

**AN ENUMERATION OF FORMOSAN TREES IN  
THE TAIHOKU HERBARIUM**

**VII**

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**Proteaceae**

(159) **Helicia cochinchinensis** LOUR. Fl. Cochinch. (1790) 83; MEISN. in DC. Prodr. XIV (1857) 442; BENTH. Fl. Hongk. (1861) 295; FORBES et HEMSL. Ind. Fl. Sin. II (1891) 394; MATSUM. et HAY. Enum. Fl. Formos. (1906) 354; HAY. Mat. Fl. Formos. (1911) 259; KANEHIRA, Formos. Trees (1917) 462.

*Helicia lancifolia* SIEB. et ZUCC. Fl. Jap. Nat. sect. alt. (1846) 198, No. 684; MEISN. l.c. 439.

8576 Uraisya, 8577 Sôzan, 8578-9, 8581-2 Kansaiho, 8580 Hoppo, 8583 Byôritu.

A small evergreen tree, leaves oblong 3-15 cm. long, 3-4 cm. wide, entire, sometimes remotely serrate, petiole 1.2 cm. long; flowers in axillary racemes, shorter than the leaves; fruit a globose or ellipsoid nut, black, 10 mm. in diameter, one-seeded. In broad-leaved forests at low altitudes, rather scarce.

*Distrib.* Indo-China and China to Japan.

*Jap. name:* Yamamogasi.

(160) **Helicia formosana** HEMSL. in FORBES et HEMSL. l.c. 394, Ann. Bot. IX (1895) t. 8; MATSUM. et HAY. l.c. 354; HAY. Fl. Mont. Formos. (1908) 189; KANEHIRA l.c. 463.

A small evergreen tree, branchlets, underside of leaves and inflorescence rufous-tomentose, leaves oblong to obovate, 15-25 cm. long, 3.5-8 cm. wide, entire or serrate, fruit globose, 3 cm. in diameter, chestnut brown. Very common in broad-leaved forests at low and medium altitudes throughout the island.

*Distrib.* Endemic.

*Jap. name:* Taiwan-yamamogasi.

**Santalaceae**

(161) **Champereia manillana** MERR. in Philip. Journ. Sci. VII (1912) Bot. 233, XI (1916) Bot. 268, Enum. Philip. Fl. Pl. II (1923) 116; KANEHIRA, Formos. Trees (1917) 466.

*Cansjera manillana* BL. Mus. Bot. Lugd.-Bat. I (1850) 246.

*Champereia Griffithiana* PLANCH. ex KURZ in Journ. As. Soc. Beng. XLIV, 2

(1875) 154; HOOK. f. Fl. Brit. Ind. V (1886) 236; MATSUM. et HAY. Enum. Pl. Formos. (1906) 358.

A small evergreen tree up to 30 cm. in diameter, 6-7 m. in height, bark glabrous, leaves alternate, coriaceous, oblong to oblong-lanceolate, 5-8 cm. long, 2.5-3.5 cm. wide, acuminate at the apex, entire, shining, petiole 3 mm. long, flowers minute in axillary panicles, with slender peduncles and pedicels, drupe ellipsoid, 10-15 mm. long, orange-red. In thickets and forests in Kōsyun Peninsula.

*Distrib.* Philippines to Moluccas.

*Jap. name:* Kanabiki-boku.

### Nyctaginaceae

(162) **Pisonia umbellifera** SEEM. in Bonplandia X (1862) 154.

*Ceodes umbellifera* FORST. Char. Gen. (1776) 71, t. 71.

*Pisonia excelsa* BL. Bijdr. (1825) 735; HAY. Icon. Pl. Formos. III (1913) 156; KANEHIRA, Formos. Trees (1917) 409.

8315-8 Kurai, Kōsyun.

A large evergreen tree up to 90 cm. in diameter, 12 m. in height, wood very soft and sappy, leaves whorled at the ends of the branchlets, elliptic, dark greenish, 14-45 cm. long, 7-15 cm. wide, petiole 1-3 cm. long, flowers dioecious, rusty pubescent, fruits cylindric, smooth, 2.5 cm. long. In damp forests along the seashore of the Kōsyun Peninsula or east side of the island and Botel Tobago.

*Distrib.* Philippines, Java, Malaya to Australia and Polynesia.

*Jap. name:* Ookusaboku.

