

LECTOTYPIFICATIONS AND NOMENCLATURAL NOTES OF JOSÉ JERÓNIMO TRIANA'S SPECIES OF DILLENIACEAE

GERARDO A. AYMARD C.¹

Abstract. The preparation of treatments of Dilleniaceae for the Flora of Colombia and Flora of Ecuador projects required a literature survey, visits to herbaria, and the analysis of types and general collections found on the Internet. The results indicate the need to lectotypify several species of Dilleniaceae described by the Colombian botanist José Jerónimo Triana. These taxa are based on specimens collected during Triana's participation in the Colombian Chorographic Commission ("Comisión Corográfica") from 1851 to 1857, under the supervision of Agustín [Giovanni Battista Agostino] Codazzi. Lectotypes for the following six species are proposed herein: *Davilla densiflora*, *Ricaurtea congestiflora*, *Ricaurtea nitida*, *Tetracera castaneifolia*, *Tetracera hydrophila*, and *Tetracera sessiliflora*.

Resumen. La preparación de los tratamientos de Dilleniaceae para las Floras de Colombia y Ecuador han requerido de una revisión de literatura, visitas a numerosos herbarios, y el análisis de material tipo y colecciones en el Internet. Como resultado se ha observado la necesidad de realizar lectotipificaciones de varias especies descritas por el botánico colombiano José Jerónimo Triana en el siglo XIX. Estas especies están basadas en ejemplares colectados por Triana durante su participación en la Comisión Corográfica, dirigida por Agustín [Giovanni Battista Agostino] Codazzi, desde 1851 hasta 1857. En la presente contribución se proponen lectotipos para las siguientes seis especies: *Davilla densiflora*, *Ricaurtea congestiflora*, *Ricaurtea nitida*, *Tetracera castaneifolia*, *Tetracera hydrophila*, and *Tetracera sessiliflora*.

Keywords: Dilleniaceae, Lectotypification, José Jerónimo Triana, Colombia

The designation of lectotypes is necessary because holotypes were not usually selected for most of the species described in the 18th and 19th centuries, particularly when authors cited several collections or syntypes (McNeil, 2014).

Many descriptions often referred to a "type" in a superficially and ambiguous way, which again often requires the designation of a lectotype. The nomenclatural rules define a lectotype as "a specimen or other element selected from the original material" (McNeil et al., 2012). In the past, many authors operated under the now discarded assumption that the first specimen cited was automatically the type, a purely bibliographical exercise with no element of selection or choice (Prado et al., 2015). Moreover, references to a "type" were often to "a collection" with several replicates, in the same or in different herbaria, some examined by the author or not, or to a collection locality, where the same collector or several collectors may have gathered specimens. In most flowering plant groups, collection with several replicates in different herbaria could have been made from a single individual, but in other groups with small individuals it is not always true that representatives of a particular collection represent the same species. Currently, the idea is to choose a specimen that the author had at hand ("original material") and alternatively might have had designated as holotype.

The plants described by José Jerónimo Triana (1828–1890) in 1858 and then by Triana and Jules Émile Planchon (1833–1990) in 1862 typically need the designation of lectotypes (Kirkbride Jr., 1982). Triana was a notable Colombian medical doctor and botanist who was an active participant in the Colombian Chorographic Commission ("Comisión Corográfica") from January 1850, to December 1856, under the supervision of Agustín [Giovanni Battista Agostino] Codazzi (Dugand, 1944; Díaz-Piedrahita, 1988, 1996; Acuña, 2011). He collected nearly 8,000 specimens during his travels (Parra-Osorio, 2017). Working on a *Prodromus florum Novo-granatensis* (Díaz-Piedrahita & Lourteig, 1989), Triana was the first Latin-American botanist to study Dilleniaceae (Triana, 1858; 1862; Aymard, 1997, 2007). Typically, however, he only provided a general type location in his protologues, or quoted several collections from places closely located, and many species need some basic nomenclature work as far as type designation is concerned.

