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Two new species of *Mollinedia* (Monimiaceae: Monimioideae) from Southern Mexico

DAVID H. LORENCE

ABSTRACT

LORENCE, D. H. (1999). Two new species of *Mollinedia* (Monimiaceae: Monimioideae) from Southern Mexico. *Candollea* 54: 433-438. In English, English and Spanish abstracts.

The new species of *Monimiaceae*, *Mollinedia oaxacana* Lorence and *Mollinedia torresiorum* Lorence from Oaxaca, Mexico are described and illustrated. Their distribution, habitat, and taxonomic affinities are discussed, and specimen citations are given.

RESUMEN

LORENCE, D. H. (1999). Dos nuevas especies de *Mollinedia* (Monimiaceae: Monimioideae) del sur de México. *Candollea* 54: 433-438. En inglés, resúmenes en inglés y en español.

Se describen y ilustran dos nuevas especies de *Monimiaceae*, *Mollinedia oaxacana* Lorence y *Mollinedia torresiorum* Lorence, de Oaxaca, México. Se discuten sus distribuciones, habitat, y afinidades taxónomicas, y se citan los ejemplares examinados.

KEY-WORDS: *Mollinedia* – *MONIMIACEAE* – Oaxaca – Mexico.

Mollinedia Ruiz & Pavón (*Monimiaceae: Monimioideae*) is a genus of approximately 70 (PEIXOTO, 1987) to 95 (MABBERLEY, 1987) species of small, dioecious trees and shrubs ranging from tropical Mexico to southern Brazil where they occur in moist and wet forest habitats. During the course of revising *Mollinedia* for *Flora Mesoamericana*, *Flora of Chiapas*, and *Flora de Oaxaca*, the following two undescribed species were encountered in Oaxaca, Mexico.

***Mollinedia oaxacana* Lorence, spec. nova** (Fig. 1).

Type: MEXICO. Oaxaca: limite entre los distritos de Ixtlán y Tuxtépéc, Sierra de Juárez, a 3 km al N de Metates sobre Ruta 175, camino a San Martín Soyolapan, 650 m, 17.IV.1982 (fl), D. Lorence & R. Cedillo T. 4055 (fl) (Holo-: MEXU; iso-: BM, CAS, ENCB, MO, PTBG 3 sheets, XAL).

Species Mollinediae viridiflorae Tul. affinis, habitu grandiori usque ad 18 m, ramunculis et petiolis subtiliter velutino-tomentosis, foliis grandioribus lamina 12-20 × 6-12 cm, pagina abaxialiter sericea differt.

Dioecious small trees 4-6(-18) m tall, the trunk to 25 cm d.b.h., the twigs and new growth finely velutinous-tomentose with pale greenish to fulvous antrorsely curved trichomes 0.3-0.8 mm long, the leafy twigs 2-4 mm diam., finely velutinous, becoming glabrate, lenticellate. Leaves opposite, petiolate; petioles 11-25 × 1.2-1.7 mm, velutinous-tomentose; lamina stiffly



Fig. 1. – *Mollinedia oaxacana* Lorence. **a**, leafy branch with terminal staminate inflorescences; **b**, ramigerous pistillate inflorescence; **c**, pistillate flower at anthesis; **d**, pistillate flower, longitudinal section; **e**, dichasium of staminate flowers at anthesis; **f**, staminate flower, longitudinal section. [**a**, Lorence & Cedillo T. 4060 (PTBG); **b-d**, Lorence & Cedillo T. 4056 (PTBG); **e, f**, Lorence & Cedillo T. 4055 (PTBG)].

