

SAXIFRAGACEAE OF TAIWAN

by

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It is more than twenty five years since Masamune's *Short Flora of Formosana* was published in 1936. After that date the work on the taxonomy of the Taiwan plants was largely discontinued for about ten years owing to the War. However during the past decade, revisional studies of the flora have been greatly accelerated by the Taiwan botanists, though a complete new flora is still far from completion. A preparation of a new flora is indeed an urgent need not only for the biologists of Taiwan but for botanists in many other countries as well.

During the school year 1960-1961 the first named author had the privilege of working at the National Taiwan University and together with the second named author made a number of collecting trips in various parts of Taiwan. In the course of the examination of some thousands of specimens acquired on these trips we sometimes have met with new or interesting species. In this and following papers, we intend to present some results of our taxonomic studies. * Our design is to revise each family or genus, and thus aid in gathering materials for a new flora of Taiwan.

The present paper is a critical revision of Saxifragaceae of Taiwan, we recognize 12 genera and 23 subgeneric taxa. No new species are described but considerable new information regarding the plants and their distribution has been included. The keys will serve for determination of any Saxifragaceous plants of Taiwan.

In this paper the following abbreviations are used to indicate the herbaria in which the specimens cited are preserved.

KYO: Kyoto University, Kyoto, Japan

SHIN: Shinshu University, Ueda, Japan

TAI: The National Taiwan University, Taipei, Taiwan, China

TI: Tokyo University, Tokyo, Japan

TNS: The National Science Museum, Tokyo, Japan

Thereby we wish to express our cordial thanks to the curators of these herbaria for their kind admission for examination of the specimens. Also our thanks must be due to Dr. Charles E. DeVol for his valuable suggestions on this paper.

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KEY TO THE GENERA OF THE SAXIFRAGACEAE

- A. Fruit capsules
 - B. Carpels 2; stamens equal to or double the number of petals; herbs
 - C. Scapose herb with staminoids.....*Parnassia*
 - CC. Herbs not scapose and without staminoids
 - D. Ovary 1 locular with parietal placenta; leaves simple
 - E. Sepals 4, without petals; inflorescence in cymes.....*Chrysosplenium*
 - EE. Sepals 5, flowers with petals; inflorescence in racemes
 - F. Carpels unequal in size.....*Tiarella*
 - FF. Carpels nearly equal in size.....*Mitella*
 - DD. Ovary 2 locular with axile placenta; leaves compound.....*Astilbe*
 - B. Carpels 2-5; shrubs (except *Cardiandra* which is a herb)
 - C. Bearing neutral flowers; stamens numerous
 - D. Styles united; neutral flowers with only one sepal.....*Schizophragma*
 - DD. Styles separate; neutral flowers with 2-4 sepals
 - E. Shrubs; leaves opposite.....*Hydrangea*
 - EE. Herbs; leaves alternate.....*Cardiandra*
 - CC. Without neutral flowers; stamens 10 or 5.
 - D. Stamens 10; ovary 5 locular; leaves opposite
 - E. Filament alate; styles 4-5.....*Deutzia*
 - EE. Filament filiform; styles united.....*Pileostegia*
 - DD. Stamens 5; ovary 2 locular; leaves alternate.....*Itea*
- AA. Fruit baccate (fleshy).....*Ribes*

1. *Parnassia* L.

✓ ***P. palustris* L.**, Sp. Pl. 273 (1753); HAYATA, Fl. Mont. Formos. 88 (1908) & Ic. Pl. Formos. 2:3 (1912)—*P. palustris* var. *syukorankeiensis* YAMAM., Journ. Soc. Trop. Agr. 4:306 (1932).

Distribution: Alaska, Aleutian, Kamtchatka, Kuriles, Saghalien, Japan, Korea, Manchuria, Siberia, North China, Taiwan, Himalayas, Asia Minor, Europe.

Taiwan:

Ilan Hsien: Doba to Mt. Taihei, J. Ohwi 2310 (KYO); Mt. Taihei, s. leg. (TI); Ugan to Mt. Taihei, S. Suzuki Jul. 3, 1936. (TAI); Mururoahu, Mt. Taihei, S. Hibino, R. Kikawa & G. Ko s. n. (TAI); Tekunan-chi, Mt. Taihei, S. Suzuki s. n. (TAI); inter Sikikum et Piyanan-ambu, Mt. Taihei, T. Hosokawa 2381 (TAI); Mt. Taihei, H. Keng K1222 (TAI).

Hualien Hsien: Mt. Chingshui, alt. 1400-2100 m, limestone crevices in the open gravelly slope, T. Shimizu & M. T. Kao 11818 (KYO, SHIN); ibid., 1800-2400 m alt., T. Shimizu 12480 (KYO, SHIN); Nokozan, 10000 ped., E. Matsuda 66 (TI).

inter Kiraikei et Higasi-noko, Y. Kudo et K. Mori 2075 (TAI); Mt. Noko S. Sasaki 1919 (TAI).

Chiayi Hsien: Ganzan, Niitaka, S. Nagasawa 692 (KYO, TI); Mt. Niitaka, T. Kawakami & U. Mori 2209 (TI); *ibid.*, S. Sasaki Oct. 1927 (TAI).

Taichung Hsien: Hatukan—Tonpo, H. Simada 931 (TAI).

Taitung Hsien: Y. Yamamoto & K. Mori Y M 506 (TAI); Shin-Zan to Kiriyaama, T. Hosokawa s. n. (TAI); in Taito-montibus, Y. Yamamoto s. n. —type of var. *syukorankeiensis* Yamamoto (TAI).

Kaohsiung Hsien: Mt. Keinan, Rokki-sho, Kizan-gun, S. Okamoto s. n. (KYO).

2. *Chrysosplenium* L.

A. Plant without rusty hairs; leaves opposite, membranaceous in texture

B. Plant completely glabrous; capsules nearly inferior, emarginate at the top.....*C. Delavayi*

BB. Plant more or less pubescent; capsules project over calyx tubes, distinctly bilobed.....*C. hebetatum*

AA. Plant with rusty hairs; leaves alternate, herbaceous in texture

.....*C. lanuginosum* var. *formosanum*

C. Delavayi FRANCH., Bull. Soc. Bot. France 32:7 (1885); HARA, Journ. Jap. Bot. 17: 21 (1941) & Journ. Fac. Sci. Univ. Tokyo sect. 3, 7:20 (1957).—*C. subargenteum* LEV. et VAN., Fedde Repert. 9:441 (1911)—*C. holochlorum* OHWI, Act. Phytotax. Geobot. 2:152 (1933); SUTO, Journ. Jap. Bot. 11:401, f. 5 (1935).

Distribution: Taiwan.

Taipei Hsien: Mt. Rara, Bunzan-gun, J. Ohwi 996—**type** of *C. holochlorum* (KYO); isotype in TNS).

Hsinchu Hsien: Mt. Tamanzan, T. Suzuki et T. Nakamura ST 18230 (TAI).

Ilan Hsien: Yappiwa to Asahi, T. Suzuki 8778 (KYO); Kyanrawa to Mururoafu, J. Ohwi 2427 (KYO).

