

ADDITIONAL NOTES ON THE GENUS *LIPPIA*. XIX

Harold N. Moldenke

LIPPIA ALBA (Mill.) N. E. Br.

Additional bibliography: Mold., *Phytologia* 56: 359--364. 1984.

Additional citations: CULTIVATED: Puerto Rico: *Sintenis* 786b (W--1322919); J. A. Stevenson 5229 (W--1475356). MOUNTED ILLUSTRATIONS: D. S. & H. B. Correll, Fl. Bahama Arch. 1235, fig. 531. 1982 (Ld); Alain in Leon & Alain, Fl. Cuba, imp. 2, 2: 288, fig. 124. 1974 (Ld); Troncoso in Burkart, Fl. Ilust. Entre Rios 274, fig. 129. 1979 (Ld); López-Palacios, Fl. Venez. Verb. [420], fig. 98. 1977 (Ld).

LIPPIA ALBA var. *CARTERAE* Mold.

Additional bibliography: Mold., *Phytologia* 48: 157--158. 1981.

Additional citations: MEXICO: Baja California: *Carter & Ferris* 3864 (Me--116644--isotype, W--2539499--isotype).

LIPPIA ALBA var. *GLOBIFLORA* (L'Hér.) Mold.

Additional bibliography: D. Dietr., *Syn. Pl.* 3: 596, 597, & 610. 1843; Walp., *Repert. Bot. Syst.* 4: 53--54 & 69. 1845; F. Muell., *Sec. Syst. Census Austral. Pl.* 1: 171. 1889; Millsp., *Field Columb. Mus. Publ. Bot.* 1: 317. 1896; F. M. Bailey, *Compreh. Cat. Queensl. Pl.* 382. 1913; Hubert, *Trav. Lab. Mat. Méd. Fac. Pharm.* 13: [Verb. Util. Mat. Méd.] [31] & 42--44. 1921; Angely, *S. Amer. Bot. Bibl.* 2: 678. 1980; Mold., *Phytologia* 48: 158. 1981; Reis & Lipp, *New Pl. Sources Drugs* 252. 1982; Mold., *Phytologia* 56: 363. 1984.

Recent collectors describe this plant as a small, sparsely branched, very fragrant shrub, 1--1.6 m. tall, or shrubby forb, and have found it growing in the clay and mud soil of riverine forests, in cutover woodland and scrub with open patches of grass in sandy soil,, in pastures, and on riverbanks, at 300 m. altitude, in flower in October and November. Steinbach, in Bolivia, refers to it as "scarce"; Casas & Molero, in Paraguay, encountered it "al borde de la pista en matorral ralo". The vernacular name, "salva", is reported.

The corollas are said to have been "rose" on *Ferreira* 158, "purple" on *Prance & al.* 26091 and *Schaller* 271, "purplish" on *Schaller* 247, and "mauve, yellow in the throat" on *Renvoize* 3283 & 3656.

Reis & Lipp (1982) report that in Peru a tea is made from the leaves and used to counteract the effects of purgatives, in Brazil (Rio Grande do Sul) it is cultivated for medicinal use but is found only rarely in an indigenous state there, and in Bolivia it is employed "tomadas en infusion por los nativos para purificar la sangre y como bebida estimulante."

Additional citations: BRAZIL: Mato Grosso: *Prance, Schaller, & Crawshaw* 26091 (N); *Schaller* 247 (N), 271 (N). BOLIVIA: Cochabamba: R. F. Steinbach 413 (Mi). PARAGUAY: Casas & Molero FC.3607 (N). ARGENTINA: Chaco: *Renvoize* 3656(W--2894525). Misiones: *Renvoize* 3283 (W--2894526). CULTIVATED: Brazil: *Ferreira* 158 (Ld).

LIPPIA ALBA f. *INTERMEDIA* Mold., Phytologia 50: 469. 1982.

Bibliography: Mold., Phytologia 50: 469 (1982), 52: 114--119 (1982), 54: 233, 236, & 240 (1983), and 56: 361 & 363. 1984.

Recent collectors refer to this plant as an herb, subshrub, or perennial aromatic shrub, 0.8--2 m. tall, a "shrub or climber to 1 m." (according to Balslev & Dea), or a "shrubby 1 m. vine with a 1--2 cm. basal stem diameter, at first ascending, then arching over to the ground, from a basal rootstock" (according to Traverse). Other collectors refer to the branches as scandent, 1 m. long, and the foliage as membranous and lemon-scented. They have found the plant growing in sandy-clay soil, in low ground, and shady spots as an understory shrub, at 15--1350 m. altitude, in flower in January, March to September, and November, and in fruit in January, March, and May to September. Daly and his associates found it, in Bolivia, "in a dry forest near the river in a large flat valley regenerating after the 1979 floods which killed all but a few of the large trees". Jimenez refers to it as abundant on riverbanks in the Dominican Republic, while Fryxell, in Tamaulipas, Mexico, describes it as "rare in thorn scrub and disturbed ground around lakesides with grazed areas". Hill reports it as escaped from cultivation in Amazonas, Brazil.

Teppner 81/453 was grown from the seeds of his 88/226 collected at Pasco, Peru and herein cited as representing the typical form of the species -- it is accompanied by a color slide. Coulter 113/364 is a mixture with the typical form.

The corollas are described as having been "rose" on Héninger & al. 497, Jiménez 2685, and Liogier & Liogier 27660, "rose with a yellow center" on Jacquemin 1506, "pale-lavender" on Plowman & Carvalho 12788, "lavender" on Fryxell 3717 and Leonard & Leonard 12442, "lavender with a yellow center" on Traverse 1169, "pale-lilac" on Cuatrecasas 27288, "lilac" on Daly & al. 2227 and Lita 303, "lilac with a yellow center" on Hill & al. 12899, "pink" on Leonard & Leonard 15470, "pink-purple" on Leonard & Leonard 15470, "purple" on Standley 39605, and "pale-purple with a yellow center" on Prance & al. 16311.

Vernacular names reported for the form are "calenturapanga", "cedrera", "erva cidreira", "erva-cidreira" [=medicinal calamantel], "hierba luisa", "hoja de calentura", "juanalama", and "orégano".

The plant contains, chiefly in its leaves, an essential oil which, in Brazil, is regarded as medicinal and taken as a tea with sugar; in Martinique it is employed as a pectoral. In Costa Rica, according to Standley, it is used to treat stomach-ache, while in Haiti the Leonards report its use as a medicinal tea by the natives and its cultivation "for hotel use". In Ecuador Balslev & Dea report its use in the treatment of fevers and grippe, "se hierve una rama y esta bebida se toma". Daly and his associates describe the bracts as "white".

Material of this form has been cited by me in previous papers (before the recognition of this form) as typical *Lippia alba* (Mill.) N. E. Br. and has been so identified in many herbaria. It has also been misidentified in herbaria as *Lippia geminata* H.B.K., *Lantana involucrata* L., *Lantana trifolia* L., *Lantana* sp., *Melissa* sp., and even as *Compositae*.

Additional & emended citations: TEXAS: Cameron Co.: J. M. Coulter

113/364 in part (W--81918). Hidalgo Co.: Traverse 1169 (W--2339895). MEXICO: Puebla: Reko 4236 (W--988723). San Luis Potosí: Purpus 5289 (W--463850). Tamaulipas: Fryxell 3717 (Ld); Edw. Palmer 102 (W--463038); Pringle 1960 (W--81846). GUATEMALA: Alta Verapaz: Pittier 290 (W--472952); Türckheim II.2241 (W--1322915). Sololá: Shannon 134 (W--1322922). NICARAGUA: Province undetermined: C. Wright s.n. (W--81848). COSTA RICA: Puntarenas: Tonduz 1606 [Pittier & Durand 2869] (Ld--photo of type, W--1322916--type). HISPANIOLA: Dominican Republic: J. J. Jiménez 2685 (W--2113176); Liogier & Liogier 27590 (N), 27660 (N). Haiti: Leonard & Leonard 14431 (W--1452855). HISPANIOLAN OFFSHORE ISLANDS: Tortue: Leonard & Leonard 12442 (W--1451200). WINDWARD ISLANDS: Martinique: Duss 4552 (N), 4765 (N, N). COLOMBIA: Amazonas: Cuatrecasas 27288 (W--2515055). VENEZUELA: Apure: Davidse & González 13779 (N). FRENCH GUIANA: Jacquemin 1506 (Cy). ECUADOR: Napo: Balslev & Dea 2813 (N). PERU: Loreto: Prance P.26634 (W--2950921). BRAZIL: Amazonas: Hill & al. 12899 (Ld); Prance, Maas, Woolcott, Monteiro, & Ramos 16311 (Ac, N, W--2699654). Rio de Janeiro: Lira 303 [Rocha 252; Herb. FEEMA 18164] (N). BOLIVIA: Santa Cruz: Daly, Hopkins, Forero, Beck, Hernandez, Phipps, & Wolf 2227 (Ld). CULTIVATED: Austria: Teppner 81/453 (Ld). Brazil: Héring, Filgueiras, Mendonça, & Pereira 7548 (W--2958141); Héring, Figueiras, Mendonça, Pereira, Salles, Silva, & Paula 497 (N); Plowman & Carvalho 12788 (F--1916408, N). Costa Rica: P. C. Standley 39605 (W--1228716). Haiti: Leonard & Leonard s.n. (W--1451028). Tortue: Leonard & Leonard 15470 (N, W--1453734).

LIPPIA ALBA f. *MACROPHYLLA* Mold., Phytologia 50: 469. 1982.

Bibliography: Mold., Phytologia 50: 469 (1982) and 52: 118 & 119. 1982.

Collectors have encountered this plant at altitudes of 400--450 m., in both flower and fruit in January. On the island of Tortue it is known as "melisse". In Haiti, according to the Leonards, it is cultivated and used for making tea; in a hotel there they found it combined with orange to make "bon pom tea".

Material of this form has been misidentified and distributed in herbaria as *Lantana* sp. and *Verbena* sp.

Citations: HISPANIOLA: Haiti: E. C. Leonard 9399 (W--1300533). HISPANIOLAN OFFSHORE ISLANDS: Tortue: Leonard & Leonard 11507 (W--1450442). PARAGUAY: Malme 902 (W--1124355). CULTIVATED: Haiti: Ekman H.8282 (Ld--photo of type, W--1413001--type); Leonard & Leonard 12324 (W--1451105).

LIPPIA ALBA f. *SCABRA* Mold., Phytologia 50: 469. 1982.

Bibliography: Mold., Phytologia 50: 469 (1982) and 56: 115. 1982.

Collectors have described this plant as having a strong mint odor, growing from long, rooting suckers, along streamsides. They have found it in flower in March and December and in fruit in December. Mexia described the corollas as "lilac" in color when fresh and reports the Mexican vernacular name, "alfombrillo".

Material of this form has been distributed in herbaria as *Lippia geminata* H.B.K., *Lippia geminata* var. *microphylla* Griseb., and *Lantana involucrata* L.

Citations: MEXICO: Colima: *Edw. Palmer 1303* (Ld--photo of type, W--208858--type). Jalisco: *Mexia 1929* (W--1317921); *E. W. Nelson 6520* (W--399111).

LIPPIA ALNIFOLIA Schau.

Additional & emended bibliography: Briq. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 1, 4 (3a): 152. 1895; Mold., *Phytologia* 48: 158. 1981.

LIPPIA AMERICANA L.

Additional & emended bibliography: Walp., *Repert. Bot. Syst.* 6: 688. 1847; Bocq., *Adansonia*, ser. 1, 3: [Rev. Verbenac.] 244. 1863; Savage, *Cat. Linn. Herb. Lond.* 109. 1945; Mold., *Phytologia* 48: 158--159 (1981), 54: 233 & 235 (1983), 55: 115 (1984), and 56: 363. 1984.

Recent collectors describe this plant as a much-branched shrub, 2.5--3 m. tall, the stems 4--5 cm. in diameter at the base, the bark light, and the branches elongated and drooping. They have encountered it at 80--900 m. altitude, in flower in May and both in flower and fruit in February. The corollas are described as having been "yellow" on *García-Barriga 21119* and "greenish-white" on *Escobar 1332*. The vernacular name, "velita", has been reported.

