

ca. The corollas are described as having been "white" on Leistner 1000, 2867, & 3153 and Wild 5044, as "cream-color" of Giess & al. 7001 and Merxmüller & Giess 741, and "white to cream" on Liebenberg 7062. Seydel found it growing "auf rotem Flächenboden nach etwas Regen".

Additional citations: NAMIBIA: Giess, Volk, & Bleissner 7001 (Mu); Merxmüller & Giess 741 (Mu), 1138 (Mu); Rehm s.n. [4.2.1940] (Mu); Seydel 3928 (Mu); Volk 11540 (Mu), 11542a (Mu); Walter & Walter 1315 (Mu). SOUTH AFRICA: Bechuanaland: Leistner 2089 (Mu); H. Wild 5044 (Mu). Cape Province: Leistner 1000 (Mu), 2867 (Mu), 3153 (Mu); Liebenberg 7062 (Mu).

CHASCANUM SCHLECHTERI (Gürke) Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 124 & 237. 1975.

Ward describes this plant as "common in sandy soil on north-facing slight slopes" at 800 feet altitude, the flowers white in November.

Additional citations: SWAZILAND: Kemp 538 (W--2781762). SOUTH AFRICA: Natal: C. J. Ward 3306 (Mu).

CHASCANUM SESSILIFOLIUM (Vatke) Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 237--238. 1975; Hocking, *Excerpt. Bot. A.28*: 257. 1976.

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ADDITIONAL NOTES ON THE GENUS CITHAREXYLUM. XII

Harold N. Moldenke

CITHAREXYLUM B. Juss.

Additional synonymy: Chytharexylum Sw. apud López-Palacios, *Bol. Soc. Venez. Cienc. Nat.* 31: 356, sphalm. 1975.

Additional & emended bibliography: L., *Gen. Pl.*, ed. 5, imp. 1, 273 & [506]. 1754; Jacq., *Enum. Syst. Pl. Carib.*, imp. 1, 26 & 39 (1760) and imp. 2, 26 & 39. 1762; Jacq., *Select. Stirp. Amer. Hist.*, imp. 1, 185--186, pl. 118. 1763; Sweet, *Hort. Brit.*, ed. 1, 1: 323 (1826) and ed. 2, 417. 1830; G. Don in Loud., *Hort. Brit.*, ed. 1, 248 (1830) and ed. 2, 248. 1832; Loud., *Hort. Brit.*, ed. 2, 551. 1832; Hook. & Arn., *Bot. Beech. Voy.* 306. 1838; G. Don in Loud., *Hort. Brit.*, ed. 3, 248. 1839; Sweet, *Hort. Brit.*, ed. 3, 551. 1839; Spach, *Hist. Nat. Vég.* 9: 227. 1840; Schau. in A. DC., *Prodr.* 11: 545, 609--614, 616, 628, & 697--698. 1847; Buek, *Gen. Spec. Syn. Candoll.* 3: 104--105 & 147. 1858; Coult., *Contrib. U. S. Nat. Herb.* 2: 326 & 329. 1892; Sessé & Moc., *Fl. Mex.*, ed. 2, 152. 1894; Engl., *Syllab. Pflanzenfam.*, ed. 2, 178 (1898), ed. 3, 187 (1903), ed. 5, 192 (1907), and ed. 6, 198. 1909; Gilg in

