

Additional Remarks on Ranunculaceae in Taiwan (6) —Some genera in Taiwan.

T. Y. Aleck Yang^(1, 3) and Tseng-Chieng Huang⁽²⁾

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ABSTRACT : This is a taxonomic study of some genera of Ranunculaceae in Taiwan, including *Aconitum* L., *Anemone* L., *Calathodes* Hook.f. & Thomson, *Coptis* Salisb., *Dichocarpum* W. T. Wang & Hsiao, *Ranunculus* L. and *Trollius* L. Two taxa of *Aconitum* are recognized in Taiwan; *Eriocapitella* is a synonym of *Anemone*; the concept of the genus *Dichocarpum* to replace the genus *Isopyrum* in Taiwan is accepted; *Ranunculus cantoniensis* is recognised as the most common species in Taiwan; brief notes are provided for species of *Calathodes*, *Coptis* and *Trollius*. A key to taxa, distribution maps and taxonomic descriptions are also provided.

KEY WORDS: *Aconitum*, *Anemone*, *Calathodes*, *Coptis*, *Dichocarpum*, *Ranunculus*, *Trollius*, Taxonomy, Ranunculaceae, Taiwan.

INTRODUCTION

Some genera of Ranunculaceae with confined distribution in Taiwan, *i.e.* *Anemone*, *Calathodes*, *Dichocarpum* and *Trollius* were studied during the last twenty years (Fu, 1988; Hsiao and Wang, 1964; Hsiao, 1979; Wang, 1979, 1980). However, some nomenclatural problems, *e.g.* *Anemone vitifolia* versus *Eriocapitella vitifolia* or confused taxa, *Aconitum* and *Ranunculus* (Liu and Hsieh, 1976) were reviewed. For this study, the fresh materials preserved in 70% ethanol and dried herbarium specimens were investigated. A key to the taxa of each genus, distribution maps and taxonomic descriptions are provided; the number of species in each genus follows Mabberley (1987).

1. ACONITUM L. 烏頭屬

Perennial or annual erect or scandent herbs with underground tubers. Leaves simple, alternate or sometimes radical, palmately divided, usually 3 to 5-partite or more, rarely undivided; petiolate. Inflorescence a raceme or panicle; bracts usually 2. Flowers bisexual, zygomorphic, violet, purple, blue, yellow or sometimes cream-colored, composed an upper sepal, two lateral sepals, two lower sepals and two (-five) petals (nectaries) per flower. Sepals 5, petaloid, upper sepals galeate or boat-shaped, lateral sepals round or nearly so,

1. Division of Collection and Research, National Museum of Natural Science, 1, Kuan-Chien Road, Taichung, 404, Taiwan, Republic of China.

2. Department of Botany, National Taiwan University, Taipei 106, Taiwan, Republic of China.

3. Corresponding author.

lower sepals elliptic, smaller than others; petals 2, sometimes 5, small, lobed usually with labia and spur, nectariferous, stalked; stamens numerous, spirally arranged, anthers elliptic-globose, filaments winged at base; staminodes present or absent; carpels 3—5 (-6—13), free, styles shorter than ovaries, persistent after anthesis. Follicles ellipsoid, short. Seeds 10—20, quadrangular, winged along the ridges or sometimes with membranous wings on the surface.

About 300 species in temperate regions of the Northern Hemisphere, mainly distributed in Asia, next in Europe and North America; 167 species in mainland China; only one species (with 2 taxa) in Taiwan.

Key to the species

1. Plants erect; distributed at altitudes of 1800-3600 m 1a. *A. fukutomei* var. *fukutomei*
 1. Plants scandent; distributed at altitudes of 1700-2400 m 1b. *A. fukutomei* var. *formosanum*

1. *Aconitum fukutomei* Hayata, Icon. Pl. Form. 4:1. 1914; Sasaki, List Pl. Form. 182. 1928; Yamamoto in Trans. Nat. Hist. Soc. Form. 20: 100. 1930; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. 2: 75. 1932; Suzuki, Short Fl. Form. 64. 1936; Masamune, List Vasc. Pl. Taiwan 52. 1954; Tamura in Acta Phytotax. Geobot. 18: 64. 1959.

Type: Mt. Kiraishuzan, *K. Fukutome* s. n. Oct. 1913 (TI).

1a. *Aconitum fukutomei* var. *fukutomei*.

臺灣烏頭

Aconitum bartlettii var. *fukutomei* (Hayata) Liu & Hsieh, Fl. Taiwan 2: 478. 1976; syn. nov.

Aconitum bartlettii Yamam. in Trans. Nat. Hist. Soc. Form. 20: 98. 1930; syn. nov. Type: Taiwan: Hualien: In monte Noko (Mt. Nengkaoshan), 2876-3109 m, type of fruits, *H.H. Bartlett* 6225 (lectotype is designated here; TAI!), 2713 m, type of flowers, *S. Sasaki* s. n. Aug 1929 (syntype: TAI!)

Aconitum yamamotoanum Ohwi in Fedd. Rep. Sp. Nov. 36: 49. 1934. Type: Mt. Tapachienshan (Miaoli) to Mt. Hsueshan (Taichung), *K. Kojima* s. n. Aug 1933 (holotype: KYO!)

Aconitum kojimae Ohwi ex Tamura in Acta Phytotax. Geobot. 18: 64. 1959. Type: Formosa: Takao (Kaohsiung): Kwanzangoe (Kuanshanyuei), *K. Kojima* s. n. Aug 1933 (holotype: KYO!), summit of Mt. Kwanzan, *S. Okamoto* s. n. Oct 1937 (paratype: KYO!); Rokki (Liukuei), Mt. Pinanshu (Mt. Peinanchushan), *S. Okamoto* s. n. Sept 1937 (paratypes: KYO!).

Aconitum kojimae var. *ramosum* Tamura in Acta Phytotax. Geobot. 18: 65. 1959. Type: Formosa: Takao (Kaohsiung): Mt. Kwanzan (Mt. Kuanshan), *S. Okamoto* s. n. Oct 1937 (holotype: KYO!).

Perennial erect herbs, 15—150 cm tall, pubescent or glabrous at maturity. Leaves simple, (4.5-)5.4—11.8(-13.5) cm long, (7.5-)8.4—15.6(-17.4) cm wide, palmately divided, usually 5-partite, pubescent on both surfaces or sparsely velutinous on adaxial surface; margin lacerate; apex acuminate; base cordate; petioles 3.3 — 12.5 cm long, pubescent. Inflorescence a raceme or sometimes flowers solitary; pedicels pubescent; bracts 2. Flowers violet or mixed with white. Sepals 5, pubescent outside, sparsely velutinous or glabrous inside; upper sepals galeate, 1.2—2.5 cm long; lateral sepals round, lower sepals elliptic. Petals 0.8—1.5 cm long, sparsely velutinous; spurs curved backward; nectariferous at base. Stamens numerous; filaments winged at base, sparsely velutinous or glabrous. Carpels 3—5, fusiform, sparsely velutinous or glabrous; styles 4 mm long. Follicles 2—4, 0.9—2.4 cm long, sessile, glabrous or subglabrous; seeds many, with membranous wings on the surface.

Flowering July to September; fruiting August to November (-December).

Endemic; in woods and on slopes at over 2500 m in the central mountains (Fig. 1).

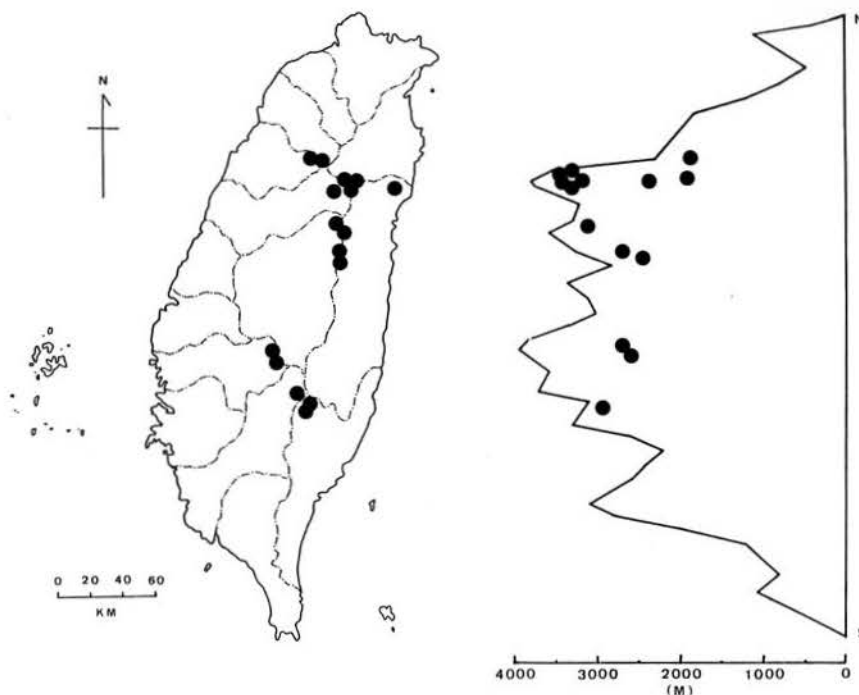


Fig. 1. Latitudinal and altitudinal distribution of *Aconitum fukutomei* var. *fukutomei*.

