

Notes on Texas Compositae—II

Lloyd H. Shinnery¹

PSILACTIS leptos Shinnery sp. nov. Annuæ e radice verticali. Caulis erectus 45-110 cm. altus glaber sive hirsutulus, parte dimidia superiore vel minus corymbose ramosus. Folia inferiora oblanceolata vel elliptico-lanceolata integra vel argute dentata vel subpinnatifida glabra vel parce hirsutula basibus petiolaribus 0.5-3.5 cm. longis laminibus 2.5-7.0 cm. longis 0.4-1.5 cm. latis. Folia superiora gradatim minora. Pedunculi bracteati florescentes 1.5-4.0 cm. longi glanduloso-hispiduli. Capitula solitaria laxè corymbosa. Involucra 3.5-4.2 mm. alta late campanulata glandulosa. Phyllaria subappressa subimbricata 3-4-seriata. Receptaculum planum glabrum. Flores radii 32-50 ligulis 5-7 mm. longis. Flores disci tubulosi corollis 3.2-3.4 mm. longis. Achaenia pubescentia 8-10-nervata 1.3-2.1 mm. longa radii epapposa disci setis ca. 30 subaequalibus ad 3.7 mm. longis.

PSILACTIS leptos Shinnery, n. sp. Annual from a taproot. Stems simple below, or sometimes divided into 2 or 3 at base, erect, 45-110 cm. high, glabrous (exclusive of peduncles) or rather densely hirsutulous below and sparsely so above, divaricately and corymbosely branched in the upper sixth to half. Lower stem leaves oblanceolate to elliptic-lanceolate, acute or obtuse, entire to coarsely salient-toothed or shallowly pinnatifid, glabrous or sparsely hirsutulous at least on the petiolar base, with prominent midrib, the petiolar bases 0.5-3.5 cm. long, blades 2.5-7.0 cm. long by 0.4-1.5 cm. wide. Middle and upper leaves gradually much reduced, proportionately narrower, the branchlets with numerous only slightly spreading, narrowly lance-oblong, entire leafy bracts. Peduncles of flowering heads 1.5-4.0 cm. long (young plants may have a precociously flowering head terminating a long branch which later develops lateral heads), with few, small, slightly clasping bracts 4-9 mm. long, moderately to very densely pubescent with short, hispid, glandular-capitate hairs 0.15 mm. or less long. Heads solitary in a loosely corymbose inflorescence. Involucres 3.5-4.2 mm. high, broadly campanulate, densely granulose-glandular. Phyllaries loosely appressed, somewhat imbricated in about 3-4 series, the outer about $\frac{2}{3}$ - $\frac{3}{4}$ as long as the inner. Outer phyllaries herbaceous, narrowly oblong, acute, about

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0.6-0.8 mm. wide, with very narrow scarious margins; middle phyllaries lance-oblong, with broad green midvein enlarging to fill the apical third, yellowish and with scarious margins below; inner phyllaries lance-linear, subacuminate, greenish yellow, often with reddish tips, with broader scarious margins than the middle or outer. Receptacle flat (slightly convex in age), glabrous. Ray florets 32-50, the ligules narrowly lance-oblong, obtuse, 5-7 mm. long, about 1 mm. wide, light blue-violet, curling under from tip to base in drying (if once fully expanded); tube about 1.4 mm. long; style branches linear, about 0.5 mm. long, glabrous. Disk corollas tubular, 3.2-3.4 mm. long (tube about 1.4 mm., limb not much expanded, about the same length, lobes about 0.4 mm., erect), yellow; style branches about 0.8 mm. long, the acuminate, pubescent appendage about a third the total. Achenes of ray florets and disk florets similar except for the pappus, light brown, sparsely to densely pubescent, 8- or 10-ribbed (ribs not prominent), pointed at base, constricted at summit, about 1.3-2.1 mm. long. Ray florets without pappus; disk florets with about 30 fragile, white or faintly yellowish, scabrous, slightly unequal hairs up to 3.7 mm. long, the shorter about $\frac{2}{3}$ - $\frac{3}{4}$ as long as the longer. TYPE: railroad ditch, southeast side of El Paso, El Paso Co., Texas, *Lloyd H. Shinnners 8918*, Aug. 11, 1946.² "Common weed in irrigated areas. Rays light blue violet, disk yellow."

