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Hawaiian Plants Named by Endlicher in 1836
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The first attempt to summarize the rapidly increasing knowledge of the flora of the South Sea islands was made by Stephan Endlicher in 1836 (Bemerkungen über die Flora der Sudseeinseln, Wien. Mus. Naturgesch., Ann. 1 : 129-190, tab. xiii-xvi, 1836). He reviewed the botanical exploration of the various islands of Oceania, for his South Sea islands included Micronesia and the Hawaiian islands in the northern hemisphere, as well as the Pacific islands of the southern hemisphere. The bulk of his paper consisted of a systematcally arranged annotated catalog. For each species he gave the scientific name, the authority and original reference, then the South Sea localities and collectors. The work was essentially a compilation from many sources. The Hawaiian records were based upon published records of the plants collected by Menzies on Vancouver's voyage, Gaudichaud on Freycinet's voyage on the *Uranie,* Chamisso on Kotzebue's voyage, Lay and Collie on Beechey's voyage, and by Meyen on Wendt's voyage. A number of plants were renamed by Endlicher in this synopsis. Most of the renamings were nomenclatorial transfers, but a few were wholly new names based upon previously published descriptions which he showed to be incorrect identifications with some foreign species. Two of these names are cited in Hawaiian botanical literature as accepted names or as rejected synonyms. These familiar names are *Byronia sandwicensis* Endl., and *Canavalia Gaudichaudii* Endl., both of which are synonyms.

[1] This is the eighth of a series of papers designed to present descriptions, revision, and records of Hawaiian Plants. The preceding papers have been published as B. P. Bishop Mus., Occ. Papers **10**(4), 1933; **10**(12), 1934; **11**(14), 1935; **12**(8), 1936; **15**(1), 1939; **15**(2), 1939.

Hillebrand and Rock were both aware of the existence of this paper, as they cited one or both of the above names, but no others. Neither of these two writers nor any other student of Hawaiian plants seems to have collated Endlicher's paper and considered the 21 species there published as new or there renamed. Likewise, of all these, only the *Byronia* and the *Canavalia* are listed in the Index Kewensis.

The writer has recently checked Endlicher's paper for new Hawaiian plant names. They are listed below with a discussion of their status and an indication as to which appear to be valid and which synonyms. The accepted names are printed in large and small capitals.

GRAMINEAE

PANICUM COLLIEI Endl. Wien. Mus. Naturgesch., Ann. 1: 157, 1836.

Panicum lanaiense Hitchc., Bishop Mus., Mem. 8(3): 189, 1922.

These names are typonyms, both being based on *Panicum affine* Hook. and Arn. (Bot. Beechey Voy. 100, 1832) which was a homonym of the two earlier ones by Poiret (1816) and by Nees (1829). *P. Colliei* Endl. (1836) is the earlier and hence the valid name, as was indicated by Agnes Chase in a letter to the writer.

URTICACEAE

Boehmeria glabra (Meyen) Endl., Wien. Mus. Naturgesch., Ann. 1: 165, 1836.

NERAUDIA GLABRA Meyen, Reise 2: 124, 1835.

Neraudia is a valid genus and Endlicher seems in error in transferring this species to *Boehmeria.* This combination, *B. glabra* (Meyen) Endl. antedates the same one made by Steudel in 1841.

Boehmeria ovata (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1: 165, 1836.

Neraudia ovata Gaud., Bot. Voy. Uranie, 501, 1830.

NERAUDIA MELASTOMAEFOLIA Gaud., Bot. Voy. Uranie, 500, 1830; the accepted name, *fide* Hillebrand.

This is based on *Neraudia ovata* Gaud. These plants with alternate leaves and fleshy connate berrylike perianth seem generically distinct. Endlicher seems in error in reducing the genus and transferring the species to *Boehmeria. Boehmeria ovata* (Gaud.) Endl. is an earlier name than the homonyms by Steudel (1841), and by Blume (1851).

