STUDIES IN THE BORAGINACEAE, XIII
NEW OR OTHERWISE NOTEWORTHY SPECIES, CHIEFLY FROM WESTERN UNITED STATES

IVAN M. JOHNSTON

Heliotropium molle (Torr.), comb. nov.

Heliophytum molle Torr. U. S. & Mex. Bound. Bot. 138 (1859).
Tournefortia mollis Gray, Proc. Am. Acad. **10**: 50 (1875); not Muell. (1858).
Tournefortia monclovana Wats. Proc. Am. Acad. **18**: 120 (1883).

TEXAS: plains south of Santiago Peak, 1883, *Havard 46½* (G). COAHUILA: mountains 24 mi. north of Monclova, Sept. 1880, *Palmer 887* (TYPE of *T. monclovana,* G); Movano, July 1910, *Purpus 4555* (G); 19 mi. south of Laguna del Rey, a colony on silty floor of a broad valley, with *H. Greggii,* fl. white, leaves thickish, gray, crisped, Sept. 20, 1938, *Johnston 7803* (G).

The type of *H. molle* was collected by Bigelow near Presidio del Norte (i.e. near Ojinaga), northern Chihuahua. The collection made by Palmer (no. 887) north of Monclova, Coahuila, the type of *T. monclovana,* is unquestionably conspecific. During my travels in Coahuila and Chihuahua, last year, I observed this species at only three localities. In each, it formed large though restricted colonies on dry silty valley-floors or dry sandy stream-ways. The plant spreads underground by rhizomes. The herbaceous stems, 2–3 dm. tall, were numerous at each station but may have come from the rhizomes of a relatively small number of individual plants. I noted the species (1) south of Laguna del Rey near Mohovano (specimen cited above), (2) near the Coahuila-Chihuahua boundary near Guimbalete, and (3) in northern Chihuahua in the type-region between Mula and Ojinaga. The species has a dry velvety fruit which breaks into two-seeded halves at maturity. The halves of the fruit contain two well-developed fertile cells and no infertile cavities. The plant unquestionably belongs to *Heliotropium* and can not possibly be kept in *Tournefortia.*

Heliotropium assurgens, nom. nov.

Heliotropium phyllostachyum var. *erectum* Macbride, Proc. Am. Acad. **51**: 542 (1916); not *H. erectum* Lam. (1778).
Anchusa incana Sesse & Mociño, Fl. Mex. 33 (1893) and ed. 2, 30 (1894); not Ledeb. (1847), nor *H. incanum* R. & P. (1799).

Cryptantha Coryi, sp. nov.

Planta biennis saepe robusta e radice palari valida lignosa erumpens; caulibus pluribus erectis rigidis 15–45 cm. altis (basim versus 2.5–5 mm. crassis) saepe hispidis setas rigidas appressas vel patentes et pilos minutos flexuosos abundantes gerentibus; foliis basalibus 5–14 cm. longis crassiusculis lineari-oblanceolatis apicem acutum vel obtusum versus 4–10 mm. latis saepe strigoso-tomentulosis setas appressas 1.5–3 mm. longas rigidas e basi pustulata erumpentes et pilos minutos appressos gerentibus; foliis caulinis numerosis saepe 1.5–2 cm. distantibus saepe 2–3 cm. longis lineari-oblongis vel oblongo-lanceolatis 3–4 mm. latis acutis; cymis 3–10 scorpioideis ascendentibus elongatis e axillis foliorum supremorum erumpentibus 10–20-floris, maturitate 5–20 mm. distantibus, supremis 5–13 cm. longis, inferioribus gradatim brevioribus, thyrsum 7–18 cm. longum 4–9 cm. crassum haud densum formantibus; floribus fructiferis 3–10 mm. distantibus; bracteis cymae 5–10 mm. longis evidentibus lineari-lanceolatis; calyce sub anthesi 4–6 mm. longo subsessili, maturitate 6–10 mm. longo 1–5 mm. longe rigideque pedicellato setis et pilis minutis vestito saepe hispido; corolla alba 6–8 mm. longa, limbo 6–7 mm. diametro patente, tubo 4–5 mm. longo quam lobis calycis paullo longiore; nuculis 4 laevibus angulatis 2.5–3 mm. altis et latis eis *C. Jamesii* similibus margine haud conniventibus.

