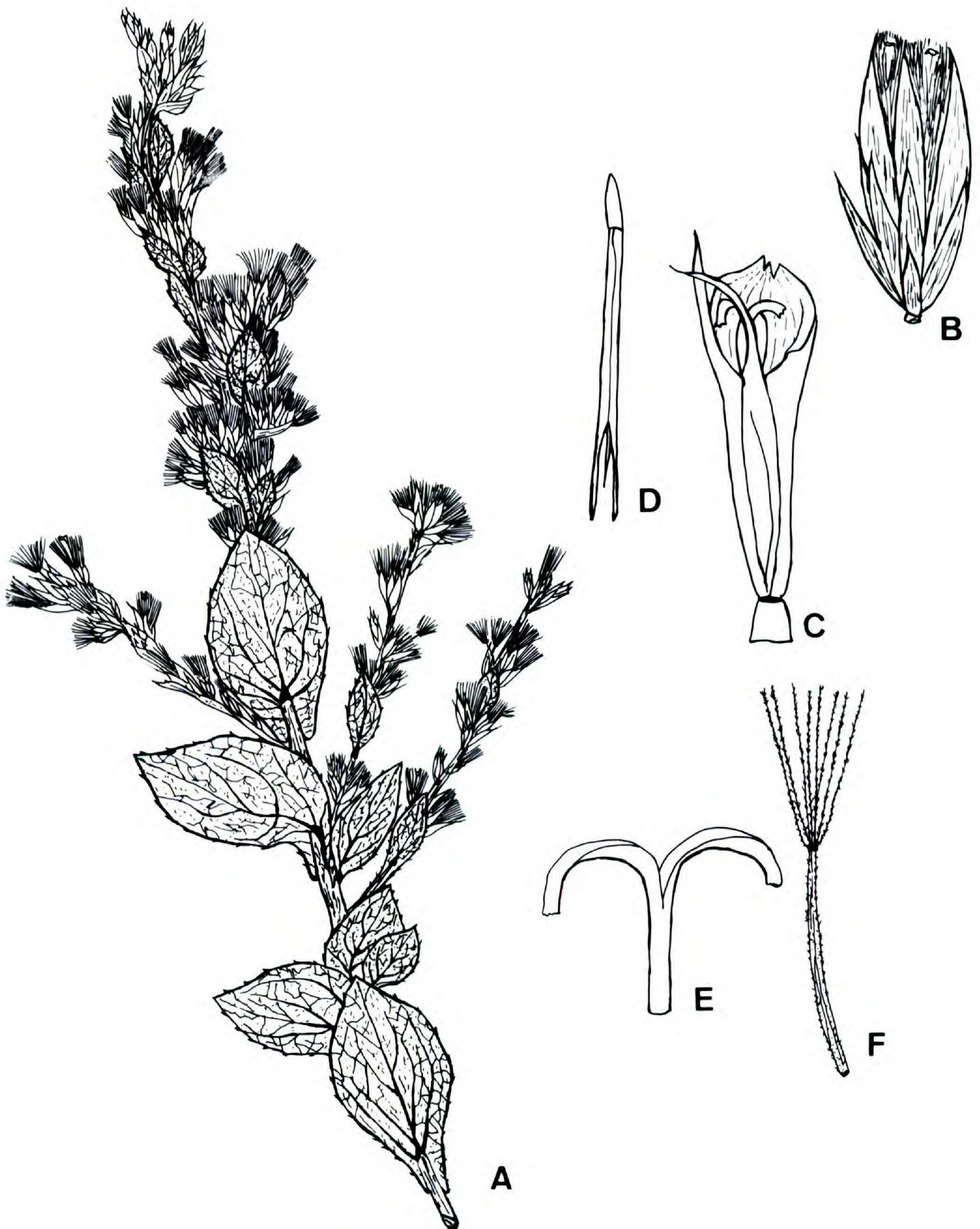


FIGURE 1. *Trixis ravenii* Zardini & Soria. — A. Habit,  $\times 0.5$ . — B. Capitulum,  $\times 8$ . — C. Flower,  $\times 10$ . — D. Anther,  $\times 10$ . — E. Style,  $\times 10$ . — F. Achene  $\times 10$ .

to oblanceolate or elliptic, acute, sessile or subsessile, glandular and pilose or sericeous on both surfaces, margin entire, flat. Phyllaries 10–12, 13–15 mm long, 1.5–2 mm wide, linear-lanceolate, acute, convex, with glandular and sericeous hairs.

