

interesante hacer notar que con Priva boliviana, el género Priva Adans. queda definitivamente incorporado al catálogo de la flora argentina, con una especie que le pertenece sin discusión. Había quedado eliminado del mismo al ser excluida del género su hasta hace poco único representante argentino, Priva cuneato-ovata (Cav.) Rusby (sin.: Priva laevis Juss.), planta común en el centro y oeste argentino. Se ha vuelto a considerarla como género aparte, Castelia Cav., reconociéndose hasta hace poco como Castelia cuneato-ovata Cav. Recientemente, J. Caro, en las Cuartas Jornadas Argentinas de Botánica en Córdoba, rechaza el género Castelia Cav. por nomen regiciendum y considera la planta especie de Pitraea Turcz."

Personally, I see no valid reason for rejecting the generic name, Castelia, since it was validly published in 1801, while the Castelia of Liebmann was not published until 1853 and has since been replaced by Neocastela Small.

Additional citations: PERU: La Libertad: Angulo & Ridoutt 233 (S). BOLIVIA: Potosí: Cárdenas 3712 (W--1909479). CHILE: Antofagasta: Pfister s.n. [Calama, 2-I-1950] (Ac). Arica: Jaffuel 1612 (W--1659377). ARGENTINA: Córdoba: Fabris 1199 (W--2144793). Jujuy: Venturi 4865 (Du--372503), 8594 (Du--372505). La Rioja: Venturi 7848 (Du--372504). Mendoza: H. H. Bartlett 19370 (Mi, W--1904439). Salta: Hjerting, Petersen, & Rahn 338 (S); T. Meyer 3883 [Herb. Inst. Miguel Lillo 35686] (G); C. Skottsberg s.n. [Cafayate, 19/10/1949] (Go). Tucumán: Dinelli s.n. [Herb. Inst. Miguel Lillo 32459] (Du--317606); Schreiter s.n. [Herb. Inst. Miguel Lillo 32600] (W--1802554).

PARTIAL REVIEW OF DOTY & MUELLER-DOMBOIS' "ATLAS", AND NEW TAXA IN HAWAIIAN RUBIACEAE, II

Otto & Isa Degener

We fear Maxwell S. Doty and Dieter Mueller-Dombois' "Atlas of Bioecology. Studies in Hawaii Volcanoes National Park" is marred by certain plant determinations conveniently summarized in Chapter VI, D., under authorship of F. R. Fosberg. Being residents less than a mile from Park Headquarters where its herbarium is deposited, we have begun the study of the specimens available and here take the opportunity to correct part of Dr. Fosberg's annotated list, so far as our present opinions dictate. We are handicapped in many cases, unfortunately, by the absence in the herbarium of voucher specimens mentioned in the "Atlas". Some of these may be in the United States National Herbarium, New York Botanical

Garden and B. P. Bishop Museum; others are on loan to Dr. Fosberg, as mentioned by him on page 154 and by a note in his handwriting in the Park herbarium dated September but without the specified year. Wherever a number in the "Atlas" does not coincide due to an obvious typographical error with that of the sheet in the Park herbarium, we do not bother to correct the slip.

The list of plants that existed in the past and that exist here now within the Park boundary would be augmented if Park specimens collected in past years by numerous botanists and scattered in American and European institutions were more easily available for study. The senior reviewer, for instance, collected within the Park area frequently since 1922, most of his collections being deposited at the New York Botanical Garden and the University of Massachusetts. Future compilers of the Park flora should watch for such specimens, checking and when necessary updating their often archaic nomenclature.

The present review not only changes nomenclature to our liking, but adds new records of taxa based on our own recent field work in the area covered. Regarding the ferns and "fern allies", we are glad that Douglass H. Hubbard in "Ferns of Hawaii National Park" has produced a work that has aided the Park visitor since 1952 in identifying the species about him. We regret Dr. Fosberg did not follow the superior Hubbard compilation as a model.

OPHIOGLOSSACEAE

Atlas page 155. Ophioderma falcatum (Presl) Degener, according to our opinion, is our correction for his Ophioglossum pendulum var. falcatum (Presl) Fosberg.

