



Lectotypification, synonymy, and a new name in *Senna* series *Aphyllae* (Leguminosae: Caesalpinioideae)

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Abstract

In series *Aphyllae*, *Senna acanthoclada* is lectotypified based on images housed at Albrecht von Haller Institute of Plant Sciences, Universität Göttingen; a new circumscription and synonyms for *S. aphylla* are given, and a new name: *S. aphylla* var. *pendula* var. *nov.* is proposed.

Key words: *Senna*, *Aphyllae*, nomenclature, taxonomy, Argentina

Introduction

Senna Miller (1754: 290) series *Aphyllae* Bentham (1871: 542) comprises six species known for their shrubby habit, deeply penetrating woody roots, leaves on adult branches represented by minute triangular or sublobate scales and by junciform, green and photosynthetic stems. This series occurs in southern Bolivia, central and northwestern Argentina and southeastern Paraguay (Burkart 1946, 1952, 1967, Bravo 1978a, 1978b, 1982, Irwin & Barneby 1982, Bravo *et al.* 1986, Robbiati *et al.* 2011, Robbiati *et al.* 2013). Working towards a new treatment of *Aphyllae* it was found that the type of *S. acanthoclada* Griseb. (1879: 116) H. S. Irwin & Barneby (1982: 570) was composed of material from more than one specimen and lectotypification is required. In addition there has been confusion and misapplication of names in *S. aphylla* Cav. (1801: 41) H. S. Irwin & Barneby (1982: 570); after the nomenclatural types were studied, a new circumscription is proposed. In this paper we include *Cassia aphylla* var. *rigida* Hieron. (1881: 24), *C. aphylla* var. *virgata* Burkart (1967: 451), *S. trichosepala* Chodat & Wilczek (1902: 475) H. S. Irwin & Barneby (1982: 570) and *C. rigida* Hieron. (1881: 24) Burkart (1952: 544) var. *inermis* L. Bravo (1978a: 377) L. Bravo (1986: 270) in the synonymy of *S. aphylla* and describe *S. aphylla* var. *pendula* Robbiati & Fortunato var. *nov.* This last taxon was misidentified by previous authors: Burkart (1952), Bravo (1978a, 1978b, 1984) and Irwin & Barneby (1982), as *C. aphylla*, *C. aphylla* subsp. *aphylla* and *S. aphylla* var. *aphylla* respectively.

Lectotypification

Senna acanthoclada (Griseb.) H. S. Irwin & Barneby (1982: 570).

≡ *Cassia acanthoclada* Griseb. (1879: 116).

Lectotype (designated here):—ARGENTINA. Córdoba: Dep. Punilla, zwischen San Roque u. Las Rosas, 4 January 1876, Lorentz & Hieronymus 481 (lectotype, GOET 8875!, GOET; isolectotype, CORD 5844!, CORD!; isolectotype, SI 1917!, SI!). Fig. 1.



FIGURE 1. Lectotype of *Senna acanthoclada* GOET.

Taxonomic note:—The syntypes (*Hieronymus* 289, *Hieronymus* 443 and *Lorentz & Hieronymus* 481) are deposited in GOET, and the last collection also in CORD and SI. The specimen *Lorentz & Hieronymus* 481 in GOET is designated lectotype since it bears more flowers and mature fruits.

Taxonomic treatment of *Senna aphylla*

Senna aphylla (Cav.) H. S. Irwin & Barneby (1982: 570) var. *aphylla*

Cassia aphylla Cav. (1801: 41) Type:—ARGENTINA. Mendoza: Dpto. Capital, Cordillera del Pocillo de Mendoza a Chile, Buenos Aires, *Née s.n.* (holotype, MA 475495!).

Cassia aphylla var. *rigida* Hieron. (1881: 24). Type:—ARGENTINA. San Juan: Dpto. Pocito, Pedregal del Pocito, December 1875, *Echegaray s.n.* (holotype CORD 3183!). *syn. nov.*

Cassia aphylla var. *trichosepala* Chodat & Wilczek (1902: 475). *Cassia trichosepala* (Chodat & Wilczek) L. Bravo (1978a: 373). *Senna trichosepala* (Chodat & Wilczek) H. S. Irwin & Barneby (1982: 570). Type:—ARGENTINA. Mendoza: Dpto. San Rafael, San Rafael, des les tables. Plantes des environs de St. Rafael et de la Vallée du Rio Atuel, January and February 1897, *Wilczek 93* (holotype US). *syn. nov.*

Cassia aphylla var. *virgata* Burkart (1967: 451). Type:—ARGENTINA. Buenos Aires: Pdo. A. Alsina, Laguna de Chasilauquen, 17 November 1962, *Cabrera & Fabris 14806* (holotype SI 1919!; isotype LP!).

