MISCELLANEOUS HAWAIIAN PLANT NOTES—I

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CRYPTOCARYA

Cryptocarya oahuensis (Degener) Fosberg, new combination (Pl. 1, *A*).

Cryptocarya mannii Hillebrand variety *oahuensis* Degener: Fl. Haw., September 13, 1935.

Comparison of a collection of this plant made recently in the Waianae Mountains, Oahu, with Mr. Degener's plate and description made it evident that the description of the fruit should be emended. An examination of the type sheet in Degener's herbarium revealed that the single fruit on the type sheet is either immature or poorly developed.

The mature fruit of Fosberg 13041 is black, fleshy, smooth, not warty, spherical, not ovoid or pointed, and approximately 3 cm in diameter. The fleshy perigone is so closely grown to the nut that it is difficult to detach. The 12 longitudinal ridges on the nut are scarcely discernible, even after the perigone has been pulled off, the surface being slightly irregular. The sclerified ovary wall in the mature fruit is about 2 mm thick. The cotyledons are not noticeably purplish when cut. When freshly cut they have a pleasant, slightly oily odor.

Oahu, Waianae Mountains: Puu Hapapa, Degener and Park 4402 (type); Mokuleia, slopes of Kaala, April 26-May 16, 1912, Forbes 1814.O.; C.C.C. trail, head of Kapuna Valley, Mokuleia, altitude 600 meters, April 12, 1936, Fosberg 13041, a slender tree growing in a dense moist forest, with fruits of three distinct ages on the tree, apparently retaining the crown of perianth lobes until just before maturity.

The following three collections, all sterile, probably belong to this species. Oahu, Waianae Mountains: Kahanahaiki Gulch, altitude 700 meters, March 29, 1928, C. S. Judd 74; Pohakea Pass, altitude 825 meters, C. S. Judd 50. Oahu, Koolau Range: south ridge of Kipapa Gulch, Waipio, altitude 1,200 feet, April 30, 1933, E. Y. Hosaka 1000. This last collection is from a tree which apparently seldom flowers; Mr. Hosaka informs me that he has often revisited the

[1] This is the first of a series of brief papers to be published from time to time recording miscellaneous taxonomic and distributional notes on Hawaiian plants.

same tree, the only one known in the Koolau Range, and has always found it sterile.

A study of *Cryptocarya oahuensis* and its Kauai relative, *C. Mannii,* convinces me that they are distinct species. The most immediately obvious difference is in the size of the fruit. The fruit of *C. oahuensis* is spherical and about 3 cm in diameter; that of *C. Mannii* is ovoid and less than 2 cm long and 1-1.5 cm wide. When the mature fruit of *C. Mannii* dries, the apical part of the fruit is outstanding as a truncate umbo. This is not true on mature specimens of *C. oahuensis,* though the somewhat immature fruits of Forbes 1814.O. show this character. The perianth is much less pubescent in *C. oahuensis,* and the tube is distinctly longer than the lobes whereas it is shorter in *C. Mannii.* The whole perianth in *C. oahuensis* is somewhat shorter than in *C. Mannii.* The leaves of C. *oahuensis* are not noticeably more rounded than those of some specimens of *C. Mannii,* but in general they average much larger. Some leaves of Forbes 1814.O. and Fosberg 13041 are distinctly blunt-acute.

CASSYTHA

Cassytha filiformis Linnaeus.

Kauai: Kahili Bog, Wahiawa, altitude 2,100 feet, December 24, 1933, St. John and Fosberg 13559.

This plant, usually of the strand and dry regions, grows well in this bog, perhaps the lowest of the Hawaiian open bogs, parasitic on such plants as *Pelea, Metrosideros,* and *Gleichenia.* Although not actually at a high altitude, the presence of vegetation typical of Hawaiian open bogs suggests that, due to some phenomenon of temperature, rainfall, or drainage, this spot is physiologically comparable to Alakai Swamp at almost twice the altitude. This makes Kahili Bog notable as a station for *Cassytha.*

SCHIEDEA

Schiedia kealiae Caum and Hosaka.

Schiedea kealiae Caum and Hosaka: B. P. Bishop Mus., Occ. Pap., vol. 11, no. 23, p. 1, April 10, 1936.

Schiedea Gregoriana Degener: Fl. Haw., April 9, 1936.

Schiedia kealiae must be regarded as the correct name for this newly described species even though antedated by *S. Gregoriana,*

because the latter is not accompanied by a Latin description[2]. The two names were based on material which the authors of both regard as identical.