Engl., Syllab. Pflanzenfam., ed. 7, 314 (1912) and ed. 8, 318. 1919; Fedde & Schust. in Just, Bot. Jahresber. 44: 253. 1922; Fedde in Just, Bot. Jahresber. 45 (1): 506. 1923; Fedde & Schust. in Just, Bot. Jahresber. 45 (1): 148. 1923; Gilg in Engl., Syllab. Pflanzenfam., ed. 9 & 10, 339. 1924; Fedde in Just, Bot. Jahresber. 46 (2): 571. 1929; Diels in Engl., Syllab. Pflanzenfam., ed. 11, 339. 1936; M. F. Baker, Fla. Wild Fls., ed. 2, imp. 1, 190. 1938; Caro, Revist. Argent. Agron. 23: 22. 1956; L., Gen. Pl., ed. 5, imp. 2 [Cramer & Swann, Hist. Nat. Class. 3:] 273 & [506]. 1960; Lombardo, Fl. Arb. & Arbust. Urug., ed. 2, 122, fig. 191. 1964; Jacq., Enum. Syst. Pl. Carib., imp. 3, 26 & 39. 1967; G. W. Thomas, Tex. Pl. Ecolog. Summ. 77. 1969; Jacq., Select. Stirp. Amer. Hist., imp. 2, 185--186, pl. 118. 1970; R. W. Long, Fla. Sci. 37: 35. 1974; Dod & Fortuna, Bol. Jard. Bot. Moscoso 2 (3): 16. 1975; Hinton & Rzedowski, Anal. Esc. Nac. Cienc. Biol. 21: 31 & 48. 1975; Hocking, Excerpt. Bot. A.26: 5. 1975; Kooiman, Act. Bot. Neerl. 24: 463. 1975; López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: [353]--398. 1975; Rogerson & Becker, Bull. Torrey Bot. Club 102: 421. 1975; Zimmerm. & Ziegler in Zimmerm. & Milburn, Transp. Pl. 1 [Pirson & Zimmerm., Encycl. Pl. Physiol., ser. 2, 1:] 502. 1975; Moldenke, Phytologia 32: 48--74 & 218--240 (1975), 32: 508 (1976), 33: 129 & 508 (1976), and 34: 245, 248, 251--257, 272, 273, & 501. 1976; Anon., Biol. Abstr. 61: AC1.580. 1976; M. F. Baker, Fla. Wild Fls., ed. 2, imp. 2, 190. 1976; Felger & Lowe, Nat. Hist. Mus. Los Angeles Co. Contrib. Sci. 285: 7. 1976; Finol U., Act. Bot. Venez. 11: 24, 45, 48, 49, 54, 55, [58], & [60]. 1976; Grímé, Bot. Black Amer. 97, 209, & 224. 1976; Crowell & Crowell, Nat. Hist. 85 (8): 53. 1976; Grubb & Tanner, Journ. Arnold Arb. 57: 318. 1976; Hocking, Excerpt. Bot. A.28: 170 & 257--259. 1976; Long & Lakela, Fl. Trop. Fla., ed. 2, 733, 738, 934, & 939. 1976; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 17: 41--42. 1976; Rogerson & Becker, Bull. Torrey Bot. Club 103: 145. 1976; Soukup, Biota 11: 3, 8--9, & 21. 1976; Conant, Biol. Abstr. 64: 5416. 1977; Conant, Wilson Bull. 89: 198 & 208. 1977; Jiménez & Liogier, Moscosoa 1 (2): 19. 1977; Liogier, Bol. Jard. Bot. Nac. Raf. Mosc. 4: 5. 1977; López-Palacios, Fl. Venez. Verb. 9, 21, 220--261, 647, 652, & 653. 1977; Moldenke, Biol. Abstr. 64: 2433 & 6574. 1977; Moldenke, Phytologia 35: 276 & 507 (1977) and 36: 31, 33, 34, 36, 37, 39, 41, 164, & 502. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 384. 1977; Powell, Econ. Bot. 31: 417, 419, & 422. 1977; Dodson & Gentry, Selbyana 4: xiii, 576, 578, 579, & 605, pl. 271B. 1978; Liogier, Moscosoa 1: 37. 1978; Moldenke, Biol. Abstr. 66: 1277. 1978; Moldenke, Phytologia 38: 256, 260, 261, 384, & 505 (1978) and 40: 54 & 339. 1978; R. F. Sm., Act. Bot. Venez. 13: 193, 205, & 264. 1978.