Cassia fabrisii L. Bravo (1978a: 377). *Senna fabrisii* (L. Bravo) H. S. Irwin & Barneby (1982: 570). Type:—ARGENTINA. San Juan: Dpto. Iglesia, 10 km de Pismanta hacia Rodeo, 15 January 1973, *Palacios & Bravo 593* (holotype SI 1928!; isotype BAFC).

Cassia rigida Hieron. (1881: 24) Burkart (1952: 544) var. *inermis* L. Bravo (1978a: 377). *Senna rigida* (Hieron.) H. S. Irwin & Barneby (1982: 570) var. *inermis* (L. Bravo) L. Bravo (1986: 270). Type:—ARGENTINA. La Rioja: Dpto. Famatina, 32 km antes de Tinogasta hacia el sur, 18 January 1977, *Palacios & Bravo 629* (holotype SI 1939!; isotype BAFC). *syn. nov.*

Taxonomic note:—Hieronymus (1881) differentiated *C. aphylla* var. *rigida* by the thick and sharp branches pointed at the ends. Later on, Chodat & Wilczek (1902) described *C. aphylla* var. *trichosepala* based on the pubescent calyx. Burkart (1952), without studying the type of *C. aphylla* var. *rigida*, raised it to the rank of species as *C. aphylla*, including specimens with branches 3–4 mm wide, and more or less fastigiate, shrubby habit, and darkening in herbaria material. Burkart (1967) described *C. aphylla* var. *virgata*, characterized by elongated and not or scarcely zigzag branches, lateral and very brief racemes, and sterile apices exceeding the inflorescence. Bravo (1978a), following Burkart's proposal (1952), recognized *C. rigida* and described a new variety, *C. rigida* var. *inermis*, citing flexible upper branches, some of them spiny, and unarmed inflorescences. In the same work, Bravo (1978a), considered *C. trichosepala* at the specific rank, based on similar thickness of principal and lateral branches, and usually with a spine. Moreover, the same author (Bravo 1978a) described *C. fabrisii* L. Bravo (1978a: 377) and this species was differentiated by small hairs on the base of the sepals and pubescent ovary and fruit. Recently Robbiati *et al.* (2013) based on numerical morphology and seminal protein profile analyses proposed *S. fabrisii* (L. Bravo) H. S. Irwin & Barneby (1982: 570) as synonym of *S. trichosepala*.

After studying the original material of *C. aphylla*, *C. aphylla* var. *rigida*, *C. aphylla* var. *virgata* and *C. rigida* var. *inermis*, we concluded that the taxa should be included in the range of variation and in the synonymy of *S. aphylla* var. *aphylla*.

Senna aphylla (Cav.) H. S. Irwin & Barneby var. *pendula* Robbiati & Fortunato var. *nov.* Fig. 2.

Cassia aphylla sensu Burkart (1952: 168, fig. 29, b. c.); Burkart (1967: 451); Bravo (1978: 383); Bravo (1984: 209).

Senna aphylla sensu Irwin & Barneby (1982: 570).

S. aphylla var. *pendula* differs from the typical variety by flexible but not flexuous, unarmed, and pendulous to trailing branches, and by the always glabrous inflorescences and flowers.

Type:—ARGENTINA. Córdoba: Dpto. Punilla, sobre ruta nacional 38, Capilla del Monte en dirección al Zapato, 30° 50' S 64° 32' W, 12 April 2010, *Fortunato et al. 9622* (holotype BAB!; isotype CORD!).

Distribution and habitat:—Distributed in northerwestern, central and southeastern Argentina, growing in sandy soils, in the Chaco and Monte phytogeography provinces (Cabrera 1971). Fig. 3.

L. N. T. A.
HERBARIO
BAB
CASTELAR



Senna aphylla (Cav.) var.
pendula Robbia & Fortunato
Fortunato n° 9622 Det. Robbia & Fortunato

FLORA ARGENTINA

Senna aphylla (Cav.) H. S. Irwin & Barneby

Det: F. O. Robbiati

CORDOBA. Dpto. Punilla: Ruta Nac. 38, de Capilla
del Monte en direcc. al Zapato. 30°50'S, 64°32'W.