Material of this taxon has been misidentified and distributed in some herbaria as *Lippia geminata* H.B.K.

Additional citations: PANAMA: Los Santos: *Ostenfeld 30* (W--120889). COLOMBIA: Atlántico: *Dugand 6188* (W--2457462). Boyacá: *García-Barriga 21119* (W--2957931). Magdalena: *Haught 6726* (W--2046309). ECUADOR: El Oro: *Escobar 1332* (Au). MOUNTED ILLUSTRATIONS: Poir. in Lam., *Tabl. Encycl. Meth. Bot.* 3: pl. 539. 1819 (Ld); Troncoso, *Darwiniana* 18: 333, fig. 9. 1974 (Ld).

LIPPIA AMERICANA f. *HYPTOIDES* (Benth.) Mold.

Additional bibliography: Walp., *Repert. Bot. Syst.* 6: 688. 1847; Mold., *Phytologia* 48: 159 (1981) and 54: 235. 1983.

Llatas encountered this plant at 30 m. altitude, in flower in October, and describes the corollas as "yellowish-green".

Additional citations: PERU: Lambayeque: *Llatas Q. 842* (Ld). MOUNTED CLIPPINGS: Benth., *Pl. Hartw.* 122. 1842 (W).

LIPPIA AMERICANA f. *PILOSA* Mold.

Additional bibliography: Mold., *Phytologia* 48: 159. 1981.

Recent collectors describe this plant as a shrub, 1.5--2 m. tall, the stems tetragonal, the leaves aromatic, and the bracts green. The corollas are described as having been "white" on all 4 of the collections cited below. The plant has been found growing in deciduous and much disturbed dry forests, at altitudes of 50--100 m., in both flower and fruit in October and November.

The vernacular name, "canallita de venado" has been reported for this plant.

Additional citations: PANAMA: Herrera: *P. H. Allen 1094* (W--1794964); *Hamel 5292* (E--2889960). VENEZUELA: Zulia: *Bunting 8256*

(Ld); *Bunting*, *Galué*, *Nucette*, & *Huber* 11854 (Ld); *Nucette* 83 (Ld).
MOUNTED ILLUSTRATIONS: López-Palacios, Fl. Venez. Verb. [426], fig. 99. 1977 (Ld).

LIPPIA ANTAICA Loes. & Mold.

Additional bibliography: Mold., *Phytologia* 48: 159. 1981.

Additional citations: PERU: Cuzco: *Weberbauer* 5918 (W--1495381--isotype).

LIPPIA ARECHAVALETAE Mold.

Additional bibliography: Angely, S. Amer. Bot. Bibl. 2: 670. 1980; Mold., *Phytologia* 48: 160 (1981) and 50: 250. 1982.

Recent collectors have found this plant growing in dry rough grassland and matorral, in flower in February and November. The corollas are described as having been "yellow" on both collections cited below.

The Paraguay record for this species, based on *Fiebrig* 6493, given by me in a previous installment of these notes is erroneous. The *Fiebrig* collection actually is *L. tegulifera* Briq.

Additional citations: BRAZIL: Rio Grande do Sul: *Pedersen* 12575 (N). ARGENTINA: Corrientes: *Krapovickas* & *Cristóbal* 14848 (Ws).
MOUNTED ILLUSTRATIONS: Troncoso in Burkart, Fl. Ilustr. Entre Rios 5: 279, fig. 132. 1979 (Ld).

LIPPIA ARECHAVALETAE var. *MICROPHYLLA* Mold.

Additional bibliography: Angely, S. Amer. Bot. Bibl. 2: 670. 1980; Mold., *Phytologia* 48: 160. 1981.

LIPPIA ASPERRIMA Cham.

Additional bibliography: Angely, S. Amer. Bot. Bibl. 2: 666. 1980; Mold., *Phytologia* 48: 160--161, 268, & 269 (1981) and 50: 249 & 269. 1982.

Recent collectors describe this plant as a perennial herb, to 30 cm. tall, with erect wiry stems and the flowers borne in dense heads. They have found it growing in gravel and mud of cleared riverbanks in standing water, at 15--700 m. altitude, in flower in October and November. The corollas are said to have been "yellow" on *Renvoize* 2883 and *Venturi* 7359 and "orange-yellow" on *Renvoize* 3371.

Additional citations: ARGENTINA: Chaco: *Jørgensen* 2631 (W--1055233). Corrientes: *Krapovickas*, *Cristóbal*, & *Schinini* 26496 (Ws). Entre Ríos: *Renvoize* 2883 (N, W--2894510). Tucumán: *Renvoize* 3371 (N, W--2894516); *Venturi* 7359 (W--1440923). MOUNTED ILLUSTRATIONS: Troncoso in Burkart, Fl. Ilustr. Entre Rios 5: 276, fig. 130, 1--x. 1979 (Ld).

LIPPIA ASPERRIMA f. *ANGUSTIFOLIA* Mold.

Additional bibliography: Mold., *Phytologia* 48: 160--161 (1981) and 50: 249 & 269. 1982.

Recent collectors have encountered this plant in "black earth" soil in hilly medium-dry grasslands, in flower in March and October. The corollas are said to have been "orange-yellow" when fresh on the *Schinini* collection cited below.

Material of this taxon has been misidentified and distributed in some herbaria, and even cited by me in a previous installment of these notes, as typical *L. asperrima* Cham., as well as *L. tristis* Briq. and *L. turnerifolia* var. *angusta* Kuntze.

Additional & emended citations: PARAGUAY: *Schinini* 4307 (Ld). ARGENTINA: Corrientes: *Pedersen* 6108 (W--2410684), 9650 (N).

LIPPIA ASPERRIMA var. *LONGIPEDUNCULATA* Mold.

Additional bibliography: Mold., *Phytologia* 48: 161 & 269. 1981.

The corollas are described as having been "yellow" on the collection cited below.

Additional citations: PARAGUAY: *Casas & Molero* FC.3660 (E--2978883).

LIPPIA BAHIENSIS Mold.

Additional bibliography: Mold., *Phytologia* 48: 161. 1981.

Recent collectors describe this plant as a branched subshrub, 50 cm. tall, and have encountered it in sandy soil of campo rupestre, at 2900 feet altitude, in anthesis in January and May. The corollas are said to have been "rose" in color on the Hatschbach collection and "lilac" on the one of King & Bishop.

Additional citations: BRAZIL: Bahia: *Harley* 15027 (W--2791563--isotype); *Hatschbach* 46446 (Ld); *King & Bishop* 8605 (W--2922468).

LIPPIA BALANSAE Briq.

Additional bibliography: Mold., *Phytologia* 48: 161. 1981.

Recent collectors describe this plant as a fragrant shrub or subshrub, 1--2 m. tall, branched, and have found it growing in riverine forests and along railroad tracks on campo sujo, at 300--310 m. altitude, in flower in December and February. The corollas are described as having been "lilac" in color when fresh on *Casas & Molero* FC.5896, "lilac, with the interior of the tube yellow" on *Hatschbach* 43670, and "white, rose, & yellow" on *Casas & Schinini* 7434.

Additional citations: BRAZIL: Mato Grosso: *Hatschbach* 46141 (Ld). PARAGUAY: *Casas & Molero* FC.5733 (N), FC.5896 (N); *Casas & Schinini* 7434 (N); *Hatschbach* 43670 (W--2932032); *Schinini* 22932 (Ld).

MOUNTED ILLUSTRATIONS: *Troncoso*, *Darwiniana* 12: 269, pl. 2. 1961 (Ld).

LIPPIA BAUMII Gürke

Additional bibliography: Mold., *Phytologia* 48: 161. 1981.

The *Phillips* 3235, distributed as *Lippia baumii*, actually is *Lantana mearnsii* var. *congolensis* Mold.

LIPPIA BOLIVIANA Rusby

Additional bibliography: Mold., *Phytologia* 48: 162. 1981.

Additional citations: BOLIVIA: Cochabamba: *M. Bang* 979 (W--62140--isotype).

LIPPIA BOLIVIANA var. *ANGUSTA* Mold.

Additional bibliography: Mold., *Phytologia* 48: 162. 1981.

Additional citations: BOLIVIA: Cochabamba: *R. F. Steinbach* 191 (Ws--

isotype).

LIPPIA BRACTEOSA (Mart. & Gal.) Mold.

Additional synonymy: *Lippia nutan* Rob. & Greenm. ex Mold., *Phytologia* 54: 243 in syn. 1983.

Additional bibliography: Mold., *Phytologia* 48: 163 (1981) and 54: 243. 1983.

Recent collectors describe this plant as a shrub, 2 m. tall, and have found it growing in open brushy and dry mountainous woods, on creek banks, in tropical deciduous forests with *Hauya*, *Euphorbia*, *Diospyros*, *Cedrella*, *Trichilia*, and *Heliocarpus*, on dry flats with *Sabal* and tropical deciduous forest and *Byrsonima*-*Curatella* savannas, and on steep slopes with *Quercus*, *Juniperus*, *Bursera*, *Ipomoea*, and *Heliocarpus*, at 800--1600 m. altitude, in both flower and fruit in March, October, and December. The corollas are said to have been "yellow" when fresh on *Breedlove* 42119 and *Breedlove & McClintock* 23735.

It is worth noting that the leaves are all especially narrow on *Purpus* 146, while on *Miranda* 4937 the heads are somewhat larger than is usual in this species.

Material of *Lippia bracteosa* has been misidentified and distributed in some herbaria as *Lantana* sp. On the other hand, the *Webster Breckon* 16201 and *Webster, Miller, & Miller* 11443, distributed as *Lippia bracteosa*, actually are *L. graveolens* H.B.K., while *Rzedowski* 17649 is *L. inopinata* Mold., *Conzatti* 3202, *Magallanes* 310, and *Reko* 3579 are *L. mcvaughii* Mold., *Matuda* 28483 is *Lantana glandulosissima* Hayek, and *Langman* 2134 is *Lantana velutina* Mart. & Gal.

Additional citations: MEXICO: Chiapas: *Breedlove* 23049 (Me--230372), 42119 (Me--246443); *Breedlove & McClintock* 23735 (Me--221013); *Breedlove & Thorne* 30534 (Me--224575); *Goldman* 893 (W--470694); *Miranda* 4937 (Me--71048). Oaxaca: *Breedlove* 35923 (Me--293035); *Conzatti* 4248 (W--1082289); *Liebmann* 11268 (W--1315072); *Nelson* 1637 (W--250210); *Pringle* 6175 (W--1418115); *Purpus* 146 (W--1265526), 380 (W--1265664); *Rose & Rose* 11368 (W--454158); *Seler & Seler* 4842 (W--1206021). Puebla: *Purpus* 2570 (W--840563). MOUNTED DESCRIPTIONS: Mart. & Gal., *Bull. Acad. Roy. Brux.*, ser. 1, 11 (2): 326. 1844 (W).

LIPPIA BRADEI Mold.

Additional bibliography: Mold., *Phytologia* 48: 163. 1981.

The *Hatschbach & Guimarães* 42383, cited by me in a previous paper and distributed to herbaria as *L. bradei*, actually represents *L. insignis* Mold. instead.

LIPPIA BROMLEYANA Mold.

Additional bibliography: Mold., *Phytologia* 48: 163. 1981; *Silva & Mori*, *Cent. Pesq. Cacau Bol. Tecn.* 89: 9 & 64. 1981; Mold., *Phytologia* 50: 214--215, 247, & 249. 1982.

Collectors describe this plant as a shrub from "often less than 1" to 4 m. tall or a sprawling subshrub, the stems (when erect) spindly, leaves coriaceous to slightly fleshy, aromatic, bright-green and undulate above, mostly flat and generally rather pale-green

beneath, the bracts spreading, pale-green with a pinkish tinge, and the flower-buds pink. They have found the plant growing in areas of campo rupestre and caatinga, on dunes, and among rocks in sandy areas by rivers, at 900 m. altitude, in flower in February and May. The corollas are described as having been "rose" on *Carvalho & Plowman* 1543, "violet" on *Mori, Boom, & Carvalho* 14044, and "with a pale-lilac almost white limb and darker pinkish-purple tube, the throat yellow" on *Harley* 22835.