PHYTOLACCACEAE

PHYTOLACCA SANDWICENSIS Endl., Wien. Mus. Naturgesch., Ann. **1**: 179, 1836.

Phytolacca brachystachys Moquin, in de Candolle, Prodromus **13**(*2*) : 31, 1849; also in H. Walter, Engler, Pflanzenr. IV, fam. **83** : 51-52, 1909.

Endlicher's new name was based on *P. Abyssinica* sensu Hook. and Arn. (Bot. Beechey Voy. 94, 1832), not *P. abyssinica* Hoffm. (1796) which is a synonym of *P. dodecandra* L'Héritier (1784-85). *P. dodecandra* of Africa and Madagascar is a species with the carpels free at anthesis, the flowers dioecious, the male with 15 stamens, and the female with 8-15 stamens. Endlicher's name is the first available one for the Hawaiian plant.

PHYTOLACCA SANDWICENSIS Endl. var. PUBERULENTA (Degener) St. John, comb. nov.

Phytolacca brachystachys Moq. var. *puberulenta* Degener, Fl. Hawaiiensis, fam. 115, June 14, 1933.

LEGUMINOSAE

Canavalia Gaudichaudii Endl., Wien. Mus. Naturgesch., Ann. **1**: 186, 1836.

Dolichos galeatus Gaud., Bot. Voy. Uranie 486, 1830; Atlas t. 115, 1826.

CANAVALIA GALEATA (Gaud.) Hook. and Arn., Bot. Beechey Voy. 81, 1832.

Canavalia galeata sensu Vogel, Mann, Gray, and other writers on Hawaii, not of Gaudichaud, which was never legally published.

Canavalia Gaudichaudii Endl. is a new specific name and a transfer to the genus *Canavalia,* based upon *Dolichos galeatus* Gaud. The name *Canavalia galeata* Gaud. has been accepted by Hillebrand, and by Rock and apparently by all other writers on Hawaiian botany. It is given by Gaudichaud on page 486, and Hillebrand and Rock accept it as being in "adnot" (or in a note). Actually Gaudichaud printed it "Canavalia ? galeata", but printed it at the end of the description and before the locality, where he customarily placed unpublished herbarium or manuscript names. It means that he had some question as to whether or not the plant was a *Canavalia.* How-

ever, *Canavalia galeata* Gaud. was published only in synonymy and hence was not validly published. [See International Rules of Botanical Nomenclature, Cambridge 1930 (1935), Art. 40.] Though Gaudichaud by his queried name, placed in synonymy, indicated that he had some doubt as to the generic position, he definitely published the plant under the generic heading *Dolichos,* used the binomial *Dolichos galeatus,* and this reappears in the index, on plate 115, and in the table of contents in the atlas. The conclusion is obvious, that Gaudichaud published the plant as a *Dolichos* and that he did not intend to do so under *Canavalia* also. In any case, *Canavalia galeata* Gaud. was not effectively or validly published.

This common Hawaiian plant, the *awikiwiki* or *puakauhi* has a small terminal stigma, not one stigmatic down the proximal side of the long style. This character is not shown in Gaudichaud's plate or mentioned in his description, but the Hawaiian plant differs from *Dolichos* in this character and agrees with *Canavalia.* Endlicher rightly came to this decision. He coined a new name, *C. Gaudichaudii,* which is illegitimate as he did not adopt the oldest specific name. The specific name given by Gaudichaud must be used. Although various subsequent writers, Vogel (for Chamisso and Schlechtendal), Mann, Gray, Wawra, Hillebrand, and Rock, have used the name *Canavalia galeata* and have attributed it to Gaudichaud, it is illegal by our present International Rules of Botanical Nomenclature. There is no indication that Gaudichaud arranged to republish or validate his name under *Canavalia* in any of these subsequent publications by the foreigners mentioned. In no case do these other botanists claim the combination as their own, but, following Gray, print the name *Canavalia galeata* Gaud. adn. (or adnot., or in note), indicating clearly that they were accepting and attributing to Gaudichaud the manuscript or herbarium name, *C. galeata,* which he published only in the synonomy of the species which he described as *Dolichos galeatus.* The International Rules of Botanical Nomenclature (ed. 3, Cambridge 1930, and amended Amsterdam 1935) state (Art. 44), "The name of a species or of a subdivision of a species is not validly published unless it is accompanied (1) by a description of the group; or (2) by the citation of a previously and effectively published description of the group under another name; . . . " and (Art. 37 ter) "A name of a taxonomic group is not validly published