This contribution precedes the preparation of treatments of Dilleniaceae for the Flora of Colombia and the Flora of Ecuador projects, the goal of which is to clarify the status, nomenclature, and typification of six names from the genera *Davilla* Vand., *Doliocarpus* Dol., and *Tetracera* L.

MATERIAL AND METHODS

Taxa are treated in alphabetical order, the accepted names are in bold face, and the synonyms are in italics. The protologues in Triana (1858) and Triana and Planchon (1862) were consulted and the specimen citations are here quoted *verbatim*. The selection of lectotypes was based on the protologues and the examination of type specimens.

Triana's collections at COL were consulted and those elsewhere were mostly examined at Global Plants (JSTOR, 2017). In addition, Tropicos (2015) provided nomenclatural data and links to the Biodiversity Heritage Library (BHL, 2015), which offered access to botanical literature published during the last three centuries.

The author is grateful to Kanchi Gandhi (GH) for his helpful comments, to Carlos Parra O. (COL) for providing literature about J. J. Triana, and the "Asociación Colombiana de Herbarios" and Felipe Cardona (HUA) who made possible a tour of the Colombian herbaria.

¹ UNELLEZ-Guanare, Programa de Ciencias del Agro y el Mar, Herbario Universitario (PORT), Mesa de Cavacas, Estado Portuguesa, Venezuela 3350. Current address: Compensation International Progress S.A.—Ciprogress Greenlife—P.O. Box 260161, Bogotá, D. C. Colombia; cuyuni24@hotmail.com

Harvard Papers in Botany, Vol. 22, No. 2, 2017, pp. 77–80.

© President and Fellows of Harvard College, 2017

ISSN: 1938-2944, DOI: 10.3100/hpib.v22iss2.2017.n1, Published online: 31 December 2017

TAXONOMIC TREATMENT

Davilla densiflora Triana & Planchon, Ann. Sc. Nat. 4, Sér. Bot. 17: 18–19. 1862. TYPE: [COLOMBIA] Nouvelle-Grenade: [Meta], Province de Bogotá, Villavicencio, Llano de San Martín, bassin du Meta, 400 m, January 1856, *J. J. Triana s.n.* (4763–2 (this is not a field collection number, see explanation below) (Lectotype, here designated: COL; Isolectotypes: BM [image seen], G [image seen], P [image seen], W [image seen]).

Protologue specimen citation: “Villavicencio, au pied de la Cordillère de Bogotá, côté oriental, bassin du Meta, sur les lisières des forêts, 400 mètres, (Tr.)”

Residual syntype: [COLOMBIA] Nouvelle-Grenade: [Meta], Province de Bogotá, bassin du Meta, 300 m, January 1851, *J. J. Triana s.n.* (K [image seen]).

Typification commentary: The authors (Kirkbride Jr., 1982) cited only a general locality and later Kubitzki (1971) cited “Triana (COL, W), Kolumbien, Meta.” Two specimens collected in the type locality were located, and the one matching the protologue is chosen here as the lectotype. Fraga (2012) observed that this taxon did not have a type specimen and he proposed a lectotypification based on the following specimen: “Colombia, Bogotá, Villavicencio, Llano de San Martín, 1856, *J. J. Triana*, 4763-2.” However, the supposed Triana’s field collection numbers annotated in almost all of his labels are in fact a generic number based on Endlicher’s system (see below), and the number after the comma refers to the number of replicates of the collection (Kirkbride Jr., 1982). This system was used by J. J. Triana to handle his collections.

Stephan Ladislaus Endlicher (1804–1849) set up a system of plant genera arranged according to a natural order, in which he treated and numbered 6,835 genera of plants (6,285 of vascular plants) called “*Genera Plantarum Secundum Ordines Naturales Disposita*” (Endlicher, 1836–1841). It is imperative for students of the flora of Colombia to understand Triana’s numbering system, and that the set of Triana’s specimens at COL is a duplicate set of that at the BM and other European herbaria (Kirkbride Jr., 1982).