Additional citations: BRAZIL: Bahia: *Carvalho & Plowman* 1543 (Ld); *Harley, Bromley, Carvalho, Nunes, Hage, & Santos* in *Harley* 22835 (W--2962835); *Mori, Boom, & Carvalho* 14044 (Ld, N).

LIPPIA BROMLEYANA var. *HATSCHBACHII* Mold., *Phytologia* 50: 214--215. 1982.

Bibliography: Mold., *Phytologia* 50: 214--215, 247, & 249. 1982.

Material of this variety has been misidentified and distributed in some herbaria as *Lantana radula* Sw.

Citations: BRAZIL: Bahia: *Hatschbach & Kasper* 41663 (Ld--type).

LIPPIA CALLICARPAEFOLIA H.B.K.

Additional & emended bibliography: D. Dietr., *Syn. Pl.* 3: 599. 1843; Walp., *Repert. Bot. Syst.* 6: 688. 1847; Bocq., *Adansonia*, ser. 1, 3 [Rev. Verbenac.]: 244. 1863; Briq. in Engl. & Prantl, *Nat. Pflanzenfam.*, ed. 1, 4 (3a): 152. 1895; Hubert, *Trav. Lab. Mat. Méd. Fac. Pharm. Paris* 13: [Verb. Util. Mat. Méd.] 2. 1921; Mold., *Phytologia* 48: 163--164 (1981), 50: 241 (1982), and 52: 117 & 118. 1982.

Recent collectors describe this species as a shrub, 0.5--2.5 m. tall, a suffrutescent herb, or even as a tree, 8 m. tall, with a resinous odor, the old stems to 2 inches in diameter, and the bracts "pale" or pink to rose-pink or purplish-violet. They have found it growing in oak or oak-pine forests, in volcanic rubble fields, on dry rolling hills, at the edge of woods, in acahual, on wet slopes, in open or low spiny deciduous woods, on dry slopes, and in low open matorral, at 500--2500 m. altitude, in both flower and fruit from November to January.

The corollas are described as having been "yellow" on *Folsom & al.* 7147, "orange" on *Hinton* 1456 and *Stuessy & Roberts* 3697, and "rose-pink" on *Miller & al.* 469 [this probably is a mis-observation of the floral bracts, not the corollas]. The vernacular names, "secaleche" and "tabaquillo", are recorded.

Stuessy & Roberts, in Mexico, refer to the species as "common" and *Maurice* uses the same term to describe it in Panama. The *Sarukhan* collection, cited below, is placed here tentatively -- it is only a fragment (which may actually be *L. myriocephala* Schlecht. & Cham.) and is a mixture with some other species.

Material of *L. callicarpaefolia* has been misidentified and distributed in some herbaria as *L. umbellata* Cav. On the other hand, the *Tonduz* 4429, distributed as being *L. callicarpaefolia*, actually is *L. costaricensis* Mold., while *Reko* 3579 is *L. mcvaughii* Mold., *Rovirosa* 636 is *L. myriocephala* Schlecht. & Cham., *Purpus* 421 is *L. myriocephala* var. *hypoleia* (Briq.) Mold., *Maurice* 693 is *L. oxyphyllaria* (Donn. Sm.) Standl., *Pringle* 1733 and *Purpus* 508 are *L.*

pringlei Briq., Pittier 1855 is *L. substrigosa* Turcz., Purpus 8206 is *L. torresii* Standl., Matuda 37524 and Paray 1349 are *L. umbellata* Cav., and Rosas R. 114 seems not to be verbenaceous.

Citations: MEXICO: Chiapas: Matuda & al. 30274 (W--2364349). Guerrero: Croat 45566 (Ld), 45570 (E--2889926); Hinton 11156 (Me--64802, W--1822344), 11302 (W--1822352), 11633 (W--1822360); Miller, Neill, & Neill 469 (Ld); Miranda 24 (Me--73568); Seler & Seler 4252 (W--1206014). México: Hinton & al. 27513 (Me--108891), 27853 (Me--108897), 30274 (Me--63876, Me--64703), 32091 (Me--64808, Me--109550), 37374 (Me--92098); Rzedowski 21829 (Me--94385, Mi); Stuessy & Roberts 3697 (Ws). Michoacán: Hinton 12945 (W--1805631). Morelos: Gándara s.n. [Cuernavaca] (Me--56592); Gold 25880 (Me--78679); Lyonnet 1163 (Me--241031, Me--241032), 2917 (Me--286245, Me--286246); Pringle 6201 (W--287805), 11084 (W--460468); Seler & Seler 376 (W--1322893). Puebla: Sarukhán, Soto, & Martínez 913 in part (Me--145950). HONDURAS: Copán: Blake 7405 (W--1014390). PANAMA: Chiriquí: Folsom, Dressler, & Dressler 7147 (Ld); Maurice 693 (W--1844123). MOUNTED ILLUSTRATIONS & CLIPPINGS: O'Gorman, Mex. Flow. Trees [71]. 1961 (Ld); Loes., Feddes Repert. Spec. Nov. 9: 365. 1911 (W); Pringle, Garden Forest 9: 102 & 105, fig. 11. 1896 (W).

LIPPIA CANDICANS Hayek

Additional bibliography: Mold., Phytologia 48: 164. 1981.

BRAZIL: Minas Gerais: Irwin, Santos, Souza, & Fonsêca 23294 (W--2863454).

LIPPIA CARDIOSTEGIA Benth.

Additional bibliography: Walp., Ann. Bot. Syst. 1: 543. 1849; F. C. Seymour, Phytol. Mem. 1: 244. 1980; Mold., Phytologia 48: 164 (1981), 50: 241, 242, & 469 (1982), 52: 116 & 117 (1982), 54: 231 (1983), and 56: 363. 1984.

Recent collectors describe this plant as an "herb", bush, or weak, narrow shrub, 1--3 m. tall, or even small tree, 4--6 m. tall, strong-scented, the leaves with a rough texture, aromatic when fresh, and the bracts green. They have found it growing in cutover pine-oak forests, scrub woods on limestone, mixed montane forests, disturbed dry forests, dry tropical forests, dry brushy and rocky slopes, in rocky matorral, clearings, rocky fields, and pastures with remnants of semi-evergreen forests, in hedges and "mesic shut-ins between limestone ridges", along irrigation canals, on steep rocky slopes with *Quercus* and *Cnidoscolus*, on grassy ridges with *Pinus* and *Quercus*, on brushy banks, on dry slopes with *Ficus*, *Hauya*, *Heliocarpus*, *Ipomoea*, *Quercus*, and *Juniperus*, slopes with scrubby growth of *Solanum*, *Ficus*, *Randia*, *Byrsonima*, and *Verbesina*, and slopes with *Quercus*, *Cnidoscolus*, *Guazuma*, *Diospyros*, *Luehea*, and *Plumeria*, at altitudes of 8--1700 m., in both flower and fruit from June to February. Molina refers to it as "common" in Guatemala and Honduras; Stevens & Montiel found it "common" in Nicaragua.

The corollas are described as having been "white on Breedlove 20304 & 40082, Molina 22477, Moreno 1232, 1553, 1731, 2076, 2107, 2311, 2380, 2436, 2726, 3061, & 3085, Moreno & Guzmán 629, and Webster & Lynch 17517, "white & yellow" on Breedlove 39024, "white or

cream" on Molina R. & Molina 26819, "whitish" on Guzmán & al. 577, "greenish-yellow" on Pittier 1941, "yellow-green" on Williams & al. 41123, "greenish" on Standley 41349, "pale-green" on Guzmán & al. 245, "pale greenish-yellow" on Standley 23262, "yellow" on Breedlove 40633 and Grijalva 692, "white with a yellow eye" on Stevens & Montiel 1794, and "cafe y verde" on Sandino 341.

The vernacular names "oreganillo", "orégano montés", and "salvia" have been reported for the species.

It should be noted that the leaves on Heyde 236, Heyde & Lux 4385, J. D. Smith 1937, Tonduz 13631, and Türkheim 8731 are remarkably small, while those on Baker 660, Holway 617, Kovar 1090, Molina R. 3661, and Shimek & Smith 8 are especially large.

Material of *Lippia cardiostegia* has been misidentified and distributed in many herbaria as *Lippia asperifolia* Rich., *L. controversa* Mold., *L. myriocephala* Schlecht. & Cham., *L. umbellata* Cav., *Lantana involucrata* L., and *Lantana* sp.

On the other hand, the Standley 14183, distributed as *Lippia cardiostegia*, actually is *L. controversa* Mold., while Moreno 1900, 2204, 2430, & 2809 are *L. curtisiana* Mold. and Matuda 30159 is *Lantana achyranthifolia* Desf.

Additional citations: MEXICO: Campeche: Webster & Lynch 17517 (Me--255543). Chiapas: Breedlove 20304 (Me--228972, Mi), 23339 (Me--203082, Mi), 39024 (Me--247691), 39723 (Me--247275), 40082 (Me--246434), 40633 (Me--283645); Breedlove & Thorne 21308 (Me--199260); Matuda 743 (Me--86182); Miranda 5565 (Me--71046), 5731 (Me--71053). State undetermined: Liebmann 11228 [Mt. Masaya] (W--1315051). GUATEMALA: Amatitlan: Holway 617 (W--862958); J. D. Smith 1937 (W--1322823); Türkheim 8731 (W--576780, W--1322943). Chiquimula: Molina R. & Molina 26819 (Mi). Escuintla: P. C. Standley 60217 (W--1807020). Huehuetenango: Williams, Molina R., & Williams 41123 (Mi). Jutiapa: Harmon & Dwyer 3329 (E--2889934). Santa Rosa: Heyde & Lux 4385 (W--354971, W--1322993). Province undetermined: Heyde 236 (W--246091). HONDURAS: Choluteca: Molina R. & Molina 24585 (W--2925220). Ocotepeque: Molina R. 22477 (Ws). Santa Bárbara: Molina R. 3661 (W--2024678). EL SALVADOR: Ahuachapán: Padilla 5 (W--1150987), 10 (W--1150992); P. C. Standley 19860 (W--1135732), 19958 (W--1135825), 20222 (W--1136074). La Libertad: Case, Dunn, Trott, Dziekanowski, Thurm, & Hess 159 (N); Stork & Horton 8646 (W--1809218). La Unión: P. C. Standley 20803 (W--1136630). San Martín: Calderón 1899 (W--1206489). San Salvador: Calderón 14 (W--1151034); P. C. Standley 19395 (W--1135314), 22677 (W--1138413), 23262 (W--1138956). Sonsonate: Pittier 1941 (W--578340); P. C. Standley 22181 (W--1137931). Province undetermined: Kovar 1090 (W--2297042); Schwabe & Kailing s.n. [17 Sept. 1978] (Me--253285), s.n. [19 Sept. 1978] (Me--253316). NICARAGUA: Estelí: Moreno 1272 (Ld), 1553 (Ld), 2076 (Ld), 2107 (Ld), 2380 (Ld), 3061 (Ld), 3085 (Ld); Williams & Molina R. 42384 (Mi). Granada: Araquistain 251 (Ld); Guzmán, Castro, & Montiel 577 (Ld); Lévy 241 (P); Moreno 2726 (Ld). León: C. F. Baker 660 (W--862758); Moreno 2311 (Ld), 2436 (Ld); C. L. Smith 108 (Me--86183 W--312559); Stevens & Montiel 17901 (Ld). Madriz: Stevens & Grijalva 16168 (Ld). Managua: Chaves 55 (W--1206325); Croat 43694 (Ld); Garnier 1069 (W--1639431); Grijalva 692 (Ld); Guzmán, Castro, & Montiel

245 (Ld), 264 (Ld), 429 (Ld); Maxon, Harvey, & Valentine 7446 (W--1181158); Moreno 1232 (Ld), 1731 (Ld), 1800 (Ld); Moreno & Guzmán 629 (Ld); Sandino 341 (Ld). Ometepe Island: Shimek & Smith 8 (W--2085016); C. L. Smith s.n. [1893] (Mi). Province undetermined: C. Wright s.n. (W--81850). COSTA RICA: Alajuela: Holway 372 (W--862582); A. Smith P.2346 (W--2955868). Cartago: Ørsted 11223 (W--1269907), 11241 (W--1269911), 11247 (W--1269913); Pittier 7519 [Herb. Nat. Costarric. 13215] (Ld, W--355588, W--1322994). Guanacaste: Tonduz 13631 (577796). San José: Cooper 602 (W--1322991); Ørsted s.n. [Anne e St. Thomas] (W--1959432); Pittier 13032 (W--358758); P. C. Standley 41349 (W--1252241); Tonduz 1460 (W--1322992), 8452 [7111] (W--1322995); Tonduz & Biolley 7218 (W--1322990).

