A NEW GYPSOPHILIC *PHACELIA* (HYDROPHYLLACEAE) FROM COAHUILA, MEXICO

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ABSTRACT

A novel *Phacelia*, **P. marshall-johnstonii** var. **deliciasana** B.L. Turner, **var. nov.**, is described from south-central Coahuila where it occurs in gypsum soils. It is closely related to *P. gypsogenia* and *P. marshall-johnstonii*, but less so to the former. It is readily distinguished from the latter by its strongly perennial habit, less markedly pubescent leaves, and more elongate fruiting calyces. Relationships of the several phacelioid gypsophiles of Coahuila are discussed and a key to the taxa is provided, along with maps showing their distributions. *Phytologia 93(1):88-93 (April 1, 2011).*

KEY WORDS: *Phacelia*, Hydrophyllaceae, gypsophiles, Mexico, Coahuila

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Routine identification of Mexican plants has occasioned the following novelty:

PHACELIA MARSHALL-JOHNSTONII var. **DELICIASANA** B.L. Turner, **var. nov., Fig. 1.**

Phacelia marshall-johnstonii I.M. Johnst. similis sed differt duratione perenni, habitu radice palari, foliis strigosis trichomatibus plerumque sparsis appressis brevibus (vs dense pubescentibus trichomatibus rigide erectis elongatis), et calycibus fructiferis lineari-oblanceolatis 5-7 mm longis (vs magis paene obovatis, 4-5 mm longis).

TYPE: **MEXICO. COAHUILA: Mpio. San Pedro de Los Colonias,** ca 2 mi. SW of Las Delicias, gypsum soils, ca 26 12 N, 102 49 W, 1150 m, 10 Jun 2004, *Henrickson 23581* (Holotype: TEX).

Tap-rooted, perennial herbs, 10-30 cm high. **Mid-stems** densely pubescent with mostly eglandular hairs ca 0.5 mm high, interspersed among these a lesser display of stiffly erect, eglandular, hairs ca 2 mm long. **Leaves** (mid-stem), 3-7 cm long, 2-3 cm wide; petioles 1.5-3.0 cm long, pubescent like the stems; blades elliptical to flabellate, pubescent above and below with appressed, eglandular, hairs, the margins irregularly incised with shallow lobes. **Capitulescence** a terminal array of 2-10 circinnate racemes 3-7 cm long (to 15 cm long in fruit), pubescent like the stems. **Calyces** (flowering) having 5 separate lobes, 3-4 mm long, pubescent like the stems, elongating in fruit to 6-7 mm long, and becoming markedly oblanceolate. **Corollas** white, glabrous, ca 6 mm long, the tubes ca 1 mm long, the throat, including lobes, ca 5 mm long. **Anthers** purple. **Style branches** fused for ca 3 mm at the base. **Capsules** ovoid, ca 2 mm long, 2 mm wide, glabrous below, pubescent above. **Seeds** black, 2.0-2.5 mm long. **Distribution** see Map 1.

ADDITIONAL SPECIMEN EXAMINED: **MEXICO. COAHUILA: Mpio Gral. Cepeda,** Canyon Carrera, SW quadrant of Sierra de la Paila, 1450-1750 m, 26 Jul 1993, *Patterson et al.7259* **(TEX). Mpio San Pedro de las Colonias,** 12 km NNE of Las Margaritas on the easternmost ridge of Sierra de las Margaritas, 1300-1400 m, 24 Sep 1972, *Chiang et al. 9509B* (LL); ca 1.5 mi SW of Las Delicias, W of the major spring above town, 3900 ft, 15 Aug 1973, *Henrickson 12457* (LL); 1.5 mi SSE and above Las Delicias, S of major spring, 3700 ft, 29 Sep 1973, *Henrickson 13685* (TEX); west end of the Sierra de los Alamitos, 3 miles S of El Mesquite, on and below distinct w-facing gypsum slopes visible from Hwy 30, 26 20 68 N, 102 37 5 W, 3000 ft, 1 Sep 2004, *Henrickson 24021* (TEX); E side of Sierra de Las Margaritas, ca 13 km N of Las Margaritas, 1100-1400 m, 23 Mar 1973, *Johnston et al. 10353* (LL). **Mpio. Parras de la Fuente,** Parras, S slope of Sierra de Parras, 1945 m, 11 Sep 1999, *Hinton et al. 27465* (TEX);

