

ADDITIONAL NOTES ON THE GENUS VERBENA. XXX

Harold N. Moldenke

VERBENA RUFIFLORA Rojas

Additional bibliography: Moldenke, *Phytologia* 41: 182 & 374. 1979.

It seems probable to me that this binomial name applies either to V. incisa Hook. or to V. peruviana (L.) Britton since both of these red-flowered species are native to Corrientes.

VERBENA RUNYONI Moldenke

Additional bibliography: Moldenke, *Phytologia* 36: 295 (1977) and 41: 171. 1979.

Recent collectors refer to this plant as "an annual herb", much-branched from the base, and found it growing in fields and "frequent to abundant in open ground, widespread in the Lower Rio Grande Valley" and "rigidly erect". The corollas are said to have been "blue" on Correll 36820 and the species has been collected in anthesis in March.

Additional citations: TEXAS: Brazoria Co.: Fleetwood 9459 (Au—289988), 9526 (Au—290157). Cameron Co.: D. S. Correll 36820 (Ld); Correll & Correll 38275 (Ld); Ecology Class s.n. [Palm Grove, 3.1. 30] (Au—122645); Lundell & Lundell 10753 (Au—122643); R. Runyon 522 (Au—290482), 2485 (Au—268740—isotype), 2588 (Au—266164), 4872 (Au—290476), 6011 (Au—294797).

VERBENA xRYDBERGII Moldenke

Additional bibliography: Mohlenbrock, *Guide Vasc. Fl. Ill.* 366—367. 1975; Moldenke, *Phytologia* 36: 295. 1977; Mohlenbrock & Ladd, *Distrib. Ill. Vasc. Pl.* [247] & 276. 1978.

Mohlenbrock (1975) says that in Illinois this hybrid occurs in "Wet ground; scattered throughout the state".

VERBENA SAGITTALIS Cham.

Additional synonymy: Verbena sagittalis Cham. & Schl., in herb.

Additional bibliography: Moldenke, *Phytologia* 36: 296. 1977.

Material of this species has been misidentified and distributed in some herbaria as "Labiatae".

Additional citations: BRAZIL: Paraná: Dombrowski 1985 [Kuniyoshi 1709] (N).

VERBENA SANTIAGUENSIS (Covas & Schnack) Moldenke

Additional bibliography: Moldenke, *Phytologia* 36: 296 & 298. 1977.

The corollas on Burkart & al. 30589 are said to have been "lilac" in color when fresh and the limb "small". It was collected in anthesis in November.

Additional citations: ARGENTINA: Santa Fé: Burkart, Troncoso, Bacigalupo, Guaglianone, Rotman, & Ulibarri 30589 (N).

VERBENA SCABRA Vahl

Additional bibliography: Stalter, Castanea 40: 13. 1975; Hocking, Excerpt. Bot. A.28: 170. 1976; Moldenke, Biol. Abstr. 64: 6575. 1977; Moldenke, Phytologia 36: 296—298, 460, & 461. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 384. 1977; Powell, Econ. Bot. 31: 424. 1977; Moldenke, Phytologia 41: 155 & 180. 1979.

Recent collectors describe this plant as large, much-branched, and to 1.5 meters tall. They have found it flowering in April and July, fruiting in July. Stalter (1975) records it from the Isle of Palms, Charleston County, South Carolina. The corollas on Correll & Popenoe 48330 are said to have been "lavender-purple" when fresh, while those on Correll & Correll 48999 were "light-lavender".

The Corrells encountered V. scabra "scattered among tall herbs", and their collection is the first record of the species from the Bahama Islands. Duncan describes the plant as "5 feet tall, all branching in upper half or third, leaves 2 or 3 to a node, blades to 4 1/2 inches long, corolla-lobes light lavender-pink, the tube violet, hairs in throat white, anthers yellow" and found it growing in the open in low areas.

The G. Watson H.9, distributed as V. scabra, actually is xV. aleni Moldenke, while R. S. Mitchell 3742 is V. urticifolia L.

