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The Myrsinaceae of the Ryukyu Islands

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The Myrsinaceae of the Ryukyu Islands[1)]

By

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Abstract

This is a systematic treatment of the 3 genera and 11 species of Myrsinaceae known to occur in this Archipelago. All species that have been attributed in the literature to this area have been accounted for. There are no new taxa. Keys, illustrations of all species and brief descriptions will facilitate identification. All important works dealing with the Ryukyus which contain references to the Ryukyus are considered. Economic uses are mentioned when known.

The Myrsinaceae comprise a moderate sized widespread tropical and subtropical family of trees, shrubs, vines, and occasional subherbaceous plants. Three genera and nine species occur in the Ryukyus so far as is now definitely known. The literature records several other species and lists many different names. This makes the identification and naming of the Ryukyu species very difficult and confusing to most botanists. This treatment is designed to aid identification and to give general information on the occurrence and uses of these species.

In general the Ryukyu Myrsinaceae are of little practical use. The larger ones become small trees which may be used for windbreaks, fuel, building posts, and perhaps the wood in the manufacture of small articles. A few drugs may be prepared from them. Their principal use, however, is as ornamental plants. Certain species have long been highly prized in Japan as potted plants, sometimes for dwarfing in the highly developed *bonsai* culture.

Most of the Ryukyu species are shrubs or small trees of the understory in the broad-leaved evergreen or "laurisilvae" forests. They are most clearly recognized by their flower characters, especially by the position of the 5 or sometimes 4 stamens opposite, not alternate, with the petals and attached to them, and by the single-celled ovary with a free central spongy placenta in which the ovules and

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finally the one or many seeds are imbedded. The leaves are always simple and alternate, except in the two low creeping species occurring here. The flowers are small, pink or white, and borne in panicles, racemes, cymes, or short fascicles. The fruits are small, globose, more or less fleshy or crustaceous berries or utricles, often red in color and ornamental. All have a single seed, except those of the genus *Maesa*, which has many. Full family descriptions may be found in the technical treatments by Mez, Walker, and Nakai. (See list of literature).

The material on which this treatment is based is mostly that in the United States National Herbarium in Washington, much of which was collected by Okinawan botanists and the writer in 1951 and 1953. Critical specimens have been examined in Tokyo, especially those in the herbarium of the University of Tokyo, on which Dr. Takenoshin Nakai based his 1943 treatment of the "Ardisiaceae" or Myrsinaceae (7). A few Ryukyu specimens lent by the National Taiwan University in Formosa have also been examined, but they add no significant data to those cited here. The list of literature here given includes all significant works with references to the Myrsinaceae of these islands. Their varying nomenclature and taxonomic concepts are coordinated and clarified in this treatment. The descriptions of each species here given are very short, being designed merely to supplement the illustrations. Full technical descriptions and other data may be found in the works referred to with each species, especially those by Mez (6), Walker (14), and Nakai (7). The preparation of this treatment has followed closely after a critical study and coordination of Nakai's revision of all the Japanese species, including those of the Ryukyus and Taiwan, with the writer's earlier treatment (16).

Key to Genera

1a. Ovaries and fruits semi-inferior, the persistent sepals attached near the summit; seeds several; each flower and fruit with a pair of bracteoles at its base or on the pedicel ..... ***Maesa.***

1b. Ovaries and fruits wholly superior, the persistent sepals attached at the base; seed solitary; without bracteoles beneath flowers and fruits.

2a. Flowers in variously stalked clusters; flowers always perfect (with functional stamens and pistils); stigmas never ligulate ..... ***Ardisia.***

2b. Flowers in umbels on very short lateral spurs or knobs; flowers unisexual (with only functional stamens or

