

A Translation of the Keys in the *Flora Micronesica* (1933) of Ryozo Kanehira

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THE STANDARD BOOK on the botany of Micronesia is R. Kanehira's *Flora Micronesica* (1933). This was based on much new field work, careful study, and is a complete and profusely illustrated flora. Its usefulness to most botanists, however, is limited by the fact that it is printed wholly in Japanese characters. The writer has slowly and laboriously translated into English Kanehira's keys, all of which lead from the genera down to the species. It is a free translation, as a literal one would in places be unintelligible. In a few instances Kanehira's phrases are given in quotation marks and the translator's preferred version is given after it in brackets. Though inconsistent, the capitalization and spelling of the specific epithets follows that used by Kanehira (except for *Gymnosporia palanica*). Unfortunately it has been impossible to ask the collaboration of Kanehira, as he died in 1948.

The following translation is offered to the botanical public with confidence that it will supply a genuine need.

Page 59 PANDANUS

- (1)1. Fruit borne in clusters..... (2)
- 2. Fruit borne singly..... (4)
- (2)1. Fruit ellipsoid, less than 6 cm. in diameter..... (3)

- 2. Fruit globose, more than 8 cm. in diameter..... **P. Kanehirae**
- (3)1. Fruit [cluster] flame-shaped, wrapped in leaf sheath [bracts]; small fruit [phalange] not conspicuously angled..... **P. aimiriikensis**
- 2. Fruit "spiral" [or cone- or shell-shaped], attached in a cluster, not enclosed in bracts; phalange with conspicuous angles..... **P. macrojeanneretia**
- (4)1. Phalange with one seed..... (5)
- 2. Phalange many seeded..... (6)
- (5)1. Fruit globose, the diameter 30 cm....
 **P. dubius**
- 2. Fruit ellipsoid, scarlet when ripe, the diameter 13 cm..... **P. patina**
- (6)1. Phalange with summit jagged, the tips sharp pointed..... **P. duriocarpus**
- 2. Phalange with summit jagged, the tips not sharp pointed..... (7)
- (7)1. Phalange obconic, having 2-4 seeds, the summit not conspicuously jagged..... **P. kafu**
- 2. Phalanges numerous, 8-11-seeded, obovoid, the summit jagged.....
 **P. sinensis**

Page 88 FICUS

- (1)1. Flowers hidden in bottom of fruit by stipule-like scales..... (2)
- 2. Flowers hidden in bottom of fruit but without stipule-like scales..... (3)

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- (2)1. Leaves long elliptic... **F. carolinensis**
- 2. Leaves elliptic, the apex emarginate...
..... **F. retusa**
- (3)1. Leaves cordate at base..... (4)
- 2. Leaves not cordate at base..... (5)
- (4)1. Creeping vine; leaf venation pinnate,
not palmately 3-veined from the base
..... **F. ramentacea**
- 2. Tall tree; leaves pinnately veined but
at base palmately 3-veined.....
..... **F. Senffiana**
- (5)1. Leaves ovate, at base rounded but
asymmetric..... **F. tinctoria**
- 2. Leaves broadly or narrowly elliptic...
..... **F. philippinensis**

Page 93 LAPORTEA

- (1)1. Leaves elongate perfect elliptic, 30 cm.
long..... **L. kusaiana**
- 2. Leaves ovate, 18 cm. long.....
..... **L. saipanensis**

Page 97 LORANTHUS

- (1)1. Leaves broad elliptic, gradually pointed,
hairy, 12 cm. long... **L. caudatifolius**
- 2. Leaves from oblong to ovate, 8 cm.
long..... **L. ponapensis**

Page 98 PISONIA

- (1)1. Leaf obovate or long elliptic; inflores-
cence glabrous; fruit linear, 6 cm. long,
slippery, even..... **P. umbellifera**
- 2. Leaf ovate; inflorescence brown pu-
bescent; fruit 1-1.5 cm. long, lunate,
with the outer surface prickly.....
..... **P. grandis**

