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WRIGHTIA

A BOTANICAL JOURNAL

VOLUME 2

1959—1963

EDITOR

HELEN B. CORRELL

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WRIGHTIA

EDITOR

HELEN B. CORRELL

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SOME NOTEWORTHY AMERICAN BORAGES¹

IVAN M. JOHNSTON

Heliotropium Torreyi Johnston, nom. nov.

Heliotropium angustifolium Torrey, Bot. Mex. Bound. 137. 1858.
not *H. angustifolium* Raf., Herb. Raf. 79. 1833.

Unhappily an all but forgotten binomial published by Rafinesque, as a substitute for *H. curassavicum* L., antedates *H. angustifolium* Torr. As a substitute for the later homonym I am proposing the name, *H. Torreyi*.

When he published *H. angustifolium*, Torrey had before him collections from Cibolo, Presidio Co., Texas (*Bigelow*); near the Rio Grande in the Big Bend (*Parry*); near Brackettville (collector not given); upper Devils River (*Wright 480*); Sycamore Creek, betw. Del Rio and Brackettville (*Wright 1546*); and Monterrey, Mexico (*Edwards & Eaton*). Most of these are scanty, poor specimens. The best one and that which Torrey naturally would have relied upon in drawing up his description is *Wright 1546* which, according to the collector, came from "stony prairies, Zoquete Creek, May 18, 1851". This specimen at New York I am accepting as type. "Zoquete Creek" is that serving as boundary between Val Verde and Kinney counties, Texas and now known as "Sycamore Creek". The type was accordingly collected within a mile or so of the bridge over Sycamore Creek on Highway No. 90, between Brackettville and Del Rio, Texas.

Heliotropium (Coeloma) Ruiz-Lealii Johnston, sp. nov.

Herba perennis ut videtur rhizomatosa glaberrima; caulibus erectis teretibus e basi stricte ramosis, foliosis, 1-3 dm. altis 1-3.5 mm. crassis; foliis alternis carnosis glaucis crispis medium versus vel infra medium latioribus, lanceolatis vel elliptico-lanceolatis, 6-12 mm. latis 15-30 mm. longis, non rariter obscure pinnato-nervatis, apice acutis, basi acutis sessilibus; inflorescentia terminali ebracteata; cymis densifloris saepe geminatis maturitate ad 5 cm. longis saepe 1-2 cm. longe pedunculatis; floribus biserialis congestis; calyce carnosissimo sessili vel subsessili, lobis plus minusve aequalibus 2-2.5 mm. longis lanceolatis vel oblongo-lanceolatis acutis tubo corollae brevioribus, duobus non rariter plus minusve connatis ceteris fere ad basin divisis; corolla glabra ca. 5 mm. longa, limbo albo infundibuliformi 4-5 mm. diametro, lobis 2.5 mm. longis 1.5 mm. latis conduplicatis apice rotundis margine aliquantum crispis, sinibus loborum acutis haud plicatis, tubo 2.5-3 mm. longo flavo basi ca. 1.5 mm. crasso apicem versus plus

¹ STUDIES IN THE BORAGINACEAE NO. XXX.

minusve constricto; filamentis brevissimis 1 mm. supra basin corollae affixis, antheris lanceolatis 2-2.4 mm. longis basin versus affixis e basi cordulata sursum gradatim attenuatis, apice acuminatis e faucibus corollae fere exertis; granulis pollinis globosis sublaevis 22-27 μ diametro poris 3 instructis; ovario glabro; stigmatе sessili 0.7 mm. alto a basi ca. 1 mm. diametro sursum apicem 0.3-0.4 mm. diametro truncatum obscure 4-lobulatum versus gradatim contracto; fructu bilobato glabro valde lateraliter compresso evidenter costato et obscure tuberculato et ruguloso saepe ca. 3 mm. alto paulo supra basin 2 mm. crasso, latere secus suturam excavato; nuculis duobus pallelis erectis angulatis uterque intus 2-ocularibus et 2-seminatis dorse nullo modo sulco mediali donatis.

ARGENTINA: entre El Balde y Tucunuco, prov. San Juan, hojas anchas en-crispadas, glaucas, carnosas!, Dec. 7, 1957, *Ruiz Leal & F. Roig no. 18,837* (type, LL).