GLEICHENIACEAE

Page 155. Dicranopteris emarginata W. J. Robinson is our correction for his Gleichenia linearis (Burm. f.) C. B. Cl. This is represented in the herbarium by Morley 122-H. Voucher specimen Egger 265, like so many others listed by Fosberg, is missing. Perhaps it is the following species:

P. 155. Dicranopteris linearis var. maxima (Christ.) Deg. & Deg. Fosberg recognizes neither the genus Dicranopteris nor the species D. emarginata, in our opinion a double error. As Fagerlund & Mitchell in their "Checklist of Plants" (1944) and Hubbard in his "Ferns Haw. Nat. Park" (1952) list only the hairy species, and not the glabrous one, as occurring within the Park boundary as it existed in their times, Fosberg's record of the latter may be unfounded. He deposited no specimen in the Park herbarium to prove his point; nor have we come across authentic material in either herbaria or the wild.

HYMENOPHYLLACEAE

P. 156. Sphaerocionium lanceolatum (Hook. & Arn.) Copel., is the modern name for his Hymenophyllum lanceolatum Hook. & Arn.

P. 156. Sphaerocionium obtusum (Hook. & Arn.) Copel., is his Hymenophyllum obtusum Hook. & Arn.

P. 156. Mecodium recurvum (Gaud.) Copel., is his Hymenophyllum recurvum Gaud.

P. 156. Vandenboschia cyrtotheca (Hillebr.) Copel., is his Trichomanes cyrtotheca Hillebr. Fosberg's "Trichomanes davallioides Gaud.", more correctly known as Vandenboschia davallioides (Gaud.) Copel., is merely his misidentification of Morley 114-H for the same species. This Vandenboschia is not represented in the Park herbarium at all. It is listed, however, by synonym both by Fagerlund & Mitchell and by Hubbard.

P. 156. Gonocormus minutus (Bl.) v. d. Bosch is his Trichomanes saxifragoides Presl.

PTERIDACEAE

P. 156. Adiantum capillus-veneris L., we have not yet seen within the Park boundary, and a voucher specimen is much desired for inclusion in its herbarium to settle the question as to whether it really occurs here. We join with Fosberg in the belief that this record is based in error on the naturalized A. cuneatum Langsd. & Fisch.

P. 164. Cibotium chamissoi Kaulf., the prickly treefern, Fosberg lists in error as C. menziesii Hook.

P. 164. Cibotium glaucum Hook. & Arn., is ubiquitous in many areas but Fowler 239, listed by Fosberg as such, is a novelty awaiting formal description and naming by Dr. V. Krajina in his forthcoming monograph of the genus. The true C. glaucum, represented by the vouchers Fowler 241 and Stone 2948, Fosberg identified in error as C. splendens (Gaud.) Krajina, a species common on Oahu. His record of C. splendens, until authentic material should be collected, is very questionable indeed.

P. 164. Cibotium hawaiiense Nakai & Ogura, listed and figured by Hubbard, is missing from Fosberg's list without explanation.

P. 164. Cibotium splendens (Gaud.) Krajina, appearing in Fosberg's list, is based on errors of identification, as mentioned above. We would omit it as a component of the Park flora.

P. 159. Doryopteris decipiens (Hook.) J. Sm., alone and partially hybridized with the common D. decora Brack., Fosberg lists as Doryopteris decora var. decipiens (Hook.) Tryon.

P. 162. Pityrogramma calomelanos (L.) Link is the silverfern as Fosberg states correctly, but we do not agree with him that the goldfern is the same species. Here we prefer to follow Neal, "In Gardens of Hawaii" (1965), in calling it the following:

P. 162. Pityrogramma chrysophylla (Sw.) Link. Copeland under the genus in his "Genera Filicum" (1947) stated that "Once the most popular cultivated ferns, these are still very common in culture, and in bewildering variety. They hybridize freely in cultivation,

and presumably in nature, which makes their specific identification difficult or impossible." Though the silver- and goldferns hybridize in the Park, we do not consider this miscegenation sufficient grounds for Dr. Fosberg to lump two species into one.

