

Noteworthy Micronesian Plants. 3.

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This third paper of this series contains new distributional records and taxonomic notes mainly on the plants of the Palau Islands. Range extensions are recorded in the genera *Hymenophyllum*, *Trichomanes*, *Schizaea*, *Cyclopeltis*, *Diplazium*, *Humata*, *Nephrolepis*, *Apluda*, *Panicum*, *Pennisetum*, *Setaria*, *Sporobolus*, *Fimbristylis*, *Aneilema*, *Suriana*, *Xylocarpus*, *Euphorbia*, *Melanolepis*, *Ammannia*, *Melaleuca*, *Bacopa*, *Utricularia*, *Andrographis*, *Hedyotis*, *Spermacoce*, *Timonius* and *Youngia*. Taxonomic notes are presented on *Humata*, *Nephrolepis*, *Aneilema*, *Eriocaulon*, *Piriqueta*, *Eugenia*, *Leucas*, *Hedyotis*, and *Spermacoce*.

HYMENOPHYLLACEAE

Hymenophyllum serrulatum (Presl) C. Chr., Ind. Fil. 367, 1905.

A delicate Malesian epiphyte with frond 6–8(–30) cm long, indusium lips bluntly triangular, receptacle protruding when old. It is distinguished from the more common *H. polyanthos* by the toothed rather than entire margin of the lobes and the bluntly triangular rather than ovate lips of the indusium. This constitutes a first record for Micronesia.

CAROLINE ISLANDS: Palau: Babeldaob I., W. Ngeremlengui Munic., locally abundant in forest below peak 1.7 mi. (2.7 km) ESE of Almongui Pt., 100 m, 7 Dec. 1978, *Canfield 613* (US).

Trichomanes setigerum Backhouse Cat. 14, 1861.

Moore, Gard. Chron. 1862: 45, 1962. Holttum, Fl. Malaya 2: 104–105, 1954.

This species, with very finely dissected fronds, has previously been found in Borneo, Malaya, and Palawan in the Philippines, according to Holttum, who places it in *Trichomanes* sect. *Macroglena* (Copeland's genus *Macroglena*), where it seems to fit well enough. It is a distinct surprise to find it in Palau. The Palau plants resemble the type (photo, US) and agree with Holttum's treatment in the Flora of Malaya. This species has been united with *T. setaceum* v. d. Bosch, a similarly finely dissected Malesian species, but the resemblance is superficial and the two are considered distinct by Holttum.

CAROLINE ISLANDS: Palau: Babeldaob I., Airai, locally common on muddy

streambank just E of reservoir, 40 m, 15 Sept. 1977, *Canfield 128* (US); Airai Munic., common on clay banks of intermittent forest stream just E of reservoir, 1.5 mi. (2.4 km) NE of Koror bridge, 40 m, 7 June 1979, *Canfield 771* (US).

SCHIZAEACEAE

Schizaea dichotoma var. **sellingii** Fosberg, Amer. Fern Jour. 40: 144–145, 1950.

When this variety was proposed in 1950 no specimens were known from Palau. *Schizae dichotoma* L. var. *dichotoma* was known from there and has since been found to be common both on volcanic and (less so) on limestone soil, in lowland and upland forests.

Var. *sellingii* has now been found on volcanic Ngerur Island, locally abundant in open secondary growth, not growing with var. *dichotoma*. Var. *sellingii* was also noticed, but not collected, in mature upland forest on Babeldaob Island just north of Ngatpang Bay.

CAROLINE ISLANDS: Palau: Ngerur I., NW Koror Munic., N end of island, 15 m, 6 Jan. 1979, *Canfield 672* (US).

POLYPODIACEAE

Cyclopeltis cumingiana (Fée) Morton, Contr. U.S. Nat. Herb. 38: 46, 1967.

Hemicardion cumingianum Fée, Gen. Fil. 283, 1852.

Found on dissected limestone, similar to the habitat of its smaller and more common relative, *C. kingii*. Known from the Philippines, Moluccas, Admiralty Islands and New Guinea, this is the first record for Micronesia. The genus can be distinguished by its articulate pinnae and large, naked *Polypodium*-like sori in a single row on each side of a pinna midway between costa and margin.

We appreciate the help of David Lellinger in the identification of this rather infrequent species.