The var. *deliciasana* is clearly related to the typical elements of *P. marshall-johnstonii,* to which it is compared in the above diagnosis, the latter possessing a markedly spreading, densely setose-

like pubescence on both stems and leaves, this not found in the former. I was inclined to treat var. *deliciasana* at the specific level when first discerned, but collections from the Parras area of southern Coahuila (e.g., *Patterson 7259*) showed a tendency to grade into the former, hence its treatment as a variety. The distributions of the five taxa concerned are shown in Fig. 2.

The specific name is derived from the Sierra Las Delicias, whence the type.

The several gypsophiles of *Phacelia* in north-central Mexico are all closely related and occur in close proximity to one another, but each is readily recognized by a combination of characters, and so far as known, they do not occur together, although occasional co-occurrences are to be expected in regions of nearness.

The original member of the pentad of gypsophiles discussed here, *P. gypsogenia* I.M. Johnst. was first collected, and subsequently described, by Johnston (1941), this, for some reason, not accounted for in Atwood's seminal treatment of the *Phacelia* Crenulatae group of North America. Johnston (1943) also added the second taxon to the group with his description of *P. pallida.* Atwood (1972) added a third species to the complex, *P. vossii*; originally known only by the type, but subsequently numerous collections have been assembled (LL, TEX). A fourth member of this pentad, *A. marshall-johnstonii,* was proposed by Atwood & Pinkava in 1977 from material collected in the vicinity of Cuatro Cienagas, Coahuila; a fifth member of the pentad, *P. m.* var. *deliciasan*a, from south-central Coahuila is described above. The following key should prove helpful in their identification:

1. Leaves, at mid-stem with well-defined petioles 1.0-1-5 cm long the blades mostly weakly incised, elliptical to flabellate in outline, 1.5-4.5 cm long, mostly pubescent on both surfaces with short appressed hairs; sepals in fruit 6-7 mm long; corollas mostly white; vicinity of Las Delicias.....**P. m.** var. **deliciasana**
1. Leaves not as described in the above; sepals in fruit mostly 3-5 mm long; corollas mostly pale lavender to purple (rarely white).....**(2)**

2. Robust perennial herbs 30-80 cm high; corollas mostly deep purple; seeds ca 3.5 mm long Nue, San and Zac.....**P. vossii**
2. Smaller, annual (?) or perennial herbs 10-30 cm tall; corollas pale purple to white; seeds 2.0-2.5 mm long; Chi, Coa, Nue, Dur and Zac.....**(3)**

3. Capsules ellipsoid, 3.0-4.0 mm long; seeds ca 3 mm long; Brewster Co., Tx and closely adjacent Mexico.....**P. pallida**
3. Capsules globoid, 2.5-3.0 mm long; seeds 2.0-2.5 mm long; widespread in northern Mexico.....**(4)**

4. Leaves linear-lanceolate in outline, the blades markedly incised, 6-9 cm long; Chi, Coa, Nue, Dur and Zac.....**P. gypsogenia**
4. Leaves elliptical to flabellate in outline, not markedly incised, mostly 3-5 cm long; vicinity of Cuatro Cienagas, Coa.....
.....**P. m.** var. **marshall-johnstonii**

ACKNOWLEDGEMENTS

My colleague, Guy Nesom, provided the Latin diagnosis and made helpful suggests on the manuscript itself. Distribution maps are based upon specimens on file at SRSC, LL-TEX, and those cited by various authors.

