

ADDITIONAL NOTES ON THE GENUS LIPPIA. VIII

Harold N. Moldenke

LIPPIA LACUNOSA Mart. & Schau.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 266. 1858; Moldenke, Phytologia 13: 359. 1966; Moldenke, Fifth Summ. 1: 156 (1971) and 2: 553, 557, & 892. 1971; Moldenke, Phytologia 27: 66. 1973; Moldenke, Biol. Abstr. 57: 3780. 1974; Moldenke, Phytologia 28: 193 & 439. 1974; Troncoso, Darwiniana 18: 339 & 410. 1974; Moldenke, Phytologia 36: 44. 1977.

Recent collectors describe this plant as an arborescent, few-branched, erect subshrub or shrub, 0.5--3 m. tall, the leaves very stiff, asperous, fragrant, the inflorescence terminal, rosy, the bracts green, and the flowers strong-scented "with the scent of pawpaw". Héringer says "ramos cheirosos". They have found it growing in dry open cerrado subject to annual burning, in "cerrado na marge de mata ciliar, solo brejoso", in gallery forests, cerrado, and the cerrado zone at the edges of streams, in dry red soil, and on rocky campos and wet slopes, at 450--1150 m. altitude, flowering from May to November, fruiting in August and September. Anderson found it in cerrado in an area of gallery forest along streams and brejo (sedge meadow), cerrado on the slopes above, the soil sandy, and the rocks sandstone. Lindeman & Haas encountered it in cerrado with many shrubs in red sandy loamy soil. Irwin and his associates report it "common but few in flower in meadows" and "occasional in cerrado and fields on limestone slopes". Maguire and his associates refer to it as "frequent". Hatschbach encountered it in "solo brejoso junta ao rio".

The corollas are described as having been "pink" on Irwin & al. 8968, "pink-purple" on Irwin & al. 18022, "rose" on Héringer 13829, 14656, & 14713b, "lilac" on Hatschbach 32403 & 37599, "lavender with orange throat" on Irwin & al. 5201, "purple with yellow eye" on Anderson 9747, "purplish" on Hunt & Ramos 6256, "violet with yellowish throat" on Lasseigne 4346, "violet, center pale yellow" on Lindeman & Haas 6063, "whitish, interior of tube yellow" on Hatschbach 27358, and "lilás-avermelhado" on Murça Pires & al. 9409.

Material of this species has been misidentified and distributed in some herbaria as L. rotundifolia Cham., L. rotundifolia Cham. & Schlecht., or Lantana sp. On the other hand, the Irwin, Maxwell, & Wasshausen 20509, distributed as L. lacunosa, actually is the type collection of L. petiolata Moldenke, a very closely related taxon.

Additional citations: BRAZIL: Distrito Federal: Héringer 8529/723 (W--2564107), 13829 (N), 14656 (N), 14713b (N); Hunt & Ramos 6256 (N), 6658 (N); Irwin, Grear, Souza, & Reis dos Santos 18022

(Ac, N); Irwin & Soderstrom 5201 (Ld, N); Irwin, Souza, & Reis dos Santos 8968 (N); Lasseigne 4346 (Ld, N); Lindman & Haas 6063 (Ut—320426); Macedo 3313 (N); Maguire, Murça Pires, Maguire, & Silva 57017 (Ld, N, N); Murça Pires, Silva, & Souza 9409 (Z).
 Mato Grosso: W. R. Anderson 9747 (N); Hatschbach 32403 (Ld), 37599 (Ld). Minas Gerais: Hatschbach 27358 (Ld, W—2744642); A. Lutz 1095 (Z); Martius s.n. [in campis editis deserti, Jul. 1818] (Mu—51, Z); J. E. Pohl s.n. [in Brasilia] (Mu—568).

LIPPIA LACUNOSA var. **ACUTIFOLIA** Moldenke, *Phytologia* 27: 66. 1973.

Synonymy: Lippia lacunosa var. ovatifolia Moldenke, *Phytologia* 28: 439, nom. nud. 1974.

Bibliography: Moldenke, *Phytologia* 27: 66 (1973) and 28: 439. 1974; Moldenke, *Biol. Abstr.* 57: 3780. 1974; Moldenke, *Phytologia* 36: 44. 1977.

Citations: BRAZIL: Minas Gerais: Hatschbach 27360 (Z—type).

LIPPIA LANATA Walp.

Additional bibliography: Buek, *Gen. Spec. Syn. Candoll.* 3: 266. 1858; Moldenke, *Phytologia* 12: 239—240. 1965; Moldenke, *Fifth Summ.* 1: 72 (1971) and 2: 892. 1971.

LIPPIA LANTANIFOLIA F. Muell.

Additional bibliography: Moldenke, *Phytologia* 13: 359. 1966; Moldenke, *Fifth Summ.* 1: 347 (1971) and 2: 892. 1971.

LIPPIA LASIOCALYCINA Cham.

Additional synonymy: Lantana lasiocarycina Goodland, *Phytologia* 20: 78, sphalm. 1970. Lippia lasyocalycina Cham. ex Moldenke, *Phytologia* 26: 374, in syn. 1973.

Additional bibliography: Buek, *Gen. Spec. Syn. Candoll.* 3: 266. 1858; R. C. Foster, *Contrib. Gray Herb.* 184: 170. 1958; Hocking, *Excerpt. Bot. A.7*: 455. 1964; Angely, *Fl. Anal. Paran.*, ed. 1, 576. 1965; Hocking, *Excerpt. Bot. A.10*: 271 (1966), *A.11*: 103 (1967), and *A.12*: 423. 1967; Moldenke, *Phytologia* 14: 409. 1967; Goodland, *Phytologia* 20: 78. 1970; Angely, *Fl. Anal. & Fitogeogr. S. Paulo*, ed. 1, 4: 835 & xi, maps 1385 & 1386. 1971; Moldenke, *Fifth Summ.* 1: 156, 183, & 186 (1971) and 2: 541 & 892. 1971; Harley, *Kew Bull.* 28: 121 & 122. 1973; Troncoso, *Darwiniana* 18: 339 & 410. 1974; Moldenke, *Phytologia* 31: 384 (1975) and 39: 79 & 80. 1978.

Recent collectors describe this plant as a simple and unbranched subshrub or shrub, or as an erect woody herb, 0.75—2 m. tall, with one or two thin erect stems, woody roots, and a "green and incomplete involucre", and have found it growing in pastures and in cerrado and burned-over cerrado, at 300—1000 m. altitude, flowering from August to October, fruiting in October. The Eitens encountered it in "dense cerrado scrub, the soil mostly made up of laterite pebbles" and in "cerrado with scattered burned living trees to 10 m. spaced 6—30 m. apart, the ground-cover mostly

a bunch-grass". They report it "frequent", but Goodland refers to it as only "occasional".

The corollas are said to have been "lilac" in color on Hatschbach 38995, "rose-violet" on Irwin & Soderstrom 7156, "dark-lilac, whitish inside the tube" on Hatschbach 27123, "mauve with white center" on Goodland 21, and "magenta, tube white" on Irwin & Soderstrom 6726. On the Eitens' no. 2230 the corollas are described as "outer part of top of limb purple, near throat white, inside tube yellow, outside tube cream" and on their no. 8335 "light-violet with throat darker violet or light-violet with golden-yellow throat bordered by a whitish band".

Troncoso (1974) lists this species as from Bolivia, Paraguay, and Brazil. The Angely (1971) publication cited above is sometimes cited by its erroneous title-page date of "1970". The Irwin & Soderstrom 7115, cited below, is a mixture with L. gardneriana Schau.

Material of L. lasiocalycina has been misidentified and distributed in some herbaria as L. gardneriana Schau., Stachytarpheta reticulata Mart. & Schau., and Hyptis sp.

Additional citations: BRAZIL: Goiás: Irwin & Soderstrom 7115 in part (N), 7156 (Ac); Prance & Silva 58522 (S). Mato Grosso: Eiten & Eiten 8335 (W—2757727); Hatschbach 32005 (Ld); Irwin & Soderstrom 6640 (N), 6726 (Ld, N); Nienstedt 222 (Ac). Minas Gerais: Hatschbach 38895 (Ld). Paraná: Hatschbach 27123 (Ld, N). São Paulo: Eiten & Eiten 2230 (Ba, N); Goodland 21 (N), 40 (N). PARAGUAY: T. Rojas s.n. [Hassler 10630] (Ca—950437). MOUNTED ILLUSTRATIONS: Mart., Fl. Bras. 9: pl. 39 (dext.). 1851 (N, Z).

LIPPIA LASIOCALYCINA var. SAINTHILAIREI Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.10: 271 (1966), A.11: 103 (1967), and A.12: 423. 1967; Moldenke, Phytologia 14: 409. 1967; Moldenke, Fifth Summ. 1: 156 (1971) and 2: 892. 1971; Moldenke, Phytologia 31: 384. 1975.