Page 109 HORSFIELDIA

- (1)1. Leaves chartaceous, lance-oblong, more
than 25-30 cm. long; fruit globose. (2)
- 2. Leaves coriaceous, oblong-lanceolate,
18 cm. long; fruit ellipsoid.....
..... **H. palauensis**
- (2)1. Fruit 1.5-1.8 cm. in diameter. **H. nunu**
- 2. Fruit 3-3.5 cm. in diameter.....
..... **H. amklaal**

Page 117 CINNAMOMUM

- (1)1. Leaves having petioles..... (2)
- 2. Leaves sessile..... **C. sessilifolium**
- (2)1. Leaves ovate, the apex acuminate....
..... **C. carolinense**
- 2. Leaves long elliptic-ovate, acute.....
..... **C. carolinense var. oblongum**

Page 124 PITTOSPORUM

- (1)1. Leaves "oblong" [= lanceolate], 16 cm.
long; flowers 11 mm. long; ovary
hairy..... **P. ponapense**
- 2. Leaves lanceolate, 10 cm. long; flowers
8 mm. long; ovary glabrous.....
..... **P. kusaense**

Page 127 PARINARIUM

- (1)1. Leaves long elliptic, 10-15 cm. long;
fruit 5-10 cm. in diameter.....
..... **P. glaberrimum**
- 2. Leaves ovate or elongate ovate, 8-11
cm. long; fruit 1.5 cm. in diameter...
..... **P. palauense**

Page 133 CYNOMETRA

- (1)1. Leaflets 5-8 cm. long; petals 7 mm.
long; outer surface of fruit wrinkled..
..... **C. carolinensis**
- 2. Leaflets as much as 11 cm. in length;
petals 11 mm. long; surface of fruit not
wrinkled..... **C. Yokotai**

Page 148 SERIANTHES

- (1)1. Leaflets 12 mm. long, 5 mm. wide;
corolla tube 2 cm. long; pod 15 cm.
long, 5 cm. wide..... **S. grandiflora**
- 2. Leaflets 5 mm. long, 2 mm. wide;
corolla tube 12 cm. long; pod 12 cm.
long, 2.5 cm. wide..... **S. Nelsonii**

Page 151 EVODIA

- (1)1. Leaflets less than 7-9 cm. long.....
..... **E. nitida**
- 2. Leaflets more than 10 cm. long... (2)
- (2)1. Flowers 6 mm. long; calyx lobes 1.5
mm. long..... **E. palawensis**

2. Flowers 1.5 cm. long; calyx lobes 7 mm. long. **E. trichantha**

Page 161 **AGLAIA**

- (1)1. Shrubs; leaflets elongate obovate-elliptic, 2.5 cm. long; lateral veins 16 on a side. **A. palauensis**
 2. Small trees; leaflets lance-oblong or broadly lanceolate, less than 20 cm. long; lateral veins 13 or less on a side (2)
 (2)1. Leaf elliptic; branches of inflorescence many; calyx lobes acute; fruit elliptic-orbicular. **A. mariannensis**
 2. Leaf lance-oblong or broadly lanceolate; branches of inflorescence few; calyx lobes obtuse; fruit long obovoid **A. ponapensis**

Page 170 **CLEISTANTHUS**

- (1)1. Leaves 6-13 cm. long; fruiting capsule 8-15 mm. long. (2)
 2. Leaves 15-22 cm. long; fruiting capsule 5 mm. long. **C. Morii**
 (2)1. Lower surface of leaf brown; edges of the capsule rounded. **C. carolinensis**
 2. Lower surface of leaf grayish white; edges of capsule ridged. **C. angularis**

Page 177 **MACARANGA**

- (1)1. Leaves chartaceous, "ovate" [=round], 20 cm. long. **M. carolinensis**
 2. Leaves coriaceous, round, 30 cm. long **M. Thompsonii**