In a personal communication to me, López-Palacios says that "El Dr. Leandro Aristeguieta, Familias y Géneros de los Árboles de Venezuela : 785, agrega para el género, sin referirlos a especie determinada estos otros no citados, 'pendare' y 'totumillo sabanero'. El de 'Salvia', allí citado, más bien parece corresponder a 'salvic', véase No 101 [C. subflavescens Blake]. Pérez-Arbeláez,

Plantas Útiles de Colombia- Tercera Redacción, 1956, señala el C. fruticosum bajo el nombre de 'teuro', pero ni este taxon ha sido registrado en Colombia, no yo he oído allí ta nombre vulgar. 'Tam-poco' aparece e, la edición anterior, la de la Contraloría General de la República, 1947, en donde lo trae bajo 'palo guitarro'."

The Pennington & Sarakhán K. 9533, distributed as Citharexylum sp., actually is Rehdera penninervia Standl. & Moldenke.

An additional excluded species is Citharexylum melanocum Broughton = Petitia domingensis Jacq.

CITHAREXYLUM AFFINE D. Don

Additional bibliography: Buek, Gen. Spec. Syn. Candoll. 3: 104. 1858; Hinton & Rzedowski, Anal. Esc. Nac. Cienc. Biol. 21: 31 & 48. 1975; Moldenke, Phytologia 31: 336-337 & 451 (1975) and 32: 68 & 200. 1975; Hocking, Excerpt. Bot. A.28: 258. 1976.

Recent collectors have found this plant growing in subtropical forests and at the edge of cultivated land, fruiting in August.

The Kerber 258, distributed as C. affine, actually is C. gleasonianum Moldenke.

Additional citations: MEXICO: Jalisco: Romero A. 16 (Mi). México: Pringle 6647 (Ln--69943); J. Rzedowski 22356 (Ld), 31150 (Mi).

CITHAREXYLUM AFFINE var. GLANDULIFERUM Moldenke

Additional bibliography: Hinton & Rzedowski, Anal. Esc. Nac. Cienc. Biol. 21: 31 & 48. 1975; Moldenke, Phytologia 31: 337. 1975.

CITHAREXYLUM ALBICAULE Turcz.

Additional bibliography: López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 355. 1975; Moldenke, Phytologia 31: 338. 1975.

CITHAREXYLUM ALTAMIRANUM Greenm.

Additional bibliography: Moldenke, Phytologia 31: 338 & 378. 1975.

The Davidses describe this species as a shrub, 2 m. tall, the corolla-lobes pink-purple, and the corolla-tube yellowish, and have found it growing in juniper woodland on rocky hillsides with legume shrubs and Opuntia, at 2290 m. altitude, flowering in August.

Material of this species has been misidentified and distributed in some herbaria as C. rosei Greenm.

Additional citations: MEXICO: Zacatecas: Davidse & Davidse 9971 (Ld, N).

CITHAREXYLUM ANDINUM Moldenke

Additional bibliography: Moldenke, Phytologia 31: 338-339 (1975) and 33: 227. 1975.

Additional citations: BOLIVIA: Cochabamba: Troll 978 (Mu). Santa Cruz: J. Steinbach 8572 (Ut--96716).

CITHAREXYLUM ARGUTEDENTATUM Moldenke

Additional bibliography: Moldenke, *Phytologia* 31: 339. 1975; Soukup, *Biota* 11: 9. 1976.

CITHAREXYLUM BERLANDIERI B. L. Robinson

Additional & emended bibliography: Coult., *Contrib. U. S. Nat. Herb.* 2: 330. 1892; G. W. Thomas, *Tex. Pl. Ecolog. Summ.* 77. 1969; Kooiman, *Act. Bot. Neerl.* 24: 463. 1975; Moldenke, *Phytologia* 32: 48. 1975; Hocking, *Excerpt. Bot. A.* 28: 258. 1976.

Webster & Wilbur describe this plant as a bushy shrub, with orange drupes, and found it growing in thickets of Prosopis juliflora, Celtis pallida, Condalia, Malpighia glabra, etc. The corollas on their no. 3067 are said to have been "cream, brownish at base", while those on Moore & Wood 3845 and R. Runyon 6069 were "white. Runyon states that in Cameron County, Texas, the species is "occasional on loams and high clay ground", referring to it as a small or large shrub with white corollas and red fruit. He found it in flower and fruit there in May and reports the vernacular name, "orcajuela".