Ilan: Mt. Nanhutashan, 3400 m, T. & F. Yamazaki s.n. Sept 1969(TAI), 3480 m, W.L. Wagner 6523(HAST), 3500 m, T. Suzuki, Hukuyama & Simada 17446(TAI), 17483(TAI). **Hsinchu:** Chienshih: Mt. Tapachienshan, C.F. Hsieh 1323(TAI), M.T. Kao 8509(TAI), 3400 m, C.L. Huang, Wu & Lien 112(HAST), H.Y. Liu 3721(TNM). **Miaoli:** Taian: Kuanwu, C.H. Ou et al. s.n. Jul 1990(TNM). **Taichung:** Hoping: Mt. Chungyangchienshan, M. Tamura & Koyama 23623(KYO), Huanshan to Mt. Hsueshan, H. Koyama 24010(KYO), Mt. Hsueshan to Mt. Huanshantashan, H. Koyama 24011(KYO), 24031(KYO), 24036(KYO), Nanhu Lodge to Mt. Nanhutashan, 3300-3740 m, D.S. Hsu et al. 774(HAST), Wuling Farm, 369 Lodge to Hsueshan peak, 3100-3650 m, D.S. Hsu & Moore 737(HAST). **Nantou:** Hsinyi: Mt. Yushan, H. Simada 890(TAI), Patungkuan to summit, 3600 m, M. Tamura, Shimizu & Kao 22111(TAI); Jenai: Mt. Hohuanshan, 3100 m, C.C. Hsu 3830(TAI). **Chiayi:** Alishan: Tungpu to Mt. Alishan, 2600 m, H. Koyama 23971(KYO), Tataka to Mt. Alishan, 2500 m, M. Tamura, Shimizu & Kao 22175(TAI). **Kaohsiung:** Taoyuan: S. across highway, Yiakou forest track, C.S. Kuoh 11686(NCKU). **Hualien:** Hsiulin: Mt. Hohuanshan, M.T. Kao 7804(TAI), C.S. Kuo, Huang & Kao 7034(TAI), Hoping forest road 43 to 38 km, 1950-2080 m, W.H. Hu et al. 2194(HAST, TNM), Mt. Nengkaoshan, E. Matuda s.n. Aug 1919(TAI), 2499 m, S. Sasaki s.n. Aug 1929(TAI), 2743 m, S. Suzuki 2142(TAI), Tienchih, M. Tamura & Koyama 23335(KYO), 23337(KYO). **Taitung:** Haituan: Mt. Kuanshanlingshan, S.T. Chiu 1423(TNM), C.S. Kuoh 12440(NCKU).

1b. *Aconitum fukutomei* var. *formosanum* (Tamura) T.Y.A. Yang & T.C. Huang, stat. nov. — *Aconitum formosanum* Tamura in Acta Phytotax. Geobot. 18: 64. 1959. — *Aconitum bartlettii* var. *formosanum* (Tamura) Liu & Hsieh, Fl. Taiwan 2: 477. 1976; syn. nov.

Type: Taihoku (Ilan): Inter Ekizyu-kei (Mimotenghsi) et Piyanan-anbu (Ssuyuan-yako), M. Takawa 107 (holotype: KYO!; isotypes: KYO!), Taiheizan (Mt. Taipingshan): Inter Kyanrawa (Hsulawa) et Sikikum (Ssuchitsun), J. Ohwi 2449 (paratype: KYO!), Sikikum to Pianan-anbu, J. Ohwi 2751 (paratype: KYO!); Nankotaisan (Mt. Nanhutashan): Inter Ekizyu-kei et Kritttoi, J. Ohwi 3921 (paratype: KYO!).

蔓烏頭

Perennial scandent herbs, pubescent. Leaves simple, (5.3-)6.6 — 10.1(-10.5) cm long, (8.4-)9.5 — 16.1(-19.8) cm wide, palmately divided, 5-partite, pubescent on both surfaces or subglabrous on adaxial surface; petioles 2.7 — 5.5 cm long. Pedicels 4.5 — 6.8 cm long, densely velutinous. Stamens numerous; filaments winged at base, sparsely pubescent. Carpels 3 — 5, fusiform, sparsely pubescent or glabrous. Follicles 2 — 4, 1.7 — 2.3 cm long, sessile, glabrous or subglabrous; seeds many, with membranous wings on the surface.

Flowering June to July; fruiting July to August.

Endemic; in woods and on slopes between 1700 and 2400 m in the central mountains (Fig. 2).

Ilan: Nanau: Hsulawa (Kyanrawa), *T. Suzuki* 6998(TAI), Mt. Taipingshan, *R. Kanehira s.n.* Jul 1924(TAIF), *S. Suzuki s.n.* Jul 1929(TAI); **Taichung:** Mt. Nanhutashan, *J. Ohwi* 3921(KYO), *G. Masamune, Hukuyama & Nagamura* 2974(TAI), 1829 m, *S. Sasaki s.n.* Jul 1922(TAI), Ssuyuan-yako, *C.S. Kuoh* 1785(TAI), 1750 m, *Y.C. Lu* 117(HAST), 1900 m, *K.C. Yang* 2072(TAI), 1900-2790 m, *J.C. Wang et al.* 3855(TAI). **Nantou:** Jenai: Tienchih to Kuailin, 2160 m, *H.L. Ho et al.* 628(HAST). **Hualien:** Hoping logging tract, 41-46 Km, 1900-2000 m, *J.C. Wang et al.* 8536(TAIF), 60.5 Km, 2000 m, *S.Y. Lu* 12690(TAIF); Hsuilin: Tawusaishe (Tausai), 2120 m, *T. Suzuki, Hukuyama & Simada* 17702(TAI).

Note: The surface of the stamens and carpels ranges from pubescent to sparsely pubescent to subglabrous, and is even sometimes glabrous. The leaf shape and both surfaces of the leaf and leaf margin are also variable, making difficult to distinguish species based on such characters. The surface character of the leaves, stamens and carpels vary greatly in Taiwanese *Aconitum* group. According to the principle of priority (Article 11, ICBN) we treat Taiwanese group of *Aconitum* as *A. fukutomei*, with *A. bartlettii* (Liu and Hsieh, 1976) as a synonym. In addition, a small group of plants distributed at middle altitudes, and with a scandent habit but otherwise similar to the typical taxon, is treated as a variety, *A. fukutomei* var. *formosanum*.

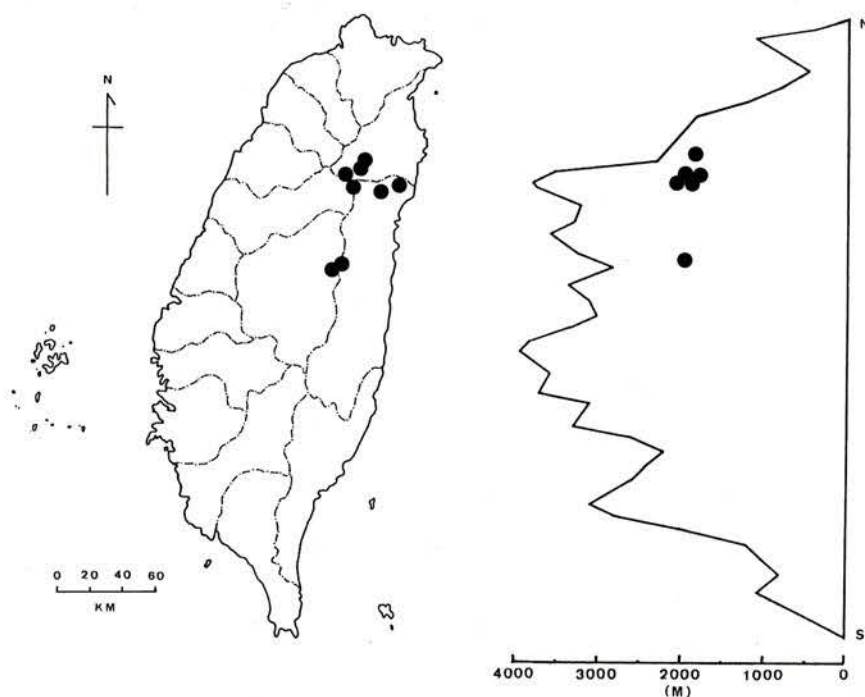


Fig. 2. Latitudinal and altitudinal distribution of *Aconitum fukutomei* var. *formosanum*.