Recent collectors refer to this plant as an "herb-shrub with woody shoots to 1.5 m." tall, and have found it growing in deciduous forests on limestone soil, flowering in October and November. The corolla is said to have been "pale-lilac with yellow throat" on Ratter & al. 2643. Lützelburg reports the vernacular name, "camara", a name also applied to many species of Lantana.

Material of this variety has been misidentified and distributed in some herbaria as Lantana sp. It is very similar in appearance to Lippia phryxocalyx Briq.

Additional citations: BRAZIL: Bahia: Lützelburg 4085 (Mu). Minas Gerais: Ratter, Fonsêca, & Castro R. 2643 (N).

LIPPIA LASIOCALYX Herzog

Additional bibliography: Fedde & Schust. in Just, Bot. Jahresber. 44: 254. 1922; R. C. Foster, Contrib. Gray Herb. 184: 170.

1958; Moldenke, *Phytologia* 12: 252—253. 1965; Moldenke, *Fifth Summ.* 1: 183 (1971) and 2: 892. 1971.

LIPPIA LAXIBRACTEATA Herzog

Synonymy: Lippia hickenii Troncoso, *Darwiniana* 10: 69—72, fig. 1. 1952.

Additional bibliography: Fedde & Schust. in Just, *Bot. Jahresber.* 44: 254. 1922; Troncoso, *Darwiniana* 10: 69—72, fig. 1. 1952; Cabrera, *Bol. Soc. Argent. Bot.* 5: 96. 1953; R. C. Foster, *Contrib. Gray Herb.* 184: 170. 1958; G. Taylor, *Ind. Kew. Suppl.* 12: 82. 1959; Moldenke, *Résumé Suppl.* 7: 6. 1963; Moldenke, *Phytologia* 12: 148, 170, 202—203, & 253 (1965), 12: 496 (1966), and 13: 356. 1966; Troncoso, *Darwiniana* 14: 638. 1968; N. F. Good, *Biol. Abstr.* 50: 9661. 1969; Moldenke, *Fifth Summ.* 1: 156, 183, & 198 (1971) and 2: 556 & 892. 1971; Troncoso, *Darwiniana* 18: 337 & 410. 1974.

Illustrations: Troncoso, *Darwiniana* 10: 70, fig. 1. 1952.

Troncoso (1968) cites the following: BOLIVIA: Tarija: Herzog 1108 [Macbride photos 20330] (Le—type). ARGENTINA: Catamarca: Castillón 950 (Ml—32690). La Rioja: Parodi 14864 (Si). Santiago del Estero: Castellanos s.n. [3-XII-1943] (*Inst. Bot. Agric. I.N.T.A.* 47556). Tucumán: Dinelli s.n. [1-XII-1906] (Ml—32367).

Recent collectors describe this plant as a shrub, 0.5—2.5 m. tall, and have found it flowering in May, June, and November, fruiting in November. The corollas are said to have been "white" on Krapovickas & al. 19115 and Murça Pires 58039 and "yellowish-white" on Pflanz 932.

Additional citations: BRAZIL: Minas Gerais: Murça Pires 58039 (N). BOLIVIA: Tarija: Herzog 1108 [Macbride photos 20330] (Mu—*isotype*); Krapovickas, Mroginski, & Fernandez 19115 (Z); Pflanz 932 (Mu, Z).

LIPPIA LEPIDA Moldenke

Additional bibliography: Moldenke, *Phytologia* 12: 253—254. 1965; Moldenke, *Fifth Summ.* 1: 156 (1971) and 2: 892. 1971; Moldenke, *Phytologia* 36: 34 (1977) and 39: 80. 1978.

This species is very closely related to and similar to L. grandiflora Mart. & Schau., with which it has been confused in some herbaria. Irwin and his associates describe L. lepida as an herb to 10 cm. tall, with red-violet corollas, and have encountered it on burned-over campos, at 900 m. altitude, flowering in August.

Additional citations: BRAZIL: Distrito Federal: Irwin, Souza, & Reis dos Santos 7900 (Ld, N, Z).

LIPPIA LIBERIENSIS Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 359. 1966; Moldenke, *Fifth Summ.* 1: 88 (1971) and 2: 892. 1971; Moldenke, *Phytologia* 39: 34. 1978.

Recent collectors describe this plant as a small subshrub or shrub, 0.8--2 m. tall, the leaves with a strong sweet odor when crushed, and have encountered it on grassy hillsides and in areas of savanna and scrub forest, flowering in January. The corollas are said to have been "yellow" on both collections cited below. Material has been misidentified and distributed in some herbaria as the closely related L. oxyphyllaria (Donn. Sm.) Standl. or as L. controversa Moldenke.

Additional citations: COSTA RICA: Guanacaste: Burger & Ramirez B. 4082 (N); Williams, Molina R., & Williams 26440 (N).

LIPPIA LINDMANNII Briq.

Additional bibliography: Moldenke, *Phytologia* 13: 359. 1966; Moldenke, *Fifth Summ.* 1: 156 & 183 (1971) and 2: 892. 1971; Troncoso, *Darwiniana* 18: 339 & 410. 1974; Moldenke, *Phytologia* 29: 75 (1974) and 31: 384. 1975.

LIPPIA LINDMANNII f. OPPOSITIFOLIA Moldenke, *Phytologia* 29: 75. 1974.

Bibliography: Moldenke, *Phytologia* 29: 75 (1974) and 31: 384. 1975.

Citations: BRAZIL: Mato Grosso: Irwin & Soderstrom 6616 (N-type).

LIPPIA LINEARIFOLIA Moldenke, *Phytologia* 24: 454. 1972.

Bibliography: Moldenke, *Phytologia* 24: 454 (1972) and 25: 229. 1973; Anon., *Biol. Abstr.* 55 (9): B.A.S.I.C. S.272. 1973; Hocking, *Excerpt. Bot. A.* 23: 292. 1974.

Citations: BRAZIL: Minas Gerais: Hatschbach 27812 (Z-type).

LIPPIA LINEARIS H.B.K.

This taxon is now called Phyla linearis (H.B.K.) Troncoso & López-Palacios, a taxon uncomfortably close to P. stoechadifolia (L.) Small.

LIPPIA LONGEPEDUNCULATA Kuntze

Additional synonymy: Lippia longipedunculata Kuntze ex Hocking, *Excerpt. Bot. A.* 10: 271. 1966.

Additional & emended bibliography: Briq. in Chod. & Hassl., *Bull. Herb. Boiss.*, ser. 2, 4: 1159. 1904; Briq. in Chod. & Hassl., *Pl. Hassler.* 2: 495. 1904; Burkart, *Excerpt. Bot. A.* 5: 586. 1962; Hocking, *Excerpt. Bot. A.* 10: 271. 1966; Moldenke, *Phytologia* 13: 359--360. 1966; Moldenke, *Résumé Suppl.* 16: 23. 1968; Moldenke, *Fifth Summ.* 1: 156 & 186 (1971) and 2: 552, 556, 559, & 892. 1971; Troncoso, *Darwiniana* 18: 340 & 410. 1974; Moldenke, *Phytologia* 38: 478. 1978.

Material of this species has been misidentified and distributed in some herbaria as L. angustifolia Cham.

Additional citations: PARAGUAY: Fiebrig 4083 (Mu--4129), 4773 (Mu--4131).

LIPPIA LOPEZII Moldenke

Synonymy: Lippia lopezii Mold. ex Soukup, Biota 11: 14. 1976.

Additional bibliography: G. Taylor, Ind. Kew. Suppl. 9: 187. 1963; Moldenke, Phytologia 12: 260. 1965; Moldenke, Fifth Summ. 1: 142 (1971) and 2: 892. 1971; Soukup, Biota 11: 14. 1976; Moldenke, Phytologia 36: 44 (1977) and 39: 41. 1978.

The Segástegui, Cabanillas, & Dios 8165, distributed as L. lopezii, actually is L. ferruginea H.B.K.

LIPPIA LORENTZII Moldenke

Additional synonymy: Lippia chacensis Moldenke, Phytologia 2: 414-415. 1948. Lippia inundata Mart. ex Moldenke, Phytologia 36: 44, in syn. 1977.

Additional & emended bibliography: Moldenke, Phytologia 2: 414-415. 1948; Moldenke, Lilloa 14: 41. 1948; Moldenke, Castanea 13: 117. 1948; Moldenke, Alph. List Cit. 4: 1293. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 97 & 189. 1949; E. J. Salisb., Ind. Kew. Suppl. 11: 138. 1953; R. C. Foster, Contrib. Gray Herb. 184: 170. 1958; Moldenke, Résumé 114 & 461. 1959; Moldenke, Phytologia 12: 63 & 119 (1965), 13: 350 (1966), and 14: 409. 1967; Moldenke, Résumé Suppl. 15: 5. 1967; Moldenke, Fifth Summ. 1: 183, 186, 189, & 198 (1971) and 2: 554, 555, 890, & 892. 1971; Troncoso, Darwiniana 18: 338 & 410. 1974; Moldenke, Phytologia 36: 35, 36, 43, & 44 (1971), 38: 398 (1978), and 39: 31. 1978.