Material of C. berlandieri has been misidentified and distributed in some herbaria as Vaccinium consanguineum Klotzsch. On the other hand, the Chiang, Wendt, & Johnston 8180, distributed as C. berlandieri, actually is C. rosei Greenm.

Additional citations: TEXAS: Cameron Co.: D. S. Correll 32361 3552 (Ld); Correll & Correll 32148 (Ld); Correll & Wasshausen 27666 (Ld); Crutchfield 1120 (Ld); Lundell & Lundell 10001 (Ld); R. Runyon 486 (Au—269680), 3838 (Au—268812, Au—269669), 4877 (Au—269670), 6069 (Ld, N); Webster & Wilbur 3067 (Mi). County undetermined: Hiway Dept. 10112 [Gulf Coast] (Ld). MEXICO: Hidalgo: Moore & Wood 3845 (Mi). Nuevo León: Gerlach 606 (Au—297416). San Luis Potosí: J. Rzedowski 23142 (Ld). Tamaulipas: González Medrano, Corona, Cortés, & Martínez 3090 (N); Webster, Adams, Miller, & Miller 11307 (Ld). Veracruz: Ventura A. 4062 (Au).

CITHAREXYLUM BRACHYANTHUM (A. Gray) A. Gray

Additional & emended bibliography: Coult., *Contrib. U. S. Nat. Herb.* 2: 330. 1892; G. W. Thomas, *Tex. Pl. Ecolog. Summ.* 77. 1969; Moldenke, *Phytologia* 32: 48 & 196. 1975; Anon., *Biol. Abstr.* 61: AC1.580. 1976.

Recent collectors describe this species as a divaricately much-branched shrub, to 1.5 m. tall, the corolla-throat congested by trichomes, and the fruit large, spherical, 2-seeded, with a purple cast, and have encountered it "in open Chihuahuan Desert with rocky reddish clay soil", in sandy soil or sandy loam, on "flattish deserts", on sandy plains, "in matorral desertico inerme on hills of dark extrusive igneous rocks in gravelly-sandy alluvium", "in calcareous gravelly soil in Yucca filifera woods on west-sloping calichified alluvial fan", and "in degraded grassland on volcanic

rock hillside in sandy-gravelly loam derived from igneous rocks", at altitudes of 1100--2330 meters, growing in association with Fouquieria splendens, Aloysia gratissima, Larrea tridentata, Flourensia cernua, Opuntia ficus-indica, O. kleiniae, Prosopis laevigata, Jatropha dioica, Acacia neovernicosa, Buddleia, Hilaria, Lycium, Mimosa spp., Yucca filifera, Y. decipiens, and numerous annual herbs and sparse shrubbery. They have found it in flower in May and July and in fruit in March, August, and September.

Henrickson refers to C. brachyanthum as "frequent" in Chihuahua. The corollas are said to have been "white" on Engard & Gentry 652 and on Johnston & al. 11193 & 11624. A notation on the labels of the Engard & Gentry collection indicates that buds were collected and preserved "in vial no. 8".

In general, the Chihuahuan and Coahuilan collections are very typical, but the San Luis Potosí and Zacatecas ones appear to vary slightly toward C. spathulatum Moldenke & Lundell.

Thomas (1969) calls C. brachyanthum the "littleleaf fiddlewood". Material of the species has been misidentified and distributed in some herbaria as C. spathulatum.

Additional citations: TEXAS: Webb Co.: Benavides 99 (Ld). MEXICO: Chihuahua: Henrickson 7752 (Ld). Coahuila: Chiang, Wendt, & Johnston 9112 (Ld); Henrickson 5959 (Ld); Johnston & Muller 346 (Mi); Johnston, Wendt, & Chiang 11623 (Ld). Durango: Engard & Gentry 652 (Ld). San Luis Potosí: Johnston, Wendt, & Chiang 11193 (Ld). Tamaulipas: González-Medrano 9031 (Mi). Zacatecas: Engard & Gentry 711 (Ld); Johnston, Chiang, & Wendt 10445 (Ld).

CITHAREXYLUM BULLATUM Moldenke

Synonymy: Cytharexylum bullatum Moldenke apud Hocking, Excerpt. Bot. A.26: 5. 1975.