CAROLINE ISLANDS: Palau: Ulong (Aulong) I., common on dissected limestone in open woods of central part of island, 0.1 mi. (0.16 km) E of S end of beach, 40 m, 9 Mar. 1978, *Canfield 480* (US).

Diplazium melanocaulon Brack., U.S. Expl. Exped. 16: 144, 1854.

A large fern, with black stipe and finely dissected fronds, originally described from Fiji; uncommon on the raised limestone islands of Palau, but common in most of the Caroline islands.

CAROLINE ISLANDS: Palau: Urukthapel I., S end, Ngchus or Ankosu Pt., rare on dissected limestone on forested ridge, 50 m, 2 Mar. 1978, *Canfield 468* (US). Ulong (Aulong) I., abundant on dissected limestone in open woods of central part of island, 0.1 mi. (0.16 km) E of S end of beach, 40 m, 9 Mar. 1978, *Canfield 479* (US).

Humata repens (L. f.) Diels in Engl. & Pr., Nat. Pflanzenf. 1(4): 209, 1899.

Adiantum [sic, sphalm] *repens* L.f., Suppl. Pl. 446, 1781.

Humata trifoliata Cav., Prael. no. 680, 1801; Descr. 273, 1802.—C. Chr., Dansk. Bot. Ark. 9(3): 26, 1937.—Morton, Contr. U.S. Nat. Herb. 38: 306–307, 1974.

Davallia serrata Willd., Sp. Pl. 5: 467, 1810 (nom. superfl. illegit.)

Humata serrata (Hook.) Desv., Prodr. 323, 1827 (nom. superfl. illegit.)

Davallia lepida Presl ex Goldm. in Meyen, Nova Acta Akad. K.-Leop. Naturf. 19 (Suppl. 1): 464, 1843.

Humata lepida (Presl ex Goldm.) Moore, Ind. Fil. XCII, 1857.

Epiphyte with long-creeping scaly rhizomes, thick deltoid lamina, upper lobes entire, lower ones lobed, the lowest broader than the rest, submarginal sori, and basally attached indusium.

Micronesian material referred here by us has been called by several names (see synonymy above), especially *Humata trifoliata* Cav., which was described from Mauritius. Christensen says of it, "The species is very near *H. repens* but a little dimorphous, stipe and ribs paleaceous and the segments sharply toothed."

These characters do not hold up. Mauritius material has scaly stipes. Neither has really dimorphic fronds. Asiatic material is more variable but includes the other in its range.

This species, taken in a broad sense, is variable and has had numerous names, but comparison of considerable material from S. E. Asia, Borneo and several Micronesian sheets with a small series from Mauritius, Reunion and the Seychelles does not show tangible or constant differences. The frond dimorphism noted by Christensen for *H. trifoliata* Cav. is not apparent unless the reduced juvenile fronds are admitted, and they are also found on Mauritian plants.

The teeth on the segments seem lacking or obscure in some Asiatic material. The stipes of plants from both the Mascarenes and Southeast Asia have elongate scales and could be called paleaceous.

Only one variable species seems to be involved which should be called *H. repens*.

This species is very close of *Humata banksii*, with which it may be confused. There is no single completely reliable character by which they may be distinguished, but their aspect is different. *H. repens* usually has fewer, broader, more crowded, more often toothed segments, with tips erose-dentate rather than smoothly rounded. *H. banksii* has the fronds more deeply cut, and the segments narrow, well separated, rounded at tips.

Known from Mauritius to Japan and Australia, and from other islands in Micronesia, this is a new record for Palau.

CAROLINE ISLANDS: Palau: Babeldaob I., Airai, uncommon in wooded drainage just E of reservoir, 50 m, 15 Sept. 1977, *Canfield 126* (US); Airai Munic., along road to waterfalls, 1.2 mi. (1.9 km) N of airfield, 50 m, 7 June 1979, *Canfield 768* (US); Airai Munic., overhanging falls 1.5 mi. (2.4 km) N of airfield, on Kumekumeyel R., 20 m, 7 June 1979, *Canfield & Bright 778* (US).

Nephrolepis Schott

The species in this genus are widespread and notoriously difficult to identify. The

following key may help determine the ones found in Palau. The record of *N. cordifolia*, based on a Tetens specimen which we have not seen, must be regarded as doubtful.