### Trochodendraceae

(163) **Trochodendron aralioides** SIEB. et ZUCC. Fl. Jap. I (1835) 84, tt. 39, 40; MATSUM. in Tokyo Bot. Mag. XII (1898) 54; MATSUM. et HAY. Enum. Pl. Formos. (1906) 11; HAY. Fl. Mont. Formos. (1908) 44, Icon. I (1911) 30; KANEHIRA, Formos. Trees (1917) 25.

A large evergreen tree up to 4 m. in diameter, scattered in the forests of *Chamaecyparis* and broad-leaved forests at high altitudes, occasionally forming pure stands. The bird lime can be obtained from the bark, but it is not utilized in the island.

*Distrib.* Japan and Luchoo.

*Jap. name:* Yamaguruma.

### Berberidaceae

(164) **Berberis Kawakamii** HAY. Mat. Fl. Formos. (1911) 24, Icon. Pl. Formos. I (1911) 40, t. 9; KANEHIRA, Formos. Trees (1917) 32.

9900 Central mountain range, 9901 Nütaka-yama, 9920-3 Arisan, 9904 Taataka, 9905 Daibusan, 9906 Nisi-Gundaizan, 9907 Nökō.

A scandent shrub, leaves whorled, obovate to oblanceolate, 3-5 cm. long, 1-2 cm. wide, spinoustoothed, berries ovoid, black 1.5 cm. long, 2- or 3-seeded. In primary forests at high altitudes ranging from 2,500 m. to 3,000 m.

*Distrib.* Endemic.

*Jap. name:* Kuromi-no-hebinoborazu.

- (165) **Berberis aristato-serrulata** HAY. Icon. Pl. Formos. III (1913) 13, f. 5.  
9893! Bunsuirei U. MORI Apl. 1910.

It is characterized by the finely serrulated leaf-margin.

*Distrib.* Endemic.

*Jap. name:* Amiba-hebinoborazu.

- (166) **Berberis brevisepala** HAY. Icon. III (1913) 14.

9894 Rokuzō-taizan, 9895-7 Niitaka-yama, 9898! Tonkuran MORI April 1910, 9899 Kiraisyu-zan.

It is characterized "by the uniovulate ovaries, the red twigs and the larger and wider leaves".\*

*Distrib.* Endemic.

*Jap. name:* Taiwan-hebinoborazu.

- (167) **Berberis mingetsensis** HAY. Icon. Pl. Formos. V (1915) 4, t. 2.

9908-9 Arisan.

It is characterized "by the very large, strongly reticulate leaves".\*

*Distrib.* Endemic.

*Jap. name:* Usuba-hebinoborazu.

- (168) **Berberis densifolia** BYHOUWER in Journ. Arnold Arb. IX (1928) 133.

The type from Kiraisyu, Nōkō, collected by E. H. WILSON, March 1918.

Very near *B. Kawakamii* HAY. but differs in its densely whorled leaves and fewer fascicled flowers.

*Distrib.* Endemic.

*Jap. name:*

- (169) **Berberis morrisonensis** HAY. Mat. Fl. Formos. (1911) 25, Icon. I, 41, t. 10; KANEHIRA l.c. 33; Curtis's Bot. Mag. (1923) 9017.

9910 Nankotai-zan at [11,000-12,000 ft., 9911-2, 9914 Niitakayama, 9913 Central Mountain, 9915 Tugitaka-yama, 9916-7! Niitakayama at 12,000 ft. U. MORI Nov. 1906, 9918 Kiraisyu-zan at 10,000 ft.

A scandent shrub, leaves whorled, obovate, with spinulose teeth, 1.5-2.0 cm. long, subsessile, berries globose, scarlet, 1 cm. in diameter, 4- to 8-seeded. The tree grows at the highest altitudes of the Central Range at more than 3,000 m. above the sea level, associated with *Rhododendron pseudo-chrysanthum* HAY. and *Juniperus squamata* LAMB.

\* J. T. P. BYHOUWER: Journ. Arnold Arb. IX (1928) 133.

*Distrib.* Endemic.

*Jap. name:* Niitaka-hebinoborazu.

(170) **Mahonia oiwakensis** HAY. Icon. Pl. Formos. VI (1916) 1; KANEHIRA, Formos. Trees (1917) 34.

*Berberis nepalensis* (non SPRENG.) MATSUM. et HAY. Enum. Pl. Formos. (1906) 18; HAY. Fl. Mont. Formos. (1908) 47, Icon. I (1911) 40—pro parte.