P. 163. Pteris vittata L., an introduced fern of the Old World tropics, is listed in error by Fosberg as Pteris longifolia L., a fern of the New. The former, besides other characters, does not have articulate, deciduous pinnae so prominent in the latter.

POLYPODIACEAE

P. 163. Adenophorus sarmentosus (Brack.) K. A. Wilson is his Polypodium sarmentosum Brack.

P. 162. Amphoradenium hymenophylloides (Kaulf.) Copel., is his Polypodium hymenophylloides Kaulf.

P. 163. Amphoradenium tamariscinum (Kaulf.) Copel., is his Polypodium tamariscinum Kaulf.

P. 162. Grammitis hookeri (Brack.) Copel., is his Polypodium hookeri Brack.

P. 163. Grammitis tenella Kaulf., is his Polypodium pseudo-grammitis Gaud.

P. 162. Pleopeltis thunbergiana Kaulf., is his Polypodium thunbergianum (Kaulf.) C. Chr.

P. 162. Polypodium pellucidum var. vulcanicum Skottsb., is his Polypodium pellucidum Kaulf., almost without exception.

P. 162. Polypodium scolopendrium Burm. f., or perhaps better Phymatodes scolopendria (Burm. f.) Ching, is his Polypodium scolopendria Burm. f.

P. 163. Xiphopteris saffordii (Maxon) Copel., is his Polypodium saffordii Maxon.

ASPIDIACEAE

P. 160. Elaphoglossum hirtum var. micans (Mett.) C. Chr., is the local taxon of his Elaphoglossum hirtum (Sw.) C. Chr., which was apparently first described from Jamaica.

P. 160. Elaphoglossum wawrae (Luer) C. Chr., is his Elaphoglossum alatum Gaud., represented by Nos. Morley 32-H (evidently a misprint for 22-H), 139-H and F & M 685. What he would consider F & M 695 to be we do not know as the specimen is missing in the herbarium.

P. 159. Cyclosorus cyatheoides (Kaulf.) Farwell is his Dryopteris cyatheoides (Kaulf.) Kuntze.

P. 159. Cyclosorus dentatus (Forsk.) Ching is his Dryopteris dentata (Forsk.) C. Chr.

P. 160. Cyclosorus sandwicensis (Brack.) Copel., is his Dryopteris stenogrammoides [sic] (Baker) C. Chr.

P. 159. Lastrea globulifera Brack., is his Dryopteris globulifera (Brack.)

P. 160. Lastrea torresiana (Gaud.) Moore, an Asiatic plant, is mistaken for Dryopteris setigera (Bl.) Kuntze.

P. 160. Dryopteris keraudreniana (Gaud.) C. Chr., is the correct spelling for his D. keraudraniana.

BLECHNACEAE

P. 163. Sadleria pallida Hook. & Arn., is his Sadleria hillebrandii W. J. Rob. This fern, so conspicuous by its prominent, almost translucent veins, is most easily observed in the wetter jungle along the Byron Ledge Trail. Here it occasionally hybridizes with the almost ubiquitous S. cyatheoides Kaulf., characterized by obscure venation. Such hybridization, in all possible degrees, is rampant beyond the Park boundary about the village of Volcano, where bulldozing has not yet destroyed the magnificent, pristine jungle.

ASPLENIACEAE

P. 157. Asplenium macraei f. strictum (Brack.) Skottsb., we prefer for his Asplenium macraei var. stricta [sic] (Brack.) Hieron.

P. 157. Neottopteris nidus (L.) J. Sm., we prefer for his Asplenium nidus L.

LYCOPODIACEAE

P. 164. Lycopodium cernuum var. crassifolium Spring is his Lycopodium cernuum L. We have seen no authentic material in the Islands of the species itself. Fosberg states that "Gametophytes have been found in steam cracks at Kilauea," yet fails to cite the senior reviewer's article in the bibliography on page 449 of the "Atlas" about it. This article appeared in Bot. Gaz. 80: 26-46. 1925.