Additional citations: NORTH CAROLINA: Carteret Co.: Wilbur 9217 (Au—277798). GEORGIA: Sapelo Island: Duncan 20268 (Mi). FLORIDA: Dade Co.: Correll & Popenoe 48330 (N). Sanibel Island: Brumbach 8786 (Mi). TEXAS: Jeff Davis Co.: Correll & Correll 35426 (Ld). Val Verde Co.: Smith & Butterwick 161 (Ld). NEW MEXICO: Eddy Co.: Crutchfield 2407 (Ld). BAHAMA ISLANDS: Eleuthera: Correll & Correll 48999 (N). JAMAICA: Proctor 23622 (Ld).

VERBENA SCABRA var. TERNIFOLIA Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 170. 1976; Moldenke, Phytologia 36: 298. 1977.

Duncan 20268, from Sapelo Island, Georgia, is said to have had its leaves arranged both in 2's and in 3's.

VERBENA SEDULA Moldenke

Additional bibliography: Moldenke, Phytologia 36: 298. 1977.

Van der Werff encountered this plant along a roadside at 580 feet altitude, flowering and fruiting in July, the corollas "pale-blue, almost white".

Additional citations: GALAPAGOS ISLANDS: Chatham: Van der Werff 2181 (Ld).

VERBENA SEDULA var. FOURNIERI Moldenke

Additional bibliography: Moldenke, Phytologia 36: 298. 1977.

Van der Werff reports this plant "common on pampa", at 2000 feet altitude, the corollas "pale-blue", flowering and fruiting in July.

Additional citations: GALAPAGOS ISLANDS: Chatham: Van der Werff 2205 (Ld).

VERBENA SELLOI Spreng

Additional bibliography: Flook, *Sida* 5: 169. 1973; Moldenke, *Phytologia* 36: 283, 296, & 298—299. 1977.

VERBENA SESSILIS (Cham.) Kuntze

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 36: 299 & 302. 1977.

Additional citations: ARGENTINA: Corrientes: Krapovickas & Cristóbal 16357 (Ld).

VERBENA SIMPLEX Lehm.

Additional bibliography: Mohlenbrock, *Guide Vasc. Fl. Ill.* 366. 1975; Baskin & Baskin, *Castanea* 42: 144. 1977; McGregor & al., *Fl. Great Plains* 281, map 1124. 1977; Moldenke, *Biol. Abstr.* 64: 6575. 1977; Moldenke, *Phytologia* 36: 299—301. 1977; R. L. Thompson, *Castanea* 42: 88. 1977; Thompson & Heineke, *Trans. Ill. Acad. Sci.* 70: 126. 1977; Mohlenbrock & Ladd, *Distrib. Ill. Vasc. Pl.* [247] & 276. 1978; Moldenke, *Phytologia* 40: 468. 1978.

The Baskins (1977) list this species as a member of the cedar glade community, while Thompson (1977) refers to it as "rare" in Newton County, Arkansas. Mohlenbrock (1975) says that in Illinois it occurs in "Prairies, fields, waste ground; occasional and scattered throughout the state"; Thompson & Heineke (1977) list it from Jackson County.

Additional citations: NEW JERSEY: County undetermined: Knieskern s.n. (M1). VIRGINIA: Fairfax Co.: Blake 8473 (Ld). NORTH CAROLINA: Durham Co.: Radford 44754 (Ld). KANSAS: Allen Co.: Ackerman Kan.2-234 (Ld). Douglas Co.: Horr E.76 (Ld). OKLAHOMA: Chectaw Co.: Taylor & Taylor 15953 (Ld).

VERBENA STRICTA Vent.

Additional bibliography: Asai, *Journ. Jap. Bot.* 50: 311—316. 1975; Mohlenbrock, *Guide Vasc. Fl. Ill.* 366 & 367. 1975; McGregor & al., *Fl. Great Plains* 282, map 1125. 1977; Moldenke, *Biol. Abstr.* 64: 6575. 1977; Moldenke, *Phytologia* 36: 300, 302—307, 451, & 461. 1977; R. L. Thompson, *Castanea* 42: 88. 1977; Mohlenbrock & Ladd, *Distrib. Ill. Vasc. Pl.* [247] & 276. 1978; A. L. Moldenke, *Phytologia* 39: 184. 1978.

