

TYPIFICATION OF *ADESMIA* (LEGUMINOSAE) SPECIES PRIMARILY FROM CHILE

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ABSTRACT

Lectotypes and Isotypes are designated for several taxa of *Adesmia* (Leguminosae, Papilionidae) housed at NY, including species described in Claudio Gay. In addition, several previous type designations are clarified.

While preparing to return a loan of *Adesmia* specimens in the type folders of the New York Botanical Garden (NY), it became apparent that many of these, primarily of Chilean species, labeled as “types,” had never been typified. Many of the untypified species in the loan were described by Dominique Clos in the *Historia Fisica y Politica de Chile* by Claude (Claudio) Gay written and published over the years 1845 to 1852. Eight volumes of this work were devoted to taxonomic treatments of the plants of Chile. Gay was an avid botanist and spent many years living and collecting plants in Chile before returning to Paris where specimens, including types, of his collections were deposited in the Muséum national d’Histoire Naturelle (P) (Stafleu & Cowan 1976). Although most of the taxonomic treatments in Gay’s opus were written by Gay himself, others were provided (with full credit) by various colleagues. One of these groups was the Leguminosae written by Dominique Clos (1847).

Burkart (e.g., 1939, 1967) and later Ulibarri (1986) worked extensively on the Argentine species of *Adesmia* and typified almost all of them (Ulibarri & Burkart 2000). Numerous Brazilian and Uruguayan species have been typified by Miotto (1993) and Monteiro et al. (2024). However, many of the Chilean species were never typified until two recent papers by Jorge Macaya-Berti and Sebastián Teillier (2022a, b) treated the members of several sections.

MATERIALS & METHODS

Original descriptions were used for all species treated. In determining type material, specimens or geographic notes in descriptions as well as the descriptions themselves were used to determine type localities. A specimen designated by the author or the specimen at the author’s institution that most closely corresponded to the protologue was chosen as lectotype. None of the Gay species included has previously been typified. Other species included here have likewise not previously been typified or had problem with the initial typification thus needing correction or clarification. Stafleu and Cowan (1976-1988) were consulted when necessary to determine where an author’s type specimens reside. Specimens at GH, NY, SGO, SI, and TEX were personally examined. JSTOR was used to locate and examine potential type specimens that were not personally seen.

In the published descriptions or on herbarium labels of *Adesmia* species treated by Clos (1847) there is occasionally a collection number, a year, and sometimes a locality. Gay’s specimens have a characteristic printed label, but the labels often differ in the amount of information provided. Most labels have only the species name and a year. All other information on the label, if present, is included here with the type designation. Unless there is something to indicate otherwise, I have assumed that specimens similarly labeled (many taxa are herbaceous or small perennials so all the specimens could not have come from the same plant) were from a single gathering (Turland et al. 2018; ICBN Art. 8)

and are labeled as Isolectotypes or “possible Isolectotypes” (when the label differs in some way from that of the type specimen).

In Ulibarri and Burkart’s 2000 paper, type specimens were designated but apparently “not seen” by the authors and there were often no specifications given as to which of the specimens (if more than one) of that taxon in the designated herbarium should be the type. In these cases, I have followed the Step-one, Step-two procedure outlined in the code (Turland et al. 2018, ICBN Art. 9.17). If their stated herbarium has a single specimen, I have clarified the determination with an herbarium number and added specimens elsewhere I determined to be Isolectotypes.

TAXONOMIC TREATMENT

1. *Adesmia aspera* Gillies, Bot. Misc. 3: 190. 1833. (**Lectotype, here designated**): Gilles s.n. (K000327947 sprigs on the right [image!]). Isolectotype: E00009052 [image!]. Possible isolectotypes: E00089055 [image!], E00089056 [image!]. Argentina. Mendoza. El Valle de Hermosa en los Andes.

The possible isolectotypes, like the lectotype, were also collected by Gilles but their labels say only Andes of Mendoza, not specifically El Valle de Hermosa.

An additional specimen at Edinburgh E00089052 has the correct locality but has an ALPHA symbol on the label indicating that Gilles thought it might be a variety. Hence it is not considered here to be an isolectotype.

2. *Adesmia conferta* Hook. & Arn. Bot. Beechey Voy. 20. 1841. **TIPO**: *Cruckshanks* s.n. (holotype, K, no visto). Designated by Ulibarri and Burkart, 2000, p. 121. Clarification: Lectotype: Ojo de Agua, *Cruckshanks* 87, sprig 1, K000329287 [image!]. Note that the Kew type specimen has a number, 87, despite Ulibarri and Burkart’s (2000) statement that it lacks a collection number, but they admit to not having seen the specimen.