In most of its structures the present plant is very suggestive of *Heliotropium curassavicum* L. and its varieties. It agrees with these in its glabrous, glaucescent somewhat succulent herbage, inflorescence, calyx, corolla, stamens, and stigma, but differs in having its fruit somewhat compressed laterally and two-lobed, and its two nutlets each two-seeded. The fruit of *H. curassavicum* is radially symmetric (not compressed laterally) and breaks up into four single seeded nutlets. The 2-seeded nutlets of *H. Ruiz-Lealii* are not grooved medially down the back nor do they present any other evidence of either an incipient or a suppressed commissure there. They never divide into single-seeded nutlets. The leaves of the new species tend to be broadest below their middle. They are sharply acute and tend to be distinctly lanceolate and not at all spatulate as are those of *H. curassavicum*. Though also fleshy, they are obviously less so than in *H. curassavicum* and are thinner and broader than is customary in that species and their margins are distinctly crisped. Crisped leaves are found in *H. Johnstonii* Rag., of Argentina, but that plant is a very close relative of *H. curassavicum* and like the latter has oblanceolate or spatulate leaves rather than lanceolate ones. Its fruit breaks up into 4 nutlets and accordingly is also very different from that of *H. Ruiz-Lealii*.

The new species evidently belongs in *Heliotropium*, section Coeloma. It has the 2-seeded nutlets, and furthermore, also the stout sessile conic stigma and the free, very elongate lanceolate anthers characteristic of that section. A similar stigma and anthers of the same distinctive type occur also in *H. curassavicum* in the section Halmyrophila. The agreement is so close, that after a reappraisal of the two sections, I am now of the opinion that the sections Coeloma and Halmyrophila must be directly and closely related. As now constituted, these two sections differ only in the fruit. *Heliotropium Ruiz-Lealii* is of especial interest since it combines distinctive characters of the two and has obvious relatives in both.

It is with great pleasure that I have associated with this interesting plant the name of Dr. Adrian Ruiz Leal, of the Facultad de Ciencias Agrarias of

Mendoza. Dr. Ruiz Leal is well known for his long, continued and very discriminating collecting in middle-western Argentina. The present *Heliotropium* is simply one of the more recent of his many discoveries of rare plants in that region.

***Heliotropium curassavicum* L. var. *fruticulosum* Johnston, var. nov.**

Planta fruticulosa erecta modice carnosa; caulibus rigidulis in sicco haud fistulosis, 1–2.5 mm. crassis; foliis angustis carnosulis crassiusculis 10–40 mm. longis 1–3.5 mm. latis medium versus vel supra medium latioribus haud venosis margine nullo modo crispis rectis obscure encrassatis vel aliquantulum revolutis; corolla 3–5 mm. longa non rariter lobis parvis 0.8–1 mm. longis donata; granulis pollinis laevibus 22–27 μ diametro poris 3 donatis; fructu 2–2.5 mm. alto paulo supra basin 1.8–2 mm. crasso apice truncato ca. 1 mm. crasso; nuculis maturis dorso haud suberosis fere laevis obscurissime tuberculatis et costatis; stigmatate late conico ca. 0.7 mm. alto; basi ca. 1 mm. diametro apice minute obscurissime bilobulato.

ARGENTINA: Capilla, dept. Lavalle (Lagunas del Rosario), Mendoza, abundante en suelos aridos, plantas erectas de color verde glauco, comun, Jan. 8, 1952, *Ruiz Leal 14536* (LL); Capilla, Mendoza, plantas erectas de color verde tierno hasta obscuro, poco carnosas, Jan 8, 1952, *Ruiz Leal 14537* (LL); entre L. Balde y Tucunuco, prov. San Juan, en zona de médanos, comun, Dec. 7, 1957, *Ruiz Leal & F. Roig 18840* (type, LL); Angaco Norte en margenes del Rio Juan, prov. San Juan, comun, Oct 29, 1954, *Ruiz Leal 16347* (LL); entre Tamberias y Calingasta, prov. San Juan, Sept. 21, 1954, *Ruiz Leal 16314* (LL).