SELAGINELLACEAE

P. 165. Selaginella arbuscula (Kaulf.) Spring is correctly identified by Fosberg so far as vouchers "s. Coll. 369 and M-D H-102" are concerned. His "Morley 186-II," however, because of the character of the leaves, is the var. menziesii mentioned below.

P. 165. Selaginella arbuscula var. menziesii (Hook. & Grev.) Skottsb., is the correct disposition of most of his material labeled Selaginella menziesii (Hook. & Grev.) Spring.

PSILOTACEAE

P. 165. Psilotum complanatum forma fosbergii Deg. & Deg., is his Psilotum "complanatum" Sw. We mentioned in our Flora Hawaiianis under Family 21 on April 30, 1959 that we considered two varieties of this genus existed. The taxon fosbergii, after more

extended study of Psilotum material in the Marie C. Neal Herbarium of the Bishop Museum, we finally judged on May 1, 1966 to be only a form rather than a variety.

P. 165. Psilotum nudum var. oahuense (Mueller) Deg. & Deg., is his Psilotum nudum (L.) Beauv.

Perhaps it is not out of place to mention here that the Hawaiian flora is a difficult one, and a challenge to many workers living in many regions. Thus for the ferns and flowering plants of our archipelago Chock of Honolulu, for example, concentrated on Sophora; Kern of Leiden on certain Cyperaceae; Krajina of Vancouver on Cibotium; the late Rock of Honolulu on Cyrtandra, and on Lobeliaceae later revised by the late Wimmer of Vienna; the late Sherff of Chicago on many Araliaceae, many Caryophyllaceae, many Compositae, many Euphorbiaceae, Labordia, some Leguminosae, and Pittosporum; the late Skottsberg of Gothenburg on Astelia, Pipturus, Santalum, Scaevola, Vaccinium and Wikstroemia; Sleumer of Leiden on Styphelia; Stone of Kuala Lumpur on Pelea; the late Yuncker of Greencastle on Peperomia; Wagner of Ann Arbor on Diellia; Fosberg of Falls Church on several genera of Rubiaceae; etc. The latter botanist deals with the Rubiaceae of the Park in great detail, listing trivial and even hybrid taxa as he understands them. We feel that the other workers mentioned above, specialists in their respective genera, are more or less similarly experts and hence feel that their opinions regarding plants are worthy of mention in equal detail to that of the Rubiaceae. This deficiency in the "Atlas" we shall try to rectify regarding all Park flowering plants in a subsequent Partial Review.

The science of taxonomy advances not by leaps and bounds but more often by step after faltering step. In the case of the genus Gouldia represented in the Park, we believe we brought Dr. Fosberg's monumental work (Bull. Bishop Mus. 147: 1-82. 1937) a step nearer the truth in the disposition of many lesser taxa (Phytologia 7: 465-467. 1961, repeated in error with a little change in 14: 213-214. 1967). It was not until the publication of Pacific Science 17: 421-423. 1963, by Dr. Robert L. Wilbur, a former resident of the Islands, that we realized Gouldia affinis (DC.) Wilbur takes precedence over G. terminalis (H. & A.) Hillebr. Fl. Haw. Isl. 168. 1888. As we have not noted any pertinent comments nor corrections by Dr. Fosberg in the literature though he has had several years time to do so, we take another faltering step in an attempt to improve our knowledge of Gouldia taxa. We follow the lead of Dr. Skottsberg who, in Arkiv för Botanik [Stockholm] 31A (4): 14. 1944, states that "Fosberg recognized only 3 species, one of these with a great number of varieties and forms. Some of these are, in my opinion, good species....." Many of these (G. antiqua (Fosb.) Skottsbg., G. cordata (Wawra) Fosb., G. gracilis (Fosb.) Skottsbg., G. kaala [sic] (Fosb.) Skottsbg., G. macrothyrsa

(Fosb.) Skottsb., G. purpurea (Fosb.) Skottsb.) Dr. Skottsb. raised to the more proper rank in Acta Horti Gotob. 15: 466, 517. 1944. We agree with Dr. Skottsb., and here make some desired changes of our own.