Recent collectors describe this plant as a decumbent, sprawling, or erect subshrub, 0.3-1.2 m. tall, and have found it growing on dunes, lake shores, riverbanks, and campos, and in dry, exposed, sunny soil along streams, at 50 m. altitude, flowering in January, April, June, and September to November, fruiting in January, April, September, and November. Rosengurtt refers to it as "common in small riverside woods". The corollas are said to have been "violet" in color on Schinini 7599 and on Schinini & Cristóbal 9863, "purple" on Woolston 1263, "rose" on Rosengurtt B.950, "rose-purple" on Herter 747a, "rose-lilac" on Rojas 12082, "lilac" on Meyer 10404, "pale-purple" on Herter 747, and "floras fuchsias" on Krapovickas & al. 26803.

Lippia inundata, a cheironym, was based on Martius 2738 from Roraima, Brazil, deposited in the Munich herbarium.

Most of the collections cited below were misidentified, distributed, and even previously cited by me as L. alba (Mill.) N. E. Br.; others have been distributed as L. geminata H.B.K. or L. geminata Kunth.

Additional & emended citations: BRAZIL: Roraima: Martius 2738 (Mu-40), s.n. [Rio Negro] (Mu-41). BOLIVIA: Santa Cruz: R. E. Fries 1445 (F-photo, N, N-photo, S, Si-photo, Z-photo). PARAGUAY: Hassler 11112 (Ca-930219, Go, N, S, W-1056911); Woolston 1263 (N). URUGUAY: Arechavaleta s.n. [Herb. Mus. Hist. Nat. Montev. 1132] (N); Berro 86 (N); A. L. Cabrera 2581 (N, N, N); A.

Castellanos s.n. [Bella Unión, Jan. 28, 1948; Herb. Inst. Miguel Lillo 15044] (N); Herter 747 [Herb. Herter 82833] (B, Ca—323334, N, N, S, W—1344155), 747a [Herb. Herter 82658] (N); Osorio s.n. [Bella Unión, Jan. 28, 1948; Herb. Mus. Hist. Nat. Montev. 13930] (N, Ug—13930); Rosengurt B.950 (N). ARGENTINA: Chaco: T. Rojas 12083 (N, S). Corrientes: Ibarrola 894 (Ut—3305438); Krapovickas, Cristóbal, Irogoyen, & Schinini 26803 (Ld); Schinini 7599 (Z); Schinini & Cristóbal 9863 (Ld). Entre Ríos: T. Meyer 10404 (N), 10580 (N). Formosa: I. Morel 6453 (N); Pierotti 4087 (N).

LIPPIA LUCENS Standl.

Additional bibliography: Moldenke, *Phytologia* 13: 360. 1966; Moldenke, *Résumé Suppl.* 16: 3. 1968; Gibson, *Fieldiana Bot.* 24 (9): 208 & 209. 1970; Moldenke, *Fifth Summ.* 1: 80 & 83 (1971) and 2: 892. 1971; Moldenke, *Phytologia* 39: 29 & 34. 1978.

Gibson (1970) reduces this species to synonymy under L. cardiostegia Benth. and maintains that the Molina R. 1456, 1837, & 3213, P. C. Standley 26473, and Williams & Molina R. 10802, distributed as and cited by me (1965) as L. lucens, actually represent L. oxyphyllaria (Donn. Sm.) Standl. She says: "Although the leaves of L. oxyphyllaria are bullate-rugose and sometimes glabrate and lustrous, they are usually more or less pilose; the flower-heads are much larger than those of L. cardiostegia, often 2.5 cm. wide, and in fruit 3—4 cm. long, with large bracts, sometimes as long as 1.8 cm."

The Molina R. 13054 & 13219 and P. C. Standley 13668, distributed as and in the latter case previously cited by me as L. lucens, actually are L. controversa Moldenke.

LIPPIA LUPULIFORMIS Moldenke

Additional bibliography: Dale & Greenway, *Kenya Trees* 588. 1961; Moldenke, *Phytologia* 13: 360. 1966; Moldenke, *Fifth Summ.* 1: 237, 241, 244, & 257 (1971) and 2: 559 & 892. 1971.

Additional citations: ANGOLA: Huila: R. Santos 105 (Z).

LIPPIA LUPULINA Cham.

Additional synonymy: Lippidia lupulina Cham. ex Moldenke, *Résumé Suppl.* 17: 11, in syn. 1968. Lippia latoovata Mart. ex Moldenke, *Phytologia* 36: 44, in syn. 1977.

Additional bibliography: Buek, *Gen. Spec. Syn. Candoll.* 3: 266. 1858; R. C. Foster, *Contrib. Gray Herb.* 184: 170. 1958; Burkart, *Excerpt. Bot. A.5*: 586. 1962; Eiten in Ferré, *Simpos. Sobre Cerrado* 190. 1962; Angely, *Fl. Anal. Paran.*, ed. 1, 576. 1965; Hocking, *Excerpt. Bot. A.10*: 271. 1966; Moldenke, *Phytologia* 14: 409. 1967; Moldenke, *Résumé Suppl.* 17: 11. 1968; Ferré, *Pl. Bras. Esp. Cerrado* 144 & [145], fig. 61. 1969; Goodland, *Phytologia* 20: 78. 1970; Angely, *Fl. Anal. & Fitogeogr. Est. S. Paulo*, ed. 1, 4: 835 & xi, map 1386. 1971; Moldenke, *Fifth Summ.* 1: 156, 183, 186,

& 198 (1971) and 2: 551, 553, 559, 560, 564, 568, 618, 682, & 892. 1971; Moldenke, *Phytologia* 28: 439. 1974; Troncoso, *Darwiniana* 18: 334, 339, & 410. 1974; Moldenke, *Phytologia* 36: 44 (1977) and 39: 43. 1978.

Additional illustrations: Ferré, *Pl. Bras. Esp. Cerrado* [145], fig. 61. 1969.

Recent collectors describe this apparently quite variable species as an herb, growing from a perennial woody base, or an erect few-branched or few-stemmed subshrub, 0.5--2 m. tall, xylopodiferous, viscid, brittle, the stems herbaceous, spindly, from a thick woody or tuberous base, the "roots woody", the leaves pleasantly aromatic, the inflorescences ("involucre") rose or pink, the bracts varying from light-green or lavender-green, pink, lavender-pink, rose-pink, or pale-pink to lavender, pale-lavender, lilac, purple-lilac, purple, pinkish-purple, pale-violet, or dull light-violet, very showy, "at first white", and the corollas as "tubular".

Collectors have found it growing in rocky soil, on campos, dry campos, campo slopes and outcrops, dry rocky campos with sparse shrubs, campo cerrado, cleared and well-grazed cleared cerrado, and steep hillside cerrado with pebbly clay soil, in brejo (sedge meadows) and "thin campo vegetation", along creek margins, in recently burned-over cerrado and "slight slopes near river plains", and next to grazed cerrado. The Eitens encountered it in "pastures originally cerrado, at this season thickly covered with long grass," "in natural grassy campo at head of a valley, the ground layer recently burned, the soil sandy, near border with cerrado", in "low trees and scrub woodland cerrado unburned for several years", and at the "edge of low tree and scrub woodland cerrado at its border with a natural grass campo, in light beige soil". Irwin and his associates refer to it as "occasional in cerrado and campo in an area of gallery forest and adjacent cerrado and campo", "in cerrado on upper slopes in an area of steep campo and cerrado slopes", "mostly in campo on steep slopes", and "infrequent among campo grasses". Goodland refers to it as "occasional", while Anderson and his associates encountered it "on campo in an area of cerrado and nearly open campo sloping down through brejo to gallery forest". It has recently been collected at 300--1400 m. altitude, flowering from September to May and in July, fruiting from January to March and in July and September.

