

## FOUR NOMINA CONSERVANDA PROPOSALS IN FLOWERING PLANTS

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Four generic names of flowering plants in almost universal use have been presented as nomina generica conservanda proposita for action by the forthcoming International Botanical Congress at Stockholm in 1950. They are: Castanopsis (D. Don) Spach, Darlingtonia Torr. (1853, not 1851), Dipholis A. DC., and Cosmibuena Ruiz & Pav. (1802, not 1794). As required by Article 21, Note 1, of the International Rules of Botanical Nomenclature (Ed. 3, 151 p. Jena. 1935), the detailed statements of these cases summarized here have been submitted to the Executive Committee.

E. D. Merrill (Nomenclatural notes on Rafinesque's published papers 1804-1840. Arnold Arboretum Jour. 29: 202-214. 1948) has published a list of about 88 valid but as yet not generally accepted generic names by Rafinesque which have priority over the names in use. For some of the large genera affected, Rafinesque's names should be rejected in favor of the familiar, established names, as Merrill has stated, but each name should be considered separately on its own merits. Names of only three genera of trees native in the United States are affected by Rafinesque's names in that list. Their present names are: Lithocarpus Blume (Pasania (Miq.) Oerst.), Castanopsis (D. Don) Spach, and Dipholis A. DC. Of these, the first and possibly also the last, can be retained without action. With Merrill's kind permission, the second and last names are here proposed for conservation.

Balanaulax Raf. (Alsogr. Amer. 28. 1838) and Arcaula Raf. (Alsogr. Amer. 30. 1838) both are earlier names for Pasania (Miq.) Oerst. (Kjoeb. Vidensk. Meddel. 1866: 81. 1867), as cited. However, the oldest name for the genus and the one now in use is Lithocarpus Blume (Bijr. Fl. Ned. Indië 526. 1825), which was established by Rehder and Wilson (in Sarg., Pl. Wilson. 3: 205. 1916). It antedates also Synaedrys Lindl. (Introd. Nat. Syst. Bot. Ed. 2, 441. 1836).

1891, partim. (Fagaceae.) CASTANOPSIS (D. Don) Spach, Hist. Vég. Phaner. 11: 185. 1842. Quercus L. [sec.?] Castanopsis D. Don, Prodr. Fl. Nepal. 56. 1825. Type sp.: Castanopsis armata Spach, loc. cit. (Quercus armata Roxb.)

Nomen rejiciendum: Balanoplis Raf., Alsogr. Amer. 29. 1838. Type sp.: B. tribuloides (Sm.) Raf., loc. cit. (Quercus tribuloides Sm. in Rees, Cycl. 29: Quercus No. 13. 1814.)

Synonym: Callaeocarpus Miq. in Junghuhn, Pl. Jungh. 13.

1851. Type sp.: Callaeocarpus sumatrana Miq., loc. cit. p. 14.

Castanopsis (D. Don) Spach is a genus of about 120 species of trees, nearly all Asiatic. C. chrysophylla (Dougl.) A. DC. and C. sempervirens (Kellogg) Dudley, the latter a shrub, are native in the Pacific coast States of the United States. This generic name was accepted by Bentham and Hooker and by Index Kewensis. Prantl (in Engler and Prantl, Natürl. Pflanzenfam. 3 (1): 55. 1888) and Dalla Torre and Harms placed it as a section, Castanea Mill. sect. Castanopsis (D. Don) Prantl. The later synonym Callaeocarpus Miq., in which only two binomials were made, is not in use.

A. Camus (Les chataigniers. Monographie des genres Castanea et Castanopsis. 604 p., illus. Paris. 1929) accepted Castanopsis as a distinct genus with 112 species. Recent authors in the United States universally have used Castanopsis for the native species.

Balanoplis Raf., published only four years before Castanopsis was elevated to generic rank, had only the two original species, B. tribuloides (Sm.) Raf. and B. serrata Raf. (loc. cit., p. 30), a substitute name for Q. cuspidata Thunb. Rafinesque's name, listed in Index Kewensis as a synonym of Quercus L., apparently was not accepted by any later authors. Revival of Balanoplis Raf. would require about 120 new combinations and would serve no useful purpose.

3131. (Sarraceniaceae.) DARLINGTONIA Torr., Smithsn. Inst. Contrib. Knowl. 6 [pt. 5]: 4, pl. 12. 1853. Type sp.: D. californica Torr., loc. cit. p. 5, pl. 12.

