

Plant Records from Aur Atoll and Majuro Atoll, Marshall Islands, Micronesia. Pacific Plant Studies 9¹

HAROLD ST. JOHN²

PREVIOUS TO WORLD WAR II, the collections of plants from the Marshall Islands were so few and so local that the flora had not even been well sampled. Since the American occupation of the islands, several botanists have visited various of the islands and made plant collections. Nevertheless, the published data on the flora are very meager and include nothing concerning Aur and Majuro Atolls. The known flora of the Marshall Islands is summarized in Kanehira (1935), though he includes only part of the species recorded from Jaluit by Koidzumi (1915) and, of course, none of those subsequently listed from Jaluit by Okabe (1941).

In December, 1945, the writer was leader of a party of scientists from the University of Hawaii which made a scientific reconnaissance of the Marshalls and other parts of Micronesia. The trip was made possible by the United States Navy, which provided travel by airplane and boat and other facilities.

On December 17, 1945, the party visited Aur Atoll, traveling by sea plane and landing on the lagoon. After ferrying ashore in native canoes, the group had 3 hours available for collection and study of the flora on Tabal, one of the inhabited islets of that atoll.

¹This is the ninth in a series of papers designed to present descriptions, revisions, and records of Pacific island plants. The preceding papers were published as *Bernice P. Bishop Mus., Occas. Papers*: 17(7), 1942; 17(13), 1943; 18(5), 1945; *Amer. Fern Jour.* 35: 87-89, 1945; *Torrey Bot. Club, Bul.* 73: 588, 1946; *Pacific Sci.* 2: 96-113, 1948; 2: 272-273, 1948. Manuscript received February 8, 1950.

²Chairman, Department of Botany, University of Hawaii.

On December 18 to 19, 1945, by L. C. I. ship, a visit was made in Majuro Atoll to Majuro Islet, a large, inhabited islet on the west side of the lagoon. On both islets native informants were employed, and from them were learned the vernacular names of the plants collected. All native plants and about half of the introduced cultivated ones and half of the adventives were known to the inhabitants by Marshallese vernacular names. These were recorded as they sounded to the observer in American phonetic rendering, just as the vocabulary of Pingelap was recorded. The explanation of the vowel sounds used in both areas is given in the report on the flora of Pingelap by St. John (1948: 99). The decision not to use the alphabet of the current U. S. Navy *Dictionary* (1945) was deliberate, due to dissatisfaction with the complexity of its vowels and the paucity of its consonants. Nearly all of these native vernacular names are here recorded for the first time, since Koidzumi, in his account of the vegetation of Jaluit Atoll, recorded as common names only the Japanese names. Later, Okabe (1941), writing also of Jaluit, recorded 21 Marshallese vernacular names, but only 18 apply to species in the present list and several are obviously different names.

The specimens collected by the University of Hawaii Expedition are deposited in the Bishop Museum, Honolulu.

In the following list the native plants are printed in bold-face roman type, while the adventive weeds and cultivated exotics are in bold-face italics.

POLYPODIACEAE

Asplenium nidus L.

Majuro Atoll, Majuro Islet: epiphytic near base of tree trunks, *St. John* 21,410; "kartëp."

Nephrolepis acutifolia (Desv.) Christ

Majuro Atoll, Majuro Islet: epiphytic on base of tree trunk, *St. John* 21,409; "anũmkarere."

Polypodium Phymatodes L.

Aur Atoll, Tabal Islet: on bases of *Cocos* trees, *St. John* 21,379; "kino."

Majuro Atoll, Majuro Islet: observed; called "kino."

More recently this species has been reclassified as *Microsorium Scolopendria* (Burm.) Copeland, in Gen. Fil. 195, 1947. The writer has not yet made the tests necessary to a decision on the validity of the numerous fragments separated from *Polypodium* as genera.

PSILOTACEAE

Psilotum nudum (L.) Griseb.

Majuro Atoll, Majuro Islet: on wet mossy rock, *St. John* 21,426; "mal dõk" (=to lean toward me), "bång." Rare; the vernacular names known to only a very few old people.

CYCADACEAE

Cycas circinalis L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; "laugõk."

PANDANACEAE

Pandanus carolinianus Martelli, Webbia 4(2): 400, tav. XXXIV, figs. 1-3, 1914.

