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Novitiae florae cubensis No. 24

ELDIS R. BÉCQUER GRANADOS

Tetrazygia decorticans (Miconieae, Melastomataceae), a new species from Cuba

Abstract

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Tetrazygia decorticans from central Cuba, a species new to science, is described and illustrated. Its position in *Tetrazygia* is discussed. The species is easily distinguished from other Cuban melastomes by its reddish bark that peels off in long laminar shreds.

Key words: vascular plants, melastomes, taxonomy, Antilles, Guamuhaya massif.

In 1997, during field work in connection with a floristic inventory of the ecological reserve Alturas de Banao in the Guamuhaya massif, central Cuba, an undescribed melastome species was collected and identified as belonging to *Tetrazygia* Rich. ex DC., based on the presence of a dense indumentum of radiate scale hairs, a paniculate terminal inflorescence, and 4-merous flowers with hypanthia slightly constricted below the calyx.

Tetrazygia is an Antillean genus of about 25 species (Howard 1989), one of which extends to S Florida. It is conventionally defined by the presence of hypanthia strongly constricted below the calyx and by inconspicuous or absent external calyx lobes (Fawcett & Rendle 1926, Alain 1957). However, its delimitation has caused problems in the past and it is likely not monophyletic, as discussed below.

Borhidi (1977) transferred the species of *Tetrazygia* with conspicuous, elongated external calyx lobes to a new genus, *Tetrazygiopsis* Borhidi. This genus was not accepted in the Floras of Puerto Rico (Alain 1995) and Hispaniola (Alain 2000). Judd & Skean (1991), in their generic realignments of terminal-flowered taxa of *Miconieae* DC., also considered *Tetrazygiopsis* as a synonym of *Tetrazygia.*

Alain (1957) considered *Tetrazygia* as an artificial genus, perhaps better a section of *Miconia* Ruiz & Pav. Judd & Skean (1991), likewise noted that, as currently defined, *Tetrazygia* might not be monophyletic and that the delimitation of the genus poses problems, as some species of *Tetrazygia* have only slightly constricted hypanthia and several species of *Miconia,* some of

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them included in *Tetrazygia,* have slightly to moderately constricted hypanthia. They suggested that the genus eventually might be recognized in a broader sense, to include several species now placed in *Miconia,* redefined as having a distinctive glabrous style, strongly curved at the apex and with a minute stigma, irrespective of the presence or absence of a constriction between calyx and hypanthium.

In their analysis of DNA sequence data in the *Miconieae,* Michelangeli & al (2004) included a few species of *Tetrazygia.* According to their results the genus is paraphyletic, with *Charianthus* (and possibly *Calycogonium,* in part) derived from within it. Preliminary molecular studies in the genus *Pachyanthus (Miconieae),* by Bécquer & al. (in prep.), in which several species of *Tetrazygia* were included, confirm that *Tetrazygia* is not a monophyletic genus. The species with conspicuously constricted hypanthia, *T. bicolor* (Mill.) Cogn., *T. barbata* Borhidi*, T. coriacea* Urb. and *T. lanceolata* Urb., form a coherent clade. The other *Tetrazygia* species included in the analysis, *T. delicatula* (A. Rich.) Borhidi, *T. elegans* Urb., *T. aurea* Howard & Briggs and the new specie described below, do not group with the above-mentioned clade, nor do they form a single clade.

Taking into account the difficulties of delimiting the genus *Tetrazygia* and the impossibility of solving them in the near future, I choose here to follow the traditional circumscription of the genus and place the new species within it.

Tetrazygia decorticans Bécquer, **sp. nov.**
Holotype: Cuba, prov. Sancti Spíritus "Reserva Ecológica Alturas de Banao, base de la Teta de Juana, orillas del arroyo del tunel de Caja de Agua", 640 m, 21°51"50.1"N, 79°35'59.7"W, 16.5. 2004, *Bécquer & Abbott HFC 82464* (HAJB!; isotypes: B!, FLAS!, GH!, HAC!, HAJB!, JE!, K!, NY!, US!) – Fig. 1.

Ab affinibus *Tetrazygiae eleganti* et *T. urceolata* distinguitur foliis pergamentaceis c. 14 cm longis, acuminatis, nervis quarti ordinis in facie abaxiali prominentibus, petalis 4-5.5 mm longis. Insuper ab ambis nec non ab omnibus melastomataceis cubanis differt cortice truncorum rubescente extus in fragmentos loriformes elongatos dissoluto.