EURYA

Eurya sandwicensis Gray variety **grandifolia** Wawra.

Eurya sandwicensis Gray variety *grandifolia* Wawra: Flora, vol. 56, p. 168, 1873.—Rock, J. F.: Indig. Trees Haw. Is., p. 308, 1913.

Eurya Degeneri C. E. Kobuski: Arnold Arb., Jour., vol. 16, p. 347, 1935.

Kobuski differentiates his species *E. Degeneri,* based on material from Kauai, from *E. sandwicensis* on the basis of difference in leaf form. He describes the leaves of *E. Degeneri* as elliptical with acute apices and cuneate bases, and those of *E. sandwicensis* as oblong, elliptical, or obovate, always obtuse or rounded at the apex and subcordate or truncate at the base. However, many collections of this species in Bernice P. Bishop Museum, not examined by Kobuski, show obtuse and acute leaves on the same plant (Kauai, Rock 5499; western Maui, E. H. Bryan, Jr. 665, G. Ewart III 57, Forbes 421.M.; Oahu, Rock 822, Forbes 1483.O.; Mann and Brigham 524) and several show all leaves acute (Kauai, Forbes 671.K.; western Maui, Forbes 73.M.; Oahu, Forbes, November 14-21, 1908, and August 18, 1909). Leaves with a rounded base are very common, especially on Oahu, while leaves with a cuneate base occur occasionally, on other islands as well as Kauai, on plants with other leaves with rounded or truncate bases. That is, leaf characters are very variable.

This leaf variability together with the similarity of the flowers and fruit of the two species, established by examination of the type and of more material of *E. Degeneri* than was available to Kobuski, makes it necessary to reduce *E. Degeneri* to a variety. Kobuski, commenting on the close relationship of the two species, almost reduces *E. Degeneri* himself.

As for the forms based on leaf size, no two collections examined have exactly the same leaf size. The variations are such as to be expected in a few scattered collections. On the same basis, numerous forms of *E. sandwicensis* would have to be described. Nothing seems

[2] See International Rules of Botanical Nomenclature (revised, Cambridge 1930) section 6, art. 38.

to be gained by this course or by recognizing the forms already described.

Eurya sandwicensis Gray.

Eurya sandwicensis Gray: Bot. U. S. Expl. Exped., p. 209. 1854.

~~*Eurya sandwicensis* Gray variety *sessilifolia* A. A. Heller: Minn. Bot. Studies, vol. 1, p. 856, 1897.~~

Eurya sandwicensis Gray variety *prostrata* Kobuski: Arnold Arb., Jour. vol. 16, p. 350, 1935.

Under *E. sandwicensis,* Kobuski mentions *E. sandwicensis* A. Gray variety *sessilifolia* A. A. Heller as a synonym. However this was not mentioned by Heller either as a synonym or as a variety. Heller states that he distributed his no. 2240 "as *Eurya sessilifolia* n. sp." but that he later decided that it was only a sessile leaved form of the species. Thus the name is a *nomen nudum* rather than a synonym.

Eurya sandwicensis variety *prostrata* Kobuski is apparently only an ecological variation. The habit is described as prostrate and the leaves as remote on the stem. I have examined the type in Degener's herbarium and a sheet of the other collection cited by Kobuski, Forbes 249.Mo., in the herbarium of Bishop Museum. The leaves on most of the branches of the type and on the Forbes sheet examined do not appear more remote than on many other specimens of *E. sandwicensis.* On a few branches of the type collection the leaves are slightly farther apart than usual. The habit of the Forbes specimen is not stated but looks normal. The type was collected on the edge of Pelekunu Gorge, Molokai, where the strong winds would very likely induce a prostrate habit in any plant able to grow on the edge of the cliff. There seem to be no other distinguishing characters.

PHYLLANTHUS

Phyllanthus sandwicensis Mueller-Argau variety **oblongifolius** Mueller-Argau form **rufidus** Fosberg, new form.

Planta frutescens rufida, folia venulosa, pulvini elongati et ramulosi.

A shrub up to 1 meter tall; similar to variety *oblongifolius* but leaves more conspicuously venulose, whole plant reddish in color; stems quite woody; pulvini conspicuously elongated and branched, as in variety *parvifolius,* but thicker and heavier.