The corollas are described as having been "rose" colored on Hatschbach 37095 & 38772 and Mattos & Mattos 8261, "lilac" on Eiten & Eiten 8742, Hatschbach 12998, Pabst 5999, and E. Pereira 6172, "lavender" on Irwin & Soderstrom 6192, "magenta" on Irwin & al. 26361 & 27228, "purple" on Hunt & Ramos 5687, "mauve-pink" on Hunt & Ramos 5456, "pinkish-purple" on Irwin & al. 15160, "purple, yellow in center" on Krapovickas & al. 18294, "magenta, throat paler" on Irwin & Soderstrom 6775, "pink with orange throat" on Harley 10300, "rose, whitish inside" on Hatschbach 32925, "purple-pink with yellow eye" on Anderson 8302 & 8741, "bright-magenta" on

Irwin & al. 22089, "mauve with yellow throat" on Anderson & al. 35270, "magenta, yellow in throat" on Irwin & al. 8048, "rose-pink, darkening in age" on Irwin & al. 13895, "rose-pink, tube yellow within" on Irwin & al. 20324, "rose-pink, throat yellow, becoming magenta in age" on Irwin & al. 12128, "lilac (ca. 10 P 6/6), some tubes white, then yellow" on Lindeman & Haas 2704, "light-violet, center yellow in some flowers or a darker violet in others" on Eiten & Eiten 2611, "violet-red" on Fiebrig 4095, "rose-pink, tube orange-yellow within" on Irwin & al. 6083, "rose, interior of tube yellow" on Hatschbach 18826, and "violet, beginning of tube white, then yellow" on Gottsberger 133. On other collections the colors are given as follows: "petals light-purple, throat entrance golden-yellow" (Eiten 3558), "tube white, outer flaring lip light-violet" (Eiten & Eiten 8941), "limb lilac" (Mimura 406), "tube light-violet with golden-yellow throat" (Eiten & Eiten 8539), "tube whitish, throat bright-yellow, limb bright mauve-purple" (Philcox & Ferreira 4143), "tube pink, limb purple, throat yellow" (Philcox & al. 3453), and "yellow-green" (Irwin & al. 20304). Mimura says: "erva 8 dm. alt.; eixos da face da flôr 11 x 12 mm., limbo corolíneo lilás, garganta amarela" or "brácteas lilases; tubo corolíneo externamente branco, internamente amarelo e, em sua parte superior, um anel branco, limbo lilás".

The Angely (1971) reference cited above is sometimes listed as published in "1970", the erroneous title-page date. Angely cites Wacket s.n. from São Paulo. Eiten (1962) cites his no. 3558, Eiten & Eiten 2244 & 2273, and Mattos & Mattos 8261. Troncoso (1974) cites Crovetto 8628 from Misiones, Argentina, and Pedersen 9428 from Paraguay, both deposited in the San Isidro herbarium. Martius 744, in the Munich herbarium, is the type of the cheironymous L. latoovata Mart. The Clausen collection cited below was identified at Munich as "L. lupulina var."

Material of this species has been misidentified and distributed in some herbaria as Lantana sp. On the other hand, the Martius s.n. [Serro Frio, Julio 1851], distributed as L. lupulina, actually represents L. francensis Moldenke and M. Wagner 585 is L. oxyphyllaria (Donn. Sm.) Standl.

Additional citations: BRAZIL: Distrito Federal: Hunt & Ramos 5456 (N); Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 26361 (Ac); Irwin, Grear, Souza, & Reis dos Santos 13895 (Ld, N); Irwin & Soderstrom 6083 (N); Irwin, Souza, & Reis dos Santos 8048 (Ld, N), 12128 (N); A. F. Santiago 21 (Ll, N). Goiás: W. R. Anderson 8302 (Ld, N); Fonsêca 294 (N); Hatschbach 37681 (Ac), 38772 (Ld); Irwin & Soderstrom 7159 (Ac, N, N); Irwin, Souza, & Reis dos Santos 15160 (Ac, N). Mato Grosso: Eiten & Eiten 8539 (W-2757736), 8742 (W-2757740), 8941 (N, W-2757755), 8949 (W-

2757730), 9793 (Ld, W—2678785); Harley 10300 (N); Hunt & Ramos 5687 (N); Irwin & Soderstrom 6692 (N), 6775 (N); Krapovickas 14397 (Ac); Krapovickas, Cristóbal, & Ahumada 14017 (Ld, Ld); Nienstedt 166 (Ac); Philcox & Ferreira 4143 (N); Philcox, Ferreira, & Bertoldo 3453 (N); Ramos & Sousa R. 40 (N). Minas Gerais: W. R. Anderson 8741 (Ac, N); Anderson, Stieber, & Kirkbride 35270 (Ld, N); Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 27228 (Ld); Irwin, Maxwell, & Wasshausen 20304 (Ac), 20324 (Ac, N); Irwin, Reis dos Santos, Souza, & Fonsêca 22089 (Ac, N); Martius 744 (Mu—52), s.n. [in campis aridiusculis deserti Serra de S. Anto. etc. Jul.] (Mu—53). Pará: Kirkbride & Lleras 2899 (W—2826919). Paraná: Borio 5 (W—2527806); Hatschbach 12998 (W—2564172), 18826 (Ld), 25910 (Ld), 32925 (Ld), 37095 (Ld); Lindeman & Haas 2704 (N); Moreira Filho & Matoso 466 (Ws); Pabst 5999 [E. Pereira 6172; Herb. Brad. 22513] (Mu, N); Reitz & Klein 17516 (N, W—2548341). São Paulo: A. Chevalier s.n. [Campo Alto, 14 Sept. 1928] (P); G. Eiten 3558 (N, W—2523079); Eiten & Eiten 2611 (Ld, W—2745641); Goodland 39 (N); I. S. Gottsberger 133 [3] (Ld); Machado da Campos 72 (N); Martius s.n. [ad Taubaté, Decbr. 1817] (Mu—54); Mattos & Mattos 8261 (N, W—2523078); Mimura 392 (W—2555604), 406 (W—2555608), 525 (N). State undetermined: P. Clausen s.n. [Aug.—April 1840] (Mu—4311); J. E. Pohl s.n. [in Brasilia] (Mu—1098); Sidney 1085 [Onishi 316; Serra do Garcas] (Ac). PARAGUAY: Fiebrig 4095 (Mu—4130); T. Rojas 3703 [Hort. Parag. 12103] (Mu). ARGENTINA: Misiones: Krapovickas, Cristóbal, Arbo, Benitez, Maruffak, Maruffak, Pire, & Tressens 18294 (Ld, Ws).

LIPPIA LUPULINA var. ALBIFLORA Troncoso

Additional bibliography: Burkart, Excerpt. Bot. A.5: 586. 1962; Moldenke, Phytologia 12: 271. 1965; Moldenke, Fifth Summ. 1: 186 (1971) and 2: 563 & 892. 1971.

Pedersen describes this plant as a subshrub, 30—70 cm. tall, and encountered it on loose sandy soil in rough grassland, flowering in November.

Additional citations: PARAGUAY: Pedersen 9428 (N).

LIPPIA LUPULINA var. PARAGUARIENSIS Chod.

Additional bibliography: Moldenke, Phytologia 13: 350. 1966; Moldenke, Fifth Summ. 1: 156 & 186 (1971) and 2: 564 & 892. 1971; Moldenke, Phytologia 28: 439. 1974.

Recent collectors describe this plant as an erect subshrub or shrub, 1—2.5 m. tall, with a few slender stems, the bracts rose or pale red-violet, and have encountered it in cerrado and fields, on limestone slopes, and on "campo lombo de chapada", at 700—1000 m. altitude, flowering in May and August, fruiting in August. The corollas are said to have been "red-violet" on Irwin & Soderstrom 5150, "rose-red" on Irwin & al. 7877, and "rose, tube

yellow inside" on Hatschbach 32104. Irwin and his associates refer to the plant as "common".

Additional citations: BRAZIL: Distrito Federal: Irwin & Soderstrom 5150 (Ld, N); Irwin, Souza, & Reis dos Santos 7877 (Ac, N). Mato Grosso: Hatschbach 32104 (Ld).

LIPPIA MACEDOII Moldenke

Additional bibliography: Moldenke, *Phytologia* 12: 272—273. 1965; G. Taylor, *Ind. Kew. Suppl.* 13: 81. 1966.

LIPPIA MARRUBIIFOLIA Reicherdt

Additional bibliography: Moldenke, *Phytologia* 13: 360. 1966; Moldenke, *Fifth Summ.* 1: 156 (1971) and 2: 892. 1971.

LIPPIA MARTIANA Schau.

Additional bibliography: Buek, *Gen. Spec. Syn. Candoll.* 3: 266. 1858; T. Peckolt, *Bericht. Deutsch. Pharm. Gesell.* 14: 469—470. 1904; Moldenke, *Phytologia* 13: 360—361. 1966; Angely, *Fl. Anal. & Fitogeogr. Est. S. Paulo*, ed. 1, 4: 835 & xi. 1971; Moldenke, *Fifth Summ.* 1: 156 (1971) and 2: 559, 560, 564, & 892. 1971.

Recent collectors describe this plant as an aromatic, malodorous shrub or subshrub, 1—3 m. tall, with small fragrant flowers, and have encountered it in forests and cerrado, among rocks at creek margins, and in gallery forest margins, at altitudes of 950—1500 m., flowering from January to March. Anderson found it growing in "red soil on grassy level campo with scattered shrubs and trees, probably recently burned", in "cerrado in area of wooded hills of blocky quartzite outcrops and sandy rocky cerrado at its base", and in "forest edge in area of gallery forest along streams and adjacent cerrado".

