

# NOMENCLATURAL NOTES IN *MELIDISCUS* (CLEOMACEAE)

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## ABSTRACT

Nomenclature of *Melidiscus* species requires clarification. Two species are currently recognized in the genus, and the correct names for these species are clarified with typification. A key to the two species is also provided.

## RESUMEN

Es necesario aclarar la nomenclatura de las especies de *Melidiscus*. Actualmente se reconocen dos especies en el género y los nombres correctos de esas especies se aclaran con la tipificación. También se proporciona una clave para las dos especies.

KEY WORDS: Cleomaceae, lectotypification, *Melidiscus*, replacement name

## INTRODUCTION

*Melidiscus* Raf. encompasses a clade of Cleomaceae distributed throughout much of the Western Hemisphere tropics, but there is significant uncertainty regarding how many species are included in the clade. Names within this group, whether treated as *Cleome* L. or *Melidiscus*, have been extremely problematic in their application and in their priority. One species has a widespread distribution, but it has remained unclear if there are other species that should be recognized (Heilborn 1931; Iltis 1952). As with other lineages of *Cleome* s.l., *Melidiscus* is a distinctive clade not closely related to *Cleome* s.s. (Patchell et al. 2014; Soares Neto et al. 2020; Saunders et al. 2024). Despite the fact that many authors have used *Melidiscus* to refer to this clade in recent years, the necessary nomenclatural work has not been done to have names available for the species recognized other than the widespread species, *Melidiscus giganteus* (L.) Raf., which was combined when Rafinesque coined the generic name.

The proper name for the most widespread species (*Cleome gigantea* versus *C. viridiflora*) has seen much confusion over the last ~70 years. For much of that time, many authors used *Cleome viridiflora* Schreb. rather than *C. gigantea* L. This was due to a misunderstanding Iltis (1952) had regarding the date of publication of *C. gigantea*. In his dissertation, Iltis wrote that *C. gigantea* was first published in 1771 (Linnaeus 1771), a year after the publication of *C. viridiflora* Schreb. (Schreber 1770) and not realizing that the name was first coined three years prior (Linnaeus 1768). This could, in part, be due to Heilborn (1931) referencing Linnaeus (1771) as the protologue. It was only in more recent years that Iltis realized his error and began using the correct name (Iltis, unpubl. mss.; Iltis & Cochrane 2015).

A second species of this group has been typically recognized as *Cleome arborea* Kunth. However, the oldest use of the name *Cleome arborea* is by Schrader (1821: 707), negating the use of the name *Cleome arborea* Kunth. The Schrader name was published on 5 May 1821, whereas the Kunth name was published in late September 1821. It is clear that *C. arborea* Schrad. represents a different species based upon the recently located holotype at LE (Brazil. Paraiba, 1815–1817, Prince Maximilian von Neuwied s.n. [holotype: LE 01072676 (image!)]), which is no doubt the type collection and is clearly not “*Cleome arborea*” as typically applied. It is annotated as *Crateva tapia* L., and while we cannot confirm that identification here, it is clearly not a *Melidiscus*. A replacement name is therefore required, and we here use the next available name, *Cleome pruriens* Triana & Planch., as the basionym for a new name in *Melidiscus*.

## TAXONOMIC TREATMENT

**Melidiscus** Raf., *Sylva Tell.* 110. 1838. TYPE: *M. gigantea* (L.) Raf., *Sylva Tell.* 110. 1838.

**Melidiscus pruriens** (Triana & Planch.) Roalson & Cornejo, **comb. nov.** *Cleome pruriens* Triana & Planch., in Triana & Planchon Prodr. Fl. Nov.-Gran., sér. 4, 17:68. 1862. TYPE: COLOMBIA: Susumuco, Cordillère de Bogota, 1000 m., *Triana 112* (HOLOTYPE: P P00741921!; ISOTYPE: WIS0259068!).

