

ceolato-ellipticis acutis, ad basin in petiolum longe acuminatis, utrinque dense puberulis; inflorescentiis terminalibus solitariis usque ad 15 cm. longis densissime multifloris percrassis robustis valde multibracteolatis densissime albido-hirsutis; bracteolis valde perspicuis numerosissimis valde divergentibus ca. 2 cm. longis oblongis ad apicem attenuatis et in juventute valde recurvatis.

Subshrub; stems and branches acutely tetragonal, conspicuously alate-margined, densely grayish- or brownish-pubescent throughout; nodes abbreviated, 1--3 cm. long, the lowest to 7 cm.; leaves decussate-opposite, sessile or subsessile, thin-chartaceous, grayish-green, somewhat lighter beneath, elliptic or lanceolate-elliptic, to 7 cm. long and 3 cm. wide, acute or obtusish at the apex, regularly sharp-serrate along the margins almost to the base, long-acuminate at the base into what could be called a margined short petiole, densely puberulent on both surfaces; midrib slender, flat above, slightly prominulous beneath; secondaries slender, numerous, close, 7--10 per side, arcuate-ascending, flat above, hardly prominulous beneath; inflorescence spicate, terminating each stem and branch, sessile or very short-pedunculate, stiffly erect, very heavy and robust, very densely many-flowered, to 15 cm. long and 3 cm. wide, very conspicuously bracteolate, densely white-hirsute; bractlets very conspicuous and numerous, oblong-linear, about 2 cm. long, 1.5--2 mm. wide, long-attenuate at the apex, widely divergent, arcuately recurved before and during anthesis, less so after anthesis, densely hirsutulous; calyx cylindric, about 15 mm. long, densely puberulent, hirsutulous on the 5 ribs, the rim sharply 5-toothed; corolla hypocrateriform, its tube about 2 cm. long, the limb about 1 cm. wide.

The type of this distinctive species was collected by Paul C. Hutchison and J. Kenneth Wright (no. 3645) in a niche at the base of a granite cliff, Rio Chamaya, 166 km. east of Olmos, at an altitude of 700 meters, in the province of Jaen, Cajamarca, Peru, on January 19, 1964, and is deposited in the herbarium of the University of California at Berkeley.

ADDITIONAL NOTES ON THE GENUS VERBENA. II

Harold N. Moldenke

VERBENA [Dorst.] L.

Additional and emended bibliography: A. Gray in M. C. Perry, Narr. Exped. China Seas & Japan 2: 316. 1856; Boiss., Fl. Orient. 4: 534. 1879; Aitch., Journ. Linn. Soc. Lond. Bot. 18: 85. 1880; N. L. Britton, N. J. Geol. Surv. Final Rep. State Geol. 2 (1): 194 & 642. 1889; Mrs. W. S. Dana, How to Know Wild Fls., rev. ed., 122, 314--316, 365, 371, & 372, pl. 135. 1896; Stack, Wild Fls.

349—351, 400, & 410. 1909; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 260: 153, fig. 153. 1910; J. Matsumura, Ind. Pl. Jap. 2 (2): 534. 1912; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 267, ed. 2, 115, fig. 174. 1915; Sievers, U. S. Dept. Agr. Misc. Publ. 77: 15, fig. 24. 1930; Muenscher, Cornell Agr. Exp. Sta. Bull. 635 [Weeds N. Y.], pr. 2, 10 & 387. 1939; Quick, Wild Fls. North. States 371—373, 375, & 518, fig. 190. 1939; M. J. Cuthbert, How to Know Spring Fls. 110, fig. 297 & 298. 1943; Oswald, Wild Flow. Dossier 1: 20, fig. 3. 1951; Gorsch., Fl. URSS 19: 694. 1953; Kitamura, Fl. Afghan. 327. 1960; Dyer, Verdoorn, Codd, & Letty, Wild Fls. Transv. 280. 1962; Angely, Bibl. Veg. Paran. 80, 136, 195, 196, 236, 242, & 260. 1964; F. H. Montgomery, Native Wild Pl., pr. 2, 121, fig. 209 & 210. 1965; Hocking, Excerpt. Bot. A8: 226—227 (1965) and A9: 364—367. 1965; Buchheim, Huntia 2: 38. 1965; Moldenke, Phytologia 13: 179—218. 1966; Shimmers, Sida 2: 266. 1966; Moldenke, Résumé Suppl. 13: 1—3, 6, & 7. 1966; Cody, Ind. Sem. Bot. Gard. Ottawa 1966: 19. 1966; Lourteig, Taxon 15: 30. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100—101. 1966.

VERBENA ABRAMSI Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 13: 181. 1966.

VERBENA AMBROSIFOLIA Rydb.

Additional bibliography: Moldenke, Phytologia 13: 181—182. 1966; Moldenke, Résumé Suppl. 13: 2. 1966.

Crutchfield found this plant growing in "sandy gravelly soil at edge of road" in New Mexico.

Additional citations: NEW MEXICO: Chaves Co.: J. R. Crutchfield 87 (Ld).

VERBENA AMBROSIFOLIA f. *EGLANDULOSA* Perry

Additional bibliography: Moldenke, Phytologia 13: 182. 1966; Moldenke, Résumé Suppl. 13: 2. 1966.

VERBENA AMOENA Paxt.

Additional bibliography: Moldenke, Phytologia 13: 182. 1966; Moldenke, Résumé Suppl. 13: 2 & 6. 1966.

VERBENA ANDRIEUXII Schau.

Additional bibliography: Moldenke, Phytologia 13: 181 & 182. 1966.

VERBENA ATACAMENSIS Reiche

Additional bibliography: Moldenke, Phytologia 13: 182. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

VERBENA BIPINNATIFIDA Nutt.

Additional bibliography: Moldenke, Phytologia 13: 180, 181, 183, & 189. 1966.

Recent collectors have found this plant growing in red or in

loose black soil, loose sand, sandy silt, or clay.

Additional citations: TEXAS: Bee Co.: Rios & Cavazos 206 (Ld). Brown Co.: L. Horner 20 (Ld). Coryell Co.: Baize 13 (Ld). Duval Co.: Gonzalez-Arroyo 99 (Ld); F. Guajardo 62 (Ld); E. F. Gutierrez 56 (Ld); Llaguno 81 (Ld). Jim Wells Co.: Gamboa & Dohnke 151 (Ld). La Salle Co.: I. A. Martinez 66 (Ld). Live Oak Co.: Rios & Cavazos 222 (Ld). Medina Co.: Barrera & Laurel 110 (Ld).

VERBENA BONARIENSIS L.

Additional bibliography: Moldenke, *Phytologia* 13: 184--185. 1966.

Reed found this plant fruiting in November.

Additional citations: ALABAMA: Crenshaw Co.: C. T. Reed 2073 (Ld).

VERBENA BRACTEATA Lag. & Rodr.

Additional bibliography: Muenscher, Cornell Agr. Exp. Sta. Bull. 635 [Weeds N. Y.], pr. 2, 10 & 387. 1939; Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, *Phytologia* 13: 185. 1966; Moldenke, *Résumé Suppl.* 13: 1. 1966; Cody, Ind. Sem. Bot. Gard. Ottawa 1966: 19. 1966; Gaiser, *Surv. Vasc. Pl. Lambton Co.* 100. 1966.

Recent collectors have found this plant growing in brownish loam on dry and sunny prairies and in sandy soil near the edge of a natural lake in rolling grasslands in New Mexico. The flowers on J. R. Crutchfield 423 are described as "blue".

Additional citations: NEW MEXICO: Colfax Co.: Lucas 164 (Ld). San Miguel Co.: J. R. Crutchfield 423 (Ld).

VERBENA BRASILIENSIS Vell.

Additional bibliography: Moldenke, *Phytologia* 13: 185--186. 1966; Moldenke, *Résumé Suppl.* 13: 3. 1966.

VERBENA CAMERONENSIS L. I. Davis

Additional bibliography: Moldenke, *Phytologia* 13: 186 & 192. 1966.

VERBENA CANADENSIS (L.) Britton

Additional bibliography: Quick, *Wild Fls. North. States* 373 & 518. 1939; M. J. Cuthbert, *How to Know Spring Fls.* 110, fig. 297b. 1943; Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, *Phytologia* 13: 186--187. 1966.

Additional illustrations: M. J. Cuthbert, *How to Know Spring Fls.* fig. 297b. 1943.

The Buchoz (1783) colored illustration of this species, cited in my previous work, is unnumbered in the New York Botanical Garden library copy of this work. The flowers on Correll, Correll, & Crutchfield 30903 are described as "lavender" and the plant is said to have been growing on a sandy bank from a woody rootstock.

Additional citations: KANSAS: Labette Co.: Lerew Kan.2-180 (Ld). TEXAS: Henderson Co.: Correll, Correll, & Crutchfield

30903 (Ld).

VERBENA CANESCENS H.B.K.

Additional bibliography: Moldenke, *Phytologia* 13: 187—188 & 216. 1966; Moldenke, *Résumé Suppl.* 13: 7. 1966.

VERBENA CANESCENS f. ALBIFLORA Moldenke

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 367. 1965; Moldenke, *Phytologia* 13: 187. 1966.

VERBENA CANESCENS var. ROEMERIANA (Scheele) Perry

Additional bibliography: Moldenke, *Phytologia* 13: 187—188. 1966; Moldenke, *Résumé Suppl.* 13: 7. 1966.

VERBENA CANIUENSIS Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 451. 1965; Angely, *Bibl. Veg. Paran.* 196. 1964.

VERBENA CAROLINA L.

Additional bibliography: Moldenke, *Phytologia* 13: 188. 1966.

Additional citations: HONDURAS: Copán: Molina R. 12892 (W—2445406).

VERBENA CILIATA Benth.

Additional bibliography: Moldenke, *Phytologia* 13: 189. 1966; Moldenke, *Résumé Suppl.* 13: 2 & 7. 1966.

The Llaguno 81 and Rios & Cavazos 206 & 222, distributed as V. ciliata, are actually V. bipinnatifida Nutt., Anda 48 is V. ciliata var. longidentata Perry, and L. R. Cuesta 28 is V. tenuisecta Briq.

VERBENA CILIATA var. LONGIDENTATA Perry

Additional synonymy: Verbena ciliata var. longedentata Perry, in herb.

Additional bibliography: Moldenke, *Phytologia* 13: 189—190. 1966.

Recent collectors have found this plant growing in sandy loam, sandy or fine sandy silt, and caliche. Material has been misidentified and distributed in herbaria under the name V. cloveri var. cloveri, a name which I never proposed and would never employ! On the other hand, the Barrera & Laurel 110, Gamboa & Dohnke 151, Gonzalez-Arroyo 99, F. Guajardo 62, E. F. Gutierrez 56, and I. A. Martinez 66, distributed as V. ciliata var. longidentata, are actually V. bipinnatifida Nutt., while T. Bruni 12 is V. ciliata var. pubera (Greene) Perry.

Additional citations: TEXAS: Dimmit Co.: Anda 48 (Ld); Chavez, Flores, & Hein 74 (Ld); Guerra, Garcia, & Garcia 32 (Ld). Jim Wells Co.: Sosa 31 (Ld). Webb Co.: Dickey 137 (Ld). Zapata Co.: F. Guajardo 42 (Ld).

VERBENA CILIATA var. PUBERA (Greene) Perry

Additional bibliography: Moldenke, Phytologia 13: 190. 1966.

Recent collectors have found this plant growing in marl or in loose sand. Material has been misidentified and distributed in herbaria as V. quadrangulata Heller.

Additional citations: TEXAS: Jim Hogg Co.: L. Moran 10 (Ld). Maverick Co.: T. Bruni 12 (Ld).

VERBENA CLOVERAE Moldenke

Additional synonymy: Verbena cloveri var. cloveri Moldenke, in herb. Verbena cloveri var. lilacima Moldenke, in herb.

Additional bibliography: Moldenke, Phytologia 13: 190--191. 1966.

Recent collectors have found this plant growing in gravel or in loose red sand. Material has been misidentified and distributed in herbaria as V. halei Small. On the other hand, the F. Guajardo 42, distributed as V. cloverae, is actually V. ciliata var. longidentata Perry, while R. A. Leal 30 is V. plicata Greene.

Additional citations: TEXAS: Duval Co.: C. Cantu 55 (Ld). Jim Hogg Co.: R. Bruno 41 (Ld); Sosa 32 (Ld). Kleberg Co.: Rios & Cavazos 4 (Ld). La Salle Co.: A. Castro 55 (Ld); M. de J. Solis 122 (Ld). Starr Co.: R. M. Navarro 98 (Ld). Webb Co.: Arzola 143 (Ld); Guerra, Garcia, & Garcia 24 (Ld). Zapata Co.: Flores & Powell 112 (Ld); F. Guajardo 37 (Ld).

VERBENA CORYMBOSA Ruiz & Pav.