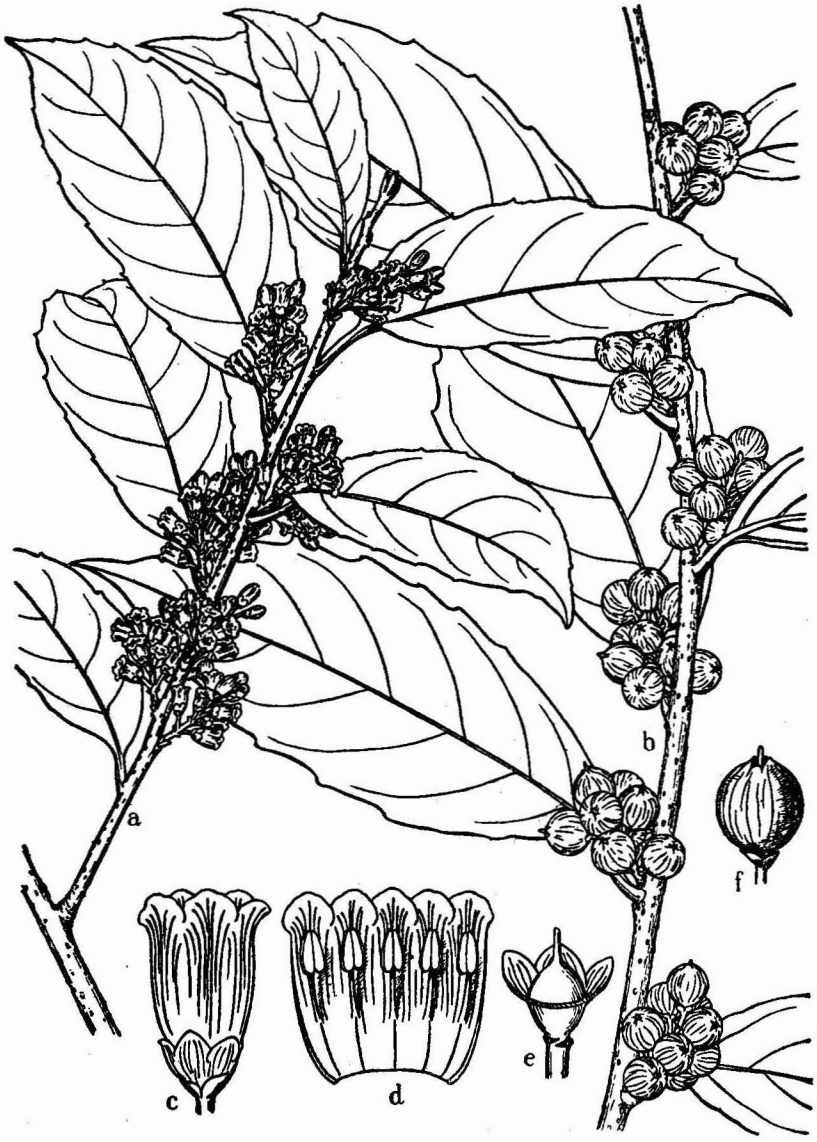

Fig. 1. ***Maese japonica*** (Thunb.) Moritzi.

a. Flowering branch, ×4/5.
b. Fruiting branch, ×4/5.
c. Flower, ×5.
d. Corolla and stamens, ×5.
e. Calyx and pistil, ×5.
f. Fruit, ×2 1/2.

(Reproduced from T. Nakai, Ardisiaceae, fig. 1.)

pistils, not both) ; stigmas ligulate or elongate, flattened (in Ryukyu species only) ..... ***Myrsine.***

Maesa Forsk.

A widespread genus of shrubs or small trees, first described in 1775 from Egypt or Arabia, consisting of trees or shrubs. About 100 species occur in the Old World tropical and subtropical regions, the two species in the Ryukyus being readily distinguished.

Key

1a. Corolla tube two or three times as long as the corolla lobes; bracteoles beneath flowers and fruits broadly ovate or kidney-shaped, prominently marked with glandular lines; leaves with teeth rather far apart along middle and upper margin .... *M. japonica.*

1b. Corolla tube about equaling the lobes; bracteoles ovate without distinct glandular lines; leaves with teeth rather close together along most of margin.

2a. Stems and inflorescences without hairs ..... *M. tenera.*

2b. Stems and inflorescences hairy ..... *M. perlarius.*

1. **Maesa japonica** (Thunb.) Moritzi. Fig. 1. Izu-senryô

References[1]: Sakaguchi, p. 26; Masamune, p. 353; Makino, p. 239, fig. 715; Nakai, p. 9, fig. 1; Tawada, p. 52; Sonohara, p. 79; Sonohara & others, p. 118.

Shrubs sometimes scandent, usually up to 3 m. high, but occasionally small trees up to 5 m., glabrous throughout, flowers white. Masamune (5) records this species as occurring in the laurisilvae and in the higher zone where conifers occur, and attributes it to southern Japan, Tanegashima, Amami-Oshima, Okinawa, Taiwan, and China. Nakai and Sonohara also state it occurs in the Ryukyus, but I have seen no specimens from here.

The anatomy and histology of the flowers and fruits of *Maesa japonica* have been described and illustrated by K. Hisauti (久内清孝) in the Journal of Japanese Botany (14. 66-71, fig. 1-15, 1938).

2. **Maesa tenera** Mez. Fig. 2. Shima idzu-senryô

References: Wilson, p. 182; Sakaguchi, p. 26; Makino & Nemoto, p. 902; Walker, Revis. p. 34; Nakai, p. 14, fig. 2; Sonohara, p. 78; Sonohara & others, p. 118; Takamine, p. 82.

[1] For full titles of these works see the list of Principal Publications.

Fig. 2. ***Maese tenera*** Mez.

a. Flowering branch, $^4/_5$.
b. Leaf, $\times^4/_5$.
c. Fruiting inflorescences, $\times^4/_5$.
d. Fruit, $\times 2\,^1/_2$.
e. Calyx and pistil, $\times 6$.
f. Corolla and stamens, $\times 6$.
g. Flower, $\times 6$.

(Reproduced from T. Nakai, Ardisiaceae, fig. 2.)

A shrub or small tree reaching 6 m. in height, fairly common in shaded or open thickets in second growth forests, especially along streams, and in moist valleys and ravines.

Specimens examined: OKINAWA SHIMA: Kunigami: Hanechison—Amano 6965; Mt. Awa—Walker 7616; Nago-dake—Walker, Sonohara & Tawada (SIRI) 6160; Takasato—Conover 1305. Nakagami: Middle of Island—Conover 1300; Yonabaru—Conover 1280. Shimajiri: Shuri—Tawada 2249, E. H. Wilson 8122; Kirabaru—Walker & Tawada (SIRI) 6901. ISHIGAKI SHIMA. Between Ishigaki and Nagura—Walker & Tawada (SIRI) 7189. IRIOMOTE SHIMA: Between Shira-hama and Sonai—Walker & Tawada 6526; between Hoshitate and Urauchi-gawa—Walker & Tawada 6636, 6658. YONAGUNI SHIMA: Urabu-dake—Walker & Tawada (SIRI) 6843.

