

**Marshalljohnstonia, a New Genus (Asteraceae) with a  
Rosette-Shrub Growth Habit from Mexico<sup>1</sup>**

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**Abstract.** *The new genus and species Marshalljohnstonia gypsophila (Asteraceae, Lactuceae, Stephanomeriinae), from western Coahuila, Mexico, is a drought-deciduous gypsophile with isolateral erect leaves, thick coarse periderm, and xylem that combines traits considered characteristic of both xeromorphic and rosette-shrub habitats. From gross morphology it would appear to be related to Pinaropappus, but in cytological and palynological features it is similar to Lygodesmia and Stephanomeria. Its rosette-shrub growth form is interpreted as a derived feature similar to derivation of secondary woodiness in maritime habitats but in this instance in a xeric environment.*

During recent field work in the Chihuahuan Desert by Marshall C. Johnston, Thomas L. Wendt, and Fernando Chiang in connection with the Chihuahuan Desert Flora, Wendt found a new and distinctive shrubby member of the Lactuceae from gypsum deposits on the slopes of the Sierra de las Delicias in western Coahuila, Mexico. The plant has an assemblage of floral and vegetative characteristics that warrants its recognition as a new genus in subtribe Stephanomeriinae.

**Marshalljohnstonia** Henrickson, gen. nov.

A *Pinaropappo* fruticibus crassiramosis, phyllariis magis foliaceis, receptaculis epaleaceis alveolatis, polline echinato lacunis abporalibus, acheniis trostratis, chromosomatum numero  $x = 9$  differt; a *Lygodesmia* et *Stephanomeria* phyllariorum structura et ramificationum ordinatione differt.

Coarsely branched, lactiferous shrubs, stems glabrous, erect to spreading; internodes short or elongate; periderm coarse, gray, deeply fissured. Leaves simple, alternate, fleshy, isolateral, mostly erect, tardily deciduous, rhombic to narrow elliptic, toothed or entire, scariosus at the margin; petioles short to elongate, winged, the wings decurrent, axils tomentose. Heads solitary, erect, terminal, the peduncles leafy, involucre bracts unequal, imbricate, foliaceous, flat, ovate-elliptical, acuminate-aristate, green; receptacle flattened, naked, strongly alveolate; flowers perfect, 10-18, corolla ligulate, five-toothed and -nerved, purple-pink, purple-striped over the nerves, sparsely pubescent abaxially; style branches elongate, subterete, stigmatic along the inner surface but without stigmatic lines; achenes cylindrical, truncate at the apex, slightly fusiform and arcuate, with five equally spaced

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furrows, puberulent; pappus of numerous, coarse, basally flattened bristles, these distichously ciliate throughout, unequal in length. Cotyledons (after germination) much elongate, terminally rhombic. Base chromosome number  $x = 9$ .

**Marshalljohnstonia gypsophila** Henrickson, sp. nov.

Folia ovato-rhomboides vel spathulata irregulariter 1-2-dentata carnosae 45-95 mm longae; capitula terminalia solitaria erecta longipedunculata; phyllaria foliacea imbricata ovata vel elliptica; flores roseo-purpurei 27-39 mm longi; achenia truncata uniformiter 5-sulcata, puberula 7-9 mm longa; pappus distiche ciliatus.

Coarsely branched shrubs 5-7 dm high, to 12 dm wide, stems erect or the peripheral ones weak, somewhat decumbent but erect terminally; young branches 3-5 mm thick, glabrous, light brown throughout or maroon at the leaf base, the older ones 5-16 mm thick with coarse, horizontally and vertically fissured, roughened, gray periderm; shoots congested with internodes 1-2 mm long or elongate with internode 8-20 (-40) mm long; lactiferous in the phloem. Leaves 45-95 mm long, petiolate, blades fleshy, variably rhombic, ovate, elliptic to spathulate, or obovate, 32-50 (-70) mm long, 14-25 (-50) mm wide, acute to acuminate and prominently scarios-toothed at the tip, cuneate to narrowly attenuate at the base, scarios, entire or with 1 (-2) pair of pronounced whitened lateral teeth at the margins, glabrous, gray-green, isolateral, mostly erect, fleshy, the midrib prominent abaxially; petiole 1-2 (-4) cm long, narrowly to broadly winged, decurrent. Capitula solitary, on peduncles 1-3 (-6.5) cm long, 1-2 mm thick, with 1-4 narrowly elliptical, acuminate, sessile bracts 11-30 mm long, 1.2-5 mm wide; involucre 19-29 mm long, of 13-15 foliaceous, imbricate phyllaries, the inner ones narrowly elliptical, 19-30 mm long, 2-4 (-8) mm wide, acuminate-aristate, entire, erect, the outer ones more broadly ovate to elliptic, 15-20 mm long, 5-9 mm wide, broadly cuneate at the base, more recurved, one-half to two-thirds the length of the inner ones, gray-green, often with purplish margins; receptacle slightly convex, coarsely alveolate, with rims to 0.5 mm high; flowers 10-18, 27-39 mm long, the ligules 15-20 mm long, 5-6.5 mm wide, narrowing to the 5-toothed apex, the teeth 1.3-4 mm long, strong purple-pink, purple-striped over the five nerves, sparsely pilose on abaxial surface above the tube, anther column dull yellow, 8-9 mm long, with scarios rounded lobes at the tip, scarios and sagittate at base, exerted from tube at anthesis; style 27-47 mm long, dark purple, scabrous without, the branches 1.8-4 mm long, subterete, stigmatic within; achenes cylindrical, slightly fusiform, truncate at the apex, the outer ones slightly arcuate, with five evenly-spaced furrows, puberulent,

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hairs. — 5. Uniseriate hair, ca. 300  $\mu$ m long. — 6. Achene with pappus showing furrowed achene. — 7. Transverse section of achene ca. 1 mm in diameter. — 8. Pappus showing distichous nature of setae and gradual broadening towards base. All *Henrickson 13682* (type). All scale lines = 1 cm.