Additional specimens seen: EL PASO Co.: $7\frac{1}{4}$ miles east of El Paso, *V. L. Cory 52933*, May 12, 1946; Hueco Tanks, 32 miles east-northeast of El Paso, *Shinners 8942*, Aug. 12, 1946; 38 miles east of El Paso, *Cory 52994*, May 14, 1946. HUDSPETH Co.: $\frac{1}{4}$ mile west of Alcala, *Cory 52999*, May 14, 1946; Rio Grande levee near Ft. Quitman ruins, *Shinners 8903* Aug. 11, 1946; McNary-Ft. Quitman levee road, *U. T. Waterfall 4588*, June 18, 1943; 20 miles west of Sierra Blanca, *Shinners 8900*, Aug. 11, 1946. PRESIDIO Co.: Along Rio Grande near Porvenir, *Waterfall 4770*, June 27, 1943.

Psilactis leptos has much smaller heads with more appressed phyllaries than its relative, *P. asteroides* Gray, of Chihuahua and Arizona. It has remarkable superficial resemblance to *Aster pauciflorus* Nutt. and its Mexican allies. *Aster Boltoniae* Greene, *Pittonia* 3: 248, 1897, described

²Types and other cited specimens are in the Herbarium of Southern Methodist University, unless otherwise stated.

from El Paso and said to resemble *A. pauciflorus*, is "perennial, sometimes suffrutescent at base, 2 to 4 feet high, . . . leaves linear or spatulate-linear, 2 to 4 inches long, obtuse, entire, . . . bracts of the hemispherical involucre nearly equal, biserial, the outer ones oblong-linear and wholly herbaceous, the inner scarious-edged below the middle and spatulate-linear." Greene's species is listed as a synonym of *Psilactis asteroides* by Blake in Kearney & Peebles' *Flowering Plants and Ferns of Arizona*, p. 914, 1942. *Psilactis asteroides* is not known to occur as far east as Texas, and Greene's description hardly applies to *P. leptos*. Without re-examination of Greene's type (collected by Marcus Jones at El Paso in 1884), its identity cannot be stated. I find no comments on it among my notes, though I recall seeing it at Notre Dame University, and considered it correctly placed in the genus *Aster* from superficial inspection. *Psilactis tenuis* Wats., Proc. Amer. Acad. 26: 139, 1891 (type: "In the Sierra Madre near Monterey; June, 1888 (n. 2238)," C. G. Pringle; in Gray Herb., not seen) has branches "rough-hispid with spreading hairs," and phyllaries "thin and scarcely herbaceous, narrowly linear, acuminate." *P. brevilingulata* Sch. Bip. ex Hemsley, Diagnoses Plant., p. 34, 1878 [type: "Mexico: prope Tacubayam, Schaffner. (Hb. Kew.)"; not seen] with "foliis scabris rigidis linearibus interdum remote dentatis, capitulis parvis, radii floribus brevissimis, pappo quam corolla disci brevior e setis circiter 20 aequalibus," is a south-Mexican representative of the genus; the name has been incorrectly applied to Texas plants.