Non Darlingtonia DC., Ann. Sci. Nat. 4: 97. 1824. (Leguminosae.) Type sp.: D. brachyloba (Willd.) DC., loc. cit. (Acaria brachyloba Willd., Sp. Pl. Ed. 4, 4: 1071. 1806.)

Non Darlingtonia Torr., Amer. Assoc. Adv. Sci. Proc. 4: 191. 1851. (Styracaceae.) Type sp.: D. rediviva Torr., loc. cit.

Nomen rejiciendum: Chrysamphora Greene, Pittonia 2: 191. 1891. Type sp.: C. californica (Torr.) Greene, loc. cit.

Darlingtonia Torr. (1853, not 1851) has a single species, D. californica Torr., the California pitcher-plant, which is a perennial herb native in northern California and southwestern Oregon. This herb is also in cultivation elsewhere, chiefly as a botanical curiosity because of its insectivorous habit. Mention of this case was made in my previous note (Amer. Midland Nat. 33: 504-505. 1945). Earlier, both Uphof and Abrams had indicated that Darlingtonia Torr. should be conserved. However, as this name does not appear among the mimeographed proposals submitted to the American Society of Plant Taxonomists for sponsorship, it may be appropriate, therefore, to make a formal proposal here in order to insure official action.

Darlingtonia DC., which contained only six binomials, was abandoned more than one hundred years ago, after Bentham (Jour. Bot. (Hook.) 4: 356, 358. 1842) made it a synonym of Desmanthus Willd. (Sp. Pl. Ed. 4, 4: 1044. 1806), nom. conserv. Noting this action, Torrey in 1851 dedicated an "anomalous genus, apparently Bombaceous," to the American botanist, Dr. William Darlington, doubtless the same person De Candolle had honored earlier. This name with its single species, Darlingtonia rediviva Torr., was published in the following, generally overlooked abstract, which was not cited in Index Kewensis: Torrey, John. On some new plants discovered by Col. Fremont, in California. Amer. Assoc. Adv. Sci. Proc. 4: 190-193. 1851. All the names of this abstract except Darlingtonia appeared also in the longer, illustrated article: Torrey, John. Plantae Frémontianae; or, descriptions of plants collected by Col. J. C. Frémont in California. Smithen. Inst. Contrib. Knowl. "5 (1)" [6 (2)], 24 p., illus. 1853.

However, Torrey adopted the name Darlingtonia again for a different genus in another publication of the series: Torrey, John. On the Darlingtonia californica, a new pitcher plant from northern California. Smithen. Inst. Contrib. Knowl. 6 (4): 1-8, pl. 12. 1853. Here he explained that the Californian plant to which he had assigned this name from imperfect specimens proved to be only a species of Styrax, which he now named S. californicum Torr. (p. 4).

Incidentally, in reviews of these articles in November 1853, Asa Gray (Amer. Jour. Sci. Arts, ser. 2, 16: 424-425. 1853) cited also the published abstract and placed the date of publication of the separate article on Darlingtonia californica as "early last summer." Darlingtonia and other names in the abstract were mentioned in my note (Amer. Midland Nat. 33: 504-505. 1945). Independently, L. C. Wheeler cited this abstract and transferred Darlingtonia rediviva Torr. to Styrax rediviva (Torr.) L. C. Wheeler (So. Calif. Acad. Sci. Bul. 44: 94. 1946).

Fearing that Darlingtonia DC. might be revived from synonymy "any day," Greene renamed Darlingtonia Torr. (1853) as Chrysamphora. However, the available name Chrysamphora Greene has been used by very few authors, including: Thomas A. Howell, Flora of Northwest America 30. 1903. Edgar T. Wherry in Mary Vaux Walcott, Illustrations of North American Pitcherplants, p. 3, pl. 1. 1935.

Darlingtonia Torr. (1853) was accepted by Bentham and Hooker, Engler and Prantl, Index Kewensis, and Dalla Torre and Harms and is in almost universal usage. Index Londonensis cited 45 illustrations under Darlingtonia and only 1 under Chrysamphora, and the Supplement listed 1 illustration for each.

Floras covering its native range have adopted Darlingtonia, as have the following monographs in Sarraceniaceae: J. M. Macfarlane, Sarraceniaceae. Pflanzenreich 4 (110): 25-26. 1908.