3. **Maesa perlarius** (Lour.) Merr. Shima-senryô

A shrub 1 to 3 m. high with hirsute stems and inflorescences and short corolla tubes. It has been listed several times for the Ryukyus (Masamune, p. 353 and 357; Kuroiwa, p. 124; Makino & Nemoto, p. 902), usually as *M. sinensis* A. DC., but the identifications on which they are based are doubtfully correct. It is easily distinguished by the hirsute stems.

Ardisia Swatz[1]

A widespread tropical genus of both hemispheres with several hundred species. They are mostly trees and upright shrubs, with alternate leaves, but two Ryukyu species are low creeping shrubs with short upright branches and opposite or verticillate leaves. The variability of the species makes identification somewhat difficult. Several species whose identities can not be maintained have been described from this region. *Ardisia* is recognized by the umbellate or subumbellate inflorescences, often on ends of special lateral branches which usually disarticulate and fall off, except in the creeping species. The long-persistent ornamental fruits of some species make them favorite garden plants.

Key

1a. Erect woody shrubs or trees, generally branching, at least with special lateral flowering branches usually bearing a few leaves or leaf-like bracts; leaves alternate, generally entire or with slightly indented margins at distinctive marginal glands.

2a. Leaves without albuminous marginal glands.

[1] Most Japanese botanists use the name *Bladhia* instead of *Ardisia*. For explanation see Walker's paper.(16)

3a. Branches slender; leaves elliptic-lanceolate, slender or acute or acuminate; petals and anthers usually punctate; fruits about 5 mm. in diameter, often 5-angled ..... *A. quinquegona.*

3b. Branches usually thick and stiff; leaves obovate, broadly acute to nearly rounded at apex with acute bases, petals and anthers without punctate dots or glands; fruits 7 mm. in diameter, more or less fleshy, always globose ..... *A. sieboldii.*

2b. Leaves with albuminous marginal glands.

4a. Lateral nerves 12 to 18 pairs, uniting in a distinct marginal nerve; leaf blade with abundant raised punctate glands beneath; petals and anthers punctate ..... *A. crenata.*

4b. Lateral nerves about 8 pairs, not uniting in a distinct marginal nerve; leaf blade without punctate glands beneath; petals and anthers not punctate glands beneath; petals and anthers not punctate ..... *A. crispa.*

1b. Low creeping undershrubs, the erect stems unbranched, the inflorescences not on special leaf-bearing lateral branches; leaves opposite or subverticillate, the margins toothed.

5a. Stems, leaves, and inflorescences very minutely puberulent when young; sepals ovate, obtuse or acute .... *A. japonica.*

5b. Stems, leaves, and inflorescences villose, at least when young; sepals slenderly lanceolate, long acute .... *A. pusilla* var. *liukiuensis.*

1. **Ardisia quinquegona** Blume. Fig. 3. Shishi-akuchi (J); akuchi (O).

Synonyms and references:

A. quinquegona Blume: Mez, p. 108; Makino & Nemoto, p. 900; Walker, Revis. p. 75, fig. 12 a-c; Sonohara, p. 78; Sonohara & others, p. 117; Takamine, p. 82.

Bladhia quinquegona (Bl.) Nakai: Sakaguchi, p. 26; Masamune, p. 355; Nakai, p. 123.

A branching, rather slender-stemmed shrub or tree, sometimes up to 8 m. high, bearing white, usually spotted flowers and bluish or blackish fruits. It is common in shaded second-growth forests,

[1] J=Japanese name; O=Okinawan name.