In Argentina *H. curassavicum* L. is represented in northern Patagonia by the var. *typicum*, and, farther north, by the var. *argentinum* Johnston. The var. *fruticulosum* is another variant worthy of recognition. It appears to be confined to the province of San Juan and adjacent portions of Mendoza. This variety differs from both var. *typicum* and var. *argentinum* in its erect fruticulose stems, very narrow leaves, and slightly larger nearly smooth fruit. The plant has slender erect rigid somewhat lignified stems. They are not flexible, juicy, herbaceous and decumbent or procumbent as in the other varieties. The fruit of the var. *fruticulosum* does not develop a corky mesocarp. The back of its nutlets is only very obscurely ribbed or tuberculate and not prominently so as in other forms of *H. curassavicum*.

***Lasiarrhenum Lundellii* Johnston, sp. nov.**

Herba multicaulis perennis; caulibus erectis simplicibus ad 5 dm. altis hispidulo-villosis (pilis gracilibus 2–3 mm. longis) basin versus 3–3.5 mm. crassis; foliis e basi caulis sursum gradatim majoribus, infimis squamatis, superioribus lanceolatis 4–5 cm. longis et medium versus 12–15 mm. latis; lamina folii majoris apice acuta, basi acuta vel obtusiuscula sessili, supra viridi strigosa nerviis impressis notata, subtus secus nervos hispidulo-villosa alibi strigosa prominenter 5-nervata; nervis tribus interioribus api-

cem laminae attingentibus quam duobus exterioribus longioribus et paulo validioribus; inflorescentia terminali ut videtur simplici et pauciflora, juventate modice circinata; bracteis foliaceis flores haud vel vix superantibus; calyce 5-fido ad 4 mm. longe pedicellato, lobis inaequalibus linearibus sub anthesi 0.8–1 cm. longis 1–1.5 mm. latis; corolla alba obovoidea ca. 1.5 cm. longa a basi ca. 2 mm. diametro sursum gradatim ampliata ca. 10 mm. supra basin crassissima (0.8–0.9 mm.) deinde orem 5–6 mm. latum versus constricta, sine faucibus distincta, extus strigosa, intus infra basis loborum glandulis et pilis sparsis inconspicuisque obsita alibi glabra; annulo ca. 0.5 mm. supra basin corollae gesto 5-lobato; lobis corollae triangularibus ca. 2 mm. latis et 1.4 mm. altis erectis obtusiusculis; filamentis ca. 6.5 mm. supra basin tubi corollae affixis dorsi-ventraliter compressis glaberrimis plus minusve lanceolatis ca. 6.5 mm. longis, 1.7–2 mm. latis medium versus vel paulo infra medium latioribus, basi late affixis deorsum 1–2 mm. longe decurrentibus; antheris infra medium affixis lanceolatis, dorse pilis 1–2 mm. longis antrorse adpressis pallidis vestitis, partibus fertilibus ad 6 mm. longis et 1–1.5 mm. latis, apice sterili 1–1.3 mm. longo basi 0.6–0.8 mm. lato attenuato acuto terminatis; stylo elongato gracillimo sub anthesi 3–5 mm. longe exerto; stigmatibus late obconicis ca. 0.3 mm. diametro 0.2 mm. longo apice truncato; fructu ignoto.

MEXICO: Oaxaca, above Tejocote, on mountain side in pineland, July 25, 1943, C. L. Lundell 12296 (type, LL).

A well marked second species of *Lasiarrhenum*. From the well known *L. strigosum* (HBK.) Johnston, widely ranging in southern Mexico, the present species differs in its lower growth, shorter and proportionately broader leaves, fewer-flowered inflorescences, and obovoid corollas. In *L. strigosum* the corolla has a cylindric tube which above abruptly expands into a distinctly campanulate throat. The corollas of present species do not have a sharply defined tube and throat. From the base the corolla swells gradually for two-thirds of its total length and then contracts more abruptly towards its mouth. In lateral profile the corolla is distinctly obovate in form. The anthers of the two species seem indistinguishable. There is, however, a difference in the filaments. In the proposed species they are broadest at or below the middle, whereas in *L. strigosum* they are broadest at or above the middle. In *L. strigosum* the style is bilobed and bears two separate stigmas. In *L. Lundellii* the style is simple and bears a broadly obconic stigma which is simple or only slightly and obscurely lobed.

MYOSOTIS LATIFOLIA Poir., Encyc. Suppl. 4: 45. 1816.

Myosotis silvatica, subsp. *latifolia* (Poir) Vestergr., Ark. f. Bot. 29A, no. 8, p. 14, 1938.

Myosotis azorica sensu Johnston, Contr. Gray Herb. 70: 42. 1924 & l.c. 78: 28. 1927.