2. ANEMONE L. 銀蓮花屬

Perennial erect herbs with underground tubers. Leaves simple or ternate, alternate, or/and radical, few to many, palmately divided; nerves palmate; petiolate. Scapes erect or upwardly ascending; inflorescence a cyme or umbel, or a single flower; bracts 2 to 3, or more, alternate or whorled and forming an involucre, palmately divided or unlobed, sessile or petiolate. Flowers bisexual, actinomorphic, white, purplish-blue or pale pink; sepals 5 or more, petaloid, imbricate, deciduous; petals absent; stamens numerous, anthers elliptic-globose or oblong-globose, filaments linear; carpels numerous or rather few, styles short or lacking, pilose or glabrous, ovaries pubescent or glabrous, each with 1 pendulous ovule. Achenes ovate-globose or nearly globose, rarely compressed, sessile, short or long stalked, pubescent.

About 120 species, almost cosmopolitan, mainly distributed in Asia and Europe; 60 species in mainland China and two species in Taiwan.

Key to the species

- 1. Subshrubs; leaves ternate, terminal leaflets more than 5.0 cm long; flowers more than 2.0 cm in diam. 2.2. *A. vitifolia*
- 1. Herbs; leaves bipinnate; terminal leaflets less than 3.0 cm long; flowers less than 1.5 cm in diam. 2.1. *A. stolonifera*

2.1. *Anemone stolonifera* Maxim. in Bull. Acad. Imp. Sci. St.-Petersb. **22**: 225. 1877; Hayata, Icon. Pl. Form. **3**: 6. 1913; Sasaki, List Pl. Form. 182. 1928; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. **2**: 76. 1932; Suzuki, Short Fl. Form. 64. 1936; Masamune, List Vasc. Pl. Taiwan 52. 1954; Huang in Bull. Taiwan Norm. Univ. **5**: 10. 1960; Liu and Hsieh, Fl. Taiwan **2**: 480. 1976; Wang, Fl. Reip. Pop. Sin. **28**: 10. 1980.

匍枝銀蓮花 (三花銀蓮花) Fig. 3

Anemone takasagomontana Masamune in Not. Syst. **6**: 37. 1937.

Perennial erect herbs, 15—30(-45) cm tall, pubescent. Leaves simple, radical, 1.83—3.07 cm long, 3.15—4.55 cm wide, ternately divided, widely ovate; pubescent on both surfaces; petioles 7.6—15 cm long. Terminal segments (1.5-) 1.67—2.71(-32) cm long, (1-)1.21—1.83(-2.2) cm wide, ovate or widely elliptic; apex acute; base obtuse. Scapes 2, 13—29 cm long, upwardly ascending. Inflorescence an umbel or sometimes a single flower; pedicels pubescent, 2.8—11.5 cm long; bracts 2 or 3, ternately divided, petiolate. Flowers 6—16 mm in diam., white. Sepals 5, 7—10 mm long, 4—6 mm wide, obovate or widely elliptic; apex obtuse or rounded; glabrous on adaxial side, pubescent on abaxial side. Stamens numerous, 2—3.5 cm long, glabrous; anthers 0.6—1.2 mm long, ellipsoid-globose; filaments linear. Carpels 20 or more, pubescent; styles short; ovaries pubescent, each with 1 pendulous ovule. Achenes 10 or more, 2—3 mm long, narrowly ovate-globose, sessile, puberulous.

Flowering June to August; fruiting July to September.



Fig. 3. *Anemone stolonifera* Maxim. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Stamens; 6. Carpel; 7. Achene.

Distributed in mainland China (Heilongjiang, Hubei and Sichuan) and Taiwan, Korea and Japan. Taiwan in shady places in forests at high altitudes in the northern part of the island (Fig. 4).

Taichung: Hoping, Mt. Hsueshan, 3600-3884 m, S.P. Li 173(KUN, TNM), from 369 Lodge to the cirque, in *Abies* forests, 3200-3350 m, C.I. Peng 9670(HAST), to Tsueichi, 3200-3884 m, J.C. Wang, Huang & Tang 4425(TAI, TNU). Rontabunsan, U. Mori s.n. Apr 1910(TAIF).

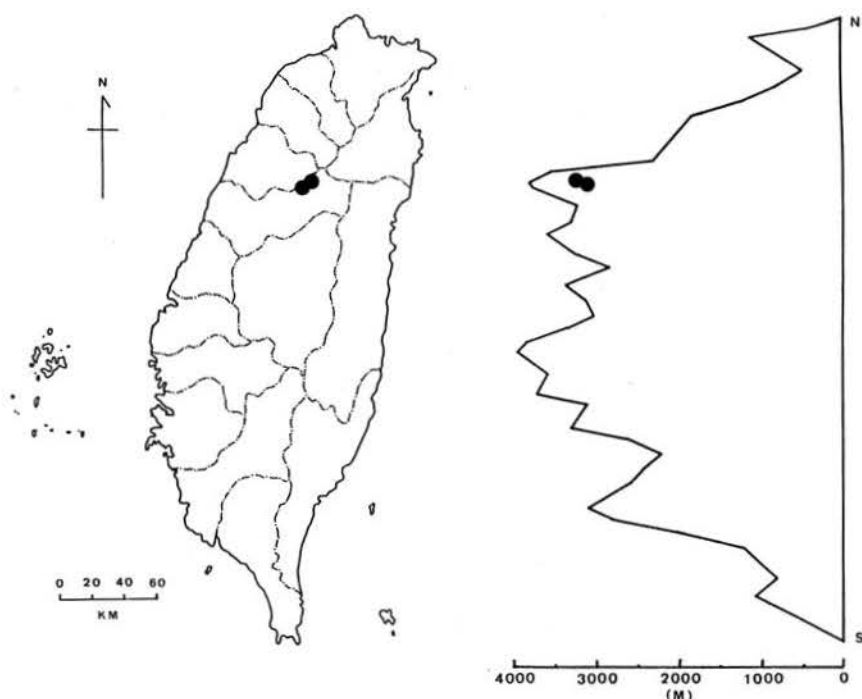


Fig. 4. Latitudinal and altitudinal distribution of *Anemone stolonifera* in Taiwan.

2.2. *Anemone vitifolia* Buch.-Ham. ex DC., Syst. 1: 210. 1818; Wang, Fl. Reip. Pop. Sin.

28: 27. 1980. — *Ericapetilla vitifolia* (Buch.-Ham. ex DC.) Nakai in Journ. Jap. Bot.

17(1): 269. 1941.

小白頭翁 (野棉花)

Anemone vitifolia var. *matsudai* Yamamoto in Suppl. Icon. Pl. Form. 3: 27. 1927. — *Ericapetilla vitifolia* var. *matsudai* (Yamamoto) Nakai in Journ. Jap. Bot. 17(1): 270. 1941. — *Anemone matsudai* (Yamamoto) Tamura ex Hsieh & Yang, Nom. Pl. Taiwan 440. 1969.

Anemone hupehensis Lem. form. *alba* W.T. Wang in Act. Phytotax. Sin. 12(2): 180. 1974.

Perennial erect pubescent herbs, 30—120 cm tall. Leaves ternate, radical, (6.0-)6.3—11.6(-14.3) cm long, (4.6-)4.7—7.9(-8.6) cm wide, elliptic or ovate; apex acute; base obtuse, truncate or acute, lateral ones oblique; ternately divided or unlobed; puberulous on adaxial surface, tomentose on abaxial surface; petioles 5.5—36.0 cm long. Scapes usually 1, erect, pubescent. Inflorescence a compound dichasium; pedicels 6.5—17.8 cm long; bracts 2 or 3, opposite or whorl, ternately or sometimes palmately divided, pubescent on both sides; petiolate. Flowers 2.5—3.8 cm in diam., white, or pale pink on the mainland. Sepals 5 or more, unequal, 1—2 cm long, 1—1.8 cm wide, ovate, broadly elliptic or obovate; apex acute or retuse; imbricate; glabrous on adaxial side, pubescent on abaxial side. Stamens numerous, anthers 2—8 mm long, elliptic-globose; filaments linear. Carpels numerous; styles pilose. Achenes 2.5—3.5 mm long, ovate-globose, many, pilose; subsessile; aggregated in a globose head.

Flowering May to October (-November); fruiting June to December.

Distributed in northern Burma, Bhutan, Nepal, northern India, Sikkim, mainland China (Yunnan, southwestern Sichuan and southeastern and southern Xizang) and Taiwan. Taiwan, widely distributed in open places between 800 and 3200 m (Fig. 5).

