

tubes ca. 3 mm long. Achenes (immature) ca. 3.5 mm long; pappus of 40-50 tawny bristles somewhat longer than the corolla tubes.

ADDITIONAL SPECIMEN EXAMINED: MEXICO. Coahuila: Sierra Mojada, just S of Esmeralda, above the Soc. Cooperativa Minera, 1600-2463 m, 1 Sep 1972, M.C. Johnston, et al. 9069 (LL).

According to label data the species occurs on steep or "very steep limestone slopes and canyons." It is known only from the Sierra Mojada, hence the name.

Pinaropappus mojadanus superficially resembles *P. parvus* and was identified as such by Jackie Poole (annotation label, 1982). Both possess similar growth habits and involucre, but *P. mojadanus* has oblanceolate to spatulate leaves, with obtuse or rounded apices (vs. linear-lanceolate and narrowly acute). Additionally, *P. mojadanus* has pink-maculate involucre bracts and deeply lobed ligules (vs. non-maculate and shallowly lobed ligules).

PINAROPAPPUS POWELLII B.L. Turner, *spec. nov.* TYPE: MEXICO. Coahuila: Sierra de la Encantada, ca. 92.5 mi NW of Muzquiz, ca. 10 mi WNW of Rancho La Peña, limestone bluffs in large dead-end canyon (Boquilla Canyon), 22 May 1968, A.M. Powell 1593 (HOLOTYPE: TEX!).

Similis *P. parvo* S.F. Blake sed major, foliis multo longioribus, radicibus maximis, capitulisque majoribus et fulvis, cum bracteis note multiserratis et acutatissimis.

Perennial scapose herbs 10-20 cm high, arising from a massive woody root system. Leaves thin, glabrous, persistent as a basal rosette; petioles mostly 1-2(-3) cm long, grading into the blades; blades linear-lanceolate, 3-7 cm long, the apices acute. Scapes 10-20 cm high, glabrous, bearing 1 or 2 bracts at or near the middle, and an additional 1 or 2 near the apex. Involucres campanulate to hemispheric, 12-14 mm high, 15-20 mm wide (pressed); bracts 6-8 seriate, markedly gradate-imbricate, glabrous, mostly ovate with acuminate apices, tawny with a purplish lunate marking below. Florets all ligulate, ca. 50 per head (estimated); corollas white, the ligules 6-8 mm long, the apices with 5 minute teeth; tubes ca. 3 mm long. Achenes (immature) glabrous, ca. 3 mm long; pappus of ca. 40 persistent tawny bristles somewhat longer than the corolla tubes. Chromosome number, $2n = 18$.

This taxon is remarkably distinct, especially in its involucre characters, as noted in the description. It is named for its primary collector, A.M. Powell, Prof. of Biology, Sul Ross State University, Alpine, Texas, well known for his systematic research on the mostly cliff-dwelling genus *Perityle* (Powell 1969, 1973). No doubt he was looking for members of the latter genus when he collected the present novelty.

The first cliff-dwelling species of *Pinaropappus* was described by S.F. Blake in 1924 from collections made in southernmost Eddy County, New Mexico. It was subsequently collected in western trans-Pecos, Texas. Turner (1992) described two additional cliff-dwelling Mexican species, *P. pattersonii* B.L. Turner from Nuevo