Myosotis sylvatica sensu Californian botanists.

WASHINGTON: Snohomish Co., Big Four Inn, Cascade Mts., 1940 Thompson 14535. CALIFORNIA: Humboldt Co., Carlotta, Tracy 7385; Sonoma Co., near

Occidental, 1954, *Sommer 81*; Marin Co., Mill Valley 1913, *Suksdorf 520*; Alameda Co., Oakland, Mills College, 1903, *Husted*; San Mateo Co., near Pescadero, 1929, *Wolf 3735*; Monterey Co., Carmel, 1950, *Raven 2596*. COLOMBIA: dept. Norte de Santander, Mutiseua, 1927, *Killip & Smith 15583*; dept. Santander, east of Las Vegas, 1926, *Killip & Smith 15583*; Bogota, 1876, *Bayon*; Pasa, Rio Ambato, 1932, *Heinrichs 46*. BOLIVIA: Canyon of La Paz River, 1920, *Shepard 174*. CHILE: Copiapo, 1886, *Gigoux*; Santiago, 1886, *Gigoux*; Corral, 1934, *Gunckel 4878*; Valdivia, 1930, *Gunckel 1784*. BRASIL: Guarinaranga, Ceara, *Bolland*. URUGUAY: dept. Colonia, 1926, *Herter 81748*; dept. Montevideo, Migualto, 1931, *Herter 5621*.

This species is the *Myosotis* most commonly cultivated in Latin America and along the Pacific Coast of the United States. In both areas it escapes from the garden and has demonstrated its ability to persist and spread as a feral plant. The characters of this distinctive robust large-flowered species were recognized by me long ago, i.e., but described under the incorrect name, "*Myosotis azorica*." More recent authors, particularly those in California, have usually identified it with *Myosotis sylvatica*, a species of northern Europe. Our plant, however, is without doubt that described as *Myosotis latifolia* Poir. and is a native of northwestern Africa (Algeria) and the Canary Islands. The earliest records of the species in America are from southern South America. These cultivated plants may have sprung from seeds collected by some traveller in the Canary Islands, during a stop-over while travelling to Chile or Argentina.

Vestergren, in his posthumous account of *Myosotis*, classes *M. latifolia* Poir. as a subspecies of *M. sylvatica*. This treatment, while suggestive of the general relationship of the plant, is entirely too conservative. I have had no difficulty in separating this Canary Island and Algerian plant from its European relatives even while working in the extensive representations of the genus at Kew, London and Paris. It has a characteristic aspect, a natural range, and has more claim for recognition than most of the so-called species generally recognized in Europe within this large and bewildering genus.

***Cryptantha gypsites* Johnston, sp. nov.**

Herba multicaulis fortasse perennis 10–15 cm. alta; caulibus pluribus decumbentibus dichotome ramosis graciliter villosulo-hispidulis (pilis laxo antrorseque adpressis 0.3–1.0 mm. longis); foliis spatulato-oblancoelatis 10–40 mm. longis infra apicem 1–4 mm. latis, subtus hispidulis (pilis gracillimis basi discoidea erumpentibus erectis vel adpressis 0.3–1.0 mm. longis), supra sparse hispidulis vel subglabris, margine sparse ciliolatis; inflorescentia terminali saepe furcata; cymis maturitate unilateralibus racemiformibus saepe 4–6 cm. longis abundanter bracteatis; bracteis lanceolatis sessilibus eis inferioribus quam floribus proximatis fere duplo longioribus; calyce ad anthesin 2–2.5 mm. longo subsessili; calyce fructifero ovato 2.5–3.5 mm. longo tardissime deciduo hispidulo pilis ad 1 mm. longis ascendentibus vestito, lobis anguste lanceolatis conniventibus; corolla alba 3–4 mm. longa; limbo 4–5 mm. diametro; lobis rotundis 1.6–2.0 mm. longis 1.4–1.7

mm. latis; tubo ad 1.5 mm. longo a basi 0.7–0.8 mm. diametro sursum gradatim ampliato apice 1.2–1.4 mm. diametro; faucibus subapertis appendiculas invaginatas flavas puberulentas trapeziformes 0.2 mm. altas gerentibus; annulo evidente 5-lobato; antheris ellipticis 0.5–0.6 mm. longis supra medium tubi corollae gestis; nuculis homomorphis 0.8–1.2 mm. longis 0.7–0.9 mm. latis 0.3–0.4 mm. crassis, dorse ovatis convexis evidenter pallideque verrucosis marginem angulatum paulo incrassatum pallidum circumdatis, ventre obtusis; nuculo abaxillari subpersistenti; sulco nuculae de apice deorsum gradatim dilatato vel solum infra medium aperto nullo modo excavato; gynobasi anguste pyramidalis ca. 1 mm. alta nuculis brevioris basi 0.4–0.5 mm. crassa; stylo ad anthesin basis antherarum attingente, maturitate nuculas 0.5–0.7 mm. longe superante.