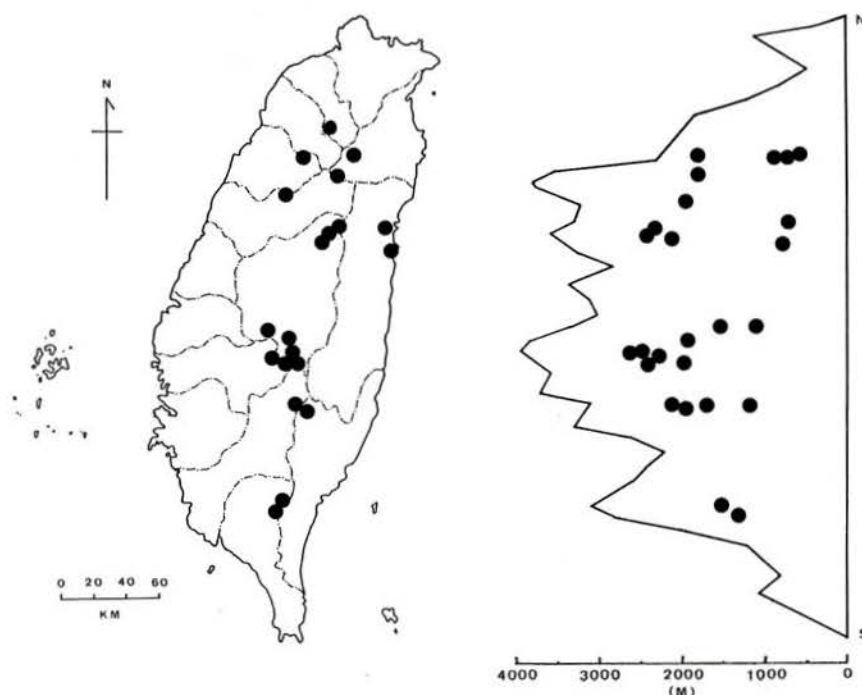


Fig. 5. Latitudinal and altitudinal distribution of *Anemone vitifolia* in Taiwan.

Ilan: Nanao: Mt. Taipingshan, C.C. Chuang, Chao & Kao 4635(HAST), 4741(HAST); Tatung: Mt. Chilanshan, Y.C. Liu et al. 588(TCF), Tuchang, C.H. Ou et al. 9538(TCF). **Taoyuan:** Tahan forest track, C.H. Ou et al. 8797(TCF). **Miaoli:** Taian: Kuanwu, C.H. Ou et al. s.n. Sept 1990(TNM), Kuanwu Dalu logging tract, 2000 m, J.C. Wang et al. 8290(HAST). **Taichung:** Mt. Shuanshan, T.T. Lin & Hsieh s.n. Jul 1983(TAIF); Hoping: Central Island Road Branch, Ssuyuan Forest track, 2100-2340 m, H.Y. Shen, Hsiao & Withey 472(HAST), Tahsuehshan forest road, 2000 m, Yang & Cheng 6363(TNM). **Nantou:** Hsinyi: Stream Cheniulanhsi, 1850 m, S.L. Deng 636(TAI), 2000 m, J.W. Hsu 2177(TAI), Paiyunshanchuang to Tataka-anbu, 2700-2800 m, Yang 3628(TUNG), Stream Salih sienhsi, 1400 m, W.H. Hu 527(TAI), 2150 m, J.W. Hu 2407(TAI), Tungpu, C.S. Kuoh 11896 (coll. by H.Y. Chang, NCKU), Wanhshiang, C.H. Ou et al. s.n. Jun 1989(TNM); Jenai: Chiyuanchuang, 2500 m, S.H. Hwang & Your 26(TUNG), Kunyang, 2400-2450 m, C.H. Chen 1039(HAST), Meifeng Watershed, 2150-2200 m, T.G. Lammers 8459(HAST), Meifeng, 2400 m, C.I. Peng 9120(HAST), Sonchiuangan, C.H. Ou 5644(TCF), Tsuefeng, Y.S. Kuo s.n. Nov 1975(TCF), F.Y. Lu & Ou 1512(TCF), H.Y. Shen s.n. Nov 1975(TCF), Yuenfeng to Tsuefeng, 2306-2756 m, G.S. Wang 80(TUNG); Luku: Hsitou to Shanlinhsi, 1100-1600 m, C.I. Peng 5330(HAST), Shanlinhsi, 1650 m, C.I. Peng 6992(HAST). **Chiayi:** Mt. Alishan, C.H. Ou et al. s.n. May 1977(TNM), Alishan to Mienyue, C.H. Ou 9473(TCF); Mt. Yushan, T. Kawakami & Sasaki s.n. Oct 1909(TAIF). **Kaohsiung:** Taoyuan: Bridge Chinchingchiao to Mt. Kuanshan, 2300-2400 m, K.Y. Wang, Liu & Wu 1141(HAST), Tienchi, F.Y. Lu & Ou 705(TCF), S. Cross-Island Highway, C.S. Kuoh 11893(NCKU), 111-112 K, 1130 m, C.S. Kuoh 11603(NCKU), 120-121 K, C.S. Kuoh 11791(NCKU), 11798(NCKU), Bridge Likuangchiao, C.S. Kuoh 12721(NCKU), Tienchi to Kuaigu, C.S. Kuoh 13729 (NCKU). **Pingtung:** Kuaigu, F.Y. Lu & Ou 3300(TCF); Wutai: Mt. Wutoushan Natural Protected Area, to Chipen, 1610 m, K.Y. Wang et al. 1005(HAST). **Hualien:** Hualien, R. Kanehira & Sasaki s.n. May 1919(TAIF); Hsiulin: Taroko National Park, Tali to Tatung, 880-1080 m, C.H. Chen & Hung 1116(HAST). **Taitung:** S. Sasaki s.n. May 1916(TAIF); Haituan, Hsiangyang to Hsiangyang Lodge, 2200 m, C.H. Chen 631(HAST), S. Cross-Island Highway, C.H. Ou 1358(TCF), Mt. Kuanshanlinshan, S.T. Chiu 1419(TNM), C.S. Kuoh 11999(NCKU), 12959 (coll. by J.P. Wang, NCKU).

Note: This taxon is very similar to *A. hupehensis* Lem. and *A. tomentosa* (Maxim.) Pei, differing only in hair pattern on the abaxial leaf surface (densely velutinous and tomentose) and flower color (white, pale pink and pink). However, such characters are variable and overlap on the same individual. We have not seen enough specimens from the mainland so we will continue to recognize *A. vitifolia* even though the Taiwanese plants have been treated as *A. hupehensis* form. *alba* (Wang, 1974, 1980). More investigations are needed for this complex group in the future.

3. CALATHODES Hook. f. & Thomson 雞爪草屬

Perennial erect herbs with fibrous roots. Leaves simple, radical and cauline, ternately or palmately divided, usually 5-partite; petiolate. Flowers solitary, terminal, bisexual, actinomorphic, colored; sepals 5, petaloid, yellow or white, imbricate, deciduous; petals absent; stamens numerous, anthers elliptic-globose, filaments narrowly linear; carpels 5—70, sessile or short-stipitate, ovules 8—10, 2-seriate at the base of the carpel. Follicles subcoriaceous, styles persistent after anthesis. Seeds many, obovoid-globose, smooth. Distributed in the Himalaya, mainland China and Taiwan; one species in Taiwan.

Calathodes polycarpa Ohwi in Acta Phytotax. Geobot. **2**(3): 153. 1933; Wang in Acta Phytotax. Sin. **12**(2): 156. 1974, Fl. Reip. Pop. Sin. **27**: 67. 1979.

Type: Taiwan: Ilan: Mt. Nanhutashan, *J. Ohwi 4211* (holotype: KYO!; isotype: TAI!, TI!).
多果雞爪草

Calathodes palmata auct. non Hook.f. & Thoms.: Liu & Hsieh in Fl. Taiwan **2**: 480. 1976.

Perennial erect herbs with fibrous roots; stem glabrous, 30—40 cm tall. Leaves radical and cauline, ternately or palmately divided, 5-partite, 4.2—5.5 cm long, 6.5—9 cm wide; apex acute; base cordate; margin serrate; glabrous on both sides; terminal segment (4.2-)4.5—5.5(-5.6) cm long, (2.4-)2.5—2.9(-3.1) cm wide, apex acute, base acute; petioles 7—13.5 cm long. Flowers solitary, terminal, 1.8—3 cm diam., white or greenish-white; pedicels 6.5—16.3 cm long. Sepals 5, 1.2—1.6 cm long, 6—9 mm wide, elliptic or obovate. Petals absent. Stamens numerous; anthers elliptic-globose, 2 mm long; connective shortly excurrent beyond the pollen sacs; filaments narrowly linear, 4—6.5 mm long. Carpels 30—60, sessile, 4.5 mm long; styles recurved. Follicles 7—10 mm long, triangular-gibbous, keeled on ventral surface; styles 1.5—2 mm long. Seeds 1.5—2 mm long.

