

## Plants of Southeastern Polynesia. 2.<sup>1</sup>

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### Abstract

In this paper are presented critical notes and records of species of *Peperomia* (Piperaceae), *Ascarina* (Chloranthaceae), *Weinmannia* (Cunoniaceae), *Ardisia* (Myrsinaceae), *Alstonia*, *Ochrosia*, and *Neiosperma* (Apocynaceae), and *Operculina* (Convolvulaceae), from various islands in the Marquesas, Society, and Cook Archipelagoes. The following taxa are described as new: *Weinmannia parviflora* var. *myrsinites*; *Alstonia marquisensis* M. L. Grant; *Ochrosia nukuhivensis* and *O. fatuhivensis*; and *Neiosperma brownii*. Two new combinations are made under *Weinmannia parviflora*: var. *marquesana* (F. Br.); and var. *glabrata* (F. Br.).

### PIPERACEAE

*Peperomia pallida* var. *anderssonii* (Yuncker) Fosberg & Sachet, n. comb.

*Peperomia anderssonii* Yuncker, Bish. Mus. Bull. 143:50, 1937.

There seems remarkably little difference between *Peperomia anderssonii* Yuncker and *P. pallida* (Forst. f.) A. Dietr., especially *P. pallida* var. *tuamotensis* (F. Br.) Yuncker, from Niau and Anaa atolls, Makatea, Meetia, Tahiti, and the Marquesas (Uahuka). Usually *P. pallida* may be distinguished by its ciliate leaf margins, rather shorter petioles, and by its palmate rather than "subplinerved" vein arrangement, though this latter difference is a bit obscure. Varietal rank, at most, can be maintained.

Cook Islands: Rarotonga, Oneroa Motu, *Philipson 10360* (US, CHR); Avana Valley, *Philipson 10448* (US).

*P. anderssonii* was originally described from Tahiti and was, until now, only known from there.

### CHLORANTHACEAE

*Ascarina polystachya* Forst., Char. Gen. 118, tab. 59, 1776.

That *Ascarina* occurs in the Marquesas has not been unknown, heretofore, but no published account of it has come to our attention. On page 164 of *Plant-geography of the Pacific, 1971*, by van Balgooy, the genus is indicated as occurring in the Marquesas, but with no information as to source. Neither Drake nor Brown record it. The late M. L. Grant, however, had cited *Quayle 1319* (BISH and Herb.

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Brooklyn) as a new species of *Ascarina* from Nukuhiva in his card file of Polynesian plants, with the note that the specimens were determined as *Weinmannia marquesana* var. *glabrata* Brown. Brown cites this collection thus in Bish. Mus. Bull. 130:99, 1935. Quayle's collection plus that cited below from Hiva'oa, show that the genus *Ascarina* occurs on at least two islands in the Marquesas. The Sachet and Decker collection seems identical with the Tahitian *A. polystachya* and Grant's notes on the Quayle plants do not indicate significant differences, but we have not seen these specimens.

Marquesas Islands: Hiva'oa, Atuona-Feani trail, on ridge crest in dense tangled mossy growth, 1200–1300 m, *Sachet and Decker 1181* (US, P, BISH).

This shrub has obovate-obtuse punctate serrate-crenate leaves, persistent stipular sheaths, and dioecious flowers in ament-like spikes in which the flowers are reduced to single stamens and single pistils each subtended by 3 scale-like bractlets.

The distribution of the genus extends from east Malesia to New Zealand and the Marquesas.

#### CUNONIACEAE

*Weinmannia parviflora* Forst. f., Prodr. 29, 1786.

Many insular species have been described of this affinity. Their differences are trifling, indeed, and most of them should probably be regarded at best as varieties of *W. parviflora*, originally described from Tahiti.

Only the Marquesan forms will be considered here, of which three are known. It is difficult, from the material at hand, to be certain of the correct taxonomic status of these taxa. We are regarding them as varieties, even though their geographic separation is incomplete. Careful field study may eventually show that for some of them the rank of *forma* would be more appropriate. Adequate collecting on all the islands that provide wet habitats may result in some rearrangement, possibly recognizing more entities.