LIPPIA CARDIOSTEGIA f. *SKUTCHII* Mold., Phytologia 50: 469. 1982.

Bibliography: Mold., Phytologia 50: 469 (1982) and 52: 116. 1982.

Citations: GUATEMALA: Quiche: Skutch 1747 (Ld--photo of type, W--1644263--type).

LIPPIA CARVIODORA Meikle

Additional bibliography: Mold., Phytologia 48: 164. 1981.

The *Herlocker* 59, distributed as *L. carviodora*, actually is *Lantana petitiana* A. Rich.

LIPPIA CARVIODORA var. *MINOR* Meikle

Additional bibliography: Mold., Phytologia 48: 164. 1981.

Recent collectors describe this plant as a sweet-smelling shrub, 0.5--1.5 m. tall, and report the vernacular names, "gad hamer" and "gad hamar".

Additional citations: SOMALIA: Kazmi, Elmi, Mahanoud, & Suliman 27 (Mu), 61 (Mu).

LIPPIA CHEVALIERII Mold.

Additional bibliography: Mold., Phytologia 48: 155 & 164. 1981.

Sweeney describes this plant as a tall herb, much branched from the base, and found it growing near streams, at 3000 feet altitude, in both flower and fruit in November. His collection was mistakenly distributed as a member of the *Labiatae*.

Additional citations: REPUBLIC OF GUINEA: Sweeney 9 (W--2127050).

LIPPIA CHIAPASENSIS Loes.

Additional bibliography: Mold., Phytologia 48: 164--165. (1981), 52: 115 & 116 (1882), and 54: 231. 1983.

Recent collectors describe this species as a weak shrub, 1--3 m. tall, or small tree, the leaves stiff and hairy, and the bracts green. They have encountered it on steep rocky and pine-oak slopes, in open pine-oak forests, thickets and mixed forests, on ledges and cliff faces with *Pinus* and *Quercus*, on the sunny sides of cliffs, on dry slopes with tropical deciduous forest, and on pine-oak-madrone openly forested slopes, at 1000--2400 m. altitude, in anthesis in May and from September to January, in fruit in January and September. Williams and his associates, in Guatemala, refers to it

as "common" and Carlson uses the same term for it in Chiapas.

The corollas are said to have been "yellow" on Breedlove 40676 & 41225, Carlson 2246, and Stevens & Montiel 17326, "yellowish" on Williams & al. 41202 & 43361, and "pale-yellow" on Breedlove 43919.

Material of *Lippia chiapasensis* has been misidentified and distributed in some herbaria as *L. controversa* Mold. and *L. umbellata* Cav.

Additional citations: MEXICO: Chiapas: Breedlove 33433 (Me--247606), 40676 (Me--257617), 41225 (Mi); Breedlove & Dressler 29502 (Me--246316); Breedlove & Smith 22702 (Me--227330); Breedlove & Thorne 21323 (Me--198683); M. C. Carlson 2246 (Me--74568); Laughlin 475 (Me--104556); Miranda 5012 (Me--69663); E. W. Nelson 3482 (W--252567); F. Ramirez s.n. [3 Dec. 1951] (Me--76438). Durango: Breedlove 43919 (Me--292073). Michoacán: Arsène 5293 (W--1000879). Nayarit: Croat 45193 (E--2914050). Sinaloa: H. S. Gentry 7222 (W--1945217). Veracruz: N. L. H. Krauss 286 (W--2189369). GUATEMALA: Amatitlan: Morales Ruano 851 (W--1405272). Baja Verapaz: Williams, Molina R., Williams, & Molina 43361 (Mi). Quiché: Williams, Molina R., & Williams 41202 (Mi). NICARAGUA: Madriz: Stevens & Montiel 17326 (Ld).

LIPPIA CHRYSANTHA Greenm.

Additional bibliography: Mold., Phytologia 48: 165 & 184. 1981.

Recent collectors describe this plant as an unarmed shrub, 3--6 feet tall, with erect or ascending branches, and dense axillary inflorescences. They have found it growing in stunted woody vegetation on limestone hillsides, at 3000 feet altitude, in flower in July. The corollas are said to have been "pale-yellow" on the collection of Smith & Corona cited below.

The Paray 3014 distributed as *Lippia chrysantha*, actually is *L. pringlei* Briq.

Additional citations: MEXICO: Morelos: Pringle 8679 (W--460035--isotype, W--1322897--isotype); Smith & Corona Mex.10 (Me--99364).

LIPPIA CIPOËNSIS Mold.

Additional bibliography: Angely, S. Amer. Bot. Bibl. 2: 673. 1980; Mold., Phytologia 48: 165. 1981.

The collection cited below was gathered with the plant in full flower in May and the corollas are said to have been "rose" when fresh.

Additional citations: BRAZIL: Minas Gerais: Gibbs, Abbott, & Andrade 5238 (N).

LIPPIA COARCTATA Troncoso, Darwiniana 19: 490--493. 1975.

Bibliography: Troncoso, Darwiniana 19: 490--493. 1975; Mold., Phytologia 54: 238. 1983.

The type collection of this taxon was originally distributed as *L. imbricata* Kuntze.

Citations: URUGUAY: Gallinal, Aragoné, Bergalli, Campal, & Rosengurtt PE.5171 (W--1858134--type).

LIPPIA CONTERMINA Briq.

Additional bibliography: Troncoso, *Hickenia* 1: 231. 1980; Mold., *Phytologia* 48: 165 (1981) and 51: 162. 1982.

Troncoso (1980) has examined the type of *Lantana ovata* Hayek and concludes that it is conspecific with *Lippia contermina*.

Lippia contermina is described by recent collectors 20 cm. tall, woody at the base, and they have encountered it in dry matorral, in flower in September. The corollas are described as having been "yellow" when fresh on the collection cited below.

Additional citations: PARAGUAY: Casas & Molero FC.3856 (N).

LIPPIA CONTERMINA var. **HIRSUTA** Mold., *Phytologia* 51: 162. 1982.

Bibliography: Mold., *Phytologia* 51: 162. 1982.

Citations: PARAGUAY: Casas & Molero FC.3660 (N--type).

LIPPIA CONTROVERSA Mold.

Additional bibliography: F. C. Seymour, *Phytol. Mem.* 1: 244. 1980; Mold., *Phytologia* 48: 165--166 (1981), 50: 242 & 243 (1982), and 52: 118. 1982.

Recent collectors describe this plant as a small shrub, 1--2.5 m. tall, and have found it growing in partial shade, on dry brushy hillsides, along roadsides, in mesophytic forests, on dry slopes with tropical deciduous forests, and in cafetal in seasonal evergreen forests along small streams, at 20--1100 m. altitude, in flower in April, July, November, and December, and in fruit in April, July, and November. Molina encountered it on "colinas pedrojasas sobre barro colorado". The vernacular name, "frijillo", is recorded for it.

The corollas are described as having been "white" on *Araquistain* 251, Molina R. 15275, and Vincelli 763, "yellow" on Breedlove & Thorne 30919, and Molina R. 549 & 1456, and "blue" on D'Arcy 11288.

Material of *Lippia controversa* has been misidentified and distributed in some herbaria as *Lippia cardiostegia* Benth., *L. lucens* Standl., *L. oxyphyllaria* (Donn. Sm.) Standl., *L. umbellata* Cav., and *Lantana hispida* H.B.K. On the other hand, the Breedlove 41225 and Williams, Molina R., & Williams 41202, distributed as *Lippia controversa*, actually are *L. chiapasensis* Loes., while Breedlove & Raven 8381 is *L. curtisiana* Mold.

Additional citations: MEXICO: Chiapas: Breedlove 20375 (Me--226995); Breedlove & Thorne 30919 (Me--226860); Matuda 17260 (Me--85841), GUATEMALA: Santa Rosa: Heyde & Lux 4387 (W--74220, W--1322894). Sololá: Molina R. 15275 (Ws). HONDURAS: Morazán: Molina R. 549 (W--2021538), 1134 (W--2922303), 1456 (W--2022325); P. C. Standley 14183 (W--2021055). NICARAGUA: Granada: Araquistain 251 (Ld). Managua: Vincelli 763 (Ld). Masaya: Maxon 7653 (W--1181365). COSTA RICA: Guanacaste: Murger & Ramirez B. 4082 (Ws). PANAMA: Coclé: D'Arcy 11288 (Ld).

LIPPIA CONTROVERSA var. **BREVIPEDUNCULATA** Mold.

Synonymy: *Lippia controversa* var. *pedunculata* Mold. ex F. C. Sey-

mour, Phytol. Mem. 1: 244. 1980.

Additional bibliography: F. C. Seymour, Phytol. Mem. 1: 244. 1980; Mold., Phytologia 48: 166 (1981) and 50: 242. 1982.

Recent collectors describe this plant as a shrub, 0.5--1.5 m. tall, abundant on grassy hills, at 1100 m. altitude, in anthesis in October. The corollas are said to have been "yellowish" on *Molina R. & Molina* 22835.

Material of this taxon has been misidentified and distributed in some herbaria as *L. lucens* Standl.

Additional citations: HONDURAS: Morazán: *Molina R. & Molina* 22835 (Ws). NICARAGUA: Granada: *Atwood A.* 202 (Ln--266876).

LIPPIA CORYMBOSA Cham.

Additional bibliography: Pio Corrêa, Dicc. Pl. Uteis Bras. 2: 208. 1931; Mold., Phytologia 48: 166. 1981.

Pio Corrêa (1931) records the vernacular name, "cha de pedestre" for this plant. Recent collectors describe it as an herb, 40 cm. tall, the flower-buds "rose" color, and have found it growing in rocky soil of campo rupestre. at 1380 m. altitude, in flower in January.

Additional citations: BRAZIL: Goiás: *Nogueira, Silva, Cardoso Silva, Bianchetti, & Mauri* 65 (N).

LIPPIA COSTARICENSIS Mold.

Additional bibliography: Mold., Phytologia 48: 166. 1981.

Recent collectors refer to this plant as a tree, 4--18 m. tall, the bracts scarious and white. They have found it growing in pastures on steep slopes, in thickets in ravines, cutover pastures, clearings, cloud forests, and cafetal margins in premontane rainforests and drier hilltops, at 1300--2333 m. altitude, in flower in July, August, and October, and in fruit in July and August. Wilbur and his associates refer to it as "common" in Costa Rica.

The corollas are said to have been "yellow" on *Knapp* 1594 and *Skutch* 3297, "dull-yellow" on *Stevens* 13659, and "pale-yellow" on *Wilbur, Almeda, & Daniel* 21956.

Additional citations: COSTA RICA: Alajuela: *Skutch* 3297 (W--1643385). Cartago: *Wilbur, Almeda, & Daniel* 21956 (Mi). Heredia: *Lent* 2633 (Me--219311). San José: *Skutch* 2292 (W--1642323--isotype); *W. D. Stevens* 13659 (Ld); *Tonduz* 1262 (W--1322948). PANAMA: Chiriquí: *Kirkbride* 143 (N); *Knapp* 1594 (Ld); *Stern & Chambers* 88 (W--2301307).

LIPPIA CURTISIANA Mold.

Additional bibliography: Mold., Phytologia 48: 166 (1981) and 52: 115. 1982.

Recent collectors describe this plant as a shrub, 1--2 m. tall, and have encountered it in dense woodlands of *Quercus* and *Pinus*, at 300--1700 m. altitude, in flower in January and September. The corollas are said to have been "white" on all the Moreno collections cited below and "yellow" on the Breedlove & Raven collection.