KEY TO SPECIES OF NEPHROLEPIS IN PALAU:

1. Sori continuous, marginal—*N. acutifolia* (Desv.) Christ
- 1'. Sori discrete.
 2. Sori submarginal, in or below small lobe-like crenations—*N. saligna* Carruthers
 - 2'. Sori not close to margins of pinnae.
3. Pinnae about 2 cm long, rounded at apices—*N. "cordifolia"* (L.) Presl
- 3'. Pinnae longer, tending to be narrowed to apices.
 4. Rhachis scales peltate with strongly woolly margins, rhizome scales lance-attenuate, with brown central part running out into apex—*N. biserrata* (Sw.) Schott
 - 4'. Rhachis scales lanceolate, long-caudate, margins strongly ciliate but scarcely woolly, rhizome scales lanceolate with dark shiny reticulate central and basal part, this tending to be persistent—*N. hirsutula* (Forst. f.) Presl

Dr. Frances Jarrett, of Kew, kindly pointed out the differences by which *N. biserrata* and *N. hirsutula* may usually be separated.

Nephrolepis biserrata (Swartz) Schott, Gen. Fil. pl. 3, 1834.

Common tropical fern with long pinnate fronds, sessile barely auriculate crenate coriaceous pinnae, the upper pinnae not close enough to touch, fertile pinnae narrower than sterile, and circular indusia.

Its habitat is similar to that of both *N. saligna* and *N. hirsutula*, and it has been collected growing with the latter species in Palau. Much of the Micronesian material of *N. saligna* has been referred to this species. However, after reassigning all such misidentified material, some records of true *biserrata* do remain, explaining why the species is noted here.

CAROLINE ISLANDS: Palau: Babeldaob I., common on banks of Geligal (Ngerekall) Marsh, 1.5 mi (2.4 km) NW of Keklau dock, 45 m, 27 Sept. 1977, *Canfield 140* (US). Angaur I., abundant in forest W of Lake D, 0.3 mi. (0.5 km) NE of village, 2 m, 11 Oct. 1977 *Canfield 158* (US).

Nephrolepis saligna Carruthers in Seemann, Fl. Vit. 361, 1873.

Common fern of Fiji and the Carolines, with long pinnate fronds, sessile coriaceous pinnae, and round-reniform indusia in tiny lobes on margin of pinna.

One of Palau's most common ferns, most abundant in cleared areas such as periodically weeded coconut groves.

CAROLINE ISLANDS: Palau: Babeldaob I., Ngerelong, abundant in forest 0.1 mi. (0.16 km) W of Pkulrengelong, 10 m, 3 Jan. 1978, *Canfield 301* (US); Melekeok, fairly common in marshy area on main road, 2 mi. (3.2 km) N of dock, 5 m, 6 Aug. 1977, *Canfield 101* (US); Airai Munic., common on cliffs along stream, 1.5 mi. (2.4 km) N of airfield, on Kumekumeyel R., 15 m, 17 Nov. 1977, *Canfield 276* (US).

Eil Malk (Mecherchar) I., locally abundant on trail to NW bank of large lake on SW side of island, 2 m, 16 Sept. 1977, *Canfield 131* (US). Ngerchong I., abundant along path through farm land on NE side of island, 2 m, 28 Aug. 1977, *Canfield 113* (US) "kilkuld".

GRAMINEAE

Apluda mutica L., Sp. Pl. 82, 1753.

A grass widespread in the Old World Tropics, reported here for the first time in Micronesia. Whether it is native or introduced is hard to say, but since it has not been found there before it is likely a new introduction. It is a slender decumbent to erect plant with a panicle of broad, flat spikelets. It is curious in frequently having the lower stem or rhizome prostrate but held several cm above the ground on a series of stilt roots from the nodes.

CAROLINE ISLANDS: Palau: Babeldaob I., Ngardmau Munic., 0.3 mi. (0.48 km) S of Ngardmau, 5 m, 20 Jan. 1978, *Canfield 394* (US).

Panicum reptans L., Syst. Nat. ed. 10, 2: 870, 1759.

Brachiaria reptans (L.) Gardner and Hubbard, in Hooker's Icones, t. 3363, 1938; Stone, *Micronesica* 6: 203, 1971.