Swanson refers to this species as "abundant in open spots in dry sandy formerly cultivated fields mixed with shrubs, pioneer herbs, and young hardwoods" — a photograph of the locality is included with his no. 1704 — and "common in sunny open areas". He asserts that the corollas were "purple" on his no. 2175, as they were also on Webster 4280. Thompson (1977) refers to the species as only "occasional" in Newton County, Arkansas. Asai (1975) re-

ports finding it in waste places in Tokyo, Japan, as an introduced weed. Mohlenbrock (1975) says that in Illinois the species occurs in "Prairies, pastures, fields, common; in every co[unty]".

Additional citations: ILLINOIS: Pike Co.: Moldenke & Moldenke 31509 (Lc). WISCONSIN: Vernon Co.: Swanson 1704 (N), 2175 (N). MISSOURI: Reynolds Co.: D'Arcy 4644 (Ld). ARKANSAS: Craighead Co.: Demaree 5085 (M1). OKLAHOMA: Custer Co.: Seigler 1569 (Au--284502). Osage Co.: Webster 4280 (M1). Sequoyah Co.: Taylor & Taylor 10823 (Ld).

VERBENA STRICTA f. ALBIFLORA Wadmond

Additional bibliography: Moldenke, *Phytologia* 28: 390. 1974; Mohlenbrock, *Guide Vasc. Fl. Ill.* 366. 1975; Moldenke, *Phytologia* 36: 303. 1977; A. L. Moldenke, *Phytologia* 39: 184. 1978.

Brooks & Hauser encountered this plant in sandy brushy areas, flowering in July.

Additional citations: KANSAS: Butler Co.: Brooks & Hauser 13225 (N).

VERBENA STRICTA f. ROSEIFLORA Benke

Additional bibliography: Moldenke, *Phytologia* 28: 391. 1974; Mohlenbrock, *Guide Vasc. Fl. Ill.* 366. 1975.

VERBENA STRIGOSA Cham.

Additional bibliography: Moldenke, *Phytologia* 36: 307--308. 1977.

Additional citations: BRAZIL: Paraná: Hatschbach 32594 (M1).

xVERBENA STRUPOSA Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.25*: 379. 1975; Moldenke, *Phytologia* 30: 171. 1975.

VERBENA SUBINCANA (Troncoso) Shinnars

Additional bibliography: Flook, *Sida* 5: 169. 1973; Moldenke, *Phytologia* 30: 171. 1975.

VERBENA SULPHUREA D. Don

Additional bibliography: Moldenke, *Biol. Abstr.* 64: 6575. 1977; Moldenke, *Phytologia* 36: 308. 1977; Markgraf & D'Antoni, *Pollen Fl. Argent.* 99. 1978.

Additional citations: CHILE: Valparaíso: Zöllner 8208 (N).

VERBENA SULPHUREA var. INTERMEDIA Kuntze

Additional synonymy: Verbena macrosperma Speg., *Rev. Argent. Bot.* 1: 218--220. 1926. Glandularia macrosperma (Speg.) Tronc., *Darwiniana* 18: 317. 1974.

Additional & emended bibliography: Speg., *Rev. Argent. Bot.* 1: 218--220. 1926; A. W. Hill, *Ind. Kew. Suppl.* 8: 246. 1933; Fedde & Schast. in Just, *Bot. Jahresber.* 54 (2) 747. 1934; Fedde in Just, *Bot. Jahresber.* 59 (2): 417. 1939; Moldenke, *Known Geogr.*

Distrib. Verbenac., [ed. 1], 42, 44, 101, & 102 (1942) and [ed. 2], 102, 106, 107, 198, & 199. 1949; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14361. 1958; Moldenke, Résumé 122, 127, 128, 376, 472, & 474. 1959; Moldenke, Phytologia 10: 119—121. 1964; Hocking, Excerpt. Bot. A.9: 365. 1965; Moldenke, Phytologia 14: 289 (1967) and 16: 100. 1968; Moldenke, Fifth Summ. 1: 193, 201, & 202 (1971) and 2: 699, 916, & 920. 1971; Moldenke, Phytologia 23: 298 (1972), 24: 227 (1972), and 28: 254, 441, & 457. 1974; Troncoso, Darwiniana 18: 317, 318, 409, & 412. 1974; Moldenke, Phytologia 30: 154. 1975.

VERBENA SULPHUREA var. **LONGITUBA** Kuntze

Additional bibliography: Moldenke, Phytologia 24: 227. 1972.

Zöllner encountered this plant at 2600 meters altitude, flowering in October.