*Mahonia lomariifolia* (non TAKEDA) TAKEDA in Notes, Roy. Bot. Gard. Edinb. XXIX—XXX (1917) 239, quod ex Formosa.

*Mahonia morrisonensis* TAKEDA l.c. 239, t. 36, f. 200–206. HAY. Icon. IX (1920) 5, nov. syn.

9937! Gōkan-zan, 9938–9, 9942 Hattūkan, 9940 Nōkōzan, 9941! Niitaka-yama at 7,500 ft., 9943 Arisan, 9944 Daibuzan, 9927–9 Sekizan. Niitaka, 9930–3 Arisan, 9934–5 Central Mountain. 9936 Tombara-Nōkō.

A small spiny shrub, leaflets lanceolate, flowers yellowish, sepals elliptic, 5 mm. long. In the central range of mountains. The type of *Mahonia oiwakensis* HAY. (No. 9937! MORI Gōkwanzan; Oiwake material collected by Dr. HAYATA May 1916, missing in the Tokyo Imp. Univ. Herb.) agrees with the type of *M. morrisonensis* TAKEDA (No. 9941! KAWAKAMI and MORI, Niitakayama 1906); the material of *M. lomariifolia* cited by Dr. TAKEDA (NAKAHARA Nov. 1906, Arisan) in the Tokyo Imp. Univ. Herb. is too poor for comparison, but is apparently identical with the present plant.

*Distrib.* Endemic.

*Jap. name:* Niitaka-hiiragi-nanten.

(171) **Mahonia tikushiensis** HAY. Icon. Pl. Formos. V (1915) 5, VII (1917) 1, t. 1; KANEHIRA l.c. 33.

*Berberis nepalensis* (non SPRENG.) MATSUM. et HAY. l.c. 18; HAY. Fl. Mont. l.c. 47, Icon. I, 40—pro parte.

9922 Taiton SASAKI 1910, 9923–4 tikusizan, 9925 ibid SHIMADA.

A small evergreen shrub, leaves imparipinnate, whorled at the ends of branches, leaflets 5–11, variable in size, spinous-toothed, upper leaflets elongately ovate, racemes several at the ends of branches, sepals and petals yellowish green, petals notched at the top, stamens 6, ovary one, fruit a berry with 1 or 2 seeds. Known only from Daitonzan and Tikusi-zan, Taihoku Prefecture.

*Distrib.* Endemic.

*Jap. name:* Hiiragi-nanten or Ooba-hiiragi-nanten.

### Magnoliaceae

(172) **Illicium leucanthum** HAY. Icon. Pl. Formos. IX (1920) 2, f. 2.

*Illicium Anisatum* (non LINN.) HAY. Icon. I (1911) 31; KANEHIRA, Formos. Trees (1917) 19.

*Illicium Anisatum* var. *leucanthum* HAY. Gen. Ind. Fl. Formos. (1916) 2.

*Illicium randaiense* HAY. Icon. IX, 2, f. 3, *syn. nov.*

10032 Taihei-zan, 10034 Musya, 10035! Randaizan, 10036 Randaizan, 10037! Bioritu, 10038-9 Sekizan, 10040 Tôzan.

A medium-sized evergreen tree, 30-60 cm. in diameter, leaves whorled, oblong, entire, 7-10 cm. long, 2.5-4 cm. wide, coriaceous, acute at both ends, petiole 1-1.5 cm. long. flowers axillary, with short pedicels, perianth 12-15, white, lanceolate. In broad-leaved forests at 2,100-2,700 m. altitudes.

*Distrib.* Endemic.

*Jap. name:* Arisan-sirobana-sikimi.

(173) *Illicium arborescens* HAY. Icon. II (1912) 106, IX, 1. f. 1; KANEHIRA, l.c. 20.

*Illicium arborescens* var. *oblongum* HAY. Icon. II (1912) 106.

A small evergreen tree up to 12 m. in height, leaves whorled, lanceolate to elliptic, 10 cm. long, 3.5 cm. wide, entire, petiole 1-2 cm. long, perianth rosy, saucer-shaped. In broad-leaved forests at 300-1,500 m. altitudes.

*Distrib.* Endemic.

*Jap. name:* Akabana-sikimi.

(174) *Illicium daibuense* YAMAMOTO Suppl. Icon. Pl. Formos. V (1932) 22, f. 7.

The type collected by Mr. MATUDA in Daibuzan 1913. "Near *Illicium Anisatum* LINN., but differs by its much narrower leaves and fewer carpels".