This is a small, weak nearly prostrate grass, with a panicle of short spike-like branches, previously known in Micronesia from the Marianas and Yap. It is a pantropical species widely distributed in the Pacific islands. We do not consider *Brachiaria* (Trin.) Griseb. to be sufficiently distinct or well-defined to merit generic rank, though we are aware that it is becoming fairly widely accepted.

CAROLINE ISLANDS: Palau: Angaur I., locally common in exposed soil on E edge of boat basin, 2 m, 25 Jan. 1978, *Canfield 407* (US).

Pennisetum polystachion (L.) Schultes, Mantissa 2: 146, 1824.

Panicum polystachion L., Syst. Nat. ed. 10, 2: 870, 1759.

This vigorous annual grass continues its spread through Micronesia, now found on Malakal Island, Palau. It forms tall erect clumps of few to more numerous strong culms from 1 to 1.5 or even 2 m tall, with terminal straw-colored spike-like inflorescences. It can be expected to occupy open, disturbed places.

CAROLINE ISLANDS: Palau: Malakal I., *Otobed P-10110* (US).

Setaria sphacelata (Schum.) Stapf and Hubbard, Kew Bull. 1929: 184, 195, 1929.—Prain, Fl. Trop. Afr. 9: 795, 1930.

Panicum sphacelatum Schum., Beskr. Guin. Pl. 78, 1827.

What seems to be this species, a glabrous rhizomatous perennial with somewhat flattened culms, wide leaves, and a dense slender spike-like somewhat yellowish inflorescence, has been collected at the Koror Agricultural Station. It is said by the collector to be an imported pasture grass.

CAROLINE ISLANDS: Palau: Koror, *Otobed P-10117* (US).

Sporobolus farinosus Hosok., Jour. Soc. Trop. Agr. Taihoku Univ. 7: 321, 1935.

A bunchgrass distinguished by the blueish cast to its leaves and its restriction to exposed, dissected limestone cliffs. This is the first record from Palau. It was described from Rota and Tinian and has since been found on Guam and Fais.

CAROLINE ISLANDS: Palau: Angaur I., uncommon on limestone cliffs NW of airstrip, 7 m, 23 Oct. 1977, *Canfield 250* (US); uncommon on exposed cliffs NW of airstrip, 7 m, 22 May 1979, *Canfield 743* (US); abundant on exposed limestone 15 m from ocean, NW corner of island, Pkulangelul, 5 m, 22 May 1979, *Canfield 749* (US).

CYPERACEAE

Fimbristylis cymosa var. **pycnocephala** (Hbd.) Kük. ex F. Br., Bish. Mus. Bull. 84: 104, 1931.

Fimbristylis pycnocephala Hbd., Fl. Haw. Is. 473–474, 1888.

Collected in sandy spots in exposed, dissected limestone cliffs on the coast of Angaur, differing from other varieties of this common coastal species in its condensed capitata inflorescence, originally described from the Hawaiian Islands.

CAROLINE ISLANDS: Palau: Angaur I., abundant 15 m from ocean, along road just E of Pkulangelul, 9 m, 22 May 1979, *Canfield 750* (US); locally abundant in cliffs, WN coast road, 7 m, 12 Oct. 1977, *Canfield 170* (US).

ERIOCAULACEAE

Eriocaulon sexangulare var. **micronesicum** Moldenke, Phytologia 43: 355, 1979.

The Micronesian *Eriocaulon* has been described as a new endemic variety by Dr. Moldenke, after having been placed from time to time in several species. It is mentioned here as it might be missed by some of those interested in the Micronesian flora and to record material and localities not mentioned in the original publication. The type is from Palau, Babeldaob, Ngetpang, collected by *Otobed P-10143* (US).

Other specimens are as follows, mostly named by Dr. Moldenke. They have been identified under various names, *E. sexangulare* L., *E. australe* Nees ex Kunth, *E. australe* R. Br. and *E. willdenovianum* Moldenke, but all seem probably to belong to this new variety.

CAROLINE ISLANDS: Palau: Babeldaob I., Ngetpang, *Otobed P-10143* (US, holotype); *Stone 4626* (GUAM); NE of Nekkeng, 5 m, *Canfield 339* (US); Nekkeng, *Fosberg 50606* (US); “Marikyoku [Melekiok], Kanehira, 1935, not seen; Aimeliik, Hosokawa 7228, not seen. Yap I.: s.l. *Volkens 406* (US); trail to Inuf Village, 20 m, *Cushing 431* (US), *Cushing & Cushing 356* (US); Tora village, 30 m, *Evans 283* (US).