Additional bibliography: Moldenke, Phytologia 13: 191. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

xVERBENA DEAMII Moldenke

Additional bibliography: Moldenke, Phytologia 13: 191. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100. 1966.

VERBENA DELTICOLA Small

Additional bibliography: Moldenke, Phytologia 13: 186 & 191--192. 1966; Moldenke, Résumé Suppl. 13: 2. 1966

VERBENA DEMISSA Moldenke

Additional bibliography: Moldenke, Phytologia 11: 455. 1965.

Recent collectors have found this plant on sparsely brushy hillsides, at 3300 meters altitude, in flower and fruit in July.

Additional citations: ECUADOR: Cañar: Játiva & Epling 260 (La-53980).

VERBENA DISSECTA Willd.

Additional bibliography: Moldenke, Phytologia 13: 192--194, 213, 214, & 217. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

The Bailetti 231 [Herb. Inst. Miguel Lillo 31690] cited by me previously as this species seems, rather, to be V. selloi Spreng. Its leaves do resemble those of typical V. dissecta, but its calyx

and bractlets more closely resemble those of V. selloi. Possibly it may be a hybrid between the two species.

VERBENA DISSECTA f. ALBA Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 194. 1966; Moldenke, *Résumé Suppl.* 13: 3. 1966.

VERBENA ELEGANS H.B.K.

Additional bibliography: Moldenke, *Phytologia* 13: 194--195. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

VERBENA ELEGANS var. ASPERATA Perry

Additional bibliography: Moldenke, *Phytologia* 13: 195. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

xVERBENA ENGELMANNII Moldenke

Additional bibliography: N. L. Britton, *N. J. Geol. Surv. Final Rep. State Geol.* 2 (1): 194. 1889; Moldenke, *Phytologia* 13: 195. 1966; Gaiser, *Surv. Vasc. Pl. Lambton Co.* 100. 1966.

This hybrid is recorded by Britton (1889) from "Near Riegelsville" in Warren County, New Jersey. Gaiser (1966) says "only on Walpole Is., in two locations.....Both parental species are abundant on the island", Lambton County, Ontario.

VERBENA GOODDINGII Briq.

Additional bibliography: Moldenke, *Phytologia* 13: 196--197. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

The flowers on Crutchfield 243 are described as "light-blue" and the plant was found growing on a dry rocky hillside.

Additional citations: ARIZONA: Mohave Co.: J. R. Crutchfield 243 (Ld).

VERBENA GOODDINGII var. NEPETIFOLIA Tidestr.

Additional bibliography: Moldenke, *Phytologia* 13: 196--197. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

VERBENA HALEI Small

Additional bibliography: Moldenke, *Phytologia* 13: 197--199 & 217. 1966.

Recent collectors report this plant growing in sandy silt, sandy loam silt, black clay, fine sandy silt of the Claiborne Group, and in open fields. Material has been misidentified and distributed in herbaria under the name "V. placata Greene". On the other hand, the R. Bruno 41 and Sosa 32, distributed as V. halei, are actually V. cloverae Moldenke. Malacara P. & Gutierrez F. 21 is a mixture with V. plicata Greene.

Additional citations: MISSOURI: Saint Louis: Muhlenbachs 1256 (Ac), 1423 (Ac), 1607 (Ac). TEXAS: Bee Co.: Rios & Cavazos 205 (Ld). Bexar Co.: Chavez, Flores, & Hein 96 (Ld). Dimmit Co.: Fowler & Vergara 112 (Ld). Duval Co.: Ramirez, Lopez, & McCart 8787 (Ld). Goliad Co.: Rios & Cavazos 181 (Ld). Jim Hogg Co.:

Malacara P. & Gutierrez F. 21, in part (Ld). Jim Wells Co.: P. Cabrera 101 (Ld). Live Oak Co.: Rios & Cavazos 221 (Ld). Rains Co.: B. J. Simpson 25 (Ld). San Patricio Co.: F. Guajardo 83 (Ld); E. F. Gutierrez 70 (Ld). Starr Co.: M. de J. Solis 149 (Ld). Victoria Co.: Rios & Cavazos 165 (Ld). Webb Co.: Cisneros 24 (Ld); J. Gonzalez 41 (Ld); J. M. Hughes 44 (Ld); S. Webber 12 (Ld). Zapata Co.: F. Guajardo 39 (Ld). Zavala Co.: Moore, Carrasco, Gongora, & McCart 8997 (Ld).

VERBENA HASTATA L.

Additional bibliography: N. L. Britton, N. J. Geol. Surv. Final Rep. State Geol. 2 (1): 194. 1889; Mrs. W. S. Dana, How to Know Wild Fls., rev. ed., 314--316, 365, & 371, pl. 135. 1896; Stack, Wild Fls. 349--351, 400, & 411. 1909; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 260: 153, fig. 153 (1910) and 267, ed. 2, 115, fig. 174. 1915; Sievers, U. S. Dept. Agr. Misc. Publ. 77: 15, fig. 24. 1930; Quick, Wild Fls. North. States 371--372, 375, & 518, fig. 190. 1939; Muenscher, Cornell Agr. Exp. Sta. Bull. 635 [Weeds N. Y.], pr. 2, 10 & 387. 1939; Oswald, Wild Flow. Dossier 1: 20, fig. 3. 1951; Hocking, Excerpt. Bot. A8: 226 (1965) and A9: 367. 1965; F. H. Montgomery, Native Wild Pl., pr. 2, 121, fig. 209. 1965; Cody, Ind. Sem. Bot. Gard. Ottawa 1966: 19. 1966; Moldenke, Phytologia 13: 199--200. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100. 1966.

Additional illustrations: Mrs. W. S. Dana, How to Know Wild Fls., rev. ed., 315, pl. 135. 1896; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 260: fig. 153 (1910) and 267, ed. 2, fig. 174. 1915; Sievers, U. S. Dept. Agr. Misc. Publ. 77: fig. 24. 1930; Quick, Wild Fls. North. States 375, fig. 190. 1939; Oswald, Wild Flow. Dossier 1: 20, fig. 3. 1951; F. H. Montgomery, Native Wild Pl., pr. 2, fig. 209. 1965.

VERBENA HATSCHBACHI Moldenke

Additional bibliography: Moldenke, Phytologia 9: 284--285. 1963; Hocking, Excerpt. Bot. A8: 226. 1965.

VERBENA HAYEKII Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 200. 1966.

VERBENA HERTERI Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 200. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

VERBENA HIRTA Spreng.

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 200--201. 1966.

Smith and his associates found this plant growing in thickets, bogs, low woods, forests, gallery forests, dry fields, and dry open ground, on cliffs, along boggy brooks, and ruderal. Smith &

Klein 14936 represents the very hairy form of the species. The Tryons found the species in shrubby grassland and sedgeland with local elfin-woods dominated by granitic rocks. Tryon & Tryon 6713 had "blue-purple" flowers and was "woody at base".

Additional citations: BRAZIL: Rio de Janeiro: Angeli 107 [Herb. Cent. Pesq. Florest. 345] (Ac); Tryon & Tryon 6713 (Ac). Santa Catarina: A. Castellanos 24675 [Herb. Cent. Pesq. Florest. 3417] (Ac).

VERBENA HIRTA var. GRACILIS Dusén

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 201. 1966.

VERBENA HISPIDA Ruiz & Pav.

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 201. 1966.

VERBENA HOOKERIANA (Covas & Schnack) Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 201. 1966.

VERBENA HUMIFUSA Cham.

Additional bibliography: Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 201--202. 1966.

xVERBENA HYBRIDA Voss

Additional bibliography: McCurdy, Book Gard. Fls. 72--73, 300, & 311. 1931; Hocking, Excerpt. Bot. A8: 226. 1965; Moldenke, Phytologia 13: 202--203. 1966; Moldenke, Résumé Suppl. 13: 7. 1966.

xVERBENA ILLICITA Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A8: 227. 1965; Moldenke, Phytologia 13: 203. 1966.

VERBENA INCISA Hook.

Additional bibliography: Angely, Bibl. Veg. Paran. 136. 1964; Hocking, Excerpt. Bot. A8: 227. 1965; Moldenke, Phytologia 13: 203. 1966.

xVERBENA INTERCEDENS Briq.

Additional bibliography: Hocking, Excerpt. Bot. A8: 227. 1965; Moldenke, Phytologia 13: 203--204. 1966.

VERBENA INTERMEDIA Gill. & Hook.

Additional bibliography: Hocking, Excerpt. Bot. A8: 227. 1965; Moldenke, Phytologia 13: 204. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

VERBENA LACINIATA (L.) Briq.

Additional bibliography: Hocking, Excerpt. Bot. A8: 227. 1965; Moldenke, Phytologia 13: 204 & 213. 1966.

The Bailetti 231 [Herb. Inst. Miguel Lillo 31690], distributed as V. erinoides Lam. and cited by me previously as V. dissecta Willd., is probably V. selloi Spreng.

VERBENA LANDBECKI R. A. Phil.

Additional bibliography: Moldenke, *Phytologia* 11: 469. 1965.

Additional citations: CHILE: Aconcagua: Landbeck s.n. [Choapa; Macbride photos 17425; Herb. Mus. Nac. Hist. Nat. Chile 54672] (W--photo of isotype). Coquimbo: Marticorena & Matthei 409 (Z).

VERBENA LASIOSTACHYS Link

Additional bibliography: Hocking, *Excerpt. Bot.* A8: 227 (1965) and A9: 364. 1965; Moldenke, *Phytologia* 13: 204. 1966.

VERBENA LASIOSTACHYS f. ALBIFLORA Moldenke

Additional bibliography: Moldenke, *Phytologia* 9: 465--466. 1964; Hocking, *Excerpt. Bot.* A9: 364. 1965.

VERBENA LIPOZYGIOIDES Walp.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 364 & 365. 1965; Moldenke, *Phytologia* 13: 205. 1966.

In the 1965 reference given above this species is referred to as "L. lipozygioides Walp." through a typographic error.

VERBENA LITORALIS H.B.K.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 205--206. 1966; Moldenke, *Résumé Suppl.* 13: 3. 1966.

Játiva & Epling found this plant growing in secondary forests. Material has been misidentified and distributed in herbaria as V. carolina L. and even as Salvia nigriflora Epl. in the Lamiaceae.

Turczaninow (1863) has this to say about his Verbena nudiflora: "V. caule erecto tetragono, inferne folioso, superne paucifolio vel omnino foliis denudato, di- vel trichotomo, divisionibus simplicibus monostachyis, vel iterum divisio 2--3 stachyis, spicis filiformibus; foliis anguste-lanceolatis, basi longe attenuata, sessilibus, acutiusculis, a medio ad apicem argute et saepe inaequaliter serratis, supra punctis bullatis, interdum breviter piliferis exasperatis, subtus ad nervationes strigillosis; bracteis lanceolato-subulatis calycem aequantibus; nuculis striatis laevibus. In insula Sandwicensi Wahoo lecta. Species V. angustifoliae simillima, sed praeter folia bullata recedit floribus fructibusque duplo minoribus, praeterea nucas in V. angustifolia semper transverse rugosas vidi. Ad hanc speciem proximae et nonnisi diversae panicula saepe ramosissima pedali et bipedali e spicis numerosis constante, ad ramificationes tantum foliis diminutis integerrimis instructa: specimen a Galipan, prov. Caracasanae Funk No. 325, e Cumana prope Cumanacoa Funk No. 54 et Galeotti No. 359. Nuculae ejusdem magnitudinis, apice parum rugulosae, folia latiora et angustiora. Haec forte ad V. longifoliam Mart. et Gal. spectant.... Sed specimina Funkiana e Caripe sub No. 637 et Lindenianum e vic-

in *Meridae* panicula multo minus ramosa et oligostachya gaudetia, fere medium tenent inter hanc et *V. nudifloram*. An omnes ad speciem unicam reducendae. Planta in *schedula* dicitur annua. Stirps Novo-Grenadensis e prov. Ocana, *Schlim. No. 564* speciem valde propinquam indicat at caule e *schedula* fruticoso et foliis parvis, in pagina superiore integerrimis paucidentatisve recedente." He places the species in the Section *Leptostachyae*.

Additional citations: COLOMBIA: Valle del Cauca: *López Figueiras 8219* (W—2451148), *8478* (W—2451145). ECUADOR: Los Ríos: *Játiva & Epling 55* (La—49643).

VERBENA LOBATA Vell.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 206—207. 1966.

Additional citations: BRAZIL: Rio de Janeiro: *Herb. Inst. Oswaldo Cruz 651* (W—2454227).

VERBENA LONGIFOLIA Mart. & Gal.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 207. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

VERBENA MENDOCINA R. A. Phil.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 209. 1966.

The collection cited below was previously cited by me as *V. tenera* Spreng. in error.