TEXAS: 16 mi. northeast of Ft. Stockton, Pecos Co., 1933, *Cory 5599* (G); about 2 mi. west of Longfellow, Pecos Co., Apr. 15, 1936, *V. L. Cory* (TYPE, Gray Herb.); near Persimmon Gap, Brewster Co., fl. white, 1931, *McKelvey 1979* (G); 55.8 mi. south of Alpine, Brewster Co., Apr. 13, 1936, *Cory* (G); Feodora, Terrell Co., dry rocky plain, 1928, *E. J. Palmer 33575* (G); 8 mi. east of Langtry, Val Verde Co., Apr. 6, 1939, *Cory* (G); 7 mi. southeast of Del Rio, Val Verde Co., April 1, 1939, *Cory* (G); Big Spring, Howard Co., stony hills, June 11, 1900, *Eggert* (G); Big Spring, deep sand, 1928, *E. J. Palmer 34009* (G); Ross Place, Tom Green Co., 1929, *Cory 651* (G); Upper Concho, sandy hills and plains, *Reverchon 2120* (G); between Uvalde and Del Rio, fl. white, 1931, *McKelvey 1891* (G); without data, *Wright 1566,* in pt. (G).

This is the plant of Texas which Payson treated as "*C. Palmeri.*" It is known from Reeves and Brewster east to Howard, Tom Green and Kinney counties, Texas, and is evidently different from the type and only known collection of *C. Palmeri* (Gray) Payson, from the mountains south of Saltillo, Coahuila. The Mexican plant is a perennial with a slender multicipital caudex producing more slender and more densely strigose basal leaves, more slender stems, smaller corollas with a dis-

tinctly narrower limb, and finally an inflorescence of glomerules rather than elongating scorpioid cymes. The coarse habit, the biennial root and the very well developed elongate scorpioid cymes quickly distinguish *C. Coryi* from true *C. Palmeri* of Mexico. I do not believe that these two species are even immediately related. As Payson has indicated this Texan plant has affinities with *C. Jamesii* var. *multicaulis* (Torr.) Payson. The true Mexican, *C. Palmeri* has its closest relation in *C. crassipes* described below.

Cryptantha crassipes, sp. nov.

Herba cinerea e radice perenni valida cortice nigrescente obtecta oriens; caulibus pluribus erectis simplicibus 6–30 cm. altis plus minusve hispidis setis longis et pilis mollibus brevibus laxe appresseque vestitis, basi ima persistentibus induratis, basibus petiolorum marcidis crasse squamoso-vestitis caudicem crassum multicipitalem conspicuum formantibus; foliis basalibus congestis crassiusculis lineari-spathulatis vel anguste lineari-oblanceolatis 4–6 cm. longis 2–6 mm. latis utrinque dense pallideque strigosis (indumento e setis 1–2 mm. longis rigidis e basi pustulata orientibus et pilis ca. 0.5 mm. longis flexuosis mollibus composito) apice obtusis vel rotundis; foliis caulinis sparsis 1.5–3 cm. distantibus 1–2 cm. longis indumento laxe appresso vestitis plus minusve hispidis; floribus glomeratis sub anthesi in inflorescentiam capitatam densam 1–2.5 cm. diametro caulem sparse foliatum terminantem aggregatis; inflorescentia fructifera ambitu obovata vel oblongo-obovata ex glomerulo terminali multifloro 2.5–3 cm. diametro congesto latiore quam longo et infra glomerulum maximum ex glomerulis 1–3 parvis 1–5-floris 1–2 cm. longe pedunculatis in axillis foliorum supremorum 1–2 cm. longorum 5–25 mm. distantium gestis composita; cymis omnino glomeratis fructiferis congestis vix longioribus quam latis haud elongato-scorpioideis; corolla ut videtur alba conspicua, limbo patente ca. 8 mm. diametro, lobis orbicularibus ca. 2.2 mm. diametro, tubo ca. 9 mm. longo; calyce sub anthesi ca. 9 mm. longo, lobis cuneatis fere apicem tubi corollae attingentibus setis et pilis laxe appressis dense vestitis, maturitate paullo accrescentibus, 1–3 mm. longe pedicellatis; nuculis 4 fructum hemisphaericum formantibus crassis angulatis 3.5–4 mm. longis ca. 3 mm. latis a dorso visum orbiculari-triangularibus vel ovato-triangularibus, margine lateraliter conniventibus dorso convexis opacis inconspicue rugulosis, ventre angulatis sublaevibus, sulco angustissimo lineato.

Texas (Brewster Co.): tributary of Alamo de Caesario, 18 mi. north of Terlingua, April 3, 1939, *V. L. Cory* (G); 55 mi. south of Alpine,