Majuro Atoll: S. E. side, Aug. 26, 1944, *E. H. Bryan, Jr.* "Very good eating—[like] carrot with apricot flavor." First record for the Marshalls. Known only from the type locality on Yap Island. The general name for *Pandanus* is "bõp."

Pandanus odoratissimus L. f., var. *novo-guineensis* (Martelli) St. John, comb. nov.

P. tectorius Soland. var. *novo-guineensis* Martelli. Webbia 4(2): 413, tav. XLIII, figs. 4-5, 1914.

Kwajalein Atoll, Ennylabegan Island, Aug. 4, 1944, *E. H. Bryan, Jr.* First record in the Marshalls; known previously from Hatzfeldthafen in German New Guinea. The name *P. tectorius* is rejected as being inadequately published.

Pandanus pulposus (Warb.) Martelli, Webbia 4(2): 409, tav. XXXVIII, figs. 1-3, 1914.

P. tectorius Soland. var. *pulposus* Warburg, in Engler's Pflanzenreich IV, fam. 9: 49, 1900.

Aur Atoll, Tabal Islet: tree 7 m. × 2 dm., *H. St. John* 21,371; called "kubenan."

Type locality is in the Marshalls: "Radackinseln."; collector, *Chamisso*. Kanehira also listed it from Jaluit.

GRAMINEAE

Cenchrus echinatus L.

Aur Atoll, Tabal Islet: on sand in shade, *St. John* 21,376; called "quãramiyumũt" (=to slow you down).

Eragrostis amabilis (L.) Wight & Arn.

Aur Atoll, Tabal Islet: common, on sand in shade, *St. John* 21,378; called "wujoët" (a name meaning grass, that is, any grass). Also observed on Majuro Atoll, Majuro Islet.

Lepturus repens (Forst.) R. Br.

Aur Atoll, Tabal Islet: tufted, in sand, *St. John* 21,373; "wujoët" (= grass).

Saccharum officinarum L.

Majuro Atoll, Majuro Islet: cultivated by house, only one variety, introduced by the Japanese from Kusaie, now rare, *St. John* 21,413; called "to."

Thuarea involuta (Forst.) R. & S.

Aur Atoll, Tabal Islet: creeping, on top of coral sand beach, *St. John* 21,374; called "wujoët." Also observed on Majuro Atoll, Majuro Islet.

CYPERACEAE

Cyperus javanicus Houtt.

Majuro Atoll, Majuro Islet: not collected, but observed in a swamp; called "wujoët in ion buil" (= marsh grass).

Fimbristylis cymosa R. Br.

Aur Atoll, Tabal Islet: in open sand by shore or in open woods near-by, *St. John* 21,399; called "wujoët" (= grass).

PALMAE

Cocos nucifera L.

Aur Atoll, Tabal Islet, and Majuro Atoll, Majuro Islet: not collected, but observed as abundant; called "ni."

ARACEAE

Alocasia macrorrhiza (L.) Sweet

Majuro Atoll, Majuro Islet: observed in cultivation; called "wöt."

Colocasia esculenta (L.) Schott var. *antiquorum* (Schott) Hubb. & Rehd.

Aur Atoll, Tabal Islet: observed in cultivation in one small, wet pit.

Majuro Atoll, Majuro Islet: cultivated in swampy hollow, *St. John* 21,416; "katak" is the general name, but this variety is called "katak Majol," that is, the Marshallese variety. It has the petiole pale green with short purple streaks, the margin purplish; corm 1.5 dm. long with white flesh. The other variety was called "katak in kabelin," or the variety from the west.

Cyrtosperma Chamissonis (Schott) Merr.

Majuro Atoll, Majuro Islet: cultivated in swamp, 2-6 m. tall, petioles smooth, *St. John* 21,418; called "iarätz." Another variety, with spiny petioles, *St. John* 21,417, called "kailiklik" (= spiny).

AMARYLLIDACEAE

Crinum asiaticum L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; called "kiüp."

TACCACEAE

Tacca Leontopetaloides (L.) Ktze.

T. pinnatifida Forst.

Aur Atoll, Tabal Islet: planted commonly in shade of trees, *St. John* 21,395; called "magamük." Also observed on Majuro Atoll, Majuro Islet: also called "magamük."

MUSACEAE

Musa paradisiaca L. subsp. *sapientum* (L.) Ktze.

Aur Atoll, Tabal Islet: observed in cultivation; called "keibaran."

