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MORE VARIANTS OF *SCAEVOLA TACCADA*
(GOODENIACEAE) HAWAIIAN PLANT STUDIES 43

BY HAROLD ST. JOHN
B. P. Bishop Museum, Honolulu, Hawaii 96818

The commonest marine beach shrub in the Hawaiian Islands is the "naupaka kahakai" or *Scaevola* sp. It thrives on rock, or soil of gravel, sand, clay, or loam, and it extends inland where the salt spray and marine influence does. As on many other tropical shores, there are two recognized variations: *S. Taccada* (Gaertn.) Roxb., var. *Taccada* which has its leaves glabrous, and its calyx lobes 2-3 (-4) mm long, 0.3-0.5 (-1) mm wide, lanceolate to linear. This is on all of the islands of the Leeward Islands, Hawaiian Islands, and it is also present on Kauai.

The var. *sericea* (Vahl) St. John differs by having its leaves sericeous. This variety is infrequent on the Leeward Islands, but it has been collected on Ocean, Midway, Laysan, and French Frigates. It is also present and abundant on all of the main islands of the Hawaiian group, and it is the only one on Niihau, Oahu, and the Hawaiian Islands to the south.

In the uplands of the Hawaiian Islands, there are recognized about 11 species and numerous varieties and hybrids of the genus, all of them endemic. It is assumed that they have evolved from the pantropic marine beach species. These upland ones are quite different in appearance, having the fruit smaller and black, and the corollas white, blue, or yellow. Nevertheless, *S. Taccada* is looked upon as the logical ancestor of these local endemics.

On Kauai, the maritime species extends inland and upland to a conspicuous degree. This was noted, and upland specimens of it were collected in 1909 by Urbain Faurie, in 1909 and

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1916 by C. N. Forbes, in 1927 by L. H. MacDaniels, in 1933 by H. St. John, and in 1961 by O. & I. Degener. These collections were mostly made in southern Kauai, near Lihue, on the Haupu (or Hoary Head) Range, a line of jagged mountains running directly inland. Most of the collections were made at Kahoahea, or the Knudsen Gap, a pass at 500 ft altitude, 5½ mi inland. Here, at the lower edge of the forest, among trees of *Metrosiders collina*, and with *Dicranopteris linearis*, the species abounds and makes vigorous bushes 1–3 m tall. It follows along the range at least to Laaukahi and to an elevation of 1,300 ft. Its leaves are thinner and of a brighter green than that of the usual coastal varieties. Because of their distinctive differences these plants are here made a new variety, though they have had other placements.

Scaevola Taccada (Gaertn.) Roxb., var. *Fauriei* (Lévl.) comb. nov.

S. Fauriei Lévl., Fedde Repert. 10:150, 1911.

S. sericea Vahl, var. *Fauriei* (Lévl.) Deg. & Deg., Phytologia 6:321 1958.

S. sericea Vahl, var. *Fauriei* (Lévl.) Deg. & Deg., forma *saintjohnii* Deg. & Deg., Taxon 10:227, 1961.

Original diagnosis: "Rami arcuati, teres, striati, brunei; folia oblongo-spathulata, obtusissima, glabra, flaccida, ciliata, in petiolum alatum longe attenuata, 10–16 × 4–5 cm; inflorescentiae cymosae et axillares 2–3 cm ad basin plumoso-villosae; pedunculi et pedicelli pubescentes; dentibus calycinis anguste lanceolatis, acuminatis persistentibus; drupa glabosa (sic)."

Diagnostic differences: Leaves glabrous as in the species, but the calyx lobes 3.5–6 mm long, linear, glabrous.

Holotype: Hawaiian Islands, Kauai, Koloa, dec. 1909, *Faurie* 651 (P). Type examined. Isotype (A).

Specimens examined: Hawaiian Islands, all from Kauai Island, Omoe, in woods on both sides of terminal ridge, Mar. 16, 1961, O. & I. Degener 27,313 (NY, BISH), (holotype of *S. sericea*, var. *Fauriei* f. *saintjohnii*); Honopu near Lihue, on very tip of ridge, July 9, 1909, C. N. Forbes 31.K (BISH); Moloaa Gulch, 4½ mi from the sea, 750 ft elev., Oct. 9, 1916; Forbes 554.K (BISH); Haupu, Lihue, top of ridge, July 9, 1909, Forbes 31.K (BISH); Waioli Valley, in uluhi fern (*Dicranopteris linearis*), 2½ mi from the sea, 50 m alt., Feb. 27, 1929, L. H. MacDaniels 904 (BISH); Haupu, Kipu, reforested area, 500 ft alt., Dec. 25, 1933, H. St. John & F. R. Fosberg 13,634 (BISH); Laaukahi, Koloa, grassy slope and in woods with *Metrosideros* and *Pandanus*, 900–1,300 ft alt., Dec. 22, 1933, St. John & Fosberg 13,464 (BISH);

Hanakapiai, Napali Coast, in *Pandanus* forest, Dec. 31, 1930, St. John et al. 10,906 (BISH).

Discussion: This *Scaevola* has invaded the uplands in several places on the south side (leeward) along the Haupu Range, and on the north side (windward) in Waioli Valley, and at Hanakapiai.

This upland, inland variety may well represent the connecting link between the maritime, halophytic species and the upland endemic ones.

Scaevola Taccada (Gaertn.) Roxb., var. **Bryanii** var. nov.

Diagnosis holotypi: Folia glabra sunt, lobis calycis 4–5 mm longis 2–2.5 mm latis ellipticis glabris.

Diagnosis of holotype: Leaves glabrous; calyx lobes 4–5 mm long, 2–2.5 mm wide, elliptic, glabrous.

Holotypus: Hawaiian Leeward Islands, Midway Island, Sand Island, 4–8 ft high, on the sand mounds, Aug. 21, 1902, W. A. Bryan (BISH).

Discussion: This new variety is closely related to *S. Taccada* (Gaertn.) Roxb., var. *Taccada*, but that typical variety has the calyx lobes 2–3 mm long, and 0.5–1 mm wide.

The variety *Bryanii* is named for its collector, William Alanson Bryan (1875–1942), professor of zoology and geology in the College of Hawaii, Honolulu; curator of ornithology, B. P. Bishop Museum; author of "Natural History of Hawaii," 1915.



St. John, Harold. 1975. "More variants of *Scaevola taccada* (Goodeniaceae) Hawaiian plant studies 43." *Proceedings of the Biological Society of Washington* 88, 73–75.

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