Material of *Lippia curtisiana* has been misidentified and distributed in some herbaria as *L. controversa* Mold. On the other hand,

the *Gold s.n.* [Oct. 22, 1950], distributed as *L. curtisiana*, actually is *L. umbellata* Cav.

Additional citations: MEXICO: Chiapas: Breedlove & Raven 8381 (Ld). Durango: Edw. Palmer 479 (W--304248--isotype, W--398813--isotype). NICARAGUA: Estelí: Moreno 1900 (Ld), 2204 (Ld), 2430 (Ld). Madriz: Moreno 2809 (Ld).

LIPPIA DOMINGENSIS Mold.

Synonymy: *Phyla domingensis* Molh. ex Mold., Phytologia 52: 128 in syn. 1982.

Additional bibliography: Mold., Phytologia 48: 267 (1981) and 52: 128. 1982.

Recent collectors refer to this plant as a common aromatic shrub, 1 m. tall, at 1000--1320 m. altitude, in both flower and fruit in March.

Material of *Lippia domingensis* has been misidentified and distributed in some herbaria as *Lantana exarata* Urb. & Ekm. and *Lantana reticulata* Pers.

Additional citations: HISPANIOLA: Dominican Republic: Howard & Howard 8110 (W--2110714--isotype); J. J. Jiménez 3264 (W--2225610), 4458 (W--2519425); Votava & Liogier 116 (N).

LIPPIA DUARTEI Mold.

Additional bibliography: Angely, S. Amer. Bot. Bibl. 2: 676. 1980; Mold., Phytologia 48: 167. 1981.

LIPPIA DUMETORUM Herzog

Additional bibliography: Mold., Phytologia 48: 167. 1981.

Gerold describes this plant as a shrub, 2 m. tall, and found it growing in disturbed forests, in both flower and fruit in March.

Additional citations: BOLIVIA: Santa Cruz: Gerold 380 (Ld); R. F. Steinbach 333 (Mi).

LIPPIA DURANGENSIS Mold.

Additional bibliography: Mold., Phytologia 48: 167 (1981) and 52: 115. 1982.

Recent collectors have encountered this plant at 1900--2100 m. altitude, in flower in October. Material has been misidentified and distributed in some herbaria as *L. myriocephala* Schlecht. & Cham. and *L. umbellata* Cav.

Additional citations: MEXICO: Chihuahua: Gentry & Arguelles 18064m (W--2301888). Durango: Díaz 854 (Au, Ld); Edw. Palmer 496 (W--571517); Pennell 18189 (Me--isotype). Zacatecas: H. S. Gentry 8516 (W--2022196).

LIPPIA ELEGANS Cham.

Additional bibliography: Mold., Phytologia 48: 167--168 (1981), 54: 236 (1983), and 55: 42--43. 1984.

Recent collectors describe this plant as a shrub or subshrub, 1--2.5 m. tall, and have found it growing in caatinga and in disturbed spots in mata ciliar, in flower in April. The corollas are said to have been "white" on Carvalho & al. 1858, Héninger & al. 6509, and

Kummrow & Stutts 1785.

Additional citations: BRAZIL: Bahia: *Carvalho, Lauenberger, & Silva 1858* (Ld). Distrito Federal: *Héringer, Filgueiras, Mendonça, & Pereira 6509* (N). Minas Gerais: *Menezes 810* (Ld). São Paulo: *Kummrow & Stutts 1785* (Ld).

LIPPIA ELEGANS var. *MACROPHYLLA* Mold., *Phytologia* 55: 42--43. 1984.

Bibliography: Mold., *Phytologia* 55: 42--43. 1984.

Citations: BRAZIL: Distrito Federal: *Pereira & Mendonça 408* (N--type).

LIPPIA ELLIPTICA Schau.

Additional bibliography: Brenan, *Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 168. 1981.

LIPPIA ELLIPTICA var. *SILVICOLA* Mold.

Additional bibliography: Brenan, *Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 168. 1981.

Additional citations: BRAZIL: Bahia: *Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 16436* (W--2791561--isotype).

LIPPIA EUPATORIUM Schau.

Additional bibliography: Brenan, *Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 168 (1981) and 50: 262. 1982.

Héringer and his associates found this plant in "cerrado sobre morro cascalhento" and report the corolla-color as "yellow".

Additional citations: BRAZIL: Distrito Federal: *Héringer, Figueiras, Mendonça, Pereira, Salles, & Silva 4940* (E--2978867).

LIPPIA EUPATORIUM var. *ANGUSTIFOLIA* Mold.

Additional bibliography: Brenan, *Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 168 (1981) and 50: 262. 1982.

LIPPIA FELIPPEI Mold.

Additional bibliography: Angely, *S. Amer. Bot. Bibl.* 2: 676. 1980; Mold., *Phytologia* 48: 168. 1981.

LIPPIA FERRUGINEA H.B.K.

Additional & emended bibliography: Bocq., *Adansonia*, ser. 1, 3: [Rev. Verbenac.] 244. 1863; Mold., *Phytologia* 48: 168. 1981.

Recent collectors describe this plant as an odorous subshrub and have found it in flower in September. The corollas are said to have been "white" on the Sagastegui A. & Cabanillas S. collection cited below. These collectors report the vernacular name, "tulluquero".

Additional citations: PERU: Piura: *Fosberg 27705* (W--2747151); *Sagastegui A. & Cabanillas S. 8601* (Ld).

LIPPIA FLAVIDA Urb.

Additional bibliography: Mold., *Phytologia* 48: 169. 1981.

Recent collectors refer to this plant as a shrub, 1 m. tall, and have encountered it in dry thickets, at 325--900 m. altitude, in both flower and fruit in January.

The Ekman H.16082, distributed as *Lippia flavida*, actually is *Lantana microcarpa* Urb.

Additional citations: HISPANIOLA: Haiti: Ekman H.1817 (W--1411943); Leonard 8901 (W--1300233).

LIPPIA FLORIDA Cham.

Additional bibliography: Mold., Phytologia 48: 169. 1981.

Williams & Assis refer to this plant as a shrub, with yellow corollas, and found it growing at 1300 m. altitude, in flower in June. Their collection was previously misidentified as *L. pseudothea* (A. St.-Hil.) Schau.

Additional citations: BRAZIL: Minas Gerais: Williams & Assis 7160 (B).

LIPPIA FORMOSA T. S. Brandeg.

Additional bibliography: Mold., Phytologia 48: 169. 1981.

Additional citations: MEXICO: Baja California: T. S. Brandegees s.n. [Todos Santos, Jan. 19, 1890] (W--47022--isotype), s.n. [Pescadero, Nov. 1902] (W--397995); Carter, Alexander, & Kellogg 2291 (W--2022908); R. V. Moran 6979 (Me--55026); Nelson & Goldman 7334 (W--565414); Wiggins 14536 (Me).

LIPPIA FRAGRANS Turcz.

Additional synonymy: *Lippia fragrans* Turcz. ex Botta, Darwiniana 22: 531 sphalm. 1980.

Additional bibliography: Botta, Darwiniana 22: 531. 1980; Mold., Phytologia 48: 169. 1981.

Botta (1980) raises the possibility that this species may belong in the genus *Acantholippia* Griseb.

LIPPIA GARDNERIANA Schau.

Additional bibliography: S. Moore, Trans. Linn. Soc. Lond., ser. 2, 4: 437. 1895; Angely, S. Amer. Bot. Bibl. 2: 666. 1980; Mold., Phytologia 48: 169. 1981.

LIPPIA GENTRYI Standl.

Additional bibliography: Mold., Phytologia 48: 170 (1981) and 50: 14. 1981.

Additional citations: MEXICO: Sonora: H. S. Gentry 3039 (W--1689753--isotype).

LIPPIA GLANDULOSA Schau.

Additional bibliography: Mold., Phytologia 48: 170 (1981), 50: 247 (1982), and 54: 236. 1983.

Recent collectors describe this plant as a shrub, 0.8--2 m. tall, with pendent branches, and have encountered it on campo ruderal and at the edges of brejo, in flower in October, and both in flower and fruit in June. The corollas as described as having been "whitish" on Hatschbach 44201 and "cream"-color on Héring 17797.

Additional citations: BRAZIL: Bahia: Hatschbach 44201 (Ld). Distrito Federal: Héring 15855 (N, N); Héring, Filgueiras, Mendonça, & Pereira 7426 (W--2941377). Goiás: Héring 17797 (N). Min-

as Gerais: Irwin, Maxwell, & Wasshausen 19579 (W--2630579).

LIPPIA GRACILIS Schau.

Additional bibliography: Hubert, Trav. Lab. Mat. Méd. Fac. Pharm. 13: [Verb. Util. Mat. Med.] 44. 1921; Mold., Phytologia 48: 170--171 (1981) and 54: 236. 1983.

Recent collectors describe this plant as a slender, spindly, brittle-stemmed shrub, 0.5--3 m. tall, the leaves "coriaceous", rugose, somewhat bicolored, agreeably resinous-fragrant, dull mid-green above, paler gray-green beneath, the bracts pale-green. They have found it growing on campos gerais (shrub- and herb-rich grassland with acaulous palms but few trees), at 500--1000 m. altitude, in flower in April, May, and December. The leaves are especially large on Harley 16390 & 16778.

The corollas are described as having been "white" on Carvalho & al. 977, Harley 21103, Hatschbach 47811, and Rosa & Santos 1885, but "yellow" on Héninger & al. 532 and "limb cream, throat yellow, tube reddish-purple below" on Harley 21818.

Material of *Lippia gracilis* has been misidentified and distributed in some herbaria as *Hyptis suaveolens* Poit.

Additional citations: BRAZIL: Bahia: Carvalho, Lewis, & Hage 977 (Ld); Harley, Bromley, Carvalho, Hage, & Brito in Harley 21103 (W--2965517), 21818 (W--2965514); Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 15158 (W--2791582), 16269 (W--2791578), 16390 (W--2791579), 16444 (W--2791590), 16778 (W--2791588); Mori & Benton 13178 (Ld, N). Distrito Federal: Héninger, Paula, Mendonça, & Salles 532 (E--2978868). Minas Gerais: Hatschbach 47811 (Ld). Pará: Collector undetermined s.n. (N); Rosa & Santos 1885 (N). Piauí: Netto 67 (W--1199619).

LIPPIA GRANDIFOLIA Hochst.

Additional synonymy: *Lippia grandiflora* A. Rich. ex Mold., Phytologia 50: 262 in syn. 1982. [not *L. grandiflora* Mart. & Schau., 1847, nor Mart., 1851]. *Lippia grandifolia* A. Rich. ex Mold., Phytologia 50: 262 in syn. 1982.

Additional bibliography: Mold., Phytologia 48: 171 (1981) and 50: 250 & 262. 1982.

Recent collectors describe this plant as 2.5 m. tall and have found it growing at the edges of gallery forests and on degraded *Combretum* savannas, in open bushland, and on high shrubby grassland, at 1700--2200 m. altitude, in both flower and fruit in May and November. Sometimes they refer to it as a shrub, 0.8--2 m. tall, the stems red, and the foliage somewhat aromatic. The corollas are said to have been "white" on Magogo 1592, "whitish" on Reekmans 8982, and "creamish with yellow inside" on Kahurananga & al. 2608. Magogo reports it "common" in Kenya.

Additional citations: BURUNDI: Reekmans 5249 in part (Me--222093), 8982 (W--2895635). TANGANYIKA: Kahurananga, Kibuwa, & Mungai 2608 (Mu). KENYA: Magogo 1502 (Mu).

LIPPIA GRANDIFOLIA var. *LONGIPEDUNCULATA* Mold.

Additional bibliography: Mold., Phytologia 48: 171. 1981.

Reekmans refers to this plant as 2.5 m. tall and encountered it at the edge of a gallery forest, at 1800 m. altitude; his collection is a mixture with the typical form of the species.

Additional citations: BURUNDI: Reekmans 5249 in part (Me--222093).

LIPPIA GRATA Schau.

Additional bibliography: Mold., Phytologia 48: 171. 1981.

