Micronesica 23(1): 1–4, 1990

New and noteworthy Cook Island plants

F. R. FOSBERG

Dept. of Botany, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

Abstract—New species are described in *Psychotria* and *Scaevola,* new varieties in *Terminalia* and *Nesogenes,* and a new combination in *Polypodium.* New records are noted for the Cook Islands and Polynesia of *Eragrostis* and *Oxalis.*

Since the publication of Wilder's Flora of Rarotonga (1931), plant collecting in the Cook Islands has languished until the last decade or so, when increased activity by a number of collectors—Sykes, Whistler, Paulay and McCormack—has turned up many new records and a number of new taxa. Some of these, e.g. in *Geniostoma* (Fosberg & Sachet 1981), *Charpentiera* (Fosberg & Sachet 1981), *Psychotria,* and *Nesogenes,* are significant new range extensions for their genera.

Polypodium katuii (Brownlie) Fosberg, comb. nov.

Phymatodes katuii Brownlie, in Brownlie and Philipson, Pac. Sc. 25: 509, 1970.

If we adopt a rather broad definition of *Polypodium* L. excluding *Grammitis* and its relatives, but including *Microsorum, Phymatosorus,* and their relatives, the rather recently described *Phymatodes katuii* Brownlie must be transferred to it.

From Brownlie's description, it appears to be amply distinct from what is probably its closest relative, the widespread *Polypodium scolopendria* Burm. f., differing most conspicuously in its stalked lower pinnae.

It is known only from the Cook Islands, type from Mauke Island, south side, *Katu 0017* (CHR). Mitiaro Island, road from village to Atai, in *Hernandia* forest, *Whistler 5636* (BISH). The species also is reported by its author from Manuae Island, and by W. R. Sykes (pers. comm.) from Mangaia.

Eragrostis tenuifolia (A. Rich.) Hochst. ex Steud., Syn. Pl. Glum. 1: 268, 1855 [1854].

Poa tenuifolia A. Rich., Tent. Fl. Abyss. 2: 425, 1850.

This grass, found by Art Whistler, seems new to Polynesia. It is a tall, stiff, loosely caespitose plant, leaves narrow, about half the length of the plant, panicle large, open, to 15–20 × 10 cm, rachises flexuous, articulations long-hirsute, spikelets linear, 5–10 mm long, lower glume narrow, lance-acuminate, 0.8 mm long, upper glume elliptic-obtuse, 1.0–1.2 mm long, lemmas ovate-triangular, bluntly acute, slightly divergent, lead gray, about 2.3 mm long, glabrous.

Cook Is.: Mangaia: Oneroa village, Apr. 5, 1985, roadside, *Whistler 5381* (US). This specimen was kindly identified for me by Dr. Leroy Harvey, authority on *Eragrostis.*

Oxalis debilis var. **corymbosa** (DC.) Lourt., Ann. Missouri Bot Gard. 67: 840, 1961

Oxalis corymbosa DC., Prodr. 1: 696, 1824.

Oxalis martiana Zucc., Denkschr. Akad. Muench. 9: 144, 1823–4.

This is an acaulescent tuberiferous species, with pink or white flowers, the variety *corymbosa* widely cultivated and escaping. It has recently turned up in Rarotonga, Papua Valley, 150 ft., *Philipson 10209* (US). Its type locality was the Mascarene Islands, but it probably was an introduction there, as the species is tropical American.

Terminalia glabrata var. **intonsa** Fosberg, var. nov.

Planta tota glabra, calyce utrinque glabra.

Small tree, to at least 2–4 m, glabrous throughout with dense foliage; leaves very broadly obovate, to 10 × 8 cm, apex and base rounded to subtruncate, petiole to 2.5–2.8 cm, not at all rufescent; spikes to 9 cm long, totally glabrous; flowers bisexual, cream-white, not fragrant, perianth almost twice as wide as long, glabrous both within and without; stamens subequal with perianth segments, style slightly longer, slightly exserted. Type: Cook Is. Mauke. *Paulay* and *McCormack 345* (US, holotype)

As varieties go in this species, this one seems amply distinct, apparently closer to the Tahiti var. *glabrata* than to var. *rarotongensis,* which has young growth and basal part of rhachis sericeous, and the perianth (calyx) choked with hair.