Bernardi, Bot. Jahrb. 83:185–186, 193, 1964, maintains *W. marquesana* Brown as a separate species. He distinguishes the Marquesan plants as having leaves petiolate vs. sessile, and capsules 8–10 mm long vs. 3–5 mm. However, his Tab. 39, a reproduction of Parkinson's illustration of *W. parviflora*, certainly drawn from a Tahitian specimen, has the leaves fully as petiolate as the Marquesas plants. The five Tahiti collections of this species in the U.S. National Herbarium, *Sachet & Maclet 1000* and *1009*, *U.S. Expl. Exped., s.n.*, *Whitney Exped., 607*, and *Setchell & Parks 527*, the last three duplicates of ones cited by Bernardi, all have petioles 5–10 or more mm long. Our material from the Marquesas mostly does not have mature capsules, but those that are mature do not exceed 5–6 mm in length. No notes were made of the length of capsules on material examined elsewhere.

The three varieties distinguished in the Marquesas differ mostly in pubescence, leaf size, length of racemes, and growth habit.

*Weinmannia parviflora* var. *marquesana* (F. Br.) Fosberg, n. comb.

*Weinmannia marquesana* F. Br., Bish. Mus. Bull. 130:99, 1935.

*Weinmannia marquesana* var. *typica* F. Br. 1. c.

Shrub or small tree, branchlets pubescent, not glabrate, leaves simple, elliptic, acuminate, 5–10 cm long, margins serrate-crenate, midrib slightly strigose beneath, stipules somewhat pointed (in no. 123), racemes 4–12 cm (4–6 cm in our material) long, pubescent, calyx somewhat pubescent, petals broadly oblong to somewhat obovate, ovary densely appressed hirsute, fruit described as 8–10 mm long, material we have seen has them only to 5 mm.

Marquesas Islands: s. 1. [Nukuhiva?], *Herb. S.F.I.M. 123* (P); Hiva'oa, Puamau, along Puamau-Atuona trail, 500–650 m, *Decker 1189a* (US, P).

Brown reports this variety from Nukuhiva, Uahuka and Uapou. Bernardi lists these islands, as well as Hiva'oa, Fatuhiva, and "Mohoi," but the latter is a vernacular name for the plant, not an island. As he does not distinguish var. *glabrata* and mentions only the specimens cited by Brown for these islands, his records may not be accurate.

***Weinmannia parviflora* var. *glabrata* (F. Br.) Fosberg, n. comb.**

*Weinmannia marquesana* var. *glabrata* F. Br., Bish. Mus. Bull. 130:99, 1935.

Shrub or tree; very thinly appressed pubescent, glabrate, leaves simple, elliptic, 3.5–7 cm long; racemes to 8–9 cm (fruiting); flowers almost glabrous, petals broadly oblong, ovaries very sparsely appressed hispid; fruits glabrous, 5 mm long.

Marquesas Islands: Hiva'oa, Puamau, along Puamau-Atuona trail, 500–650 m, *Decker 1189* (US, P, BISH); *Henry* in 1919 (P).

Brown also lists this variety from Nukuhiva and Fatuhiva but the Nukuhiva record is based on *Quayle 1319*, an erroneously determined specimen of *Ascarina polystachya* (see above). Bernardi, loc. cit. p. 193, dismisses this variety as of no significance because one of Brown's own specimens of it has pubescent leaves. However, the fact that it very clearly shows up in a later collection suggests that it may have more than casual interest.

***Weinmannia parviflora* var. *myrsinites* Fosberg and Sacht, n. var.**

*Arbuscula, ramulis strigosis, foliis simplicibus ellipticis 1–2.5 raro 3.5 cm longis 0.7–1.6 cm latis acuminatis brevipetiolatis, racemis strigosis maxime 3 cm longis, sepalis vix strigosis, ovariis strigosis, capsulis subglabris.*

Shrub with strigose branchlets; leaves simple, blades elliptic to broadly elliptic, glabrous, acuminate, 1–2.5 rarely 3.5 cm long 0.7–1.6 cm wide, margin bluntly glandular-serrate, petiole distinct but at most 3 mm long, racemes up to 3 cm long, rachis strigose, flowers very shortly (1 mm) pedicellate, calyx divided 3/4 to base, somewhat strigose especially below, ovaries strigose, capsule subglabrous, 4–5 mm long.

Marquesas Islands: Hiva'oa, Atuona-Feani trail, on exposed windswept slope at crest of ridge, common in scrub, 1200–1300 m, *Sacht & Decker 1155* (US, type, P, BISH, NY, L, K).