chartaceous to subcoriaceous, elliptic to broadly elliptic, broadly ovate-elliptic, obovate-elliptic or broadly obovate-elliptic, (10-) 12-20 × (4.3-)6-12 cm, the base narrowly to broadly cuneate or obtuse, the apex acute to obtuse or abruptly short acuminate, apiculate, drying light grayish or yellowish green, discolorous, adaxially finely sericeous, glabrescent, abaxially persistently sericeous, densely sericeous along costa and 2° veins, the 2° veins 5-7 per side, making a 55-65° angle with costa, festooned brochidodromous, anastomosing 3-8 mm from margin, the venation prominulous, visible to 4° adaxially and to 5° abaxially, the margin minutely serrate in apical half with 3-7 pairs of minute teeth. Staminate inflorescences ramigerous on leafless nodes or sometimes terminal, sericeous-velutinous, fulvous, 1-4 clustered dichasia (triads) 2.5-3.5 cm long or a pleiochasium 4-5.5 cm long, the peduncle 10-19 mm long, often bracteolate basally, the bracteoles 3 mm long; staminate flowers on pedicels (2-)4-8 × 1-1.5 mm, bracteoles 3 mm long, in bud obovoid-globose, 5-7 × 4-5 mm, at anthesis broadly obconic, 6-11 mm diam., greenish-yellow when fresh, externally sericeous, internally papillate with rare, scattered hairs, the tepals 4, erect, deltoid, subequal, 3-5 mm wide basally, the outer pair acute apically, the inner pair with scarious to lacinate margins, stamens 35-52, ovoid-ellipsoid, obtuse, 1-1.6 × 0.8-1.2 mm, the filament 0.2-0.5 mm long, the anther 1-1.4 mm long with thecae confluent apically. Pistillate inflorescences usually ramigerous on leafless nodes, rarely terminal, solitary or paired, a 3 (-4)-flowered dichasium 1.2-1.5 × 1.5-2.5 cm, pale green or fulvous, sericeous-velutinous, the main axis 2-3 mm long, basally bracteolate; pistillate flowers on pedicels 4-7 × 1.5 mm, bracteoles 2 mm long, in bud ovoid-ampuliform, externally sericeous-velutinous, internally verrucose, at anthesis 4-5 (-7) × 5-6.5 mm, greenish-yellow when fresh, the 4 lobes erect or slightly incurved, deltoid, 2 × 2 mm, the calyptra 2.5-3 mm long including lobes, deciduous; carpels 30-35, pileate, 1.5-2 × 0.5-0.7 mm, apically papillose, basally velutinous, intercarpellary area velutinous. Fruiting receptacles on leafless stems, the pedicel and peduncle 10-18 × 2 mm, the torus 10-15 mm diam., velutinous, bearing 5 or more carpels; mature carpels sessile, broadly ellipsoid to ovoid, 1.5-1.6 × 1.1-1.2 cm, appressed hirtellous, surface smooth, drying greenish-brown, the pericarp 0.1-0.2 mm thick.

Distribution and habitat. – Currently known from the lower northern slopes of the Sierra de Juárez and adjacent lowlands around Tuxtepéc, Valle Nacional and Cuicatlán in Oaxaca, Mexico. This new species inhabits lowland and lower montane wet forest transitional to cloud forest from 600 to 1800 m elevation, associated with *Liquidambar styraciflua* L., *Vochysia* sp., *Terminalia amazonia* (J. F. Gmel.) Exell, and *Quercus* spp. Two collections are known from localities near Tuxtepec formerly occupied by lowland wet forest (50-100 m elevation) with *Terminalia amazonia*, *Laplacea* sp., *Oreomunnea* sp., and *Ternstroemia* sp., where *M. oaxacana* was presumably more widespread before deforestation. Flowering in February, April and June, fruiting in February, June, July, and October.