Additional citations: CHILE: Coquimbo: Zöllner 9944 (Z).

VERBENA SUPINA L.

Additional bibliography: T. Johnson, Gerard Herbal, ed. 3, 717—719, fig. 2. 1975; Moldenke, Phytologia 36: 451—453. 1977; Moldenke, Biol. Abstr. 65: 71. 1978.

Additional illustrations: T. Johnson, Gerard Herbal, ed. 3, 717, fig. 2. 1975.

Additional citations: HUNGARY: Koren s.n. [26 Julio 1877] (Au—276918).

VERBENA TAMPENSIS Nash

Additional bibliography: Moldenke, Phytologia 36: 453. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 384. 1977.

VERBENA xTEASII Moldenke

Additional bibliography: Moldenke, Phytologia 28: 394. 1974; Arora, Biol. Abstr. 66: 2513. 1978; Arora, Cytologia 43: 91—96, fig. 1—8. 1978.

Illustrations: Arora, Cytologia 43: 92 & 93, fig. 1C, 3, & 4. 1978.

Arora (1978) reports that "The hybrid, known as V. xteasii is intermediate between the parents (V. tenuisecta and V. hybrida) in morphology and shows complete male sterility but reasonable amount of female fertility, despite normal pairing at metaphase I. This sterility could not be altered by colchipoideity indicating a genetic nature of male sterility. The amphidiploid has predominant bivalent pairing which indicates that the genomes of the parent species are structurally differentiated."

VERBENA TENERA Spreng.

Additional bibliography: López-Palacios, Fl. Venez. Verb. 560 & 654. 1977; Moldenke, Phytologia 36: 453—454. 1977.

VERBENA TENUISECTA Briq.

Additional bibliography: Hepper in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 2: 434. 1963; Gubanov, Pavlov, & Yumas, Byull. Mosk. O-va Ispyt. Prir. Otd. Biol. 80: 82—91. 1975; Arora, Biol.

Abstr. 65: 3288. 1977; Arora, Cytologia Tokyo 42: 653—660. 1977; Gubanov, Pavlov, & Yurns, Biol. Abstr. 64: 710. 1977; Lelong, Sida 7: 140. 1977; López-Palacios, Fl. Venez. Verb. 560, 575—578, 653, & 654, fig. 135. 1977; Moldenke, Biol. Abstr. 64: 6574. 1977; Moldenke, Phytologia 36: 453—457. 1977; K. E. Rogers, Sida 7: 78. 1977; Arora, Biol. Abstr. 66: 2513. 1978; Arora, Cytologia 43: 91, 92, 94, & 95, fig. 1A & 2. 1978; Liogier, Moscosoa 1: 38. 1978; Moldenke, Biol. Abstr. 65: 71. 1978; Moldenke, Phytologia 41: 157, 177, & 366. 1979.

Additional illustrations: Arora, Cytologia 43: 92, fig. 1A & 2. 1978.

It seems most probable to me that the V. tenera Spreng., recorded for Nigeria by Hepper (1963), will turn out to be V. tenuisecta on re-examination, since the latter is a very widespread species in gardens and introduced, while the former is not. On the other hand, the "Verbena tenuisecta" illustrated by López-Palacios (1977) is certainly not that species and probably is V. monacensis Moldenke instead.

Gubanov and his associates (1975) record V. tenuisecta from Afghanistan. Bayliss, misidentifying it as V. bonariensis L., reports it "introduced but now widespread [in Cape Province, South Africa] on roadsides in sandy conditions, semi-prostrate but sometimes straggling in low vegetation", the corollas "bright-mauve". Lelong (1977) asserts that it is "Rare, in dry open woods" in Mobile County, Alabama, while Rogers (1977) reports it "Common along roads and in other open sandy sites. Introduced" in Forrest and Perry Counties, Mississippi. Walker (1976) lists it as cultivated on Okinawa island.

Arora (1977) selfed autotriploids of V. tenuisecta and then crossed these with the diploid type ($2n = 10$). The progeny yielded plants with chromosomes varying in count from 10 to 16. The different polysomics were analyzed morphologically and cytologically. Some triploids ($3x = 15$) were morphologically distinctive and their karyotypic analysis showed that they had a constitution of $3n = 15 + 1 - 1$, being tetrasomic and disomic for 1 chromosome each. The nature and extent of transmission of extra chromosomes in different polysomics are discussed by him. The presence of an extra satellite chromosome induces larger flower size and profuse flowering, whereas its absence in the hypotriploid adversely affects plant habit and flower size.