C. hebetatum OHWI, Fedde Repert. 36:52 (1934); Suto, l. c. 399, f. 4; HARA, l. c. 43 (1957).

Distribution: Taiwan.

Taichung Hsien: Tonbara to Onoue N. Fukuyama 4677 (TAI).

Taipei Hsien: Mt. Rara. Ohwi 996 **Paratype** (TAI).

Hualien Hsien: Noko-geo, J. Ohwi 3176, 3248 (KYO).

Nantow Hsien: Niitaka-shuzan to Hattsukan, J. Ohwi 3732 (KYO).

Chiayi Hsien: Niitaka-shita to Niitakashuzan, J. Ohwi 3695 (KYO); Mt. Ali, K. Yamada YD 56 (TAI).

Pingtung Hsien: Mt. Daibu, J. Ohwi 1841 (KYO).

C. lanuginosum HOOK. f. et THOMSON var. **formosanum** (HAYATA) HARA, l. c. 83 (1957). —*C. formosanum* HAYATA, Ic. Pl. Formos. 3:103, f. 18 (1913); Suto, l. c. 397.

Distribution: Taiwan

Taipei Hsien: Tamanzan alt. 1800 m, T. Suzuki ST18182, (TNS); ST18176 (TAI).

Ilan Hsien: Shikikun to Pianan-anbu, J. Ohwi 2657 (KYO).

Hualien Hsien: Around Mt. Chingshui, T. Shimizu 12539 (KYO, TI); Nokogoe, J. Ohwi 3176 (KYO).

Chiayi Hsien: Mt. Arisan, s. leg. (TI); Mt. Niitaka, Kawakami & Mori s. n. (TI); Montibus centralibus, T. Kawakami & U. Mori s. n.—**type** (TI).

3. *Tiarella* L.

T. polyphylla D. DON, Prodr. Fl. Nepal. 210 (1825); SASAKI, Tr. Nat. Hist. Soc. Formos. 21:224 (1931); KUDO & MASAM., Ann. Rep. Taihoku Bot. Gard. 2:113 (1932).

Distribution: Japan, Taiwan, China and Himalayas.

Taiwan:

Ilan Hsien: Taiheizan to Kyanrawa, J. Ohwi 2342 (KYO); Kyanrawa to Shikikun, J. Ohwi 2439 (KYO); Mt. Taiping, K. Kimura (TAI).

Hualien Hsien: Around Mt. Chingshui alt. 1800–2400 m, T. Shimizu 12550 (KYO); Mt. Chingshui, T. Nakamura 3726 (TAI).

4. *Mitella* L.

M. formosana (HAYATA) MASAM., Journ. Soc. Trop. Agr. 4:77 (1932); KUDO & MASAM., Ann. Rep. Taihoku Bot. Gard. 2:113 (1932); HARA in NAKAI & HONDA, Nov. Fl. Jap. (*Saxifrag.*) 130 (1939)—*M. japonica* var. *formosana* HAYATA, Ic. Pl. Formos. 3:101 (1913)—*M. japonica* (non MIQ.) HAYATA, Bot. Mag. Tokyo 20:54 (1906) & Fl. Mont. Formos. 88 (1908) & l. c. 2:3 (1912)—*M. obconica* OHWI, Act. Phytotax. Geobot. 1:63 (1932).

Distribution: Taiwan

Taipei Hsien: Chakon to Mt. Rara, Bunzan-gun, J. Ohwi 832 (KYO); Bunzangun, Tamanzan, N. Fukuyama, & T. Suzuki, ST18239, ST16495, (TAI); Saukan to Kyanrawa, T. Suzuki 7062, 7154, 8596 (TAI); Bunzangun, Rarasan-Kore Rogan 1,700m T. Suzuki ST18174 (TAI).

Ilan Hsien: Kyanrawa to Shikikun in Mt. Taihei, J. Ohwi 2443 (KYO); Taiheizan, K. Kimura s. n. (TI).

Miaoli Hsien: Mt. Tsugitaka, K. Mori s. n. (TI).

Hualien Hsien: Around Mt. Chingshui, T. Shimizu 12500 (KYO, SHIN, TI); *ibid.*, T. Shimizu & M. T. Kao 11844 (KYO); Noko-goe, J. Ohwi 3025 (KYO); Shukorankei, S. Nagasawa 613 (KYO, TI); Kiraikei to Asahi, E. Matsuda 97 (TI); Kiraikei, E. Matuda s. n. (TAI); in silvis montis Taroko-taizan, T. Suzuki ST 9504 (TAI); Higa-shi-noko, N. Fukuyama 4429 (TAI); Mt. Nankotaizan, S. Suzuki s. n. (TAI); Mt.

Nan-kotaizan, S. Suzuki s. n. (TAI); Tyuosenzan, N. Fukuyama, & T. Suzuki 16297 (TAI).

Nantow Hsien: Hattukan to Tompo, M. Tagawa 473 (KYO).

Chiayi Hsien: Arisan, Faurie 1693 (KYO); Arisan to Tataka, J. Ohwi 3618 (KYO); Numanohira to Nimandaira, M. Honda & H. Ito s. n. (TI); Tozan, T. Kawakami & G. Nakahara s. n. (TI); Mt. Niitaka, T. Kawakami & U. Mori 2035, 2131 (TI); Rito-zan, E. Matsuda 425 (TI); Oiwake, 7500 ped., B. Hayata s. n. (TI).

Kaohsiung Hsien: Kanzan, Rokki-sho, Kizan-gun, S. Okamoto s. n. (KYO).

Pingtung Hsien: Shimopaiwan to Mt. Daibu, J. Ohwi 1755 (KYO).

Hsinchu Hsien: Mt. Taichasenzan, T. Hosokawa 2447 (TAI); Taickeigun, Mekuisi-nyama, T. Suzuki & T. Nakamara ST 18261 (TAI).

Taichung Hsien: Tugitaka, G. Masamune 1270 (TAI).

5. *Astilbe* HAMILT

A. Middle sized mountain plant, 1 m or so tall; inflorescence with glandular hairs only; petal usually linear 1-2 mm long without nerves.....*A. longicarpa*

AA. Small sized alpine plant, 30 cm or so tall; inflorescence with glandular hairs and also dense scaly ones; petal ovate 3.5-4 mm long distinctly nerved

.....*A. macroflora*

A. longicarpa (HAYATA) HAYATA, Mater. Fl. Formos. 106 (1911) & Ic. Pl. Formos. 2:2 (1912).—*A. chinensis* FR. et SAV. var. *longicarpa* HAYATA, Fl. Mont. Formos. 86 (1908).—*A. chinensis* (non FR. et SAV.) HAYATA, l. c. (1908) & l. c. (1912).

Distribution: Taiwan

Taipei Hsien: Agyoku, Bunzan-gun, J. Ohwi 598 (KYO); Mt. Rara to Shinten, J. Ohwi 1016 (KYO); Mt. Daiton, S. Nagasawa s. n. (KYO); Se-ten, H. Keng & M. T. Kao 1285 (TAI); Pitan, H. Shimizu 2266 (TAI); Mururoahu to Kyarawa, T. Suzuki 7145 (TAI).