COMMELINACEAE

Aneilema nudiflora (L.) R. Br. ex Hassk., Pl. Jav. rar. 95, 1848.

Commelina nudiflora L., Sp. Pl. 41, 1753.

Tradescantia malabarica L., Sp. Pl. ed. 2, 412, 1762.

Aneilema malabarica (L.) Merr., Phil. Jour. Sci. Bot. 7: 232, 1912.

Murdannia nudiflora (L.) Brenan, Kew Bull. 1952: 189, 1952.

The specimen cited below was determined by Dr. Robert Faden as *Murdannia nudiflora*. We will reserve judgment on his dismemberment of the genus *Aneilema* R. Br. until he produces a conspectus of the segregates that will better enable us to judge if they represent natural groups sufficiently discrete to stand as genera.

This binomial was not actually published by Robert Brown, who, in his Prodrumus, merely listed the species of *Commelina* that should be included in *Aneilema*.

CAROLINE ISLANDS: Palau: Babeldaob I., Ngaraard, *Otobed PW-10171* (US).

AMARANTHACEAE

Achyranthes aspera var. ***pubescens*** (Moq.) Townsend, Kew Bull. 29: 473, 1974.

Achyranthes fruticosa var. *pubescens* Moq. in DC., Prodr. 13(2): 314, 1849.

The specimen cited differs from the more common var. *aspera* in its sharply acute, more or less hairy leaves and long perianths, placing it in var. *pubescens* according to Townsend in the publication cited.

CAROLINE ISLANDS: Palau: Angaur I., along NW coast road, 0.6 mi. (1 km) E of Pkulangelul, 10 m, 19 Oct. 1977, *Canfield 231* (US).

SURIANACEAE

Suriana maritima L., Sp. Pl. 284, 1753.

A pantropical strand shrub, with fleshy crowded sessile linear-spatulate leaves, short axillary racemes of yellow flowers and a 5-parted pubescent capsule enclosed by bracts. It has probably been overlooked in Palau because of its vegetative similarity to *Pemphis acidula*. Five yellow petals distinguish *Suriana* from the 6-merous white-flowered *Pemphis*.

CAROLINE ISLANDS: Palau: Ngemelis Is., Dmasch (Arimasuku) I., on strand at NE corner of island, 1 m, 12 Nov. 1978, *Canfield 596* (US).

MELIACEAE

Xylocarpus moluccensis (Lam.) Roemer, Syn. Hesper. 124, 1846.

A mangrove species known from Indomalaysia and the Pacific, including Guam. However, the *Xylocarpus* well known from the Carolines is *X. granatum*. Both species are now recorded from Palau, the pointed leaf apex of *X. moluccensis*, as well as other characters, distinguishing it from *X. granatum*.

CAROLINE ISLANDS: Palau: Babeldaob I., Aimeliik Munic., along mangrove channel 0.8 mi. (1.3 km) N of Aimeliik, 3 m, 12 Jan. 1978, *Canfield 331* (US).

EUPHORBIACEAE

Euphorbia graminea Jacq. Select. Strip. Am. Hist. 151, 1763.

Native to Mexico to northern South America, this has become common on Angaur in yards and roadsides. It is a depressed spreading to suberect, green-stemmed plant with diffuse inflorescences of few long-pedicellate cyathia, each with 2–4 glands with wide white appendages. It is not at all obvious how it got to Angaur. It is not known elsewhere in the Pacific islands.

CAROLINE ISLANDS: Palau: Angaur I., occasional in roadside openings W of Lake D, 0.3 mi. (0.5 km) NE of village, 2 m, 11 Oct. 1977, *Canfield 155* (US); abundant along road NE of boat basin, 3 m, 27 Mar. 1979, *Canfield 694* (US); same loc., 22 May 1979, *Canfield 762* (US); abundant along W coast road, 0.1 mi. (0.16 km) S of boat basin, 3 m, 22 May 1979, *Canfield 764* (US); abundant along W coast road, just N of Garangaol Cove, 2 m, 22 May 1979, *Canfield 765* (US).

Melanolepis multiglandulosa (Reinw.) Reichb. f. & Zoll. var. **glabrata** (Muell.-Arg.) Fosberg, *Phytologia* 5(7): 289, 1955.