unless it is definitely accepted by the author who publishes it." It is clear that Gaudichaud did not republish his species, also that none of the subsequent writers had any intention of making a new combination themselves, but that they merely used a name which Gaudichaud had never legally described, and did not himself accept.

Fortunately the correct name was published by Hooker and Arnott (Bot. Beechey Voy. 81, 1832) in 1832. They published as a new species *Canavalia pubescens* based on a collection from Oneeheow [Niihau Island]. In the paragraph of discussion under this they add, "As a species, it is very closely allied to *Dolichos galeatus,* (Gaud. in Freyc. Voy. p. 486, t. 115,) which is also a *Canavalia,* but that has perfectly smooth acuminated leaves, and the lower divisions of its calyx are lanceolate and acute." This publication by Hooker and Arnott fulfills every requirement of effective and valid publication as the name-bringing synonym and reference are given; it clearly states that the species belongs in the genus *Canavalia*; and its diagnostic characters are given. This name was omitted from the Index Kewensis.

CANAVALIA GALEATA (Gaud.) Hook. and Arn. var PUBESCENS (Hook. and Arn.) St. John, comb. nov.

Canavalia pubescens Hook. and Arn., Bot. Beechey Voy. 81, 1832.

The varietal combination under *Canavalia galeata* was ostensibly made by Gray [Bot. U. S. Expl. Exped. **15**(1) : 441, 1854], and it has been accepted as valid by Rock and others and remade by Hillebrand. However, this combination and these usages were under *C. galeata* Gaud. which has no legal existence. Hence it is necessary to publish the combination under the valid *C. galeata* (Gaud.) Hook. and Arn.

ZYGOPHYLLACEAE

Kalstroemia cistoides (L.) Endl., Wien. Mus. Naturgesch., Ann. **1** : 184, 1836.

TRIBULUS CISTOIDES L., Sp. Pl. **1** : 387, 1753.

Endlicher without discussion transfers the original *Tribulus cistoides* L. to *Kalstroemia,* then cites from the Sandwich Islands the specimens collected by Lay and Collie, and by Meyen. Both *Kalstroemia* and *Tribulus* are now accepted as good genera. The Hawai-

ian *nohu* certainly has the generic characters of the pantropic *Tribulus cistoides* L. Endlicher made an error in judgment when he made this transfer. The name *Kalstroemia cistoides* (L.) Endl. is without doubt a synonym of the valid *Tribulus cistoides* L. This group is treated in Engler and Prantl (Pflanzenf., ed. 2, **19a**: 176, 1931).

EUPHORBIACEAE

EUPHORBIA ARNOTTIANA Endl., Wien. Mus. Naturgesch., Ann. **1**: 184, 1836.

Euphorbia Hookeri Steud., Nomenclator Botanicus ed. 2, **1**: 612, 1841; also in Hillebrand, W., Fl. Hawaiian Ids. 396, 1888; Sherff, E. E., Revision of Hawaiian Species of Euphorbia L., Missouri Bot. Gard., Ann. **25**: 59, 1938.

Both *E. Arnottiana* Endl. and *E. Hookeri* Steud. are based on *E. myrtifolia* Hook. and Arn. (Bot. Beechey Voy. 95, 1832). This was a new species but the name was a homonym of *E. myrtifolia* L. (Amoen. Acad. 379, 1760), which equals *E. myrtillifolia* L. (Syst. ed. **10**: 1048, 1759). This species from Jamaica with its small roundish, pubescent leaves and puberulent twigs is amply distinct from the Hawaiian one.

