

WRIGHTIA

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CONTENTS

Plantae Mayanae—II. Collections from Peten and Belice. By Cyrus Longworth Lundell.	111
Investigations of Swamp Soils from the <i>Tintal</i> and <i>Pinal</i> Associations of Peten, Guatemala. By W. Derby Laws.	127
Four New Solanums in Section <i>Tuberarium</i> . By Donovan S. Correll. .	133
Acanthaceae Americanae Novae Vel Criticae—II. Seven New Species from Colombia and Some Additional Notes. By Emery C. Leonard.	142
Note.	158
Notes on Some Texan Borages. By Ivan M. Johnston.	158
<i>Psilotum</i> in Texas. By Donovan S. Correll.	163
Additional Myrtaceae from Mexico. By Cyrus Longworth Lundell. .	166

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Ivan Murray Johnston

(1898-1960)

At the time of his death on May 31, 1960, Dr. Ivan Murray Johnston was planning to retire from Harvard University and join the staff of Texas Research Foundation in September, 1961. He had essentially completed the family Boraginaceae for the FLORA OF TEXAS, which is to be published during 1961. Dr. Johnston's science library is now a part of the library of Texas Research Foundation.

At intervals, from 1957 through 1959, Dr. Johnston aided the staff of Texas Research Foundation in its botanical exploration of Texas and northern Mexico. The more than 5,000 numbers which he helped to collect during this period are housed in the herbarium at Renner.

NOTES ON SOME TEXAN BORAGES¹

IVAN M. JOHNSTON

Coldenia gossypina (Woot. & Standl.) Johnston, comb. nov.

Eddya gossypina Woot. & Standl., Contr. U. S. Nat. Herb. 16: 164. 1913 and Contr. U. S. Nat. Herb. 19: [Fl. New Mex.] 537. 1915.

Type from Little Mt. [i.e. Torgugas Mt.], southeast of Las Cruces, Dona Ana Co., New Mexico., Sept. 2, 1894, *E. O. Wooton*.

This species has been confused with *C. hispidissima* (T. & G.) Gray. Most of its range is in northern Mexico (in Coahuila and eastern Chihuahua). In the United States it is known only from the southern half of Brewster County, Texas, and from thence northward along the Rio Grande valley to the vicinity of El Paso and (about 40 miles beyond) to the vicinity of Las Cruces in adjacent New Mexico. *Coldenia hispidissima*, on the other hand, is a northern species. It is widely distributed in New Mexico and enters trans-Pecos Texas from the north and northwest and there reaches its southern limit. In Texas and New Mexico it is much more common and very much more widely and generally distributed than is *C. gossypina*. Both species have been collected in and along the Rio Grande valley. Only there have they been found sharing the same general area. Both species grow on gypsum or gypseous soils and, if not invariably

¹ Studies in the Boraginaceae XXXI

so, at least usually are confined to that kind of substratum. The two species may be contrasted as follows:

Foliage usually cinereous; leaf-blade lanceolate, evidently broader than the base of the petiole, lower surface only partially covered by the loosely revolute leaf-margin; calyx-lobes with the midrib not thickened; corolla in the bud minutely glandular, otherwise glabrous; vein on the corolla-tube below the stamen-attachment winged; nutlet with the attachment-scar closed or open only above the middle; Rio Grande Valley south into Mexico. *C. gossypina*.

Foliage usually green; leaf-blade usually linear, narrower than the broad indurate base of the petiole, tightly revolute leaf-margin covering all the lower leaf-surface except the midrib; calyx-lobes with thickened midrib; corolla in the bud villulose, not glandular; vein on the corolla-tube below the stamen-attachment not winged; nutlet with the attachment-scar broadly open especially below the middle; trans-Pecos Texas and north in New Mexico. *C. hispidissima*.

***Coldenia mexicana* Wats. var. *tomentosa* (Watson) Johnston, comb. nov.**

Coldenia tomentosa Watson, Proc. Am. Acad. 18: 120. 1883.

Type from the mountains south of Saltillo, Coahuila, *Palmer 864*.