Ilan Hsien: Mt. Taihei to Doba, J. Ohwi 2231 (KYO); Doba to Ekizyukei, M. Tagawa 13 (KYO); Mt. Taihei, Y. Yamamoto s. n. (TI).

Hualien Hsien: Nokogoe, J. Ohwi 2986 (KYO); Tabito to Karapao, J. Ohwi 1161 (KYO); Batakan to Nai-taroko s. leg. (TI); Panpien to Tienchang, T. Shimizu 11229 (KYO, TI); Tienchang cliff, T. Shimizu 11256 (KYO); around Tienshang, T. Shimizu & M. T. Kao 10631, 11673 (KYO, SHIN, TAI).

Nantow Hsien: Tataka to Numanohira, M. Tagawa 385 (KYO); Musya-Santinozyo-Miharasi, Masamune, Mori & Nakamura 2079 (TAI); Pah-Ton-Kuan-Tonpu, H. Simada SH923 (TAI).

Chiayi Hsien: Mt. Iwaiyama, Arisan, J. Ohwi 3457 (KYO); Arisan, T. Sato 210 (TI); Ibid., 2500m, Faurie 162 (KYO); Genzan (Niitaka), S. Nagasawa 636 (KYO, TI); Tappansha, T. Kawakami & U. Mori 1743—type (TI); Mt. Niitaka, T. Kawakami

& U. Mori 1990—**paratype** (TI); Mt. Ali, Chuang & Kao s. n. (TAI).

Kaohsiung Hsien: Between Masuhoaru and Nakanoseki, Kizan-gun, M. Tagawa 1234 (KYO); Takimi, Rokki-sho, Kizan-gun, S. Okamoto s. n. (KYO); Chirifu, Rokki-sho, Kizangun, S. Okamoto s. n. (KYO); Kanzan-goe, Kizan-gun, S. Okamoto s. n. (KYO); Pinma-sha, E. Matuda s. n. (TAI); Izumo, Y. Yamamoto et K. Mori YM 502 (TAI); Kikiyo, Y. Yamamoto & K. Mori YM 89 (TAI) Oiwake et Miharasi T. Hosokawa 5210 (TAI); Raisya, E. Matuda 908 (TAI).

Taitung Hsien: Chippon-goe, J. Ohwi 1408 (KYO); Daijurin to Shussuiha, J. Ohwi 443 (KYO); Kiriyaama to Tipponzan, M. Tagawa (KYO).

Taichung Hsien: Mt. Shinshan, Liu, Kou & Kao 395 (TAI); Mt. Pah-hsin-shan Chuang, Kou & Kao 2714 (TAI).

Hsinchu Hsien: Mogiri, N. Fukuyama 3522 (TAI); Mt. Kita-Soten T. Suzuki, 4651 (TAI).

A. macroflora HAYATA, l. c. 86 (1908) & l. c. 2:2 (1912).

Distribution: Taiwan

Ilan Hsien: Mt. Nankotaizan, Kirittoi to Bunakke, J. Ohwi 4002 (KYO); Mt. Nankotaizan, J. Ohwi 4061 (KYO); Mt. Nankotaizan, T. Suzuki, N. Fukuyama & H. Simada 18081 S. Suzuki s. n. (TAI) Mt. Taiha S. Suzuki s. n. T. Hosokawa 2486 (TAI).

Hualien Hsien: Nokogoe, J. Ohwi 3192, 3263 (KYO); Nokozen, E. Matsuda s. n. (TI); Mt. Tyuosen-hyphen-zan, T. Suzuki 15173 (TAI).

Nantow Hsien: Hattsukan to Rakuraku, J. Ohwi 3848 (KYO).

Chiayi Hsien: Mt. Morrison, G. Nakahara s. n.—**type** (TI).

6. *Schizophragma* SIEB. et ZUCC.

S. integrifolia OLIV. var. **Fauriei** (HAYATA) HAYATA, Gen. Ind. Fl. Formos. 27 (1916); KANEH., Formos. Tr. ed. rev. 247 (1936); LIU, Ill. Nat. Intr. Lign. Pl. Taiwan 1:428, f. 363 (1960).—**S. Fauriei** HAYATA in MATSUM. & HAYATA, Enum. Pl. Formos. 131 (1906).—**S. hydrangeoides** SIEB. et ZUCC. var. **Fauriei** (HAYATA) HAYATA, Mater. Fl. Formos. 106 (1911).

Distribution: Taiwan

Taipei Hsien: Mt. Tatung, U. Faurie 104—**type** (TI).

Ilan Hsien: Mt. Taihei, Mururoahu-Kyanrawa, J. Ohwi 2327 (KYO); Mt. Taihei, T. Suzuki s. n. (TI); Mt. Bombon, E. Matuda 519 (TI); Mt. Taipin alt. 1800 m. H. Keng 1220 (TAI); S. Suzuki 208, 652 (TAI).

Hualien Hsien: Mt. Chingshui, T. Shimizu 12504 (KYO, TAI); Mt. Tyuosen-zan, N. Fukuyama & T. Suzuki ST16195 (TAI); Mt. Muhkwa, M. T. Kao 4128. (TAI)

Nantow Hsien: Numanohira to Tataka, M. Tagawa 362 (KYO).

Chiayi Hsien: Arisan. Faurie 153 (KYO); Tozan, Hayata s. n. (TI); Mt. Ali, T. C.

Huang & M. T. Kao 1666 (TAI).

Taitung Hsien: Izumo, Y. Yamamoto & Y. Mori YM 489 (TAI).

7. *Hydrangea* L.

- A. Ovary inferior; capsule truncate at apex; styles divided into 2 rarely 3 at bases; petals not patent in anthesis, falling together
- B. Deciduous erect shrubs or lianes; leaves chartaceous in texture, apparently serrated, not punctate with glands
- C. Scandent shrub; leaves glabrous but with axillary tufts of hairs on undersurface; seeds with rounded wing surrounding body.....*H. anomala*
- CC. Erect shrub; leaves pubescent above and tomentose to be white or gray beneath; seeds caudate without rounded wing
- D. Leaves widely ovate with venation denser; petals of neutral flower serrated *H. aspera*
- DD. Leaves oblongly ovate, caudately acuminate, veins looser; petals of neutral flower entire.....*H. longifolia*
- BB. Evergreen scandent shrub; leaves hard coriaceous in texture, entire, punctate with glands.....*H. integrifolia*
- AA. Ovary half superior; capsule conical at apex; styles divided into 3-4 at bases; petals patent in anthesis
- B. Seeds caudate; inflorescence paniculate.....*H. paniculata*
- BB. Seeds not caudate; inflorescence flat at top
- C. Leaves chartaceous, apparently serrated, more or less pubescent on both surfaces; petals of neutral flower serrated.....*H. angustipetala*
- CC. Leaves somewhat leathery, not conspicuously serrated, almost completely glabrous; petals of neutral flower entire.....*H. chinensis*
- H. anomala** D. DON, Prodr. Fl. Nepal 211 (1825); HAYATA, Ic. Pl. Formos. 3:106 (1913); KANEH., Formos. Tr. ed. rev. 241, f. 182 (1936); McCLINTOCK, Monogr. Hydr. 196 (1957).—*H. glabra* HAYATA, Fl. Mont. Formos. 89, t. 6 (1908).—*H. anomala* subsp. *petiolaris* (SIEB. et ZUCC.) McCLINTOCK, Journ. Arn. Arb. 37:373 (1956) & l. c. 199 (1957), quoad pl. ex Taiwan; LIU, Ill. Nat. Intr. Lign. Pl. Taiwan 1:419, f. 354 (1960).