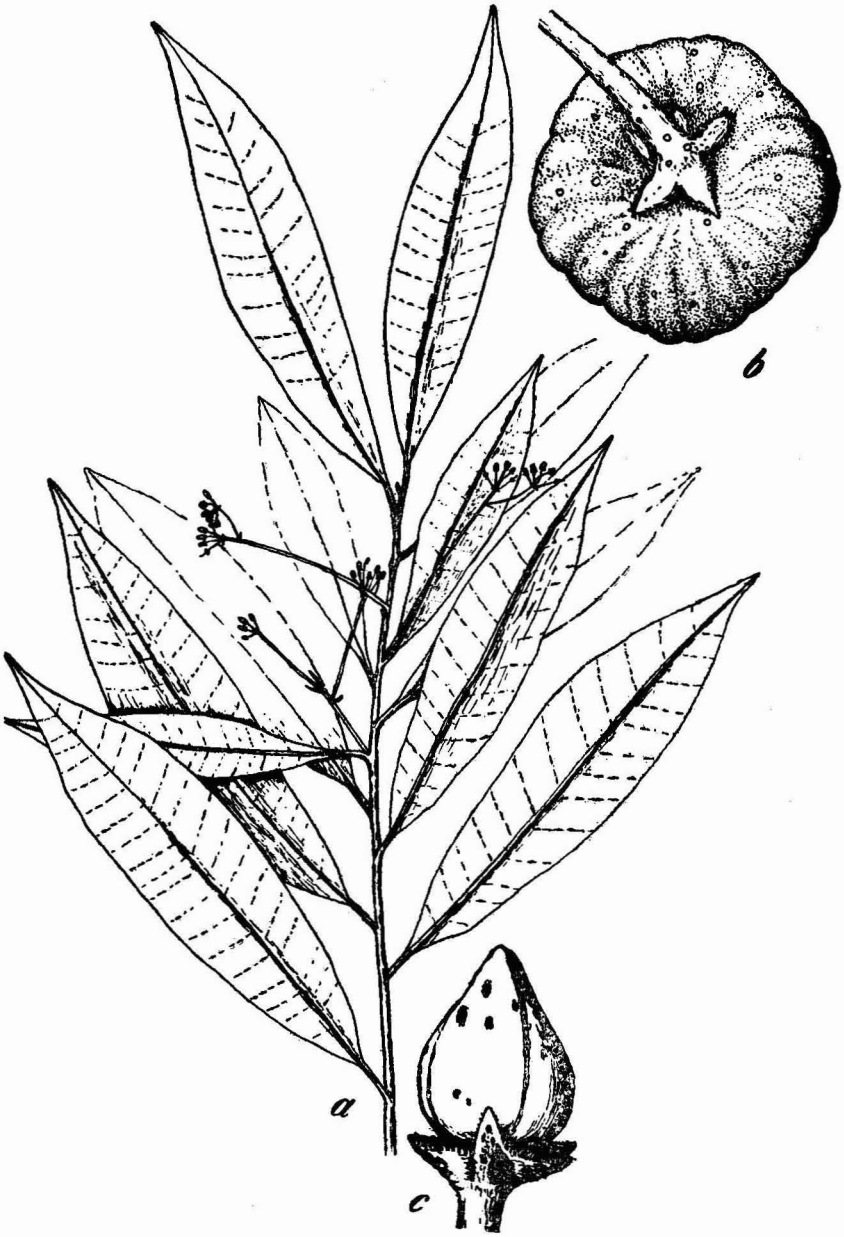

Fig. 3. ***Ardisia quinquegona*** Bl.

a. Flowering branch, $\times 3/5$. b. Fruit, $\times 5/8$.
c. Unopened flower, $\times 5/8$.

(Reproduced from E. H. Walker, Revision of eastern Asiatic Myrsinaceae, fig. 12.)

especially in mountains, also in open places and in ravines. Masamune attributes it to the laurisilvae from Tanegashima to Yaeyama. It is common in Taiwan and the Ryukyus.

Specimens examined: OKINAWA SHIMA: Kunigami: Hedo —Conover 1172; Ada-yama—Amano 6367; Itomi—Conover 2830; Yonaha-dake—Walker, Sonohara & Tawada (SIRI) 6987, 6990; Ogimi-son—Amano 6729; Taminato-ugan—Walker, Sonohara, Tawada & Amano (SIRI) 6119; Tanyu-dake—Sonohara, Tawada & Amano (SIRI) 6296, 6334; Nago-dake—Walker, Sonohara, Tawada & Amano (SIRI) 6201, 6230; Mt. Awa—Walker 7611, 7616. ISHIGAKI SHIMA: Between Ishigaki and Nagura—Walker & Tawada 7187. IRIOROTE SHIMA: Between Hoshitate and Urauchi-gawa—Walker & Tawada 6656; Nakara-gawa—Walker & Tawada 6872.

2. **Ardisia sieboldii** Miq. Fig. 4. Moku-tachibana (J); irushi, mindama (O).

Synonyms and references:

A. sieboldii Miq.: Kuroiwa, p. 105; Wilson, p. 182; Makino & Nemoto, p. 901; Walker, Revis. p. 79; Tawada, p. 52; Takamine, p. 82; Sonohara, p. 78; Sonohara & others, p. 117; Walker, Impt. Trees. illus. (in press).

Bladhia sieboldii (Miq.) Nakai: Sakaguchi, p. 26; Masamune, p. 356; Nakai, p. 120, fig. 36.

A shrub or tree up to 6 m. high or higher, the trunk attaining 12 cm. or more in diameter, the bark green becoming grayish, usually the swollen bases of the flowering branches conspicuous; flowers pinkish or white, not spotted or obscurely so; fruits turning from green to reddish or black, somewhat fleshy. It is fairly common in forests or open thickets, probably at lower altitudes than *A. quinquegona*. Masamune attributes it to the littoral forests from the Bonin Islands and Kyûshû through the Ryukyus to Taiwan and China.

The distinctive disarticulation of the branches has been studied by Y. Ogura (Bot. Mag. Tokyo 51: 158-167. fig. 1-5. 1937).

Specimens examined: OKINAWA SHIMA: Kunigami: Taminato-ugan—Walker, Sonohara, Tawada, & Amano (SIRI) 6133. Nakagami: Kishaba—Field & Loew 13; Nakagusuku—Walker, Tawada, & Amano (SIRI) 6501. KERAMA RETTO: Kanagusuku—E. H. Wilson 8039. MIYAKO SHIMA: Near Kawamitsu—Walker & Tawada (SIRI) 7309, 7314. IRIOMOTE SHIMA: Between Shirahama and Sonai—Walker & Tawada (SIRI) 6527; between Hoshitate and Urauchi-gawa—Walker & Tawada (SIRI) 6586. YONAGUNI SHIMA: Urabu-dake—Walker & Tawada 6838. SENKAKU

Fig. 4. ***Ardisia sieboldii*** Miq.

a. Portion of branch with leaf and bases of articulating flowering branchlets, reduced. b. Flowering branch, reduced.
c. Fruiting inflorescences, reduced. d. Partly opened flower, ×2.
e. Expanded flower, ×3. f. Calyx and pistil, ×3.