Flowering June to July; fruiting July to August.

Distributed in northeastern Yunnan, western Guizhou, southwestern Hubei and Taiwan. Taiwan, open slopes at high altitudes in the northern part of the island (Fig. 6).

Nantou: Mt. Nengkaoshan, Tienchi to Nengkao Pass, *T.C. Huang et al. 5814* (TAI), *M. Tamura & Koyama 23333* (TI). **Hualien:** Mt. Chungyangchienshan (Tyuo-senzan), *N. Fukuyama & Suzuki 15224* (TAI).

4. COPTIS Salisb. 黃連屬

Perennial erect herbs with creeping yellowish rhizomes. Leaves radical, ternately to palmately divided, 3 to 5-partite, sometimes ternate to triternate; petiolate. Scapes 1 or 2,

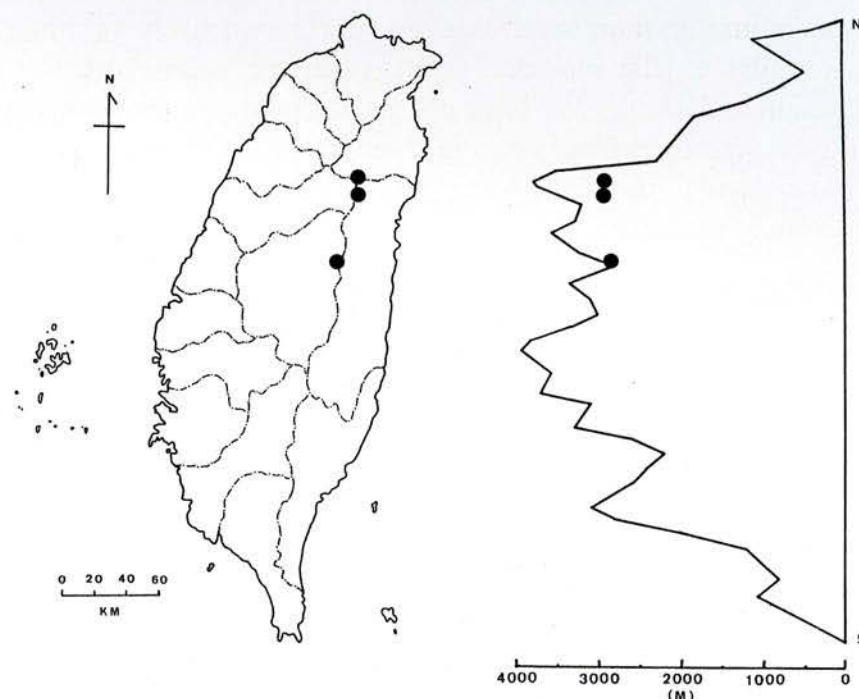


Fig. 6. Latitudinal and altitudinal distribution of *Calathodes polycarpa* in Taiwan.

erect; inflorescence a monochasium, dichasium to pleiochasium, or sometimes a single flower; bracts lanceolate, usually pinnately divided. Flowers small, bisexual, sometimes unisexual, actinomorphic, white or yellowish-green; sepals 5 or 6, petaloid, elliptic, deciduous; petals 5 or 6, shorter than sepals, oblanceolate or spatulate, clawed, nectariferous or not; stamens numerous, anthers widely elliptic, filaments linear; carpels 5—14, stipitate. Follicles several, umbellately arrangement on receptacle, chartaceous, stipitate, stalks pubescent. Seeds few, oblong-glabose, brown, nitid, with a crustaceous testa.

About 16 species in temperate regions of the northern hemisphere, 6 species in mainland China and only one species in Taiwan.

Coptis quinquefolia Miq. in Ann. Mus. Bot. Lugd.-Bat. **3**: 7. 1867; Yamamoto, Suppl. Icon. Pl. Form. **3**: 25. 1927; Sasaki, List Pl. Form. 184. 1928; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. **2**: 75. 1932; Suzuki, Short Fl. Form. 65. 1936; Masamune, List Vasc. Pl. Taiwan 52. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 32. 1960; Liu & Hsieh, Fl. Taiwan **2**: 494. 1976; T.I. Yang, List Pl. Taiwan 605. 1982.

五葉黃連（臺灣黃連）

Coptis quinquefolia forma *ramosa* Makino in Bot. Mag. Tokyo **25**: 227. 1911.

Coptis morii Hayata, Icon. Pl. Form. **3**: 9. t. 2. 1913. Type: Formosa: Rontabunzan, *U. Mori* s.n. Apr 1910 (holotype: TI!).

Coptis quinquefolia var. *pedatoquinquefolia* Koidz. in Bot. Mag. Tokyo **27**: 39. 1928.

Coptis quinquefolia var. *ramosa* (Makino) Ohwi, Fl. Japan 457. 1956.

Perennial erect herbs with short rhizomes. Leaves radical, 1.5—4.5 cm long, 2—6 cm wide, palmately divided, 5-partite; petioles 3—12 cm long. Terminal segment (1.3-)1.8—3(-

4) cm long, (0.6-)0.9—1.5(-1.9) cm wide, rhombate or narrowly rhombate; apex acute; base acute; 3-lobed or more; margin mucronate-serrate; glabrous on both surfaces; nerves elevated on adaxial side, flat on abaxial side. Scapes 1, 4.5—20 cm long, erect; flowers solitary or sometimes in a dichasium; bracts lanceolate; pedicels 1—7.5 cm long. Flowers 9—12 mm in diam., bisexual, white. Sepals 5—6, 4.5—8 cm long, 2.8—5 cm wide, petaloid, elliptic or obovate-elliptic; apex round or obtuse. Petals 5, 1.6—3 mm long, spatulate, base clawed, nectariferous with Stamens 20. Carpels 10—12, stipitate; styles curved. Follicles 3—10 mm long; stipitate 3—5 mm long. seeds 5—10.

Flowering January to May (-June); fruiting (March-) April to August.

Distributed in Japan and Taiwan; Taiwan, wet places in forests between 900 and 1500 m (Fig. 7).

Taipei: Wulai : Mt. Lopeishan, 1250 m, Y.B. Cheng & Hsieh 1204(TAI), 1400 m, C.F. Hsieh, Hsieh & Hsiao 679(TAI), Mt. Peichatienshan, 1400-1727 m, R.T. Li 3574(TAI), Mt. Tamanshan, 1600 m, T. Suzuki & Nakamura 18236(TAI), Wulai, T. Suzuki 7151(TAI), 17881(TAI), 17883(TAI), Wulai to Mt. Lalashan, J. Ohwi 863(TI). **Ilan:** Nanao Lake Shenmihu, 1100 m, Y.M. Hsu 594(TAI), Mt. Taipingshan, C.C. Chuang & Kao 4089(TAI, TI), T.C. Huang 4976(TAI), C.H. Ou et al. 5865(TCF), S. Sasaki s.n. Mar 1918(TAIF), s.n. Apr 1930(TAI), s.n. May 1932(TAI), S. Suzuki 764(TAI), 3798(TAI), 3864(TAI), Y. Yamamoto s.n. Sept 1925(TI), 1800 m, H. Keng 1212(TAI), 1870 m, S.F. Huang 4778(TAI), 1900-2000 m, S.F. Huang 4794(TAI), , 2200 m, M.T. Kao 10684(TAI), Houshan Park, S.F. Huang 4964(TAI); Tatung Mt. Chialoshan (Mt. Mururorafu), Y. Yamamoto s.n. Sept 1925(TI), Mt. Chilanshan, C.M. Kou 7864(TAI), F.Y. Lu & Ou 597(TCF). **Taoyuan:** Parlin to Mt. Lalashan, P.F. Cheng 43(TAI), Mt. Lalashan, Yang et al. 6285(TAI, TNM). **Hsinchu:** Chienshi, Lake Yuenyanghu, Y.P. Yang s.n. Mar 1977(TAIF), 1650 m, T.C. Huang, Yang & Jeng 10751(TAI), 1700 m, Y.F. Wang 1175(TAI). **Nantou:** Hsinyi Wanghsiang, C.S. Kuoh B0186(NCKU). **Chiayi:** Mt. Alishan, Erhwanping (Nimendaira), Y. Yamamoto & Mori s.n. Nov 1932(TAI), Mienyue, B. Hayata s.n. Apr 1916(TI). **Hualien:** Mt. Chinshueishan, W.L. Chiew & Ho(TAIF), 1500-2400 m, T.C. Huang, Huang & Yang 12935(TAI).