3. *Patagonium confertum* (Hook. & Arn.) Kuntze var. *berteroi* Kuntze. Revis. Gen. Pl. 3(3): 69. 1898. **Lectotype, here designated**: (NY00055617) Paso Cruz 34°, Chili 2300 m.

Although Burkart (1939) stated that the name *Adesmia berteroi* Phil. is a *nomen nudum*, the name *berteroi* was legitimately published as a subspecific entity of *Patagonium confertum* Hook. & Arn. by Kuntze in Rev. Gen. Pl. (1898). Kuntze provided a very brief but adequate description of the subspecies and listed its locality as Chile, 2300 m, Paso Cruz.” The New York specimen from Kuntze’s herbarium has his annotation with the correct locality and therefore is chosen as the type of the variety. The taxon, according to Burkart (1939), is a synonym of *Adesmia filipes* A. Gray.

4. *Adesmia dichotoma* Clos, Fl. Chil. [Gay] 2: 180. 1847. Ameriq. Merid. **Lectotype, here designated**: K000327934 [image!], “received 1864”. Isolectotype: NY00004936 (labeled as a formerly a GH specimen). Possible Isolectotype: MEL2046666 [image!]. There is no specimen of this taxon with a Gay label at P. The lectotype specimen chosen at K has no collector or date, but it has a typical Gay label, includes both flowers and fruits, and closely fits Clos’ description. It also has an annotation label stating that it came from Paris (P).

Like many species described by Clos (in Gay 1847), it is difficult to determine the actual specimens collected by Gay and used by Clos for his descriptions. The common name of the species given in the description is Jarilla, and the author says it flowers in November and is common in the hills and sandy sites along the channel of the Rio de Coquimbo at 4000 feet. Descriptions of both flowers and fruits are included, but few specimens I have seen have both. The Kew specimen (formerly a Paris specimen) has both flowers and fruits, and the label is in Gay’s handwriting.

5. *Adesmia elata* Clos, Fl. Chil. [Gay] 2: 160. 1847. **Lectotype, here designated:** P02142344 [image!]. Gay 268. Coquimbo, April 1836. Commune sur les collines exposées de la route d'Arqueos. Isolectotypes: P02142346 [image!], P02142345 [image!], NY00004938. Possible Isolectotypes: K000327941 [image!], MEL2046674 [image!]. The Paris lectotype specimen has two labels that appear to be in Gay's handwriting with the type locality specifically given: gravel hills along the road from Serena to Arqueos. The Isolectotypes are very similar to the Lectotype but with the collection number 268 added later.

6. *Adesmia filifolia* Clos, Fl. Chil. [Gay] 2: 157. 1847. **Lectotype, here designated:** P02142354 [image!]. Gay 26, 1836, La Serena. Isolectotypes: P02142355 [image!], P02142356 [image!], SI004127 Fragment on upper left, presumable from P) [image!]. Possible Isolectotype K000328069, plant of the right [image!].

Clos (1847) described this species as having many thin stems with few filiform leaflets, numerous flowers, and very narrow dorsally convex fruits. It was said to occur on the hills of La Serena and flower in October.

The lectotype specimen at Paris, has both flowers and fruits, Gay's handwriting, the number 26, a date (1836), and La Serena as the locality and date. Other specimens at Paris designated as Isolectotypes have a label with the number 26 and a date of 1839 added later. Due to the number "26," Paris considers the actual collection date of the specimen's collection to be 1836. The Kew specimen (K000328069) labeled as "type" has a label added later and no collection numbers. The Darwinion specimen (SI004127) presumably came from Paris and has the correct (but later added) label data.

7. *Adesmia filipes* A. Gray, U.S. Expl. Exped., Phan. 15: 425. 1854. Argentina. Rio Negro, North Patagonia on sand hills, sin collector (**Holotype** GH, no visto). Determined by Ulibarri and Burkart (2000: 74). Clarification: Holotype: GH00058406 [image!]: Rio Negro northern Patagonia. Capt. Wilkes 1938-1842. Isolectotypes: K000328020 [image!]; NY00004942; P02142356 [image!], PH00050389 [image!], US00001946 [image!].

8. *Adesmia glomerula* Clos, Fl. Chil. [Gay] 2: 184. 1847. Step-one: **TIPO:** Chile. Santiago Andes 3700 msm. Gay 865, P (not seen): Isotipos: K, NY, SI004125 [image!], SI004126 [image!]. (fragment from the P specimen). Designated by Ulibarri and Burkart (2000: 73). Step-two: Lectotype, here designated: P02142357 [image!], Dans les plus haute cordillères de Santiago a 3700 metres, St. Lago. Fragments of the Paris type: SI004125 [image!], SI004126 [image!]; Isolectotypes: NY00004945, P02142358 [image!], P02142859 [image!]. Possible Isolectotypes: K000327963 [image!], K000327964 [image!], MEL2046675 [image!], P03570128 [image!], US00385578 [image!]. Note: NY00004944 is labeled "glomerata" and has a later label (see below).