The corollas are said to have been "white" on Anderson 6272, 7532, & 10228, Héringer 14446, Irwin & al. 12445, 13079, & 13726, and Murça Pires 57903.

Peckolt (1904) records the species from Minas Gerais and São Paulo and reports the vernacular name, "herva de velludo", which he translates as "Samtkraut, aufolge der samtartigen Bekleidung der ganzen Pflanze". The Angely (1971) reference listed in the bibliography above bears the incorrect title-page date of "1970".

Additional citations: BRAZIL: Distrito Federal: Héringer 14446 (N); Irwin, Grear, Souza, & Reis dos Santos 13079 (N, Z); L. B. Smith 15076 (N). Goiás: W. R. Anderson 6272 (Ld, N), 7532 (Gz, N), 10228 (Ac, N); Irwin, Grear, Souza, & Reis dos Santos 12445 (Ac, N), 13726 (Ld, N); Murça Pires 57903 (N, W—2571106A). Minas Gerais: P. Clausen 140 [Herb. Martius 1028; Macbride photos 7859] (E—116718—cotype, Mu—64—cotype, Mu—1200—cotype); Regnell 1.333 [1848] (Mu—1486—cotype, Z—cotype).

LIPPIA MATTOGROSSENSIS Moldenke

Additional bibliography: Moldenke, *Phytologia* 13: 361. 1966;

Moldenke, Fifth Summ. 1: 156 (1971) and 2: 892. 1971; Moldenke, Phytologia 36: 35. 1977.

Recent collectors refer to this plant as a shrub, 2 m. tall, and have found it growing in forests, cerrado, and "cerrado being transformed into pasture", flowering from January to March and in May, fruiting in January and March. The corollas are said to have been "whitish" on Hatschbach 31869 and on Hatschbach & Ramamoorthy 38210 and "white with yellow throat" on Philcox & Ferreira 4380.

Material of this species has been misidentified and distributed in some herbaria as L. sidoides Cham. On the other hand, the Anderson 9857, Irwin, Souza, Grear, & Reis dos Santos 16787, 16799, 17341, & 17457, Philcox & Freeman 4736, Ratter, Bertoldo, Castro, Santos, & Souza R.904, and Ratter, Santos, Souza, & Ferreira R. 1357, distributed as L. mattogrossensis, actually are L. obscura Briq., a closely allied species with the pubescence on the branches and twigs antrorsely appressed (not spreading-hirsute as in L. mattogrossensis).

Additional citations: BRAZIL: Goiás: Hatschbach & Ramamoorthy 38210 (Ld). Mato Grosso: Philcox & Ferreira 4380 (N).

LIPPIA MCVAUGHII Moldenke

Synonymy: Lippia mcvaughii Moldenke apud G. Taylor, Ind. Kew. Suppl. 8: 388. 1962.

Additional bibliography: G. Taylor, Ind. Kew. Suppl. 8: 388. 1962; Moldenke, Phytologia 12: 277. 1965; Moldenke, Fifth Summ. 1: 72 (1971) and 2: 892. 1971; Moldenke, Phytologia 23: 414 (1972) and 36: 44. 1977.

McVaugh describes this plant as a tree or "shrubby, tree-like", 2--8 m. tall, the trunk to 15 cm. in diameter, with pale longitudinally stripping bark, the inflorescences greenish-white, and the bracts "pale greenish-white or purplish" or "nearly white, then greenish to tan", and encountered it as "occasional in stream valley with Hura and other tall trees in precipitous eroded granitic sands", "abundant in thorn forest with Caesalpinia, Guaiacum, Cephalocereus, and Jatropha", and "very abundant, becoming weedy, on wooded hills and bluffs with arborescent Ipomoea, Cordia, Caesalpinia, Jatropha, and Bursera", at altitudes of 30--250 m., flowering in December. The corollas are said to have been "cream-color" on his no. 25453.

Additional citations: MEXICO: Colima: McVaugh & Koelz 1660 (Autotype, N--isotype). Jalisco: R. McVaugh 25335 (Mi), 25453 (Mi), 26300 (Mi).

LIPPIA MELASTOMIFOLIA Gandoger

Additional bibliography: Moldenke, Phytologia 12: 278 & 301. 1965; Moldenke, Fifth Summ. 1: 80 (1971) and 2: 892. 1971.

LIPPIA MICHUACANA Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.11: 505. 1967; Moldenke, Phytologia 14: 409. 1967; Moldenke, Biol. Abstr. 49: 2769. 1968; Moldenke, Fifth Summ. 1: 72 (1971) and 2: 892. 1971; Heslop-Harrison, Ind. Kew. Suppl. 15: 80. 1974.

Additional citations: MEXICO: Michoacán: R. McVaugh 22869 (Ip--isotype).

LIPPIA MICROCEPHALA Cham.

Additional synonymy: Lippia miocephala Harley & Kunimoto ex E. M. D., Biol. Abstr. 51: 1076. 1970. Lippia macrocalyx Mart. ex Moldenke, Phytologia 36: 44, in syn. 1977.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 266. 1858; T. Peckolt, Bericht. Deutsch. Pharm. Gesell. 14: 470--471. 1904; Moldenke, Phytologia 14: 409. 1967; Harley & Kunimoto, Bull. Entomol. Res. 58: 787--792. 1969; Moldenke, Fifth Summ. 1: 156 (1971) and 2: 556, 560, 567, 568, & 982. 1971; Moldenke, Phytologia 36: 44. 1977.

Recent collectors describe this plant as a slightly viscous and ramose subshrub, 0.8--2.5 m. tall, rigid and brittle, the floral buds white, and have found it growing in cerrado on rocky slopes and with campo on steep hillsides, at altitudes of 1100--1750 m., flowering from January to May and in July, fruiting in January and February. Irwin and his associates encountered it "in cerrado in an area of gallery forest and adjacent cerrado and campo" and "mostly restricted to soil-filled crevices on steep rocky slopes", also "frequent on steep rocky slopes in 'canga' soil", "on lower slopes in cerrado on steep schist slopes", "in disturbed places especially around outcrops in wooded valley", and "on hills with iron-rich 'canga' soil". Anderson and his associates found it "at edge of gallery forest, adjacent sedge meadow, and 'campo sujo', with rocky campo on higher drier slopes" and "in campo in areas of gallery forest and adjoining 'campo sujo'". Davidse and Ramamoorthy encountered it "in cerrado on hillside with gravelly red soil". A vernacular name reported for it is "alacrín".

The corollas are described as having been "rose" colored on Hatschbach 36438 and Hatschbach & al. 29027, "lilac" on Hatschbach & Ahumada 31662, "lilac-pink" on Mexia 5710, "cream to lavender" on Irwin & al. 19813, "white, rose inside" on Emygdio & al. 3261, "white, lavender-pink in throat" on Irwin & al. 29348, "white, pale-pink in throat" on Irwin & al. 29676, "pale-pink, the tube red-violet within" on Irwin & al. 29164, "pale-pink, white in age" on Irwin & al. 28309, "pale-pink, darker in throat" on Irwin & al. 22071, "white, pink in age" on Anderson 8436, "pink, aging to cream" on Irwin & al. 2897, "pale-lavender, aging to white" on Irwin & al. 22680, "white with a yellow eye & tube when young, later white with a purple eye & tube" on Anderson & al. 35173, and "reddish-purple with a white margin" on Davidse & Ramamoorthy

10801.

Martius' cheironymous name, L. macrocalyx, is based on the un-numbered Martius collection from "in alpinis ad V. R., April", cited below, and deposited in the Munich herbarium.

Harley & Kunimoto (1969) found the beetle, Plagiohammus spinipennis, on Lippia microcephala as host. Peckolt (1904) reports the plant from Minas Gerais and Rio de Janeiro and the vernacular names, "chá de frade do mato" [which he translates as "wilder Mönchstee"], "hyssopó do terra" ["einheimischer Ysop"], and "alecrim do serra" ["Gebirgsrasmarin"]. He says that the plant is a "Strauch mit elliptischen, an der Basis keilförmigen, gesägten, Blätter. Blüten weiss mit gelbem Schlund in drei- bis fünfblütigen Köpfchen. Die Pflanze ist in allen Teilen reich an Harz, brennt ähnlich einer Fackel, in Bündeln gebunden dient sie zu diesem Zwecke sowie zur Räucherung. Die Blätter riechen, nur wenn gerieben, ähnlich einer Mischung von Rosmarin und Thymian. Bei im Handel befindlichen luftgetrockneten Blätter liefern 20 Kg nur 1,2 g hellgelbes ätherisches Öl". He further lists a number of other chemical compound constituents.