MEXICO: Nuevo Leon, on gypsum in open pine woods, 8 mi. south of Galeana, July 20, 1958, *D. S. Correll & I. M. Johnston 19872* (type, LL); open pine slope 4 mi. south of Pablillo, July 20, 1958, *Correll & Johnston 19901* (LL); gypsum flat in valley 3 mi. east of Highway No. 57 on road to Galeana, July 21, 1958, *Correll & Johnston 19966* (LL).

A very well marked species known only from the highlands of southern Nuevo Leon where it is apparently confined to gypsum or gypseous soils. In the field it was mistaken for a form of *C. albida* (HBK.) Johnston, the species with which it is probably most closely related. From *C. albida*, however, it is readily distinguished by its low spreading habit, loose dichotomous branching, larger corollas, long protruding style that much surpasses the nutlets, and dorsiventrally compressed nutlets with thickened pale angulate margins and non-excavate attachment-scar. Like *C. albida*, the present species appears to be a summer-flowering and not a spring-flowering plant. The specimens available have remnants of evidently crowded basal leaves. Some of the lowermost stems appear to be persisting portions of the stems of the season previous. The root also seems to be more than that of a seasonal annual and possibly may be that of a short-lived perennial.

CRYPTANTHA CRASSISEPALA (Torr.) Greene, *Pittonia* 1: 112. 1887.

Eritrichium crassisepalum Torrey, *Pacif. R. R. Survey Reports*, ed. 1, 2^d: 321. 1855, without description.

Eritrichium crassisepalum Torrey & Gray, *Pacif. R. R. Survey Reports*, ed. 2, 2^d: 171. 1857, description.

The name of this species was first published in 1855 in Torrey's report of the collections of Capt. Pope's expedition contained in the octavo first edition of the Pacific Railroad Survey Reports. Two lines of print were devoted to the species as follows: "*ERITRICHIMUM CRASSISEPALUM*, *n. sp.* With the preceding. A common species in Western Texas and New Mexico, but not hitherto described." The species preceding *E. crassisepalum* in the catalogue is *Lithospermum breviflorum*. Its source, and hence that of *E. crassisepalum* also, is given: "Gravelly soil, on the Pecos; April"

In the second, much more elaborate, quarto edition of Capt. Pope's Report, the botanical catalogue is authored by Torrey & Gray. Our species is provided with a description for the first time. Data concerning its geographic distribution and reference to collections made on the expedition are given as follows: "On the Pecos, Llano Estacado, etc.; in sandy soil; March. A common species in Western Texas and New Mexico. It was found by Frémont on the Upper Platte. It is the same as No. 640 of Fendler's New Mexican collection."

The type of *Eritrichium crassisepalum*, the collection made on Pope's expedition, is preserved at the New York Botanical Garden. The label with the type gives its source as: "Pecos River, Western Texas, Capt. Pope." Accordingly, not only the two original publications of the species, but also the type collection associate the plant with the Pecos River and Capt. Pope's expedition. With considerable justification, therefore, the Pecos River Valley has become generally accepted as the type locality for the species.

Unfortunately, *Eritrichium crassisepalum* as originally described by Torrey & Gray, was a mixture of two closely related species. These two, *Cryptantha crassisepala* and *C. minima* were first distinguished by Johnston (Contr. Gray Herb. 74: 58-59. 1925), who selected the bractless southern and western plant as true *C. crassisepala* and assigned the more northern bracteate plant of the Great Plains to *C. minima* Rydb. The type specimen of *C. crassisepala* at New York consists of two plants of the bractless, *C. crassisepala* and two of the bracteate *C. minima*. The Frémont collections mentioned when the species was originally described represents *C. minima*. The New Mexican collection (no. 640) of Fendler like the type of *C. crassisepala* seems to be an equal mixture of true *C. crassisepala* and *C. minima*.