Roland M. Harper, The American pitcher-plants. Elisha Mitchell Sci. Soc. Jour. 34: 110-125, illus. 1918. J. C. T. Uphof, Sarraceniaceae. In Engler, A., and Harms, H. Natürl. Pflanzenfam. Ed. 2, 17b: 724. 1936.

Francis E. Lloyd devoted a chapter in his book, The Carnivorous Plants (352 p., illus. Waltham, Mass. 1942), to this species under the heading "Darlingtonia californica." However, in the first paragraph (p. 40) he explained that Darlingtonia was used because of its wide familiarity and use in horticultural literature, though under the International Rules the name is invalid as a later homonym and is to be replaced by Chrysamphora Greene. Uphof (loc. cit.) proposed that Darlingtonia Torr. (1853) be retained over Chrysamphora. Abrams (Illus. FL Pacif. States 2: 329, fig. 2171. 1944) likewise continued to use Darlingtonia in hope that it would be conserved over Greene's name.

As a name in accord with the International Rules previous to 1930, when the homonym rule (Art. 60 (3) and 61) was changed, Darlingtonia Torr. (1853) clearly is eligible for conservation. This homonym rule was changed with the definite understanding that all well-known generic homonyms should, if possible, be retained as nomina conservanda (Rehder, A, Weatherby, C. A., Mansfeld, R., and Green, M. L. Conservation of later generic homonyms. Kew Bul. 1935: 341-544. 1935). In the search for later homonyms by these authors, the names were divided alphabetically among different persons, but names beginning with the letters D to K were not checked in time to be submitted in 1935. Thus, Darlingtonia was not considered at the last Congress.

Probably the only objection to this proposal is the small size of the genus. However, names of other small genera, including monotypic ones, have been conserved. An extreme example is Maclura Nutt., proposed over Toxylon Raf. in 1905, even before the proper specific epithet had been transferred to Maclura! Wide usage of the name Darlingtonia should outweigh this objection.

6373. (Sapotaceae.) DIPHOLIS A. DC. in DC., Prodr. 8: 188. 1844. Type sp.: D. salicifolia (L.) A. DC., loc. cit. (Adras salicifolia L., Sp. Pl. Ed. 2, 470. 1762.)

Nomen rejiciendum: Spondogona Raf., Sylva Tellur. 35. 1838. Type sp.: S. nitida Raf., loc. cit.

Dipholis A. DC. is universally accepted for a genus of about 14 species of tropical American trees and shrubs, chiefly in the West Indies but also from Mexico to Panama. The type species, D. salicifolia (L.) A. DC., is widely distributed and reaches the United States in southern Florida. This generic name was adopted by Bentham and Hooker, Engler and Prantl, Index Kewensis, and Dalla Torre and Harms.

Spondogona Raf., listed by Merrill as an earlier name for Dipholie, was similarly cited with its single species in Index Kewensis, though the cross reference under the latter name appeared only in the Addenda et Emendanda (p. 1280). Likewise, Spondogona Raf. was placed as a synonym by Dalla Torre and Harms (Gen. Siphon. Sup. 630. 1907). House (Amer. Midland Nat. 7: 131. 1921) called attention to Rafinesque's prior name and made the combination Spondogona salicifolia (L.) House for the Florida species.

In a monograph of this genus, Arthur Cronquist (Studies in the Sapotaceae, III. Dipholis and Bumelia. Arnold Arboretum Jour. 26: 435-471. 1945) retained Dipholis A. DC. as not requiring conservation and rejected Spondogona Raf. as based upon a monstrosity (Art. 65). Spondogona and its type species S. nitida Raf. are based on Bumelia pentagona Sw. (Nov. Gen. Sp. Pl. Prodr. 50. 1788) with slightly modified description. According to Cronquist the authority for the synonymy is Radlkofer (Ergänz. Monogr. Sapind.-Gatt. Serjania, p. 55-56. 1886), whose disposition of the name had been accepted also by L. Pierre and Ign. Urban (Sapotaceae. Symb. Bot. 5: 138. 1904). Cronquist explained that Swartz described the fruit as 5-angled and that Rafinesque apparently without seeing the type added that the fruit was 5-seeded. Stating that a 5-seeded or even 5-angled fruit in Dipholis would be a monstrosity, Cronquist rejected Rafinesque's earlier name. He reported the number of seeds as 1, or sometimes 2 or 3.