Sherff in his revision accepts *E. Hookeri* Steud. and lists *E. Arnottiana* Endl. as its synonym. It is apparent that he did not see Endlicher's publication or realize that it was the earlier, as he lists *E. Arnottiana* Endl. as a synonym, gives an incomplete reference without the date and does so *fide* Drake del Castillo. Nevertheless, it is evident that *E. Arnottiana* is the earlier and the valid name.

EUPHORBIA ARNOTTIANA Endl. var. INTEGRIFOLIA (Hillebrand) St. John, comb. nov.

Euphorbia Hookeri Steud. β var. *integrifolia* Hillebrand, Fl. Hawaiian Ids. 397, 1888; also in Sherff, E. E., Missouri Bot. Gard., Ann. **25**: 61, 1938.

AQUIFOLIACEAE

Byronia sandwicensis Endl., Wien. Mus. Naturgesch., Ann. **1**: 184, 1836.

ILEX ANOMALA Hook. and Arn., Bot. Beechey Voy. 111, t. 25, 1832.

This publication of a new genus was accomplished in the briefest possible way:

"1577. BYRONIA SANDWICENSIS* Ilex anomala Hook. et Arn. *ad Beech. p.* 111. *t.* 25.—Insulae Sandwicenses. (*Lay et Coll.*)." It has no generic description, specific description, or discussion. Hooker and Arnott gave a detailed description of their *Ilex? anomala,* and discussed the characters by which it differed from *Ilex* and from all other genera of the group. On plate 25 they gave a good habit drawing, with detailed enlargements of the flower, the calyx, the corolla with stamens, the ovary, and its cross section. Hence, by Article 43 of the 1930 (1935) Cambridge International Botanical Rules, *Byronia sandwicensis* is validly published as it was a monotypic genus based on a previous description and plate with analytical details. The genus *Byronia* was accepted by Gray, von Mueller, Bentham and Hooker, and at first by Engler and Prantl. These Hawaiian plants called *aiea* or *kaawau* with 5-10-parted corollas and 10-20-celled fruits appear very different from the species of holly such as *Ilex Aquifolium* L. or *Ilex opaca* Ait., but when all the species in the group are considered the supposed generic differences vanish. This is well demonstrated by the monographer of the family, Th. Loesener (K. Leop. Carol. Deut. Akad. d. Naturforscher, Abhandl. **78**: 10, 65-68, 1901; also in their Nova Acta **89**: 27-33, 1908). Hence, the name *Byronia sandwicensis* Endl. becomes a synonym of *Ilex anomala* Hook. and Arn.

MALVACEAE

Abutilon incanum (Link) Endl., Wien. Mus. Naturgesch., Ann. **1**: 182, 1836.

ABUTILON INCANUM (Link) Sweet, Hort. Brit., ed. 1, 53, 1827.
Sida incana Link., Enum. Hort. Berol. **2**: 204, 1822.

The combination made by Endlicher is superfluous as it is a later typonym, as also was the one made by G. Don in General History of Dichlamydeous Plants **1**: 501, 1831.

The name-bringing synonym is *Sida incana* Link (1822), and the valid combination was made by Sweet in 1827.

LOBELIACEAE

Lobelia acuminata (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.
Delissea acuminata Gaud., Bot. Voy. Uranie 457, pl. 76, 1829.

CYANEA ACUMINATA (Gaud.) Hillebr., Fl. Hawaiian Ids. 254, 1888.

The combination under *Cyanea* is the accepted classification and name of this plant.

Lobelia crispa (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.

ROLLANDIA CRISPA Gaud., Bot. Voy. Uranie 459, 1829.

This is still classified as *Rollandia crispa* Gaud. and Endlicher's transfer is not accepted.

Lobelia grandiflora (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.

CLERMONTIA GRANDIFLORA Gaud., Bot. Voy. Uranie 459, pl. 73, 1829.