Distribution: Himalayas, west and south China and Taiwan.

Taiwan:

Ilan Hsien: Taiheizan, K. Kimura s. n. (KYO, TI); near Pianan-anbu, J. Ohwi 2885 (KYO).

Chiayi Hsien: Arisan 2500 m, Faurie 146 (KYO); Mt. Niitaka 7500 ped., T. Kawakami & U. Mori 1787—type of *H. glabra* (TI); Mt. Ali, S. Sasaki s. n. (TAI).

Basing upon difference of only number of stamens, McClintock reduced *H. petiolaris*

to a subspecific rank of *H. anomala* and published her opinion that the Taiwan plant so far called *H. anomala* was same with *H. petiolaris* of Japan. The result of our examination, however, is that the Japanese plant has about 20 stamens 3–5 mm long while the Taiwan plant 10 or so stamens only 1–3 mm long. In this respect, we prefer to assign the Taiwan plant to the continental *H. anomala* as done by some previous authors.

H. aspera D. DON, l. c.; McCLINTOCK, l. c. 190 (1957), cum subsp. *strigosa* & *robusta*, quoad pl. ex Taiwan; LIU, l. c. 420, f. 355.—*H. kawakamii* HAYATA, l. c. 90, t. 8 (1908) & l. c. 2:6 (1912) & l. c. 3:108, f. 18 (1913); KANEH., l. c. 242, f. 185 (1936).

Distribution: Himalayas, China, Taiwan and Sumatra.

Taiwan:

Ilan Hsien: Ekijukei to Piyanan-anbu, M. Tagawa 102 (KYO); Pianan-anbu to Shikikun, J. Ohwi 4256 (KYO); inter Sikikun et Piyanan-anbu, T. Hosokawa 2413 (TAI); Mt Taipin, S. Suzuki 267, 635 (TAI).

Hualien Hsien: Mt. Chingshui, T. Shimizu 12596 (KYO); Mt. Tarokotaizan, T. Suzuki 9520 (TAI); Tausai, 2000 m, T. Suzuki, N. Hukuyama, & H. Simada ST 17727 (TAI); Mt. Tyuosenzan, N. Fukuyama, T. Suzuki ST 16204 (TAI); Mt. Fungshan, Liu, Chen & Kao, 10 (TAI); Mt. Muhkwa, M. T. Kao 4161 (TAI); inter Kiraikei et Higasinoko Y. Kudo et K. Mori 2076 (TAI)

Nantow Hsien: Dantaisan, s. leg. (TI); Kiraikei to Higashinoko, Y. Kudo & K. Mori 2076 (TAI).

Chiayi Hsien: Arisan 2500 m, U. Faurie 1340 (KYO); Heishana to Jujiro, B. Hayata s. n. (TI); Mt. Niitaka, T. Kawakami & U. Mori 1875—**type** of *H. Kawakamii* (TI).

Kaohsiung Hsien: Mt. Keinan, Rokki-sho, Kizan-gun, S. Okamoto s. n. (KYO); Ako huji, Ariko-banti, E. Matuda s. n. (TI).

Taitung Hsien: Kotobuki to Tuneban, Y. Yamamoto & K. Mori YM 299 (TAI).

Pintung Hsien: Paiwan, E. Matuda 77 (TAI); Budai, T. Hosokawa 5402 (TAI).

Taichung Hsien: Mt. Sikayo, T. Hosokawa 2365 (TAI)

Taipei Hsien: Mt. Rara, T. Suzuki ST 11741 (TAI).

H. longifolia HAYATA, l. c. 91 (1908) & l. c. 2:7 (1912); KANEH., l. c. 244, f. 186 (1936).—*H. involucrata* SIEB. sensu McCLINTOCK, l. c. 184 (1957), quoad pl. ex Taiwan; Liu l. c. 423, f. 358.

Distribution: Taiwan

Hualien Hsien: Taroko, T. Kawakami & G. Nakahara 690—**type** (TI); Tenchozan, E. Matuda s. n. (TI,TAI); Tienshang, T. Shimizu & M. T. Kao 10506 (KYO, TAI); Naitaroko, E. Matuda 576 (TI); Tabito Miharashi, M. Tagawa 732 (KYO); Hakku, Noko-gun, S. Sasaki s. n. (TI); from Gouliu to Batakan, T. Hosokawa 5099 (TAI); Mt. Fong-shan, Liu, Chen & Kao 20, (TAI).

Nantow Hsien: Sakahen, Y. Kudo et K. Mori 1922 (TAI).

Ilan Hsien: Mt. Tayen, M. T. Kao 3194 (TAI); Mt. Taiping S. Suzuki 5906A (TAI).

McClintock considered *H. longifolia* of Taiwan as same with *H. involucrata* of Japan.

Comparing these two species, leaves of the former are constantly oblong adpressedly serrated and shorter petioles 1-2 cm long. Contrariwise, those of the latter are widely ovate with triangular teeth at the margins and longer petioles extending 8 cm long. The floral parts of the former, in addition, are distinctly larger than those of the latter. This is the reason why we prefer to separate the Taiwan plant from the Japanese one.

H. integrifolia HAYATA in HAYATA & MATSUM., Enum. Pl. Formos. 131 (1906) & l. c. 2:6 (1912); McCLINTOCK, l. c. 236 (1957); LIU, l. c. 422, f. 357.—*H. integra* HAYATA, l. c. 90, pl. 7 (1908) & l. c. 2:5 (1912) & l. c. 3: 107, f. 17 (1913) & l. c. 5:70 (1915); KANEH., l. c. 242, f. 184 (1936).

Distribution: Philippine and Taiwan.

Taiwan:

Taipei Hsien: Mt. Taitung, U. Faurie 105—**type** (TI; isotype in KYO); Mt. Rara, E. Matuda, s. n. (TAI); Mt. Kentobo, Bunzangun, T. Suzuki ST 19342 (TAI).

Ilan Hsien: Nankotaizan, Kirittoi to Bunakkei, J. Ohwi 3964 (KYO); Mt. Taipin S. Suzuki 83, 648, 652, 5021 (TAI); *ibid.*, T. Suzuki 7211 (TAI); Mt. Nankotaizan S. Suzuki s. n. (TAI); Mt. Tayanshan, M. T. Kao 3222 (TAI).