Radlkofer in his reduction of Bumelia pentagona Sw. to synonymy noted that Grisebach (Fl. Brit. West Ind. 401. 1864) had already reached the same decision from the description of that species. Grisebach reported the fruit of this species to be sometimes slightly pentagonal also. In Banks' Herbarium at London, Radlkofer located a specimen collected by Du Ponthieu which he concluded was the basis for Bumelia pentagona, though there was a discrepancy in the locality. No mention was made of a monstrosity. The simplest disposition of this case seems to be definite acceptance of Dipholis A. DC. as a nomen conservandum, even though action possibly may not be required.

8209. (Rubiaceae.) **COSMIBUENA** Ruiz & Pav., Fl. Peruv. Chil. Descr. 3: 2. 1802. Type sp.: C. obtusifolia Ruiz & Pav., loc. cit. 3: 3. 1802. (C. grandiflora (Ruiz & Pav.) Rusby.)

Non Cosmibuena Ruiz & Pav., Fl. Peruv. Chil. Prodr. 10, pl. 2. 1794. (Rosaceae.) Type sp.: None.

Synonym: Buena Pohl, Pl. Bras. 1: 8. 1827. Type sp.: B. obtusifolia (Ruiz & Pav.) DC., Prodr. 4: 356. 1830. (Cosmibuena obtusifolia Ruiz & Pav., loc. cit.) Non Buena Cav., An. Hist. Nat. 2: 278, pl. 23. 1800. (Rubiaceae.) Type sp.: B. panamensis Cav., loc. cit. p. 279, pl. 23.

Cosmibuena Ruiz & Pav. (1802, not 1794), family Rubiaceae, is a small genus of about 10 species of trees in northern South America and Central America. This genus, a member of the tribe Cinchoneae, came to my attention while I was making field surveys for cinchona bark in Colombia during the late war. Afterwards I noted that the generic name is illegitimate as a later homonym and that no other name is available. However, this name was accepted by Bentham and Hooker, Index Kewensis, Engler and Prantl, and Dalla Torre and Harms and is in universal usage.

Cosmibuena Ruiz & Pav. (1794) was dedicated to Dr. Cosme Bueno, Peruvian geographer, in a work describing new genera but not listing specific names. It was soon suppressed by its authors as a synonym of Hirtella L. and contained no binomials. Cavanilles, noting that this name was a synonym and protesting the compound generic name formed from the two parts of one person's name, honored the same man with another genus, Buena Cav. (An. Hist. Nat. 2: 278, pl. 23. 1800). However, the only species, B. panamensis Cav. (loc. cit. p. 279, pl. 23) promptly was admitted by its author (An. Cienc. Nat. 4: 109-120. 1801) to be congeneric with Gonzalagunia Ruiz & Pav. (Fl. Peruv. Chil. Prodr. 12, pl. 3. 1794), family Rubiaceae, another name rejected by Cavanilles because of its compound derivation from two surnames.

Then, in conformity with the times, Ruiz and Pavon gave the name Cosmibuena Ruiz & Pav. (1802) to a second genus of two species, the genus of Rubiaceae to which the name is now applied. To complicate matters, Pohl (Pl. Bras. 1: 8-10. 1827), citing previous usage of Cosmibuena and Buena, proposed for Cosmibuena Ruiz & Pav. (1802) the shortened name Buena Pohl, because he too considered this compound name unacceptable. Ruiz and Pavon's two species of Cosmibuena were mentioned by Pohl but not transferred to Buena. Instead, Pohl added Buena hexandra Pohl (loc. cit. 1: 10, pl. 88. 1827), which now is placed in the related genus Ladenbergia Klotzsch. However, the type species of Buena Pohl must remain the same as that of Cosmibuena Ruiz & Pav. (1802). The present name for the type species is Cosmibuena grandiflora (Ruiz & Pav.) Rusby (N. Y. Bot. Gard. Bul. 4: 368. 1907), based upon Cinchona grandiflora Ruiz & Pav. (Fl. Peruv. Chil. Descr. Icon. 2: 54, pl. 198. 1799).

Of course, under present Rules (Art. 25), formation of Cosbuena from two parts of one man's name is permissible. Buena Pohl is illegitimate both as a later homonym and as a direct substitution for Cosmibuena Ruiz & Pav. (1802). Though reestablished later by H. A. Weddell (Linn. Soc. Jour. 11: 185. 1869) with B. hexandra as the type and for the genus now known as Ladenbergia, Buena Pohl has not been used in recent years. If Cosmibuena Ruiz & Pav. (1802, not 1794), the name in universal use, is not conserved, a new generic name will be required.

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