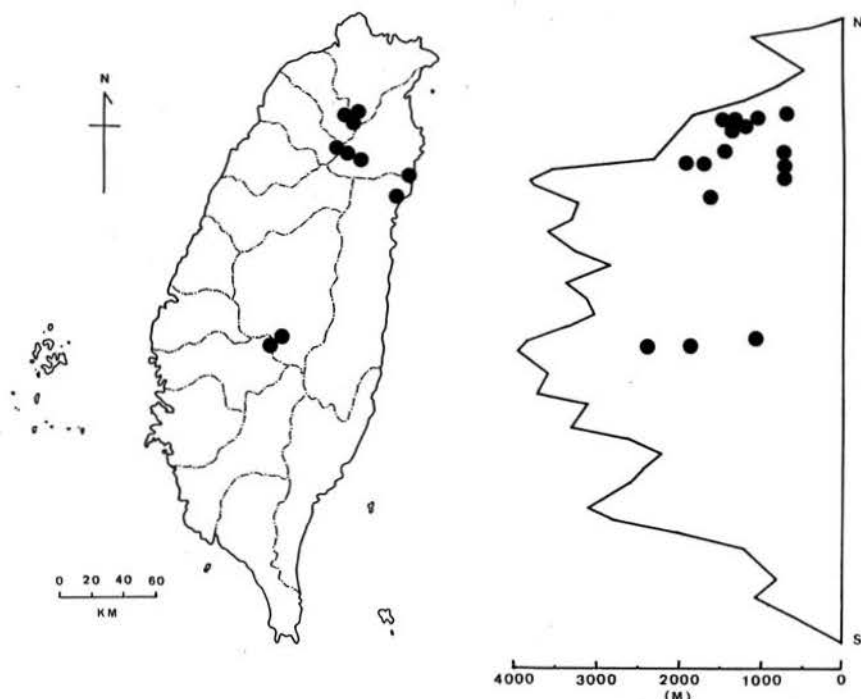


Fig. 7. Latitudinal and altitudinal distribution of *Coptis quinquefolia* in Taiwan.

5. DICHOCARPUM W. T. Wang & Hsiao 人字果屬

Perennial erect herbs with rhizomes. Leaves radical and cauline or radical only, alternate, ternately or pedately compound, terminal segments simple, unlobed or slightly lobed; petiolate. Inflorescence a monochasium or cyme; bracts 3-lobed or ternately divided. Flowers bisexual, actinomorphic, white, rarely pale yellow or pale pink; sepals 5, petaloid, elliptic or obovate, white or pale yellow, deciduous; petals 5, much smaller than sepals, round or obovate with a slender claw, tip entire or retuse, sometimes slightly 3 or 4-lobed; stamens 5—25, anthers obovate-globose or widely ellipsoid-globose, yellow, filaments linear; carpels 2, erect, oblong, connate at base, sessile; ovules numerous. Follicles 2, obovate-linear or narrowly oblong with small beak at apex, divaricate or patent. Seeds many, round-global, rarely elliptic-global, brown, nitid, usually smooth, sometimes verruculose or scaberulous.

About 16 species distributed in the Himalaya and eastern Asia; 9 species in mainland China and only one species in Taiwan.

Dichocarpum adiantifolium (Hook. f. & Thoms.) W.T. Wang & Hsiao in Acta Phytotax. Sin. **9**(4): 329. 1964; Fu in Acta Phytotax. Sin. **26**(4): 256. 1988. — *Isopyrum adiantifolium* Hook.f. & Thoms., Fl. Ind. I: 42. 1855.

鐵線蕨葉人字果 (臺灣人字果) Fig. 8

Isopyrum adiantifolium Hook.f. & Thoms. var. *arisanense* Hayata in Journ. Coll. Sci. Univ. Tokyo **30**(1): 21. 1911. — *Isopyrum arisanense* (Hayata) Ohwi in Acta. Phytotax. Geobot. **1**: 141. 1932; Liu & Hsieh in Fl. Taiwan **2**: 498. 1976. — *Dichocarpum arisanense* (Hayata) W.T. Wang & Hsiao in Acta Phytotax. Sin. **9**(4): 329. 1964. Type: Formosa: Mt. Alishan, T. Kawakami & Mori s.n. Mar. 1908 (TI!).

Perennial erect glabrous herbs, 7—20 cm tall, with creeping rhizomes. Leaves radical and cauline, biternately or pedately compound; petioles 5.5—8.5 cm long. Terminal segments (0.7-)0.8—1.4(-1.8) cm long, (0.8-)1—1.5(-2) cm wide, broadly rhombate; apex retuse; base rounded or truncate; slightly lobed; glabrous on both surfaces. Scapes 1 or 2, 3.5—15.5 cm long, erect. Inflorescence a cyme; bracts ternately divided; pedicels 8—25 mm long. Flowers 6—10 mm in diam., white. Sepals 5, ca. 3.5—4.5 mm long, 1.5—2.5 mm wide, elliptic, oblong or obovate. Petals 5, round, ovate, obovate or elliptic with a slender claw, apex entire, emarginate or 2-lobed. Stamens 5—10, anthers obovoid-glabose; filaments linear, 2—4 mm long. Carpels 2, erect, 2—3 mm long, connated at base. Follicles 2, 7—10 mm long, narrowly oblong with small beak at apex, patent. Seeds many, globose, brown, nitid, smooth.

Flowering (January-) February to May (-September); fruiting March to July (-October).

Distributed in mainland China (Hunan, Sichuan, Guizhou, Yunnan and Xizang), India and Taiwan; Taiwan, on mountaineous areas of Central to northern parts (Fig. 9).

Ilan: Mt. Taipingshan, J. Ohwi 2431(KYO), T. Suzuki 836(TAI). **Hsinchu:** Chienshi Lake Yuanyanghu Natural Preserved Area, 1670 m, H.Y. Shen et al. 795(HAST). **Miaoli:** Taian: Kuangwu, Y.B. Cheng et al. 1694(TNM), 1800-2000 m, J.C. Wang & Yang 4784(TAI), 2150 m, C.I. Peng et al. 14919(HAST), Kuanwu to Kuaishan Giant-tree, 2000 m, J.C. Wang et al. 8353(HAST). **Nantou:** Jenai: Mt. Hohuanshan, in Abeis forest, T. Fukuhara & Shibaike s.n. Jun 1991(KYO). **Chiayi:** Alishan, Mt. Alishan, B. Hayata & Sasaki s.n. Jan

1912(TAIF), Ito s.n. Apr 1914 (TAIF), C.H. Ou s.n. Feb 1980(TCF), 2200 m, M. Tamura, Y. & K. Kosuge 27447(KYO), 2230 m, M. Minaki et al. 2013(KYO, TI), 2500 m, U. Faurie 578(KYO), Pond Sisters, Yang, Hsu & Wang 4512(TUNG), 5562(TUNG), Tungshan, T. Kawakami & Mori 3615(TAIF).