Additional citations: URUGUAY: *A. Castellanos s.n.* [23. I. 1947; *Herb. Inst. Miguel Lillo 15126*] (N).

VERBENA MENTHAEFOLIA Benth.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 209. 1966.

VERBENA MICROPHYLLA H.B.K.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 209. 1966.

The *Jørgensen 1737* cited by me as *V. microphylla* in 1948 and as *V. tenera* in 1964 is actually *V. parodii* (Covas & Schnack) Moldenke.

VERBENA MINUTIFLORA Briq.

Additional bibliography: Angely, *Bibl. Veg. Paran.* 196. 1964; Moldenke, *Phytologia* 13: 210. 1966.

VERBENA MONTEVIDENSIS Spreng.

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 210—211. 1966.

Additional citations: BRAZIL: Santa Catarina: *A. Castellanos 24880* [*Herb. Cent. Pesq. Florest.* 3546] (Ac).

VERBENA MULTIGLANDULOSA Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 211. 1966;
Moldenke, *Résumé Suppl.* 13: 3. 1966.

VERBENA OFFICINALIS L.

Additional and emended bibliography: A. Gray in M. C. Perry, *Narr. Exped. China Seas & Japan* 2: 316. 1856; Boiss., *Fl. Orient.* 4: 534. 1879; Aitch., *Journ. Linn. Soc. Lond. Bot.* 18: 85. 1880; N. L. Britton, *N. J. Geol. Surv. Final Rep. State Geol.* 2 (1): 194. 1889; J. Matsumura, *Ind. Pl. Jap.* 2 (2): 534. 1912; Gorsch., *Fl. URSS* 19: 694. 1953; Kitamura, *Fl. Afghan.* 327. 1960; Hocking, *Excerpt. Bot.* A9: 365. 1965; Moldenke, *Phytologia* 13: 212--213. 1966.

Additional citations: GERMANY: Degener & Degener 29214 (Ac).
CRETE: Degener & Degener 29389 (Ac). FORMOSA: Degener & Degener 28983 (Ac).

VERBENA PARODII (Covas & Schnack) Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 213--214. 1966.

The Jørgensen 1737, cited below, was erroneously cited by me as V. microphylla H.B.K. in my *Alph. List Cit.* 2: 599 (1948) and as V. tenera Spreng. in *Phytologia* 10: 148 (1964) and 11: 275 (1965), while Venturi 5267 was incorrectly cited as V. tenera var. albiflora Kuntze in *Phytologia* 11: 276 (1965).

The flowers are described as "white" on Venturi 5267 and as "rose-blue" on Jørgensen 1737. Venturi found the species in flower in September at 700 meters altitude.

Additional citations: ARGENTINA: Catamarca: Jørgensen 1737 [*Herb. Inst. Miguel Lillo* 31472; *Herb. Osten* 11009] (N, Ug, W--874768). Jujuy: Venturi 5267 (Gg--158515, W--1591467).

VERBENA PERENNIS Wooton

Additional bibliography: Moldenke, *Phytologia* 13: 214. 1966.

The flowers on Correll & Correll 30882 are described as "purple" and the plant was found growing in rocky soil on small mountains.

Additional citations: TEXAS: Pecos Co.: Correll & Correll 30882 (Ld).

xVERBENA PERRIANA Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 214--215. 1966; Gaiser, *Surv. Vasc. Pl. Lambton Co.* 101. 1966.

VERBENA PHLOGIFLORA Cham.

Additional bibliography: J. Matsumura, *Ind. Pl. Jap.* 2 (2): 534. 1912; Moldenke, *Phytologia* 13: 216. 1966.

The record of this species being cultivated in Japan as given by Matsumura (1912) probably refers to xV. hybrida Voss.

Additional citations: BRAZIL: State undetermined: Sellow s.n. [Macbride photos 34351] (W--photo of type).

VERBENA PLATENSIS Spreng.

Additional bibliography: Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 13: 216--217. 1966.

VERBENA PLICATA Greene

Additional synonymy: Verbena placata Greene, in herb.

Additional bibliography: Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 13: 217. 1966.

Recent collectors have found this plant growing in loose sand, gravel, sandy silt, caliche, and in a mixture of gravel and sandy silt. Material has been distributed in herbaria (probably through a transposition of labels) as Larrea tridentata Coville in the Zygophyllaceae. On the other hand, the Rios & Cavazos 205 & 221, distributed as V. plicata, are V. halei Small. Malacara P. & Gutierrez F. 21 and Rios & Cavazos 233 are mixtures with V. halei.

Additional citations: TEXAS: Duval Co.: N. Castillo 6 (Ld); Malacara P. & Gutierrez F. 35 (Ld). Hidalgo Co.: R. A. Leal 30 (Ld). Jim Hogg Co.: Malacara P. & Gutierrez F. 21, in part (Ld); Rios & Cavazos 102 (Ld). Jim Wells Co.: N. Castillo 27 (Ld, Ld). La Salle Co.: Gonzalez & Quesada 14 (Ld). McMullen Co.: Rios & Cavazos 233, in part (Ld). Starr Co.: Rios & Cavazos 52 (Ld). Webb Co.: J. Gonzalez 26 (Ld); Guerra, Garcia, & Garcia 23 (Ld); Rios & Cavazos 33 (Ld); S. Webber 20 (Ld). Zapata Co.: M. de J. Solis 106 (Ld). MEXICO: Tamaulipas: F. A. Barkley 14324 (Ld).

VERBENA PORRIGENS R. A. Phil.

Additional bibliography: Moldenke, Phytologia 11: 477. 1965.

Additional citations: CHILE: Aconcagua: Landbeck s.n. [near Quilimar, Dec. 1861; Herb. Mus. Nac. Hist. Nat. Chile 54729; Macbride photos 17441] (W--photo of isotype).

VERBENA PULCHELLA Sweet

Additional synonymy: Glandularia pulchella (Sweet) Troncoso, Darwiniana 13: 473. 1964. Glandularia pulchella var. pulchella Troncoso, Darwiniana 13: 475 & 476. 1964.

Additional bibliography: Troncoso, Darwiniana 13: 468--470 & 473--476, fig. 2. 1964; Moldenke, Phytologia 11: 477 (1965) and 13: 192. 1966; Shinnars, Sida 2: 266. 1966.

Additional illustrations: Troncoso, Darwiniana 13: 474, fig. 2. 1964.

Troncoso (1964) describes this species as follows: "Planta perenne, sufruticosa en la base, de tallos generalmente muy extendidos, postrados y apoyantes, radicantes sólo en la base luego ascendentes. Ramas subtetrágonas estrigoso-pubescentes a veces hirsútulas, entrenudos largos, de 2--6 cm long. Hojas pinnatisectas, con fascículos de hojitas menores en las axilas, atenuadas en breve pecíolo, lámina de ámbito oval-triangular, lacinias linear-lanceoladas, subagudas, estrigosas en ambas caras, en la inferior sobre el borde y el nervio medio prominente, epifilo surcado, hipofilo comúnmente con puntos pelúcidos (sub lente),

margen revoluto (principalmente en material de herbario). Inflorescencia solitaria en ramitas terminales erguidas, en densas cabezuelas capituliformes en la floración que se alargan después de la antesis en delgadas espigas de 5--6 cm long. Brácteas oval-lanceoladas, de 3,5--4 long., subcóncavas en la base, rala o densamente estrigosas, hirsútulas en el borde y porción basal. Cáliz tubuloso, de 8--9 mm long. (incluidos los dientes), estrioso o cano-estrioso en toda su superficie, dientes oval-subulados, desiguales, los mayores de 0,8--1 mm long., rectos o subrectos. Brácteas, cáliz y nervios en el envés de la hojas con pequeñísimas glándulas pateliformes, subsesiles. Corola glabra exteriormente, tubo superando 1/3 el cáliz. Estambres típicos, los dos superiores con apéndices anterales cilíndricos, delgados, que superan las tecas asomándose en la garganta corolar. Pistilo típico, estilo filiforme de 7,5--8 mm long. Mericarpios cilíndricos de 3,5--4 mm long., ápice subrostrado, superficie dorsal pardo-negruzca, reticulado-estriada, la ventral, blanco verrucosa (ver figura), pericarpio prolongado y ensanchado en la base, ésta huera."

She notes "Habita en campos altos y arenosos del S de Brasil, Uruguay, centro y litoral argentino. Es una especie muy variable!" She cites from Buenos Aires Burkart 23908 (Si) and 8490 (Si) and cultivated in Buenos Aires Herb. Bentham s.n. [Soc. Hort. London, 20-VII-1829] (K), and from Uruguay Felippone 3147 (Si).

She separates two varieties as follows:

1. Plants ascending or prostrate, rooting only at the base.
2. Bractlets lanceolate-subulate, strigose-hirsutulous; calyx-teeth subulate; anther-appendages cylindric, slightly exserted from the corolla-throat.....V. pulchella.
- 2a. Bractlets oval, "pestañosas", subglabrous; calyx-teeth acute, apiculate, short; anther-appendages club-shaped, plainly exserted from the corolla-throat.....V. pulchella var. clavellata.
- 1a. Plants creeping, in general low, much shorter and more slender.....V. pulchella var. gracilior.

However, after examining an isotype of her var. gracilior, I find this to be typical V. selloi Spreng. Herter 1805 [Herb. Herter 96556] was cited by me in a previous work as V. dissecta f. alba Moldenke, but seems definitely to represent V. pulchella instead. The H. M. Smith 5, cited below, was erroneously cited by me as V. tenera Spreng. in Phytologia 11: 275 (1965) and was originally distributed as V. tenuisecta Briq. Troncoso (1964) cites Rodrigo 2339 as V. dissecta, but the New York Botanical Garden specimen of this collection, at least, is definitely V. pulchella. Rosengurt B.992, which I previously cited as V. pulchella, proves to be the type collection of V. subincana (Troncoso) Shinnars.

Rambo 48914 is described by the collector as prostrate, with violet flowers, growing in sandy places. Herter encountered the species at 2 meters altitude. The Boffa 330, T. Meyer 12290, and

Rambo 48914, cited below, were previously erroneously cited by me as V. dissecta Willd. On the other hand, the Frenguelli 105 & 137, previously cited by me as V. pulchella, appear to be V. dissecta instead. Similarly, Herb. Herter 83911, Herter 181g, and J. T. Lima s.n. [II.1946; Herb. Rio Jan. 55466], previously cited by me as V. pulchella, are V. subincana, but Herb. Herter 50882, originally distributed by the collector as V. pulchella and cited by me previously as V. dissecta, is actually V. selloi Spreng.

The very old Commerson and Saint-Hilaire collections cited under V. dissecta and V. selloi have the name V. pulchella given as a synonym of V. tenera on their labels in a very old handwriting, but I do not think that this reduction is valid.

Additional citations: BRAZIL: Rio Grande do Sul: Rambo 48914 (N). URUGUAY: Herter 1805 [Herb. Herter 96556] (N, Z); H. M. Smith 5 (W--1193661). ARGENTINA: Buenos Aires: Boffa 330 (N). Salta: T. Meyer 12290 (N).

VERBENA PULCHELLA f. LATILOBATA Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 26. 1964; Troncoso, *Darwiniana* 13: 468, 470, & 484--485. 1964; Moldenke, *Phytologia* 13: 192. 1966.

Troncoso (1964) reduces this taxon to synonymy under V. dissecta Willd., but I do not agree. Its characters are much closer to those of V. pulchella if I am interpreting this species and V. dissecta correctly.

VERBENA PULCHRA Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 478. 1965; Rambo, *Pesquis. Bot.* 21: 51 & [60]. 1965.

Rambo (1965) cites Herb. Anchieta 29682 [Henz s.n.] from Rio Grande do Sul. He describes the plant as "Very vigorous, erect, apparently more than 1 m high", growing in "Wet, densely and highly vegetated Campos". He notes "Only one findplace in the northeastern Lowlands" of Rio Grande do Sul, and gives the general distribution of the species as "S. Paulo to Misiones and Uruguay".

VERBENA PUMILA Rydb.

Additional bibliography: Moldenke, *Biol. Abstr.* 45: 2772. 1964; Moldenke, *Résumé Suppl.* 12: 1. 1965; Hocking, *Excerpt. Bot.* A9: 366. 1965; Moldenke, *Phytologia* 11: 478, 490, & 491 (1965) and 13: 186. 1966; Moldenke, *Résumé Suppl.* 13: 2. 1966.

Bruni & Pena found this plant growing in rocky loam in Nuevo León; others have found it in red loamy soil, red sandy loam, or red soil, and among road and gravel in xerophytic canyons, as well as in fairly sandy soil along roadsides. Parks, Warnock, & Turner refer to it as a "low infrequent annual" with "whitish flowers" (their collection may, therefore, represent f. albida Moldenke; the base of the cocci in this collection is wide-flaring, a puzzling character occasionally seen in speci-

mens tentatively regarded and cited as V. pumila). The J. A. de la Cruz s.n. [12.IV.1961], distributed as V. pumila, is actually V. cameronensis L. I. Davis.