Additional citations: BRAZIL: Minas Gerais: W. R. Anderson 8436 (Ld, N); Anderson, Stieber, & Kirkbride 35173 (Ld, N, W—2709292); Davidse & Ramamoorthy 10801 (Ld, N); Emygdio, Duarte, Becker, & Silva Santos 3261 (N); Hatschbach & Ahumada 31662 (Ac, Ld, W—2706095); Hatschbach, Anderson, Barneby, & Gates 36438 (Ld, N); Hatschbach, Smith, & Ayensu 29027 (Ld, W—2744551); Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 28309 (Ld); Irwin, Harley, & Onishi 28971 (Ld, N, W—2755321), 29164 (Ac, N, W—2759078), 29348 (Ld, N, W—2759074), 29676 (N, W—2758980, Ws); Irwin, Maxwell, & Wasshausen 19813 (Ld, N); Irwin, Reis dos Santos, Souza, & Fonsêca 22071 (Ac, N), 22680 (Ld, N); Martius 814 (Mu—66), 1038 (Mu—67, Mu—1202), s.n. [in apricis montanis virgulosus, 1818] (Mu—65), s.n. [in alpinis ad V. R., April] (Mu—50); Mexia 5710 (Au—121211, Ba); Murça Pires 57932 (Ld, N, N, N, W—2758984); Princess Therese of Bavaria s.n. [Itacolumy, VIII.1888] (Mu). State undetermined: Herb. Zuccarini s.n. [e Brasilia] (Mu—68). MOUNTED ILLUSTRATIONS: Mart., Fl. Bras. 9: pl. 38 II. 1851 (N, 2).

LIPPIA MICROMERA Schau.

Additional bibliography: Schau., Linnaea 20: 480. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 266. 1858; Pompa, Colecc. Medicament. Indig., ed. 5. 1875; Pittier, Man. Pl. Usual. Venez. 314 & 435. 1926; V. E. Graham, Trop. Wild Fls. 110—112. 1963; Liogier, Rhodora 67: 349. 1965; Hocking, Excerpt. Bot. A.10: 271. 1966; Moldenke, Phytologia 14: 410. 1967; Moldenke, Biol. Abstr. 50: 7999. 1969; Moldenke, Phytologia 18: 210—211. 1969; Oberwinkler, Pterid. & Sperm. Venez. 18 & 78. 1970; Hartwell, Lloydia 34: 386. 1971; Hocking, Excerpt. Bot. A.18: 444. 1971; Moldenke, Fifth Summ. 1:

86, 97, 103, 105, 112, 113, 117, 124, 130, 156, & 366 (1971) and 2: 519, 553, 556, 559, 562, 892, & 893. 1971; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Rendueles, Rodríguez Graquitená, Roquel Casabella, & Schreiber, Die Kulturpfl. 19: 422. 1972; Farnsworth, Pharmacog. Titles 7 (4): xvii & 222. 1972; Moldenke, Phytologia 23: 417. 1972; Farnsworth, Pharmacog. Titles 8 (8): xiii. 1973; León & Alain, Fl. Cuba, imp. 2, 2: 288 & 289. 1974; Moldenke, Phytologia 28: 436. 1974; [Farnsworth], Pharmacog. Titles 7, Cum. Ind. [72]. 1975; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 15: 60. 1975; Moldenke, Phytologia 34: 274. 1976.

Additional illustrations: V. E. Graham, Trop. Wild Fls. 111. 1963.

Recent collectors describe this plant as a large shrub or subshrub, 0.4--4 m. tall, woody, erect, unarmed, much-branched, strongly and penetratingly aromatic, often gregarious; stems brown, with white hairs; young twigs tetragonal; leaves dark-green above, lighter beneath with white hairs, fragrant with a strong odor of oregano when crushed; flowers axillary; sepals green, with whitish hairs; anthers yellow; stigmas cream; style pink. Ruiz-Terá & López-Palacios say: "Ramitas....pardas....adultas subcilíndricas, marrones, fisuradas. Hojas simples, opositidecussadas, prolíficas en las axilas, verde intensas por la haz, más claras, por el envés. Cimas capituloides pedunculadas, axilares. Cáliz verde intenso, con ápice de los segmentos purpúreo."

Collectors have found this plant growing on arid slopes, at altitudes of 900--2650 m., flowering from December to April, as well as in June, September, and December. The corollas are said to have been "white" on Bianco 100, López-Palacios 2724, Nevling 265, Pittier 13108, and Ruiz-Terán & López-Palacios 7592 & 8796, "white with a blotch of yellow in the center" on Omamale & Persaud 154, "white or lilac-white, the throat light orange-yellow" on Ruiz-Terán & López-Palacios 9691, "blanca, salvo la garganta, amarillo verdosa" on Ruiz-Terán & López-Palacios 7592, and "verbenacea blanca, con garganta y anteras amarillo limon" on Ruiz-Terán & López-Figueiras 1797.

Omawale & Persaud report this species cultivated in vegetable gardens in Guyana. Hartwell (1971) says that in Venezuela it is used in native medicine mixed with vinegar and salt to treat "cold tumors". Ruiz-Terán & López-Palacios assert that it is "usada localmente para condimentar carne de cochino". López-Palacios (1975) reports that in Venezuela it is an "Arbustico muy aromático, ampliamente distribuido en el territorio nacional, usado principalmente como condimento por su olor a orégano, nombre con el que es vulgarmente conocido. Para Venezuela no ofrece dificultad." Neal reports that it is used to flavor soups and meatloaf in Hawaii. Graham (1963) says: "Small Thyme...is a small shrub grown in many parts of the tropics as a herb for flavouring. It has close clusters of white flowers in the leaf axils."

Common and vernacular names recently reported for this plant are "false thyme", "fineleaf thyme", "orégano", "small thyme", and "Spanish thyme".

All the collections from Puerto Rico and Hispaniola distributed as typical L. micromera are probably better regarded as var. helleri (Britton) Moldenke.

Additional citations: TRINIDAD AND TOBAGO: Trinidad: Sieber Fl. Trinit. 86 (Mu—1202). COLOMBIA: Norte de Santander: Garganta 1126 (W—2771840). VENEZUELA: Aragua: Vogl 1348 (Mu). Delta Amacuro: Ruiz-Terán & López-Palacios 9691 (Gz). Lara: Pittier 13108 (E—953591, Mu); Saer d'Héguert 484 (Mu). Mérida: López-Palacios 2724 (N, Z); Ruiz-Terán & López-Figueiras 1797 (N), 8796 (Ac). Táchira: Aristeguieta 2117 (N). Trujillo: Ruiz-Terán & López-Palacios 7592 (Ld). CULTIVATED: Guyana: Omawale & Persaud 154 (N). Hawaiian Islands: Neal 1235 (Ba). Jamaica: Nevling 265 (Ba). Venezuela: Bianco 100 (N); Oberwinkler & Oberwinkler 13405 (Mu).

LIPPIA MICROMERA var. **HELLERI** (Britton) Moldenke

Additional synonymy: Lantana floribunda Urb. & Ekm. ex Moldenke, Phytologia 34: 274, in syn. 1976. Lantana micromera Schau., in herb.

Additional & emended bibliography: Sessé & Moc., Fl. Mex., ed. 2, 139—140. 1894; Arrillaga, Puerto Rico Agr. Exp. Sta. Ann. Rep. 28—29. 1939; Anon., Chem. Abstr. 36: 5614 (1942) and 37: 1225. 1943; Arrillaga, Am. Perfumer 45: 27—29. 1943; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14358. 1958; Moldenke, Phytologia 14: 410. 1967; Farnsworth, Blomster, Quimby, & Schermerh., Lynn Index 6: 265. 1969; Moldenke, Fifth Summ. 1: 86, 97, 103, 105, & 336 (1971) and 2: 553, 556, & 893. 1971; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Rendueles, Rodríguez Graquitená, Roquel Casabella, & Schreiber, Die Kulturpfl. 19: 422. 1972; Farnsworth, Pharmacog. Titles 8 (8): xiii. 1973; Hegnauer, Chemotax. Pfl. 6 [Chem. Reihe 21]: 668. 1973; León & Alain, Fl. Cuba, imp. 2, 2: 288 & 289. 1974; Moldenke, Phytologia 34: 274. 1976.

Recent collectors describe this plant as a small or low shrub or bush, 0.4—1.2 m. tall, the branches slender, spreading from the base, and the leaves very aromatic. They have found it growing on cliffs, elevated coral reefs, in pastures, on coastal mountains and plateaus, in arid zone thickets, and on sandy hills, in thickets along roadsides, dry thickets on rocky coasts, and thorny thickets on limestone hills and terraces, seeming to prefer limestone soil, at altitudes of sealevel to 500 meters, flowering from January to July and in September and October, fruiting in January, February, April, May, July, and September. Liogier refers to it as "quite common in thickets on hillsides".