R. H. Fortunato 9622 12-IV-2010
Con: A. M. Anton, G. Bertone y F. Robbiati



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FIGURE 2. Holotype of *Senna aphylla* var. *pendula* BAB.

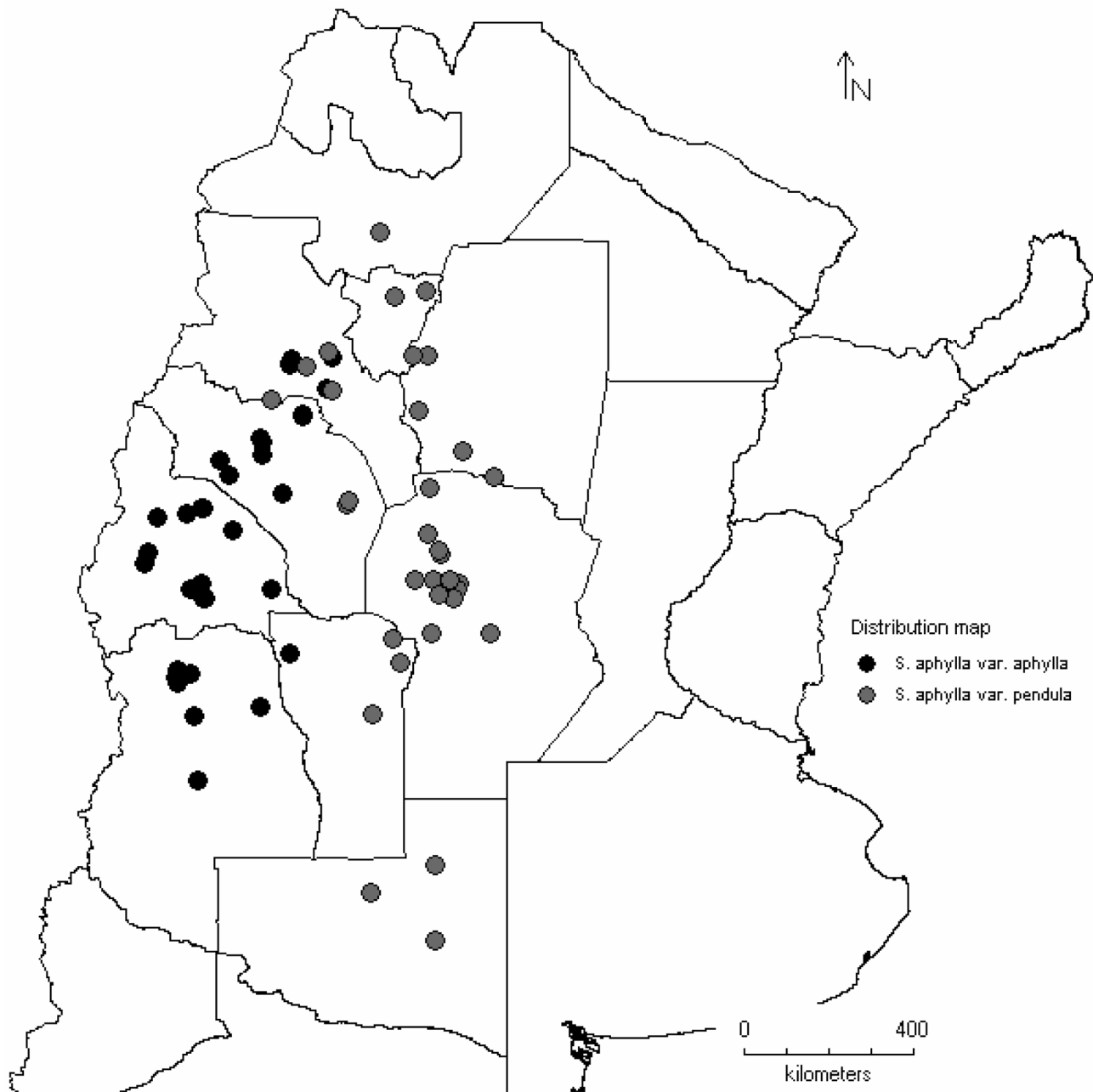


FIGURE 3. Distribution map of *S. aphylla* var. *aphylla* and *S. aphylla* var. *pendula*.

Etymology:—The varietal epithet refers to the flexible and pendulous branches, never found in *S. aphylla* var. *aphylla*.