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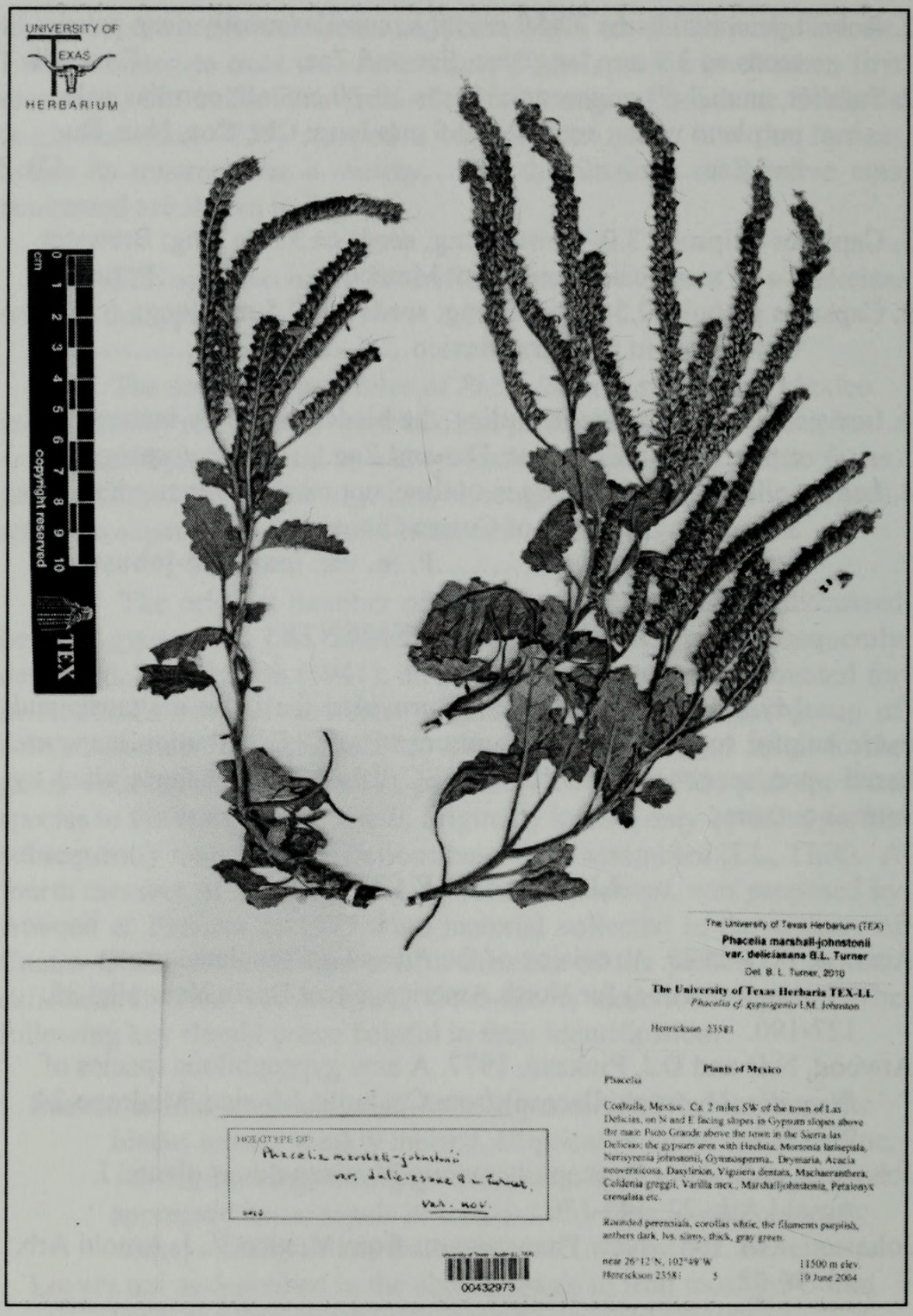
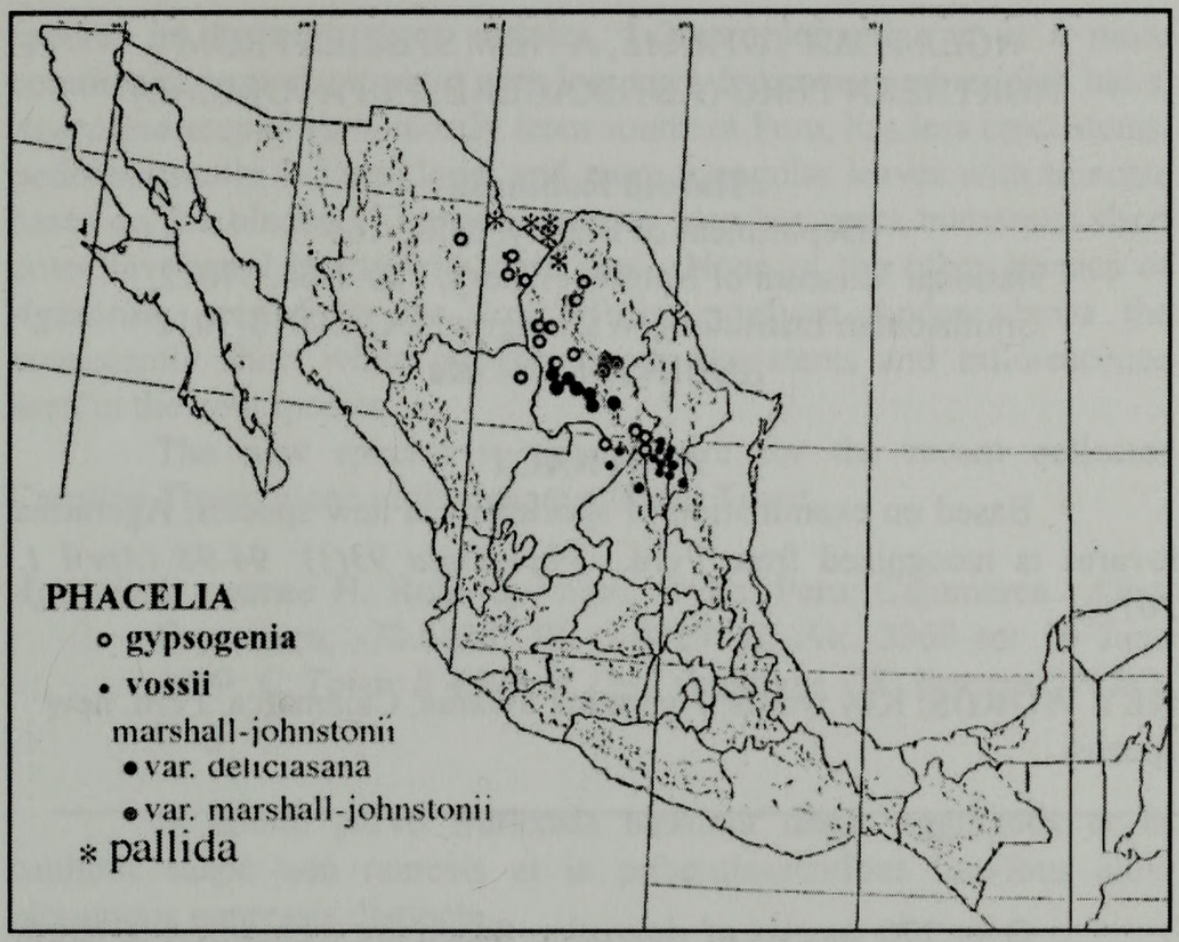


Figure 1. Holotype of *Phacelia marshall-johnstonii* var. *deliciasana*.



Map 1. Distribution of *Phacelia* species in Mexico.