MACHAERANTHERA Correllii Shinnery, sp. nov. Perennis e radice verticali cumque caudice brevi subligioso. Caules plerumque plures erecti 15-35 cm. alti simplices vel superne corymbose ramosi glabrati vel dense pubescentes pilis brevibus rigidis patentibus. Folia simplicia spinuloso-serrulata subcoriacea dense scabro-pubescentia, inferiora oblanceolata subpetiolata basibus petiolaribus 0.5-1.5 cm. longis lamini-bus 1.5-3.5 cm. longis 0.5-1.3 cm. latis, superiora minora sessilia subamplectentia. Pedunculi 1.5-6.0 cm. longi bracteati. Involucra campanulata 6-8 mm. alta. Phyllaria lanceo-linearum acuminata apice setifera imbricata ca. 6-seriata subcoriacea glabra nisi marginibus glanduloso-ciliolatis et apicibus viridibus glanduloso-hispidis. Receptaculum planum

lacero-alveolatum. Flores radii 16-32 ligulis albis 8-11 mm. longis. Flores disci ca. 96 corollis luteis ca. 5.7 mm. longis. Achaenia radii 2.1-2.3 mm. longa truncato-ovoidea sericea 10-nervata, pappi setae numerosae scabrae aliae 3.0-3.5 mm. longae aliae ad dimidium breviores. Achaenia disci similia (saepe abortiva?), pappi setae ad 4-5 mm. longae.

MACHAERANTHERA Correllii Shinnery, n. sp. Perennial from a taproot, with a short somewhat woody caudex. Stems usually several, erect, 15-35 cm. high, simple or corymbosely branched in the upper third or less, glabrate or densely and finely pubescent with short stiff hairs 0.5 mm. or less long, spreading at right angles from the stem. Leaves simple, rather evenly finely-toothed with antrorse, spiny or bristle-tipped teeth, rather stiff or subcoriaceous, light green, densely and minutely scabrous-pubescent with widely spreading hairs. Lower leaves oblanceolate, broadly acute or obtuse, the petiolar base 0.5-1.5 cm. long, blade 1.5-3.5 cm. long, 0.5-1.3 cm. wide; upper leaves gradually reduced, narrowly oblong, sessile and slightly clasping. Peduncles (other than of solitary terminal heads) 1.5-6.0 cm. long, with lance-linear or narrowly oblong, spiny-serrate, leafy bracts 4-10 mm. long by 1.0-2.5 mm. wide. Involucres campanulate or broadly urn-shaped, 6-8 mm. high. Phyllaries lance-linear, acuminate, with spreading or twisted bristle-tipped apices (the translucent whitish bristle on the outer 0.5-1.0 mm. long), imbricated in about 6 series (the outermost about $\frac{1}{4}$ - $\frac{1}{3}$ as long as the innermost), subcoriaceous, greenish, stramineous, glabrous except for margins finely ciliate with mostly glandular-capitate hairs, and elongate, diamond-shaped, glandular-hispid, green tips. Receptacle flat, alveolate, the alveoli margined with conspicuous, unequal, partly united, acuminate, yellowish scales up to 1.5 mm. long. Ray florets 16-32; ligules oblong-elliptic, 8-11 mm. long, about 3.3 mm. wide, obtuse and entire dull white, sometimes violet-tinged beneath, tube about 2.5 mm. long, pubescent; style branches linear, subacute, glabrous, 1.3 mm. long. Disk florets 96 (one count); corollas funnel-form cylindric, yellow, about 5.7 mm. long, limb and tube scarcely differentiated, lobes about 0.6 mm. long, erect; anther column 4.1 mm. long, appendages lanceolate, hyaline, 0.7 mm. long; style branches 1.6 mm. long, the acuminate appendages about $\frac{3}{5}$ the total length. Achenes or ray florets truncate-ovoid,