Additional specimens examined (paratypes):—ARGENTINA. Catamarca: Andalgalá, 8 km al oeste de Andalgalá, en cauce seco del Río Choya, 21 September 1972, *Cantino 338* (CORD); Catamarca, January 1910, *Spezzini 33674* (BAB); La Paz, San Lorenzo, 29 November 1946, *Brizuela 97* (LIL); Pomán, Salar de Pipanaco, 17 km al oeste del Saujil, 17 February 1970, *Hunziker 20270* (CORD); Sierra de Graciana, October 1966, *Fabris 6583* (CTES); Córdoba: Capital, barrancas del Parque Sarmiento, cerca del puente colgante, 6 October 1945, *Hunziker 6220* (CORD); Quebrada del Infiernillo, inmediaciones del Jardín Botánico de Córdoba, 19 October 1996, *Ariza Espinar 3301* (CORD); Colón, Sierras Chicas, inmediaciones de La Calera, 2 November 1962, *Subils 531* (CORD); Punilla, sobre ruta nacional 38, poco antes de llegar a La Falda, 22 November 1987, *Coccuci 168* (CORD); en km 78 desde La Cumbre, antes del ingreso a Capilla del Monte, 30° 54' S, 64° 31' W, 12 April 2010, *Fortunato 9617* (BAB); Tulumba, Chipiti, entre San José de la Dormida y Tulumba, sobre ruta nacional 9, 6 October 1973, *Subils 1794* (CORD); Lucio V. Mansilla, camino a Mina Progreso, 8 November 1949, *Schwabe 374*

(BAB); La Pampa: Conhelo, sobre ruta nacional 143, entre Mitre y Rucanelo, 9 December 1969, *Cano 4374* (BAB); Loventué, Cerro El Durazno, sobre ruta nacional 148, November 1959, *Cano 430* (BAB); Ultracán, General Acha, 10 January 1944, *Hunziker 4119* (CORD); La Rioja: Castro Barros, 2 June 1973, *Cantino 589* (CORD); Gobernador Gordillo, 15 February 1949, *Krapovickas & Hunziker 5984* (CORD); San Luis: Chacabuco, ruta provincial 1, al norte de Villa del Carmen, al oeste de las Sierras Comechingones, 32° 58' S, 65° 2' W, 13 April 2004, *Pozner & Belgrano 198* (BAB); General Pedernera, después de Liborio Luna, aproximadamente 20 km de Villa Mercedes, 14 November 1956, *Hunziker 13147* (CORD); General San Martín, Bajo de Velís, 22 December 1885, *Kurtz 3146* (CORD); Salta: Guachipas, 7 December 1873, *Lorentz & Hieronymus 1177* (CORD); Santiago del Estero: La Banda, ruta nacional 34, al norte de La Aurora, 27 September 1989, *Pérez-Moreau 4867* (BAB); 9 km al norte de Simbol Cañada, 10 March 1986, *Molina 3392* (BAB); Ojo de Agua, ruta nacional 9, próximo a Ojo de Agua, 4 December 1967, *Vervoorst 731* (LIL); camino a Ambargasta, 30 km al oeste de la ruta nacional 9, 21 October 1988, *Pérez-Moreau 4256* (BAB); Pampa Grande, entre Sumampa y Ojo de Agua, 29° 27' S, 63° 34' W, 10 October 1979, *Piccinini & Hilfer 3717* (BAB); Sierra de Sumampa, lado oeste de la ruta nacional 9, 29° 38' S, 63° 44' W, 14 October 1979, *Piccinini & Hilfer 3823* (BAB); Río Hondo, 22 May 1949, *Soriano & Barrett 3568* (BAB); Tucumán: Burreyacu, en cerrillos áridos, 15 October 1923, *Venturi 40547* (BAB); Trancas, alrededores de Tapía, December 1902, *Baer 125* (BAB); Benjamin Pa, 7 November 1947, *Dawson 1825* (BAB).

Taxonomic note:—Cavanilles (1801: 41) described *C. aphylla* as a shrub, with alternate, erect, dichotomous, terete and glabrous branchlets and without leaves (*Caulis fruticosus tripedalis: rami alterni, erecti, dichotomi, teretes, glabri, folia nulla*). Later works (Burkart 1952, 1967, Bravo 1978a, 1978b, 1982, 1984, Irwin & Barneby 1982, Bravo *et al.* 1986), without analysis of the original material, considered under this name specimens with flexible, pliant, pendulous to trailing branches and unarmed apices. After studying the type of *C. aphylla* we conclude that this plant morphology represented a new variety of *S. aphylla*: *S. aphylla* var. *pendula* which herein is proposed.

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