1. Gouldia affinis var. gracilis (Fosb.) Deg. & Deg., was G. terminalis f. gracilis Fosb. in Bull. B. P. Bishop Mus. 147: 29. 1937. (Oahu).
2. G. affinis var. robusta (Fosb.) Deg. & Deg., was G. t. f. robusta Fosb. *ibid.* 147: 29. 1937. (Oahu).
3. G. angustifolia (Fosb.) Deg. & Deg., was G. t. var. beta Hillebr. Fl. Haw. Isl. 169. 1888 (in part) and G. t. var. angustifolia Fosb. *ibid.* 147: 43. 1937. (Molokai).
4. G. antiqua (Fosb.) Deg. & Deg., was G. t. var. antiqua Fosb. *ibid.* 147: 54. 1937. (Hawaii).
5. G. antiqua var. acuta (Fosb.) Deg. & Deg., was G. t. var. antiqua f. acuta Fosb. *ibid.* 147: 55. 1937. (Hawaii).
6. G. antiqua var. hirtellifolia (Fosb.) Deg. & Deg., was G. t. var. antiqua f. hirtellifolia Fosb. *ibid.* 147: 55. 1937. (Hawaii).
7. G. antiqua var. kauensis (Fosb.) Deg. & Deg., was G. t. var. antiqua f. kauensis Fosb. *ibid.* 147: 55. 1937. (Hawaii).
8. G. antiqua var. kekenaensis (Fosb.) Deg. & Deg., was G. t. var. antiqua f. kekena [sic] Fosb. *ibid.* 147: 54. 1937. We have altered the trivial orthography because of the mandate expressed by Article 73, Note 3 and recommendation 73D of the 1961 International Code of Botanical Nomenclature. (Hawaii).
9. G. antiqua var. oblonga (Fosb.) Deg. & Deg., was G. t. var. antiqua f. oblonga Fosb. in Brittonia 8 (3): 176. 1956. (Hawaii).
10. G. aspera (Fosb.) Deg. & Deg., was G. t. var. aspera Fosb. in Brittonia 8 (3): 175. 1956. (Hawaii).
11. G. axillaris f. glabriflora (sphalm for glabrifolia) (Fosb.) Deg. & Deg., in Phytologia 7: 466. 1961 and 14: 214. 1967, was G. hillebrandii var. typica f. glabriflora Fosb., in Bull. Bishop Mus. 147: 60. 1937. (Maui). We are not using the binomial G. hillebrandii as we are not convinced Wawra's type is an outright, recent hybrid. Skottsb. preceded us in this suspicion (Acta Horti Gotob. 15: 467. 1944) that "Fosberg's idea that the name axillaris cannot be used because Wawra's axillaris should be a hybrid is not supported by Wawra's collection, all of which I have examined." A breeding project, never attempted before, sponsored by IBP of alleged species, varieties, forms and hybrids in Gouldia would be very revealing.
12. G. bobeoides (Fosb.) Deg. & Deg., was G. t. var. bobeoides Fosb. in Bull. Bishop Mus. 147: 37. 1937. (Hawaii).