Hualien Hsien: Kiraikei to Asahi, E. Matuda s. n. (TI); Sekigahara to Gokwan, M. Tagawa 855 (KYO).

Chiayi Hsien: Mt. Arisan, B. Hayata s. n. (TI); *ibid.*, U. Faurie 141, 143, 144, 1692, 1693 (KYO); Jujiro to Heishana, B. Hayata s. n. (TI); Heishana to Nimandaira, B. Hayata s. n. (TI); Niitakayama, T. Kawakami & U. Mori 1723—**type** of *H. integra* (TI); Mt. Niitaka T. Wakatsuki 1436 (TAI); Mt. Ali, B. Hayata & S. Sasaki s. n. (TAI); *ibid.*, S. Suzuki s. n. (TAI); *ibid.*, Y. Yamamoto & T. Nakamura 4092 (TAI); *ibid.*, T. Suzuki ST18020 (TAI); *ibid.*, M. T. Kao 3334 (TAI); *ibid.*, S. Sasaki s. n. (TAI). *ibid.*, Y. Hashioka s. n. (TAI).

Kaohsiung Hsien: Takimi to Hinode, Rokki-sho, Kizan-gun, S. Okamoto s. n. (KYO).

Hsinchu Hsien: Mt. Rokujo-taizan, N. Fukuyama 3251, 3276, 3453 (TAI).

Taichung Hsien: Mt. Amma, T. S. Liu et al. 25 (TAI); Mt. Pahsenshan, Liu, Kou & Kao 340. (TAI), Chung, Kou & Kao 2682 (TAI).

Nantow Hsien: Hsitou, Liu & Kuo s. n. (TAI)

Taitung Hsien: From Kakayo to Torin, Y. Yamamoto & K. Mori YM 145, 194 (TAI).

H. paniculata SIEB., Nov. Act. Acad. Leop.-Carol 14:691 (1829); SUZUKI, Ann.

Rep. Taihoku Bot. Gard. 1:146 (1932); McCLINTOCK, l. c. 22 (1957); LIU, l. c. 425, f. 360.

Distribution: Saghalien, Japan, Southeastern China and Taiwan.

Taiwan:

Taipei Hsien: Saukan to Kyanrawa, T. Suzuki 7092 (TAI); Tonroku, Roppeizan, T. Suzuki 18927 (TAI).

Ilan Hsien: Mt. Taipin, S. Suzuki, s. n. (TAI); Mururoa, S. Hibino, R. Kikawa & Ku s. n. (TAI).

H. angustipetala HAYATA, Mater. Fl. Formos. 107 (1911); KANEH., l. c. 240, f. 181; LIU, l. c. 418, f. 353.—*H. angustifolia* HAYATA, l. c. 1: t. 32 (1912).—*H. scandens* (L. f.) SERINGE subsp. *chinensis* (MAXIM.) MCCLINTOCK, l. c. 37:373 (1956) & l. c. 206 (1957), p. p.

Distribution: Ryukyu and Taiwan

Taiwan:

Taipei Hsien: Mt. Hichisei, J. Ohwi 2062 (KYO); *ibid.*, K. Kimura s. n. (KYO); Sozan, U. Faurie s. n. (KYO); T. Ito 6 (KYO); K. Kimura s. n. (KYO, TI); Mt. Tatung, U. Faurie 102, 1855 (KYO); Chikushiko, T. Kawakami & Y. Simada s. n. (TI); H. Simada 1000 (TI); Kiirun, K. Odashima 17856 (KYO, TI); Mt. Soten, T. Kawakami & U. Mori s. n. (TI); Syabozan, T. Suzuki 5910 (TAI); Saukan et Kyanrawa, T. Suzuki 7091 (TAI); Wantan, H. Keng 1010 (TAI); Mt. Yanmin, Hsu & Kao 3306, (TAI); *ibid.*, Huang 2434 (TAI); Mt. Tatung, H. Keng & Kao s. n. (TAI); *ibid.*, Lee & Kao 3948 (TAI).

Ilan Hsien: Mt. Taihei, Kyanrawa to Shikikun, J. Ohwi 2435 (KYO); Churei, T. Kawakami & U. Mori 13831—**type** (TI); Mt. Taipin, S. Suzuki s. n. (TAI) Mururoahu, S. Suzuki 6192 (TAI); Insl. Kizan, G. Masamune & S. Suzuki s. n. (TAI)

Hsinchu Hsien: Mt. Taihasenzan, T. Ito s. n. (TI).

Chiayi Hsien: Bunkiko 1500 m, U. Faurie 141 (KYO); Arisan 2500 m, U. Faurie 140 (KYO); Mt. Ali, Yamamoto & Mori s. n. (TAI).

Taichung Hsien: Mt. Pahsenshan, Chuang, Kou & Kao 2604, (TAI); *ibid.* Liu, Kou & Kao 409 (TAI).

Kaohsiung Hsien: Hugie to Chiusinron, Y. Yamamoto & K. Mori 787 (TAI); Tatumi—Keinanzan, Y. Yamamoto & K. Mori 703 (TAI).

Taitung Hsien: Mt. Kiri, T. Hosokawa 5344 (TAI).

Hualien Hsien: Mt. Fong-shan, Liu, Chen & Kao 94 (TAI); Mt. Muhkwa, Liu, Chen & Kao 243, (TAI); *ibid.*, Kao 4170 (TAI).

The type specimen of this species presents herbaceous and pubescent leaves, pubescent corymb, pubescent floral parts except carpels, and serrated sepals of the neutral flower. Basing upon these distinguishing characters, we are of opinion that the present species should not be referred to *H. chinensis* which is characterized by its nearly glabrous and somewhat leathery leaves.

H. chinensis MAXIM., Mem. Acad. Imp. Sci. St. Peter. St. Peter. ser. 7, 10:7 (1867); MATSUM. & HAYATA, l. c. 130 (1906); HAYATA, l. c. 89 (1908) & l. c. 2:5 (1912):

KANEH., l. c. 241, f. 183.—*H. scandens* (L. f.) SERINGE subsp. *chinensis* (MAXIM.)
 McCLINTOCK, l. c. 37:373 (1956) & l. c. 206 (1957), p. p.—*H. Lobbii* MAXIM., l. c.
 15; LI, Journ. Wash. Acad. Sci. 42:42 (1952).—*H. glabrifolia* HAYATA l. c. 3: 108
 (1913).—*H. obovatifolia* HAYATA, l. c. 3: 109 (1913).—*H. yayeamensis* KOIDZ., Bot.
 Mag. Tokyo 43:394 (1929)—*H. formosana* KOIDZ., l. c.

Distribution: West and south China, Ryukyu, Taiwan and Philippines.