For details of the variation in this species, see Fosberg and Sachet, 1981. The other varieties of this species are found on volcanic substrata. This is the first record on limestone.

Cook Islands: Mauke Island, on rough limestone 200 m from shore 10–15 m alt., Nov. 22, 1984, *Paulay* and *McCormack 345* (US, holotype).

Nesogenes euphrasioides (H. & A.) A. DC. var. **lineata** Fosberg, var. nov.

Caules scabrae in lineas, folia scabro-ciliolata.

Prostrate herb, puberulence confined to broad lines of reflexed scabrosity on stems and very slight traces on petioles and midribs of leaves, leaf margins with strong antrorsely scabrous ciliation, hooks swollen, flowers completely glabrous, corolla white or white spotted with mauve. Type: Cook Is., Mitiaro, *Whistler 5578* (US).

The two collections made by Whistler in the Cook Islands, cited below, represent a marked western extension for this Tuamotuan species. The plants differ from those in the Tuamotus in being only locally scaberulous, in lines on stems, petioles and leaf margins, rather than generally hispidulous.

Cook Islands: Mitiaro, rocks near the shore, *Whistler 5578* (US, holotype); Mauke I., coral north of Kimiangatau, *Whistler 5487* (US, BISH). "Tutae torea tai."

W. R. Sykes (pers. comm.) informs me that this plant is very common on Mitiaro, apparently rare on Mauke, and that he has collected it back of the beach in open scrub on Manuae, but not on Atiu.

The genus *Nesogenes* A. DC. is now known from the Tuamotus, Society atolls, Cook Islands, Rota in the Marianas, several islands in the western Indian Ocean, and from continental Africa.

Nesogenes has usually been placed in the family Verbenaceae, where it clearly does not belong. It has also been considered to constitute a family of its own, the Nesogenaceae

(Marais). It seems however, to fit very comfortably in the Australian family, Chloanthaceae, and I am confident of its relationship there.

Psychotria whistleri Fosberg sp. nov.

Frutex glaber, stipulis tubulosis, cyma sessili trichotoma, pyrenis fructi tricarinata rugosa.

Shrub 1.5 m tall, glabrous, internodes mostly 1 cm or less, scarcely angled, leaves elliptic, to 6.5 × 2 cm, apex slightly acuminate, base acute, 7–10 veins on a side, petiole 5–6 mm, slender; stipules prominently sheathing, with triangular free lobes with 4 minute spine-like tips at their apices, inner surface apparently hirsute; inflorescence a terminal or pseudo-axillary trichotomous cyme, in fruiting condition middle branch reduced to a single fruit with scars half-way up the 1 cm slender branch, lateral branches each with 2 pedicellate fruits and a scar where a third flower or fruit may have been shed; fruit 4–6 mm, slightly ovoid, crowned by persistent cup-shaped 5-dentate calyx pyrenes appearing rugose, with 3 sharp dorsal keel. Type: Cook Is.: *Whistler 5471* (US, holotype)

To the best of my knowledge, this is the first *Psychotria* to be reported from the Cook Islands. It was referred to *P. tahitensis* (Drake) Drake by the collector, but differs from that species in details of inflorescence and fruit, and in being glabrous. We have no authentic material of *P. tahitensis* for comparison, but the description and key by Drake call for a somewhat different plant.

Cook Is.: Rarotonga: just east of Te Kahi Motu, *Whistler 5471* (US, holotype).

Subsequent information from W. R. Sykes indicates that several additional collections, presumably of this species, have been made, that it is fairly common between 200 and 250 m on Te Kahi Motu Ridge, it has been collected on the ridge between Taipara and Avana valleys in the S.E. part of the island and also in the eastern part of the island below Te Atakura at 400–450 m. Leaves on vegetative twigs may reach 8–10.5 (−11) × 2.7–4 (−5) cm, elliptic to elliptic-obovate on petioles 8–15 mm long; fruit much larger, to 9–10 × 7–8 mm.