Receptacle with nonglandular hairs. Florets 20–30; tube of the corolla 6–7 mm long, glabrous or with glandular and sericeous hairs; outer lip 2.5 mm long, glabrous; lobes of the inner lip 2 mm long. Anthers 5–6 mm long, tails 2 mm long. Style

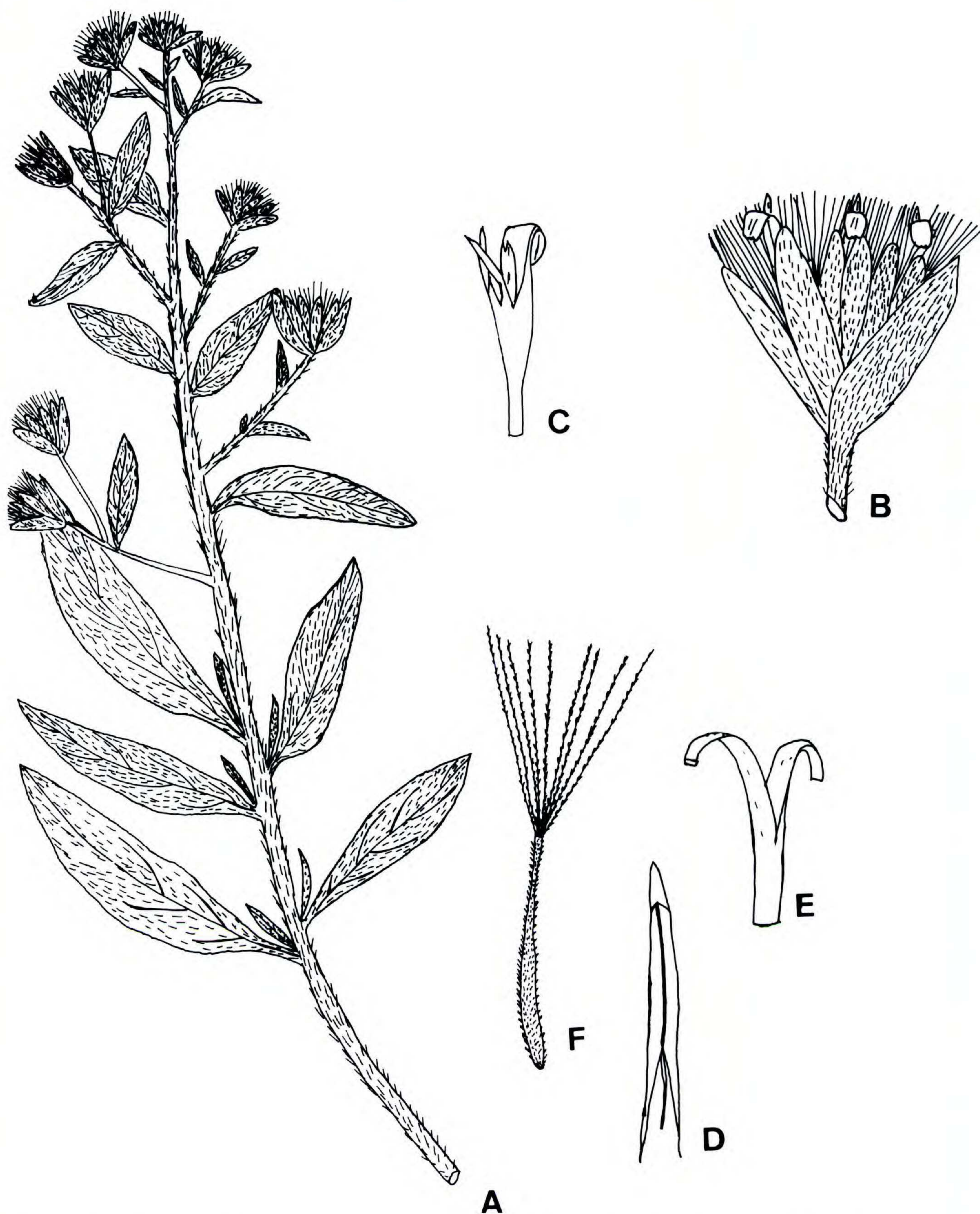


FIGURE 2. *Trixis cerroleonensis* Soria & Zardini.—A. Habit,  $\times 0.5$ .—B. Capitulum,  $\times 4$ .—C. Flower,  $\times 5$ .—D. Anther,  $\times 10$ .—E. Style,  $\times 10$ .—F. Achene,  $\times 10$ .

5 mm below the bifurcation, branches 1 mm long. Achenes 7 mm long, 0.5 mm wide, papillose, rostrate. Pappus white.

*Trixis cerroleonensis* is a distinctive species. It

is most similar to *Trixis ophiorrhiza* Gardn. from Central Brazil, which has larger phyllaries.

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