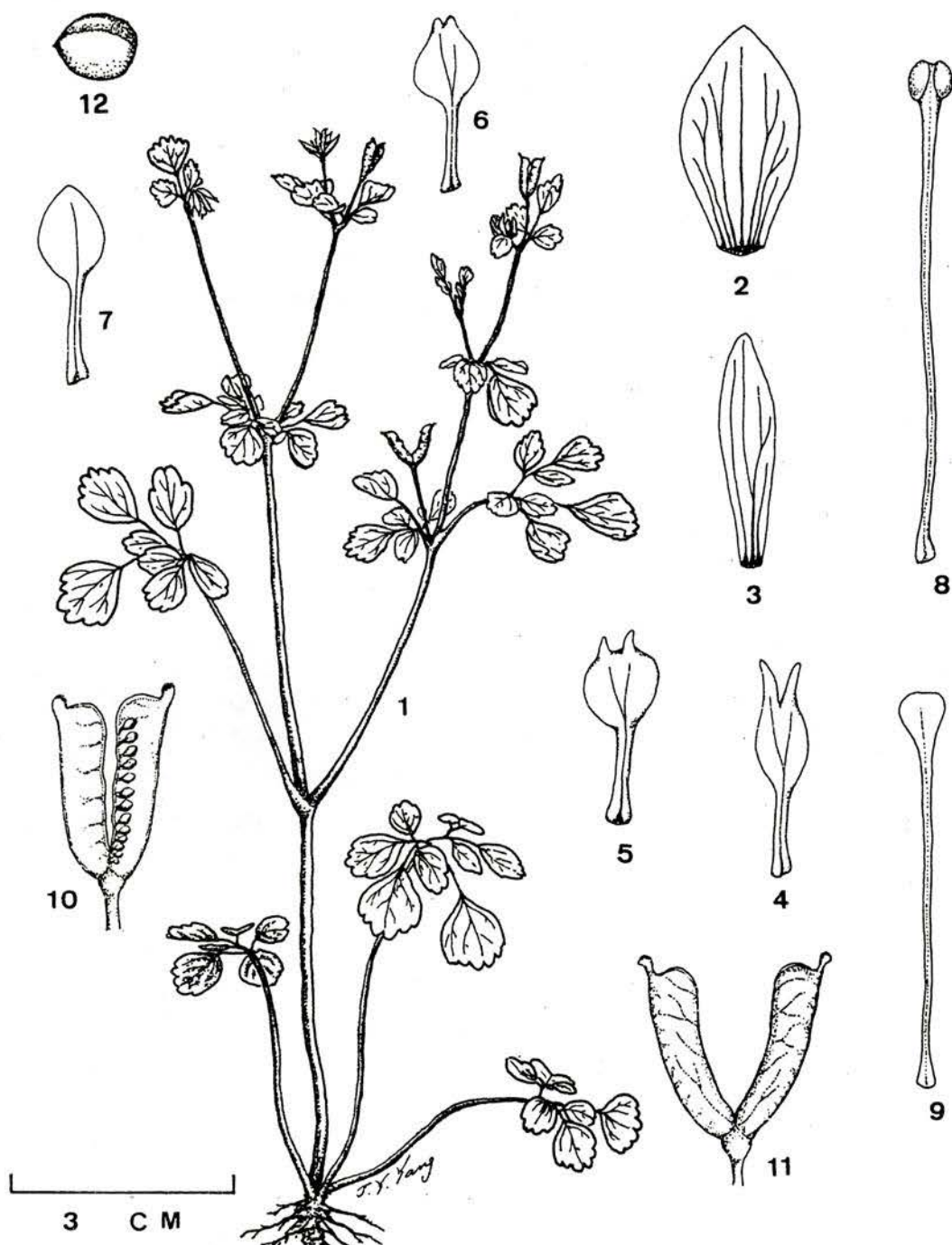


Fig. 8. *Dichocarpum adiantifolium* (Hook. f. & Thoms.) Wang & Hsiao. 1. Habit; 2. & 3. Sepals; 4.-7. Petals; 8. Stamens; 9. Sterile stamen; 10. Carpel (one carpel showing ovules); 11. Follicles; 12. Seed.

6. RANUNCULUS L. 毛茛屬

Annual or perennial terrestrial herbs, or sometimes aquatic or semi-aquatic; upright, spreading or sometimes creeping. Roots fibrous and/or stoloniferous rhizomes. Leaves

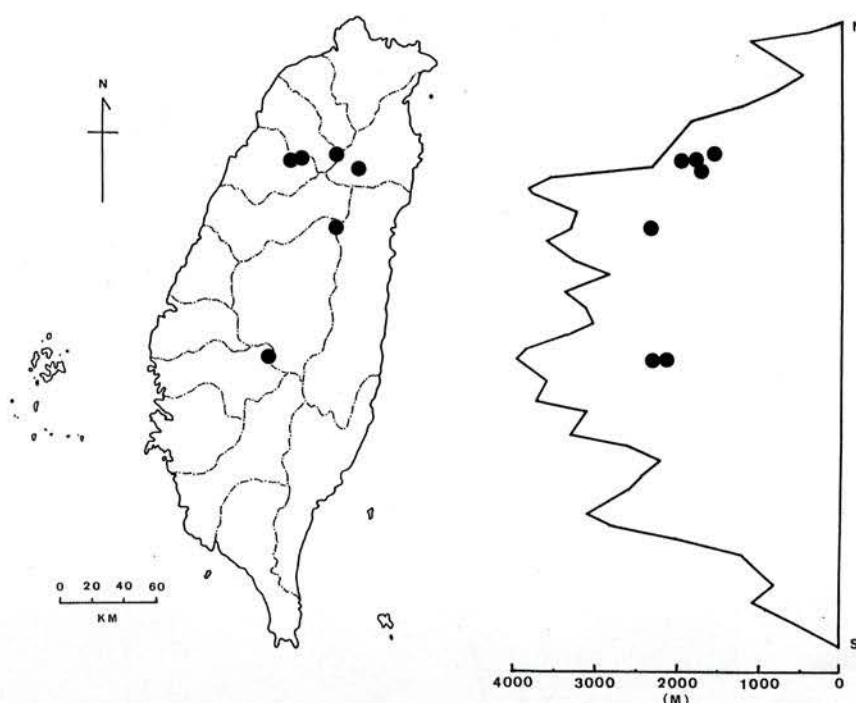


Fig. 9. Latitudinal and altitudinal distribution of *Dichocarpum adiantifolium* in Taiwan.

dimorphoic or monomorphoic, simple, ternate, biternate, pinnate or bipinnate; unlobed, 3-or more lobed to 3-partited; chartaceous or subcoriaceous; margin entire, or serrate; alternate or radical leaves a basal rosette, with long sheathing petioles; cauline leaves short-petiolate, subsessile to sessile; stipules absent. Inflorescence a cyme or flowers solitary, terminal or axillary. Flowers bisexual, actinomorphic, yellow, white, or red; sepals 5, green, deciduous; petals larger than sepals, usually 5, sometimes 6 or up to 10, with a nectariferous spot, cup-shaped or covered by a scale, claw at base; stamens numerous, glabrous, anthers oblong or narrowly ovate, filaments linear; carpels many, with an ascending ovule, spiral arranged on glabrous or pubescent receptacle. Fruits aggregated forming a globose or ellipsoidal head; achenes ovate, orbicular, obovate or elliptic, compressed or convex in lateral view; glabrous or hairy, scabrous or papillate; style persistent or not, or lengthening to become beaklike after anthesis.

About 250 species in the temperate and frigid regions in worldwide, mainly in Asia and Europe; about 80 species in Mainland China and 11 species in Taiwan.

Key to the species

1. Leaves dimorphoic
 2. Carpels and achenes pubescent 6.7. *R. nankotaizanus*
 2. Carpels and achenes glabrous
 3. Plants glabrous or nearly so; fruits compressed in laterally 6.8. *R. scleratus*
 3. Plants pubescent or sparsely pubescent; fruits convex in lateral view
 4. Leaves glabrous or nearly so; margin entire 6.5. *R. junipericolus*
 4. Leaves pubescent; margin coarsely serrate or serrate
 5. Radical leaves 2.7—5.9 cm wide; achenes 1.5—4 mm long 6.4. *R. japonicus*
 5. Radical leaves 1.2—2.2 cm wide; achenes ca. 1—1.5 mm long

- 6.11. *R. ternatus*
1. Leaves monomorphic
6. Leaves glabrous or nearly so
7. Leaves entire; flowers 8—10 mm in diam. 6.2. *R. cheirophyllus*
7. Leaves biternate or bipinnate; flowers 20—25 mm in diam. 6.6. *R. morii*
6. Leaves pubescent or sparsely pubescent
8. Fruits convex in lateral view; achenes less than 3 mm long; plants usually under 10 cm tall
9. Flowers more than 12 mm in diam. 6.3. *R. formosa-montanus*
9. Flowers less than 12 mm in diam. 6.10. *R. taisanensis*
8. Fruits compressed in lateral view; achenes > 3.0 mm long; plants usually over 15 cm tall
10. Plants spreading and/or upright; roots fibrous and stoloniferous rhizomes 6.9. *R. sieboldii*
10. Plants upright not spreading; roots fibrous 6.1. *R. cantoniensis*

6.1. *Ranunculus cantoniensis* DC., Prod. Syst. Nat. 1: 43. 1824; Ohwi, Fl. Jap. 526. 1953; Masamune, List Vasc. Pl. Taiwan 53. 1954; Liou, Fl. Reip. Pop. Sin. 28: 321. 1980.

禺毛茛 (水辣菜)

Ranunculus sieboldii auct. non. Miq.: Liu & Hsieh, Fl. Taiwan 2: 506. 1976.

Perennial pubescent herbs, upright, 12—70 cm tall. Roots fibrous. Leaves monomorphic, ternate or simple, terminal ones 3-partited, (19-) 29.1—50.9(-67) mm long, (15-) 22.2—44.2 (-65) mm wide; ovate or widely elliptic; 3-or more lobed; apex acute; base obtuse, acute or truncate; margin serrate; sparsely pubescent on adaxial surface, pubescent on abaxial surface; petioles 3.7—18 cm long. Inflorescence a scorpioid cyme or cyme; pedicels 1.2—8 cm long, pubescent. Flowers 9—18 mm long in diam., yellow. Sepals 5, 4.5—6 mm long, 2—4 mm wide; spreading, broadly elliptic or elliptic, pubescent outside, glabrous inside. Petals 5, 6—7 mm long, 3—4 mm wide; obovate or elliptic, glabrous on both sides. Stamens numerous, ca. 2.5—4.5 mm long, anthers oblong, 1—1.5 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head globose; achenes 3—5 mm long, obovate-orbicular, glabrous, compressed laterally; styles persistent, short, recurved.