Hatschbach describes this plant as a shrub, 2 m. tall, with "whitish" corollas, and encountered it in chapada, at 700 m. altitude, in anthesis in May.

Additional citations: Brazil: Bahia: Hatschbach 46377 (Ld).

LIPPIA GRAVEOLENS H.B.K.

Additional synonymy: *Lantana berlandieri* Schau., in herb.

Additional & emended bibliography: Bocq., Adansonia, ser. 1, 3: [Rév. Verbenac.] 244. 1863; A. Gray, Synop. Fl. N. Am., ed. 1, 2: 338 (1878) and ed. 2, 2: 138. 1886; Baill., Hist. Pl. 11: 94. 1891; Hubert, Trav. Lab. Mat. Méd. Fac. Pharm. 13: [Verb. Util. Mat. Méd.] [31] & 37--38, pl. 3, fig. 7--11. 1921; Puig, Trav. Sect. Scient. Techn. Inst. Franc. Pond. Hors 16: 77 & 132. 1979; J. T. & R. Kartesz, Syn. Checklist Vasc. Fl. 2: 467. 1980; F. C. Seymour, Phytol. Mem. 1: 244. 1980; Mold., Phytologia 48: 157 & 171--172 (1981), 49: 431 (1981), and 50: 13--14. 1981; L. O. Williams, Ceiba 24: 332. 1981; Mold., Phytologia 50: 239, 241, 243, 262, & 269 (1982) and 52: 114--117. 1982; Knobloch, Phytol. Mem. 6: 13, 14, 73, 82, 87, & 99. 1983; Mold., Phytologia 54: 230 (1983) and 56: 361 & 363. 1984; Martin & Hutchins, Spring Wildfls. N. Mex. 188 & 189. 1984.

Additional illustrations: Hubert, Trav. Lab. Mat. Med. Fac. Pharm. 13: [Verb. Util. Mat. Med.] [31], pl. 3, fig. 7--11. 1921; Martin & Hutchins, Spring Wildfls. N. Mex. 189. 1984.

Recent collectors describe this plant as a shrub, 1--2 m. tall, often browsed by goats, with aromatic leaves that are light-green above and gray-green beneath and fragrant flowers. They have found it growing in stony places, rock-jumbled canyons, and disturbed areas, on steep rocky granite slopes above beaches, limestone hills, and on heavily eroded hills of loose limey soil covered with *Acacia-Prosopis* grassland, on volcanic rock outcrops, rocky limestone slopes in high desert scrub, in low deciduous forests with *Bursera* and with *Croton* spp., *Colubrina heteroneura*, *Jatropha*, *Bursera*, and *Plumeria*, in scrub on gray metamorphic rock with *Brahea*, *Ipomoea*, and *Bursera*, and on steep slopes with *Quercus*, *Juniperus*, *Bursera*, *Ipomoea*, *Heliocarpus*, as well as among lower sierran vegetation, in mixed woods on wet rocky slopes, and in rocky soil of barrancas. They have encountered it in low, deciduous, spiny woods, in mezquital, in brushland, in matorral alto subinermes, in sandy-loam of valley floors with *Prosopis*, *Acacia*, and large *Platyopuntia*, as well as in low deciduous forests with *Acacia coulteri*, *Ceiba*, and much *Bursera*. It is said to be frequent in canyons, common in rocky valleys, and locally common in shallow gravelly loam on sandstone bluffs.

Collectors report the species scattered in steep-walled, brushy, limestone canyon woods with *Acacia berlandieri*, *A. greggii*, *Helietta*,

Gochnatia, *Vauquelinia*, *Zanthoxylum fagara*, *Colubrina greggii*, *Ptelea*, *Calliandra*, *Fraxinus greggii*, *Bernardia*, and *Agave*, common on limestone slopes with *Larrea*, *Acacia*, *Jatropha*, *Croton*, *Agave lecheguilla*, and *Grusonia*, common in semi-evergreen thorn scrub of *Acacia*, *Agave*, *Bursera*, and *Sabal*, infrequent in limestone canyons with Tamaulipan-like scrub growth of *Quercus*, *Rhus*, *Prunus*, *Cercocarpus*, and *Ceanothus*. and in association with *Karwinskia*, *Poinciana pulcherrima*, *Cosmos*, *Waltheria*, and *Mimosa*.

Butterwick & Strong refer to the species (in Texas) as an infrequent shrub at the margins of cleared areas in gravelly-sandy soil with *Cercidium texanum*, *Aloysia gratissima*, and *Acacia rigidula*. Millspaugh (1896) reports it cultivated at Izamal as a shrub to "30 feet" tall, citing his nos. 41 & 832. Williams (1981) refers to it as "Native from Texas and Mexico south to Nicaragua. The leaves are often used to flavor food or medicines. The leaves of this and perhaps other species are sometimes found in markets, most often as home remedies." Martin & Hutchins (1984) tell us that in New Mexico it occurs on dry rocky hills, in canyons and arroyos, and on mesas in the southern portion of the state, from 3000 to 5500 feet altitude.

Recent collectors have encountered *Lippia graveolens* at 65--1800 m. altitude, in anthesis from July to December, in fruit in November. Vernacular names reported include "orégano", "orégano de la tierra", "oregano del monte", "redbush lippia", "salvia", "tarbay", and "yerba buena cerril".

The corollas are said to have been "white" on Argüelles 899, D'Arcy 11766, Dwyer 14298, Gentry 14286, Henrickson & Lee 17441, Johnston 2766, Lott & al. 1523, McKee 11001, Medrano 1019, Messer 193, Smith & Kitchen 4838, and Webster & Brecken 16201, "whitish" on D'Arcy 11998, "cream" on Wendt & Riskind 1700, "yellowish-white" on Webster & al. 11443, and "pale-yellow" on Hernández M. 3952.

In Mexico the leaves of this plant are used to relieve coughs and as a condiment in cooking; the plant is also cultivated as an ornamental. The Tucker and Foster collections, cited below, represent material sold in public markets in jars labeled "oregano" distributed by Goya Foods of Brooklyn, New York, originally from Toluca, Mexico; Palmer 2771 was purchased in a public market at Culiacán. Crockett 283 is a mixture with *Aloysia gratissima* (Gill. & Hook.) Troncoso.

It should be noted that the leaves on Salazar s.n. and Tharp & York 51-252 are especially large and approach those seen regularly on f. *macrophylla* Mold., while those on Berlandier 832 and Gonzalez-Medrano 108 & 9041 are exceptionally small, approaching those seen regularly on f. *microphylla* Mold.

Material of *Lippia graveolens* has been misidentified and distributed in some herbaria as *Lippia alba* (Mill.) N. E. Br., *L. geminata* H.B.K., *L. nutans* Rob. & Greenm., *L. palmeri* S. Wats., *Lantana canescens* H.B.K., and *Lantana involucrata* L. On the other hand, the Bruff 1408, distributed as *Lippia graveolens*, actually is *L. alba* (Mill.) N. E. Br., while Breedlove 28468, Gaumer 832, Hernandez M. & Cedillo T. 701, Hinton 2655 & 13162, Levy 250, Rowell, Webster, & Barkley 17M490, Stanford, Retherford, & Northcraft 96, Tharp & York

51-252, and Vela G. s.n. are all *L. graveolens* f. *macrophylla* Mold., Aguirre & Reko 37, Berlandier 832, Brenes s.n. [vic. Liberia, 1910] Cochrane & Cochrane 8506, Frye & Frye 2353 in part, Gentry 6833, Heard & Barkley 14547, Fernandez & Barkley 14496a, Smith, Peterson, & Tejeda 3977, and Stanford, Lauber, & Taylor 2226 are *L. graveolens* f. *microphylla* Mold., Bourgeau 1471 & 2983 are *L. myriocephala* var. *hypoleia* (Briq.) Mold., Barber 28 is *Lantana camara* f. *parvifolia* Mold., Medrano & al. 10069 and Seler & Seler 3916 are *Lantana microcephala* A. Rich., Sánchez Mejorada 2789 is *Lantana velutina* Mart. & Gal., Medrano 8355 is *Lantana velutina* f. *flava* Mold., and Argüelles 106 is *Lantana velutina* f. *violacea* Mold.

Additional citations: TEXAS: Brewster Co.: Hanson 614 (W--982945), 709 (W--983022); Warnock 831 (W--1725947). El Paso Co.: C. Wright 459 (W--81916). Hidalgo Co.: Correll & Johnston 18041 (Mi); Lundell & Lundell 9906 (W--1887607); R. Runyon 1721 (W--1699948). Houston Co.: Tracy 9158 (W--513854). Maverick Co.: Pringle 9034 (W--382080). Presidio Co.: Havard s.n. [Chinati Mts.] (W--155947). Starr Co.: Butterwick & Strong 1187 (Au), 1343 (Au); D. S. Correll 14895 (W--2178857); Crockett 283 in part (It); M. C. Johnston 2766 (Me--58974); R. Runyon 154 (W--1469666); Tharp 5905 (W--1468811). Val Verde Co.: G. L. Fisher 280 (W--1119182); Havard s.n. [mouth of Pecos R.] (W--155948); Rose & Fitch 17978 (W--761026). Zapata Co.: Tharp 3697 (W--1289914). NEW MEXICO: Dona Ana Co.: Parry, Bigelow, Wright, & Schott 819 (W--81917); C. Wright 1507 (W--81915). MEXICO: Chiapas: Breedlove 27656 (Me--225329); Langman 3796 (W--1976804); Miranda 5062 (Me--71814). Chihuahua: LeSueur s.n. [Mesqui, 8/6/26] (W--2086676). Coahuila: Capó s.n. [24-XI-78] (Me--267693); Henrickson 11840b (Au); Henrickson & Lee 17441 (Au); Hinton 16571 (W--1891480); I. M. Johnston 7038 (W--1822957); Lehto, Pinkava, Parfitt, & Reeves L. 21705 (Me--269678); M. Martínez s.n. [1925] (W--1268939); E. W. Nelson 6201 (W--347427); Edw. Palmer 736 (W--570256), 1024 (W--82073), 1025 (W--1322924), 1026 (W--82070); Pringle 215 (W--1322917); Wendt & Riskind 1700 (Au, Me--294106). Durango: Gentry & Argüelles 18147 (W--2301914); E. W. Nelson 4694 (W--332749); Edw. Palmer 539 (W--336467); Ward 5768 (Mi). Guerrero: Breedlove 35990 (Me--300722); Gómez & Vázquez 5 (Me--296070); Koch & Fryxell 8250 (Ae); Edw. Palmer 167 (W--259583); Paray 2148 (Mi); Pringle 9167 (W--382145); Webster & Breckon 16201 (Me--241587). Hidalgo: Gilly & Camp 20 (Me--64803); Hernández M. 3640 (Me--276485), 3952 (Me--290145); Medrano, Ortiz, Solis, & Hiriart 9604 (Me--292558); Salazar s.n. [Tecoantla, July 24, 1913] (W--1013231). Jalisco: Lott, Butterwick, & Bullock 1523 (Ld); Magallanes 479 (Me--249672); Rose 3031a (W--866780). México: Matuda & al. 31723 (Me--64807, Me--109578), 31934 (Me--64806, Me--109594). Michoacán: Soto Nuñez 301 (Au); Soto Nuñez & Roman de Soto 965 (Me--283419). Morelos: Paray 3015 (Me--99876); Pringle 11083 (W--460467). Nuevo León: D'Arcy 11766 (E--2904986); Pringle 1934 (W--82069); Seler & Seler 1092 (W--1205451); Villarreal & Valdes Reyna VO.519 (Me--262716). Oaxaca: Breedlove 35907 (Me--293034); Cisneros 2571 (Ws); D'Arcy 11998 (E--2889917); Dziekanowski, Dunn, & Pennell 3098 (Me--263556); McKee 11001 (Me--253370); Messer 193 (Me--149340); E. W. Nelson 1210 (W--565891); Pringle 6258 (Au, W--254860); Smith & Kitchen 4838 (Me--142172); Sousa, German, & Rico