(Reproduced from T. Nakai, Ardisiaceae, fig. 36.)

RETTO: Uotsuri-jima—Tawada 31 (April 15, 1952).

3. **Ardisia crispa** (Thunb.) A. DC. Fig. 5. Kara-tachibana.
Synonyms and references:

Fig. 5. ***Ardisia crispa*** (Thunb.) A. DC.

a. Whole plant in fruit. about $\times 1/3$.
b. Corolla with 4 of the 5 stamens, $\times 3\,1/2$.
c. Stamen from back, $\times 3\,1/2$. d. Calyx and pistil, $\times 3\,1/2$.

(Reproduced from E. H. Walker, Revision of eastern Asiatic Myrsinaceae, fig. 21.)

A. crispa (Thunb.) A. DC.: Walker, Revis. 118, fig. 21 a-d; Takamine, p. 82.
?*Bladhia crispa* Thunb.: Masamune, p. 354.
Bladhia crispa var. *typica* Nakai: Nakai, p. 63.
Bladhia punctata (Lindl.) Nakai, as misapplied in Sakaguchi, p. 26. (True *Ardisia punctata* Lindl. does not occur in the Ryukyus).
Ardisia punctata Lindl., as misapplied in Makino, p. 238, fig. 714.

An upright shrub, but with a rather prominent rhizome, the erect stem reaching only about 1.5 m. high, with white unspotted flowers and usually red fruits. The leaves are thin and membranous. I have seen only one Ryukyu specimen. It was found as an undershrub in the dense, almost pure stand bamboo thicket forming a cap on a spur of Omoto-yama on Ishigaki Shima (Walker & Tawada (SIRI) 1286). Masamune regards it as occurring in the undergrowth in the laurisilvae or in the mixed evergreen broadleaved and coniferous forests of Honsyû, Shikoku, Kyûshû, and Okinawa and in Taiwan and China. It is one of the Myrsinaceae commonly cultivated in Japanese gardens for *kansho*, and many horticultural forms are known, for which see Nakai's treatment (7).

4. **Ardisia crenata** Sims. Fig. 6. Manryô.

Synonyms and references:

Ardisia crenata Sims: Walker, Revis. p. 112; Sonohara & others, p. 117.
Ardisia crispa (Thunb.) A. DC. as misapplied in Mez, p. 144; Sakaguchi, p. 26; Makino & Nemoto, p. 899; Makino, p. 238, fig. 713.
Bladhia lentiginosa Nakai: Masamune, p. 355.
Bladhia lentiginosa var. *typica* Nakai: Nakai, p. 101.
Bladhia lentiginosa var. *lanceolata* Masam.: Nakai, p. 102.
Bladhia lentiginosa var. *taquetii* (Lév.) Nakai: Nakai, p. 101.
Ardisia crenata var. *lanceolata* (Masam.) Takamine: Takamine, p. 81 (the first publication of this combination of names).
Ardisia crenata var. *taquetii* (Lév.) Ohwi: Takamine, p. 82 (the first publication of this combination of names).

A shrub with a definite rhizome giving rise to a single rather slender erect stem up to 1.5 m. high bearing only the special flowering branches; flowers white or pinkish; fruits in winter, red, somewhat fleshy. This is common in the forest undergrowth or in thickets,

Fig. 6. ***Ardisia crenata*** Sims

a. End of fruiting stem, × 1/2. b. Flower, top view, ×2 1/2.
c. Flower from beneath, ×2 1/2. d. Fruit, ×2 1/2.

(a and d, drawn from collection by Walker and Tawada (SIRI) 6646 from Iriomote Is. b and c, drawn from collection by N. Fukuyama and T. Suzuki, no. 11696, from Nankotaizan, Rato-gun, Formosa).

recorded by Masamune as occurring in the "laurisilvae" and the mixed evergreen broadleaved and coniferous forest. It is found from Korea, Honsyû, and Shikoku through the Ryukyus to Taiwan and China. It is probably the most widely cultivated species of the Myrsinaceae. Many forms are described by Nakai (7).

Specimens examined: OKINAWA SHIMA: Yonaha-dake—Conover 1839, Walker, Sonohara, Tawada, & Amano (SIRI) 6985; Ogimi-son—Amano 6730; between Shioya-wan and Taira-wan—Walker, Sonohara, Tawada, & Amano (SIRI) 7144; Tanyu-dake—Sonohara, Tawada & Amano (SIRI) 6292; Nago-dake—Walker, Sonohara, Tawada & Amano (SIRI) 6222. ISHIGAKI SHIMA: Omoto-yama—Walker & Tawada 7285. IRIOMOTE SHIMA: Be-

