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Nesoluma and Planchonella from the Hawaiian Islands
(Sapotaceae)

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This paper supplements my monograph on the genus *Nesoluma* published by Bernice P. Bishop Museum in 1938 [Occ. Papers 14 (9) : 127-165] and "A tentative list of wild Pacific Sapotaceae . . ." [Blumea 5(1) : 1-46, 1942]. The infraspecific taxa have, as far as necessary, been renamed in accordance with the 1952 International Code of Botanical Nomenclature, Articles 35 and 80.

Unless otherwise specified, the specimens dealt with are in the following herbaria: Bishop Museum (BISHOP); the National Herbarium, Leiden (L); and Stockholm (S).

Genus *Nesoluma* Baillon

Nesoluma is represented in Hawaii by only one species.

Nesoluma polynesianum (Hillebr.) H. Baill., Soc. Linn. Paris, Bull. 2 : 964, 1891; based on *Chrysophyllum polynesianum* Hillebr., Flora Hawaiian Islands, 277, 1888.—Lam, B. P. Bishop Mus., Occ. Papers 14(9) : 145, 1938; Blumea 5(1) : 31, 1942.

Var. *polynesianum*.

Var. *typicum* Lam, loc. cit.

Forma *polynesianum*.

Forma *genuinum* Lam, loc. cit.

West Molokai: arid sunny gully west of Hawaiian Homes Commission boundary, *Degener 10635*, very young buds, Oct. 5, 1928 (BISHOP, S.)

Forma **longipetiolatum**, Lam, op. cit., 148, 149.

Maui: Kamole Gulch, in moderately dry gulch, *Degener 19305*, dense 10-ft. tree, fruit 15 mm. long, Dec. 21, 1948 (BISHOP, L).

Subforma **longipetiolatum** Lam.

Subforma *originarium*, Lam, op. cit., 148, 150.

The other (sub)formae retain their names.

Var. **glabrum** Lam, loc. cit., 148, 151.

Forma **glabrum**.

Forma *genuinum*, Lam, loc. cit.

Subforma **glabrum**.

Subforma *originarium*, Lam, loc. cit.

Subforma **gracile** Lam retains its name.

Forma **longipetiolatum**, Lam, op. cit., 148, 152.

Oahu: west slope of Niu Valley, arid region, *Degener, Park, and Nitta 10658*, sterile, June 4, 1932 (BISHOP, S); small east central ridge near head of Wailupe Valley, forest, 1,600 ft., *Degener and Hatheway 21179*, flowers, Dec. 19, 1950, leaves up to 5.9 cm. broad (BISHOP, S).

Degener's specimen 15515 from Fiji was provisionally labeled *Nesoluma degeneri* Gilly, but the name was never published. This specimen belongs to *Planchonella costata* (Endl.) Pierre.

Genus **Planchonella** Pierre

Planchonella is represented in Hawaii by only one species.

Planchonella sandwicensis (A. Gray) Pierre, Not. Bot. Sap., 36, 1890, based on *Sapota sandwicensis* A. Gray, Am. Acad., Proc. 5: 328, 1862.—Lam, *Blumea* 5(1): 14-30, 1942.—Boeke, *Blumea* 5(1): 47-65, 1942.

The extraordinary variability of this species which has given rise to the creation of a number of species, whose differences seem to claim a certain naturalness to botanists who have no access to a large collection, has been fully dealt with in my paper and in that of Boeke (1942). The new material completely confirms the conclusions reached there. As in the case of *Nesoluma polynesianum*, how-

ever, the names of some varieties and forms had to be changed; these have been introduced below. The specimens are represented in the Bishop Museum and in the National Herbarium, Leiden. A few also represented in Stockholm are so indicated.

Var. **sandwicensis**.

Var. *typica* Lam, *Blumea* 5 (1): 24, 1942.

Forma **sandwicensis**.

Forma *typica* Lam, loc. cit.