2.1-2.3 mm. long, 1.2 mm. thick, sericeous, rather indistinctly 10-ribbed; pappus bristles brownish, scabrous, more or less flattened, numerous, unequal (the shorter $\frac{1}{3}$ - $\frac{1}{2}$ as long as the longer); 3.0-3.5 mm. long. Achenes of disk florets similar (many apparently abortive), but with longer pappus, the bristles 4-5 mm. long. TYPE: Pine Springs Canyon, Guadalupe Mountains, elevation about 5700 ft., Culberson Co., *Shinners 9059*, Aug. 15, 1946. "North-facing slopes, limestone and silt. Frequent, but few plants in flower. Rays dull white, disk yellow." Additional specimens: CULBERSON Co.: "The Bowl," summit of Pine Top Mountain, Guadalupe Mountains, *D. S. Correll 13916*, Aug. 15, 1946. Guadalupe Mountains 2.7 miles north [northeast] of Pine Springs Camp, rocky limestone soil, *Eula Whitehouse 17058*, Sept. 22, 1946; 5 miles north [northeast] of Pine Springs Camp on Highway 62, *Whitehouse 17067*, Sept. 22, 1946. Guadalupe Mountains, *M. S. Young*, Aug. 15, 1916 (in Herb. University of Texas).

On the evening of August 15, 1946, the collector and author of the new species tumbled twenty or thirty feet from a cliff in a branch of Pine Springs Canyon in the Guadalupe Mountains, and his plant press, containing the type specimen, catapulted on down two or three times as far. Collector and collection were rescued next day by Dr. Donovan S. Correll, in whose honor it seems not inappropriate that the specific name should be given—in preference, say, to *ossium-fractorum*.

Machaeranthera is a well-marked genus of perhaps 20 or 30 species of the western United States, western Canada, and Mexico. It is in many respects more closely allied to *Lessingia* and *Corethrogyne* than to *Aster*, subgenus *Euastr*. From the latter it differs in having a taproot instead of shallow rhizomes or premorse rootstocks, coriaceous phyllaries with colored tips not formed by expansion of the midrib, alveolate to short-setose or almost chaffy receptacle, and often spiny-toothed or pinnatifid leaves. In addition to the unique white-flowered perennial *M. Correllii*, at least three annual species are found in Texas:

MACHAERANTHERA PARVIFLORA Gray, Pl. Wright. 1 (Smithsonian Contrib. 3 no. 5): 90, 1850. Type: "Along the Rio Grande, New Mexico; Sept., *Charles Wright 211* (in

Gray Herbarium; not examined). *Aster parvulus* Blake in Tidestrom, Fl. Utah & Nevada (Contrib. U.S. Nat. Herb. 25: 563. 1925.) Low annual, much branched from the base, with numerous small, deeply pinnatifid or bipinnatifid leaves, and small heads (involucres 5-6 mm. high) terminating the branches. A roadside weed, locally common in Hudspeth and El Paso Counties.

MACHAERANTHERA LINEARIS Greene, Bull. Torr. Bot. Club 24: 511-512. 1897. Type: "Sandy fields of the Mesilla Valley, New Mexico," *E. O. Wooton*, "autumn" (examined in the Greene Herbarium at Notre Dame University). *Aster linearis* (Greene) Cory, Rhodora 38: 407. 1936. Robust erect annual 50-60 cm. or more in height (only two complete or nearly complete plants seen; most specimens are fragmentary), branching above the middle, with lanceolate, 3-nerved, spiny-toothed leaves up to 1.4 cm. wide, and numerous, rather large heads (involucres 7-9 mm. high) with appressed phyllaries. Sandy soil, Hudspeth and El Paso Counties; apparently not common. In the University of Texas Herbarium are two fragmentary specimens of a species I have been unable to identify. The fragments (flowering branches) suggest *M. linearis*, but the phyllaries have slenderly pointed, spreading tips. The collections were made at El Paso, *M. J. White*, fall, 1913.