Additional citations: TEXAS: Burnet Co.: C. L. Lundell 15050 (Ld); McCart 6079 (Ld). Frio Co.: Lucas, Painter, & Barkley 14213 (Ld); Painter, Lucas, & Barkley 14201 (Ld). La Salle Co.: A. Cantu 71 (Au--222196). Llano Co.: Rose-Immes & Warnock 793 (Ld). Medina Co.: Barrera & Laurel 111 (Ld). Val Verde Co.: Parks, Warnock, & Turner 236 (Mi). MEXICO: Nuevo León: F. A. Barkley 14281 (Ld); Bruni & Pena 38 (Au--232622, Ld); Oatman & Rowlett s.n. [3 Feb. 1964] (Au--227525). San Luis Potosí: J. Rzedowski 7536 (Ip).

VERBENA PUMILA f. ALBIDA Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 45: 2772. 1964; Moldenke, Phytologia 11: 478. 1965.

Possibly Parks, Warnock, & Turner 236, from Val Verde County, Texas, and described as having "whitish flowers", may belong here. Its cocci are wide-flaring at the base, and it is cited herein tentatively as V. pumila Rydb.

VERBENA QUADRANGULATA Heller

Additional bibliography: Moldenke, Phytologia 11: 478. 1965.

This species has been collected in fruit also in February. Recent collectors have found it in sandy or light tan sandy loam, gravel or Pleistocene gravel, light tan clay, fine sandy silt or grayish calcareous silt, light grayish-tan sandy loam, light-tan or loose light-tan sand, pale-tan loose sand, very loose light-tan sand, sandy silt, red or deep orange sand, and in hard-packed soil, on riverbottoms, in openchaparral pastures, and at the water's edge. The Flores call it "abundant in caliche", while Gamez describes it as "common in fine sandy silt". The I. Moran 10, distributed as V. quadrangulata, is actually V. ciliata var. pubera (Greene) Perry, while Barrera & Laurel 111 is V. pumila Rydb.

Additional citations: TEXAS: Duval Co.: P. Cabrera 53 (Au--232964, Ld); N. Castillo s.n. [10 March 1963] (Au--232963); Ramirez, Lopez, & McCart 8768 (Au--232663); Ramos, Sandoval, & McCart 8007 (Au--222245). Hidalgo Co.: R. L. Crockett 8013 (Ld). Jim Hogg Co.: Alvarez, Guajardo, Salazar, & McCart 7784 (Au--222246); Sanchez, Rodriguez, & McCart 8311 (Au--222217, Ip). Kleberg Co.: Villarreal & Earles 102 (Au--232962, Ld). La Salle Co.: Botello 49 (Au--222218). McMullen Co.: Alvarez, Guajardo, Salazar, & McCart 7723 (Au--222225). Starr Co.: Alvarez, Guajardo, Salazar, & McCart 7924 (Au--222220), 8042 (Au--222216); M. de la L. Campos 79 (Ld); Ramos, Sandoval, Salazar, & McCart 7879 (Au--222221, Ip). Webb Co.: Alvarez, Guajardo, Salazar, & McCart 7632 (Au--222249); D. Cardenas 57 (Ld); Flores & Flores 118 (Au--

232961); Gamboa & Dohnke 105 (Au—233069); Gamez 80 (Au—232958); E. G. Garcia 145 (Au—232960); J. Gonzalez 38 (Ld); Guerra, Garcia, & Garcia 3 (Ld); M. de J. Solis 145 (Au—232679); S. Webber 14 (Ld). Zapata Co.: Herrera & McCart 7699 (Au—222222); Ramos, Sandoval, Salazar, & McCart 7848 (Au—222214, Au—222219). MEXICO: Tamaulipas: Dominguez & McCart 8182 (Au—232959); Escalante 36 (Ip).

VERBENA RACEMOSA Eggert

Additional bibliography: Hocking, Excerpt. Bot. A5: 44. 1962; Moldenke, Phytologia 11: 478, 490, & 497. 1965.

Additional citations: TEXAS: Brewster Co.: B. H. Warnock 418 (Ld), 20105 (Ld).

VERBENA RADICATA Moldenke

Additional bibliography: Moldenke, Phytologia 11: 478. 1965; Moldenke, Résumé Suppl. 12: 13. 1965.

VERBENA RADICATA var. GLABRA (Hicken) Moldenke

Additional bibliography: Moldenke, Phytologia 11: 478. 1965; Moldenke, Résumé Suppl. 12: 13. 1965.

VERBENA RAMBOI Moldenke

Additional bibliography: Moldenke, Phytologia 11: 52—53. 1964; Rambo, Pesquis. Bot. 21: 51 & [60]. 1965.

Rambo (1965) cites Herb. Anchieta 25786 and 25787 from Rio Grande do Sul, both collected by himself. He suggests that the taxon may be conspecific with V. stellarioides Cham., and describes it as "Erect, stiff, coarse, about 30 cm high", growing in "Slightly shrubby Campos" on the "Southwestern plains only" in Rio Grande do Sul. He gives its general distribution as "So far, RGS [Rio Grande do Sul] only."

VERBENA RECTA H.B.K.

Additional bibliography: Moldenke, Phytologia 11: 478. 1965.

Recent collectors have found this plant growing in Abies forests, Abies religiosa woods, and Pinus hartwegii woods, at altitudes of 3000 to 3200 meters, flowering in July. The Paray 2449, distributed as V. recta, is actually V. carolina L.

Additional citations: MEXICO: Federal District: Paray 564 (Ip), Hidalgo: Galván s.n. [4.VIII.1963] (Ip). México: J. Rzedowski 18409 (Ip), s.n. [4.VIII.1962] (Ip).

VERBENA REITZII Moldenke

Additional bibliography: Moldenke, Phytologia 11: 58—59. 1964; Rambo, Pesquis. Bot. 21: 51 & [60]. 1965.

Rambo (1965) cites Herb. Anchieta 50761 [Reitz 3663] and 50794 [Reitz 3726] from Santa Catarina. He describes the plant as a "Suffrutescent perennial, erect, apparently about 1 m high", growing in "Wet, apparently densely vegetated Campos" and notes

"To be found along the northeastern frontier" of Rio Grande do Sul, but notes that its general distribution is "So far, SC [Santa Catarina] only".

VERBENA REITZII var. *CASTRENSIS* Moldenke, var. nov.

Haec varietas a forma typica speciei recedit ramis ramulisque foliisque antrorse strigosis, foliis 1--1.5 cm. longis ad basin acutis sessilibus, inflorescentiis spicatis usque ad 2.8 cm. elongatis.

This variety differs from the typical form of the species in having the stems, branches, branchlets, leaves, and peduncles appressed-strigose with antrorse hairs, the leaves only 1--1.5 cm. long and acute at the sessile (not amplexicaul) base, and the inflorescences becoming to 2.8 cm. long during and after anthesis.

The type of the variety was collected by Lyman Bradford Smith, Roberto M. Klein, and Gerdt Günther Hatschbach (no. 14526) in rocky campos, sandstone ledge, stream margin, bog, forest, and fallow field, at Carambei by the Rio São João, ca. 24°30' S., 50°02' W., at an altitude of 950 meters, municipality of Castro, Paraná, Brazil, on January 15, 1965, and is deposited in the H. N. Moldenke herbarium at Plainfield, New Jersey.

Citations: BRAZIL: Paraná: Smith, Klein, & Hatschbach 14526 (Z--type).

VERBENA RIBIFOLIA Walp.

Additional bibliography: Moldenke, *Phytologia* 11: 59--62. 1964.

Additional citations: CHILE: Concepción: Besser 12 [Macbride photos 17443] (W--photo of type).

VERBENA RIBIFOLIA f. *ALBA* Acevedo de Vargas

Additional bibliography: Moldenke, *Phytologia* 11: 60. 1964.

Ricardi found this plant growing at 1800 meters altitude.

Additional citations: CHILE: Colchagua: Ricardi 3175 (Z).

VERBENA RIGIDA Spreng.

Additional bibliography: Moldenke, *Biol. Abstr.* 33: 1215. 1959; Hocking, *Excerpt. Bot.* A5: 44. 1962; Angely, *Bibl. Veg. Paran.* 196. 1964; Hocking, *Excerpt. Bot.* A9: 366. 1965; Moldenke, *Phytologia* 11: 478--479. 1965; Moldenke, *Biol. Abstr.* 46: 3618. 1965; Moldenke, *Résumé Suppl.* 12: 5. 1965; Neal, *In Gard. Hawaii*, new rev. ed., 722. 1965; Rambo, *Pesquis. Bot.* 21: 52--53 & [60]. 1965.

Sidey 3509 is said to have had "mauve" flowers and was found growing in grasslands. Smith & Klein found the species in forests, on dry campos, and ruderal in Santa Catarina.

Rambo (1965) cites Herb. Anchieta 439, 1122, 3904, 8376 [Erich s.n.], 8844, 9146, 9191, 9219, 9336, 9550, 9798, 9990, 10064, 11253 [Heidler s.n.], 11257 [Friderichs s.n.], 25940 [Friderichs s.n.], 27143, 27286, 28229, 29121, 34727, 37551, 43694, 44028, 44150, 44164, 48078 [Sehnen 3505], 51646, 53021, 53289, 56045,

57248, 58857 [Camargo 173], 62057 [Camargo 1944], 63055 [Schlichting s.n.], 63278 [Sacco 853], 63786 [Sacco s.n.], and 63861 [Sacco 82] from Rio Grande do Sul, 47913 [Sehnem 3036] from Santa Catarina, and 4052 and 4080 from Uruguay, all collected by himself except where otherwise indicated. He describes the species as "Erect, stiff, coarse, up to 40 cm high", growing in "Dry, more or less shrubby Campos, shows weedy tendencies.....Over the whole of the Campos area" in Rio Grande do Sul, with a general distribution "From southern USA to Uruguay, northern Argentina and Chile."

Additional citations: ALABAMA: Crenshaw Co.: C. T. Reed 2087 (Ld). BRAZIL: Minas Gerais: N. Santos 5924 (Ac). Santa Catarina: A. Castellanos 24689 [Herb. Cent. Pesq. Florest. 3317] (Pf); Smith & Klein 13813 (W--2451612). ARGENTINA: Buenos Aires: Gillies s.n. [Macbride photos 34349] (W--photo). SOUTH AFRICA: Transvaal: Sidey 3509 (W--2377223).

VERBENA RIGIDA f. *GLANDULIFERA* Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 33: 1215. 1959; Hocking, Excerpt. Bot. A5: 44. 1962; Moldenke, Phytologia 11: 95-96. 1964; Angely, Bibl. Veg. Paran. 196. 1964.

VERBENA RIGIDA var. *OBOVATA* (Hayek) Moldenke

Additional bibliography: Moldenke, Phytologia 11: 479. 1965; Moldenke, Résumé Suppl. 12: 5. 1965.

Additional citations: BRAZIL: Paraná: Dombrowski & Saito 1308/1124 (Ac). PARAGUAY: Pedersen 5205 (W--2432935).

VERBENA RINCONENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 11: 479. 1965. Dodds & Simpson found this plant flowering in January.

Additional citations: MEXICO: México: Dodds & Simpson 9 (M1).

VERBENA RUNYONI Moldenke

Additional bibliography: Moldenke, Phytologia 11: 109--112 (1964) and 11: 460 & 502. 1965; Moldenke, Résumé Suppl. 12: 1. 1965.

Additional citations: TEXAS: Cameron Co.: Fleetwood 8001 (A--230978). Hidalgo Co.: R. L. Crockett 8032 (Ld).

xVERBENA RYDBERGII Moldenke

Additional bibliography: Moldenke, Phytologia 11: 462 & 479. 1965; Moldenke, Résumé Suppl. 13: 1. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100. 1966.

One each of the A. R. Moldenke 819 and 942 specimens cited previously as being deposited in my own herbarium is now in the Aarhus University herbarium. Heidenreich found this hybrid growing in an open field in Ontario. Gaiser (1966) says "only at Point Edward, V. hastata was on lower land under the Ambassador Bridge, V. stricta, on sandy banks of St. Clair R.; numerous hybrids were along the roadway between the parents and intermingled

with V. stricta."

Additional citations: ONTARIO: Peterborough Co.: Heidenreich 292 [7138] (Mi).

VERBENA SANTIAGUENSIS (Covas & Schnack) Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A6: 535. 1963; Moldenke, Phytologia 11: 468 & 479. 1965.

VERBENA SCABRA Vahl

Additional bibliography: Moldenke, Phytologia 11: 479, 501, & 502. 1965.

Proctor found this plant growing at the edge of swamps in Jamaica.

Additional citations: JAMAICA: G. R. Proctor 23622 (Mi). HIS-PANIOLA: Dominican Republic: Fuertes 391 (Mi), 1758 (Mi).