8074 (Me--209735); Wallace, Dunn, & LeDoux 463 (Me--216596). Puebla: Dwyer 14298 (N); Hernández M. & Cedillo T. 701 (Me--140883); Huitrón 14 (Me--210902); Miranda 1986 (Me--73557), 2949 (Me--66233); E. W. Nelson 2026 (W--566190); Sanchez G. s.n. [22.VIII.1965] (Me--97181); Webster, Miller, & Miller 11443 (Me--114031). Querétaro: Argüelles 899 (Me--258045); Paray 2148 (Me--95432). Sinaloa: H. S. Gentry 14286 (W--2296660), 14426 (W--2296763); González Ortega 6602 (Me--98669, W--1317454). Tamaulipas: Crutchfield & Johnston 4986 (Me); Fryxell 3728 (Ld); González-Medrano 108 (Me--127716), 9041 (Me--296149); González-Medrano, Castellanos, & Zavaleta 9689 (Me--211968), 9729 (Me--211983); González-Medrano, Lopez, & Dirzo 4526 (Ld); Medrano 1019 (Me--127520, Me--172854); Edw. Palmer 520 (W--572749); Viereck 823 (W--1687418). Veracruz: Purpus 1915 (W--840079). Yucatán: G. F. Gaumer 832 (W--268610); Souza Novelo 264 (W--2087135). Zacatecas: Rose 2412 (W--301322); Taylor & Taylor 6086 (W--2914986). State undetermined: Berlandier 2252 [Macbride photos 33929] (Ld--photo, W--2216238). BELIZE: Record s.n. [Vaca Falls Distr. 1926] (W--1266413). NICARAGUA: Province undetermined: Chaves 297 (W--1406224). CULTIVATED: Costa Rica: P. C. Standley 37383 (W--1227924). Delaware: Tucker s.n. [October 13, 1980] (Ba--386802). El Salvador: Calderón 1177 (W--1152149). Mexico: Edw. Palmer 2771 (W--867329); Soto Nuñez 965 (Me--280108). New Jersey: Tucker 1 (Ba). Wisconsin: G. F. Foster s.n. [Sept. 11, 1983] (Ba--389677). MOUNTED CLIPPINGS: Mart. & Gal., Bull. Acad. Roy. Brux. 11 (2): 327. 1844 (W).

LIPPIA GRAVEOLENS f. *LOESENERIANA* Mold., Phytologia 52: 130--131. 1982.

Bibliography: Mold., Phytologia 52: 115 & 130--131. 1982.

Collectors have encountered this plant at 5000 feet altitude, in both flower and fruit in August. Material has been misidentified and distributed in some herbaria as *L. berlandieri* Schau.

Citations: MEXICO: Chiapas: Seler & Seler 3043 (E--photo of type, Ld--clastotype, W--1205596--type). San Luis Potosí: G. L. Fisher 3718 (W--1725427).

LIPPIA GRAVEOLENS f. *MACROPHYLLA* Mold., Phytologia 49: 431. 1981.

Bibliography: Mold., Phytologia 49: 431 (1981), 50: 239, 241, & 269 (1982), 52: 115 (1982), and 56: 361. 1984.

Collectors refer to this plant as a shrub, 0.8--3 m. tall. quite fragrant when bruised. They have found it growing abundantly in low spiny vegetation, on slopes with *Pinus*, *Quercus*, and *Acacia*, along riversides, in brushland along railroad cuts, and in granitic soil on cliffs of sandstone and soft granite, at 1000--1340 m. altitude, in flower in April, June to August, October, and November, and in fruit in November. The vernacular name, "orégano", is reported for it.

The corollas are said to have been "white" on Breedlove 28468 and Dwyer 14301 and "yellow" on Stanford & al. 96.

Material of this form has been distributed widely in herbaria as typical *L. graveolens* H.B.K., *L. berlandieri* Schau., *L. geminata* H.B.K., or *Lantana velutina* Mart. & Gal.

Citations: TEXAS: Hidalgo Co.:Tharp & York 51-252 (Au--121180,

B1--87441, Me--123524, St). MEXICO: Chiapas: Breedlove 28468 (Me--228568). Coahuila: Stanford, Retherford, & Northcraft 96 (Ca--713862, Du--291288, G, N, Se--70494, Tu--120241). México: Hinton 2655 (A, N, N, N). Michoacán: Hinton 13162 (G--isotype, Ld--type, Mi--isotype, N--isotype, N--isotype, S--isotype). Oaxaca: Rowell, Webster, & Barkley 17M490 (Au--170142, Me--175734, Mi, N). Puebla: Dwyer 14301 (Ld); Hernández M. & Cedillo T. 701 (Me--140882, Me--157971, Mi). Querétaro: Vela G. s.n. (Me--183508). Yucatán: Gaumer 832 (Br, Ca--446227, Du--207671, F--36635, G, Gg--160699, Mi, N, Ws). NICARAGUA: Granada: Levy 250 (Bb, Cb, Cp, Cp, Ld--photo, N--photo).

LIPPIA GRAVEOLENS f. *MICROPHYLLA* Mold., Phytologia 50: 13--14. 1981.

Bibliography: Mold., Phytologia 50: 13--14 (1981), 50: 243 & 269 (1982), 52: 116 & 117 (1982), and 54: 230. 1983.

Recent collectors refer to this plant as a very aromatic small shrub or subshrub, 0.8--2 m. tall, twiggy, straggly, and brittle, several-stemmed at the base, soon branching, with fragrant mint-like flowers. They have encountered it in dry country, with *Yucca*, and in arid scrub, in dry creek beds, on *Larrea* slopes, along small runoff channels on lower bajada slopes, in desert shrub grassland and dry rocky terrain, on rocky hills, in dense shrub grassland on limestone slopes, on extremely dry hillsides and limey-clay hilltops, on slopes with oaks, grasses, and *Dodonaea*, in primary thorn-scrub-cactus cover with evidence of former oak forest at higher elevations and with frequently calcareous rock outcrops, on low arid rocky hills with grazed desert to open crassicaulis matorral dominated by *Cephalocereus hoppenstedtii* and spiny mimosoid legumes with *Yucca perniculosa*, *Beaucarnea gracilis*, *Achtinocheita filicina*, *Juliana adstringens*, *Jatropha neopauciflora*, *Malpighia galeottiana*, and *Echinopteris lap-pula*, on very rocky spiny-shrub-covered limestone talus slopes with *Fouquieria*, *Agave lecheguilla*, *A. asperrima*, *Viguiera stenoloba*, *Acacia crassifolia*, *A. berlandieri*, *Mimosa* spp., etc., among *Agave lecheguilla*, *Euphorbia antisiphilitica*, *Acacia crassifolia*, and *Tiquilia greggii*, in litosol, and growing in association with *Juniperus*, *Croton*, *Acalypha*, *Karwinskia*, *Solanum*, *Savvia*, and *Bursera*, at 700--3100 m. altitude, in flower in April and from June to November, in fruit from June to November. Webster and his associates refer to it as fairly common in Puebla, Marín reports it very abundant in Coahuila, and Molina found it frequent in Honduras.

The plant is used medicinally in Mexico and the vernacular name, "oregano", is applied to it. The corollas are described as having been "white" on Frye & Frye 2353, Gentry & al. 20221, Molina R. 13202, Smith & al. 3977, and Webster & al. 17211, "cream-white" on Stanford & al. 2226, "white with a small yellow eye" on Cochrane & Cochrane 8506, and "white and gold" on Messer 142.

The Cochrane collection serves as voucher for cytological material taken from the plant. The Pittier collection, cited below, from Costa Rica, bears striking resemblance to the northern South American *Lippia schomburgkiana* Schau.

Material of *Lippia graveolens* f. *microphylla* has been identified and distributed in some herbaria as typical *L. graveolens* H.B.K., *L. berlandieri* Schau., *L. schomburgkiana* Schau., and *Cordia* sp. On the

other hand, the Ferris 5927 distributed as *Lippia berlandieri*, actually represents *L. alba* (Mill.) N. E. Br.

Citations: MEXICO: Baja California: Nelson & Goldman 7220 (W--565306). Chihuahua: Gentry & Engard 23085 (Me--158845, Mi). Coahuila: Aguirre & Reko 37 (N); M. E. Jones 361 (W--238003); Marín s.n. [17.I.1961] (Me--105722); Edw. Palmer 362 (W--336358); Rodriguez G. 662 (Au); Shreve 8420 (W--1790624), 8731 (W--1790694); Wynd & Mueller 87 (W--1639567). Durango: H. S. Gentry 6833 (Ak--22803, G, Mi, N); Hendrickson 2 (Me--246104); Iltis & Lasseigne 124 (Ld); Pittier 489 (W--570883). Hidalgo: González-Medrano & al. 8355 (Me--199051); Matuda 29564 (Me--64804, Me--108906); Salazar s.n. [July 24, 1913] (Ld, W--1013194, W--1013237). Jalisco: Rzedowski 17557 (Me--91943). Nuevo León: Fernandez & Barkley 14496 (Au, N, W--2134258); G. L. Fisher 332 (W--1207934); Frye & Frye 2353 in part (It, N, Pl--111102, Se--65594); Heard & Barkley 14547 (Au, N); Orcutt 1285 (W--1207818). Oaxaca: Clarke, Gittens, Haid, & Lathrop s.n. [26 August 1967] (Au); Conzatti 4960 (W--1696337); Messer 142 (Me--149341); E. W. Nelson 1977 (W--566175); Seler & Seler 1391 (W--1205469). Puebla: Cochrane & Cochrane 8506 (Au, Ld); Gentry, Barclay, & Argüelles 20221 (W--2451102); Liebmann 11255 (W--1315067); Miranda 1399 (Me--73560); Rose & Hay 5930 (W--395720); Rose, Painter, & Rose 10174 (W--453675); Smith, Peterson, & Tejeda 3977 (G--isotype, Me--118985--type, N--isotype, W--2397994--isotype); Webster, Lynch, & Breckon 17211 (Me--252999). Querétaro: Altamirano 1595 (W--570665). San Luis Potosí: Edw. Palmer 711½ (W--82071, W--82072). Sinaloa: Brandegee s.n. [Nov. 1, 1904] (W--873685). Tamaulipas: Gonzalez-Medrano, Castellanos, & Zavaleta 9792 (Me--205033); González-Medrano, Lopez, & Dirzo 4526 (Me--192142); González-Medrano, Guevara, & Zavaleta 8527 (Me--199056); González-Medrano, Zavaleta, & Guevara 8499 (Me--230308); Perkins & Hall 3322 (It); Stanford, Lauber, & Taylor 2226 (Du--366137, N, Se--149146); Viereck 322 (W--1687181), 505 (W--1687262), 787 (W--16871406). Zacatecas: Lloyd 97 (W--574063). State undetermined: Berlandier 832 (G, T, W--771827). HONDURAS: El Paraíso: Molina R. 13202 (Mi). COSTA RICA: Guanacaste: Brenes s.n. [vic. of Liberia, 1910] (N, Si). San José: Pittier 1681 (W--1322886).

LIPPIA GRISEA Mold.

Additional bibliography: Mold., Phytologia 48: 172 (1981) and 55: 43. 1984.

LIPPIA GRISEA var. LATIFOLIA Mold., Phytologia 55: 43. 1984.

Bibliography: Mold., Phytologia 55: 43. 1984.

Citations: BRAZIL: Distrito Federal: Héring, Filgueiras, Mendonça, & Pereira 7050 (N--type), 7051 (N).

LIPPIA GRISEBACHIANA Mold.

Additional bibliography: Mold., Phytologia 48: 172. 1981; Retamar, Delfini, Juliani, Guissani, & Piagentini, Essenz. Deriv. Agrum. 51: 91--97. 1983.

Retamar and his associates (1983) found the leaves of this plant to yield 1.7% essential oil on steam distillation with the following constituents: α - and β -pinenes, myrcene, limonene, camphene,

1,8-cineole, p-cymene, methyl heptenone, citronellal, piperitone, linalol, linalyl acetate, isobornyl acetate, caryophyllene, pulegone, dihydrocarbons, α -terpineol, isoborneol, geranyl acetate, geraniol, sesquiterpenoids, eugenol, and several unidentified components.