Page 182 **BUCHANANIA**

- (1)1. Leaves elongate obovate, 10-15 cm. long, 6-8 cm. wide; fruit 1 cm. in diameter. **B. palawensis**
 2. Leaves broadly obovate, 15-22 cm. long, 7-12 cm. wide; fruit 1.5 cm. in diameter. **B. Engleriana**

Page 187 **SEMECARPUS**

- (1)1. Leaves oblanceolate, 100 cm. long; fruit reniform, 3 cm. long.
 **S. Kraemeri**

2. Leaves "lanceolate" [=narrowly oblanceolate], 40 cm. long; fruit globose, 2 cm. long. **S. venenosa**

Page 192 **GYMNOSPORIA**

- (1)1. Leaves broad ovate, the apex rounded **G. palauica**
 2. Leaves ovate, the apex subobtus. **G. Thompsonii**

Page 201 **ALLOPHYLLUS**

- (1)1. Small trees; leaflets elliptic, less than 4.5 cm. wide, the margin entire.
 **A. holophyllus**
 2. Shrubs, trees, or vines; leaflets ovate, more than 6 cm. wide, the margins coarsely serrate. (2)
 (2)1. Spike longer than the leaves, few branched. **A. ternatus**
 2. Spike shorter than the leaves, many branched. **A. timorensis**

Page 209 **Elaeocarpus**

- (1)1. Leaves ovate or elliptic. (2)
 2. Leaves lanceolate. (3)
 (2)1. Leaves obovate or elliptic; fruit elliptic, more than 3 cm. in length. (4)
 2. Leaves ovate; fruit less than 1.5 cm. in length. (5)
 (3)1. Fruit elliptic, 2.5 cm. long.
 **E. carolinensis**
 2. Fruit globose, 1.5 cm. long. **E. joga**
 (4)1. Leaf base obtuse; fruit 4.5 cm. long.
 **E. kusaiensis**
 2. Leaf base acute; fruit 3 cm. long.
 **E. rubidus**
 (5)1. Leaves elliptic, 6-8 cm. long.
 **E. Kerstingianus**
 2. Leaves ovate, 10-13 cm. long.
 **E. Kusanoi**

Page 219 **TRICHOSPERMUM**

- (1)1. Branchlets stellate pubescent; leaves long ovate, 15 cm. long, lateral veins 6-7 on a side; flowers 2 cm. in diameter **T. Ikutai**

2. Branchlets glabrous; leaves long elliptic, 10 cm. long, lateral veins 4–5 on a side; flowers 1 cm. in diameter.
 **T. Ledermannii**

Page 228 HERITIERA

- (1)1. Leaves long elliptic; petioles 2 cm. long; fruit skin thin. . . . **H. littoralis**
 2. Leaves water-chestnut-shaped; petioles 4–6 cm. long; fruit skin thick.
 **H. longipetiolata**

Page 233 CALOPHYLLUM

- (1)1. Leaves 6–7 cm. long; fruit ellipsoid, 6–7 mm. long. **C. cholobtaches**
 2. Leaves 10–15 cm. long; fruit globose, 3 cm. in diameter. . . . **C. Inophyllum**

Page 235 GARCINIA

- (1)1. Fruit globose, 3–4 cm. in diameter.
 **G. Matudai**
 2. Fruit obovoid or long ellipsoid, less than 2 cm. in diameter. (2)
 (2)1. Fruit long obovoid, 2 cm. in diameter, 3 cm. long. **G. rumiyo**
 2. Fruit ellipsoid, 2 cm. long. (3)
 (3)1. Leaves 7–8 cm. long, almost sessile.
 **G. ponapensis**
 2. Leaves 12 cm. long; petioles 10–12 mm. long. **G. trukensis**

Page 241 PENTAPHALANGIUM

- (1)1. Leaves 20 cm. long; flowers 20 mm. in diameter; fruit 2 cm. long.
 **P. carolinense**
 2. Leaves 15 cm. long; flowers 10 mm. in diameter; fruit 5 cm. long.
 **P. Volkensii**