*Cleome arborea* Kunth, Nov. Gen. Sp. Pl. 86. [late September] 1821, nom. illeg. non *C. arborea* Schrad., Gött. Gel. Anz. 2:707. [5 May] 1821. TYPE: Equatorial America, *M.A. Bonpland s.n.* (HOLOTYPE: P 00741922!).

Note.—Specimen P 00741922 was annotated by Ilitis as possible isotype of *C. arborea* Kunth; however, it has the label *M.A. Bonpland s.n.* Equatorial America, and all indications suggest this is the holotype of this name and so it treated as such here.

**Distribution.**—Known from scattered populations across Venezuela, Colombia, and Ecuador.

Exemplar Specimens: COLOMBIA. Antioquia: Medellín, hierba de 1 metro o algo mas de altura, de'olor muy pronunciado y desagradable, que produce hemorragias nasales, 1700 m, Dec 1943, L. Uribe Uribe 689 (COL [COL000226018 image!]). **Cundinamarca:** Susumuco, versant oriental de la Cordillera de Bogotá, 1000 m., *Triana 112* (P [P00741921!]). **ECUADOR. Imbabura:** Hwy. Salinas-Lita, Río Mira Gorge, rank herb 2.3 m, flowers green except back of anthers maroon, fruits green, 0°40'–45'N, 78°10'–15'W, 900–1100 m, 22 Feb 1984, A. Juncosa 2311 (MO [MO 3195856!]). **VENEZUELA. Anzotegui:** steep forested slopes along stream, between Cerro San José, along headwaters of Quebrada La Tigra, and Cerro Peonia (Cerro Los Pajaritos), 1600 m, *Steyermark 61572* (F). **Aragua:** Colonial Tovar, *Fendler 28* (GH, MO, NY, PH). **District Federal:** in umbrosis juxta La Venta Grande, inter La Guayra et Caracas, 606 hex., *Humboldt & Bonpland s.n.* (P); Quebrada Chacaito, vic. Caracas, 850–1400 m, *Pittier 9490* (GH, NY, US). **Mérida:** chorreras de Los González, carretera Mérida-Jaji, 1680 m, 25 Oct 2001, T. Ruiz y L. Hernández 4981 (MO [MO 5708970!]).

**Melidiscus giganteus** (L.) Raf., *Sylva Tell.* 110. 1838. *Cleome gigantea* L., *Syst. Nat. Ed.* 12, 3:232. 1768. TYPE: Jacq. *Observ. IV. Spec. Icon. Tab. 76. Sinapistrum giganteum* (L.) Moench, *Meth. Pl. Marb.* 250. 1794.

*Cleome viridiflora* Schreb., *Nova Acta Physico-Med.* 4:136, t. 3. 1770. TYPE: Illustr. 3, *Nova Acta Physico-Med. Melidiscus viridiflorus* (Schreb.) Raf., *Sylva Tell.* 110. 1838.

*Cleome pedunculata* Vellozo, *Fl. Flum.* 272. 1829. TYPE: LECTOTYPE, **designated here:** [icon ined.] “Tetradyn. Siliq. CLEOME. pedunculata Tab. 112” (Manuscript Sect., *Bibliot. Nac.*, Rio de Janeiro, No. 1-17, 03, 002; mss1198655\_116 [image!] [with a copy in the Sect. of Torre do Tombo, Lisbon, PT-TT-MSLIV-2776\_m0233]).

Note.—Guidelines for typification of names based on Vellozo illustrations have been recently addressed, and those guidelines are followed here (Pastore et al. 2022).

*Cleome kerberi* Briquet, *Ann. Conserv. Jard. Bot. Gen.* 17:366. 1914. TYPE: MEXICO: Atoyac, Nov. 1882, *E. Kerber 124* (LECTOTYPE, **designated here:** G00226168 [image!]; ISOLECTOTYPES: BM000629048 [image!], BR0000006986230 [image!], CORD00002713 [image!], G00226166 [image!], G00226167 [image!], GOET000547 [image!], K000220432 [image!], M0240979 [image!], MICH1192085 [image!], P00741919!, P00741920!, PR154941, US00100481 [image!])