Current status: *Davilla densiflora* is a synonym of *Davilla nitida* (Vahl) Kubitzki (Kubitzki, 1971; Fraga, 2012; Aymard & Kelloff, 2016).

Ricaurtea congestiflora Triana, Ann. Sci. Nat., Bot. sér. 4 9: 48 (1858). TYPE: [COLOMBIA] *Crescit in valle fluminis Metae et indeclivitate orientali Andium Bogotensium usque ad altitudinem 1300 metrurum*, *J. J. Triana s.n.* (Lectotype designated here: COL; Isolectotype: P [image seen]).

Homotypic synonym: *Doliocarpus congestiflorus* (Triana) Gilg & Werderm., Nat. Pflanzenfam. (ed. 2) 21: 21. (1925).

Protologue specimen citation: [COLOMBIA. Meta]: “*Crescit in valle fluminis Metae et indeclivitate orientali Andium Bogotensium usque ad altitudinem 1300 metrurum.*”

Typification comment: Triana cited only a general locality without specifying any collection or *exsiccata*. Kubitzki (1971) cited “syntypes” at COL, K, and P. In the current study, it was found that only a single collection was made in the type locality region and that the specimens housed at COL, K, and P, as cited by Kubitzki, constitute syntypes. Of these, the COL specimen is here designated as the lectotype.

Current status: *Ricaurtea congestiflora* is a synonym of *Doliocarpus dentatus* (Aubl.) Standl. subsp. *dentatus* (Kubitzki, 1971; Gallardo-Hernández, C. 2004).

Ricaurtea nitida Triana, Ann. Sci. Nat. Bot., sér. 4: 47 (1858). TYPE: [COLOMBIA] Nouvelle-Grenade: [Tolima], Prov. Mariquita et Neiva, Vallée du Magdalena, 500 m, 1 August 1853, *J. J. Triana s.n.* (Lectotype, here designated: COL).

Homotypic synonym: *Doliocarpus nitidus* (Triana) Triana & Planch., Ann. Sci. Nat., Bot. sér. 4, 17: 16. 1862.

Doliocarpus nitidus (Triana) Gilg & Werderm., Nat. Pflanzenfam. (ed. 2) 21: 21 (1925), isonym.

Protologue specimen citation: “*Crestic in fluminis Magdalenae regione calidissima usque ad altitudinem 1000 metrurum.*”

Residual syntypes: [COLOMBIA] Nouvelle-Grenade: [Tolima], El Espinal, Vallée du Magdalena, 1200 m, July 1853, *J. J. Triana s.n.* (BM [image seen], COL, P [image seen], US [image seen], W [image seen]). [COLOMBIA] Nouvelle-Grenade: [Tolima], Prov. Mariquita - Neiva, 500 m, 01-08-1853, *J. J. Triana s.n.* (COL). [COLOMBIA] Nouvelle-Grenade: Prov. Bogotá et Mariquita, Vallée du Magdalena, 500–000 m, *J. J. Triana s.n.* (P [image seen]). [COLOMBIA] Nouvelle-Grenade: Prov. Bogotá et Mariquita, Socorro, Vallée du Magdalena, 1200 m, *J. J. Triana s.n.* (BM [image seen], K [image seen], G [image seen], P [image seen], US [image seen], W [image seen]).

Typification commentary: Triana (1858) described *Ricaurtea* to honor captain Antonio Ricaurte Lozano (1786–1814), a “Neogranadino” independence hero, based in at least five of his own collections gathered in 1854. Triana, however, cited only a general type locality (Triana, 1858). Later, Triana and Planchon (1862) after studying another collection (i.e., *Goudot s.n.*) and finding no significant distinctions to keep both genera, transferred *Ricaurtea nitida* to *Doliocarpus*, a genus described by Daniel Rolander in 1756. This time the authors cited a more detailed locality (“*Prov. de Mariquita et Neiva, vallée du Magdalena, entre 300–1200 mètres d’attitude*”), but without referring any particular specimen, and cited Goudot’s collection as well (Triana & Planchon, 1862). Kubitzki (1971) cited “Kolumbien, Triana a. 1851–59 (BM, COL, P, W).”