A similar specimen, probably collected in the Marquesas (as the Marquesan name, "ataa", appears on the label) probably by *LeBatard*, No. 39 (P, US) differs

in narrower acute rather than acuminate leaves and pedicels up to 2 mm long.

This variety is strikingly different in appearance, but needs to be studied as a population. Population analyses of all the Marquesan varieties are much to be desired.

#### MYRSINACEAE

*Ardisia elliptica* Thunb., Nov. Gen. 8:119, 1795.

*A. humilis* sensu Mez, Pflr. 236:127, 1902, non Vahl, 1794.

This has been reported previously by Wilder, Bish. Mus. Bull. 86:86, 1931, from Rarotonga, also by others from Raiatea, Samoa and farther west, mostly as *A. humilis* Vahl or *A. squamulosa* Presl, which is probably the same. It is native from Ceylon to the Philippines and Taiwan, and cultivated and escaped eastward in the Pacific to Rarotonga and Hawaii (Degener, Fl. Haw. 290 A.E. 4/14/39). The Stoddart collection is from apparently spontaneous plants in natural vegetation not much above sea level.

Cook Islands: Rarotonga, Motutapu, Ngatangia Harbour, *Stoddart 2142* (US).

#### APOCYNACEAE

*Alstonia marquisensis* M. L. Grant, n. sp.

"*A. costata* sensu F. Brown, Bish. Mus. Bull. 130:233, 1935, non R. Br. 1809.

"*Ad A. costatam affinis sed foliis obtusiusculis parum acuminatis, petiolis 4 (2-8) cm longis, juvenilibus subtus subfuscis; stylo 2.5 mm longo (fide F. Brown); folliculis 4-5 mm latis; seminibus 7-9 mm longis bicaudatis, cauda infera 1 mm longa supera 2-3 mm longa.*

"For a fuller description see F. Brown (1935). Differs from *A. costata* in the obtuse to acute or only slightly acuminate broad leaves, which become longer-petioled, the brownish color of the under-surface of the young leaves, the slightly broader follicles, and the larger seeds with longer appendages. The inferior (proximal) appendage may be irregularly forked or divided into three. A small tree to 2 m. Blades elliptic, 9-13 × 3.5-7.5 cm, with 13-20 lateral nerves, glabrous or with scattered hairs on the veins below. Corolla 11-13 mm long, with lobes about 6 mm long, obtuse to somewhat acute. Follicles 19-29 cm long.

"Brown says, 'style 2.5 mm in length, terminating in an obconical stigma.' I have seen the only two flowering specimens that were available to Brown but must confess that I did not notice this point. Possibly his measurement of the style included the stigma or the ovary or both, but, if not, this long style must be a striking feature of the species. The only flower measurements I have (corolla and calyx) are identical with those of *A. costata*, but in *A. costata* the ovary is about 1 mm long, the style 0.8 mm, and the stigma (ovoid-conical rather than obconical) 0.5-0.6 mm long.

"*Mumford and Adamson 140* is the small-leaved form of higher altitudes, a parallel type being found in *A. costata* and in other species of the genus."

Marquesas Islands: s. l., in 1918, *Henry 6* (P).

Hiva'oa: "hauts plateaux," *Henry* in 1919 (P); Atuona-Feani trail, crest of ridge, 1200–1300 m, *Sachet and Decker 1174* (US, BISH, P); Feani, 900 m, Dec. 21, 1921, *Brown 879* (BISH, type); route de Hanamenu, 600 m, *Henry* in 1922 (P); north side of Mt. Temetiu, *Mumford and Adamson 140* (BISH); *Adamson and Mumford 146* (UC); Atuona Valley, 1100 m, *Pacific Entomological Survey Ex 140* (BISH). Teihuonanui, 3400', *Adamson and Mumford 498* (NY).

Nukuhiva: western side, interfluvium above Uea Valley, near Baie Marquisienne, 150–200 m, *Decker 2046* (US, P, BISH), (leaves lanc-elliptic, inflorescence full but loose); *Tovii, Quayle 1338* (BISH).

Uahuka: s. 1., *Quayle 1753* (BISH), *1836* (BISH).

This species was described in a footnote in Grant's manuscript Flora of the Society Islands: Sympetalae Part 1. It is more appropriately published here, as it does not occur in the Society Islands.