VERBENA SCROBICULATA Griseb.

Additional bibliography: Moldenke, Phytologia 11: 137-140. 1964; Rambo, Pesquis. Bot. 21: 50. 1965.

VERBENA SELLOI Spreng.

Synonymy: Glandularia selloi (Spreng.) Troncoso, Darwiniana 13: 481. 1964. Glandularia pulchella var. gracilior Troncoso, Darwiniana 13: 476. 1964. Verbena pulchella var. gracilior (Troncoso) Shimmers, Sida 2: 266. 1966.

Bibliography: Spreng. in L., Syst. Veg., ed. 16, 2: 750. 1825; Schau. in A. DC., Prodr. 11: 552. 1847; Schau. in Mart., Fl. Bras. 9: 194. 1851; Briq., Ann. Conserv. & Jard. Bot. Genève. 7-8: 296-297. 1904; Hayek, Denkschr. Kaiser. Akad. Wissensch. Math.-nat. 79 (1): 294. 1908; Moldenke, Lilloa 6: 333. 1934; Troncoso, Darwiniana 3: 54. 1937; Moldenke, Phytologia 9: 389, 394, & 396. 1963; Troncoso, Darwiniana 13: 468-470 & 481-484, fig. 6. 1964; Moldenke, Résumé Suppl. 13: 3. 1966.

Illustrations: Troncoso, Darwiniana 13: 483, fig. 6. 1964.

Troncoso (1964), in resurrecting this species from synonymy, cites the following specimens: URUGUAY: Burkart 21553 (Si); Collector undesignated s.n. [Carrasco, II. 1835] (P); Felippone 3071 (Si), 2240 (Si), 2725 (Si), 2742 (Si), 2784 (Si), 2874 (Si), 3386 (Si); Herb. Herter 87430 (Si); Herter 68181 (Si); Langeron s.n. [Carrasco, II. 1927] (P); Osten 5642 (Si); H. L. Parker s.n. [Carrasco, 23.X.1942] (Si-25668); Rosengurt 1004 (Si), 2116 (Si), B.182 (Si); Rosengurt & al. 1433 (Si).

She describes the species as follows: "Planta perenne, rastrera, radicante en todos los nudos formando céspedes extensos, ramas floríferas erguidas. Tallos subtetrágonos verde-violáceos, lisos, glabrescentes o con pubescencia hispida, extendida o retrorsa en tallos y pedúnculos, mas densa hacia el extreme de los mismos. Entremudos breves, de 0,5-2 cm long. alargándose hacia el ápice de las ramas hasta 5 cm long. Hojas pinnatisectas, de 0,7-2 cm (raro mayores) long. x 0,5-1,5 cm lat., de ámbito triangular,

enangostadas en breve pecíolo, con un fascículo de hojitas reducidas o breves ramitas en las axilas; lacinias breves, subagudas u obtusas, con margen extendido (subrevoluto en el material seco), glabras o con pelitos rígidos, subcallosos en la base en el haz e hirsutas en el borde y nervios del envés, éste con puntos pelúcidos (visibles sub lente), nervio medio impreso en el epifilo, prominente en el hipofilo. Inflorescencia en 2 o 3 cabezuelas terminales, más rara vez solitarias, espiciformes en la fructificación hasta de 4 cm long., pedunculada, pedúnculos laterales, generalmente más largos que el central, con pelitos hispídos extendidos o retrorsos. Brácteas lanceoladas, subuladas, de 4--5 (---6) mm long., pestañosas, el resto glabras. Cáliz cilíndrico, verdoso-violáceo, de 7--8 mm long. (incluidos los dientes), hirsuto sobre las costillas, el resto hispídulo o subglabro, dientes desiguales, subulados, los mayores de 1 mm long., rectos. Brácteas y costillas de cáliz con brevísimas glándulas pateliformes, subsésiles. Corola pubescente exteriormente en el ápice del tubo y base de la cara inferior de los lóbulos, tubo de 1 cm long. Estambres típicos, los superiores con apéndices antrales cilíndricos que superan notablemente las tecas, exsertos en la garganta corolar. Gineceo típico, estilo filiforme de 0,8--1 cm long. Mericarpios cilíndricos, parduscos, de 2,8--3 mm long., redondeados y alveolados en el ápice, truncados en la base, cara dorsal alveolado-sureada, cara ventral blanco-verrucosa, pericarpio levemente prolongado en la base, pero no ensanchado."

She notes that the species is "Abunda en praderas arenosas del litoral marítimo uruguayano." She also comments that "Esta especie es muy característica y fácilmente diferenciable de sus afines por formar densos y extendidos céspedes muy floríferos y por su pubescencia en general hirsuta y los pedúnculos hispido-retrorsos." "Si bien la descripción de Sprengel es muy breve, es en todo bastante coincidente, por lo cual creo conveniente rehabilitar este antiguo nombre, pues de no hacerlo debería describirse como un nuevo taxón."

Collectors describe this plant as 1--2 dm. tall, the corollas varying from blue, bluish, or purplish-blue to violet, lilac, purple, bright purple-lilac, or reddish. They have found it growing in dry sunny sandy or dry rocky campos, dry sandy pastures, and maritime meadows, as well as on grassy slopes, at altitudes of 10--2000 meters, flowering from September to February and in April. The common names "margarita morada" and "yerba meona" are recorded by Herter in Uruguay. Swallen describes it as very common along roadsides in campo, while Smith refers to it as littoral.

Material of V. selloi has been misidentified and distributed in herbaria under the names V. dissecta Willd., V. erinoides Lam., V. laciniata (L.) Briq., V. microphylla H.B.K., V. pulchella Sweet, V. tenera Spreng., and V. tenuisecta Briq. The Chicchi 264 collection, cited below, is a mixture with V. hookeriana (Covas & Schnack) Moldenke. The label on the Rosengurt B.2116 specimen, also cited below, originally was inscribed "B-2116 1/2", but the fraction was apparently later crossed out.

The flowers are described as "blue" on Berro 134, 4753, 4754, 6720, & 8219; "blue or violet" on Berro 4752; "purplish-blue" on Berro 8205; "bluish" on Berro 8390; "violet" on Berro 4323, Krapovickas 2752, and Burkart 22380; "reddish" on Schreiter 6643; "lilac" on Herter 1811; "purple" on Berro 8701 & 8775; and "bright purple-lilac" on Herb. Herter 50882.

The Chicchi 264, in part, Gallinal, Aragone, Bergalli, Campal, & Rosengurt 1433 & 1821, Herb. Herter 50882, Herb. Jussieu s.n., and Rosengurt B.2116, cited below, were all previously erroneously cited by me as V. dissecta Willd.; all the rest cited below were previously cited by me as V. tenera Spreng. These changes in determination are due, in large part, to the splendid revisionary work recently published by Troncoso (1964) on certain Argentine members of this species complex. It is probable that most of the material cited by me previously under V. tenera will prove, upon re-examination, to be V. selloi. The Bailetti 231, cited below, is placed here tentatively. It was originally distributed as V. erinoides Lam., then cited by me as V. dissecta Willd. Its leaves have the exact appearance of those of V. dissecta, but its inflorescences are those of V. selloi. It may possibly represent a hybrid between the two species.

Troncoso (1964) says for her V. pulchella var. gracilior: "A typo differt: planta humilior, repens, humifusa; caules ramaeque graciles, ad nodos floriferos radicales, pubescencia strigosa, sparsa; folia minores." The type of the variety was collected by Arturo Burkart (no. 22380) at Villa Gesell, Gral. Madariaga, Buenos Aires, Argentina, on March 5, 1961, and is deposited in the herbarium of the Instituto Botanico Darwinion at San Isidro. She cites also from Buenos Aires Hicken s.n. [Gral. Pinto, 10-I-1898] (Si), s.n. [Olivos, barrancas, 30-III-1929] (Si), and Nicora 2014 (Si). I have, however, examined an isotype of this taxon in the United States National Herbarium and find it to be identical with typical V. selloi. Shinnars (1966) maintains that it is the correct name for what has hitherto passed as V. tenuisecta Briq.

Citations: BRAZIL: Rio Grande do Sul: Rambo 34719 (N); Swallen 7391 (W--1903226). URUGUAY: H. H. Bartlett 20821 (W--1907610); Berro 134 (N), 4323 (N), 4752 (N), 4753 (N), 4754 (N), 6720 (N), 6800 (N), 8205 (N), 8219 (N), 8390 (N), 8701 (N), 8702 (N), 8775 (N); A. Castellanos s.n. [1.XI.1946; Herb. Inst. Miguel Lillo 15774] (N), s.n. [26.XII.1946; Herb. Inst. Miguel Lillo 11755] (N), s.n. [18.I.1947; Herb. Inst. Miguel Lillo 15138] (N, N), s.n. [7.XII.1947; Herb. Inst. Miguel Lillo 11768] (N), s.n. [9.XII.1947; Herb. Inst. Miguel Lillo 11766] (N); Felippone 5915 (N); Gallinal, Aragone, Bergalli, Campal, & Rosengurt 1433 (N), 1821 (N), 2299 (W--1742790); Herb. Herter 50882 (N); Herter 181c [Herb. Herter 79227] (N), 1811 [Herb. Herter 96600] (N); Herter & Strahl 181 [Herb. Herter 79174] (N); Legrand 2717 (N); Moldenke & Legrand s.n. [Herb. Legrand 2791]; Moldenke & Moldenke 19692 (N), 19696 (N);

Rosengurtt B.2116 (N); A. Saint-Hilaire C².1882 (N); H. M. Smith 1140 (W--1193793); Teague s.n. [22.II.1947; Herb. Inst. Miguel Lillo 11760] (N, N). ARGENTINA: Buenos Aires: Burkart 22380 (W--2371533); Krapovickas 2752 (N). Corrientes: Edw. Palmer s.n. [La Plata Exped. Capt. Page] (W--227527). La Pampa: Chicchi 264, in part (N). Salta: Garolera & Romero s.n. [Cuesta del Obispo, 8.I. 1947] (N); Schreiter 6643 [Herb. Inst. Miguel Lillo 32795] (N). Tucumán: Bailetti 231 [Herb. Inst. Miguel Lillo 31690] (N). CULTIVATED: Russia: Herb. Hort. Bot. Petrop. s.n. (W--71959). LOCALITY OF COLLECTION UNDETERMINED: Herb. Jussieu s.n. (N).

VERBENA SESSILIS (Cham.) Kuntze

Additional bibliography: Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 11: 479. 1965.

Additional citations: BRAZIL: State undetermined: Sellow 1563 [Macbride photos 17447] (W--photo of type).

VERBENA SIMPLEX Lehm.

Additional bibliography: Turcz., Bull. Soc. Nat. Mosc. 36 (2): 195. 1863; N. L. Britton, N. J. Geol. Surv. Final Rep. State Geol. 2 (1): 194. 1889; Quick, Wild Fls. North. States 372--373. 1939; M. J. Cuthbert, How to Know Spring Fls. 110, fig. 297a. 1943; Moldenke, Biol. Abstr. 46: 3246. 1965; Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 11: 480 (1965) and 13: 185. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100. 1966.

Additional illustrations: M. J. Cuthbert, How to Know Spring Fls. fig. 297a. 1943.

Additional citations: ALABAMA: DeKalb Co.: Demaree 50551 (Ac). MISSOURI: Saint Louis: Muhlenbach 182 (Ac), 1208 (Ac), 11465 (Ac).

VERBENA SIMPLEX f. ALBIFLORA Moldenke

Additional bibliography: Moldenke, Phytologia 11: 480. 1965; Moldenke, Biol. Abstr. 46: 3246. 1965; Hocking, Excerpt. Bot. A9: 367. 1965.

xVERBENA SOLBRIGII Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 35: 1688. 1960; Hocking, Excerpt. Bot. A4: 592. 1962; Moldenke, Phytologia 11: 480. 1965.

VERBENA STELLARIOIDES Cham.

Additional bibliography: Rambo, Pesquis. Bot. 21: 51, 53, & [60]. 1965; Moldenke, Phytologia 11: 480. 1965.

Rambo (1965) suggests that V. ramboi Moldenke may be conspecific with V. stellarioides. Under the latter, he cites Herb. Anchieta 9555, 9758, 10156, and 58698 [Camargo 51] from Rio Grande do Sul, Brazil, all collected by himself except where otherwise noted. He describes the plant as "Erect, stiff, coarse, scarcely branched or unbranched, up to 50 cm high; leaves very narrow and long", growing in "Dry, grassy Campos" in the "Western

Campos only" in Rio Grande do Sul, with a general distribution of "Paraguay, westernmost RGS [Rio Grande do Sul], Uruguay".

Additional citations: BRAZIL: Rio Grande do Sul: Sellow s.n. [Macbride photos 17446] (W—photo of type).