Additional bibliography: Hocking, Excerpt. Bot. A.26: 5. 1975; Moldenke, Phytologia 31: 343 (1975), 32: 220 (1975), and 34: 273. 1976; López-Palacios, Revist. Fac. Farm. Univ. Los Andes 17: 41. 1976.

López-Palacios (1976) refers to this plant as "una característica y bella especie" and cites two additional collections from Cundinamarca, Colombia: Huertas & Camargo 5483 and Huertas & Jar-amilla 6086 in the Bogotá herbarium.

CITHAREXYLUM CAUDATUM L.

Additional synonymy: Chytharexylon caudatum Sw. apud López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 356, sphalm. 1975.

Additional & emended bibliography: Lunan, Hort. Jamaic. 1: 291 & 292. 1814; Sweet, Hort. Brit., ed. 1, 1: 323 (1826) and ed. 2, 417. 1830; G. Don in Loud., Hort. Brit., ed. 1, 248 (1830) and ed. 2, 248. 1832; Loud., Hort. Brit., ed. 2, 551. 1832; G. Don in Loud., Hort. Brit., ed. 3, 248. 1839; Sweet, Hort. Brit., ed. 3, 551. 1839; Buek, Gen. Spec. Syn. Candoll. 3: 104 & 105. 1858; López-Palacios, Bol. Soc. Venez. Cienc. Nat. 31: 355--357, 363, 364,

& 375. 1975; Moldenke, *Phytologia* 32: 48, 50, 51, 53, 61, 200, 219, 221—223, & 226 (1975) and 34: 252, 253, & 272. 1976; Anon., *Biol. Abstr.* 61: AC1.580. 1976; Grime, *Bot. Black Amer.* 97, 209, & 224. 1976; Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Soukup, *Biota* 11: 9. 1976; Grubb & Tanner, *Journ. Arnold Arb.* 57: 318. 1976; López-Palacios, *Fl. Venez. Verb.* 228, 248, & 647. 1977; Moldenke, *Phytologia* 36: 39 & 41 (1977) and 38: 384. 1978; Moldenke, *Biol. Abstr.* 66: 1277. 1978.

Recent collectors refer to this species as a shrub, 2--2.5 m. tall, or as a small tree, 5--7 m. tall, the leaves leathery, the petioles orangish, the infructescence-rachis orangish, the calyx pale-green, the stamens white, and the fruit at first green or green tinged with orange, then orange, finally red or black, odorless when crushed. They have found it growing on savannas, in open coppices, and at the edge of rainforests, at altitudes from sea-level to 500 meters, flowering in February, May, and June, fruiting in January, February, May, June, and December. Both Lunan and Adams refer to the fruit as "berries", but they are actually drupes. Lunan (1814) reports that they are sometimes eaten by the natives on Jamaica. Fosberg found the species "common but scattered" on Hunting Cay. The corollas are said to have been "white" on Croat 23535 & 23978, Duke 12507, A. Gentry 7608 & 7631, and Spellman & Stoddart 2302, but Kennedy says "corolla-tube green at base, lobes white".

The leaves on some Cuban and Dominican Republic specimens (e.g., Liogier & Liogier 24744) are uniformly remarkably small and apically acute. They may represent f. parvifolium Moldenke. The leaf-blades on Hespenheide & al. and on Proctor 26629 have very conspicuous venation on the upper surface and may represent one of the named hybrids [such as xC. jamaicense Moldenke] rather than the typical form of C. caudatum.

Don (1830), Sweet (1830), and Loudon (1832) all list C. caudatum as cultivated in British gardens, introduced from Jamaica in 1763 and known as the "upright fiddle-wood".

The J. Steinbach 8572, distributed as C. caudatum, actually is C. andinum Moldenke, while J. G. Jack 6874, 7243, & 7255 are C. caudatum f. parvifolium Moldenke, C. D. Adams 10812 and Harris 11065 are xC. jamaicense Moldenke, and Linden 32 in part is C. lucidum Schlecht. & Cham.