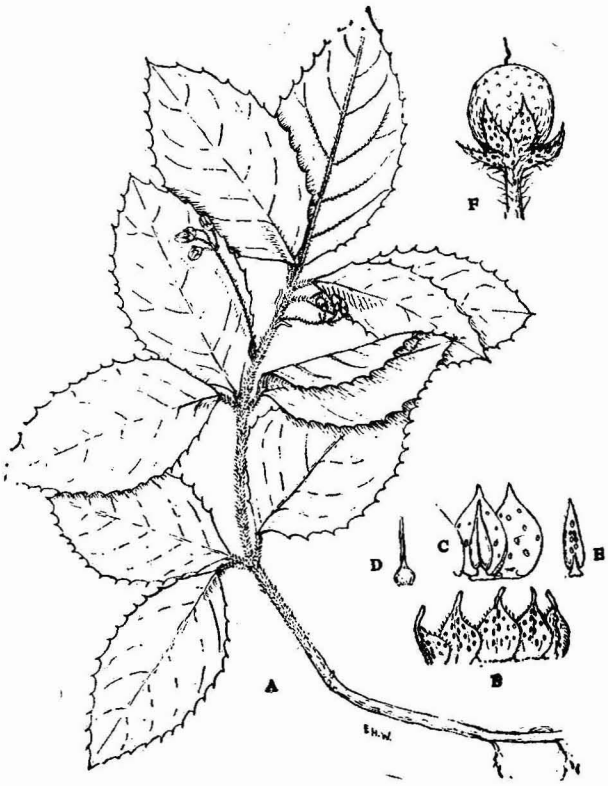

Fig. 7. ***Ardisia japonica*** (Hornst.) Blume

a. Flowering and fruiting plant, × 1/2.

b. Flower from above, ×2 1/2. c. Flower from back, ×2 1/2.

d. Fruit, ×2 1/2. (Flower atypical, having one extra petal.)

(a and d, drawn from collection by M. Takeuchi, June 18, 1946 (U.S. Nat. Mus. 2073699) from Sagami, Kamakura, Japan; b and c from collection by M. Mizushima, July 27, 1952 (U.S.N.E. 2126251) from Nishitama-gun, Prov. Musashi, Japan).

tween Hoshitate and Urauchi-gawa—Walker & Tawada 6646; along Urauchi-gawa—Walker & Tawada 6727. YONAGUNI SHIMA: Koidzumi, June 11-13, 1923 (U. S. Nat. Herb. 2070981).

5. **Ardisia japonica** (Hornst.) Blume. Fig. 7. Yama-tachibana.
Synonyms and references:
Ardisia japonica (Hornst.) Blume: Walker, Revis. p. 134; Makino, p. 237, fig. 711.
Bladhia japonica Hornsted: Masamune, p. 354; Nakai, p. 237.

A low creeping and rooting undershrub with slender ascending branches up to 30 cm. long, minutely puberulent when young, becoming glabrous; flowers pink or white, abundantly dotted; fruits reddish to blackish. This is apparently a rare species in the Ryukyus, being recorded as occurring here only by Masamune (5), Nakai (7), and Makino (4). The first records it as occurring in the mixed ever-

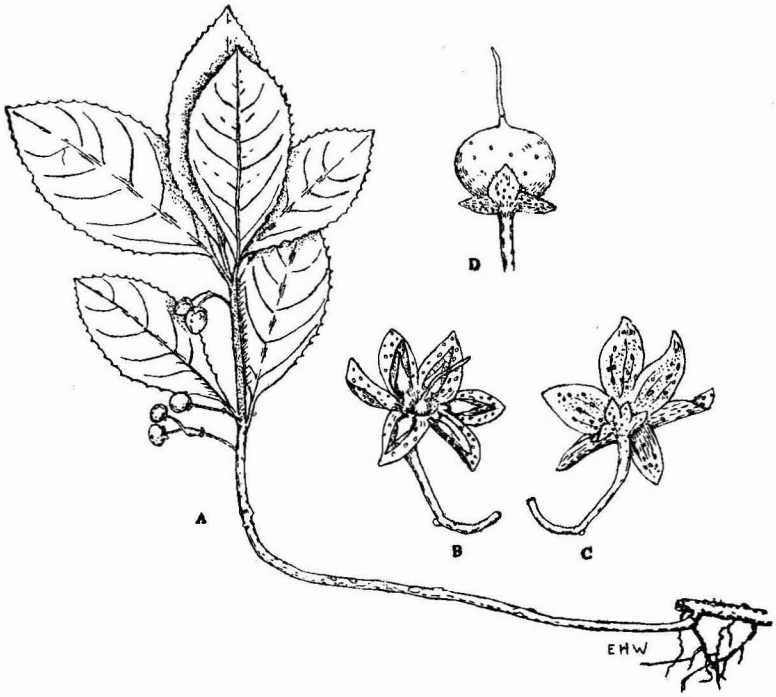

Fig. 8. ***Ardisia pusilla*** var. ***liukiuensis*** (Nakai) Okuyama.
a. Flowering branch, $\times 1/2$. b. Calyx, $\times 2\,1/2$.
c. Petals, $\times 2\,1/2$. d. Stamen, back view, $\times 2\,1/2$.
e. Pistil, $\times 2\,1/2$. f. Fruit, $\times 2\,1/2$.
(a–e, drawn from collection by G. Koidzumi, May 1923 (U. S. Nat. Herb. 2070982) from Nago; f, drawn from Walker, Sonohara and Tawada (SIRI) 7010 from Yonahadake, Okinawa).

green broadleaved and coniferous forests from Yezô, Honsyû, Shikoku, Kyûshû, Tanegashima, and Amami-Oshima, also in Taiwan and China. I have seen no Ryukyu specimens. Its variability and ornamental nature make it a favorite plant for cultivation and dwarfing. The root is reported to contain rapanone and an extract from the root is used medicinally to reduce fever.