Tree to 10(-14) m tall, with a reddish bark that peels off in long laminar shreds (Fig. 2); young twigs tetragonal; twigs, petioles and inflorescences covered with a lepidote indumentum of dense, white to light brown radiate scales. *Leaves* with a 1.5-3.6 cm long petiole; blade elliptic-lanceolate, 6-14 × 1.2-4.5 cm, chartaceous to subcoriaceous, the apex attenuate or acuminate, the base cuneate to obtuse, the margin slightly revolute, entire; adaxial surface with a sparse, deciduous lepidote indumentum, shiny, dark green in live plants, becoming light green by drying; abaxial surface densely and persistently lepidote; venation acrodromous, suprabasal, the secondary veins arising from the midvein 0.2-0.4 cm above the base of the lamina; the midvein impressed adaxially and prominent abaxially, the secondary and tertiary veins not or slightly impressed adaxially and ± prominent abaxially, quaternary reticulate veins prominent adaxially but inconspicuous abaxially. *Inflorescence* a paniculate cyme, terminal, 6-12 cm long, borne on a 2.5-5.2 cm long peduncle; bracts persistent, triangular, 1-2 mm long, but 2-50 mm long in the lowermost, foliaceous pair. *Flowers* sessile, 4-merous, c. 1 × 1 cm. *Hypanthium* campanulate, 4-4.4 × 2.4-3 mm, the free portion 1.8 mm long, external surface densely white-lepidote outside, glabrous inside. *Calyx* broadly cup-shaped, not extending; external calyx lobes navicular to triangular, obtuse, 1.5-2 mm; internal calyx lobes inconspicuous, triangular, membranaceous, 1 × 2-3 mm. *Petals* imbricate in bud, broadly obovate, asymmetrical, measuring 4-5.5 × 4-5.5 mm, membranaceous, white, glabrous, rounded-emarginate and with a broadly cuneate base. *Stamens* 8; filaments flattened, 3.5-4 mm long, white; anthers ovate, sagittate, 2.8-3.4 × 1-1.2 mm, yellow; connective thick, oblong, shorter than the thecae, lacking glands or a dorsal appendage; thecae with a sagittate base and a dorsal apical pore. *Style* deflexed, terete, glabrous, 7-9 mm long; stigma minute, capitate, densely papillose; ovary 3-locular, without appendage, apex glabrous. *Berries* globose, glabrescent, dark blue to black, 4-5 mm in diameter.

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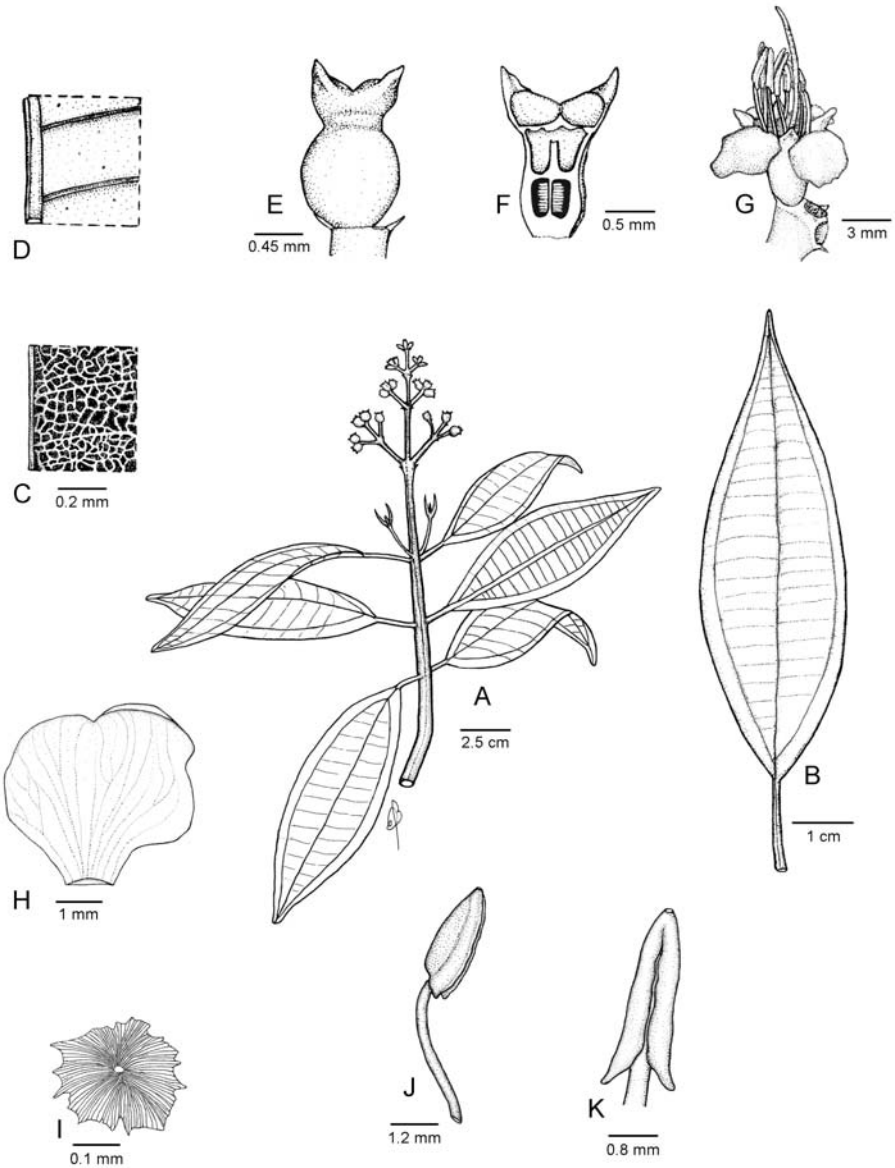