A shrubby tree distinguished by its coarsely toothed leaves and pendant inflorescences with brown stellate pubescence. It is native to Malesia and the Marianas Islands, but had not previously been collected in the Caroline Islands. It grows in secondary forest on sandy soil.

CAROLINE ISLANDS: Palau: Angaur I., occasional along W coast road S of boat basin, 3 m, 22 May 1979, *Canfield 763* (US).

TURNERACEAE

Piriqueta racemosa (Jacq.) Sweet, Hort. Brit. 154, 1826.

Turnera racemosa Jacq., Hort. Vind. 3: 49, 1777.

This was reported in Micronesica 11: 83, 1975 as *Piriqueta ovata* (Bello & Esp.) Urb., but M. M. Arbo has annotated similar material as *P. racemosa*, which it seems to be, if indeed they are satisfactorily distinct.

LYTHRACEAE

Ammannia baccifera L., Sp. Pl. 120, 1753.

Differs from the other species known from Micronesia in the lack of petals, the leaves narrowed to base, not auriculate, and the smaller fruit. This is a new record for Micronesia, and, to the best of our knowledge, from the oceanic islands of the Pacific. It is well known in eastern Asia and the neighboring continental archipelagos.

CAROLINE ISLANDS: Palau: Peliliu I., east coast, abundant weedy herb on roadside in mucky sand, 2 m, 26 Jan. 1978, *Canfield 428* (US).

MYRTACEAE

Eugenia suzukii Kaneh., Bot. Mag. Tokyo 45: 335, 1931.

A common tree with paired oblong-elliptic coriaceous leaves, white flowers, and a waxy white subglobose fruit. The tart fruit is edible, and in addition is a favorite food of the Palau Fruit Dove.

It is widespread in Palau, common on both low and raised limestone islands, in the swamp forest, lowland, and upland forests on volcanic soil, and in inhabited areas as well. Previously we have, with considerable doubt, called this *Eugenia javanica* Lam., but that seems to be a different species altogether. The present species is found on many of the Caroline Islands in the lowlands.

CAROLINE ISLANDS: Palau: Ulong (Aulong) I., dominant canopy species in open woods, central part of island, 0.1 mi. (0.16 km) E of S end of beach, 40 m, 9 Mar. 1978, *Canfield* 477 (US). Ngerchong I., common along path running E across N half of island, 5 m, 27 Aug. 1978, *Canfield* 549 (US). Angaur I., fairly common in forest along NW coast road, 0.6 mi. (0.9 km) E of Pkulangelul, 10 m, 19 Oct. 1977, *Canfield* 236 (US) "rebotel".

Melaleuca quinquenervia (Cav.) S. T. Blake, Proc. R. Soc. Queensl. 69: 76, 1958.

The tree is recognized by its white exfoliating bark, aromatic foliage, large yellowish inflorescences, and persistent fruit clustered on branches.

Native from Australia and New Caledonia to Southeast Asia, it has been introduced to Palau for timber production. While it seems to thrive on exposed volcanic clay ridges in Palau, it has not reproduced there since its introduction over five years ago. Thus it hopefully poses no threat to the native vegetation. The effect of fire on seed germination should be investigated, as this species seems to be favored by fire in New Caledonia. It has usually been known as *M. leucodendron* L., which is a different species, not known in Micronesia.

CAROLINE ISLANDS: Palau: Babeldaob I., NE Aimeliik Munic., abundant on open savanna ridge S of upper Tabagaten R., 60 m, 21 Mar. 1979, *Canfield* 687 (US).

LABIATAE

Leucas linifolia (Roth) Spreng., Syst. 2: 743, 1825.

Phlomis linifolia Roth, Nov. Pl. Sp. Ind. Or. 260–261, 1821.

Leucas lavandulifolia Smith in Rees, Cycl. 20, LEU, 1812 (nom. superfl., illegit.)

This is the name that must be used for the plant reported in No. 2 of this series (Micronesica 11: 83, 1975).

SCROPHULARIACEAE

Bacopa procumbens (Miller) Greenman, Field Columb. Mus. Bot. Ser. 2: 261, 1907.

Native to tropical America, a suberect to prostrate herb of damp places with

quadrangular stems, crenulate-serrulate elliptic leaves, yellow corolla, and two-valved capsule. It is otherwise known in Micronesia from Ponape, Truk and the Marianas.