MACHAERANTHERA TANACETIFOLIA (H.B.K.) Nees, Gen. et Sp. Asterearum 225. 1832 (dated 1833). *Aster tanacetifolius* H.B.K., Nov. Gen. et Sp. Pl. 4: 95. 1820. Type: "Colitur in horto Mexicano," a single plant preserved (according to Nees) in the Willdenow Herbarium at Berlin (not seen). *Aster tanacetifolius* var. *pygmaeus* Gray, Syn. Fl. 1 pt. 2: 206. 1884. (Earlier, Gray listed *Machaeranthera tanacetifolia* var. *pygmaea*, Pl. Wright 2. [Smithsonian Contrib. 5 no. 6]: 74-75, 1853, but the word "pygmaea" was in Roman type and evidently intended to be a descriptive term, not a formal varietal epithet.) Type: "Dry, stony hills, valley of the Salado, Chihuahua, and near El Paso; April," *Wright 1395* (in Gray Herbarium; not examined). "A remarkably dwarf, precociously flowering state of the species." *Machaeranthera pygmaea* (Gray) Wooton & Standley, Contrib. U.S. Nat. Herb. 16: 189. 1913. Simple or usually bushy-branched annual up to 35 cm. high, with deeply dissected leaves (upper

once, lower twice pinnatifid, and very large showy heads; involucre 9-12 mm. high), the phyllaries with long, narrow, green, spreading tips. The most abundant and widespread species in Texas, occurring in sandy or disturbed ground from the Panhandle to the Trans-Pecos, extending eastward as far as Dickens, Mitchell, and Reagan Counties. Seed is offered by dealers under the name "Tahoka Daisy," doubtless from the small town of Tahoka, Lynn County, Texas, south of the Panhandle. The plant's showiness is marred by the fact that usually only a few heads are open at a time.

RUDBECKIA Coryi Shinnery, sp. nov. Perennis caespitosa e rhizomate horizontali breviter repenti radicibus multis fibrosis. Caulis 75 cm. altus basi curvatus tortuosus hispidus corymbose ramosus ramis tribus 21-27 cm. longis. Folia radicali ovato-lanceolata longissime petiolata (petiolis 17.5-34 cm. longis) laminibus 11-13 cm. longis 4-5 cm. latis crenato-denticulatis vel subintegris subacutis quinquenerviatis e parti quarta basali et reticulato-venosis in ambitu scabris. Folia caulina pauca inferiora petiolata superiora gradatim brevius petiolata minora angustioraque. Rami elongati paucifoliati foliis oblongis vel lanceolata-oblongis integris 1.6-3.2 cm. longis 3-9 mm. latis. Capitula solitaria terminalia. Phyllaria viridia foliacea 3-4-seriata serierum 2-3 exterium ovato-oblonga vel ovato-oblonga vel ovato-lanceolata obtusa vel late acuta subaequalia patula 5-9 mm. longa 2-4 mm. lata in ambitu hispida, seriei intimae 1.5-3 mm. longa plus minusve appressa lanceolata acuta. Discus breviter conicus florens 10-12 mm. latus 13-14 mm. latus, receptaculum elongatum 6 mm. altum basi 2 mm. latum. Squamae disci oblongo-oblancoolatae subacutae concavae cucullatae glabrae apice hispidulo-serrulatae. Ligulae 11-15 oblongo-lanceolatae 2.0-2.4 cm. longae 0.6 cm. latae patentes apice bifidae. Flores disci artobrunneo-rubrae, corollae 4 mm. longae (tuba 1 mm., limbus 2.6 mm., lobae erectae 0.4 mm.) ; styli rami 1.25 mm. longitruncati apice hispidi. Achaenia matura desunt; immatura quadrangulata glabra. Pappus e corona brevi squamosa obtuse lobata glabra 0.3-0.4 mm. longa constitutus.