Majuro Atoll, Majuro Islet: observed in cultivation; called "kebrang" (the name now obsolete); currently called "bena-na" (= banana).

MORACEAE

Artocarpus incisus L. f. (corrected from *incisa*)

The general name for all varieties of breadfruit is "me."

Seeded Variety:

Aur Atoll, Tabal Islet: tree 15 m. × 2 dm., cultivated in village, *St. John* 21,381; called "mejuan." Also observed on Majuro Atoll, Majuro Islet.

Seedless Variety:

Aur Atoll, Tabal Islet: tree 20 m. × 1 m., common, especially in village, *St. John* 21,380; called "pădăthadăk."

Ficus tinctoria Forst. f.

Majuro Atoll, Majuro Islet: observed in cultivation; called "tebero" (this name said to be a foreign word).

URTICACEAE

Fleurya ruderalis Gaud.

Majuro Atoll, Majuro Islet: weedy herb in clearings, *St. John* 21,407; called "nen-küt-küt" (= legs of the turnstone, a bird).

Pipturus argenteus (Forst. f.) Wedd.

Majuro Atoll, Majuro Islet: tree 10 m. × 2 dm., bast fiber used for fishnets and fish-line, *St. John* 21,412; called "armai."

AMARANTHACEAE

Gomphrena globosa L.

Majuro Atoll, Majuro Islet: cultivated ornamental, observed in the village; without a vernacular name.

NYCTAGINACEAE

Boerhavia diffusa L. var. *tetrandra* (Forst.) Heimerl.

Aur Atoll, Tabal Islet: trailing in shade, *St. John* 21,384; called "rabitchiragai" (=to hold on to a stone).

Bougainvillea spectabilis Willd.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; without a vernacular name.

Mirabilis jalapa L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; called "emen aur" (=the fourth hour).

PORTULACACEAE

Portulaca oleracea L.

Majuro Atoll, Majuro Islet: observed by paths.

ANNONACEAE

Annona muricata L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; called "sauer sharp" (=a pronunciation of sour sop).

LAURACEAE

Cassytha filiformis L.

Aur Atoll, Tabal Islet: vine, over bushes or trees, *St. John* 21,392; called "ganun." Also observed on Majuro Atoll, Majuro Islet; called "kanun."

HERNANDIACEAE

Hernandia ovigera L.

Majuro Atoll, Majuro Islet: tree 15 m. \times 2 m., top of beach, *St. John* 21,429; called "bĩgbĩg."

LEGUMINOSAE

Canavalia sericea Gray

Majuro Atoll, Majuro Islet: in sandy woods by shore, *St. John* 21,430; called "marlāp" (=large bush). This species is new to Micronesia. Later collections of it are from Ailinglapalap Atoll, *St. John & Cowan* 21,707; and from Wotje Atoll, *St. John & Cowan* 22,076. These localities are far distant from the nearest known station in Fiji. Its known distribution is shown on the accompanying map (Fig. 1).

It is worthy of note that in the revision of *Canavalia* by Piper and Dunn (1922) the key needs revision. The two well-marked species, *C. galeata* (Gaud.) H. & A. of Hawaii and *C. sericea* Gray of Polynesia, Melanesia, and Micronesia, are incorrectly keyed. They are separated as the first pair of species by the first of the two headings quoted below:

"1. Pod with two supplementary ribs close to the upper suture.

Pod with two supplementary ribs 5 mm. or more distant from the upper suture."

To be sure, Piper and Dunn note under their listing of *C. galeata*, "the pods are not described and have not been seen by the writers," but in the previous paragraph they list the reference to Rock, J. F. (*Leguminous Plants of Hawaii* 209, 1920), where the pods of *C. galeata* are described in detail. Collections now in the Bishop Museum, Gray Herbarium, U. S. National Herbarium, and the New York Botanical Garden show that on ripe pods the interval between the supplementary rib and the upper suture measures, in millimeters, 1, 2, 2, 2, 3, 3.5, 4, 4, 4, 4, 5, 6, 8, 9, 12, or from 1-12 mm. Similar measurements for *C. sericea* are: 3, 4, 4, 4, 4, 4, 5, 5, 5, 6, 6, 6, 6, 6, 6, 7, 7, 7, 8, 8, 8, 8, 9, or from 3-9 mm. The key character given by