VERBENA STOREOCLADA Briq.

Additional bibliography: Moldenke, *Phytologia* 11: 188—190. 1964; Rambo, *Pesquis. Bot.* 21: 58. 1965.

VERBENA STRICTA Vent.

Additional bibliography: N. L. Britton, N. J. Geol. Surv. Final Rep. State Geol. 2 (1): 194. 1889; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 267, ed. 2, 115, fig. 175. 1915; Muenscher, Cornell Agr. Exp. Sta. Bull. 635 [Weeds N. Y.], pr. 2, 10 & 387. 1939; Rickett, New Field Book Am. Wild Fls. 280, fig. 98. 1963; Y. Matsumura, *Amat. Herb.* 25 (3-4): 42. 1964; Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, *Phytologia* 11: 462, 480, 500, & 501. 1965; F. H. Montgomery, *Native Wild Pl.*, pr. 2, 121, fig. 210. 1965; Moldenke, *Résumé Suppl.* 12: 1 & 13 (1965) and 13: 1. 1966; Gaiser, *Surv. Vasc. Pl. Lambton Co.* 100. 1966.

Additional illustrations: W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 267, ed. 2, fig. 175. 1915; Rickett, New Field Book Am. Wild Fls. fig. 98. 1963; F. H. Montgomery, *Native Wild Pl.*, pr. 2, fig. 210. 1965.

Muhlenbach 1335 was identified by the collector as "V. simplex x stricta", but I do not think that it is a hybrid. One each of the A. R. Moldenke 924 and H. N. Moldenke 21909 specimens cited previously by me as being deposited in my personal herbarium is now in the herbarium of Aarhus University. C. M. Rogers 6111 is said to have had "violet" flowers.

Additional citations: INDIANA: Porter Co.: M. W. Lyon Jr. s.n. [Baileytown, IX.13.1925] (M1). KENTUCKY: Union Co.: Shacklette 506 (M1). KANSAS: Crawford Co.: H. F. Becker s.n. [Pittsburgh, 3 June 1964] (M1). MISSOURI: Saint Louis: Muhlenbach 145 (Ac), 1335 (Ac). COLORADO: Las Animas Co.: C. M. Rogers 4967 (M1), 6076 (M1), 6111 (M1), 6956 (M1). TEXAS: Hemphill Co.: Correll & Ogden 28302 (Ld), 28321 (Ld).

VERBENA STRICTA f. ALBIFLORA Wadmond

Additional bibliography: Moldenke, *Phytologia* 11: 480. 1965; Moldenke, *Résumé Suppl.* 12: 1. 1965.

Additional citations: MISSOURI: Saint Louis: Muhlenbach 435 (Z).

VERBENA STRIGOSA Cham.

Additional bibliography: Moldenke, *Phytologia* 11: 238—240, 498, & 500. 1965; Rambo, *Pesquis. Bot.* 21: 53—54 & [60]. 1965.

Rambo (1965) cites *Herb. Anchieta* 2817, 8492, 8602, 8783, 30981, 32450, 34728, 35217, 49319, 50961, 50999, 51940, 55928, 56274, 56628, all from Rio Grande do Sul, and 55298 [Reitz 4746]

55300 [Reitz 4742], 55303 [Reitz 4739], and 56868 [Reitz s.n.] from Santa Catarina, Brazil, all collected by himself except where otherwise noted. The Santa Catarina specimens, he says, were identified by me as *V. hirta* Spreng. He describes *V. strigosa* as a "Low shrub, densely branched from a rootstock, branches up to 30 cm high", found in "More or less wet, peaty, grassy Campos" on the "Highlands only, especially the northeastern sector" of Rio Grande do Sul, with a general distribution of "From S. Paulo to RGS [Rio Grande do Sul]".

Additional citations: BRAZIL: São Paulo: Sellow s.n. [Brasília; Macbride photos 17448] (W--photo of isotype).

VERBENA SUBINCANA (Troncoso) Shinnars, Sida 2: 266. 1966.

Synonymy: *Glandularia subincana* Troncoso, Darwiniana 13: 478--481, fig. 5. 1964.

Bibliography: Troncoso, Darwiniana 13: 468--470 & 478--481, fig. 5. 1964; Shinnars, Sida 2: 266. 1966.

Illustrations: Troncoso, Darwiniana 13: 480, fig. 5. 1964.

Troncoso (1964) describes this species as follows: "Perennis herbacea, circ. 25 cm alt., caulibus ad basim prostratis interdum radicanibus, demum ascendentibus, subtetragonis; pubescentia apicem versus subincana, ad caules retrorso-hispidula, ad bracteas nervis foliorum calycique glandulis patelliformibus intermixta; internodiis 1--5 cm longis; foliis pinnatisectis, 1--4,5 cm longis, subtus crassinervosis, supra et subtus scabro-hirtellis, laciniis circ. 1--2,5 mm latis oblongo-lanceolatis subacutis; capitulis densis solitariis, post anthesin usque ad 7 cm elongatis, pedunculos retrorso-hispidulo; bracteis lanceolatis ciliolatis hispidulisque, 4--4,5 mm longis, dimidio calyce longioribus, persistentibus; calyce tubuloso 8--8,5 mm longo cano-hispidulo, dentibus inaequalis usque ad 1 mm longis, corolla violacea 1,2--1,5 cm longa, extus glabra, laciniis obovatis emarginatis, tubo subincurvato apicem versus incrassato; antheris glandulis cylindricis elongatis, exsertis, munitis; stylo 8,5--9 mm longo; fructu 2,5--2,8 mm longo, mericarpiis obtusis, dorso-reticulato-sulcatis.....Planta perenne, súfruticosa en la base, con tallos extendidos, rastreros o radicales en la base, luego erguidos, sin formar césped. Ramas subtetrágonas con pubescencia hispida, extendida o retrorsa sobre los ángulos, el resto cano-hispidulo, más densa hacia el ápice dándole un aspecto blanquecino. Entre nudos breves, de 1--3 cm long, más largos hacia el extremo de la ramas, hasta de 5 cm long. Hojas pinnatisectas, con un fascículo de hojitas menores en las axilas, de 1--3 (4,5) cm long, atenuadas en breve pecíolo, lámina de ámbito oval-triangular, hirsutas en el epifilo con pelitos rígidos, callosos en la base, más densamente en el hipofilo sobre los nervios y el margen subrevoluto (visto en material seco), nervio medio impreso arriba, prominente abajo; lacinias oblongo-lanceoladas, subagudas u obtusas, enteras o dentadas, de 1--1,5 mm lat. Inflorescencia en densas cabezuelas terminales, solitarias, que se alargan en la fructificación hasta 7 cm long, pedúnculo hispido y cano-hispidulo con pubescencia retrorsa. Brácteas lanceoladas, subcóncavas

en la base, de 4--4,5 mm long, generalmente superando la 1/2 del cáliz, nervio medio manifiesto, pestafiosas, el resto incano-hispídulo, persistentes sobre el raquis después de la fructificación. Cáliz cilíndrico-tubuloso, de 8--8,5 mm long. (incluido los dientes), cano-hispídulo en toda su superficie, más densamente en la 1/2 inferior y con pelitos más rígidos y oblicuos hacia el ápice de la costillas y los dientes, ciliolado en el borde, dientes desiguales, subulados, los mayores de 1 mm long., ensanchados y membranáceos en la base; cáliz fructífero plegado en el ápice por encima de los mericarpios. Brácteas, cáliz y nervios del envés de la hojas con pequeñas glándulas pateliformes. Corola violácea, morada o lila azulada (según los coleccionistas), de 1,2--1,5 cm long., lóbulos obovales, escotados, tenuemente nerviados (sub lente), glabra exteriormente; tubo de 1--1,2 cm long., brevemente encorvado y ampliado en la parte superior. Estambres típicos, los superiores con apéndices anterales cilíndricos, superando las tecas y asomando en la garganta corolar, Gineceo típico, estilo de 8,5--9 mm long. Mericarpios de 2,5--2,8 mm long., recubiertos por el cáliz persistente que a la madurez se hiende lateralmente, cilíndricos, redondeados en el ápice y truncados en la base, ápice y 1/2 superior del dorso alveolado el resto surcado, cara ventral blanco-verrucoso (sub lente), pericarpio prolongado por debajo de la parte fértil, no ensanchado. Habita laderas pratenses, en suelos arenosos.....Especie afín a Gl. selloi, de la que se diferencia por su pubescencia cano-hispídula en brácteas, cáliz y pedúnculos, por su corola glabra exteriormente y en general por ser toda ella mucho más hirsuta y no formar céspedes densos. De Gl. pulchella se aparta por la pubescencia, no estrigosa y por los mericarpios menores y redondeados en el ápice, no rostrados." She cites from Entre Ríos, Argentina, Burkart 25425 (Si) and from Uruguay Rosengurtt & al. 492 (Si) and PE.5262 (Si).

The type of the species was collected by Bernardo Rosengurtt Gurvich (no. B.992), common in riverside thickets at Arroyo Valentín, Río Arapey, dept. Salto, Uruguay, on January 28, 1937, and is deposited in the herbarium of the Instituto Botanica Darwinion at San Isidro, Argentina. This collection was cited by me in previous works as V. pulchella Sweet.

Collectors describe V. subincana as prostrate or ascending, stoloniferous, the corollas varying from lilac or violet to purple. They have found it growing in riverside thickets, rocky fields, and low or dry rocky sunny sandy campos, as well as on grassy slopes, at 150 meters altitude, flowering in September, October, January, and February. Rambo says "Species in toto planalto, praesertim in rupestribus valde communis" in Rio Grande do Sul, Brazil. The flowers are described as "lilac" on Rosengurtt B.992, "violet" on Herter 181g, and "purple" on Rosengurtt B.3756 and Gallinal, Aragone, Bergalli, Campal, & Rosengurtt PE.5262.

The Brade 7000, Gallinal, Aragone, Bergalli, Campal, & Rosengurtt PE.5262, Löfgren s.n. [22-9-1887; Herb. Com. Geogr. e Geol.

3685; Herb. Inst. Bot. S. Paulo 15725], Rambo 10103, and Rosengurt B.3756, cited below, were previously cited erroneously by me as V. dissecta Willd., while J. T. Lima s.n. [II.1946; Herb. Rio de Jan. 55466] was erroneously cited by me as V. pulchella Sweet.

Citations: BRAZIL: Rio Grande do Sul: Rambo 10103 (N). São Paulo: Brade 7000 [Herb. Inst. Bot. S. Paulo 6728] (N, N); J. T. Lima s.n. [II.1946; Herb. Rio de Jan. 55466] (N); Löfgren s.n. [22-9-1887; Herb. Com. Geogr. & Geol. 3685; Herb. Inst. Bot. S. Paulo 15725] (N). URUGUAY: Gallinal, Aragone, Bergalli, Campal, & Rosengurtt PE.5262 (N, N); Herter 181g [Herb. Herter 83911] (N); Rosengurtt B.992 (N--isotype), B.3756 (N, N).

VERBENA SULPHUREA D. Don

Additional bibliography: Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 11: 480--481 (1965) and 13: 213. 1966; Moldenke, Résumé Suppl. 13: 3. 1966.

The Herb. Inst. Miguel Lillo 31745 and Jørgensen 1613, distributed as V. sulphurea, are actually V. parodi (Covas & Schnack) Moldenke, not V. dissecta Willd. as stated by me previously.

Additional citations: CHILE: Coquimbo: Martcorena & Matthei 74 (Ac), 105 (Ac), 230 (Ac); Ricardi 2028 (Ac); Ricardi & Martcorena 4236/621 (Ac). Valparaíso: Behn s.n. [Viña del Mar, 19. XI.1922] (Ac); Junge s.n. [Quinteros, 9. XI.1942] (Ac).

VERBENA SULPHUREA f. ALBA Moldenke

Additional bibliography: Moldenke, Phytologia 11: 480. 1965; Moldenke, Résumé Suppl. 13: 3. 1966.

Additional citations: CHILE: Valparaíso: F. Torres s.n. [Quintero, 19. IX.1958] (Z).

VERBENA SULPHUREA var. TALTALENSIS Moldenke

Additional bibliography: Moldenke, Phytologia 11: 481. 1965; Moldenke, Résumé Suppl. 13: 3. 1966.

Recent collectors have found this plant in flower and fruit in October.

Additional citations: CHILE: Antofagasta: Ricardi 2701 (Ac), 3090 (Ac). Coquimbo: Martcorena & Matthei 350 (Z).

VERBENA SUPINA L.

Additional bibliography: Hocking, Excerpt. Bot. A9: 366. 1965; Moldenke, Phytologia 11: 251--261 & 490. 1965.

VERBENA TENERA Spreng.

Additional bibliography: Troncoso, Darwiniana 13: 468--473, fig. 1. 1964; Hocking, Excerpt. Bot. A9: 366. 1965; Rambo, Pesquis. Bot. 21: 54-55 & [60]. 1965; Moldenke, Phytologia 11: 458, 468, 481 & 485. 1965.