A study of Capt. Pope's itinerary reveals that his expedition with Dr. W. L. Diffenderfer, who actually was the botanical collector, travelled easterly along Delaware Creek to its confluence with the Pecos River where a camp was established on March 8, 1854. Ten days later Pope and most of his party crossed the Pecos and began travelling southeasterly down the north side of the river through what is now Loving and Ward counties, Texas. On March 24th, when about 15 miles west of Grand Falls, the party turned away from the river and headed northeasterly for Big Spring, Howard County, where it arrived March 31st. In his report Pope refers to that area traversed between the Pecos River and Big Spring as part of the Llano Estacado. During the following month the party first went northwesterly from Big Spring to Sulphur Springs, Martin Co, and then turned northeasterly heading directly towards Fort Belknap in Young County. Accordingly, during March the party spent over two weeks in the Pecos Valley and less than a week on the southern portion of the Llano Estacado. During all of April the party was east of the Llano Estacado and crossing the red plains of north-central Texas.

The published data and that on the label with the type specimen, associate *Eritrichium crassisepalum* with the Pecos River which, as we can de-

termine from Pope's itinerary, must mean the 75 miles of the Pecos Valley in Loving and Ward counties, Texas. The collection must have been made in March. This data seems trustworthy, at least so far as it concerns the bractless plants in the mixed type of the species. These represent a recognizable geographic form of true *C. crassisejala* with large corollas, which I have seen only from this section of the Pecos Valley and areas directly adjacent, in Ward, Winkler, Crane and Upton counties. The source of the other material in the mixed type of *E. crassisejalum* is not readily determined. This bracteate plant, referable to *C. minima* Rydb., is primarily a northern species which merely reaches its southern limit in the Pecos Valley and is rare and erratic in occurrence so far south. In the general region traversed by Pope it has been collected near Pyote, Ward Co., near Girvin, Pecos Co. and near Big Spring, Howard Co. Possibly the Expedition may have met the species while travelling between the Pecos and Big Spring. Were this the case the mention of Llano Estacado when *E. crassisejalum* was described would be understandable.

The two geographic varieties of *Cryptantha crassisejala* may be distinguished as follows:

***Cryptantha crassisejala* (Torr.) Greene var. *typica* Johnston, var. nov.**

Planta grandiflora; corolla 4.5 mm. longa quam calyce evidenter longiore; limbo 3-5 mm. diametro; lobis 1.5 mm. diametro; tubo 1.7-2 mm. longo; antheris 0.5 mm. longis ca. 1.2 mm. supra basin corollae affixis.

TEXAS: Crane Co., 6-14 mi. west of Crane, May 4, 1957, *Warnock & Mullins 14429 & 14433* (LL). Ward Co., 7 mi. west-southwest of Monahans, May 5, 1947, *McVaugh 8176* (LL, TEX); 3 mi. nw. of Monahans, sandy, May 4, 1946, *Cory 51964* (US); east of Pyote, April 17, 1941, *Lundell 10257* (LL); north of Pyote, April 30, 1942, *Lundell 11390* (LL). Winkler Co., east of Kermit, dunes, April 30, 1942, *Lundell 11397* (LL); 10 mi. east of Kermit, dunes, May 13, 1957 *Correll 16355* (LL). Upton Co., 3 mi. west of McCamey, April 16, 1941, *Lundell 10228* (LL, US). Indefinite: Pecos River, Western Texas, *Capt. Pope* in pt., mixed with *C. minima* (type, NY).

This typical form of the species is known only from sandy places in the Pecos Valley and just north of it, in Ward, Crane, Upton and Winkler counties, Texas.

***Cryptantha crassisejala* (Torr.) Greene var. *elachantha* Johnston, var. nov.**

Planta parviflora; corolla 3 mm. longa calyce vix longiore inconspicua; limbo 2.5 mm. diametro; lobis 0.6-0.8 mm. diametro; tubo 1.5 mm. longo; antheris 0.4 mm. longis 1 mm. supra basin corollae affixis.