Lanai: ridge north of Kaiholena Gulch, moist brushy forest, altitude 850 meters, November 30, 1935, F. R. Fosberg 12510; Haalele-

paakai, moist open brushy forest, altitude 950 meters, November 28, 1935, F. R. Fosberg 12410 (type); mountains near Koele, June 1913, C. N. Forbes 45.L.

This plant differs in aspect from variety *oblongifolius* and has a tendency toward extreme corkiness in the lower parts. It grows strictly erect and is quite robust as compared with ordinary material of the other varieties of the species.

ANTIDESMA

The discovery of a pubescent variety of *Antidesma platyphyllum* makes rather unreliable the keys which separate the two Hawaiian species of *Antidesma, A. platyphyllum* and *A. pulvinatum,* on the basis of the presence or absence of tufts of hair in the axils of the veins on the under side of the leaves. In fruit these species are easily separated by the smaller fruit of *A. pulvinatum.* Another character, which is useful even in sterile material and which has apparently been overlooked, is the nature of the petiole. The petiole of *A. pulvinatum* is slender and almost straight; that of *A. platyphyllum* (pl. 1, *B*), including its varieties, is much thickened, tapering somewhat distally, and curving around the stem to bring the leaves into more or less the same plane. The following key will serve to distinguish the native Hawaiian Antidesmas:

A. Petiole straight, slender, not much over 1 mm thick, fruit 4-6 mm in diameter ..... **A. pulvinatum**

AA. Petiole curved, heavy, 2 mm or more thick near the base, fruit 7-12 mm in diameter.

B. Leaves shortly and sparsely pubescent beneath..... ..... **A. platyphyllum** variety **hamakuaense**

BB. Both surfaces of leaves glabrous.

C. Mature fruit with stone semiterete, leaves shiny on both faces even when dry..... **A. platyphyllum** variety **Hillebrandii**

CC. Mature fruit with stone strongly flattened, leaves rather dull when dry..... **A. platyphyllum** variety **genuinum**

Antidesma platyphyllum Mann variety **genuinum** Pax and Hoffmann.

Recognizable by its glabrous leaves and strongly flattened stone of the fruit; a common tree on Oahu, Molokai, Maui, Lanai, and in the Kona section of Hawaii.

Antidesma platyphyllum Mann variety **Hillebrandii** Pax and Hoffmann.

Antidesma platyphyllum Mann variety *B* Hillebrand: Fl. Haw Is., p. 403, 1888.

All the Antidesmas from Kauai apparently belong to this variety, characterized by the semi-terete stone of the fruit which is usually quite large, by the ciliate disk of the pistillate flowers, and by the smooth, shiny leaves which have the appearance, when dried, of being varnished.

Antidesma platyphyllum Mann variety **hamakuaense** Fosberg, new variety.

Folium infra rufum puberulum, acumen longum.

Differs from variety *genuinum* in having the under surface of the leaves reddish puberulent, especially on the veins, and the acuminate point on the leaves ordinarily longer.

Hawaii, Hamakua Coast: hills above Akaka Falls, Honomu, wet forest, altitude 435 meters, December 8, 1933, F. R. Fosberg 10461 (type); Awehi Stream, above Hilo, wet forest, side of gulch, altitude 460 meters, December 7, 1933, F. R. Fosberg 10506; Hiilawe, Waipio, July 18, 1919, J. F. Rock 4593; Parker Ranch, lower Paauhau No. 3, forest, July 5, 1909, J. F. Rock 4329.

This variety may be mistaken, at first glance, for *A. pulvinatum*, but the fruits are as large as those of *A. platyphyllum*, the leaf shape and form of the petiole are the same as those of *A. platyphyllum*, and there are no tufts of hair at the angles of the veins with the midrib. Comparison with specimens of *X Antidesma kapuae* Rock shows that it is not similar to that miscellaneous group of hybrids. Furthermore, the parents of *X A. kapuae* were not observed where variety *hamakuaense* was found.

Antidesma pulvinatum Hillebrand.

Recognizable by its relatively slender, straight petiole; obtuse leaves, reddish pubescent beneath, with tufts of hair in the angles of the veins; pubescent branchlets; calyces more densely woolly than in *A. platyphyllum*; and its small fruits 4-6 mm across.

Found in dry regions on Hawaii, Maui, and the Waianae Mountains, Oahu. In Kona, Hawaii, it hybridizes with *A. platyphyllum*. (See Rock, J. F., Ind. Trees Haw. Is., p. 249, 1913.)