López-Palacios (1977) cites the following collections from Venezuela (but it is not certain which of these actually represent V. tenuisecta and which are V. tenera Spreng. or V. monacensis Moldenke: Aragua: Trujillo 3373. Federal District: Lasser 3480; Ll. Williams 10138. Mérida: Ruiz-Terán & López-Palacios 6201. Trujillo: Ruiz-Terán & López-Palacios 7599. Yaracuy: Trujillo 1636. He records the vernacular name, "Virginia". Liogier (1978) cites his no. 23071 as cultivated and escaped in the Dominican Republic.

Material of V. tenuisecta has been misidentified and distributed

in some herbaria as V. incisa Hook.

Additional citations: FLORIDA: Jackson Co.: B. M. Davis s.n. [Mar. 2, 1933] (Mi). SOUTH AFRICA: Cape Province: Bayliss BS.7344 (W--2778880). CULTIVATED: Dominican Republic: Ekman H.12615 (Id). MOUNTED CLIPPINGS: E. H. Walker, Fl. Okin. & South. Ryuk. 448. 1976 (W).

VERBENA TEUCRIIFOLIA Mart. & Gal.

Additional bibliography: Moldenke, Phytologia 36: 457. 1977.

Recent collectors have encountered this plant "in ridgetop meadows, dark-brown loamy clay soil, common", along "roadsides in valley between farms or corn and Agave with shrubs and many Lupinus marshallianus", and in pine forests with "suelo cafe arcilloso algo rocoso, muy frio". They describe it as a perennial herb to 25 cm. long, creeping, rooting at the nodes, forming colonies 0.5 m. in diameter. They have found it 2700--3155 m. altitude, flowering in January and July. Calzada reports it as "rare". The corollas were "purple" on Calzada 2127 and "pinkish-lavender" on Sanders 74119.

Additional citations: MEXICO: México: Wieder, Dunn, Bennett, & Torke 77 (N). Veracruz: Calzada 2127 (N). GUATEMALA: Totonicapan: Sanders 74119 (Mi).

VERBENA TOWNSENDII Svenson

Additional bibliography: Moldenke, Phytologia 36: 458 (1977) and 41: 169. 1979.

Van der Werff describes what he regards as this species as often prostrate, the leaf shape variable, the corollas light-blue, and encountered it on wet southwest slopes of a volcano at 3000 feet altitude, flowering and fruiting in August.

Additional citations: GALAPAGOS ISLANDS: Albemarle: Van der Werff 2286 (Z).

VERBENA TRACHEA R. A. Phil.

Additional bibliography: Moldenke, Phytologia 24: 243. 1972.

Zöllner found this species growing at 2600 m. altitude, flowering in November.

Additional citations: CHILE: Coquimbo: Zöllner 9974 (Z).

VERBENA TRIFIDA H.B.K.

Additional bibliography: Moldenke, Phytologia 36: 458 (1977) and 41: 179. 1979.

López-Palacios, in a personal communication to me, reports the vernacular name, "cinamono", in Colombia "según ejemplar 3685 (6) de Triana".

VERBENA URTICIFOLIA L.

Additional bibliography: Russell, Ann. Ent. Soc. Am. 56: 151. 1963; E. M. Bush, Castanea 41: 304. 1976; McGregor & al., Fl.

Great Plains 282, map 1126. 1977; Moldenke, *Phytologia* 36: 458--462. 1977; Musselman, Nickrent, & Levy, *Rhodora* 79: 264. 1977; Noblick, *Annot. List Herb. Spec. M. Mitch. Assoc.* 179. 1977; Powell, *Econ. Bot.* 31: 424. 1977; E. E. Rogers, *Sida* 7: 78. 1977; R. L. Thompson, *Castanea* 42: 88. 1977; Thompson & Heineke, *Trans. Ill. Acad. Sci.* 70: 126. 1977; Frankel, *Bull. Torrey Bot. Club* 105: 154. 1978; Mohlenbrock & Ladd, *Distrib. Ill. Vasc. Pl.* [247] & 276. 1978; Moldenke, *Biol. Abstr.* 65: 71. 1978; A. L. Moldenke, *Phytologia* 39: 184. 1978; Mound & Halsey, *Whitefly World* 216. 1978; Moldenke, *Phytologia* 41: 173. 1979.