*Distrib.* Endemic.

*Jap. name:* Hosoba-sikimi.

(175) *Magnolia Kachirachirai* DANDY in Kew Gard. Misc. Inf. VII (1927) 264.

*Michelia Kachirachirai* KANEHIRA et YAMAMOTO in Trans. Nat. Hist. Soc. Formos. No. 84 (1926) 78.

A large evergreen tree, up to 100 cm. in diameter, leaves lanceolate to oblong, 10-20 cm. long, 2.5-3.0 cm. wide, acuminate, entire, wavy, upper surface dark green, glaucous underneath, petiole 1.5-2 cm. long, flowers terminal, solitary, perianth yellowish green, up to 3.5 cm. long. The tree was first found by KANEHIRA. It is scattered in small patches in the Kôsyun Peninsula.

*Distrib.* Endemic.

*Jap. name:* Katiratirai-no-ki.

(176) *Michelia compressa* MAX. var. *formosana* KANEHIRA in Trans. Nat. Hist. Soc. Formos. XX (1930) 384.

*Michelia compressa* (non MAX.) MATSUM. et HAY. Enum. Pl. Formos. (1906) 10; KANEHIRA, Formos. Trees (1917) 22.

The present variety differs from the species by having much smaller leaves. Very common in broad-leaved forests at 300-1,800 m. altitudes. One of the most important trees in the island.

*Distrib.* Endemic (variety)

*Jap. name:* Taiwan-ogatamanoki.

### Anonaceae

(177) **Goniothalamus amuyon** MERR. in Philip. Journ. Sci. X (1915) Bot. 264, Sp. Blancoanae (1918) 149, Enum. Philip. Fl. Pl. II (1923) 169; Sasaki, List Pl. Formos. (1928) 190.

*Uvaria amuyon* BLANCO Fl. Filip. (1837) 463.

*Polyalthia Sasakii* YAMAMOTO, Suppl. Icon. Pl. Formos. III (1927) 38, t. 2.

10154 Garambi, 10155 Kral Kôsyun, 10156-7 Garambi SASAKI 1912.

A small tree or shrub, leaves oblong, 8-12 cm. long, 4-5 cm. wide, obtuse at both ends, glabrous, flowers axillary or above the leaf scars, sepals 3, petals 6, biseriata, dissimilar, stamens numerous, ripe carpels 1- or 2 seeded, ellipsoid, 10 mm. long, indehiscent. Scattered in the extreme south of the Kôsyun Peninsula, very scarce. It is identified by Dr. E. D. MERRILL that the Formosan form is entirely identical with Philippine material.

*Distrib.* Philippines.

*Jap. name:* Kidati-Oosôkwa.

(178) **Fissistigma Oldhami** MERR. in Philip. Journ. Sci. XV (1919) 134.

*Melodrum Oldhami* HEMSLE, in Ind. Fl. Sin. I (1886) 27; MATSUM. et HAY. Enum. Pl. Formos. (1906) 13; HAY. Fl. Mont. Formos. (1908) 46.

A climber, young shoots, petioles and underside of leaves rusty tomentose, leaves elliptic to obovate, 8-12 cm. long, 3-4 cm. wide, apex obtuse, petiole 3-5 mm. long. In broad-leaved forests at low altitudes throughout the island.

*Distrib.* China.

*Jap. name:* Turu-ryûgan.

### Myristicaceae

(179) **Myristica philippensis** LAM. Act. Paris (1788) 161; MŪQ. Fl. Bat. I, 2 (1858) 50; MERR. Enum. Philip. Fl. Pl. (1923) 179.

*Myristica heterophylla* (non WARB.) HAY. Gen. Ind. Fl. Formos. (1917) 61; KANEHIRA, Formos. Tees (1917) 411; SASAKI, List. Pl. Formos. (1928) 190.

*Myristica simiarum* (non A. DC.) HAY. l.c. 61; SASAKI, l.c. 190.

10167 Botel Tobago SASAKI.

A large evergreen tree up to 100 cm. in diameter, 20 m. in height, with straight trunk, leaves oblong, entire, 15-25 cm. long, 5-9 cm. wide, lateral nerves 16-18 pairs, impressed above, petioles 2.5-3 cm. long, dioecious, fruit ellipsoid, 6 cm. long, seed arillate, flowers unknown. The materials sent to the Bureau of Science Manila and identified by Dr. MERRILL.

*Distrib.* Philippines.

*Jap. name:* Kôtô-nikuduku.