Taiwan:

Taipei Hsien: Kokei, Naisho, Nagasawa s. n.—**type** of *H. macrosepala* (TI; isotype
 in KYO); Okaseki, U. Faurie 103 (KYO); Mt. Tatung, U. Faurie 102, 1648, 1868
 (KYO); Mt. Hichisei, J. Ohwi 14 (KYO); Chikushiko, S. Nagasawa s. n. (KYO);
 Hokuto, U. Faurie 148 (KYO); Urai, U. Faurie 147 (KYO); Agyoku, Bunzan-gun,
 J. Ohwi 537 (KYO); Tomitacho, Taihoku-shi, T. Tanaka & Y. Simada 13493
 (KYO); Mt. Pitang, H. Simizu 2106, (TAI); Mt. Tatung, H. Simada 98 (TAI);
 ibid. Sasaki s. n. (TAI); Mt. Yanmi, Kudo, Suzuki & Mori (TAI); Mt. Chisin,
 H. Simizu 639 (TAI); Mt. Kwanin, K. Mori 11 (TAI); Kankou, Lin & Shen,
 s. n. (TAI); Habun-Iboho, T. Suzuki 17865 (TAI).

Nantow Hsien: Tantaisha, Mori s. n.—**type** of *H. glabrifolia* (TI); Rengechi, T.
 Hayashi s. n. (TAI).

Hualien Hsien: Teraso-san, the coast of Shokoko, B. Hayata s. n.—**type** of *H. obovat-*
ifolia (TI); between Sakahen to Kirai, Kwarengun, M. Tagawa 3350 (KYO);
 Kirai, Kwarengun, M. Tagawa 3309 (KYO); between Tarokoguchi to Harokudai,
 Kwarengun M. Tagawa 3385 (KYO); between Rokumei to Sampu, Tamazato-gun,
 M. Tagawa 3473 (KYO); Lungchien to Panpien, T. Shimizu 11165 (KYO, SHIN);
 Mt. Chingshui, T. Shimizu 12380 (KYO); ibid., T. Shimizu & M. T. Kao 11693
 (KYO, SHIN, TAI, TI); ibid., T. Shimizu & M. T. Kao 11832 (KYO, SHIN);
 Tachingshui valley, T. Shimizu & M. T. Kao 11637 (KYO).

Taitung Hsien: Chippon-goe, J. Ohwi 1420 (KYO); Botel Tobago (Lanyi) Y. Yamamoto
 s. n. (TAI); ibid., T. Sikano s. n. (TAI); ibid. Liu, Keng et al. 368, 367, 69 (TAI).

Kaohsiung Hsien: Daikanzan to Nakanoseki, S. Okamoto s. n. (KYO); Mt. Nanmen-
 zan, T. Suzuki 20897 (TAI).

Miaoli Hsien: Ta-an, Kuo & Kao 481, (TAI).

Pintung Hsien: Pintung, E. Matuda 912 (TAI); Chautzu, E. Matuda 910 (TAI)

8. *Cardiandra* SIEB. et ZUCC.

C. alternifolia SIEB. et ZUCC. var. **binata** F. MAEK., Journ. Jap. Bot. 25:158 (1950).—
C. formosana HAYATA, Bot. Mag. Tokyo 20:54 (1906); MATSUM. & HAYATA, l. c.
 132 (1906); HAYATA, l. c. 107 (1911) & l. c. 2:10 (1912).—*C. Moellendorffi* (HANCE)
 MIGO, Journ. Jap. Bot. 18:419 (1942).—*Hydrangea Moellendorffi* HANCE, Journ. Bot.
 XII:177 (1874).

Distribution: Taiwan

- Chiayi Hsien: Tappansha, S. Nagasawa 714—**type** (TI; isotype in KYO); Funkiko, Faurie 1341, 1691 (KYO); Koden, T. Kawakami & U. Mori 1735 (TI).
 Taitung Hsien: Mt. Takukei, T. Kawakami & U. Mori 2201 (TI).
 Taoyuan Hsien: Mt. Kitasotenzan, R. Kanehira & S. Sasaki s. n. (TAI)

9. *Deutzia* THUNB

- A. Leaves hard coriaceous in texture, greyish beneath densely vested with stellate hairs 15–20 armed and 0.1–0.15 mm in diameter.....**D. pulchra**
 AA. Leaves chartaceous in texture, greenish beneath vested with stellate hairs 3–6 armed and 2–3 times larger than the former's.....**D. taiwanensis**
D. pulchra VIDAL, Revis. Pl. Vasc. Filip. 124 (1886); KANEH., l. c. 238, f. 179 (1936); Li, Journ. Washing. Acad. Sci. 42:42 (1952); LIU, Ill. Nat. Intr. Lign. Pl. Taiwan 1:417, f. 352 (1960), exclud. syn. *D. taiwanensis* (MAXIM.) SCHNEID.—*D. taiwanensis* HAYATA, Mater. Fl. Formos. 109 (1911) & Ic. Pl. Formos. 1:pl. 33 (1911) & l. c. 2:8 (1912).—*D. pulchra* var. *formosana* NAKAI, Bot. Mag. Tokyo 35:84 (1921).—*D. Hayatai* NAKAI, l. c. 83.—*D. Bartlettii* YAMAM., Suppl. Ic. Pl. Formos. 4:16, f. 10 (1928).

Distribution: Taiwan and Philippine.

Taiwan:

- Taipei Hsien: Kankaukei, Taihoku-syu, T. Suzuki 7619 (TAI); Koso to Kankei, Taihoku, T. Suzuki 8388 (TAI).
 Ilan Hsien: Ta yen Shan 700–900 m, M. T. Kao 3192 (TAI); Rumoan to Sikikun, S. Suzuki 4296 (TAI); Mt. Taihei, S. Suzuki s. n. (TAI); Karappo, S. Suzuki s. n. (TAI); Ebo, Rato-gun, S. Suzuki 13 (TAI).
 Hsinchu Hsien: Mt. Mentyu, Chikuto-Banchi, T. Suzuki 20297 (TAI).
 Taichung Hsien: Banaiko, Taityu-shi, S. Suzuki s. n. (TAI).
 Hualien Hsien: Tausai, Taroko, Fukuyama & T. Suzuki 16376 (TAI); Higashinoko to Noko, S. Suzuki 2074 (TAI); Sikirian, Taroko, S. Suzuki 9588 (TAI); Tonroku Musigan, monte Tyuosenzan, T. Suzuki 15229 (TAI); Taroko, Batakan to Busegan, M. Tatewaki & S. Kitamura s. n. (KYO); Tabito to Miharashi, M. Tagawa 740 (KYO); Tabitoto Karapao, J. Ohwi 1190 (KYO); Shinjo to Tabito, J. Ohwi 1050 (KYO); Mt. Chingshui, T. Shimizu 12375 (KYO, SHIN); Tungmen to Lungchien, T. Shimizu 11143 (KYO); Pungpien to Lonchien, T. Shimizu 11406 (KYO); Kirai to Sakahen N. Fukuyama 4433 (TAI).
 Nantow Hsien: Dokurituzan, Hosha, Niitaka-gun, S. Suzuki 406 (TAI).
 Chiayi Hsien: Funkiko 1500 m, Faurie 1689 (KYO).
 Kaohsiung Hsien: Raisha, Ako, E. Matsuda s. n. (TNS); Raisha, Faurie 158, 159 (KYO); Nakanoseki, Kizan-gun, M. Tagawa 1175 (KYO); between Kuwarusu to Amawan, M. Tagawa 2182 (KYO).
 Pingtung Hsien: Botansya, Kosyun, Y. Kudo & K. Mori 2818 (TAI); Budai, Heito-