Monachino in his revision (Pac. Sci. 3:174–175, 1949) was aware of this plant and that it differs from *A. costata*, but preferred to include it in that species, to which he gave a wide range including Rarotonga, Society Islands, and Marquesas.

*Ochrosia tahitensis* Lanessan ex Pichon, Bull. Mus. d'Hist. Nat. Paris II, 19:207, 1947.

This name was originally published as a nomen nudum by Lanessan, Pl. Utiles Col. Franç. 865, 1886. It was barely validated by Pichon, who provided a brief and inadequate characterization of it in his key. No type was designated by Pichon, nor did he cite any specimens, so his brief characterization must be considered the type. Lanessan, l. c., gives the Tahitian name "tamoramoua." The following description is based on all material that we have been able to locate.

Glabrous; leaves usually in whorls of 3 (rarely 2 or 4), petioles 1 cm or less long, blades lanceolate, up to 2.8 cm wide, 21 cm long, usually smaller, veins many, indistinct above, clearly visible but not prominent beneath, very widely diverging, almost perpendicular to midrib, 0.5–1 mm apart, somewhat anastomosing by obscure network of connecting veinlets, apex acuminate, marginal vein very close to margin, usually hidden by closely revolute margin; inflorescences axillary, very minutely puberulent, slender, 2–9 cm long, peduncle to 4 (or 7) cm long, loosely several times trichotomous with terminal very shortly pedicellate flowers, with one or two branches, one of the two often abortive or reduced to a single flower, internodes short, to 1 cm long, with scale-like ovate, somewhat carinate bracts, ramifications up to 4 or 5 (or 6?), but these mostly with branch abortive, resulting in a somewhat zig-zag rachis with very few flowers; sepals triangular-ovate, bluntly acute, puberulent, 1.5–2 mm long, one open corolla available, tube about 1 mm wide, at least 5 mm long, lobes narrowly oblong, 7 mm long, 2 mm wide, apex rounded, buds blunt; fruit somewhat obovoid, dorsiventrally somewhat compressed, sides scarcely carinate, 2 (or 2.8) cm long, 1–1.2 (or 1.4) cm wide; 0.8–1 cm thick, apex obtuse, sometimes slightly beaked, endocarp smooth, but with large cavities on sides toward apex.

Society Islands: Tahiti, s. 1. *Banks & Solander* (BM); *Nelson* (BM); *Bertero & Moerenhout* in 1831 (K, P); *Webb* (K); *Nadeaud* 366 (P, 5 sheets); *Nadeaud* s.n. (P, 5 sheets); Teoa, 800 à 1100 mètres, *Nadeaud* in 1857 (P); "Sur les flancs des ravins secs et pierreux Pinae, Ahouu, Pirae, etc.", *Nadeaud* in 1858 (P); "Mont.-Fataua" 7-800 m, *Lépine* 187 (P). Specimens variously determined as *Alyxia*, *Ochrosia ackeringae*, *O. parviflora*, etc.

***Ochrosia nukuhivensis* Fosberg and Sachet, n. sp.**

*Arbor glabra, foliis ellipticis petiolatis, cymis tri-ramosis, flore in alabastro 7 mm longo, sepalis obtusissimis vix 1 mm, latioribus quam longioribus, corollae tubo 5 mm longo, lobis 2 mm vix sinistrorsis.*

Glabrous tree; leaves in whorls of 3, blades 5×15 cm, elliptic tapering to both ends, veins visible on both surfaces, widely divergent, about 5 mm apart with an anastomosing network between, petiole 3 cm long; cymes to 2.5 cm long, loosely branched about 3 times; in bud only, sepals less than 1 mm high, very obtuse, wider than high, corolla 7 mm long with tube 5 mm, lobes 2 mm, slightly twisted to left.

Marquesas Islands: Nukuhiva, Mauu, 1000 m, *Brown* 432 (BISH, type).

This somewhat resembles *O. tahitensis* but has much broader leaves, smaller differently shaped sepals, and longer corolla lobes. The material is poor, but the plant does not match any known species. It was part of the basis for Brown's report, from the Marquesas, of *O. parviflora* (Forst.) Henslow a synonym of *Neiosperma oppositifolia*, with which the present species has nothing in common. This and the following species should be searched for by future collectors as they are very poorly known.