Fig. 1. *Tetrazygia decorticans.* – A: habit; B: leaf, adaxial surface; C: detail of the same; D: detail of abaxial leaf surface; E: young fruit; F: flower in longitudinal section; G: flower; H: petal; I: peltate scale; J: filament and anther in side view; K: anther in front view. – Drawn by the author from the holotype.

Etymology. – The epithet refers to the plant's most remarkable feature: its reddish bark peeling off in very long laminar shreds (Fig. 2) a feature unknown in any other Cuban melastome.

Phenology. – Flowering May to June, fruiting July to September.

Distribution and habitat. – *Tetrazygia decorticans* is endemic to the Lomas de Banao, Sancti Spíritus mountains, and Pico Potrerillo, Trinidad mountains, both situated in central Cuba. The

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Fig. 2. Trunk of *Tetrazygia decorticans,* with bark peeling off in laminar shreds.

species is very rare. It occurs from 600-650 m in seasonally wet evergreen forest. Associated melastome species include: *Miconia prasina* (Sw.) DC., *Meriania leucantha* subsp. *nana* (Triana) Borhidi, *Tetrazygia bicolor* (Mill.) Cogn. and *Clidemia barbeyana* Cogn. Other associated species include *Calyptronoma plumeriana* (Mart.) Lourteig, *Cyathea arborea* (L.) Sm., *Alsophila cubensis* (Underw. ex Maxon) Caluff & Shelton, *Cinnamomum montanum* (Sw.) J. Presl, *Ocotea leucoxylon* (Sw.) Mez, *Guarea guidonea* (L.) Sleumer, *Talipariti elatum* (Sw.) Frixell, *Roystonea regia* (Kunth) O. F. Cook, *Dendropanax arboreus* (L.) Decne. & Planch., *Faramea occidentalis* (L.) A. Rich., *Wallenia laurifolia* (Jacq.) Sw., *Citharexylon caudatum* L., *Casearia sylvestris* Sw. subsp. *sylvestris* and *Tabernaemontana ambliocarpa* Urb.

Additional specimens seen. – Cuba: prov. Sancti Spíritus: "Alturas de Banao, Caja de Agua, base del farallón norte de Tetas de Juana, bosque siempreverde mesófilo húmedo", 500 m, 8.5.2001, *Bécquer HFC 79752* (B, HAJB); ibid., 19.7.1999, *Bécquer HFC 79753* (HAJB); ibid., 10.5.2000, *Bécquer & González HFC 79754* (HAJB); "Trinidad, Topes de Collantes, falda norte y cima del Pico Potrerillo", 600-1000 m, 6.5.1977, *Bisse & al. HFC 34865* (HAJB, JE).

Relationship. – *Tetrazygia decorticans* probably is most closely related to the *Tetrazygia* species with paniculate inflorescences, 4-merous flowers with sagittate anthers, navicular to triangular external calyx lobes and but weakly constricted hypanthia, viz., *T. elegans* Urb. and *T. urceolata* (Urb.) Borhidi, both species endemic to Sierra Maestra in eastern Cuba. The new species differs of those species by the leaf and floral features given in Table 1.

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Table 1. Comparison of *Tetrazygia decorticans* with related species.

	T. decorticans	*T. elegans*	*T. urceolata*
Leaf texture	chartaceous to subcoriaceous	coriaceous	coriaceous
Lamina length [cm]	6-14	3.5-6	4-6.5
Lamina with [cm]	1.2-4.5	1.2-2.2	1.3-1.9
Lamina shape	elliptic-lanceolate	elliptic	oblong to oblong-lanceolate
Leaf apex	attenuate to acuminate	obtuse to truncate or slightly emarginate	attenuate to shortly acuminate
Tertiary veins on abaxial surface of lamina	prominent	flat	flat or slightly raised
Quaternary veins on adaxial surface of lamina	prominent	flat	flat
Druses visible or not on adaxial surface of lamina	not visible	not visible	visible
Petals length [mm]	4-4.5	2	3.5

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