Additional illustrations: Troncoso, Darwiniana 13: 472, fig. 1.

1964.

Smith and his collaborators found this plant growing in dry open ground and on rock outcrops, as well as in bogs, in Santa Catarina.

Rambo (1965) cites Herb. Anchieta 9389, 9913, 10005, 10103, 25789, 34719, 28352, 53317, 60504 [Sacco s.n.], 61292 [Pivetta 1155], 61443 [Sacco 646], 61444 [Sacco 647], 63207 [Spies s.n.], and 63244 [Spies s.n.] from Rio Grande do Sul, Brazil, all collected by himself except where otherwise noted. He describes the species as "Prostrate, base generally a little elevated branches radiating, up to 40 cm long", growing in "Dry, more or less open to grassy Campos" in the "Western to central Campos area, absent from the northeastern quadrant" in Rio Grande do Sul, with a general distribution "From Rio de Janeiro to Uruguay and northern Argentina".

Troncoso (1964) describes the species as follows: "Herbácea perenne, sufruticosa en la base, rastrera, muy extendida, con ramas floríferas ascendentes, subglabra a raramente estrigoso-pubescente más densa en la región de la inflorescencia. Ramas delgadas, subcilíndricas, entrenudos de 2--3 cm long. Hojas pinatisecta, de ámbito triangular, de 1,5--3 cm long., con un fascículo de hojitas menores o ramitas abreviadas en las axilas, lacinias filiformes de 0,5--1 mm diám., por lo general enteras, subagudas, subrectas (incurvadas en el material seco), glabrescentes o con pelitos estrigosos ralos en ambas caras, nervio medio unico inconspicuo en el epifilo, bordes extendidos, a veces en el material de herbario parecen subrecurvos. Inflorescencia en cabezuelas terminales solitarias, pedunculadas, especiformes, en la fructificación hasta de 7 cm long. Brácteas ovales u oval-lanceoladas de 2--3,5 mm long., con nervio medio visible, subcónicas en la base, estrigosas. Cáliz cilíndrico, de 9,5--9 mm long. (incluidos los dientes), densamente estrigoso-pubescente en toda su superficie, dientes desiguales subulados, subrectos, los mayores de 1 mm long., conniventes o contortos en el cáliz fructífero. Brácteas y cáliz con glandulitas pateliformes, subsésiles, Corola glabra exteriormente, tubo de 12--13 mm long. Estambres típicos, los superiores con apéndices anterales cilíndricos sobrepasando las tecas y exsertos. Pistilo típico, estilo filiforme, de 10,5--11 mm long. Mericarpios cilíndricos, de 4,7--5,5 (-6,5) mm long., notablemente rostrados, rostro liso, dorso pardo negruzco, alveolado-estriado, cara ventral blanco-verrucosa, pericarpio dorsal prolongado y ensanchado en la base."

She notes "Habita principalmente en terrenos arenosos....Especie muy vecina de Gl. pulchella var. pulchella, pero ésta se diferencia por las lacinias de las hojas más anchas, toda la planta más densamente pubescente, mericarpios menores y con rostro reducido y en general por su hábito mucho más robusto y sus tallos apoyantes, radicantes sólo en la base.....Destaco que Grisebach en Symb. ad Flor. Argent. p. 277. 1879, al citar la especie para E. Ríos, Urug-Bonar. señala: 'verae speciei folii segmenta angustissima (1/3 lin. fere lata), glabriuscula, corolla longius exserta et

caulis suffruticosus". Los ejemplares uruguayos estudiadosse hallan determinados por el Dr. C. Osten y coinciden exactamente con el concepto de Grisebach." She cites: ARGENTINA: Entre Ríos: Burkart 23094 (Si), 3616 (Si); Herb. Inst. Darwin. 12174 (Si); Lorentz 1483 (Bf); Ragonese & Martinez Crovetto 49 (Ib, Si), 5006 (Si); Rivas s.n. [Holt, 15-XI-1924] (Ib—77616). URUGUAY: Berro s.n. [Mercedes] (Ug); Millot s.n. [Herb. Rosengurtt]; Osten 16546 (Ug).

She proposes the following key to distinguish this species from its relatives:

1. Pubescencia estrigosa rala o densa en tallos, hojas, cáliz y brácteas; pedúnculos con pelos aplicados, acroscópicos; cáliz estrigoso o cano-estrigoso en toda su superficie.
2. Dientes del cáliz subulados o apiculados, ensanchados en la base, rectos o subrectos; apéndices anterales exertos, superando las tecas; mericarpios de ápice rostrado o subrostrado y base dorsal del pericarpio ensanchada.
3. Segmentos de las hojas filiformes, de 0,5--1 mm lat., subglabros, bordes extendidos; brácteas ovales u oval-lanceoladas, de 1/3--1/4 la longitud del cáliz, rara vez mayores; mericarpios de 4,5--5,5 (—6,5) mm long., largamente rostrados.....V. tenera.
- 3a. Segmentos de las hojas linear-lanceolados, de 1--2 mm lat., más densamente estrigosos, borde revuelto o subrevuelto; brácteas lanceoladas, igualando o superando da 1/2 del cáliz; mericarpios de 3,5--4 mm long., brevemente rostrados.....V. pulchella.
- 2a. Dientes del cáliz setoso-filiformes, recurvos, sub-truncados en la base; apéndices anterales inclusos, no superando las tecas; mericarpios redondeados en el ápice, pericarpio no ensanchado en la base.....V. tenuisecta.
- 1a. Pubescencia hispida o hirsuta en tallos, hojas, cáliz y brácteas; pedúnculos con pelos extendidos o más comúnmente retrorsos, basiscópicos; cáliz hirsuto sobre las costillas, el resto subglabro o cano-hispídulo.
4. Inflorescencia en cabezuela solitaria; tubo corolar glabro exteriormente; cáliz y brácteas cano-hispíduladas, con pelitos más rígidos sobre las costillas del cáliz.V. subincana.
- 4a. Inflorescencia en 2 ó 3 cabezuelas terminales, o cimoso-paniculada; tubo corolar pubescente exteriormente; cáliz y brácteas hiesutas.
5. Cabezuelas 2 ó 3 terminales, rara vez solitarias, alargándose después de la antesis; brácteas lanceoladas, largamente subuladas.....V. selloi.
- 5a. Cabezuelas cimoso-paniculadas, inflorescencia 2 ó 3 veces tricótoma, corimbiforme; cabezuelas no alargándose después de la antesis; brácteas ovales, agudas..V. dissecta.

It is very probable that most of the Uruguayan material cited by me previously as V. tenera actually represents V. selloi according to this revision made by Troncoso. Burkart 22380, which I

cited previously as V. tenera, is the type collection of V. pulchella var. gracilior (Troncoso) Shinnars, but this I regard as a synonym of V. selloi Spreng. Burkart 3616, which she cites as V. tenera, I have previously cited as V. tenuisecta Briq.

The flowers are described as "blue" on Schreiter 1904. The Moreno s.n. [Patagon. 1882/4], Schreiter 1904, Tweedie s.n., and Wilkes Exped. s.n., cited below, were previously erroneously cited by me as V. dissecta Willd., while Carette s.n. [Monte Hermoso, 1916] was previously cited by me in error as V. microphylla H.B.K.

On the other hand, the Boffa 25 and Commerson s.n. [Buenos Ayres et Monte Video], previously cited by me as V. tenera, are actually V. dissecta Willd.; A. Castellanos s.n. [23.I.1947; Herb. Inst. Miguel Lillo 15120] is V. mendocina R. A. Phil.; A. T. Hunziker 6471 and T. Meyer 2409 are V. microphylla H.B.K.; Herb. Inst. Miguel Lillo 31472, Jørgensen 1737, and Ruiz Leal 7092 are V. parodii (Covas & Schnack) Moldenke; A. T. Hunziker 5160 is V. pogostoma Klotzsch; H. M. Smith 5 is V. pulchella Sweet; H. H. Bartlett 20821, Berro 134, 4323, 4752, 4753, 4754, 6720, 6800, 8205, 8219, 8390, 8701, 8702, & 8775, Burkart 22380, A. Castellanos s.n. [1.XI.1946], s.n. [26.XII.1946], s.n. [18.I.1947], s.n. [7.XII.1947], & s.n. [9.XII.1947], Felippone 5915, Gallinal, Aragone, Bergalli, Campal, & Rosengurt 2299, Garolera & Romero s.n. [Cuesta del Obispo, 8.I.1947], Herb. Inst. Miguel Lillo 11755, 11760, 11766, 11768, 15138, 15774, & 32795, Herb. Herter 79174, 79227, & 96600, Herb. Hort. Bot. Petrop. s.n., Herter 181c & 181i, Herter & Strahl 181, Krapovickas 2752, Legrand 2717, Moldenke & Legrand s.n. [Herb. Legrand 2791], Moldenke & Moldenke 19692 & 19696, Edw. Palmer s.n. [La Plata Exped. Capt. Page], Rambo 34719, A. Saint-Hilaire C2.1882, Schreiter 6643, H. M. Smith 140, Swallen 7391, and Teague s.n. [22.II.1947] are V. selloi Spreng.; and A. T. Hunziker 3333 and Malme 348 are V. tenuisecta Briq. The Gallinal, Aragone, Bergalli, Campal, & Rosengurt 1433 & 1821 and Rosengurt B.2116, originally distributed as V. tenera and cited by me previously as V. dissecta Willd., are actually V. selloi Spreng.

Additional citations: BRAZIL: Santa Catarina: Reitz & Klein 7919 (W--2403363); Smith & Klein 13388 (Ac), 13730 (W--2451591); Smith & Reitz 14372 (W--2451603). URUGUAY: Sellow 99 [Macbride photos 17450] (W--photo of type). ARGENTINA: Buenos Aires: Carette s.n. [Monte Hermoso, 1916] (N). Río Negro: U. S. Expl. Exped. [Wilkes] s.n. (T). Tucumán: Schreiter 1904 [Herb. Inst. Miguel Lillo 32759] (N). Province undetermined: Moreno s.n. [Patagon. 1882/4] (N). LOCALITY OF COLLECTION UNDETERMINED: Tweedie s.n. (N).

VERBENA TENUISECTA Briq.

Additional synonymy: Verbena tenuisecta Brig., in herb. Verbena tenuisecta Brig., in herb.

Additional bibliography: Moldenke, Biol. Abstr. 36: 719. 1961; Hocking, Excerpt. Bot. A5: 44. 1962; Sharp & Baker, Castanea 29: 183. 1964; Troncoso, Darwiniana 13: 468--470 & 477--478, fig. 4. 1964; Moldenke, Phytologia 11: 448, 481, 485, & 486. 1965; Neal, In Gard. Hawaii, new rev. ed., 722. 1965; Hocking, Excerpt. Bot. A9: 366. 1965; Rambo, Pesquis. Bot. 21: 58. 1965; Moldenke, Résumé Suppl. 12: 1, 2, & 13 (1965) and 13: 6. 1966; Shinners, Sida 2: 266. 1966.

Additional illustrations: Troncoso, Darwiniana 13: 477, fig. 4. 1964.

Recent collectors have found this plant growing in black clay, sandy loam, calcareous marl, and in fine sandy silt. Godfrey reports it "abundantly naturalized along roadsides" in North Carolina.

Troncoso (1964) describes this species as follows: "Hierba perenne, rastrera, de ramas extendidas, radicales, las extremidades floríferas ascendentes, cilíndricas a subtetrágonas, glabrescentes o pilosísculas, más densamente pubescentes hacia el ápice. Entrenudos breves, de 1,5--3 cm long. Hojas pinnatisectas, con fascículos de hojas menores en las axilas, lámina de ámbito triangular, atenuada en pecíolo, de 2--3 cm long., laciniadas lineares, subrectas, subagudas, enteras o dentadas, margen extendido a subrevoluto (en material seco), impresas en el epifilo, con un nervio central prominente en el hipofilo, estrigosas en el haz y sobre el nervio medio en el envés, el resto glabrescente. Inflorescencia terminal, en cabezuelas solitarias, capituliformes en la floración, alargándose luego en densas espigas, hasta de 8 cm en la fructificación. Brácteas oval-lanceoladas, subuladas, de 3--3,5 mm long., estrigosas. Cáliz cilíndrico, de 8--9 mm long (incluidos los dientes), densamente cano-estrigoso, con pocas glándulas pateliformes, subsésiles; dientes súbitamente setoso-filiformes, desiguales, los mayores de 2--3 mm long., generalmente recurvos. Corola glabra, tubo de 11--12 mm long., garganta ciliada. Estambres típicos, los superiores con apéndices anterales reducidos, no superando las tecas ni la garganta corolar. Gineceo típico, de 0,9--1 cm long. Mericarpios pardonegruzcos, cilíndricos, de 2,5,3 mm long., redondeados en el ápice, truncados, no o apenas ensanchados en la base, ápice y dorso reticulados en la mitad superior, el resto estriado, cara ventral blanco-verrucosa o sublisa. Area: Paraguay y NE argentino.....Especie muy vecina por su hábito de G. pulchella y Gl. tenera, de las que se diferencia por los dientes del cáliz, setoso-filiformes, de base subtruncada y por los mericarpios más pequeños, de ápice redondeado, no rostrado." She cites from Paraguay Hassler 1603 (Si), Jørgensen 3771, and T. Rojas 2528 (Si) & 2536 (Si).