***Ochrosia fatuhivensis* Fosberg and Sachet, n. sp.**

*Arbor glabra, foliis oblongo-ellipticis, valde acuminatis, cymis ternatis terminalibus axillaribusque, bis-trichotomis, floribus congestis glomeratisque, sepalis ovatis obtusis 2 mm longis, corollis in alabastro acutis valde sinistrorsis.*

Glabrous tree 10 m tall, leaves whorled, oblong-elliptic, 3.5×7.5 cm, sharply acuminate, veins visible above, about 14-15 pairs, with weaker ones and network between; cymes terminal in 3's and in upper axils, 2-3 cm long, twice trichotomous, flowers crowded or glomerate, sepals imbricate, ovate, obtuse, about 2 mm long, unopened buds cylindrical, pointed, very strongly contorted to left.

Marquesas Islands: Fatuhiva, Oia, 800 m, *Brown* 886 (BISH, type).

This specimen was also part of the basis for Brown's report of *O. parviflora*. The material is inadequate, but the plant may be related to *O. compta* K. Schum. of Hawaii.

***Neiosperma* Raf., Sylva Tellur. 162, 1838.**

*Lactaria* Rumph. ex Raf., l. c.

*Ochrosia*, sect. *Echinocaryon* F. Muell., *Fragm. Phyt. Austr.* 7:130, 1871.

*Pseudochrosia* Bl., *Mus. Lugd. Bot.* 1:158, 1850.

***Neiosperma oppositifolia* (Lam.) Fosberg and Sachet, n. comb.**

*Cerbera oppositifolia* Lam., *Encycl.* 1:62, 1783.

*Cerbera parviflora* Forst. f., *Prodr.* 19, 1786.

*Ochrosia parviflora* (Forst. f.) G. Don, Gen. Hist. 4:99, 1838.

*Ochrosia oppositifolia* (Lam.) K. Schum. in E. & P., Nat. Pfl. 4(2):156, 1895.

We have a detailed consideration of *Ochrosia* and *Neiosperma* in preparation, but publish this combination here in order to validate determinations put on specimens in various herbaria. The species is a common, widespread strand and lowland plant from the Seychelles to Polynesia and north to the Marianas.

The report of *Ochrosia parviflora* (Forst.) G. Don from the Marquesas by Brown (Bish. Mus. Bull. 130:232, 1935) must be discounted, as his material was composed of *Ochrosia fatuhivensis*, *O. nukuhivensis*, and *Neiosperma brownii* (see below).

***Neiosperma brownii*** Fosberg and Sachet, n. sp.

*Arbor glabra, foliis oppositis et verticillatis, obovatis obtusis cuneatis marginibus revolutis, cymis ternatis ter-trichotomis, drupis teretibus rubris endocarpo fibroso-spinoso.*

Glabrous tree 10 m tall; leaves opposite and in whorls of 3, obovate-cuneate, obtuse, 5.5 × 14.5 cm, margins tightly revolute, veins prominent beneath, visible above, 17 pairs, 6–10 mm apart, with a weaker vein and an inconspicuous network between each two, petiole to 3 cm long; young cymes terminal (or, more accurately, in axils of terminal whorl of leaves), 7 cm long, loosely 3 times trichotomous, scale-like bracts very reduced; only very young buds available; fruit (only part of one available) terete, 22–24 mm thick, possibly 4 cm long, flesh red (acc. label), endocarp strongly fibrous-spinose.

Marquesas Islands: Nukuhiva, 900 m, *Brown 541* (BISH, type).

Named for F. B. H. Brown, collector of the type and author of the "Flora of Southeastern Polynesia."

## CONVOLVULACEAE

***Operculina turpethum*** (L.) Manso, Enum. Subst. Braz. 16, 1836.

This is apparently not previously recorded from the Marquesas, though it is known from the Society Islands. The Thouars specimen is a duplicate kindly presented by the Laboratoire de Phanérogamie, Paris.

The stems of both these specimens are terete with scarcely a trace of ridges, let alone wings, as are found on some Western Pacific specimens. The leaves are elongate triangular, slightly hastate. The peduncle has one flower and is jointed about 2 cm below the summit; the bracts are almost obsolete, calyx lobes large, obtuse, and the corolla broadly funnel-form campanulate.

Marquesas Islands: s. l., *Dupetit-Thouars 20* (US); Nuka-Hiva: *Henry 57* (P)./