Note.—There are three type collections of *Cleome kerberi* at the Genève herbarium, and I have here chosen the only one of these with both flower and fruit material to be the lectotype.

*Cleome monochroma* Macbride, *Publ. Field Mus. Nat. Hist., Bot. Ser.* 4:169. 1929. TYPE: PERU: sandy trail edge, La Merced, Dept. Junin, 10–24 Aug 1923, *J.F. Macbride 5386* (HOLOTYPE: F0042685F [image!]; ISOTYPE: US00100488 [image!]).

*Cleome friesii* Heilborn, *Ark. Bot.* 23A(10):7. 1931. TYPE: ARGENTINA: Quinta pr. Laguna de la Brea, Prov. Jujuy, June 1901, *R.E. Fries 167* (LECTOTYPE, **designated here:** S-R-7319 [image!]; ISOLECTOTYPE: S10-16917 [image!]). ADDITIONAL SYNTYPES: ARGENTINA: between Oculo and El Tipal, near Río de San Francisco, Oct 1873, *P.G. Lorentz & G. Hieronymus 365* (not located). Argentina: near San Lorenzo, Prov. Jujuy, Nov 1873, *P.G. Lorentz & G. Hieronymus 541* (not located). BOLIVIA: Chiquiaca, 1000 m, Feb 1904, *K. Fiebrig 2684a* [Plantae austro-bolivenses] (B-destroyed; F, image of B specimen [!]).

Note.—We have been unable to locate the *Cleome friesii* syntype collections of P.G. Lorentz and G. Hieronymus. They are not in CORD (G. Barboza, pers. comm.), B (R. Vogt, pers. comm.), S (J. Lundberg, pers. comm.), nor GOET (M. Appelhans, pers. comm.), the most likely locations for them.

*Cleome amazonica* Heilborn, *Ark. Bot.* 23A(10):9. 1931. TYPE: BRAZIL: tropical forest, Rio Acre, at Monte Mo, Nov 1911, *E. Ule 9411* [Amazonas Expedition] (LECTOTYPE, **designated here:** B100242686 [image!]; ISOLECTOTYPES: B100242685 [image!], K000220466 [image!], MG014260 [image!]).

Note.—*Cleome amazonica* requires lectotypification, as a clear holotype was not designated. We have chosen the more complete of the two specimens at B as the lectotype here. Ilitis annotated *Ule 1107* (P 00741923!) as an isotype, but this is clearly not type material. Heilborn clearly specifies the type is *Ule 9411* not 1107, which was collected in April of 1889.

*Cleome hirsuticaulis* Macbride, *Candollea* 5:360. 1934. TYPE: PERU: Dept. Junín, Schunke Hacienda, above San Ramón, 1400–1700 m, dense forest, 8–12 Jun 1929, E.P. Killip & A.C. Smith 24812 (HOLOTYPE: F0042681F [image!]; ISOTYPES: G00226307 [image!], NY002151561, US00100476 [image!]).

*Cleome filispala* Standl. & L.O. Williams, *Ceiba* 3:44. 1952. TYPE: HONDURAS: Matorrales húmedos a lo largo de la Quebrada El Encanto, Montaña de la Cumbre, Dept. Cortés, alt. 200 m, 5 Dec 1950, Antonio Molina R. 3589 (HOLOTYPE: US00100475 [image!]; ISOTYPES: EAP7700 [image!], F0053126F [image!]).

Note.—Although the type material of *Cleome filispala* at F has been referred to as the holotype, the protologue clearly states that the holotype is at EAP and the F collection is a duplicate. The holotype, which was originally deposited at EAP, was transferred to US in 1956 (see Dorr et al. 2009).