In Texas this variety is known only west of the lower Pecos, in southern Val Verde and Terrell counties. From here it ranges south in the eastern portions of Coahuila. It now seems probable that the type was collected at the base of the Sierra de Parras south of General Cepeda. The only sharp, decisive character to separate this variety from typical *C. mexicana* is provided by the trichomes on the corolla-bud. Since these differences are associated with plants occupying different geographical areas and having, perhaps, slightly different habit, I have considered them worthy of varietal recognition.

The var. *tomentosa* has the corolla-bud distinctly villulose and not at all glandular, or villulose and only very sparsely and inconspicuously glanduliferous. In addition, its corollas appear to average slightly smaller than those of the typical form, and its older stems tend to be somewhat more fruticulose.

The typical form of the species is known in Texas only in the Big Bend and from there extends south and southeast across Coahuila. In the bud the corolla is abundantly but minutely glanduliferous, but otherwise glabrous. The type was collected by Edw. Palmer (No. 872) "in the mountains east of Saltillo", Coahuila. Since both the species and the variety are usually found only on or in the vicinity of Upper Cretaceous beds, it seems likely that the actual place of collection was at the base of the mountains. Under *C. mexicana* when he proposed the species, Watson also cited *Edw. Palmer no. 875 in pt.* from Monelova, Coahuila, a collection which had been received mixed with material of *C. canescens* DC. This material is to be excluded from typical *C. mexicana*. It is representative of the var. *tomentosa*.

***Cryptantha Paysonii* (Macbride) Johnston, comb nov.**

Oreocarya Paysonii Macbride, Contr. Gray Herb. 48: 36. 1916.

Type from limestone hills, Berrendo Creek, Sierra Co., New Mexico, May 12, 1905, *O. B. Metcalfe 1576*.

Hemisphaerocarya Paysonii (MacBride) Brand in Fedde, Repert. Sp. Nov. 24: 61. 1927.

NEW MEXICO: DeBaca County, (southern part of county?) rolling hills on divide betw. Roswell and Vaughn, along highway about 60 mi. north of Roswell, May 2, 1948, *L. C. Hinckley 4377* (US). Otero County, Guadalupe Rim, near Orange, near Texas boundary west of Guadalupe Mts. steep limestone slope, April 21, 1929, *M. W. Talbot 960* (GH). Sierra County, Berrendo Creek, limestone hills, May 12, 1905, *O. B. Metcalfe 1576* (US); Lake Valley, limestone hills, Sept. 1914, *Mrs. Ida M. Beals* (US); Lake Valley, 1915, *Mrs. W. G. Beals* (US).

TEXAS: Culberson County, head of Guadalupe Pass, along Hwy. 180, rocky soil, corolla white with yellow throat, May 16, 1959, *D. S. Correll & I. M. Johnston 22003* (LL); Guadalupe Mts., a mile west of Pine Springs, along Hwy. 180, frequent, root with purple dye, alt. 6500 ft., May 30, 1958, *B. H. Warnock & M. C. Johnston 16299* (SRSC); Apache Mts., about 3 mi. northwest of Kent, thin buff silty soil (Tansill formation), slope of low ridge about a half mile northeast of Gardner Ranch Hdq., June 21, 1949, *M. H. Janszen 81* (TEX).

This species has been confused with *C. oblata* (Jones) Payson, and included under that species in Payson's monograph of *Cryptantha* § *Oreocarya*, Ann. Mo. Bot. Gard. 14: 255. 1927. It differs most strikingly and is identified most easily by its very strongly heterostylic flowers. In *C. oblata* the corolla is uniformly monomorphic and its stamens are always borne near the middle of the corolla-tube and the style always is short and never surpasses them. In *C. Paysonii* the style may be long and nearly exerted from the corolla-tube. When so, stamens are always borne near the middle of the tube. When the style is short, reaching only halfway up the tube, then the stamens are always borne at the top of the corolla-tube with their tips somewhat exerted. The corollas of *C. Paysonii* are strongly and obviously dimorphic.

Some other characters distinguishing *C. Paysonii* from its relative are its finely rugose or finely tuberculate, rather than coarsely tuberculate nutlets, its densely puberulent rather than glabrous or nearly glabrous fauceal appendages, and its generally somewhat larger corollas and nutlets. Its inflorescence tends to remain capitate and not become loose and thyrsoid as is common in *C. oblata*.