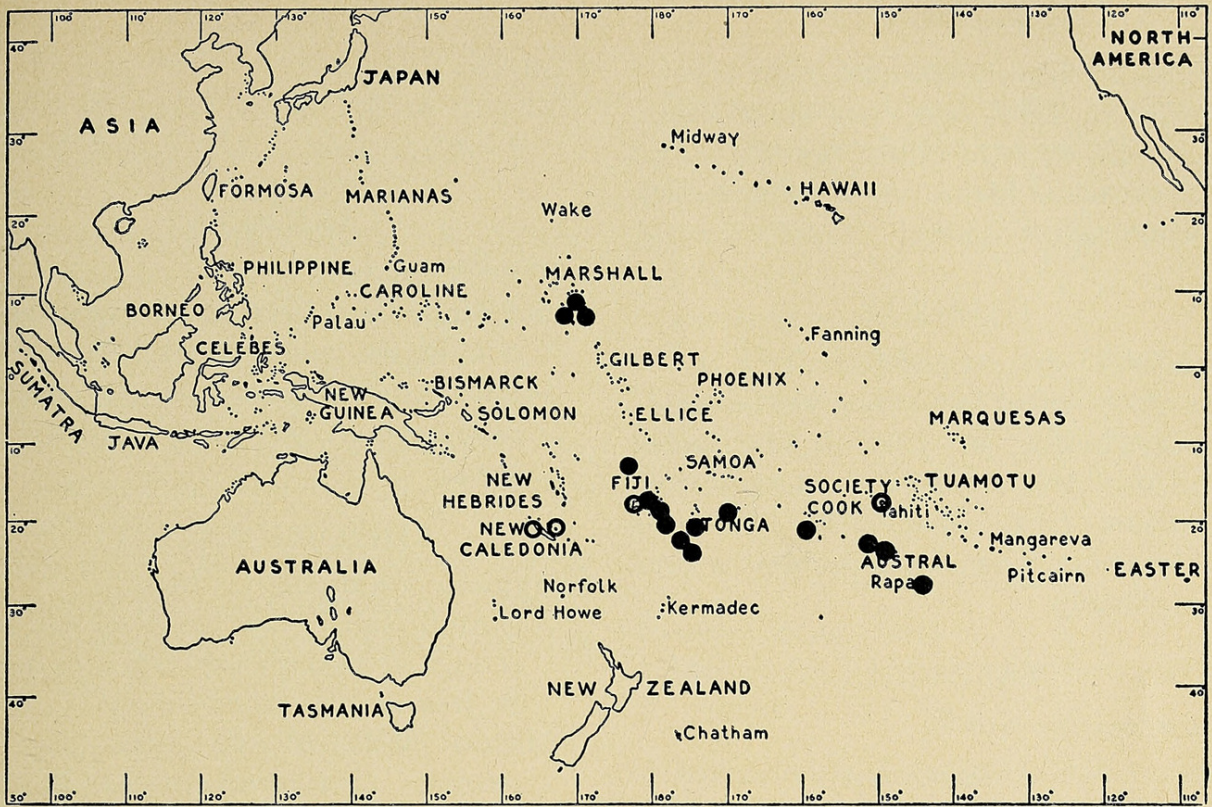


FIG. 1. *Canavalia sericea*, distribution. Round dots for localities of verified collections, reading from east to west: Rapa, Rurutu, Rimatara, Rarotonga, Niue, Nemuka, Eua, Tongatabu, Ongea Ndriti, Koro, Ovalao, Rotuma, Majuro, Wotje, and Ailinglapalap. Circles for published localities, not verified: Tahiti, Viti Levu, Lifou, and Mouac.

Piper and Dunn is (by inference) that this interval is less than 5 mm. for the two species. It is obvious, then, that the key needs revision.

Sophora tomentosa L.

Majuro Atoll, Majuro Islet: young shrub 1 m. tall, on coral sand beach, *St. John* 21,428; called "kullei."

Vigna marina (Burm.) Merr.

Aur Atoll, Tabal Islet: observed.

Majuro Atoll, Majuro Islet: on beach sands or climbing 8 m. on trees, *St. John* 21,432; called "markinejojo."

RUTACEAE

Citrus aurantifolia (Christm.) Swingle

Majuro Atoll, Majuro Islet: tree 8 m. × 2 dm., cultivated commonly in village, introduced by whites since 1900, *St. John* 21,415; called "laim" (=a pronunciation of the English word lime).