There has been confusion of the epithet *Adesmia glomerula* Clos with *Adesmia glomerata* Phil. listed in IPNI (2025) as *Adesmia glomerata* auct. ex F. Phil. Cat. Pl. Chil. 49. The name "glomerata," as spelled, is a *nomen nudum*. The IPNI citation gives only the name attributed to Philippi. The epithet "glomerata" appears to me to be an orthographic error, probably because on handwritten labels, the *ula* of Gay's name could be misinterpreted as "ata." Gay 865 specimens with Philippi's name are thus considered possible Isolectotypes.

9. *Patagonium godoyae* Phil. ex Reiche. Anales Univ. Chile 97: 772. 1897. **Lectotype, here designated:** SGO000002655 [image!]. Yerba Buena. 1885. Dr. Rosario Godoi de Cellao. This specimen is a Godoi collection and has both flowers and fruits. Isolectotype: SI004005 [image!].

Reiche's description, taken from a Philippi manuscript, states that the plant was collected in September from Yervas Buenas, Atacama, Chile and that it is woody with new branches and leaves covered with white lanate trichomes and glandular racemes. Descriptions of both flowers and fruits are given. Philippi did not designate a type and Marticorena (2000), when transferring the species from *Patagonium* to *Adesmia*, also did not typify the species.

10. *Patagonium latistipula* Phil. ex Reiche, Anales Univ. Chile 97: 768. 1897. **Lectotype, here designated:** SGO000002662 [image!]. Monte Ourargo, Atacama, Sept. 1885β. Label in Philippi's handwriting. Isolectotype: SGO000002661. This specimen has both flowers and fruits, but the label is not in Philippi's handwriting.

The species description, originally from an unpublished manuscript by Philippi, has the locality given simply as the Province of Atacama. The specimen used by Reiche was described as having white-tomentose trichomes mixed with black glandular processes, calyx lobes larger than the tube, corollas yellow, and fruits with simple trichomes. Burkart considered it a synonym of *Adesmia eremophila* Phil.

11. *Adesmia microphylla* Hook. & Arn., Bot. Beechy Voy. I: 19. Tab IX. 1841. **Lectotype, here designated:** K000327921 [image!]. Cummings, Valparaiso.

Ulibarri (1986) listed several "material tipo examinado," but did not designate one as the type. These included (a) "Chili," Bridges, Herb. Hook. 1867 Negative K, (b) Valparaiso, Chili. Herb Hort Soc., Macrae in 1825. Herb Hookeriana 1864, and (c) H. Cuming 609, 1831 Herb Hookerianum, Negative at K.

In their description Hooker and Arnott (1830) stated that the species was first *detected* by Menzies whose specimen(s) we possess but also *collected by Macrae* (presumably at the same time). The Macrae specimen at K is chosen here as type because the sole Menzies specimen at K is poor and has no fruits whereas the Macrae specimen has both flowers and fruits and its sprig closely resembles the figure (Tab. IX) accompanying Hooker and Arnott's (1841) text.

12. *Patagonium morenonis* Harms ex Kunze. Revis. Gen. Pl. 3(3): 70. 1898. TIPO: Argentina: "Patagonia, Moreno 164a, 191 (**Holotipo**, NY, no visto, Isotipo, SI)." Designated by Ulibarri and Burkart (2000). Ulibarri and Burkart's listing of two collections should be considered as indicating syntypes and not the "type" of the species. Clarification: Holotype: NY00004957, sprig labeled 191; Argentina, Moreno. Fragment SI004068 [image!].

Unlike many of the names in Kuntze's Rev. Gen. Pl. (1898), the name *Patagonium morenonis* is followed by an extensive description taken from an unpublished manuscript by Harms. who used the designation "*Adesmia morenonis* Harms" and listed the locality as "Patagonia" and the collections as Moreno 164a, 191.

The NY sheet listed by Ulibarri and Burkart (2000) as "TIPO" has two collections with separate labels. The two tiny plants labeled 191 have a handwritten label with "n. sp." The second label with number 164a, refers to a single plant that was annotated by Burkart in 1959 as *A. villosa*. Moreover, Ulibarri and Burkart (2000) stated that they had not seen the specimen(s) (despite Burkart's annotation on the NY specimen (note - the 2000 article was published after Burkart's death). On the NY Herbarium type specimen image data sheet, NY00004957 is labeled as bearing only Moreno 191, however the physical specimen shows otherwise. The specimen 191 conforms to the species description.