Paratypes. – **MEXICO. Oaxaca:** Distrito de Ixtlán, Ruta 175 Tuxtepec a Oaxaca, Sierra de Juárez, km 49 entre Puerto Eligio a Comaltepec, 6.X.1965 (fr), *Martínez-Calderon 381* (ENCB, F, MEXU 2 sheets); ibidem, 23.VII.1966 (fr), *Martínez-Calderon 954* (MEXU). Distrito de Tuxtepéc/Ixtlán (límites), Ruta 175, camino a San Martín Soyolapan, ca. 3 km al N de Metates, 650 m, 17.IV.1982 (fl), *Lorence & Cedillo T. 4054* (MEXU, PTBG); ibidem, (fl), *Lorence & Cedillo T. 4056* (MEXU, PTBG); ibidem, (fl), *Lorence & Cedillo T. 4060* (MEXU, PTBG); 39 km al S de Valle Nacional, 1800 m, *Rzedowski 33829* (ENCB). Distrito de Tuxtepéc, 11 km por la carretera (Ruta 175) a Valle Nacional, 11.II.1960 (fr), *Anon. sub Comisión de Dioscoreas 4562* (INIF); ibidem, (fl) *Anon. sub Comisión de Dioscoreas 4574* (MEXU); ibidem, 22.II.1960 (st), *Anon. sub Comisión de Dioscoreas 4667* (INIF, MEXU); 6 miles west of Valle Nacional on Hwy. 175 between Tuxtepec and Oaxaca, 660 m, 29.VI.1977, *Croat 39750* (MO); Municipio de Cuicatlán, de Santa Cruz a Fentitla, 1300 m, 20.IV.1919 (F); Municipio de San Felipe Usila, Arroyo Lumbre, 3 km E de Santa Cruz Tepetotutla, 17°44'N, 96°32'W, 780 m, 5.II.1993 (fl), *Meave del Castillo & al. 1582* (MEXU, MO).

Affinities. – *Mollinedia oaxacana* is clearly related to the widespread and variable *M. viridiflora* Tul., a species ranging from southern Mexico to Panama. It most closely resembles collections of the latter species with large leaves described as *M. guatemalensis* Perkins (herein considered as synonymous with *M. viridiflora*). However, *M. viridiflora* is distinguished by its smaller habit, much sparser, strigillose or hirtellous pubescence, usually much smaller leaves and flowers, and rugose fruiting carpels. Furthermore, *M. oaxacana* occurs sympatrically with *M. viridiflora* in at least one locality (*Lorence & Cedillo T. 4055, 4056, 4060*), confirming that these taxa are distinct and reproductively isolated.

Mollinedia oaxacana also resembles *M. butleriana* Standl. of Honduras, Oaxaca and Veracruz, a species which has equally large leaves but differs in its coarser, dark brown spreading hirtellous pubescence and leaves that dry dark brown and have more numerous marginal teeth (8-21 pairs). PEIXOTO (1985: 196; 1987: 99-100, fig. 20 c-e) described and published *Mollinedia gentrii* Peixoto based on a specimen from Sierra Santa Marta, Veracruz (*Gentry & Lott 32429*, holotype MO!, isotypes MEXU!, PTBG!, RB). I consider *M. gentrii* to be synonymous with *M. butleriana*. However, Peixoto also cited as paratype a collection of *M. oaxacana* (*Martinez-Calderon 381*, ENCB, F, MEXU), and consequently her description of *M. gentrii* is based two different taxa.

***Mollinedia torresiorum* Lorence, spec. nova** (Fig. 2).

Type: MEXICO. Oaxaca: Distrito de Ixtlán, Ruta 175 Tuxtepec a Oaxaca, a 5 km al N de Vista Hermosa, 1260 m, 14.IV.1982 (fl), *D. Lorence & R. Torres C. 4017* (Holo-: MEXU; iso-: CAS, MEXU, PTBG 3 sheets).

Species Mollinediae viridiflorae Tul. affinis, ramunculis et foliis glabris, foliis venis secundariis (8-) 10-16 paribus, inflorescentia staminata bracteis linearibus vel subulatis 5-6 mm longis, floribus staminatis minoribus, staminibus 16-19, inflorescentia pistillata fructificans toro glabro, carpellis stipitibus 1-2.5 mm longis differt.