The corollas are said to have been "white" on Allard 14432, Howard & Howard 9573, Jiménez 1025, Leonard & Leonard 11872, 11929,

11968, 12580, & 13344, and Liogier 11587a, 12677, 13641b, 15605, & 21626 and "pale-violet to whitish" on Liogier 11442. The vernacular name, "orégano", is recorded for it. J. D. Smith notes on a sheet of Eggers 1275 in the United States National Herbarium that the "connective of upper two stamens [is] produced into a clavate appendage: a character not attributed to this genus".

León & Alain (1974) state that the plant occurs on "costas y lomas" in Oriente, Cuba, as well as in the "Antillas". Sessé & Moçino (1894) say "Habitat in praedito de Josefo Garcia juxta iter de Toa Alta ad Saibanito interjectum, ubi vulgo Oregano audit....Folia et flores fragrantissimi et pro Origano in condimentis usui sunt. Floret Maio." Arrillaga (1939) reports also the name, "marjorana", and the presence of "Phenols, no aldehydes or ketones, and carvacrol in volatile oil". Ekman reports the plant "cultivated and escaped" in the Dominican Republic.

Material has been distributed in some herbaria under the name, L. micromeria Schau.

Additional citations: CUBA: Oriente: Hioram 6733 (W--2289965). HISPANIOLA: Dominican Republic: Ekman H.12451 (Ld, Ld, W--1711438); Fuertes 855 (Mu--4241, Mu, W--698007); Howard & Howard 9573 (W--2111035); Liogier 11442 (Ld, N, N, N, N), 11587a (Ac, N), 12677 (Ld, N, N, N), 13641 (W--2576809A), 13641b (Ld, N), 15605 (Ac, N, W--2576968A). Haiti: Ekman H.3619 (Ld, W--1410520); Leonard & Leonard 11872 (W--1450743), 11929 (W--1450793), 11968 (W--1450825), 12009 (W--1450862), 12113 (W--1450962), 12580 (W--1451327), 13344 (W--1452010). PUERTO RICO: Britton & Cowell 890 (W--655950); Eggers 1275 (W--1322938); F. H. Sargent 211 (W--1714654); Sintenis 6361 (W--403757); J. A. Stevenson 3933 (W--1475063). CULTIVATED: Dominican Republic: Allard 13636 (W--1956821), 14432 (W--1958345); J. de J. Jiménez 1025 (W--1882522); Liogier 21626 (N); Valeur 147 (W--1414623). LOCALITY OF COLLECTION UNDETERMINED: Herb. Schreber s.n. [West Indies] (Mu--602).

LIPPIA MICROMERA var. PALUDICOLA Moldenke

This taxon is now reduced to the synonymy of L. thymoides Mart. & Schau.

LIPPIA MICROPHYLLA Cham.

Additional synonymy: Lantana microphylla Friese, Bol. Agricult. São Paulo 34: 261. 1933. Lantana microphylla Mart. ex Braga, Pl. Nordest., ed. 2, 17. 1960 [not Lantana microphylla Franchet, 1882, nor Hutch. & Bruce, 1949, nor Mart., 1894, nor Peter, 1959]. Lantana microphylla "Mart. ex Uphof" apud Moldenke, Fifth Summ. 2: 541, in syn. 1971.

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 266. 1858; Friese, Bol. Agricult. São Paulo 34: 261. 1933; Braga, Pl. Nordest., ed. 2, 17. 1960; Moldenke, Phytologia 14: 410 & 417 (1967) and 15: 464 & 465. 1968; Uphof, Dict. Econ. Pl., ed. 2, 301.

1968; Moldenke, Fifth Summ. 1: 130 & 156 (1971) and 2: 541, 559, 560, & 893. 1971; Moldenke, Phytologia 31: 402 (1975) and 39: 78. 1978.

Braga (1960) describes this plant as an "Arbusto ou subarbusto escandente. Fôlhas opostas, simples, miúdas, mais ou menos pilosas, um tanto claras. Flores pequenas, reunidas em espigas. Drupa 2-locular. Parecido com o Alecrim, porém de fôlhas menos aromáticas, gozando, entretanto, das suas propriedades. Flores mucilaginosas, expectorantes. Do Ceará ao Paraná, Alecrim Bravo, da Bahia e em São Paulo. Com o nome de Alecrim do Campo se conhece no Piauí a Acantáceas -- Rhytiglossa leucophoea Nees."

Recent collectors describe Lippia microphylla as a slender brittle shrub or subshrub, 0.2--2 m. tall, the inflorescences nodding, the floral bracts pale-green or pale yellow-green, and have found it growing in cerrado, sandy cerrado with some rocky areas, and on sand in low woodlands, as well as on sandstone hills with dry grassland among rock and woodland along small streams, at altitudes of 220--1150 meters, flowering in January, February, April, June, and July, fruiting in June. The Eitens encountered it "on flat ridge tops with open tree canopy and lots of tall Mimosa shrubs, the soil with a few or no stones". The Gottsbergers found it on "campo serrado é um campo com elementos arbóreos de cerrado esparsos", while Hatschbach encountered it on "afloramentos rochosos".

The corollas are said to have been "white" on Anderson 9085, Castellanos 25356, Eiten & Eiten 10807, Harley & al. 15682, and Irwin & al. 14786, 14925, & 17778, "whitish" on Hatschbach 34749, "cream" on Irwin & al. 32442, "white, yellow in the interior" on Gottsberger & Gottsberger 13-24771, and "white, yellow in throat" on Cooper 244.

Uphof (1968) says that it is a "Shrub. S. America. Leaves are used in some parts of Brazil as aromatic and anti-rheumatic. Fruits are a tonic and stimulant."

The Eiten & Eiten 4492 & 10807, G. Gardner 4332, and Irwin, Grear, Souza, & Reis dos Santos 14786 & 14925, distributed (and the first-mentioned previously cited by me) as L. microphylla, seem actually to represent the very closely related L. gracilis Schau. instead.

Additional citations: GUYANA: A. Cooper 244 (Ut--328762B). BRAZIL: Bahia: Gottsberger & Gottsberger 13-24771 (Ld); Harley, Renvoize, Erskine, Brighton, & Pinheiro in Harley 15682 (K); Irwin, Harley, & Smith 32443 (Ld, N). Goiás: Hatschbach 34749 (Ld); Irwin, Souza, Grear, & Reis dos Santos 1778 (Ac, N). Maranhão: A. Castellanos 25356 [Herb. Cent. Pesq. Florest. 4125] (Fe). Minas Gerais: W. R. Anderson 9085 (Ld, N).

LIPPIA MODESTA Briq.

Additional bibliography: Hocking A.5: 586 (1962) and A.10: 271. 1966; Moldenke, Phytologia 14: 410. 1967; Moldenke, Résumé

Suppl. 15: 5. 1967; Moldenke, Fifth Summ. 1: 186, 189, & 198 (1971) and 2: 893. 1971; Troncoso, Darwiniana 18: 340 & 410. 1974.

Troncoso (1974) lists this species from Argentina (Jujuy & Salta) and Paraguay. Woolston describes it as a decumbent herb, 15–20 cm. tall, with "yellow and orange flowers" [corollas], and encountered it on low campos, flowering in December. Krapovickas and his associates describe the corollas as "yellow" and collected the plant in anthesis in January.

Additional citations: PARAGUAY: Krapovickas, Cristóbal, & Palacios 12251 (W—2481387); Woolston 413 (N).

LIPPIA MORONGII Kuntze

Additional bibliography: Moldenke, Phytologia 14: 410 & 418. 1967; Moldenke, Fifth Summ. 1: 156, 186, 189, & 198 (1971) and 2: 550, 560, & 893. 1971; Troncoso, Darwiniana 18: 340 & 410. 1974; Moldenke, Phytologia 34: 258 (1976) and 38: 479. 1978.

Hatschbach encountered this plant on dry campos, flowering in October, and reports the corollas "yellow". Troncoso records it from Argentina (Chaco), Paraguay, and Uruguay.

The Sehnam 3604, distributed as L. morongii, seems better regarded as representing L. asperrima Cham., while Lourteig 1909 is L. turnerifolia Cham.

Additional citations: BRAZIL: Paraná: Hatschbach 35204 (Ld). URUGUAY: Herter 989 [Herb. Herter 82594] (Mu).