DIOSPYROS

Diospyros sandwicensis (A. DeCandolle) Fosberg, new combination.

Maba sandwicensis A. DeCandolle: Prodr., vol. 8, p. 242, 1844.

Diospyros Hillebrandii (Seemann) Fosberg, new combination.

Maba Hillebrandii Seemann: Fl. Vit., p. 151, 1866.

This transfer to *Diospyros* of *Maba sandwicensis* and *M. Hillebrandii* has been made after a careful examination of the material of both *Maba* and *Diospyros* in the herbaria of Bernice P. Bishop Museum in Honolulu and of the University of California in Berkeley. The characters separating these genera have gradually been broken down by the discovery of species in lesser known parts of the world apparently combining the characters of both genera. R. C. Bakhuizen van den Brink (Gard. Bull., Str. Settlem., vol. 7, pt. 2, p. 161, 1933) has given adequate reasons why the relationship between these two groups is best shown by considering *Maba* as a subgenus of *Diospyros* and has made the necessary combinations for the Malayan species. P. C. Standley (Carnegie Inst., Washington, Pub. 461, pp. 79-80, 1935) has made similar combinations for the American species.

PHYLLOSTEGIA

Phyllostegia glabra Bentham.

To the differences pointed out by Mr. Sherff between *P. glabra* and *P. glabra* variety *Macraei* may be added one which is obvious in the field and useful in identifying even sterile material. The stems of *P. glabra* are terete or almost so, never sharp cornered. Those of variety *Macraei* are always square with very sharp corners. This apparently does not vary. While not as obvious in dried material, the sharp corners are always evident and though the terete, fistulose stems of the typical form may collapse and possibly appear square, they never have sharp corners. Variety *lanaiensis* is apparently more closely related, in this respect, to typical *P. glabra*, as the dried specimens examined show no evidence of sharp corners, whatever.

The corollas of variety *Macraei* are also more pubescent inside than those of the typical *P. glabra*.

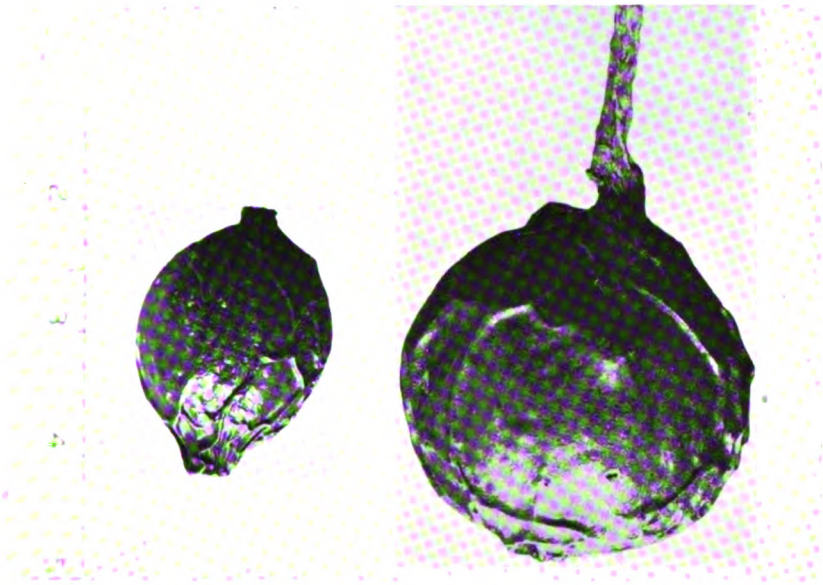
Judging by the relative numbers of specimens in the herbarium of Bishop Museum, and also by field observations, variety *Macraei* seems to be more common than *P. glabra*. They grow side by side, flowering at the same time, but do not seem to hybridize.

ROLLANDIA

Rollandia lanceolata Gaudichaud variety **kipapaensis** Hosaka, new variety.

Planta stricta 0.7-1.5 metra alta, corolla hirtella extus purpureo cinerea, columna staminea glabra; anthera glabra inferiora penicellata.

This new variety has been previously described (B. P. Bishop Mus., Occ. Papers, vol. 11, no. 13, 1935) but the Latin diagnosis was accidentally omitted. In order to make publication of the variety valid the Latin diagnosis is presented here.



A

B

PLATE 1.—*A*, fruits of *Cryptocarya Mannii* (left) and *Cryptocarya oahuensis* (right); *B*, *Antidesma platyphyllum*, showing enlarged, curved petioles.