SIMARUBACEAE

Suriana maritima L.

Aur Atoll, Tabal Islet: tree 4 m. tall, *St. John* 21,386; "ngiungi."

EUPHORBIACEAE

Acalypha grandis Benth. var. *genuina* Muell. Arg.

Majuro Atoll, Majuro Islet: observed in cultivation in the village.

Euphorbia Atoto Forst.

Aur Atoll, Tabal Islet: tufted, *St. John* 21,389; called "perau." Also observed on Majuro Atoll, Majuro Islet, where called "peiralo."

Euphorbia heterophylla L.

Majuro Atoll, Majuro Islet: observed as a weed in the village; no vernacular name.

Codiaeum variegatum (L.) Bl.

Majuro Atoll, Majuro Islet: observed in cultivation as a hedge in the village. It had no vernacular name.

SAPINDACEAE

Allophyllus timorensis (DC.) Bl.

Aur Atoll, Tabal Islet: tree 8m. \times 2 dm., *St. John* 21,393; called "kudäk." Also observed on Majuro Atoll, Majuro Islet, where called "kutät."

TILIACEAE

Triumfetta procumbens Forst. f.

Aur Atoll, Tabal Islet: common in woods near beach, *St. John* 21,397; called "ädät." Also observed on Majuro Atoll, Majuro Islet, where it has the same vernacular name. The bast fiber is used in plaiting.

MALVACEAE

Hibiscus rosa-sinensis L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village, where called "roz" (= a pronunciation of the English name rose).

Hibiscus tiliaceus L.

Aur Atoll, Tabal Islet: observed near a moist pit. The native name is "loo."
Majuro Atoll, Majuro Islet: tree forming thicket 7 m. tall, *St. John* 21,405; called "lowau." Bast fiber used for mats.

Gossypium barbadense L.

Majuro Atoll, Majuro Islet: observed in cultivation in the village; the vernacular name "kotin" (= a pronunciation of cotton).

Sida fallax Walp.

Aur Atoll, Tabal Islet: observed; called "keo."
Majuro Atoll, Majuro Islet: observed; called "guio."

GUTTIFERAE

Calophyllum Inophyllum L.

Aur Atoll, Tabal Islet: tree 8 m. \times 3 dm., *St. John* 21,372; called "luët," and "luës." Also observed on Majuro Atoll, Majuro Islet, where called "luguëtz."

LYTHRACEAE

Pemphis acidula Forst.

Majuro Atoll, Majuro Islet: tree 8 m. \times 3 dm., *St. John* 21,427; called "kungi."

CARICACEAE

Carica Papaya L.

Aur Atoll, Tabal Islet: in common cultivation in the village; called "keinabu."
Majuro Atoll, Majuro Islet: in common cultivation in the village; called "keinapu."

RHIZOPHORACEAE

Bruguiera conjugata (L.) Merr.

Aur Atoll, Tabal Islet: tree 6 m. tall, rare, at edge of swampy excavation in forest, *St. John* 21,398; called "shon."
Majuro Atoll, Majuro Islet: edge of swampy *Cyrtosperma* patch, *St. John* 21,406; called "jung."

COMBRETACEAE

Terminalia litoralis Seem.

Majuro Atoll, Majuro Islet: young tree, branches horizontal, *St. John* 21,431; called "kugung."

ONAGRACEAE

Jussiaea suffruticosa L. var. *ligustrifolia* (HBK.) Griseb.

Majuro Atoll, Majuro Islet: observed as a weed in wet garden plots; without a vernacular name.

ARALIACEAE

Nothopanax Scutellaria (Burm. f.) Merr.

Majuro Atoll, Majuro Islet: observed as a common hedge in the village; without a vernacular name.

Polyscias Guilfoylei (Bull) Bailey

Majuro Atoll, Majuro Islet: observed in cultivation in the village as a hedge.

UMBELLIFERAE

Centella asiatica (L.) Urban

Aur Atoll, Tabal Islet: sandy flat by house,

introduced weed in village, *St. John* 21,375; called "nargo." Also observed on Majuro Atoll, Majuro Islet, where called "marigo."

APOCYNACEAE

Ochrosia oppositifolia (Lam.) K. Schum.

O. parviflora (Forst.) Henslow

Aur Atoll, Tabal Islet: tree 15 m. \times 2 dm.,

St. John 21,388; called "kujebara."