Oahu: Mokuleia, near Pahole Gulch, forest, 1,800 ft., *Degener and Hatheway 20656*, flowers, May 7, 1950; same location, forest, 1,700 ft., *Degener and Hatheway 20650*, tall tree, sterile, May 7, 1950, leaves up to 24×6 cm., petioles 6 cm., Mokuleia, *mauka* (mountainward), forest 2,000 ft., *Degener, Murashige, and Saiki 20942*, flowers and fruit, May 2, 1949; west branch of east Makaleha Valley, in dark canyon, 1,300 ft., *Degener, Greenwell, and Hatheway 20676*, flowers, July 4, 1950, leaves up to 19.5×8.5 cm., petals 4 cm.; near Poamoho Stream, forest, 1,300 ft., *Degener and Murashige 20941*, flowers and fruits, June 3, 1949, leaves large; Kaileku, west branch near trail, *G. W. Russ s. n.*, flowers, Jan. 6, 1933; Waianae, Kaala, *Selling 3704* (S), fruit, Sept. 25, 1938; east branch of east Makaleha Valley, dryish valley near ridge of 1,400 ft., *Degener, Greenwell, and Hatheway 20677*, sterile, July 4, 1950; east Makaleha Valley, east spur of east ridge of west branch, dense forest, 1,600 ft., *Degener 20812*, sterile, Sept. 30, 1950; Kahuku, *mauka*, shrubby forest, 1,000 ft., *Degener, Lam, Clay, Saiki, and Murashige 19545* (=Lam 7281), small tree, 5 m., sterile, March 20, 1949.

Kauai: north side of Haupu, moist rock talus, 350 m., *MacDaniels 736*, flowers, Feb. 16, 1927; atypical by its small lanceolate leaves, up to 8×3.5 cm., petioles 3 cm.; Waimea, Kumuwela Ridge, 3,600 ft., moist woods, fairly common, *St. John, Fosberg, and Oliveira 13815*, tree 25 ft. \times 10 in., sterile, Dec. 28, 1933.

Forma **puulupensis** (Baehni and Degener) Lam, *Blumea* 5(1): 26, 1942.

Oahu: east of Mauna Kapu, decadent forest, 2,600 ft., frequent, *Degener, Greenwell, Hatheway, and Caindec 20854*, flowers and fruit, June 28, 1950.

Var. **spathulata** (Hillebr.) Lam, loc. cit.

Forma *spathulata*.

Forma typica Lam, loc. cit.

Oahu: fork of Aiea heights trail to north Halawa stream, *Mark Kerr 19442* (*Degener's no.*), fruit, Nov. 16, 1947, east spur of east ridge of west branch of east Makaleha Valley, forest, 1,700 ft., *Degener 20815*, flower buds and young fruit, Sept. 30, 1950; Dupont trail, north side of Kaala, forest, 3,000 ft., *Degener 20939*, very young flower buds, Dec. 16, 1949; second ridge east of Dupont trail, north of Kaala, *Degener 20940*, sterile, July 24, 1949; Pupukea, forest, 800 ft., *Degener, Lam, Clay, Saiki, and Murashige 19553* (= *Lam 7273*), flowers, March 20, 1949; southeast of Keekee Gulch, decadent forest, 1,800 ft., *Degener and Hatheway 20669*, young fruit, May 14, 1950, calyx occasionally 6-merous.

Hawaii: Belt road between Huehue and Puuwaawaa, north Kona, rich dry forest, 1,900 ft., *Hatheway 510*, fruit, Nov. 9, 1950, common tree 35 ft. tall, 10 in. in diameter, fruit yellow [label states that "fruits are ripe, I am sure, never larger"; in a dry state they are slightly beaked and up to 1.2 cm. long, thus just undermeasuring the known specific variability (1.5-5 cm.) (the varietal variability is the same)]; Puuwaawaa, along road, on rough lava, 600 m., *MacDaniels 308*, fruit, Nov. 30, 1926, tree 15 m. high, fruits small, 0.9-1.1 cm., globular (cf. *Hatheway 510*); same locality, 1,100 m., *MacDaniels 317*, fruit, Dec. 1, 1926, tree 14 m.

Transitional between var. *sandwicensis* and var. *spathulata* are the following:

Oahu: *mauka* of Puu Moa, Pupukea-Kahuku Trail, forest, *Degener, Salucop, and Arlantino 11886* (S), tree 25 ft., flowers, April 3, 1938; middle ridge of Wailupe Valley, *Mark Kerr 19444* (*Degener's no.*), flowers, Jan. 10, 1948.

Kauai: Waimea, between Kokee and Kilohana, 1,400 m., *Skottsberg 965* (S), flowers, Oct. 27, 1922 (1,400 m. is the known altitudinal limit of the species) [cf. Lam, *Blumea* 5(1): 28, 1942].