Dioecious small trees 1-3 m tall, sparsely branching, the new growth sparsely strigillose with scattered simple ascending hairs to 0.5 mm long, soon glabrate, the mature leafy twigs glabrous, terete, 1-2.5 mm diam., the older twigs sparsely lenticellate. Leaves opposite, petiolate, glabrous; petioles 4-12 × 0.6-1.2 mm; lamina chartaceous, drying dark brownish- or blackish-green adaxially, paler abaxially, narrowly elliptic to linear-elliptic, 7-16 × 2-5 cm, the base cuneate to obtuse, the apex acuminate to caudate, the acumen 0.6-2.5 cm long, often falcate, the 2° veins (8-)10-16 pairs, making a 70-80° angle with costa, festooned brochidodromous, anastomosing 1.5-3 mm from margin, the venation prominulous, visible to 4-5° on both surfaces, the margin distally serrate-dentate with 2-5 pairs of thickened, antrorse teeth. Staminate inflorescences ramigerous along the internodes on new growth or sometimes terminal, 2-5 cm long, 1-4 clustered dichasia (triads) or a pleiochasium, sparsely strigillose, the peduncle (0.6-)1-3 cm long, subtended by a bracteole 2-3 mm long; staminate flowers on pedicels 4-15 × 0.3-0.5 mm, subtended by a pair of linear-subulate bracteoles (2-) 5-6 × 0.5 mm, in bud obovoid, 3-4 × 2.5-3 mm, at anthesis broadly obconic, 4-6 × 4-6 mm, greenish-yellow when fresh, externally with rare scattered hairs, internally glabrous, the 4 tepals erect or slightly incurved, deltoid, subequal, 1.5-2 mm wide basally, the outer pair acute to obtuse at apex, the inner pair obtuse with scarious-laciniate margins; stamens 16-19, ovoid-ellipsoid, obtuse, 1-1.8 mm long, the anther 0.8-1.5 × 1 mm, the thecae apically confluent, the filament 0.2-1 mm long. Pistillate inflorescences and flowers not seen. Fruiting receptacles ramigerous on leafless stems, the pedicel and peduncle 2-2.4 cm long, 0.6-0.8 mm diam., the torus 5-6 mm diam., glabrous, bearing 2-6 or more carpels on stipe-like bases 1-2.5 mm long; submature carpels broadly ovoid, 1.3-1.4 × 1-1.1 cm, glabrous, smooth, the pericarp 0.1-0.2 mm thick, drying dark brown.

Distribution and habitat. – Known only from Oaxaca, Mexico where it occurs on the lower northern slopes of the Sierra de Juárez in the vicinity of Vista Hermosa at 1260-1340 m elevation. *Mollinedia torresiorum* occurs in the understory of lower montane wet forest transitional to cloud forest with *Hedyosmum mexicanum* Cordem., *Brunellia* sp., *Liquidambar styraciflua*, *Rhedia* sp., and various species of *Lauraceae*.

Paratypes. – **MEXICO. Oaxaca:** Distrito de Ixtlán, a 5.3 km al N de Vista Hermosa, carretera Tuxtepec a Oaxaca, 27.IX.1982 (fr), *Torres C. & Cedillo T. 1463* (CAS, MEXU, MO, PTBG); entre Metates y Vista Hermosa a 4 km al N de Vista Hermosa, 1340 m, 17.IV.1982 (fl), *Cedillo T. & al. 1239* (BM, CAS, MEXU, PTBG).