Page 248 THYMELAEACEAE

- (1)1. Leaves 15–20 cm. long, 7–8 cm. wide; corolla tube white, 15 mm. long.
 **Phaleria Cumingii**
 2. Leaves 12–17 cm. long, 5–6 cm. wide; corolla tube golden yellow, 24 mm. long. **Wikstroemia elliptica**

Page 252 BARRINGTONIA

- (1)1. Leaves obovate or long elliptic, 40 cm. long, 15–20 cm. wide; fruit 4-angled, the 4 sides of the body 10 cm. long.
 **B. asiatica**
 2. Leaves long elliptic or oblanceolate, 30 cm. long, as much as 6–10 cm. wide; fruit long ellipsoid, 5–6 cm. long.
 **B. racemosa**

Page 257 RHIZOPHORA

- (1)1. Leaves "lance-oblong" [=narrowly elliptic]; flowers twinned, sessile [on the peduncle]. **R. apiculata**
 2. Leaves elliptic; flowers mostly pedicelled in short cymes. . . **R. mucronata**

Page 262 TERMINALIA

- (1)1. Leaves long elliptic-obovate, as much as 50 cm. long; fruit ellipsoid, acute at both ends. **T. carolinensis**
 2. Leaves obovate, 30 cm. long; fruit ellipsoid, flattened. **T. Catappa**

Page 265 DECASPERMUM

- (1)1. Leaves glabrous, oblong.
 **D. fruticosum**
 2. Branchlets, petioles, and midrib of sepals silvery white hairy; leaves lanceolate. **D. Raymundi**

Page 267 EUGENIA

- (1)1. Leaf base cordate. (2)
 2. Leaf base not cordate. (6)
 (2)1. Leaf ovate. (3)
 2. Leaf long elliptic. (4)
 (3)1. Flowers in terminal corymbs.
 **E. Suzukii**
 2. Flowers in axillary cymes. **E. javanica**
 (4)1. Leaves 15–30 cm. long. (5)
 2. Leaves 8–14 cm. long.
 **E. Thompsonii**
 (5)1. Small twigs 4-angled and -winged.
 **E. stelechanthoides**
 2. Small twigs terete, wingless.
 **E. stelechantha**

- (6)1. Leaves less than 8 cm. long. (7)
 2. Leaves more than 10 cm. long. (8)
 (7)1. Leaves long elliptic, acute at both ends
 **E. palumbis**
 2. Leaves elliptic or obovate. (9)
 (8)1. Leaves more than 15 cm. long.
 **E. malaccensis**
 2. Leaves less than 12 cm. long. (10)
 (9)1. Leaves elliptic; flowers mostly single
 in the axils. **E. Reinwardtiana**
 2. Leaves obovate, obtuse; flowers in ter-
 minal cymes. **E. palauensis**
 (10)1. Leaves pinnately veined.
 **E. carolinensis**
 2. Leaves parallel veined. **E. cumini**

Page 278 **ASTRONIA**

- (1)1. Leaves long elliptic; inflorescence pen-
 dent. **A. ponapensis**
 2. Leaves elliptic; inflorescence erect. (2)
 (2)1. Leaf tip rounded [apiculate]; inflores-
 cence a panicle; petals milky white. . .
 **A. palauensis**
 2. Leaf tip acuminate; inflorescence a
 cyme; petals yellow. **A. carolinensis**

Page 282 **MEDINILLA**

- (1)1. Vine; leaves long elliptic.
 **M. Blumeana**
 2. Small shrub; leaves large, ovate, size
 irregular. **M. diversifolia**

Page 292 **POLYSCIAS**

- (1)1. Leaflets entire; inflorescence a panicle;
 fruit flat, round. **P. grandifolia**
 2. Leaflets pubescent, coarsely serrate;
 inflorescence of compound cymes;
 fruit ovoid. **P. subcapitata**