LIPPIA MULTIFLORA Moldenke

Additional & emended bibliography: Meikle in Hutch. & Dalz., Fl. W. Trop. Afr., ed. 2, 2: 432, 436, & 437, fig. 306. 1963; Meikle in Brenan & al., Kew Bull. 17: 173. 1963; Trease & Evans, Textb. Pharmacog., ed. 9, 799. 1966; Moldenke, Phytologia 14: 410–412, 415, & 416. 1967; Moldenke, Résumé Suppl. 15: 5–7. 1967; Moldenke, Fifth Summ. 1: 209, 211, 217–222, 224–227, 230, & 366 (1971) and 2: 893. 1971; Drar, Publ. Cairo Univ. Herb. 3: 110. 1970; Letouzey, Man. Bot. Forest. Afr. Trop. 2 (B): 361 & 363. 1972; Moldenke, Phytologia 23: 420. 1972; Hegnauer, Chemo-tax. Pfl. 6 [Chem. Reihe 21]: 668–669. 1973; Moldenke, Phytologia 28: 441. 1974; Jaeger & Moldenke, Phytologia 30: 387 & 401–402. 1975; Moldenke, Phytologia 38: 266 (1978) and 39: 31. 1978.

Additional illustrations: Letouzey, Man. Bot. Forest. Afr. Trop. 2 (B): 363. 1972.

Recent collectors refer to this plant as an aromatic herb, shrub, or undershrub, with an erect, grooved, light-green stem, 1.2–3 m. tall, woody at the base, the bark grayish-brown, the leaves stiff, papery, dark-green and more or less shiny above, dull and slightly paler green beneath, and fragrant flowers. They have found it growing on plains, low-lying land, in rocky soil, and on savannas grazed by cattle, at 650 m. altitude, flowering in January, February, October, and December, fruiting in January. The corollas are said to have been "white" on Lowe 1668, "white with yellow center" on the Morton collections cited below, "white, yellow in throat" on Breteler 826, and "white,

yellow in center, anthers yellow" on Breteler 574.

Jaeger & Moldenke (1975) report that L. multiflora is "Abondant en savane guinéenne....avec Lophira lanceolata, Ficus glumosa, Syzygium guineense var. macrocarpa, Entada abyssinica, Piliostigma thonningii, Bridelia ferruginea, Hymenocardia acida, Crossopteryx febrifuga, Chasmopodium caudatum, Loudetia sp., Andropogon sp., Lactuca capensis, Elephantopus mollis, Borreria ramisparsa, Laggera alata.....Terminalia glaucescens, Cussonia barteri, Markhamia tomentosa, Kotschya lutea." They describe the plant as an "Herbe érigée 2—3 m. de haut, à base ligneuse, tige anguleuse, striée, ramifiée vers le haut, glabre faiblement pubescente. Feuilles opposées, souvent verticillées par trois. Face supérieure avec nombreux poils tecteurs couchés, face inférieure glanduleuse. Inflorescences en épis terminaux ombelliformes globuleuses ou étirées cylindriques; bractées obtuses, courtement mucronées. Corolle blanc-crème, ne dépassant pas les bractées; fleurs légèrement odorantes....La plante n'est pas touchée par le bétail. Distrib. - Savanes de l'Afrique tropicale." They cite Jaeger 3955 & 6831 from Sierra Leone.

Trease & Evans (1966) report the presence of a volatile oil containing camphor in material of L. multiflora secured from Ghana. Meikle (1963) distinguishes this species from closely related species in western tropical Africa as follows:

1. Flower-heads in spreading, much-branched corymbose cymes.

2. Upper surface of leaves smooth to touch, venation obscure; stems subglabrous or sparsely appressed-pubescent; apex of floral bracts very obtuse, shortly mucronate.....

L. multiflora.

2. Upper surface of leaves rough to touch, venation prominently rugose-reticulate; stems usually distinctly appressed-pubescent; apex of floral bracts acute or cuspidate.....

L. rugosa.

1a. Flower-heads in narrow, elongate, terminal and axillary verticels or spikes.

3. Floral bracts obtuse or shortly cuspidate; leaves smooth or slightly scabridulous; stems subglabrous or sparsely appressed-pubescent.....L. chevalieri.

3a. Floral bracts acute; leaves strongly scabrid; stems densely pubescent or pilose.....L. savoryi.

Material of L. multiflora has been misidentified and distributed in some herbaria under the names, L. abyssinica (Otto & Dietr.) Cuf., L. adoensis Hochst., and L. radula J. G. Baker.

Additional citations: SUDAN: Bahr-el-Ghazal: Drar & Mahdi 1215 (Gz); Kassas, Khalifa, & Mobarak 128 (Gz), 129 (Gz, Gz), 177 (Gz). SIERRA LEONE: Jaeger 3955 (Z), 6831 (Ld). GHANA: J. K. Morton GC.9911 (Ba), s.n. [18/10/1953] (Ba). NIGERIA: Gbile & Olorunfemi F.H.I.20475 (N); Lowe 1668 (Mu). CAMEROONS: Breteler 574 (Mu), 826 (Mu); Breteler, Wilde, & Leeuwenberg 2563 (Mu).

LIPPIA MYRIOCEPHALA Schlecht. & Cham.

Additional & emended synonymy: Lippia myriocephala Cham. & Schlecht. ex Benth., Bot. Voy. Sulphur 154. 1846. Lipia myriocephala Ch. & Sch. ex Moldenke, Phytologia 28: 459, in syn. 1974. Lippia myriocephala H.B.K. ex Moldenke, Phytologia 36: 44, in syn. 1977.

Additional bibliography: Hook. & Arn., Bot. Beech. Voy. 305. 1838; Schau., Linnaea 20: 479. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 266. 1858; Kern, Mycologia 3: 289. 1911; Arthur, Mycologia 10: 51 & 133--134. 1918; Cummins, Lloydia 3: 16, 21, & 62. 1940; Hocking, Excerpt. Bot. A. 10: 271. 1966; Moldenke, Phytologia 12: 362. 1966; J. Rzedowski, Act. Cienc. Potos. 6: 26, 27, 40, 41, & 47. 1966; Moldenke, Résumé Suppl. 16: 3. 1968; A. L. Moldenke, Phytologia 18: 122--124. 1969; Gibson, Fieldiana Bot. 24 (9): 208 & 211--212. 1970; Lowdon, Taxon 19: 21. 1970; Moldenke, Fifth Summ. 1: 72, 80, 83, 85, 86, & 88 (1971) and 2: 558, 560, & 893. 1971; Rouleau, Taxon Index Vols. 1-20, part 1: 216. 1972; Moldenke, Phytologia 27: 66 & 289 (1973) and 28: 431--433, 454, 459, & 460. 1974; Farnsworth, Pharmacog. Titles 9 (3): xii. 1974; Moldenke, Biol. Abstr. 57: 3780 (1974) and 58: 684. 1974; Troncoso, Darwiniana 18: 336 & 410. 1974; Hocking, Excerpt. Bot. A. 26: 5. 1975; Moldenke, Phytologia 31: 378. 1975; Molina R., Ceiba 19: 96. 1975; Moldenke, Phytologia 34: 253 (1976), 36: 30 & 44 (1977), and 39: 27, 29, 36, & 87. 1978.

Recent collectors describe this plant as a weak shrub, tree-like, or a weak tree, 2--10 m. tall, the inflorescence cream-color, and have found it growing in moist thickets and second-growth forests, montane cloud forests, and roadside thickets, on steep mountainsides and barrancas, in fir forests with Pinus, Quercus, Ostrya, Cornus, Meliosma, and Podocarpus, in open forests, moist cloud forests, mixed dense and wet cloud forests, and at the edges of mixed forests, as well as in oak forests on rocky hillsides and with many shrub composites, mosses, and ferns, at 300--2700 meters altitude, flowering from September to March and in July, fruiting from September to November. The Roes found it in a dense moist forest with palmettos, Cycas, and many shrub Compositae in the understory in the tropical vegetation zone. Breedlove encountered it on steep slopes with Pinus, Quercus, Hauya, Erythrina, Lysiloma, Oreopanax, and Ostrya adjacent to a waterfall. González & Pérez report it from the "Asociación secundaria de 5 años, con Guazuma ulmifolia, Bauhinia divaricata, Pithecellobium lanceolatum y Calliandra houstoniana. Suelo de color obscuro en el horiz. 'A' y gris en el 'B', textura arcillosa y bastante pesado".

The corollas are said to have been "yellow" on McVaugh 21511 and Williams & al. 27127, "yellowish" on Williams & al. 43204, "white with yellow center" on Roe & Roe 2330 & 2362, "cream and yellow" on Breedlove 23258, "cream" on Molina 13556 & 16942, and "greenish" on Williams & al. 20107. [to be continued]



Moldenke, Harold N. 1978. "Additional notes on the genus *Lippia*. VIII." *Phytologia* 39(3), 162–182.

View This Item Online: <https://www.biodiversitylibrary.org/item/47392>

Permalink: <https://www.biodiversitylibrary.org/partpdf/219416>

Holding Institution

New York Botanical Garden, LuEsther T. Mertz Library

Sponsored by

The LuEsther T Mertz Library, the New York Botanical Garden

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

Rights Holder: Phytologia

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.