Additional citations: BELIZE: Croat 23978 (N); Dwyer 11402 (N); A. Gentry 7608 (N), 7631 (N); Liesner & Dwyer 1548 (W—2787880). GULF OF HONDURAS ISLANDS: Hunting Cay: Spellman & Stoddart 2455 (W—2784892). Sapodilla Cay: Spellman & Stoddart 2302 (W—2777480). NICARAGUA: Chontales: Narvaez S. 2748 (N). COSTA RICA: Alajuela: Lent 1831 (Ws). PANAMA: Panamá: H. Kennedy 2276 (N). PEARL ISLANDS: San José: Duke 12507 (W—2788963). BAHAMA ISLANDS: Eleuthera: Correll & Hill 45337 (N). JAMAICA: C. D. Adams 8467 (Mu);

Crosby, Hespenheide, & Anderson 692 (Ld); Hespenheide, Hespenheide, Calver, & Ricklefs 1278 (Ld); Proctor 26629 (Ld). HISPANIOLA: Dominican Republic: Gastony, Jones, & Norris 427 (N). HAWAIIAN ISLANDS: Oahu: Crosby & Anderson 1342 (Mi); Sohmer 6125 (Lc). CULTIVATED: Cuba: C. F. Baker 23 (Ln—69954).

CITHAREXYLUM CAUDATUM f. ANGUSTIFOLIUM Moldenke, Phytologia 38: 384. 1978.

Bibliography: Moldenke, Biol. Abstr. 66: 1277. 1978; Moldenke, Phytologia 38: 384. 1978.

Citations BELIZE: Croat 23535 (Ld—type, N—istotype).

CITHAREXYLUM CAUDATUM f. PARVIFOLIUM Moldenke, Phytologia 38: 384. 1978.

Synonymy: Citharexylum caudatum f. parvifolium Urb. ex Moldenke, Prelim. Alph. List Inv. Names 16, in syn. 1940. Citharexylum caudatum var. parvifolium O. E. Schulz ex Moldenke, Prelim. Alph. List Inv. Names 16, in syn. 1940.

Bibliography: Moldenke, Prelim. Alph. List Inv. Names 16. 1940; Moldenke, Biol. Abstr. 66: 1277. 1978; Moldenke, Phytologia 38: 384 (1978) and 40: 491. 1978.

Collectors have encountered this plant at the edge of woods and on savannas, at 800—1750 meters altitude, flowering in April and from June to August, fruiting in January, June, August, and December, referring to it as a shrub, 8—9 feet tall, or a small tree, to 16 feet tall, "las ramas colgantes", the fruit red, turning black and lustrous. The corollas are said to have been "white" on Howard 5204 and Jack 6874, 7243, & 7436 and "creamy-white" on Jack 7255.

Citations: CUBA: Las Villas: A. Gonzales 190 (N); R. A. Howard (N), 5228 (N); J. G. Jack 6874 (A—istotype, N—type, N—istotype), 7243 (A, B, Ba, F—70254, N, W—1478175), 7255 (A, N, N, N—photo, P, W—1476546, Z—photo), 7436 [April 18] (N), 7436 [July 11] (D—777439, N); León & Clément 6507 (N). Province undetermined: C. Wright 1356 [Herb. Sauvalle 1770] (B, Hv, Pa, T, W—57323). HISPANIOLA: Dominican Republic: Liogier & Liogier 24744 (N). Haiti: Ekman H. 1248 in part (Ld).

CITHAREXYLUM CHARTACEUM Moldenke

Additional bibliography: Moldenke, Phytologia 31: 347. 1975; Soukup, Biota 11: 9. 1976.

CITHAREXYLUM COOPERI Standl.

Additional bibliography: Moldenke, Phytologia 31: 347—348 & 456 (1975), 32: 49 & 226 (1975), and 34: 251. 1976.

Breedlove describes this plant as a shrub, 10 feet tall, or a tree, 40 feet tall.

[to be continued]



Moldenke, Harold N. 1978. "Additional notes on the genus *Citharexylum*. XII." *Phytologia* 40, 486–492. <https://doi.org/10.5962/bhl.part.28277>.

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