Page 294 **SCHEFFLERA**

- (1)1. Small trees; flowers erect, in "spikes"
 [=racemose umbellets]. **S. pachyclada**
 2. Vines; flowers in cymes. **S. odorata**

Page 298 **DISCOCALYX**

- (1)1. Leaves 25-35 cm. long. **D. ponapensis**
 2. Leaves 15-25 cm. long. **D. megacarpa**

Page 299 **MAESA**

- (1)1. Leaves round or elliptic.
 **M. palauensis**
 2. Leaves obovate. **M. carolinensis**

Page 300 **RAPANEA**

- (1)1. Leaves 5-11 cm. long.
 **R. carolinensis**
 2. Leaves 12-16 cm. long. **R. palauensis**

Page 307 **SIDEROXYLON**

- (1)1. Leaves 8-12 cm. long; seed 1.
 **S. glomeratum**
 2. Leaves 15-21 cm. long; seeds 2-3. . . .
 **S. micronesicum**

Page 313 **COUTHOVIA**

- (1)1. Leaves broad ovate, the base obtuse;
 lateral veins 6 to a side; fruit fusiform
 **C. calophylla**
 2. Leaves obovate, the base cuneate; lat-
 eral veins 9 to a side; fruit ellipsoid. .
 **C. toua**

Page 316 **FAGRAEA**

- (1)1. Fruit ellipsoid. **F. ksidi**
 2. Fruit globose. (2)
 (2)1. Leaves elliptic, obtuse, petioled. . . .
 **F. sair**
 2. Leaves obovate, obtuse, subsessile. . .
 **F. galilai**

Page 319 **GENIOSTOMA**

- (1)1. Leaves sessile. **G. sessile**
 2. Leaves petioled. (2)
 (2)1. Ultimate branches of inflorescence
 densely pubescent. (3)
 2. Ultimate branches of inflorescence
 glabrous. (4)
 (3)1. Leaves 4-6 cm. long; calyx lobes acute,
 3-angled. **G. Hoeferi**
 2. Leaves 6-8 cm. long; calyx lobes ob-
 tuse, 3-angled. **G. micranthum**
 (4)1. Leaves long ovate, acute. **G. kusaiense**
 2. Leaves lanceolate, subacuminate. . . .
 **G. stenurum**

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ALYXIA

- (1)1. Leaves opposite, 4.5 cm. long; fruit 10 mm. long, 6 mm. in diameter.
 **A. palauensis**
 2. Leaves whorled, 4–6 cm. long; fruit 13 mm. long, 8 mm. in diameter.
 **A. Torresiana**

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CERBERA

- (1)1. Inflorescence a corymb; corolla scarlet, 1.5 cm. in diameter. **C. floribunda**
 2. Inflorescence a cyme; corolla white, 3 cm. in diameter. (2)
 (2)1. Calyx lobes long elliptic; corolla lobes asymmetric, 3-angled. **C. dilatata**
 2. Calyx lobes shallow; corolla lobes obovate. **C. Manghas**

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RAUWOLFIA

- (1)1. Leaves elliptic; inflorescence longer than the leaves; flowers few.
 **R. laxiflora**
 2. Leaves lanceolate; inflorescence short; flowers many. **R. insularis**

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GMELINA

- (1)1. Scandent shrub; leaves elliptic, 10 cm. long. **G. elliptica**
 2. Tall trees; leaves obovate or broad elliptic, 10–15 cm. long.
 **G. palawensis**

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PREMNA

- (1)1. Small shrub; leaves cordate, 8–12 cm. long. **P. angustiflora**
 2. Small tree; leaves elliptic, 10–12 cm. long. **P. gaudichaudii**

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VITEX

- (1)1. Shrubs. **V. trifolia**
 2. Tall trees. (2)
 (2)1. Leaves simple. **V. cofassus**
 2. Leaves of 5 leaflets. **V. glabrata**