- gun, S. Suzuki 11265 (TAI); Boryo to Daijirin, Choshu-gun, J. Ohwi 289, 312 (KYO).
- Taitung Hsien: Botel Tobago, N. Hanada s. n. (TAI); Nishi-imoruru, T. Hosokawa 8060 (TAI); *ibid.*, Yayu to Mt. Hongtau, L. K. H. & C. 358 (TAI); *ibid.*, Mt. Tashun, L. K. H. & C. 465 (TAI); *ibid.*, T. I. Chuang & C. C. Hsu 2363 (TAI).
- D. taiwanensis** (MAXIM.) SCHNEID., Mitt. Deutsch. Dendr. Ges. 13:177 (1904) & Ill. Handb. Laubholz. 1:377 (1905); NAKAI, l. c. 85.—*D. scabra* var. *taiwanensis* MAXIM., Mem. Acad. Imp. Sci. St. Pet. Ser. 2, 10:23 (1867).—*D. kelungensis* HAYATA, l. c. 108 (1911) & l. c. 1. c. 2:8 (1912) & 6:suppl. 26 (1917).—*D. cordatula* H. L. Li, l. c.
- Distribution: Taiwan.
- Taipei Hsien: Mt. Kwannon, T. Fukuyama & S. Miura 14—type of *D. cordatula* (TAI); Mt. Rara, Bunzan-gun, J. Ohwi 970 (KYO).
- Ilan Hsien: Mt. Taihei, S. Suzuki 887 (TAI).
- Miaoli Hsien: Cholan, I. M. Liu & M. T. Kao s. n. (TAI); Shiling 600 m, C. C. Kuo & M. T. Kao s. n. (TAI).
- Hualien Hsien: Tyuosenzan, Murudon to Rodohu, Fukuyama & T. Suzuki 16130 (TAI); Tausai, Birin Battonhu, T. Suzuki, N. Fukuyama & H. Simada 17732 (TAI); Taroko, Batakan to Tabito, M. Tatewaki & S. Kitamura s. n. (KYO); Karapao, J. Ohwi 1232 (KYO); Mt. Chingshui T. Shimizu 12501 (KYO) & 12563 (KYO, SHIN, TI); *ibid.*, T. Shimizu 12479 (KYO, SHIN, TAI); Tachingshui, T. Shimizu & M. T. Kao 11631 (KYO, SHIN).
- Taichung Hsien: Mt. Pahsienshan, T. I. Chuang, C. C. Kuo & M. T. Kao 2621 (TAI), Chiapaotai, Pahsien-shan 900–1100 m, Liu, Kou, Kao et al. 475 (TAI).
- Nantow Hsien: Musha-Santinnozyo—Miharashi, Masamune, Mori & Nakamura 2065 (TAI); Musha to Rogan, I. M. Liu 36 (TAI); Hoshe, M. T. Kao 3976 (TAI).
- Chiayi Hsien: Arisan 2500 m, U. Faurie 156, 1687 (KYO); Funkiko, Faurie 155, 1688 (KYO).
- Kaohsiung Hsien: Buizan, Akotyo, E. Matsuda s. n. (TAI).
- Taitung Hsien: Asahi to Izumo-police, Riro-shicho, Y. Yamamoto & K. Mori 354 (TAI).

10 *Pileostegia* Hook. f. et THOMS.

- P. viburnoides** Hook. f. et THOMS., Journ. Linn. Soc. 2:76, pl. 2 (1858); MATSUM. & HAYATA, Enum. Pl. Formos. 132 (1906); HAYATA, Ic. Pl. Formos. 3:106 (1913) & l. c. 2:7 (1912); Li, Journ. Washing. Acad. Sci. 42:44 (1952); LIU, Ill. Nat. Intr. Lign. Pl. Taiwan 1:427 (1960).—*P. viburnoides* var. *parvifolia* OLIVER ex MAXIM., Mem. Acad. Sci. St. Petr. VII, 10:18 (1867).—*Schizophragma viburnoides* STAFF,

Bot. Mag. 155:pl. 9262 (1931).—*P. urceolata* Hayata, l. c. 105 (1917).

Distribution: Lyukyu and Taiwan.

Taiwan:

Taipei Hsien: Kusshaku, s. leg. (TI); Buta to Riyohen, T. Suzuki 7549, 7386, 7469, (TAI); Mt. Oyaubi, S. Suzuki 12086 (TAI); Mt. Sozan, Y. Kudo 3286 (TAI); Mt. Kwannon, N. Fukuyama 71 (TAI); Taikyo, S. Suzuki 3492 (TAI); Karasan, S. Suzuki 6244 (TAI); Agyoku, T. Suzuki 18898 (TAI).

Ilan Hsien: Suou, S. Nagasawa 292 (KYO); Ekizyukei to Piyanananbu, M. Tagawa 86 (KYO); Pianan, Y. Yamamoto s. n. (TI); Mt. Oobi, Suou-gun, G. Masamune s. n. (TAI); Mt. Taihei, S. Suzuki & Okamoto s. n. (TAI); *ibid.*, S. Suzuki s. n. (TAI).

Taichung Hsien: Suiryusoku, K. Kawakimi & U. Mori 1213 (TI); Mt. Hassenzan, Tazima et al. s. n. (TAI).

Chiayi Hsien: Arisan, K. Uyematsu 37—*type* of *P. urceolata* (TI); Faurie 1346 (KYO); Funkiko 1500 m, Faurie 1822 (KYO); Zyujiro to Heishana, B. Hayata s. n. (TI); Toroen to Heishana, Hayata s. n. (TI).

Kaohsiung Hsien: Mt. Bui, E. Matsuda 144 (TI); *ibid.* E. Matuda s. n. (TAI); Mt. Daibu, E. Matuda 919 (TAI).

Nantow Hsie: Musya-Santinozyo, Masamune, Mori & Nakamura 2325 (TAI).

Hualien Hsien: Mt. Fong-shan, Liu, Chen & Kao 4, (TAI).

11. *Itea* L.

A. Leaves hard coriaceous, elliptical, distinctly 4–10 acutely serrated; sepals long triangular 2 mm long; petals 3–4 mm long; capsules 6–7 mm long....*I. Oldhami*

AA. Leaves leathery, rather oblong, minutely 10–20-serrated or nearly entire; sepals triangular shorter than 1 mm; petals 2 mm long; capsules 4 mm long.....*I. parviflora*

I. Oldhami C. K. SCHNEID., Ill Handb. Laubholz. 1:396 (1906); HATUS., Sci. Bull. Agr. & Home Ec. Univ. Ryukyu no. 32, 22 (1956).—*I. chinensis* (non HOOK. et ARN.): HENRY, List. Pl. Formos. 41 (1896); HAYATA, Ic. Pl. Formos. 2:10 (1912); KANEH., Formos. T. ed. rev. 245, f. 188 (1936); YAMAM., Act. Phytotax. Geobot. 6:245 f. I a-e (1937).—*I. chinensis* var. *subserrata* MAXIM., Melang. Biol. 12:459 (1886); MATSUM. & HAYATA, Enum. Pl. Formos. 133; HAYATA, l. c.—*I. formosana* H. L. LI, Journ. Washing. Acad. Sci. 42:44 (1952); LIU, Ill. Nat. Intr. Lign. Pl. Taiwan 1:412, f. 349 (1960).