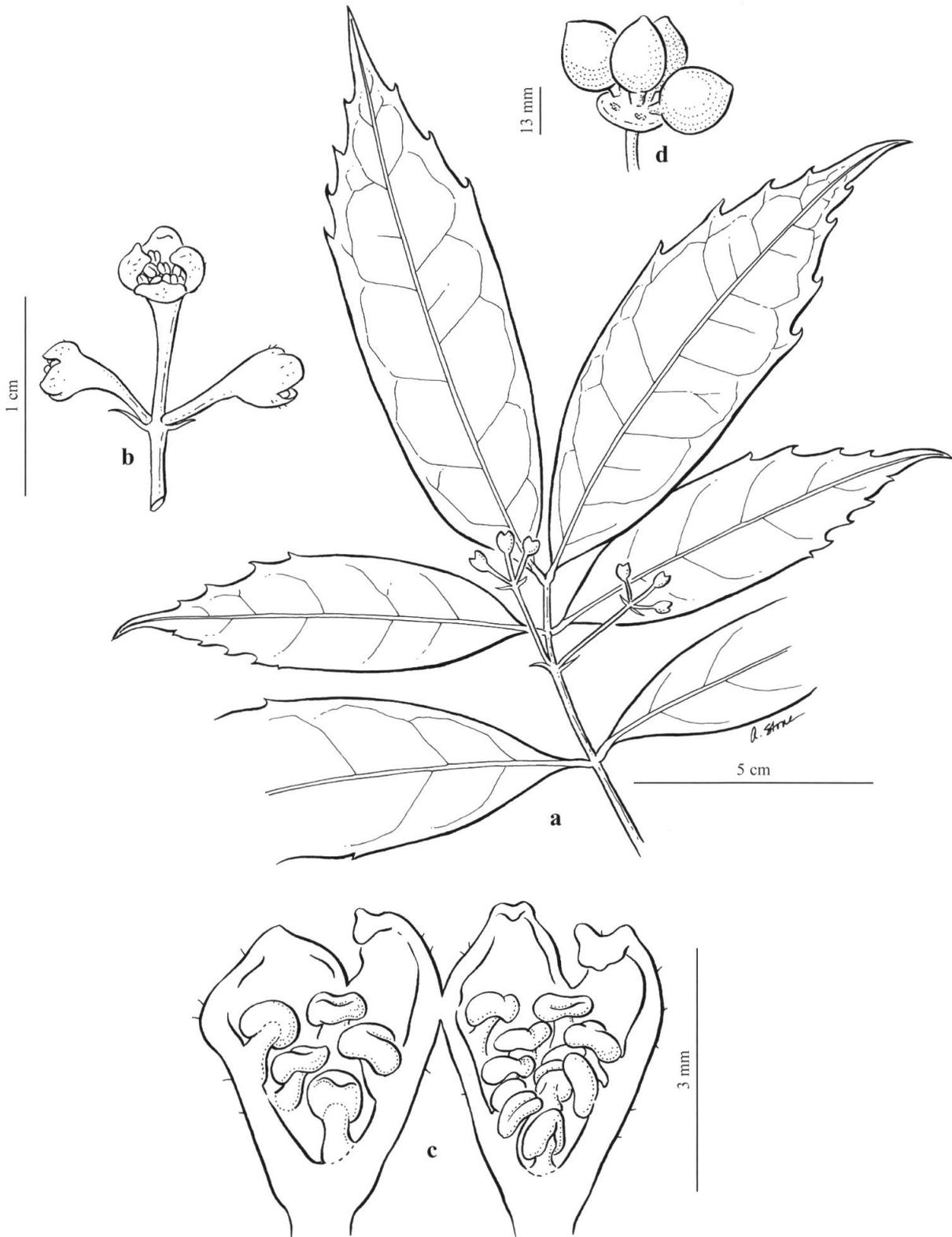


Fig. 2. – *Mollinedia torresiorum* Lorence. **a**, leafy branch with staminate inflorescences; **b**, dichasium of staminate flowers at anthesis; **c**, staminate flower, longitudinal section; **d**, infructescence showing stipitate fruiting carpels. [**a-c**, Lorence & Torres C. 4017 (PTBG); **d**, Torres C. & Cedillo T. 1463 (PTBG)].

Affinities. – *Mollinedia torresiorum* is related to *M. viridiflora*, with which it occurs sympatrically in the Sierra de Juárez. These two species do not appear to hybridize and obviously represent reproductively isolated and taxonomically distinct entities. *Mollinedia viridiflora* is a widespread and variable species ranging from southern Mexico through Central America which differs by the characters given in the diagnosis. I am pleased to name this new species after my friends and former colleagues Rafael and Leticia Torres Colín, a botanical brother-and-sister team at the Instituto de Biología, Herbario Nacional (MEXU). Both have contributed greatly to our knowledge of the flora of Oaxaca.

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