Plumeria acuminata Ait.

Aur Atoll, Tabal Islet: ornamental trees, observed in cultivation in the village; called "mei ria."

Majuro Atoll, Majuro Islet: common ornamental tree, cultivated; called "meria."

The vernacular names are contractions of *Plumeria*.

ASCLEPIADACEAE

Asclepias curassavica L.

Majuro Atoll, Majuro Islet: observed, cultivated as an ornamental in the village; called "ialu" (=a pronunciation of yellow).

CONVOLVULACEAE

Ipomoea Batatas L.

Majuro Atoll, Majuro Islet: cultivated, rare, introduced by the Germans. Tuber 1.5 dm. long, flesh white, *St. John* 21,414; called "juweet potato" (=sweet potato).

Ipomoea gracilis R. Br.

Majuro Atoll, Majuro Islet: vine, climbing 2-3 m., *St. John* 21,411; called "marginejojo."

Ipomoea pes-caprae (L.) Roth

Majuro Atoll, Majuro Islet: common on or near the beaches; called "marginejojo."

Ipomoea tuba (Schlecht.) Don

I. grandiflora sensu Jacq., non L. f.

Aur Atoll, Tabal Islet: trailing or climbing high on trees, *St. John* 21,385; called "marabele" (=white man's or foreign necklace). Also observed on Majuro Atoll, Majuro Islet; called "marabele."

BORAGINACEAE

Cordia subcordata Lam.

Majuro Atoll, Majuro Islet: tree 10 m. \times 4 dm., wood used for timber, *St. John* 21,408; called "kono."

Messerschmidia argentea (L. f.) I. M. Johnston

Tournefortia argentea L. f.

Aur Atoll, Tabal Islet: tree 7 m. \times 2 dm., common near outer beach, *St. John* 21,390; called "krin." Also observed on Majuro Atoll, Majuro Islet, where called "kurin."

VERBENACEAE

Premna integrifolia L.

Majuro Atoll, Majuro Islet: native tree, observed; called "kar."

LABIATAE

Ocimum sp.

Majuro Atoll, Majuro Islet: aromatic herb, observed in cultivation; called "katarin" (=Catharine).

ACANTHACEAE

Hemigraphis reptans (Forst.) T. Anders.

Majuro Atoll, Majuro Islet: trailing in shade, only in village, *St. John* 21,433. It has no native name and was probably introduced, perhaps by the natives.

RUBIACEAE

Guettarda speciosa L.

Aur Atoll, Tabal Islet: tree 8 m. \times 2 dm., *St. John* 21,387; called "wudilonaro" (=flower of the bush).

Majuro Atoll, Majuro Islet: observed; called "wüt."

Hedyotis biflora (L.) Lam.

Oldenlandia biflora L.

Majuro Atoll, Uliga Islet: erect, forming colonies 1 m. in diameter, *St. John* 21,370.

Ixora carolinensis (Val.) Hosokawa var. *typica* Fosberg

Majuro Atoll, Majuro Islet: observed.
Apparently cultivated; called "gajiru."

Morinda citrifolia L.

Aur Atoll, Tabal Islet: shrub 3 m. tall,
St. John 21,394; called "nin." Also observed on Majuro Atoll, Majuro Islet; called "nin."

CUCURBITACEAE

***Cucurbita Pepo* L.**

Majuro Atoll, Majuro Islet: observed, commonly cultivated for food, near the houses; called "pāmki" (=a pronunciation of pumpkin).

***Lagenaria siceraria* (Molina) Standl.**

L. leucantha (Duch.) Rusby

Aur Atoll, Tabal Islet: cultivated near house, *St. John* 21,377; called "pangi" (=a pronunciation of pumpkin). Introduced by the members of the Rurick voyage under Capt. Kotzebue in 1817, and perhaps not previously cultivated by the natives.

GOODENIACEAE

***Scaevola frutescens* (Mill.) Krause**

Aur Atoll, Tabal Islet: shrub, mostly near the sea beach, *St. John* 21,391; called "gunnat." Also observed on Majuro Atoll, Majuro Islet; called "kunnat."

COMPOSITAE

***Wedelia biflora* (L.) DC.**

Aur Atoll, Tabal Islet: sprawling shrub, *St. John* 21,396; called "marijetch." Also observed on Majuro Atoll, Majuro Islet; called "marijatch."

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