CAROLINE ISLANDS: Palau: Peliliu I., abundant along road by fishpond 0.3 mi. (0.5 km) SSE of Mt. Amiangel, 2 m, 26 Jan. 1978, *Canfield 421* (US).

LENTIBULARIACEAE

Utricularia uliginosa Vahl, Enum. 1: 203, 1804.

A minute inconspicuous plant, a submerged aquatic rooting on basalt in running water, the leaves with oblanceolate-obovate blades, the traps to 2 mm in diameter, translucent to deep purple, the appendages translucent.

A new record for Micronesia, the species was previously known from India to Japan and Australia and from New Caledonia. It is apparently rare in Palau, the only known populations being two sterile patches 1–2 m sq., growing within 120 m of each other along the same stream. The specimens were kindly identified for us by Dr. Peter Taylor.

CAROLINE ISLANDS: Palau: Babeldaob I., Airai Munic., Ngerikil R. near jct. with Kumekumeyel R., 1.5 mi. (2.4 km) due N of airfield, 5 m, 17 Nov. 1977, *Canfield 262* (US); Airai Munic., Ngerikil R., 20 m above jct. with Kumekumeyel R., 1.5 mi. (2.4 km) N of airfield, 5 m, 5 Dec. 1978, *Canfield & Bright 599* (US).

ACANTHACEAE

Andrographis paniculata (Burman f.) Wallich ex Nees in Wallich, Pl. Asiat. Rar. 3: 116, 1832.

Justicia paniculata Burman f., Fl. Ind. 9, 1768.

Herb 2–3 dm tall with sharply quadrangular stems, obscurely scabridulous or puberulent, branching at a wide angle; leaves lanceolate, sub-acute, with abundant cystoliths, glabrous, subsessile; inflorescence open-paniculate with widely racemose branches, internodes subglabrous, nodes and pedicels hispidulous, pedicels 4–7 mm long, sepals lanceolate, united only at base, strongly glandular-pubescent, 2.5 mm long, corolla tube slender, curved, 7 mm long, slightly dilated upward, sparsely pubescent without, limb bilabiate, about 4 mm long, upper lobe oblong, emarginate, lower broader, deeply trifid; anthers included; style almost filiform, curved downward, strongly exerted, conspicuously pilose, especially just under the glabrous clavate stigma; fruit lanceolate, strongly compressed, about 16 mm long, sparsely glandular-puberulent, valves elastic, arcuate, each with 6 alternately arranged hooks bearing dull brownish thick discoid seeds that appear to have been bent upon themselves, about 1.5 mm across. (Descr. from Palau specimen).

Material from India and Jamaica indicates that the plant may reach 1 m in height with bushy habit; corollas white tinged with lavender or purplish, anthers purple.

Native of India (and Ceylon?), introduced in tropical America, especially Jamaica. This is the first record from Micronesia. The specimen was kindly identified

for us by Dr. Dieter Wasshausen.

CAROLINE ISLANDS: Palau: Koror, *Hosokawa* 7829 (A).

RUBIACEAE

Hedyotis cyanantha Kurz, Jour. As. Soc. Beng. 45(2): 136, 1876.

Hedyotis coerulea W. & A., Prodr. Fl. Pen. Ind. Or. 412, 1834, non (L.) Hook.,
Fl. Bor. Am. 1: 286, 1833.

This species, hitherto known from India and Ceylon, has turned up in Palau. It is a branched wiry little plant, with linear falcate leaves and flowers sessile or subsessile in dichotomies and in axillary clusters. The Palau plants differ somewhat in the longer hairs on the fruits and in having pink rather than blue flowers. We have not found any other similar species to which it might belong, so tentatively place it here.

CAROLINE ISLANDS: Palau: Peliliu I., abundant along roadside 1/2 mi. (0.8 km) SW of Mt. Amiangel, 2 m, 26 Jan. 1978, *Canfield* 426 (US).

Hedyotis lancifolia Schumacher, Beskr. Guin. Pl. 72, 1827.

Oldenlandia lancifolia (Schum.) DC., Prodr. 4: 425, 1830.

Hedyotis herbacea auct., non L., Sp. Pl. 102, 1753.

Oldenlandia herbacea sensu auct. plur., non (L.) Roxb., Fl. Ind. 1: 445, 1820.