Current Status: *Ricaurtea nitida* is a synonym of *Doliocarpus nitidus* (Triana) Triana & Planchon.

Tetracera castaneifolia Triana & Planchon, Ann. Sci. Nat., Bot., sér. 4, 17: 22–23. 1862, as “*castaneaefolia.*” TYPE: [COLOMBIA] Nouvelle-Grenade: [Meta] Apiai, dans les Llanos de San Martín, bassin du Río Meta, 500 m, 1856, *J. J. Triana s.n.* (Lectotype, designated here: P [image seen]).

Protologue specimen citation: “*Apiai, dans Les Llanos de San Martín, Bassin du Rio Meta, alt. 500 mètres.*”

Residual syntype: [COLOMBIA] Nouvelle-Grenade: Province de Bogotá: plaine du Meta, 300 m, 1856, *J. J. Triana s.n.* (P [image seen]).

Typification comment: Triana and Planchon (1862) cited only a general type locality. Kubitzki (1970) cited an “isotype” of this species and provided the following

information: “Meta, Llanos de San Martín, Triana (P).” Since a holotype never existed, Kubitzki’s usage of “isotype” is construed as a correctable error for the term lectotype (ICN Art. 9.9; McNeill & al., 2012). However, the author located two specimens collected in the general type locality and, therefore, Kubitzki’s citation is assumed to be the first-step lectotypification. Of the two specimens, the one that more closely matches the protologue is designated here as the second-step lectotype (ICN Art. 9.17; McNeill & al., 2012).

Current Status: *Tetracera castaneifolia* is a synonym of *Tetracera volubilis* L. subsp. *volubilis* (Kubitzki, 1970).

Tetracera hydrophila Triana & Planchon, Ann. Sci. Nat., Bot., sér. 4, 17: 20. 1862. TYPE: [COLOMBIA] [Colombia] Nouvelle-Grenade [Nariño]: Provincia de Barbacoas, Río Telembí und Río Patia, Caño de Chimbusa, 20 mt, 1853, *J. J. Triana s.n.* (Lectotype, here designated: G [image seen]). Isolectotypes: BM [image seen], BR [image seen], K [image seen], P [image seen], W [image seen].

Protologue specimen citation: “Bords des cours d’eau; Rio Patia, Rio Telembí et Caño de Chimbusa, alt 20 mètres, prov. de Barbacoas, près de la côte du Pacifique.”

Residual syntype: [COLOMBIA] Nouvelle-Grenade [Nariño]: Río Telembí, 1853, *J. J. Triana s.n.* (P [images seen]). [COLOMBIA] Nouvelle-Grenade [Nariño]: Caño de Chimbusa, Rio Patia, 1853, *J. J. Triana s.n.* (P [image seen]). [COLOMBIA] Nouvelle-Grenade [Nariño]: Bords des rivières de Patia et de Telembí, 1853, *J. J. Triana s.n.* (NY [image seen], W [image seen]).

Typification comment: Triana and Planchon (1862) described *Tetracera hydrophila* based on four of Triana’s collections, but within the protologue cited only a general type locality and mentioned three watercourses (“Río Patia, Río Telembí et Caño de Chimbusa). Kubitzki (1970) cited these three localities without specifying a particular collection.

Tetracera sessiliflora Triana & Planchon, Ann. Sci. Nat., Bot., sér. 4, 17: 21 1862. TYPE: [COLOMBIA] Nouvelle-Grenade [Cundinamarca]: Vallée du Magdalena, La Mesa (Guaduas), 400–200 mètres, 1854, *J. J. Triana s.n.*

(Lectotype, here designated: G [image seen]; Isolectotype: P [image seen]).