13. *Adesmia muricata* (Jacq.) DC var. *rionegrens* Burkart, Darwiniana 10(4): 475, fig. 3A. 1954. **Holotype**, designated by Burkart (1954) Clarification: to specify the specimen and isotypes: Lectotype: SI001584 [image!]. Fischer 87, 5.I.1915; Isolectotypes: BM000931720 [image!]; US00385589.

14. *Adesmia obcordata* Clos, Fl. Chil. [Gay] 2:199. 1847. **TIPO**: P, Fototipo coll. C. Munoz 4336 ex. P. Sgo. Designated by Ulibarri, 1986. Clarified in Ulibarri and Burkart (2000: 108): **TIPO**: Chile. Colchagua. Gay s.n. (**Holotipo**, P, no visto. Fotografía colec. C. Muñoz 4336 ex P, SGO, vista).). To specify the specimen, Holotype: P02142369 [image!].

The specimen at Paris is very sparse with only a few leaves and flowers but it the only specimen posted at P. If there is a photograph or mounted photograph of the type at SGO, it is not listed on JSTOR.

15. *Patagonium oxalidophyllum* Phil. [Reiche] var. *melanocarpum* Phil. ex Reiche. Ann. Univ. Chile 97: 769. 1897. **Lectotype, here designated**: SGO000002669 [image!]. Bondurrias, Atacama. W. Geisse s.n. 1885. Isolectotypes: NY00004955 ex herb Thomas Morong; SGO000002668 [image!].

This name cited in IPNI as *Adesmia melanocarpa* Phil., Anales Univ Chile 97: 769. 1897 is incorrect. The correct citation is this: *Patagonium oxalidophyllum* Phil. [Reiche] var. *melanocarpum* Phil. ex (Reiche), Ann. Univ. Chile 97: 769. 1897.

The name *Adesmia melanocarpa* was apparently a manuscript name of Philippi's (Reiche. Fl. Chile 2: 769. 1897). It was never described as a species but only as a subspecies of *Patagonium oxalidophyllum* Phil. ex Reiche in Reiche's treatment of the genus for the Flora of Chile (1898). Burkart, listed it as *A. melanocarpa* (Phil. ex Reiche) This. Dyer, but only as a synonym of *A. multicuspis* Clos. It is not clear to me where/how Burkart found the designation of "This. Dyer" (= W.T. Thiselton-Dyer).

16. *Adesmia pungens* Clos, Fl. Chil. [Gay] 2: 197. 1847. **TIPO**: P. Designed by Ulibarri. Darwiniana 27: 376. 1986. To clarify: Lectotype, P02142390 [image!] Gay 887. Isolectotype: NY00004963. Possible Isolectotype: K000222498 [image!].

Clos indicated that there was a variety alpha (indicated on the label of a specimen at Paris, P02142391) suggesting it would have been the type if the variety had been described.

17. *Adesmia radicans* Clos, Fl. Chil. [Gay] 2: 173. 1847. **TIPO**: (holotipo, P, no visto; isotipo y fotografía series Field Mus. 27917, SI). Chile: Quilloto, Santiago, In pasculus arenosis secus flumina Quillota. Bertero 767. Designated by Ulibarri and Burkart 2000. p 68. Lectotype clarified in Monteiro, T.C.E. et al. (2024): P barcode P02297857 [photo!]; isolectotypes HAL0119480; L1970583 [photo!]; L1929961 [photo!]; M barcode M0010742; MO2481457; NY00004964; P barcode P02297859 [photo!], P barcode P02297858 [photo!], P03570136 [photo!], P barcode P02297856 [photo!]; SI004132 [fragment, photo!], SI004133 [photo!]; negative of the isolectotype F 27917 [photo!]).

18. *Adesmia ramosissima* Phil. Linnaea 33 (1): 56. 1864. **Lectotype**, here designated: SGO000002614 [image!]. Concumen, Januario. 1862. Landbeck 562: Isolectotype: SGO000002613 [image!].

19. *Adesmia schneideri* Phil. Linnaea 33: 60. 1864. **TIPO**: SGO050154 (p.p., ejemplar inferior de la cartulina); isolectotipos SI, fotografía serie Field Mus. 2224 ex B, SGO, SI. Designated by Ulibarri and Burkart 2000. Specifically: **Lectotype**: SGO000002620 [image!], lower specimen (= SGO earlier specimen number 050154), Cord. Colchagua, 5-7000' s.m., 12/1860.Landbeck. Isolectotypes: SGO000002621 (SGO number 040243); SI004025.

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