RUDBECKIA Coryi Shinnery, n. sp. Tufted perennial. Rootstock horizontal, apparently short-repent and branched, with numerous coarsely fibrous roots. Stem 75 cm. high, curved and twisted in the basal portion, hispid (especially

below the heads) with short, prominently thick-based, jointed, translucent or transparent, whitish trichomes 0.8-0.9 mm. long (only the bases of many persisting), strongly ribbed above, divided above the middle into 3 corymbose branches 21, 25, and 27 cm. long. Basal (rootstock) leaves four, the petioles 17.5-34 cm. long, flat; blades ovate-lanceolate, subacute, 11-13 cm. long, 4-5 cm. wide, the bases asymmetrically short-decurrent on the petioles, margins, shallowly crenate-dentate or subentire, the teeth (when distinct) apiculate; prominent main veins 5, arising in the basal quarter of the blade, with numerous less prominent reticulate veinlets, the surfaces sparsely scabrous. Stem leaves few (6 below the lowest branch), the lowest long-petioled (blade wanting), middle and upper progressively shorter-petioled, smaller, narrower, and more entire, the one at the base of the lowest branch 8.5 cm. long (including a wing-petiole base 1.5 cm. long) by 1.6 cm. wide. Branches (peduncles) with 1-3 sessile, oblong to lanceolate-oblong, entire, reduced leaves 1.6-3.2 cm. long by 3-9 mm. wide. Heads solitary and terminal on the long branches. Phyllaries green, foliaceous, about 3-4-seriate, those of the outer 2-3 rows ovate-oblong to ovate-lanceolate, obtuse to broadly acute, slightly unequal, loosely spreading, 519 mm. long, 2-4 mm wide, hispid-pubescent on both surfaces; innermost row about $\frac{1}{3}$ or $\frac{1}{4}$ as long, lanceolate, acute, more or less appressed. Disk low-conical in flower, 10-12 mm. high, 13-14 mm. wide; receptacle 6 mm. high, 2 mm. thick at base. Scales of chaff oblong-oblong, broadly acute, concave, cucullate, keeled and with a prominent rib near each margin, inconspicuously hispid-serrulate at the apex, otherwise glabrous. Rays 11, 12, and 15, oblong-lanceolate, 2.0-2.4 cm. long, 0.6 cm. wide, shallowly bifid at apex, widely spreading or slightly ascending, apparently uniformly yellow throughout. Disk florets dark brown-red (whole disk appearing blackish), corollas cylindrical, 4 mm. long (tube 1 mm., limb slightly broader, 2.6 mm., lobes erect, 0.4 mm.); style branches 1.25 mm. long. Mature achenes wanting. Immature achenes quadrangular, glabrous. Pappus an irregular, bluntly lobed, scaly crown about 0.3-0.4 mm. long. TYPE: Turtle Creek, $13\frac{3}{4}$ miles west of Kerrville, Kerr Co., *Cory 52412*, September 29, 1946. "Frequent in moist soil at edge of running water." Addi-

tional collection (not used in preparing the above description): KERR Co.: north of Hunt, *Whitehouse*, Sept. 1, 1930 (in Herb. University of Texas).

Rudbeckia Coryi adds another to an already lengthy list of endemics of the Edwards Plateau in central Texas. Its closest relatives are *R. speciosa* Wenderoth and *R. Sullivantii* Boynton & Beadle, of the central and southeastern United States, chiefly east of the Mississippi River. It differs from both in the rounded teeth of the lower leaves, shorter, thicker stem hairs with prominently swollen bases and jointed lower portions, shorter, broader, less unequal outer phyllaries, and more broadly pointed chaff scales. In the key in Small's *Flora of the Southeastern United States* (1903 and 1913, p. 1253), it runs to either *R. truncata* Small or *R. missouriensis* Engelm. It has very little resemblance to the narrow-leaved, long-hairy, leafy-peduncled, small-headed *R. missouriensis*. No specimen of *R. truncata* is at hand, but according to the original description (Bull. Torr. Bot. Club 25: 478-479, 1898), the petioles of the lower leaves are shorter than the blades, the blades are linear-oblong to linear, 3-10 cm. long, acute or acuminate, the phyllaries are linear-lanceolate or nearly linear, about 1 cm. long, the rays are 1-2 cm. long, usually 10-12; type from limestone districts in extreme northwestern Georgia. Certainly this description could not apply to *R. Coryi* of central Texas.