Specimen citation: “Villeta, Guaduas, La Mesa, etc., sur le versant occidental de la cordillère de Bogotá, et dans la vallée du Magdalena, 400–1200 mètres (Tr.), Garrapata, sur le fleuve Magdalena, alt. 600 mètres (Humb. & Bonpl.); Mendez et Guaduas (Goudot); Panamá (Weddell).”

Residual syntype: [COLOMBIA] Nouvelle-Grenade: Prov. de Bogotá, Magdalena, 1000 m, 1854, *J. J. Triana s.n.* (BM [images seen], US [images seen]). [COLOMBIA] Nouvelle-Grenade [Cundinamarca]: Prov. de Neiva et Bogotá, Vallée du Magdalena, La Mesa, Villeta, 400–1200 mètres, 1854, *J. J. Triana s.n.* (P [image seen]). [COLOMBIA] Nouvelle-Grenade: Prov. de Bogotá et Mariquita. Vallée du Magdalena, 500–1200 m, 1854, *J. J. Triana s.n.* (K [images seen]). [COLOMBIA] Nouvelle-Grenade: Prov. de Bogotá, Villeta, 1200 mètres, 1854, *J. J. Triana s.n.* (BM [images seen]). [COLOMBIA] Nouvelle-Grenade [Cundinamarca]: Vallée du Magdalena, Guaduas, *J. Guodot 3* (P, cited by Triana and Planchon, 1862; Kubitzki, 1970). [COLOMBIA] Nouvelle-Grenade: Crescit in ripa fluminis Magdalenae, prope Garapatas, alt. 80–100 hex. A. von Humboldt & A. Bonpland *s.n.* (P [image seen]). Panama: *H. A. Weddell s.n.* (cited by Triana & Planchon, 1862; Kubitzki, 1970).

Typification comment: Triana and Planchon (1862) cited “*Tetracera volubilis* HBK., *Nov. Gen. et sp.* V, 119[1821], non L. [1753]” as a synonym. Had Humboldt, Bonpland, and Kunth described *T. volubilis* as a new species, he would have created a later homonym, and it would have made Triana and Planchon’s *T. sessiliflora* a new name for a later homonym; however, when the original work is consulted, it is evident that the authors did not describe *T. volubilis* as a new species, but actually used Linnaeus’ 1753 name for their species treatment. Thus it is asserted here that Triana and Planchon (1862) published a new species and included “*Tetracera volubilis*” *sensu* Kunth, non L. (1753) as a synonym. Kubitzki (1970) cited a few of the specimens cited above as syntypes (Kubitzki, 1970). One of Triana’s collections housed at G is selected here as the lectotype.

Current status: *Tetracera sessiliflora* is a synonym of *Tetracera portobellensis* Beurl. (Kubitzki, 1970; González-Arce, 2010).

LITERATURE CITED

- ACUÑA, R. 2011. José Jerónimo Triana (heredero de una tradición botánica). Cuadernos de pioneros de museología. Universidad Nacional de Colombia, Bogotá, Colombia.
- AYMARD, G. 1997. Dilleniaceae Novae Neotropicae V. El género *Doliocarpus* en Colombia. Anales Jardín Bot. de Madrid. 55: 17–30.
- . 2007. Two new species of *Doliocarpus* (Dilleniaceae) from Colombia. *Novon* 17: 288–293.
- AND C. KELLOFF. 2016. 40. Dilleniaceae. Pages 1–41 in S. MOTA DE OLIVEIRA AND M. J. JANSEN JACOBS, EDS. Flora of the Guianas. Ser. A, Phanerogams, Fascicle 31.
- BHL. 2015. Biodiversity Heritage Library. A consortium of natural history and botanical libraries. <http://www.biodiversitylibrary.org/>
- DÍAZ-PIEDRAHITA, S. 1988. José Jerónimo Triana (Rasgos biográficos). *Trianea* 1: 1–4.
- . 1996. José Jerónimo Triana (Naturalista multifacético). Biblioteca breve, Biografía de las Ciencias en Colombia. Fondo Fen Colombia, Bogotá.
- AND A. LOURTEIG. 1989. Génesis de una flora. Acad. Colomb. Cienc. Ex. Fis. Nat. Colección E. Pérez-Arbeláez 2. Bogotá.
- DUGAND, A. 1944. Itinerarios botánicos de José Jerónimo Triana. *Revista. Rev. Acad. Colomb. Cienc. Ex. Fis. Nat.* 5(20): 483–489.
- ENDLICHER, S. L. 1836–40. *Genera Plantarum: Secundum Ordines Naturales Disposita*. Fr. Beck, Wien.
- FRAGA, N. C. 2012. Filogenia e revisão taxonômica de *Davilla* VAND. (Dilleniaceae). Ph.D. Dissertation, Universidade Federal de Minas Gerais, Instituto de Ciências Biológicas, Departamento de Botânica. Belo Horizonte, Brasil.
- GALLARDO-HERNÁNDEZ, C. 2004. Dilleniaceae. *Fl. Veracruz* 134: 1–27.