**Distribution.**—Broadly distributed from México to Argentina.

Exemplar Specimens: **ARGENTINA. Salta:** Baritu ecolodge, 22°37'S, 64°26'W, 500 m, 23 Nov 2009, F. Billiet & B. Jadin 8392 (BR, MO [MO 6338926!]). **BOLIVIA. La Paz:** Muñecas, Hacienda Jiriguillo, al SE de Marumpampa, 15°12'20"S, 68°37'16"W, 1190 m, 4 May 2005, A. Fuentes, R. Cuevas, E. Cuevas, H. Pariamo, P. Mollinero y R. Huanca 7911 (MO [MO 0486465!]). **BRAZIL. Distrito Federal:** Córrego Landim, ca. 25 km N of Brasília, 850 m, 26 Jan 1966, H.S. Irwin, R. Souza, & R. Reis dos Santos 12024 (MO). **COLOMBIA. Antioquia:** Santa Fé de Antioquia, 4 Jul 1971, M.H. Nee & S.A. Mori 4284 (WIS). **COSTA RICA. Limón:** Talamanca, bord d'un ruisseau á Shirores, 100 m, Feb 1895, A. Tonduz 9371 (US). **ECUADOR. Azuay:** 5–9 km E of Manta Real, following the Rio Patul, 02°36'S, 79°19'W, 400 m, X. Cornejo & C. Cornejo 3359 (GUAY!, WIS!). **Cañar:** La Troncal, Manta Real, 2°34'16"S, 79°19'49"W, 28 May 2005, H. Vargas & W. Defas 5726 (QCNE, MO [MO 0485965!]). **Guayas:** Cordillera Chongón-Colonche, Bosque Protector Loma Alta, 01°48'S, 80°47'W, 300 m, X. Cornejo & C. Bonifaz 5699 (GUAY!, WIS!); Comuna Dos Mangas, 01°55'S, 80°40'W, 30–50 m, X. Cornejo & C. Bonifaz 668 (GUAY!). **Santo Domingo de los Tsáchilas:** Otongachi, 00°19'14"S, 78°57'21"W, 900 m, X. Cornejo & A. Guasti 8090 (NY!, QCA!). **GUYANA. Cuyuni-Mazaruni:** Paruima to Konuktipu (Rain Mountain) trail, 600–620 m, 11 Feb 1996, H.D. Clarke 1096 (US). **HONDURAS. Comayagua:** Dept. Comayagua, vicinity of Comayagua, 600 m, 12 Mar 1947 to 23 Mar 1947, P.C. Standley & P.J. Chacón 5890 (US). **MÉXICO. Veracruz:** Atoyac, Mun. Atoyac., 19 Jan 1984, M.H. Nee & K. Taylor 28965 (NY). **PARAGUAY. Guaira:** Cordillera de Ybytyruzú, road to Cantera Jhú, 25°48'S, 56°20'W, 16 Oct 1989, E. Zardini & C. Velásquez 15087 (FCQ, MO [MO 3790859!]). **PERU. Cusco:** La Convención, Distrito Echarate, Kepashiato, Puguientimari-Pomorení, 12°41'25"S, 73°15'12"W, 853 m, 23 Mar 2007, L. Valenzuela 9377 (MO [MO 6344492!]). **VENEZUELA. Barinas:** a 500 m de la entrada a Barinitas viniendo de Santo Domingo, 640 m, 27 Oct 2001, T. Ruiz y L. Hernández 4987 (MO [MO 5708971!]).

#### KEY TO SPECIES OF *MELIDISCUS* (BASED ON KEY IN ILTIS [1952: 308])

1. Siliques 10–19 cm long, rarely shorter, narrow elongate-fusiform, gradually attenuate to the tip, usually much longer than the gynophore, the valves thin. México to Argentina \_\_\_\_\_ **M. giganteus** (L.) Raf.
1. Siliques 3–7 cm long, about as long as the gynophore, short oblong to cylindrical, contracted near the apex into a stout beak 5–10 mm long, the valves stout and woody. Colombia, Ecuador, and Venezuela \_\_\_\_\_ **M. pruriens** (Triana & Planch.) Roalson & Cornejo

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