6. **Ardisia pusilla** var. **liukiuensis** (Nakai) Okuyama. Fig. 8. Riukiu-tsurukôji.

Synonyms and references:

Ardisia pusilla var. *liukiuensis* (Nakai) Okuyama: Takamine, p. 82.

Ardisia villosa var. *liukiuensis* (Nakai) Makino & Nemoto, p. 901; Walker, Revis. p. 153; Sonohara, & others, p. 117.

Bladhia villosa var. *liukiuensis* Nakai: Sakaguchi, p. 26; Masamune, p. 356; Nakai, p. 48.

?*Bladhia villosa* var. *reptans* (Merr.) Nakai: Nakai, p. 47; Walker, Conc. Myrs. Jap. (in press).

A creeping and rooting undershrub with slender, ascending, villose branches less than 30 cm. high; flowers probably white or pinkish, not spotted. It is fairly common in the ground cover in forests and shaded ravines and on moist stream banks. Masamune records this variety as occurring in Okinawa and Taiwan. He also records the typical variety as occurring in Tanegashima, and Amami-Oshima in the Ryukyu Islands, but I have not seen any specimens from there. Variety *liukiuensis* differs from the typical variety (*A. pusilla* var. *pusilla*) mainly in its more robust characters almost throughout.

Specimens examined. OKINAWA SHIMA: Kunigami: Nishime-dake—Sonohara, Tawada & Amano (SIRI) 7114; Benoki-yama—Sonohara, Tawada & Amano (SIRI) 7104; Yonaha-dake—Walker, Sonohara, Tawada & Amano (SIRI) 6969, 7010; between Shioya-wan and Taira-wan (same) 7148, 7149, 7150; Hanechi-yama—G. Nakahara 183; Nago and Nago-dake—Kanashiro (=Amano) 1185, Koidzumi, May 1923, Walker, Sonohara, Tawada & Amano (SIRI) 6223; Onna-dake—Amano 6867, 6868. IRIOMOTE SHIMA: Along the Urauchi-gawa—Walker & Tawada (SIRI) 6717; along the Nakara-gawa—Walker & Tawada (SIRI) 7162. SENKAKU RETTO: Uotsuri-jima—Tawada 30 (Apr. 17, 1952).

Myrsine L.[1]

A widespread tropical genus, probably of both hemispheres, of

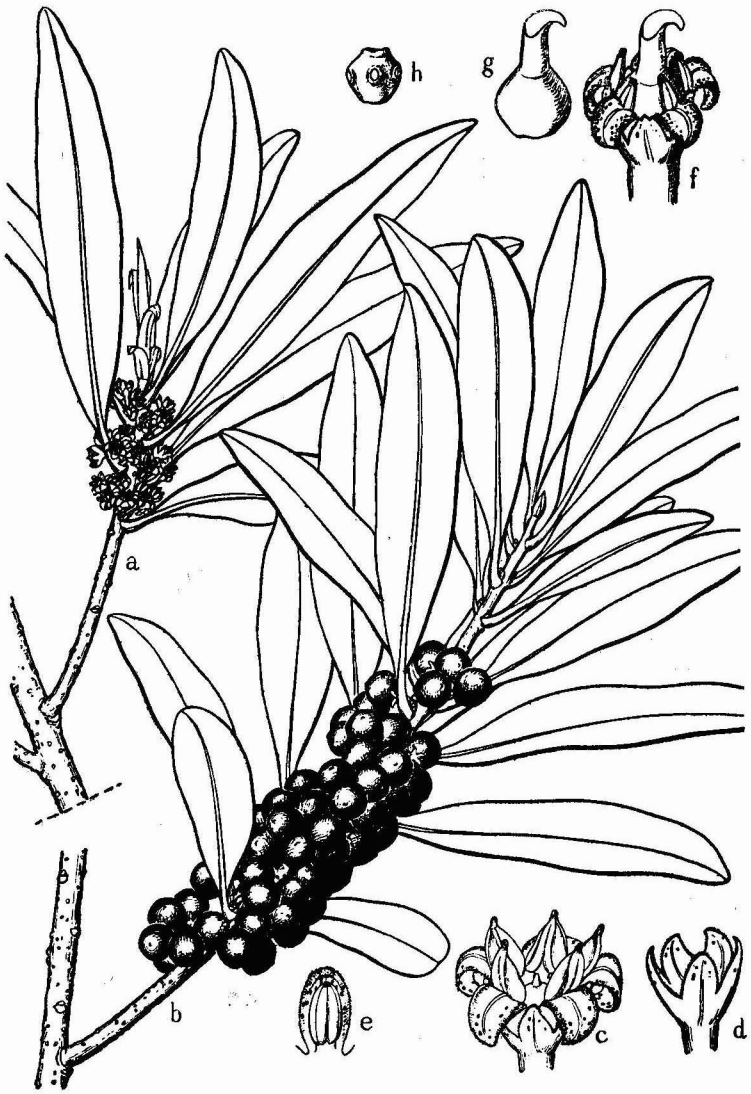

Fig. 9. ***Myrsine seguinii*** Lév.

a. Flowering branch, $\times 4/5$. b. Fruiting branch, $\times 4/5$.
c. Open male flower, $\times 5$. d. Calyx, about $\times 5$.
e. Stamen and petal, about $\times 5$. f. Open female flower, $\times 5$.
g. Pistil, $\times 5$. h. Placenta, showing imbedded ovules, $\times 5$.
(Reproduced from T. Nakai, Ardisiaceae, fig 41.)