13. G. cirrhopetiolata Lévl. (Fedde Repert. Spec. Nov. Veg. 10: 150. 1911) is based on Faurie 344 from "Molokai: Pukoo" and on Faurie 416 from "Maui: Yao valley." If one of these specimens, like G. axillaris, were not a hybrid after all and were properly chosen as lectotype, some one must take a further step in correcting the nomenclature of Gouldia taxa. G. cirrhopetiolata hardly comes under Article 69 of the Code whereby a "name must be rejected if it is used in different senses and so has become a long-persistent source of error." We suspect Dr. Fosberg erred in considering it one of his "rejected and doubtful names" (Bull. Bishop Mus. 147: 64. 1937).
14. G. congesta (Fosb.) Deg. & Deg., was G. t. var. congesta Fosb. ibid. 147: 55. 1937. (Hawaii).
15. G. cordata var. nealiae (Fosb.) Deg. & Deg., was G. t. var. cordata f. nealae [sic] Fosb. ibid. 147: 45. 1937. (Maui). The orthography has been corrected to meet the requirements of recommendation 73C(b) of the Code.
16. G. crassicaulis (Fosb.) Deg. & Deg., was G. t. var. crassicaulis Fosb. ibid. 147: 56. 1937. (Maui).
17. G. degeneri (Fosb.) Deg. & Deg., was G. t. var. degeneri Fosb. ibid. 147: 39. 1937. (Oahu).
18. G. elongata var. hirtellicostata (Fosb.) Deg. & Deg., was G. t. var. elongata f. hirtellicostata Fosb. ibid. 147: 33. 1937. (Kauai).
19. G. elongata var. kahiliensis (Fosb.) Deg. & Deg., was G. t. var. elongata f. kahili [sic] Fosb. ibid. 147: 33. 1937. (Kauai). The orthography has been corrected to meet the requirements of recommendation 73D of the Code.
20. G. forbesii (Fosb.) Deg. & Deg., was G. t. var. forbesii Fosb. ibid. 147: 57. 1937. (Hawaii).
21. G. fosbergii Deg. & Deg., was G. sandwicensis var. arborescens Wawra in Flora 57 (18): 276. 1874, not G. arborescens (Wawra) Heller in Minn. Bot. Stud. 1: 896. 1897; G. t. var. arborescens f. euarborescens Fosb. in Bull. Bishop Mus. 147: 31. 1937. (Kauai).
22. G. fosbergii var. albicaulis (Fosb.) Deg. & Deg., was G. t. var. arborescens f. albicaulis Fosb. ibid. 147: 32. 1937. (Kauai).
23. G. fosbergii var. macrophylla (Fosb.) Deg. & Deg., was G. t. var. arborescens f. macrophylla Fosb. ibid. 147: 32. 1937. (Kauai).
24. G. glabra (Fosb.) Deg. & Deg., was G. t. var. glabra f. euglabra Fosb. ibid. 147: 36. 1937. (Hawaii).
25. G. glabra var. parvithyrsa (Fosb.) Deg. & Deg., was G. t. var. glabra f. parvithyrsa Fosb. ibid. 147: 36. 1937. (Hawaii).
26. G. glabra var. waipioensis (Fosb.) Deg. & Deg., was G. coriacea