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CYRTANDRA

- (1)1. Vines. **C. palawensis**
 2. Small shrubs. (2)

- (2)1. Leaves long elliptic; petiole 7 cm. long; calyx lobes two, 3-angled.
 **C. tôdaiensis**

2. Leaves ovate or rhombic-elliptic; petiole less than 5 cm. long; calyx lobes 4, lanceolate. (3)
 (3)1. Leaves rhombic; calyx lobes 11 mm. long, the outer surface pubescent.
 **C. ponapensis**
 2. Leaves ovate-elliptic; calyx lobes 18 mm. long, glabrous. **C. Urvillei**

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BIKKIA

- (1)1. Corolla lobes acute, as long as broad; calyx lobes linear. **B. palauensis**
 2. Corolla lobes obtuse, shorter than wide; calyx lobes with three pointed prongs. **B. mariannensis**

Page 360

IXORA

- (1)1. Flowers 2–3, terminal. **I. triantha**
 2. Inflorescence umbellate, ball-like, or a compact tassel. (2)
 (2)1. Inflorescence ball-like, usually compact. **I. confertiflora**
 2. Inflorescence an umbel, usually elongate. (3)
 (3)1. Leaves long elliptic, as much as 25 cm. in length. **I. pulcherrima**
 2. Leaves lanceolate, 11 cm. long.
 **I. pulcherrima** var. **lanceolata**

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MORINDA

- (1)1. Vines. (2)
 2. Small trees. (3)
 (2)1. Large vines; leaves ovate, 7–9 cm. long.
 **M. glandulosa**
 2. Small vines; leaves long elliptic-ovate, 10–13 cm. long. **M. volubilis**
 (3)1. Flower head with enlarged petals if any. **M. latibracteata**
 2. Flower head without enlarged petals.
 (4)
 (4)1. Leaves long elliptic, 15–20 cm. long; flower head an elongate cluster.
 **M. pedunculata**

- 2. Leaves broad elliptic, 15–25 cm. long or more; flower head for the most part in a short cluster **M. citrifolia**

- 2: Leaves 12–16 cm. long; corolla tube 6 mm. long, the lobes obovate **T. sambucina**

Page 370 PSYCHOTRIA

- (1)1. Flowers terminal, in a long panicle; leaves more than 18 cm. long **P. rhombocarpa**
- 2. Flowers in a short terminal cyme or cluster; leaves less than 15 cm. long (2)
- (2)1. Flowers clustered **P. Merrillii**
- 2. Flowers in a short cyme (3)
- (3)1. Leaves long elliptic, acute at both ends **P. arbuscula**
- 2. Leaves obovate, the apex obtuse . . (4)
- (4)1. Leaves coriaceous; lateral veins 6–8 on a side; corolla 6 mm. long. **P. mariana**
- 2. Leaves membranous; lateral veins 5 on a side; corolla 2.5 mm. long **P. rotensis**

Page 381 TIMONIUS

- (1)1. Leaf base auriculate or cordate . . . (2)
- 2. Leaf base not auriculate or cordate. (3)
- (2)1. Upper side of leaves pubescent **T. mollis**
- 2. Upper side of leaves smooth and glabrous (4)
- (3)1. Leaves with lower surface pubescent along midrib and lateral veins **T. ponapensis**
- 2. Leaves glabrous or slightly pubescent (5)
- (4)1. Leaves rhombic or elliptic **T. corymbosus**
- 2. Leaves ovate or elliptic. **T. subauritus**
- (5)1. Leaves long elliptic, 12–16 cm. long **T. Ledermannii**
- 2. Leaves elliptic or obovate, 13 cm. long (6)
- (6)1. Fruit long, slender, commonly 6 mm. in diameter **T. korrense**
- 2. Fruit short, commonly 10 mm. in diameter **T. albus**

Page 379 TARENNA

- (1)1. Leaves 7–10 cm. long; corolla tube 3 mm. long, the lobes long elliptic **T. glabra**