- GONZÁLEZ-ARCE, L. A. 2010. Dilleniaceae. Pages 203–212 in V. B. E. HAMMEL, M. H. GRAYUM, C. HERRERA AND N. ZAMORA, EDS. *Manual de Plantas de Costa Rica V. Monogr. Syst. Bot. Missouri Bot. Gard.* Vol. 119.
- JSTOR. 2016. Global Plants. Primary Sources. Available from <http://www.jstor.org/> (accessed 17 June 17, 2017).
- KIRKBRIDE, JR. J. 1982. Rubiaceae types in the Triana collections at the Instituto de Ciencias Naturales, Universidad Nacional, Bogotá, Colombia. *Taxon* 31(2): 303–307.
- KUBITZKI, K. 1970. Die Gattung *Tetracera* (Dilleniaceae). *Mitt. Bot. Staatsamml. München* 8: 1–218.
- . 1971. *Doliocarpus*, *Davilla*, und Verwandte Gattungen (Dilleniaceae). *Mitt. Bot. Staatsamml. München* 9: 1–105.
- MCNEILL, J. 2014. Holotype specimens and type citations: general issues. *Taxon* 63: 1112–1113.
- , F. R. BARRIE, W. R. BUCK, V. DEMOULIN, W. GREUTER, D. L. HAWKSWORTH, P. S. HERENDEEN, S. KNAPP, K. MARHOLD, J. PRADO, W. F. PRUD'HOMME VAN REINE, G. F. SMITH, J. H. WIERSEMA, AND N.J. TURLAND. 2012. International Code of Nomenclature for Algae, Fungi, and Plants (Melbourne Code). *Regnum Vegetabile* 154: 1–240. Koeltz Scientific Books, Königstein. Germany. <http://www.iapt-taxon.org/nomen/main.php?page=title>
- PARRA-OSORIO, C. A. 2017. El Herbario Nacional Colombiano. Pages 158–171 in G. SILVA-CARRERO, ED. *Naturaleza en Observación. Colección del Sesquicentenario 1/1*. Universidad Nacional de Colombia, Bogotá.
- PRADO, J., R. Y. HIRAI, AND R. C. MORAN. 2015. Proposals concerning inadvertent lectotypifications (and neotypifications). *Taxon* 64: 651.
- TRIANA, J. J. 1858. Choix de plantes de la Nouvelle Grenade. *Ann. Sci. Nat. Bot.*, sér. 4, 9(1): 36–58.
- AND J. E. PLANCHON. 1862. *Prodromus florum Novogranatensis*. *Ann. Sci. Nat.* 4, Sér. Bot. 17(1): 5–64.
- TROPICOS. 2015. Tropicos.org: Nomenclatural, bibliographic, and specimen data accumulated in MBG's electronic databases. Missouri Botanical Garden. <http://www.tropicos.org>