Additional citations: ARGENTINA: La Rioja: *Venturí 7808* (W--1591391). Tucumán: *Rodríguez 346* (W--1802577). MOUNTED ILLUSTRATIONS: Sanzin, Anal. Soc. Cienc. Argent. 88: 103, fig. 5. 1919 (Ld).

LIPPIA HARLEYI Mold.

Additional bibliography: Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 173. 1981.

Mori & Boom describe this plant as a shrub, 1.5 m. tall, with purple corollas, and found it growing in wet sandy depressions in pine woods, in flower in May.

Additional citations: BRAZIL: Bahia: *Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 16788* (W--2791562--isotype); *Mori & Boom 14143* (N).

LIPPIA HATSCHBACHII Mold.

Additional bibliography: Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 173. 1981.

LIPPIA HEDERAEFOLIA Mart. & Schau.

Additional & emended bibliography: C. Muell. in Walp., Ann. Bot. Syst, 5: 707. 1860; Bocq., Adansonia, ser. 1, 3: [Rév. Verbenac.] 244. 1863; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a); 152. 1895; Mold., Phytologia 48:173. 1981.

LIPPIA HIERACIFOLIA Cham.

Additional bibliography: Mold., Phytologia 48: 173. 1981.

Pedersen encountered this plant on roadcuts, in both flower and fruit in November, describing the corolla color as "yellow".

Additional citations: BRAZIL: Rio Grande do Sul: *Pedersen 12566* (N).

LIPPIA HIRSUTA L. f.

Additional & emended bibliography: Walp., Repert. Bot. Syst. 6: 689. 1847; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 152. 1895; Savage, Cat. Linn. Herb. Lond. 109. 1945; Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 173--174. 1981.

Additional citations: COLOMBIA: Antioquia: *Escallon 4* [Herb. Linnaeus G.801, S. 3] (It--photo of type). MOUNTED CLIPPINGS: Benth., Fl. Hartw. 245. 1846 (W).

LIPPIA HIRSUTA var. *MORITZII* (Turcz.) López-Palacios

Additional bibliography: C. Muell. in Walp., Ann. Bot. Syst. 5: 708. 1860; Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 173--174. 1981.

Recent collectors describe this plant as a shrub or tree, 5--8 m. tall, the trunk 5 cm. in diameter at breast height, and have found it growing at 2000--2300 m. altitude, in flower in February, June, and July. The corollas are said to have been "white" on *Aymard &*

Salcedo 20, Berti, Valverde, & Mendez 982-085, and López Figueiras & Rodríguez 9081 and "cream-white" on Bertin & Pena 11-7-78.

Material of this variety has been misidentified and distributed in some herbaria as *Labiatae*.

Additional citations: COLOMBIA: Norte de Santander: Schlim 97 (W--1628277). VENEZUELA: Mérida: Aymard & Salcedo 20 (Ld); Berti & Peña 11-7-78 (W--2977405); Berti, Valverde, & Mendez 982-085 (W--2977416); Breteler 3398 (W--2465643); Lopez Figueiras & Rodríguez 9081 (W--2932346). Trujillo: Breteler 4134 (W--2465989). MOUNTED CLIPPINGS & ILLUSTRATIONS: Briq., Ann. Conserv. Bot. Genev. 4: 237. 1900 (W); Lopez-Palacios, Fl. Venez. Verb. [429], fig. 100. 1977 (Ld); Lopez-Palacios, Revist. Fac. Farm. Univ. Andes 15: 58, [fig. 12]. 1975 (Ld).

LIPPIA HIRTA (Cham.) Meisn.

Additional synonymy: "*H. hirta* Meisn." ex D. Dietr., Syn. Pl. 3: 599 sphalm. 1843.

Additional bibliography: C. Muell. in Walp., Ann. Bot. Syst. 5: 707. 1860; Mold., Phytologia 48: 174 (1981) and 50: 261. 1982.

Additional citations: BRAZIL: Paraná: Hatschbach 31739 (Ba); Smith & Klein 14922 (W--2573698). Santa Catarina: Smith & Klein 10672 (W--2251702).

LIPPIA HISPIDA Good

Additional bibliography: Mold., Phytologia 48: 174 & 176. 1981.

Additional citations: ANGOLA: Gossweiler 2362 [Mo. Bot. Gard. type photo A.833] (Ba--photo of type. E--1983905--photo of type, Ld--photo of type, W--photo of type).

LIPPIA HOEHNEI Mold.

Additional bibliography: Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 174. 1981.

LIPPIA HOEHNEI var. *GOVAZENSIS* Mold.

Additional bibliography: Brenan, Ind. Kew. Suppl. 16: 166. 1981; Mold., Phytologia 48: 174. 1981.

LIPPIA INOPINATA Mold.

Synonymy: *Lippia opiniata* Knobloch, Phytol. Mem. 6: 63 sphalm. 1983.

Additional bibliography: Mold., Phytologia 48: 175. 1981; Knobloch, Phytol. Mem. 6: 63 & 91. 1983.

Recent collectors describe this plant as a rare slender shrub, 2.5 m. tall, with a dense inflorescence, the corollas "yellowish-white", and have encountered it at 125--1700 m. altitude in dry lowland forests. Material has been misidentified and distributed in some herbaria as *Lippia bracteosa* (Mart. & Gal.) Mold.

Additional citations: MEXICO: Jalisco: Gentry & Gentry 23542 (Me--181679); Rzedowski 17649 (Me--95614).

LIPPIA INSIGNIS Mold.

Additional bibliography: Mold., Phytologia 48: 175. 1981; Silva & Mori, Cent. Pesq. Cacau Bol. Técn. 89: 9 & 65. 1981.

Recent collectors describe this plant as a spindly shrub, 1--3.5 m. tall, the stems erect, brittle, little-branched, the leaves coriaceous, glossy and rugose mid-green above, gray beneath, or glossy dark-green above and gray-green beneath, the "bracteoles" rather bright-green, tinged purple at the tips, or pale-green and tinged reddish, and have found it in flower in May and June, growing in campo rupestre, open scrubby campos gerais vegetation, or open scrub on exposed sites to scattered low woodland and marsh, among sandstone rock with open sand in the flatter areas, at 980--1000 m. altitude.

The corollas are described as having been "lavender" on *Mori & Boom 14463*, "deep-pink with a yellow-orange throat surrounded by a whitish area" on *Harley 22754*, and "very showy, pink, white at center, with yellow throat" on *Harley 22958*.

Material of *Lippia insignis* has been misidentified and distributed in some herbaria as *L. bradei* Mold.

Additional & emended citations: BRAZIL: Bahia: *Harley, Bromley, Carvalho, Nunes, Hage, & Santos in Harley 22754* (W--2965511), 22958 (W--2965518); *Hatschbach & Guimarães 42383* (Ld); *Mori & Boom 14463* (Ld, N).

LIPPIA INTEGRIFOLIA (Griseb.) Hieron.

Additional bibliography: Mold., *Phytologia* 48: 175. 1981; *Retamar, Delfini, & Iturraspe, Essenz. Deriv. Agrum.* 51: 40--43. 1981; Mold., *Phytologia* 52: 19. 1982; *Reis & Lipp, New Pl. Sources Drugs* 252. 1982.

Reis & Lipp (1982) refer to this plant as medicinal, citing *Schreiter 1202*. *Retamar* and his associates (1981) asserts that this plant "differs markedly" from *L. turbinata* Griseb. in chemical composition, the essential oil containing -pinene, limonene, 1,8-cineol, camphor, and sesquiterpenoids in a 1% yield.

Additional citations: ARGENTINA: Salta: *Venturi 6972* (W--1591513), 8072 (W--1443351).

LIPPIA INTEGRIFOLIA var. BECKII Mold., *Phytologia* 52: 19. 1982.

Bibliography: Mold., *Phytologia* 52: 19. 1982.

Citations: BOLIVIA: Cochabamba: *S. G. Beck 7433* (Ld--type).

LIPPIA INTERMEDIA Cham.

Additional bibliography: *Brenan, Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 175. 1981.

The *Dusén* collection cited below was previously incorrectly identified and cited as *L. pumila* Cham.

Additional & emended citations: BRAZIL: Paraná: *Dusen 16736* (F--photo, Ld--photo, N--photo, S, Si--photo).

LIPPIA INTERMEDIA var. PARVIFOLIA Mold.

Additional bibliography: *Brenan, Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 175. 1981.

Additional citations: BRAZIL: Paraná: *Hatschbach 32582* (W--2849693--isotype).

LIPPIA JALISCANA Mold.

Additional bibliography: Mold., *Phytologia* 48: 176 (1981) and 50: 241. 1982.

Recent collectors have found this plant in flower in January and in both flower and fruit in November. Material has been misidentified and distributed in some herbaria as *L. myriocephala* Schlecht. & Cham. and *L. umbellata* Cav.

Additional citations: MEXICO: Jalisco: *Mexia* 1636 (W--1317889--isotype). Michoacán: *Bratz* M.125 (Me--94182). Sinaloa: *Ortega* 5101 (W--1165142).

LIPPIA JAVANICA (Burm. f.) Spreng.

Additional & emended bibliography: Walp., *Repert. Bot. Syst.* 4: 33, 43--44, 47, 50, & 134. 1845; Koord., *Excursionsfl.* 3: 133 & 439. 1912; White & Angus, *For. Fl. N. Rhodes.* 370. 1962; Bennet, *Fl. Howrah* 309--310. 1976; Mold., *Phytologia* 48: 174 & 176. 1981; Rooyen, Theron, & Grobbelaar, *Journ. S. Afr. Bot.* 47: 413. 1981; Blundell, *Wild Fls. Kenya* 109 & 158, pl. 8, fig. 54. 1982; Guha Bakshi, *Fl. Murshidabad Dist.* 17. 1984; Mold., *Phytologia* 56: 362. 1984.

Additional illustrations: Blundell, *Wild Fls. Kenya* pl. 8, fig. 54 (in color). 1982.

Recent collectors describe this plant as a shrub, 1.5 m. tall, and have found it in flower in February and April. The corollas are said to have been "yellowish-white" on *Giess* 15811; Blundell (1982) describes them as "white or cream", while White & Angus (1962) refer to them as simply "white", calling the plant "A weed, and a pioneer in secondary vegetation", citing *White* 1851 & 2784, *Mart.* 476, *Mich.* 183, and *Tr.* 1694 from Zambia.

Material of *Lippia javanica* has been misidentified and distributed in some herbaria as *Lantana* sp. On the other hand, the *Belsky* 271, distributed as *Lippia javanica*, actually is *L. plicata* J. G. Baker, while *Phillips* 2009 is *L. whytei* Mold. and *Liebenberg* 8722 is *Lantana rugosa* Thunb.

Additional citations: SOUTH AFRICA: Cape Province: *Bayliss* BS. 7086 (Ba--371861), BS.8742 (Ba--381504, Mu); *Collector undetermined* s.n. [Mo. Bot. Gard. photo A.865] (Ld--photo). Transvaal: *Bernardi* 8956 (W--2896856), 9074 (W--2896892); *Giess* 15811 (Mu); *Liebenberg* 8669 (W--3000422). LOCALITY OF COLLECTION UNDETERMINED: *Herb. Linnaeus* G.35, S.10a (It--photo). MOUNTED ILLUSTRATIONS: *Briq.* in *Engl. & Prantl, Nat. Pflanzenfam.*, ed. 1, 4 (3a): 150. 1895 (Ld).

LIPPIA LACUNOSA Mart. & Schau.

Additional bibliography: *Brenan, Ind. Kew. Suppl.* 16: 166. 1981; Mold., *Phytologia* 48: 177. 1981.

Recent collectors describe this plant as a shrub or subshrub, 1--2 m. tall, the leaves thick, rough, and aromatic-odoriferous, and the flowers fragrant. They have encountered it in openings in woods, along roadsides, in campo rupestre, cerrado, and wet brejo, at 1100 m. altitude, in flower in March, May to August, and October, and in fruit in March, August, and October. *Heringer* reports that the leaves contain an essential oil.

[to be continued]



Moldenke, Harold N. 1984. "Additional notes on the genus *Lippia*. XIX." *Phytologia* 56, 420–447.

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