A number of species of perennial *Rudbeckia* allied to *R. fulgida* Ait. have recently been subjected to Procrustean lumping by Dr. Arthur Cronquist (*Rhodora* 47: 400-401, 1945). In my opinion this was done too hastily and superficially. Such treatment may simplify the genus on paper, but only there. I prefer the judgment of Fernald (*Rhodora* 43: 657, 1941) and especially of Deam (*Flora of Indiana*, pp. 964-968, 1940). Dr. Deam has had a number of *Rudbeckias* in cultivation for many years in his garden at Bluffton, where it was my privilege to observe and to collect some of them in August, 1944. The Ozarkian *R. missouriensis* (or *R. fulgida* var. *missouriensis*) is attributed to Texas by Small and by Cronquist, but this may be the result of erroneous identification of specimens of the similarly narrow-leaved but winter annual or biennial *R. divergens* T. V. Moore. This Coastal Plain species is common in east Texas,

extending north to Oklahoma. I have seen no specimens of *R. missouriensis* from Texas.

RUDBECKIA GRANDIFLORA (Sweet) DC., Prodrromus 5: 556. 1836. *Centrocarpha grandiflora* Sweet, British Flower Garden (ser. 2) 1, pl. 87. 1831. The combination under *Rudbeckia* was attributed to "Gmel. hort. Carls. ex Steud.," by De Candolle, and later authors have accepted this authorship. In *Hortus Magni Ducis Badensis Carlsruhanus*, by C. C. Gmelin, 1811, there appears on page 231 only the name *Rudbeckia grandiflora*, followed by abbreviations and symbols signifying "ornamental, grows outdoors, perennial." In the first edition of Steudel's *Nomenclator Botanicus*, 1821, p. 707, the whole entry is "*Rudbeckia grandiflora*. Hortul. Gmel. H. C.," with the symbol for a perennial. Obviously these two sources merely give a *nomen nudum*, which cannot be identified as Sweet's later species, nor prevent later use of the specific epithet under *Rudbeckia*. De Candolle clearly described the same species as Sweet (from cultivated material), cited the latter's *Centrocarpha grandiflora* as first synonym, and apparently following Sweet added "*Rudbeckia nudicaulis* Nutt. mss." as second synonym. He evidently assumed that Gmelin's plant was the same as Sweet's—an impossibility, in view of the dates and source of the latter's plant (of American origin, obtained from Nuttall, not more than a year or two prior to 1831)—and did not check the original publication of the name *Rudbeckia grandiflora*. His acceptance of Gmelin as the author was an error pure and simple; the correct author citation is given above. De Candolle also listed D. Don as the author of *Centrocarpha grandiflora*. While Sweet credits the description of the genus *Centrocarpha* and the transferred species *C. triloba* and *C. aristata* to Don, the wording of the text relating to *C. grandiflora* implies that Sweet himself was its author: "Stem, in our specimens, about 3 feet and a half in height. . . . Our drawing of this splendid plant, was taken from a fine specimen sent to us in September last, from the collection of the late Robert Barclay, Esq., of Bury Hill: it had been received the same Spring from Mr. Nuttall, who discovered it in North America, and sent it under the name of *Rudbeckia nudicaulis*, of Persoon; that it, however, is not. The present genus has been proposed by Mr. D. Don. . . . To

Mr. D. Don we are much obliged for the following descriptions and synonyms." Here follow *C. triloba*, with synonymy, and *C. aristata*, with synonymy and a paragraph of description in quotes, followed by "D. Don mss." No quotes or statement of credit accompany the description of *C. grandiflora*. It must therefore be assumed that its author was Sweet, not Don. There is a Nuttall specimen from "Arkansa" bearing the name *Rudbeckia nudicaulis* in the Gray Herbarium; an evident duplicate without data is in the Herbarium of the Philadelphia Academy. Both are of the species generally known as *R. grandiflora*. The name *Rudbeckia nudicaulis* is marked by an asterisk, indicating that Nuttall himself intended it as a new name, not as a use of Persoon's epithet, as Sweet supposed.