A somewhat different sterile specimen, from Ikurangi, in the northeastern part of Rarotonga, c. 1400 ft, *Sykes 1945/CI* (CHR), a shrub 1 m tall, entirely glabrous, leaves dark green above, strongly blunt-acuminate, elliptic, 8 veins on a side, petioles 1–2 cm long, leaf-bases acute, stipules very early-caducous, may be something different, perhaps close to *Psychotria insularum* A. Gray, from islands farther west, and one old specimen from Hawaii. Fertile specimens will be needed to determine its identity.

Further collecting of *Psychotria* from Rarotonga may show that several species exist on the island. This would not be out of character for this genus.

Scaevola paulayi Fosberg, sp. nov.

Frutex prostratus, foliis spathulatis carnosis oppositis, pedunculis unifloribus bibracteatis, floribus 6-meris, lobis corollae lanceolatis acutis exalatis.

Creeping shrub, young stems sparsely puberulent, glabrate, axillary tufts of white hair conspicuous, lanceolate white lenticels present, lower internodes to 5 cm, becoming shorter distally, very short on condensed lateral branchlets; leaves opposite or rarely subopposite, spatulate, cuneately narrowed to a subsessile base or very short petiole, 2.5–4 × 1–2 cm, fleshy or coriaceous, venation except midrib invisible, puberulent be-

neath especially near midrib, apex slightly mucronulate, rounded or slightly emarginate; peduncles axillary, sericeous puberulent, 5–6 mm long, with a pair of triangular, scale-like bracts 2 mm below summit, these with axillary tufts of hair, summit jointed to turbinate sericeous hypanthium, calyx lobes 6–7, ovate-oblong, 2–3 mm long, blunt, subglabrous; corolla 19–21 mm long, yellow, tube about 15 mm, sericeous without except glabrous lower 2 mm, lower two-thirds or half pilose within, lobes 6, lanceolate, 6 mm long, puberulent externally, glabrous within, erect to spreading, tube split to base, lobes lacking membranous margin; filaments flat, thin, anthers unknown; style flat, 16 mm long, pilose, becoming hooked at summit, stigma saucer-shaped, densely hirsute within; fruit unknown. Type: Cook Is.: *Paulay & McCarmack 412* (US, holotype).

This species resembles a diminutive *S. sericea* var. *tuamotuensis* except for the opposite leaves, these almost unique in Pacific *Scaevola* except in New Guinea. The corolla lobes lack the membranous wing-margins present in *S. sericea* and in the Hawaiian species, and are acute. The species may be a local derivative of *S. sericea* Vahl, the widespread, usually strand species of the Indo-Pacific. Fruiting specimens are needed.

Only known from the type, from the Cook Islands, Mauke Island, south shore on rough limestone near shore, 5–10 m elevation, 20 November 1984, *Paulay and McCormack 412* (US, holotype).

Since the above was written, a specimen, *Whistler 5647* (BISH), from Matai'i Landing, Atiu Island, has come to my attention. This is in some ways intermediate between *S. paulayi* and *S. sericea* var. *tuamotuensis* (St. John) Fosberg. It is a dwarf plant with short uniflorous peduncles. It differs from *S. paulayi* in having the corollas glabrous and part of the leaves alternate. This is an indication of the need for more than casual collecting of *Scaevola* in the Cook Islands, and of the fallacy that strand and lowland plants are of no interest.

W. R. Sykes has kindly sent a photo of a specimen that is surely *S. paulayi,* his number *315b/CI* (CHR), from Matai, east coast of Atiu, as well as a related specimen from Amanau, Niue Island, far to the west, between the Cook Islands and Tonga. This specimen, *Sykes 1341/NIUE* (CHR) has the habit of *Scaevola paulayi,* or *S. sericea* var. *tuamotuensis,* opposite or subopposite spatulate leaves, almost no axillary hairs, but branched, cymose inflorescences with several small, 1 × 1 cm fruits on a cyme. Flowers are lacking. This cannot be safely referred to either *S. sericea* or *S. paulayi.* This emphasizes the need for more collecting and detailed study of the variation in the coastal *Scaevola* species.

References

Fosberg, F. R. & M.-H. Sachet. 1981. Polynesian Plant Studies 6–18. Smithsonian Contr. Bot. 47: 1–38.

Marais, W. 1981. Two gamopetalous families Cyclocheilaceae and Nesogenaceae from extra-Australian Dicotyledonae. Kew Bull. 35: 397–812.