TEXAS: Jeff Davis Co., Apr. 20, 1932, *Whitehouse 8357* (TEX); 3 mi. northwest of Chispa, March 18, 1941, *Warnock & Rose-Innes 481* (TEX). Brewster Co., Alpine, Sul Ross College campus, Aug. 12, 1936 *Warnock T. 178* in pt., mixed with *C. mexicana* (TEX); 0-2 Ranch [about 40 mi.] south of Alpine, March 26, 1929,

A. B. Clawson 29-113 in pt., mixed with *C. mexicana* (LL); hills about mouth of Santa Elena Canyon, Big Bend, March 16, 1947, *Warnock 47040* (LL). Culberson Co., just south of Van Horn, Apr. 5, 1936, *Sperry T. 65* (US); Van Horn Mts., April 15, 1949, *Tharp & Haward 49309* (TEX); betw. Van Horn and Sierra Blanca, May 8, 1938, *Warnock T. 350* (US). Hudspeth Co., Quitman Range, Apr. 23, 1938, *H. E. Wheeler* (LL); igneous north end of Quitman Mts., 8 mi. west of Sierra Blanca, April 21, 1947, *McVaugh 8040* (type LL, TEX). El Paso Co., Fabens, Apr. 10, 1930, *M. E. Jones 25815* (POM); El Paso, 1881, *G. R. Vasey* (NY); El Paso, 1858, *Dieffenderfer 79* (PH); El Paso, March 20, 1932, *Whitehouse 8354* (TEX); McKelligon Canyon, El Paso, March 26, 1948, *Warnock 7661* (LL, TEX); Mt. Franklin, El Paso, April 19, 1952, *Warnock 10386* (LL); slopes of Mt. Franklin, 2 mi. west of El Paso, April 10, 1952 *Warnock 10310* (LL).

Only Texas collections of the variety are cited. From Trans-Pecos Texas the var. *elachantha* extends westward through New Mexico into Arizona and thence southward into northern Mexico and northward into southern Utah and southwestern Colorado. It is the most common and most widely ranging form of *C. crassisepala*.

CRYPTANTHA MINIMA Rydb., Bull. Torr. Bot. Cl. 28: 31. 1901; Johnston, Contr. Gray Herb. 74: 58. 1925.

Eritrichium hispidum Buckley, Proc. Acad. Philad. 1861: 462. 1861, not *Cryptantha hispida* (Phil.) Reiche, 1908.

In the past Buckley's *Eritrichium hispidum* has been identified with *Cryptantha texana* (DC.) Greene or more commonly with *C. albida* (HBK.) Johnston. The type of *E. hispidum* was recently reexamined at Philadelphia. Without doubt, it represents the bracteate generally northern relative of *C. crassisepala* to which the name *C. minima* Rydb. is properly applicable!

The type collection of *E. hispidum* is given by S. B. Buckley as collected "on the Upper Colorado of Texas" in June, of either 1860 or 1861. According to Buckley (First Annual Report of Geol. & Agric. Survey of Texas, pp. 8 and 10. 1874), during June 1860 he was working in Navarro County, Texas where the present species is most certainly neither known nor to be expected! The following year, from early March to mid June he was travelling on geological reconnaissance in central and north central Texas. His return route was south from Clay and Archer counties along the Permian-Pennsylvanian contact. He crossed the Colorado River between Coleman and McCulloch counties and, after a few days in Mason and Maynard counties, travelled directly to Austin, reaching there by mid-June. Accordingly, the type of *E. hispidum* must have been collected early in June 1861 near the crossing of the Colorado River in either Coleman or McCulloch county. This represents a southeastern extension in the generally recognized range of the species. This extension, however, is not inconsistent with the known distribution of *C. minima* and should be a cause for no great surprise. The species has heretofore been recognized as reaching its southeastern limit within Texas in Archer, Fisher, Mitchell and Val Verde counties.

It can be noted here that of the six members of the group *Texanae*, *C. minima* is the North American species most closely related to *C. mendocina* Johnston, the single South American member of this very natural and well defined group of species. Both species are characterized by bracteate cymes. *C. mendocina* is known only from the foothills of the Andes in western Mendoza, Argentina. It differs from *C. minima* in having the scorpioid cymes solitary and not in pairs, and in having evidently larger nutlets with both the large axial one and the smaller consimilar ones coarsely tuberculate in a similar manner. The lobes of the fruiting calyx of *C. mendocina* become prominent and thickened but to a much less degree than is common in *C. minima*.

Arnold Arboretum of Harvard University
Jamaica Plain, Massachusetts

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