In Culberson County, Texas, about the Guadalupe and Apache mountains, *C. Paysonii* has been found in the same area as *C. oblata*, but elsewhere it is known only in areas in New Mexico well to the north and northwest of the range of *C. oblata*. The latter is known in New Mexico only from eastern Dona Ana County to the east and southeast of Las Cruces, but is frequent and widely distributed in the western half of trans-Pecos Texas.

Cryptantha mexicana (Brandege) Johnston, comb. nov.

Krynitzkia mexicana T. S. Brandege, *Zoe* 5: 182. Aug. 1905.

Type from Viesca, Coahuila, 1903, *Purpus* 126.

This species has been confused with *Cryptantha albida* (H.B.K.) Johnston, but is readily distinguished from it by differences in habit of growth and its more bristly green herbage, larger proportionately broader fruiting calyces, and more elongate, conspicuously bracted cymes. It is a spring-flowering herb with several to many, dichotomously branching stems which are usually decumbent or widely ascending. *Cryptantha albida*, on the other hand, is a much taller, and more slender, summer-flowering herb. Its one to several stems form straight erect axes from which numerous lateral branches arise. Typical *C. albida* grows in western trans-Pecos Texas and southern Arizona and extends south through western Coahuila and eastern Chihuahua and Durango to central Mexico. The type came from Hidalgo. *Cryptantha mexicana*, however, is the common annual member of this genus in the large area from the vicinity of El Paso, Texas, and southeastern New Mexico, southeastward to the southern tip of Texas, and south across the Rio Grande to northern Nuevo Leon and southern Coahuila. It appears to affect warmer areas and generally lower altitudes than *C. albida*; unlike *C. albida*, which seems to be most common in volcanic areas, it seems to have a prevailing special preference for limestone soils.

The nomenclatorial history of the species is confused. The original description of *Krynitzkia mexicana* Brandege, as between *Cryptantha albida* and the present species applies well to the latter. In addition to the type (Viesca, Coahuila, 1903, *Purpus* 126), another collection, *Pringle* 8301 from "Diaz" (i.e. Piedras Negras), Coahuila, is also mentioned by the author of the species. Pringle's collection is very characteristic of *C. mexicana* as here accepted. However, the type collection now preserved at the University of California at Berkeley, is a mixture of recognizable *C. mexicana* and young plants of *Amblynotopsis heliotropioides* (A. DC.) Macbride. Since Mr. Brandege's original description of *K. mexicana* does not apply to the *Amblynotopsis*, only the *Cryptantha* included under *Purpus* 126 is considered as belonging to his species.

I have recognized the present species as distinct from *C. albida* for many years and over this period have reported many specimens of it to collectors under the name "*Cryptantha mexicana* (Brandg) Jtn." By oversight this combination was not properly published. In the meantime, however, two improper uses of the name have appeared in print. In Brand's treatment of *Cryptantha*, in the *Pflanzenreich*, Heft. 97, p. 63. 1931, the name *Cryptantha mexicana* Brandg. appears in the synonymy of *Cryptantha albida*. Brand makes no mention of the binomial, *Krynitzkia mexicana*! It seems clear that the name, *Cryptantha mexicana* was made unintentionally and is to be dismissed as a slip of the pen. In any case, appearing in synonymy, it is not validly published (Intern. Code, Art. 37) and is to be ignored. A more

recent use of the binomial occurs in W. B. McDougall & O. E. Sperry's "Plants of the Big Bend National Park", p. 143. 1951. In this popular, non-technical flora the binomial "*Cryptantha mexicana*" appears bare, without any accompanying citation of author, bibliographic reference or name-bringing synonym. The two lines of English description are so general as to be applicable to at least half the species in the genus. Since I used the name, *Cryptantha mexicana*, in identifying for Dr. Sperry some of his plants from the Big Bend, it does seem probable that McDougall & Sperry used the name as I had applied it. This, however, is only surmise. Since there is no indication that the publication of a new combination was intended by McDougall & Sperry, I am dismissing their use of "*Cryptantha mexicana*" as unintentional and mere incidental mention.

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