Rogers (1977) refers to this species as "Infrequent or rare in disturbed low woods. Native" in Forrest and Perry Counties, Mississippi, while Thompson (1977) avers that it is "common" in Newton County, Arkansas. Bush (1976) records it from Barbour County, West Virginia, but all the material I have thus far seen from this county is var. *leiocarpa* Perry & Fernald. Brooks & Hauser refer to typical *V. urticifolia* as "common in moist sandy soil of shaded roadside ditches" in Butler County, Kansas. Frankel (1978) lists it from Westchester County, New York. Noblick (1977) cites *G. B. Gardner s.n.* [Aug. 30, 1909] from Nantucket County, Massachusetts. Mohlenbrock (1975) comments: "Leaves hirsute on the lower surface; nutlets about 2 mm. long, corrugated on [the] back" and says that in Illinois the species occurs in "Fields, thickets, disturbed woods, common in every co[unty]"; Thompson & Heineke (1977) reports it from Jackson County.

Russell (1963) and Mound & Halsey (1978) report *V. urticifolia* as host to a whitefly, *Trialeurodes packardi* (Morrill) Quaint. & Bak.

Additional citations: MASSACHUSETTS: Norfolk Co.: Blake 11077 (Ld). NEW JERSEY: Hunterdon Co.: Moldenke & Moldenke 31463 (Ac, Lc, Ld, N). NORTH CAROLINA: Catawba Co.: Bell s.n. [Sept. 8, 1958] (Ld). SOUTH CAROLINA: Union Co.: Bell 10497 (Au—179479). ILLINOIS: Pike Co.: Moldenke & Moldenke 31508 (Lc). KANSAS: Atchison Co.: Horr & McGregor E.531 (Ld). Butler Co.: Brooks & Hauser 13215 (N). ARKANSAS: Garland Co.: R. Runyon 1487 (Au). OKLAHOMA: Cherokee Co.: R. S. Mitchell 3742 (Ld). Cleveland Co.: J. Taylor 23015 (Ld). Comanche Co.: Taylor & Taylor 20906 (Ld). Murray Co.: Correll & Correll 39028 (Ld). TEXAS: Franklin Co.: Correll & Correll 36583 (Ld). Lamar Co.: D. S. Correll 37530 (Ld). Wheeler Co.: Martins 2278 (Ld).

VERBENA URTICIFOLIA var. LEIOCARPA PERRY & Fernald

Additional bibliography: Mohlenbrock, *Guide Vasc. Fl. Ill.* 367. 1975; Moldenke, *Phytologia* 36: 460—462. 1977; Mohlenbrock & Ladd, *Distrib. Ill. Vasc. Pl.* [247] & 276. 1978; A. L. Moldenke, *Phytologia* 39: 184. 1978.

Mohlenbrock (1975) says of this variety: "Leaves velutinous on the lower surface; nutlets about 1.5 mm long, not corrugated on

the back" and says that in Illinois it occurs in "Low ground; Cook and Kane" counties.

Additional citations: NEW JERSEY: Ocean Co.: Moldenke & Moldenke 31537 (Ac, Lc, Ld).

VERBENA VALERIANOIDES H.B.K.

Additional bibliography: Garcis Barriga, Fl. Med. Colomb. 2: 514. 1975; Moldenke, Phytologia 36: 462 (1977) and 41: 179. 1979.

In a personal communication to me, López-Palacios reports the vernacular name, "verbena negra", for this species in Colombia.

VERBENA VILLIFOLIA Hayek

Additional bibliography: Moldenke, Phytologia 36: 462. 1977.

Richardson refers to this plant as prostrate and found it scattered in rocky soil along roadsides, flowering in March, the corollas described as having been "blue" when fresh.

Additional citations: PERU: Junín: Richardson 2066 (N).

VERBENA VIOLATA Rojas

Additional bibliography: Moldenke, Phytologia 36: 462—463. 1977.

Rojas Acosta (1897) calls this plant "margarita morada".