Rudbeckia grandiflora is a perennial with long-petioled, prominently ribbed, elliptic, entire basal leaves, brown (not red) disk, and drooping rays which from a little distance give it the appearance of an *Echinacea*. Specimens have been seen from Bowie and Upshur Counties, in extreme northeast Texas.

RUDBECKIA SEROTINA Nutt., Journ. Acad. Nat. Sci. Phila. 7: 80. 1834. Type: "Cult.," the seeds probably from Arkansas or Oklahoma ("Arkansas [Territory] and Georgia," according to the original description), in Herb. Philadelphia Academy. Long erroneously known as *R. hirta* L., an eastern perennial species (cf. Fernald and Schubert, *Rhodora* 50: 172-176, 1948). Including *R. bicolor* Nutt., l. c., p. 80. 1834. Type: cultivated, from "Arkansas and near the Red River"; not found at Philadelphia, perhaps at the British Museum. I find no grounds for maintaining *R. bicolor* as a species distinct from *R. serotina*. It apparently is merely *R. serotina* f. *pulcherrima* (Farwell) Fernald & Schubert, with rays deep red-brown at base, a striking form which is frequent to common in Texas, especially in the Rio Grande Plain. *R. flexuosa* T. V. Moore, *Pittonia* 4: 180, 1900 (type: near Gregory, San Patricio Co., Texas, A. A. Heller 1751, in U.S. Nat. Herb.; not examined) is probably to be referred to *R. serotina* also, thought it is possible that a localized coastal endemic variety should be recognized. Several varieties have been recognized by Fernald (*Rhodora* 39: 458, 1937; nomenclature revised by Fernald & Schubert, *Rhodora* 50: 172-176,

1948), but like Deam, I do not find his treatment convincing. Most of the variations of *Rudbeckia serotina* would be more profitable subjects for investigation by a geneticist than by a taxonomist. The species is common except in extreme east Texas, where it is largely replaced by *R. divergens*.

RUDBECKIA DIVERGENS T. V. Moore, *Pittonia* 4: 177-178. 1900. Type: pine barrens near Jacksonville, Florida, A. H. Curtiss 4759, in U.S. Nat. Herb. (not seen, but a topotype in the Gray Herbarium has been examined: *Curtiss 2nd distrib. 5673*). Including *R. floridana* var. *angustifolia* T. V. Moore, l. c., p. 176. Type: "Mandenville," Louisiana, *Rev. A. B. Langlois*, in 1893; presumably in Herb. Catholic University of America (not seen). Probably also including *R. floridana* T. V. Moore, l. c., p. 176. Type: Sanford, Orange Co., Florida, *Geo. V. Nash 2272*, in U.S. Nat. Herb. (not seen). Although there is some variation in leaf proportions, and intermediates are found where the ranges of *R. divergens* and *R. serotina* overlap, the latter is a distinctive species of the Gulf Coastal Plain, with few broadly linear to lanceolate-oblong leaves rather crowded near the base of the plant, and strikingly elongate peduncles naked for most of their length. Specimens are in the Gray Herbarium from southeastern Oklahoma (Choctaw Co.), eastern Texas, Louisiana, Mississippi, Alabama, and Florida. In Texas the species is commonest in the extreme southeast, but occurs north to the Red River and as far west as Red River, Titus, Montgomery, Harris and Matagorda Counties.

A New Texan Form of *Castilleja indivisa* Engelm.

V. L. Cory¹

On March 28, 1948, while traveling from Sinton to Refugio, I encountered a profusion of the *Castilleja* which, in its area of distribution, is characterized by large bright-red bracts. At a mile northeast of Sinton, in San Patricio County, our collection, No. 54157, was made. Here the species was typical in that the expanded distal portions of both bracts and sepals were bright red. About eight miles

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