[1] This inculdes the eastern Asiatic species commonly placed in *Rapanea* Aubl. For further explanation see Walker, Concerning the Myrsinaceae of Japan.(16)

rather few species, but of somewhat uncertain limits. They range from dwarf shrubs to small trees. Only one species occurs in the Ryukyus.

1. **Myrsine seguinii** Lév.[1] Fig. 9. Taimin-tachibana (J); irahajâ (O).
Synonyms and references:
Myrsine capitellata Wall. as misapplied by Kuroiwa, p. 124.
Rapanea neriifolia (Sieb. & Zucc.) Mez: Mez, p. 361; Wilson, p. 182; Sakaguchi, p. 27; Makino & Nemoto, p. 903; Masamune, p. 356; Walker, Revis., p. 202; Makino, p. 237, fig. 710; Sonohara, p. 79; Sonohara, & others, p. 118; Takamine, p. 82; Walker, Impt. Trees. illus. (in press).
Athruphyllum seguinii (Lév.) Nakai: Nakai, p. 140, fig. 41.

A shrub or small tree, usually up to about 5 m. high, reported sometimes up to 12 m., the leaves more or less clustered at ends of branches; flowers unisexual, each plant bearing only one kind, white or greenish or the staminate flowers perhaps reddish. It is found in the understory in broadleaved evergreen forests. Masamune records its distribution as Honsyû, Shikoku, Tanegashima, Amami-Oshima, and Okinawa. It has also been collected in Iriomote Shima and occurs in Taiwan and eastern and southern China.

Specimens examined: OKINAWA SHIMA: Kunigami: Yona-ha-dake—Amano 7135; Genka, Mt. Kunchon—E. H. Wilson 8074; Tanyu-dake—Sonohara, Tawada & Amano (SIRI) 6342. IRIOMOTE SHIMA: Urauchi—Y. Kimura & I. Hurusawa 28 (Oct. 8, 1940).

Cultivated species

Ardisia squcmulosa Presl. Fig. 10. Kôtô-tachibana.

Synonyms and references:
A. kotoensis Hayata: Kanehira, Rev. ed., p. 562.

A compact branching shrub about 4 feet high with rather leathery leaves broadest above the middle and tapering toward the base and without marginal glands. The abundant flowers are produced in summer in rather short stalked clusters, the petals white to pale lavendar, the anthers conspicuous, yellow. The fleshy fruits are dark purplish to black and ripen in early winter.

Only one plant is known in the Ryukyus, that growing in the garden near the offices of the Agricultural Experiment Station in Nago, Kunigami-gun, Okinawa. As an interesting, medium-sized,

[1] For discussion of use of this name see Walker, Concerning the Myrsinaceae of Ja-p an.(16)

rather compact ornamental shrub it should be useful.

Specimens examined, all from same plant at Nago: Amano 6058; Walker, Sonohara, Tawada & Amano 6093; Walker 7582.

The origin of this plant at Nago is not known. The species occurs in the Philippine Islands and in southeastern Asia, and in Kôtôshô (Kashioto, Taito), an island off the southeastern coast of Formosa. When first found there it was described by Hayata as a new species. In the Flora of Okinawa by Sonohara and others (10) it is called *Ardisia solanacea* Roxb. Professor G. Masamune had identified this plant as *A. humilis* Vahl, as interpreted by Mez (6). In editing this manuscript I mistakenly considered *A. humilis* Vahl as the same as *A. solanacea* Roxb., but now consider it the same as *A. squamulosa* Presl. Nakai (7) discusses and illustrates this species as *Bladhia racemosa* (Lour.) Nakai, a misunderstanding discussed in my treatment of the Myrsinaceae of Japan (16).

The Japanese name given here is that used by Nakai and by Kanehira (1).

Excluded species

Rapanes maximowiczii Koidz.: This species was attributed to the Ryukyus in my Revision (14) on the basis of a collection by C. Wright of 1856. No locality is given on the label. Since the species is known only from the Bonin Islands, the recording of this species in the Ryukyus is doubtless an error.

Principal publications concerned with the Myrsinaceae of the Ryukyus

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6. Mez, C.: Myrsinaceae. In A. Engler, Pflanzenreich. 9 (IV.2 36): 1–437. fig. 1–61. 1902.
7. Nakai, Takenoshin: Ardisiaceae, In T. Nakai and M. Honda, Nova Flora Japonica 9: [i-ii], 1–3, [1-3], 1-170. fig. 1–42. 1943.
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15. Walker, E.H.; Important trees of the Ryukyu Islands. Spec. Bull. (U.S. Civil Admin. Ryukyu Is.) 3: i-vi, 1–350. 1954.
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