VERBENA WRIGHTII A. Gray

Additional bibliography: McGregor & al., Fl. Great Plains 569. 1977; Moldenke, Phytologia 36: 463. 1977; Moldenke, Biol. Abstr. 65: 71. 1978; Moldenke, Phytologia 39: 161 (1977) and 41: 164 & 165. 1979.

Recent collectors refer to this plant as having erect stems and as "locally common to frequent on rocky slopes", "common in grassy openings in oak-juniper woodlands", "locally common around edge of intermittent ponds", and "locally common on grassland and sparse creosote-bush deserts". They have found it growing at 4400—6000 feet altitude, flowering in April, May, and July. The corollas are said to have been "pink" on Holmgren & Holmgren 7040 & 6080, "purple" on Webster 4466, and "mauve" on Dechamps 4012.

McGregor (1977) reports this species from Harding, Quay, and Union counties, New Mexico, and Cimarron and Harper counties, Oklahoma.

The Sample 420, distributed as V. wrightii, actually is V. ambrosifolia Rydb., while Edwards & Repass 4754 is V. bipinnatifida Nutt., Reskind, Henrickson, Wendt, Chiang, & Johnston 11858 is V. delticola Small, and N. H. Holmgren 6692 and Holmgren & Holmgren 6784 are V. wrightii var. intermedia Moldenke.

Additional citations: TEXAS: Brewster Co.: Webster 4466 (Ml). NEW MEXICO: Chaves Co.: Holmgren & Holmgren 6907 (N). Hidalgo Co.: Dechamps 4012 (Ld). ARIZONA: Graham Co.: Holmgren & Holmgren 7040 (N), 7080 (N).

VERBENA WRIGHTII var. **INTERMEDIA** Moldenke, *Phytologia* 39: 161. 1978.

Bibliography: Moldenke, *Phytologia* 39: 161. 1978.

The Holmgrens found this plant growing on creosotebush-mesquite-cholla deserts, at 2900--5000 feet altitude, flowering and fruiting in April, and "locally common to frequent" in pinyon-juniper-oak woodland on southwest-facing slopes. The corollas are said to have been "pink, withering blue".

Citations: ARIZONA: Pima Co.: N. H. Holmgren 6692 (N); Holmgren & Holmgren 6784 (N--type).

VERBENA XUTHA Lehm.

Additional bibliography: Moldenke, *Phytologia* 36: 463--464. 1977; Moldenke, *Biol. Abstr.* 63: 1852 (1977) and 65: 71. 1978; Moldenke, *Phytologia* 41: 171 & 173. 1979.

Recent collectors refer to this plant as "bushy, procumbent to erect" and have found it growing among Acacia farnesiana and "in arid scrub with a purple scrophulariaceous shrub", at 2100 feet altitude. The corollas are said to have been "blue" on Killip 42107, "bluish-lavender" on Lundell 15082, "lavender" on Correll 35266 and on Correll & Correll 38983, and "pinkish-white with white throat" on Traverse 2510.

Material of this species has been misidentified and distributed in some herbaria as V. hastata L. On the other hand, the Ecology Class Univ. Texas s.n. [Palm Grove, 3.1.30], previously cited by me as V. xutha, actually represents V. runyonii Moldenke as does also Fleetwood 9526 distributed as V. xutha.

Additional citations: OKLAHOMA: McCurtain Co.: J. Taylor 22823 (Ld). TEXAS: Brazoria Co.: Killip 42107 (Au--122886). Brazos Co.: Parks s.n. [6-7-47] (Au--122890). Chambers Co.: Traverse 2510 (Ld). Galveston Co.: Correll & Correll 38983 (Ld). Lavaca Co.: Tharp, Rogers, & York 49199 (Au--122829). Liberty Co.: C. L. Lundell 15082 (Ld--287008). McLennan Co.: L. D. Smith 736 (Au--122872). Polk Co.: Correll & Correll 38819 (Ld). San Jacinto Co.: D. S. Correll 35266 (N). MEXICO: Nuevo León: Bennett, Torke, Wieder, & Dunn 612 (Au).



Moldenke, Harold N. 1979. "Additional notes on the genus *Verbena*. XXX." *Phytologia* 41, 399–408. <https://doi.org/10.5962/bhl.part.20789>.

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