- var. e Hillebr. Fl. Haw. Isl. 168. 1888. (Hawaii)
27. G. hathewayi (Fosb.) Deg. & Deg., was G. t. var. hathewayi Fosb. in Brittonia 8 (3): 174. 1956. (The correct spelling for the locality is Mokuleia, not "Moluleia", Oahu).
 28. G. hosakae (Fosb.) Deg. & Deg., was G. t. var. hosakai [sic] Fosb. in Bull. Bishop Mus. 147: 38. 1937. (Hawaii). The orthography has been corrected to meet requirements of recommendation 73C(a) of the Code.
 29. G. kaalana (Fosb.) Skotts., was G. t. var. kaala [sic] Fosb. *ibid.* 147: 49. 1937, and G. kaala [sic] Skotts. in Acta Horti Gotob. 15: 466. 1944. The specific orthography has been altered by us because of the mandate expressed by Article 73, Note 3 and Recommendation 73D of the Code.
 30. G. kapuaensis (Fosb.) Deg. & Deg., was G. t. var. kapuaensis f. eukapuaensis Fosb. *ibid.* 147: 39. 1937. (Hawaii).
 31. G. kapuaensis var. pittosporoides (Fosb.) Deg. & Deg., was G. t. var. kapuaensis f. pittosporoides Fosb. *ibid.* 147: 39. 1937. (Hawaii).
 32. G. kapuaensis var. rigidifolia (Fosb.) Deg. & Deg., was G. t. var. kapuaensis f. rigidifolia Fosb. *ibid.* 147: 39. 1937. (Hawaii).
 33. G. kapuaensis var. rigidifolioides (Fosb.) Deg. & Deg., was G. t. var. kapuaensis f. rigidifolioides Fosb. in Brittonia 8 (3): 174. 1956. (Hawaii).
 34. G. kapuaensis var. violetiae (Fosb.) Deg. & Deg., was G. t. var. kapuaensis f. violetae [sic] Fosb. in Bull. Torr. Bot. Club 70: 392. 1943. (Hawaii). The varietal name, here corrected to meet requirements of the Code, honors the collector, Mrs. F. R. Fosberg.
 35. G. konaensis (Fosb.) Deg. & Deg., was G. t. var. konaensis f. eukonaensis Fosb. in Bull. Bishop Mus. 147: 38. 1937. (Hawaii).
 36. G. konaensis var. latifolia (Fosb.) Deg. & Deg., was G. t. var. konaensis f. latifolia Fosb. *ibid.* 147: 38. 1937. (Hawaii).
 37. G. lanaiensis (Fosb.) Deg. & Deg., was G. t. var. lanai [sic] Fosb. *ibid.* 147: 59. 1937. (Lanai). The orthography is changed according to mandates of the Code.
 38. G. macrocarpa var. cuneata (Fosb.) Deg. & Deg., was G. sandwicensis var. hirtella forma alpha Wawra in Flora 57 (19): 295. 1874, and G. t. var. macrocarpa f. cuneata Fosb. in Bull. Bishop Mus. 147: 35. 1937. (Kauai).
 39. G. macrocarpa var. sambucina (Heller) Deg. & Deg., was G. sambucina Heller in Minn. Bot. Stud. 1: 898. 1897. (Kauai).
 40. G. macrocarpa var. sclerophylla (Fosb.) Deg. & Deg., was G. t. var. macrocarpa f. sclerophylla Fosb. in Bull. Bishop Mus. 147: 35. 1937. (Kauai).
 41. G. macrocarpa var. teres (Fosb.) Deg. & Deg., was G. t. var. macrocarpa f. teres Fosb. *ibid.* 147: 36. 1937. (Kauai).

42. G. munroi (Fosb.) Deg. & Deg., was G. st.-johnii var. munroi Fosb. ibid. 147: 63. 1937. (Lanai).
43. G. myrsinoidea (Fosb.) Deg. & Deg., was G. t. var. myrsinoidea Fosb. in Brittonia 8 (3): 176. 1956. (Hawaii).
44. G. osteocarpa (Fosb.) Deg. & Deg., was G. arborescens Heller in Minn. Bot. Stud. 1: 896. 1896, not G. sandwicensis var. arborescens Wawra in Flora 57 (18): 276. 1874, but G. t. var. osteocarpa Fosb. in Bull. Bishop Mus. 147: 33. 1937. (Kauai).
45. G. ovata (Wawra) Skottsb. (not a nomen nudum as expressed by Fosberg because Skottsberg, according to Article 32 of the Code, referred to a previously, effectively published description in his Acta Horti Gotob. 15: 465. 1944), was G. sandwicensis var. ovata Wawra in Flora 57 (18): 278. 1864. (Maui). This new specific name should legitimize, if there should be any doubt, the following trivial taxa for which the proper synonymy is found in Fosberg, Bull. Bishop Mus. 147. 1937, and cited by us in our articles appearing in Phytologia 6: 466. 1961 and/or 14: 213-215. 1967: vars. heterophylla (Molokai), lydgatei (Maui), makawaoensis (Maui), membranacea (Maui), oahuensis (Oahu), obovata (Lanai), petiolata (Molokai), santalifolia (Maui), storeyi (Molokai), suehiroae (Molokai), and wailauensis (Molokai) nobis.
46. G. ovata var. kalaupapana (Fosb.) Deg. & Deg., was G. t. var. ovata f. kalaupapa [sic] Fosb. in Bull. Bishop Mus. 147: 51. 1937, and G. ovata var. kalaupapa [sic] (Fosb.) Deg. & Deg. in Phytologia 7: 466. 1961. (Molokai).
47. G. ovata var. maunahuiensis (Fosb.) Deg. & Deg., was G. t. var. ovata f. maunahui [sic] Fosb. in Bull. Bishop Mus. 147: 51. 1937, and G. ovata var. maunahui [sic] (Fosb.) Deg. & Deg. in Phytologia 7: 466. 1961. (Molokai).
48. G. ovata var. oahuensis (Fosb.) Deg. & Deg., was G. t. var. ovata f. oahuensis Fosb. in Brittonia 8 (3): 176. 1956.
49. G. ovata var. punaulana (Fosb.) Deg. & Deg., was G. t. var. ovata f. punaula [sic] Fosb. in Bull. Bishop Mus. 147: 53. 1937. (Molokai).
50. G. ovata var. russii (Fosb.) Deg. & Deg., was G. t. var. kaala [sic] f. russii Fosb. ibid. 147: 49. 1937, and G. t. var. ovata f. russii Fosb. in Brittonia 8 (3): 176. 1956. (Oahu).
51. G. parvifolia (Wawra) Deg. & Deg., was G. sandwicensis var. parvifolia Wawra in Flora 57 (19): 296. 1874. (Maui).
52. G. parvifolia var. subpilosa (Fosb.) Deg. & Deg., was G. terminalis var. parvifolia f. subpilosa Fosb. in Bull. Bishop Mus. 147: 56. 1937. (Maui).
53. G. parvula var. impressa (Fosb.) Deg. & Deg., was G. t. var. parvula f. impressa Fosb. in Bull. Torr. Bot. Club 70: 391. 1943. (Maui).