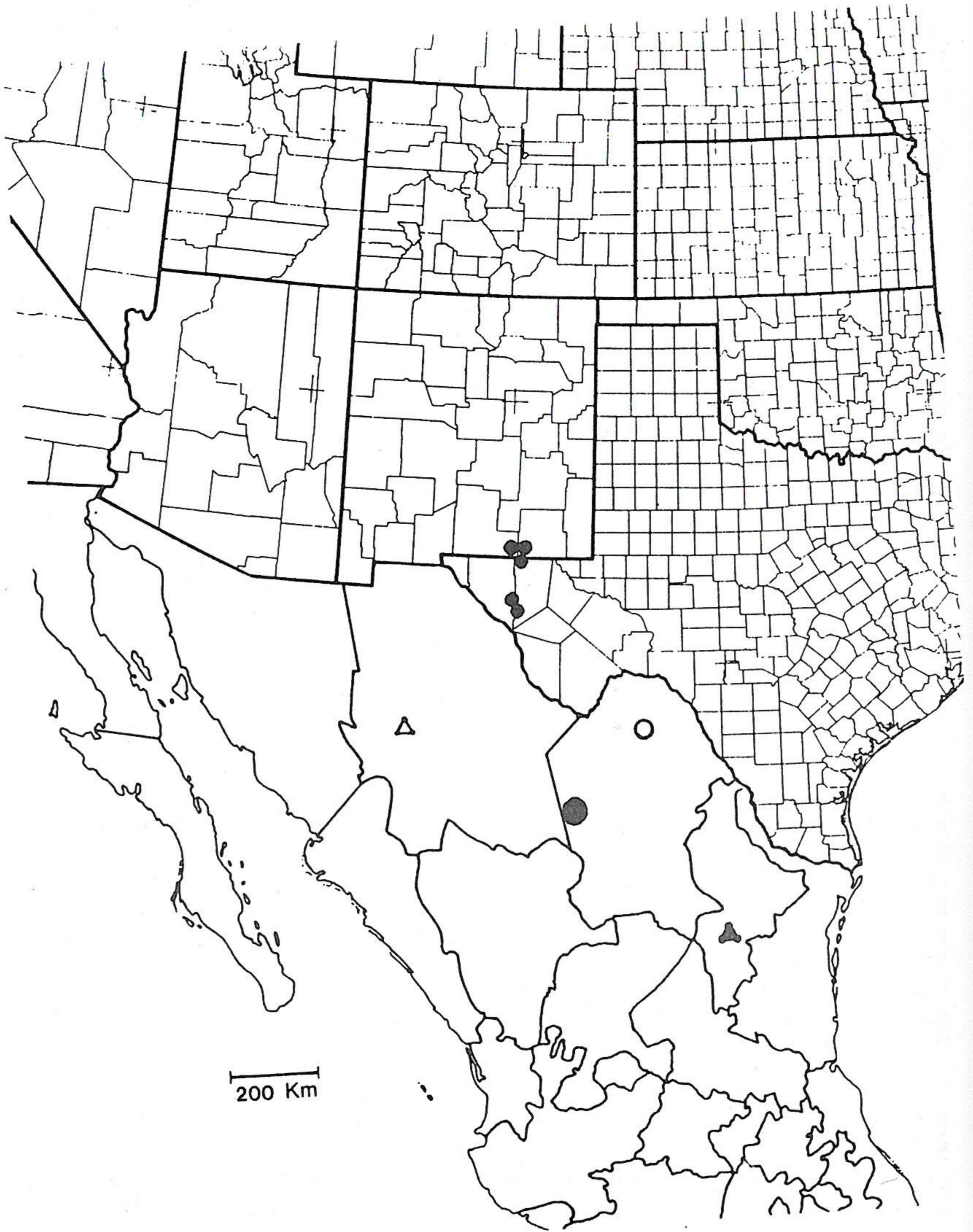


Figure 1. Map showing distribution of the five cliff-dwelling species of *Pinaropappus*: *P. mojadanus* (large closed circle); *P. parvus* (small closed circle); *P. pattersonii* (closed triangle); *P. pooleanus* (open triangle); *P. powellii* (open circle).

León, and *P. pooleanus* B.L. Turner from Chihuahua. Description of the present two Coahuilan taxa bring to five the number of cliff-dwelling species recognized. A key to these follows.

KEY TO CLIFF-DWELLING SPECIES OF *PINAROPAPPUS*

1. Plants producing well-defined aerial stolons; Nuevo León..... *P. pattersonii*
1. Stems not producing aerial stolons; New Mexico, Texas, Chihuahua, Coahuila..(2)
 2. Involucral bracts arranged in 6-8 evenly graduate series, tawny throughout with sharply acute apices. *P. powellii*
 2. Involucral bracts arranged in 3-5 unevenly graduate series, green or pinkish, their apices not sharply acute.....(3)
3. Rosettes arising from thin rhizomatous processes; Chihuahua. *P. pooleanus*
3. Rosettes arising from a thickened, mostly woody, branched root system; Coahuila, New Mexico, Texas.(4)
 4. Leaves mostly linear-lanceolate to linear-oblongate with acute apices; ligules with apical lobes ca. 0.5 mm long; New Mexico, Texas. *P. parvus*
 4. Leaves mostly oblanceolate to spatulate with obtuse to rounded apices; ligules with apical lobes 1.0-1.5 mm long; Coahuila..... *P. mojudanus*

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