Shinners (1966) maintains that the correct name for this taxon is V. pulchella var. gracilior (Troncoso) Shinners, but this name

belongs in the synonymy of V. selloi Spreng.

The Burkart 3616, cited by me previously as V. tenuisecta, is regarded by Troncoso (1964) as representing V. tenera Spreng. instead.

Recent collectors have found V. tenuisecta growing in dry or somewhat moist sandy rather open places in Rio Grande do Sul, Brazil. The flowers are described as "violet" on A. T. Hunziker 3333. This collection and Malme 348, cited below, were previously erroneously cited by me as V. tenera Spreng. Material of V. tenuisecta has been misidentified and distributed in herbaria as V. ciliata Benth.

Additional citations: SOUTH CAROLINA: Dillon Co.: R. K. Godfrey SC.49027 (Ld). ALABAMA: Crenshaw Co.: C. T. Reed 2025 (Ld). LOUISIANA: Jeff Davis Par.: R. L. Crockett 8313 (Ld). TEXAS: Jasper Co.: D. S. Correll 27427 (Ld). Jefferson Co.: R. L. Crockett 8418 (Ld). Nueces Co.: B. E. Campos 41-A (Au--232472). Starr Co.: P. Cabrera 87 (Au--232474). Tyler Co.: R. L. Crockett 6707 (Ld). Webb Co.: L. R. Cuesta 28 (Ld). Zapata Co.: Balleza & Valdez 169 (Ld); Flores & Powell 106 (Ld). BRAZIL: Rio Grande do Sul: Malme 348 (N). PARAGUAY: Hassler 6114 [Macbride photos 17451] (W--photo). ARGENTINA: Buenos Aires: A. T. Hunziker 3333 (N). Córdoba: Hieronymus s.n. [Córdoba, 14/11/1876] (M). Formosa: Morel 530 (M). CULTIVATED: India: Khosho 2 (Ac), 3 (Ac), s.n. [National Botanic Gardens, Lucknow] (Ac). Texas: Y. Villarreal 20 (Au--232446), 253 (Ld).

VERBENA TENUISECTA var. ALBA Moldenke

Additional bibliography: Moldenke, Phytologia 11: 448 & 481. 1965; Moldenke, Résumé Suppl. 12: 1 & 2 (1965) and 13: 6. 1966.

Recent collectors have found this plant growing in fine sandy silt, fruiting in February.

Additional citations: LOUISIANA: Sabine Par.: Demaree 48315 (Ac). MEXICO: Tamaulipas: E. Villamueva 39 (Au--232442). CULTIVATED: India: Khosho 4 (Ac).

VERBENA TENUISECTA var. GLABRATA Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 36: 719. 1961; Hocking, Excerpt. Bot. A5: 44. 1962; Moldenke, Phytologia 11: 303--304. 1965.

VERBENA TEUCRIIFOLIA Mart. & Gal.

Emended synonymy: Verbena teucrifolia Mart. & Gal. ex Moldenke, Résumé Suppl. 7: 10, in syn. 1963; Hocking, Excerpt. Bot. A9: 366. 1965.

Additional bibliography: Moldenke, Phytologia 11: 305--311 & 490. 1965; Beaman, Bol. Soc. Bot. Mex. 29: [71] & 74. 1965; Hocking, Excerpt. Bot. A9: 366. 1965.

Recent collectors have found this plant growing in Pinus pat-

ula woods, and material has been misidentified and distributed in herbaria as Rubiaceae.

Additional citations: MEXICO: Federal District: Powell & Edmondson 746 (Mi). Tlaxcala: V. Aguilar 8-A-21 (Ip). Vera Cruz: Dodds 99 (Mi); Vela G. 1227 (Ip).

VERBENA THYMOIDES Cham.

Additional bibliography: Rambo, Pesquis. Bot. 21: 54--55 & [60]. 1965; Moldenke, Phytologia 11: 311--314. 1965.

Smith & Klein found this plant growing in bogs and on riverbanks in Santa Catarina, Brazil.

Rambo (1965) cites Herb. Anchieta 2790, 4538, 9407, 11850 [Augusto s.n.], 29122, 31077, 34132, 34725, 36415, 37491, 37827, 40857, 43564, 45091, 48873, 57608 [Pivetta 629], 58722 [Camargo 35], 58730 [Camargo 216], 58767 [Camargo 105], & 61302 [Pivetta 1135] from Rio Grande do Sul, and 31758, 35979 [Hatschbach 500], and 49579 from Santa Catarina, all collected by himself except where otherwise noted. He describes the plant as "Slender, erect to recumbent, up to 1 m high", growing in "Dry Campos, among dense and tall grasses.....Over the whole Campos area, not frequent" in Rio Grande do Sul, with a general distribution "From S. Paulo and Paraguay through South Brazil to Uruguay".

Additional citations: BRAZIL: Santa Catarina: Sellow 1482 [Macbride photos 17454] (W--photo of cotype); Smith & Klein 13610 (W--2451608).

VERBENA TUMIDULA Perry

Additional bibliography: Moldenke, Phytologia 11: 325--326 (1965) and 13: 191. 1966.

The E. G. Marsh 1822 distributed as V. tumidula is actually V. delticola Small.

VERBENA URTICIFOLIA L.

Additional bibliography: N. L. Britton, N. J. Geol. Surv. Final Rep. State Geol. 2 (1): 194. 1889; Mrs. W. S. Dana, How to Know Wild Fls., rev. ed., 122, 365, & 372. 1896; W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 260: 153, fig. 154 (1910) and 267, ed. 2, 116, fig. 176. 1915; Muenscher, Cornell Agr. Exp. Sta. Bull. 635 [Weeds N. Y.], pr. 2, 10 & 387. 1939; Quick, Wild Fls. North. States 372 & 518. 1939; Moldenke, Biol. Abstr. 36: 719. 1961; Hocking, Excerpt. Bot. A5: 44. 1962; Rickett, New Field Book Am. Wild Fls. 280, fig. 98. 1963; H. L. Hoffman, Castanea 29: 31 & 45. 1964; Moldenke, Phytologia 11: 502. 1965; Hocking, Excerpt. Bot. A9: 366. 1965; Cody, Ind. Sem. Pl. Res. Inst. Ottawa 1965: 31. 1965; Moldenke, Résumé Suppl. 12: 1 (1965) and 13: 1. 1966; Cody, Ind. Sem. Bot. Gard. Ottawa 1966: 19. 1966; Gaiser, Surv. Vasc. Pl. Lambton Co. 100. 1966.

Additional illustrations: W. J. Beal, Mich. Agr. Coll. Exp. Sta. Bull. 260, fig. 154 (1910) and 267, ed. 2, fig. 176. 1915; Rickett, New Field Book Am. Wild Fls. fig. 98. 1963.

Additional citations: VERMONT: Windsor Co.: A. R. Moldenke 1130 (Ac), 1132 (Ac). INDIANA: Porter Co.: M. W. Lyon Jr. s.n. [Keiser, VIII.10.1924] (Mi). TENNESSEE: Cheatham Co.: Demaree 51102 (Ac). MISSOURI: Saint Louis: Muhlenbach 993 (Ac), 1041 (Ac), 1286 (Ac), 1293 (Ac), 2004 (Ac), 2135 (Ac). TEXAS: Bowie Co.: D. S. Correll 31288 (Ld).

VERBENA URTICIFOLIA var. INCARNATA (Raf.) Moldenke

Additional bibliography: Moldenke, Biol. Abstr. 36: 719. 1961; Hocking, Excerpt. Bot. A5: 44. 1962; Moldenke, Phytologia 11: 410-411. 1965.

xVERBENA URUGUAYENSIS Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 11: 420-421. 1965.

xVERBENA VAGA Moldenke

Additional synonymy: xVerbena vaca Moldenke ex Hocking, Excerpt. Bot. A9: 367, sphalm. 1965.

Additional bibliography: Moldenke, Phytologia 11: 421. 1965; Hocking, Excerpt. Bot. A9: 367. 1965.

VERBENA VALERIANOIDES H.B.K.

Additional bibliography: Moldenke, Phytologia 11: 481-482. 1965.

Additional citations: COLOMBIA: Cundinamarca: Humboldt & Bonpland s.n. [Macbride photos 39476] (W--photo of type).

VERBENA VARIABILIS Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 11: 482. 1965.

VERBENA VENTURII Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 11: 482-483. 1965.

VERBENA VILLIFOLIA Hayek

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 11: 483-484. 1965.

Recent collectors have found this plant in flower and fruit in February.

Additional citations: PERU: Junín: Hutchison & Tovar 4209 (Ac); Weberbauer 2582 [Macbride photos 17458] (W--photo of type).

VERBENA WEBERBAUERII Hayek

Additional bibliography: Hocking, Excerpt. Bot. A9: 367. 1965; Moldenke, Phytologia 11: 485. 1965.

Additional citations: PERU: Puno: Weberbauer 440 [Macbride photos 17459] (W--photo of type).

xVERBENA WINGEI Moldenke

Additional bibliography: Moldenke, *Phytologia* 11: 485--486. 1965; Hocking, *Excerpt. Bot.* A9: 367. 1965.

VERBENA WRIGHTII A. Gray

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 367. 1965; Moldenke, *Phytologia* 11: 437, 440, 452, & 486--497. 1965.

In Nuevo León, Mexico, this plant has been found growing in calcareous marl, while Warnock says that it is "frequent" in limestone soil in Texas. Other recent collectors have found it along sandy rocky washes, in sandy gravel, on granite schist, and in dry sandy soil near creeks. The flowers on J. R. Crutchfield 107 & 319 are described as "pink". On Beasley & Finzel 805 they were "violet-pink" and on Crutchfield 63 "purple".

Additional citations: TEXAS: Brewster Co.: E. Marsh 247 (Au--214398); B. H. Warnock 20022 (Ld). El Paso Co.: Lundell & Lundell 16941 (Ld). Presidio Co.: B. H. Warnock 9004 (Ml). NEW MEXICO: Otero Co.: J. R. Crutchfield 63 (Ld). Socorro Co.: J. R. Crutchfield 107 (Ld). ARIZONA: Apache Co.: Deaver 5599 (Ac), 6483 (Ac). Gila Co.: Beasley & Finzel 805 (Ld). Navajo Co.: J. R. Crutchfield 319 (Ld). MEXICO: Nuevo León: May, Carroasco, Ibarra, & McCart 8902 (Au--232372).

VERBENA WRIGHTII f. ALBIFLORA Moldenke

Additional bibliography: Hocking, *Excerpt. Bot.* A9: 367. 1965; Moldenke, *Phytologia* 11: 491 & 497--498. 1965.

VERBENA XUTHA Lehm.

Emended synonymy: Verbena matthesii Turcz., *Bull. Soc. Nat. Mosc.* 36 (2): 196--197. 1863.

Additional and emended bibliography: Turcz., *Bull. Soc. Nat. Mosc.* 36 (2): 196--197. 1863; Hocking, *Excerpt. Bot.* A9: 367. 1965; Moldenke, *Phytologia* 11: 446 & 498--507. 1965.

Turczanow (1863) describes his V. matthesii as follows: "V. caule fruticoso tetragono, paniculato-ramoso, pilis adpressis aut subpatentibus scabro, ramis ramulisque oppositis, apice 1--3-stachyis; spicis inferne laxis, superne densifloris filiformibus elongatis; foliis basi breviter cuneata sessilibus oblongis acutis inciso-serratis; serraturis subfalcatis acuminatis, interioribus intertum bifidis aut denticulo auctis, utrinque pubescentibus; bracteis lanceolato-subulatis calyce pubescente brevioribus; tubo corollae calycem parum excedente; nuculis transverse rugosis. Ad V. menthaefoliam Bth., e hujus descriptione, videtur accedere; at bractee non parvae, sed calyce paulo breviores, corolla calyce paulo nec triplo major."

Additional citations: TEXAS: Brazos Co.: Demaree 50859 (Ac); Fayette Co.: Matthes 13 [Macbride photos 34343] (W--photo). Galveston Co.: R. L. Crockett 8462 (Ld).



Moldenke, Harold N. 1966. "Additional notes on the genus *Verbena*. II." *Phytologia* 13, 243–276.

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