A slender diffuse to ascending or semierect herb with opposite lanceolate to lanceolate leaves, flowers on solitary axillary capillary pedicels, very small, white; capsule globose, very thin-walled, persistent calyx lobes narrowly lanceolate. The Palau specimens are glabrous, while most others are minutely scabrous or puberulent. A widespread species, also known from Yap, often incorrectly called *Oldenlandia herbacea*.

CAROLINE ISLANDS: Palau: Babeldaob I., Ngerelong Munic., NE of Ngerelong School on damp volcanic clay soil, 5 m, 21 Jan. 1978, *Canfield* 399 (US). Koror I., weed in taro patches, 9 July 1978, *Otobed* PW-10133 (US).

Spermacoce assurgens Ruiz & Pavon, Fl. Per. 1:60-61, t. 92, 1798.

Spermacoce suffrutescens Jacq., Pl. Rar. Hort. C. Schoenbr. 3: 40, t. 322, 1798.

Borreria laevis, sensu auct. plur., non (Lam.) Griseb.

White-flowered weed of sandy soils, previously known in the Pacific Islands as *Borreria laevis* or *Spermacoce suffrutescens*. It is a pantropical weed, originally from tropical America.

CAROLINE ISLANDS: Palau: Ngerchong I., common along path inside strand on NW end of island, 3 m, 26 Aug. 1978, *Canfield* 539 (US). Peliliu I., abundant along road 0.5 mi. (0.8 km) SW of Mt. Amiangel, 2 m, 26 Jan. 1978, *Canfield* 425 (US). Angaur I., abundant along road just N of former phosphate drying plant, 8 m, 18 Oct. 1977, *Canfield* 181 (US).

Spermacoce latifolia Aubl., Hist. Pl. Guian. Fr. 1: 55, t. 19, 1775.

Native to South America, now becoming a prolific weed in plowed fields and burned over savanna in parts of Palau. It is distinguished by its robust habit, square

stems, tiny white flowers, and pubescence yellowish when dry.

CAROLINE ISLANDS: Palau: Babeldaob I., Airai Munic., common weed on savanna ridge along road 0.3 mi. (0.5 km) N of mangroves on Ngerikiil R., 40 m, 7 June 1979, *Canfield 774* (US); Koror I., weed in gardens in dry areas, 19 Aug. 1977, *Otobed PW-10084* (US).

Timonius timon (Spr.) Merr., Jour. Arn. Arb. 18: 131, 1937.

Erithalis timon Spreng., Pl. Min. Cog. Pugillus 1: 18, 1813.

Timonius sericeus (Desf.) K. Schum., in Schum. & Hollr., Fl. Kaiser Wilhelmsland 131, 1889.

A native of Malesia, well established on Peliliu and Angaur. In Peliliu it was said to have appeared after World War II. It is a shrub, densely sericeous except the narrow elliptic-obovate acuminate leaves which are green beneath. The calyx lobes are ovate with obtuse to rounded apex. The corolla is white, fading to purple, with reflexed lobes.

It has become common in secondary thickets, especially around openings and roadsides on coralline rubble and sandy soil. Collection labels bear the vernacular name "Liberal".

CAROLINE ISLANDS: Palau: Peliliu I., s.l. *Otobed P-10119* (US); south part near northeast end of air strip, 2–4 m, 1 Sept. 1965, *Fosberg 47638, 47639, 47640* (all US, BISH); Angaur I., N of phosphate drying plant, 8 m, 14 Oct. 1977, *Canfield 177* (US); 0.1 mi. (0.16 km) NE of phosphate drying plant, 3 m, 25 Jan. 1978, *Canfield 408* (US); N of power plant, 4 m, 27 Mar. 1979, *Canfield 695, 701* (both US); along road in NW interior, 10 m, 22 May 1979, *Canfield 752, 753* (both US).

COMPOSITAE

Youngia japonica (L.) DC., Prodr. 7: 194, 1838.

Prenanthes japonica L., Mant. 107, 1767.

This subscapose, yellow-flowered herb was previously known in Micronesia from the Marianas, but this is the first record from Palau. It was found growing as a weed in the grounds of the Agricultural Station.

CAROLINE ISLANDS: Palau: Koror, Jan. 1979, *Otobed PW-10181* (US).