54. G. pedunculata (Fosb.) Deg. & Deg., was G. t. var. pedunculata Fosb. in Bull. Bishop Mus. 147: 46. 1937. (Hawaii).
55. G. pseudodichotoma (Fosb.) Deg. & Deg., was G. terminalis var. pseudodichotoma Fosb. ibid. 147: 58. 1937. (Lanai).
56. G. pubescens (Fosb.) Deg. & Deg., was G. t. var. pubescens Fosb. ibid. 147: 57. 1937. (Maui).
57. G. quadrangularis (Fosb.) Deg. & Deg., was G. t. var. quadrangularis Fosb. ibid. 147: 56. 1937. (Hawaii).
58. G. rotundifolia (Fosb.) Deg. & Deg., was G. t. var. rotundifolia Fosb. ibid. 147: 41. 1937. (Molokai).
59. G. sclerotica (Fosb.) Deg. & Deg., was G. t. var. sclerotica Fosb. in Brittonia 8 (3): 175. 1956. (Hawaii).
60. G. skottsbergii (Fosb.) Deg. & Deg., was G. t. var. skottsbergii Fosb. in Bull. Bishop Mus. 147: 42. 1937. (Hawaii).
61. G. stipulacea (Wawra) Deg. & Deg., was G. sandwicensis var. stipulacea Wawra in Flora 57 (19): 297. 1874. (Kauai).
62. G. stipulacea var. rockii (Fosb.) Deg. & Deg., was G. terminalis var. stipulacea f. rockii Fosb. in Bull. Bishop Mus. 147: 43. 1937. (Kauai).
63. G. subcordata (Fosb.) Deg. & Deg., was G. t. var. subcordata Fosb. ibid. 147: 44. 1937. (Lanai).
64. G. tenuicaulis (Fosb.) Deg. & Deg., was G. t. var. tenuicaulis Fosb. ibid. 147: 57. 1937. (Kauai).
65. G. wawrae (Fosb.) Deg. & Deg., was G. t. var. wawrana [sic] Fosb. ibid. 147: 30. 1937. (Oahu). The specific orthography for the Viennese physician Heinrich Wawra is here corrected to wawrae according to Recommendation 73C(a) of the Code.
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Degener, Otto and Degener, Isa. 1967. "Partial review of Doty & Mueller-Dombois 'Atlas' and new taxa in Hawaiian Rubiaceae, II." *Phytologia* 15(1), 42-52.

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