Distribution: Taiwan.

Taipei Hsien: Hokuto, Faurie 1010 (KYO); Keelung, S. Nagasawa 293 (KYO); Faurie 1011 (KYO); Koketsu-zan, T. Makino s. n. (TI); Kushaku near Taihoku S., Nagasawa 361 (KYO, TI); Mt. Tatung, Faurie 296 (KYO); Shinten-gai K. Miyake s. n. (TI); Urai-sha, s. leg. (TI); Neihu, Huang 1532, (TAI); Hekizangan, Tananka

s. n. (TAI); Senziozan., T. Nakamura 1695 (TAI); *ibid.*, T. Suzuki 4427, (TAI); *ibid.*, Hukuyama 1430, 1452, (TAI); Rokutyori, Tanaka 2357, (TAI); Hokuto, Murakami 1309 (TAI); Sinten, H. Keng 1003 (TAI); Wantan, H. Simizu 2356, 2380 (TAI); Nanseikaku, Masamune 4355 (TAI); Mt. Boshi, H. Simizu 409 (TAI); Mt. Kwanozan, Fukuyama et Miura 249, 159, (TAI); Mt. Sozan, Kudo, Suzuki & Mori s. n. (TAI); *ibid.*, Y. Kudo & S. Suzuki 3285 (TAI); Sizan-gan, K. Mori & Nonaka s. n. (TAI); Kiirun, S. Suzuki s. n. (TAI); *ibid.*, T. Suzuki 6675, 6269, *ibid.*, Liu, Chen & Kao s. n. (TAI).

Ilan Hsien: Insl. Kizan, G. Masamune & S. Suzuki s. n. (TAI); Suoo, T. Hosokawa 5008 (TAI).

I. parviflora HEMSL., Ann. Bot. 9:153 (1895); MATSUM. & HAYATA, l. c.; HAYATA, l. c.; Kaneh., l. c. 246, f. 189; YAMAM., l. c. 246, f. II; LI, l. c. 43, cum var. *latifolia*.—*I. arisanensis* HAYATA, l. c. 6:19 (1916); KANEH., l. c. 246; YAMAM., l. c. 347, cum var. *longifolia*. et *parvifolia*.—*I. chinensis* (HAYATA) MASAM., Ann. Rep. Taihoku Bot. Gard. 2:177 (1932).—*I. parviflora* var. *arisanensis* (HAYATA) H. L. LI, l. c. 44.

Distribution: Taiwan

Taipei Hsien: Mt. Shichisei, J. Ohwi 2073 (KYO); Mt. Tatung, Faurie 392 (KYO); Hokuto, Faurie 1009, 1128 (KYO); Sozan, Faurie s. n. (KYO); K. Kimura s. n. (KYO, TI); Shimada s. n. (TI); Mt. Hichisei, T. Hosokawa, 1232, (TAI); Chiohokuto, H. Simada 394 (TAI); Mt. Tikusizan, Y. Simada s. n., (TAI); Taihyo, S. Suzuki, 3467 (TAI); Hokuto, H. Simada, 339, 394 (TAI); Mt. Yanmin, Hsu & Kao s. n. (TAI).

Hsinchu Hsien: Mt. Taihasenzan, T. Ito (TI).

Ilan Hsien: Pianan, Y. Yamamoto s. n. (TI); Mt. Oobi, Suoo-gun, G. Masamune s. n. (TAI); Mt. Taihei, S. Suzuki 6046, s. n. (TAI); *ibid.*, T. Suzuki, N. Fukuyama & H. Simada 17697, (TAI); *ibid.*, T. Suzuki 7126, (TAI); Mt. Ta-yen, M. T. Kao 3176 (TAI).

Hualien Hsien: Karenko, Faurie s. n. (TI); Mt. Chingshui, T. Shimizu 12383 (KYO, SHIN).

Chiayi Hsien: Arisan, Faurie 151 (KYO); Funkiko, Faurie 150, 1680, 1686 (KYO); Suisharyo to Bunkiko, Hayata s. n. (TI).

Kaohsiung Hsien: Mt. Bui, Matuda 138 (TI).

Pingtung Hsien: Byumasha, E. Matuda 15 (TI); Ako-cho, E. Matuda 450 (TI); Bangti, Ako, G. Nakahara s. n. (TI); Kusukusu, s. leg. (TI); Kuraru, B. Hayata s. n. (TI); Buizan, E. Matuda 1211 (TAI); Kuskus, Y. Kudo & S. Suzuki 16035 (TAI); Kuwaruru, E. Matuda 915, 916 (TAI).

12. *Ribes* L.

R. formosanum HAYATA Bot. Mag. Tokyo 20:56 (1906) & Fl. Mont. Formos. 93, t. 9

(1908) & Ic. Pl. Formos. 2:10 (1912); KANEH., Formos. Tr. ed. rev. 246, f. 190 (1936); Liu, Ill. Nat. Intr. Lign. Pl. Taiwan 1:415, f. 351 (1960).

Distribution: Taiwan.

Ilan Hsien: Mt. Nankotaizan, J. Ohwi 3285 (KYO); *ibid.*, T. Suzuki, N. Fukuyama & H. Simada 17384, 17403, (TAI); *ibid.*, H. Simada 1418 (TAI).

Hsinchu Hsien: Mt. Taihasenzan, T. Ito s. n. (TI); Mt. Izawa, S. Sasaki s. n., (TAI); Mt. Taihasenzan N. Fukuyama s. n. (TAI).

Miaoli Hsien: Mt. Tsugitaka, K. Mori s. n. (TI).

Hualien Hsien: Nokozen, E. Matuda 88 (TI); Noko-goe, J. Ohwi 3295 (KYO); Mt. Tyuosenzan, N. Fukuyama & T. Suzuki 16310, 15192 (TAI).

Nantow Hsien: Tonpo-kei, Nagasawa s. n.—**type** (TI).

Chiayi Hsien: Arisan to Tataka, J. Ohwi 3589 (KYO); Mt. Niitaka, T. Kawakami & U. Mori 2132, 2141 (TI); Mt. Niitaka, H. Simada 883, (TAI); *ibid.*, G. Masamune 3818, 3826, 3830 (TAI); Kawakami & Mori 2250, **paratype** (TAI); Mt. Arishan, Yamada 37, (TAI); *ibid.*, Chuang & Kao s. n. (TAI).

Taichung Hsien: Mt. Tugitaka, K. Mori s. n. (TAI); Mt. Chungshushan, Kou & Kao s. n. (TAI); Mt. Kotenzan T. Hosokawa 2257 (TAI).