This is still classified as *Clermontia grandiflora* Gaud., so Endlicher's transfer is not accepted.

Lobelia Grimesiana (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.

CYANEA GRIMESIANA Gaud., Bot. Voy. Uranie 458, pl. 75, 1829.

This is still classified as *Cyanea Grimesiana,* hence Endlicher's transfer is not accepted.

Lobelia kakeana (Meyen) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.

CLERMONTIA KAKEANA (KAKEANA) Meyen, Reise **2**: 139, 1835.

This is still classified as *Clermontia Kakeana* Meyen, and Endlicher's transfer is not accepted. As Hillebrand indicated in his Flora of the Hawaiian Ids. 240, 1888, Kake is the Hawaiian spelling of the personal name Jack, so the specific name *Kakeana* should be capitalized as a personal specific name.

Lobelia lanceolata (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. **1**: 170, 1836.

Rollandia lanceolata Gaud., Bot. Voy. Uranie 458, pl. 74, 1829.

ROLLANDIA LANCEOLATA Gaud. var. GRANDIFOLIA DC., Prodr. **7**: 344, 1838, *fide* St. John and Hosaka, Bishop Mus., Occ. Papers **11**(13): 12, 1935.

This is still classified as a *Rollandia,* and Endlicher's transfer is

not accepted. Its present name is *Rollandia lanceolata* Gaud. var. *grandifolia* DC.

Lobelia oblongifolia (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1: 170, 1836.

CLERMONTIA OBLONGIFOLIA Gaud., Bot. Voy. Uranie 459, pl. 71, 1829.

This is still classified as *Clermontia oblongifolia* Gaud. and Endlicher's transfer seems unjustified.

Lobelia persicifolia (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1:170, 1836.

CLERMONTIA PERSICIFOLIA Gaud., Bot. Voy. Uranie 459, pl. 72, 1829.

This is still classified as *Clermontia persicifolia* Gaud. and Endlicher's transfer seems unjustified.

Lobelia subcordata (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1: 170, 1836.

DELISSEA SUBCORDATA Gaud., Bot. Voy. Uranie 457, pl. 77, 1829.

This is still classified as *Delissea subcordata* Gaud. and Endlicher's transfer seems unjustified.

Lobelia undulata (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1: 170, 1836.

DELISSEA UNDULATA Gaud., Bot. Voy. Uranie 457, pl. 78, 1829.

This is still classified as *Delissea undulata* Gaud. and Endlicher's transfer seems unjustified.

COMPOSITAE

Adenostemma glutinosum (Gaud.) Endl., Wien. Mus. Naturgesch., Ann. 1: 168, 1836.

Verbesina Lavenia L., Sp. Pl. 1: 902, 1753.

Lavenia glutinosa Gaud., Bot. Voy. Uranie 471, 1830.

ADENOSTEMMA LAVENIA (L.) O. Kuntze, Revisio Generum Plantarum 1: 304, 1891.

This same combination *A. glutinosum* (Gaud.) was made by A. P. de Candolle in the same year, 1836, in Prodromus **5**: 111, 1836, but the Hawaiian plants do not differ from those of the other South

Sea islands or Southern Asia. They were reduced to the synonymy of *A. viscosum* Forst. by Hillebrand (Flora of the Hawaiian Ids. 192, 1888). O. Kuntze reduced *A. viscosum* Forst. to the synonymy of the older Linnaean species, *A. Lavenia* (L.) Ktze. in 1891, and this was accepted by Merrill (Interp. Herb. Amb. 497, 1917), and by J. T. Koster (Blumea **1**:471, 1935). Hence, it is immaterial whether Endlicher or A. P. de Candolle was the first to make the combination *A. glutinosum* during the same year, as it is treated as a synonym in any case.

In summary, it is noted that of the twenty-one names proposed by Endlicher for Hawaiian plants, three are valid.

The author has in preparation a similar evaluation of the status of the new Polynesian and South Sea plants published by Endlicher.