Flowering (March-)April to August (-September); fruiting May to October (-February).

Widely distributed around India, southwestern, southern and southeastern mainland China (Yunnan, Sichuan, Guezhou, Hubei, Hunan, Guangxi, Guangdong, Fujian, Jiangxi, Zhejiang and Jiangsu), Vietnam, Hongkong, Taiwan, Japan and Korea. Taiwan, semi-wet places, stream sides, and forest margins, below 2500 m, but sometimes to 3000 m (Fig. 10).

Taipei City: S.T. Lin s.n. Apr 1947(TAI), E. Matuda s.n. Mar 1915(TAI), S. Sasaki s.n. Mar 1927(TAI), H. Simada 361(TAI), Y. Yamamoto s.n. Oct 1931(TAI); Hsinyi District: Taipei Medical College campus, P.C. Cheng & Kao s.n. Apr 1968(TAI); Shihlin District: Chishanyen, T. Nosaka & Mori s.n. Apr 1933(TAI), Mt. Tatunshan, T. Suzuki 6807(TAI), Yangmingshan, H. Shimizu 658(TAI); Taan District: Konkuan, T. Tanaka & Shimada s.n. Apr 1932(TAI), National Taiwan Univ. campus, W.T. Cheng 604(TAI), S.H. Lee s.n. Apr 1962(TAI), S. Suzuki s.n. Dec 1932(TAI); Wenshan District: Mt. Chengchushan, H. Shimizu 647(TAI), Y. Yamamoto s.n. May 1930 (TAI). **Keelung:** Keelung, T. Kawakami & Sasaki s.n. Apr 1910 (TAI). **Taipei:**

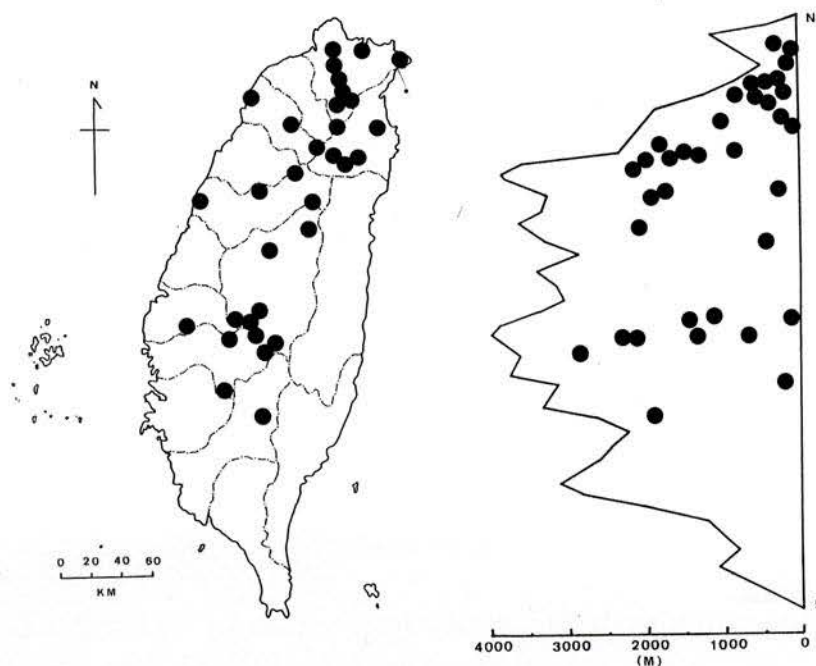


Fig. 10. Latitudinal and altitudinal distribution of *Ranunculus cantoniensis* in Taiwan.

Hsintien: Chienkou, 100-200 m, *T. Shimizu & Kao* 12357(TAI), Hualin Experimental Forest Plantation of Chinese Culture Univ., 415 m, *T.Y. Liu, C.C. Wang & T.T. Lin* 194(TNM), Tachichiao, *J.G. Liu* s.n. May 1991(TNM); Pinglin: Hsiaogertou, *J.G. Liu* s.n. Jun 1991(TNM), Pinglin, *C.T. Wang* 907(TAI); Shiting: Mt. Huangtitienshan, *W.S. Tang* 1602(TAI); Tanshui: Tanhai, *Yang & Wang* 4465(TAI,TUNG); Wulai: Fushan, *S.T. Chiu* 1074(TNM), Tunghou, 400 m, *C.C. Liao, Liu & Wang* 423(HAST), Wulai, *J.G. Liu* s.n. May 1991(TNM). **Ilan:** Lotung: Lotung, *Y. Yamamoto* s.n. Aug 1933(TAI); Nanao: Lake Tsuifenghu, around Tsuifengshanchuang, 1790 m, *Y.R. Lin, Lin & Liu* 76(HAST), Mt. Taipingshan, *C.H. Ou et al.* 2670(TCF), *S. Suzuki* s.n. Jun 1927(TAI), 1950 m, *C.I. Peng* 7842(HAST), Mt. Tayuanshan, *M.T. Kao* 3144(TAI); Tatung: Mt. Chilanshan, *F.Y. Lu & Ou* 649(TCF), Jentse, *C.H. Ou et al.* 2621(TCF), Litaishenmuyuan, 1500 m, *K.Y. Wang, Lin & Liao* 1069(HAST). **Hsinchu:** Chienshih: Lake Yuanyanghu, 1670-185 m, *H.Y. Shen, Leu & Chen* 624(HAST); Chupei: Temple Lienhuasi, *C.S. Kuoh* 13064(NCKU); Hengshan, Peiwou, 245 m, *C.M. Wang* 770(HAST,TNM). **Taichung:** Hoping: Lishan, *C.S. Kuoh* 6981(TAI), Tahsueshan forest track, 1700 m, *Yang & Cheng* 6358(TNM); Sunping, *H.Y. Sheu & Wang* s.n. May 1991(TNM). **Nantou:** Chushan: Chingshuikou, *T.C. Huang, Kou & Kao* 828(TAI); Jenai: Meifeng, 2100 m, *W.P. Leu & Yen* 454(HAST,TNM); Luku: Mt. Fenghuangshan, *C.H. Ou* 2168(TCF), Hsitou, *Chen & Ting* 10104(TAI), *F.Y. Lu & Ou* 1582(TCF), *C.H. Ou et al.* 3048(TCF), 3095(TCF), *I. Sasaki* 691(TI), 1150 m, *C.I. Peng* 15008(HAST), to Sunlinhsi, 1100-1600 m, *C.I. Peng* 5352(HAST); Puli: Puli, *T. Tani* 2397(TI). **Chiayi:** Alishan: Mt. Alishan, *C.H. Ou et al.* 2806(TCF), *Y. Yamamoto & Mori* s.n. Nov 1932(TAI), 2300 m, *T. Shimizu* 10718(TAI), to Chushan, *T. Nakamura* 4089(TAI), 2200-2400 m, *J. Murata & Huang* 17595(TAI,TI), to Tungpu, 2100 m, *T. & F. Yamazaki* 998(TAI), Mienyueh, *C.H. Ou et al.* 9480(TCF), Paiyunshanchuang to Tatacha, 2850 m, *S.T. Chiu* 1852(TNM), Tataka-anbu, 2600-2800 m, *Yang, Tsou & Lin* 5301(HAST,TUNG); Chuchi: Lake Fenchihu, *T.C. Huang & Huang* 13991(TAI), *F.Y. Lu & Ou* 3423(TCF). **Yunlin:** Peichiung: Wind-break Institution campus, *T. Shimizu* 11540(TAI). **Kaohsiung:** Taoyuan: Tengchih lodging area to Shihshan, 1875 m, *Y.R. Lin et al.* 394(TNM). **Hualien:** Nanshan, *F.Y. Lu & Ou* 1797(TCF). Uncertain place: Hukko, *Hori, G. Masamune & Suzuki* s.n. Mar 1934(TAI).

6.2. *Ranunculus cheirophyllus* Hayata, Icon. Pl. Form. 3: 7. 1913; Sasaki, List Pl. Form. 184. 1928; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. 2: 78. 1932; Suzuki, Short Fl. Form. 66. 1936; Masamune, List Vasc. Pl. Taiwan 53. 1954; Huang in Bull.

Natl. Taiwan Norml. Univ. **5**: 40. 1960; Liu & Hsieh, Fl. Taiwan **2**: 500. 1976; T.I. Yang, List Pl. Taiwan 606. 1982. — *Ranunculus kawakamii* Hayata Journ. Coll. Sci. Imp. Univ. Tokyo **30**: 19. 1911, Icon. Pl. Form. **1**: 27. 1911.

Type: Chiayi: Mt. Alishan, 2134 m, T. Kawakami & Mori 3646 (holotype: TI!).

掌葉毛茛 Fig. 11

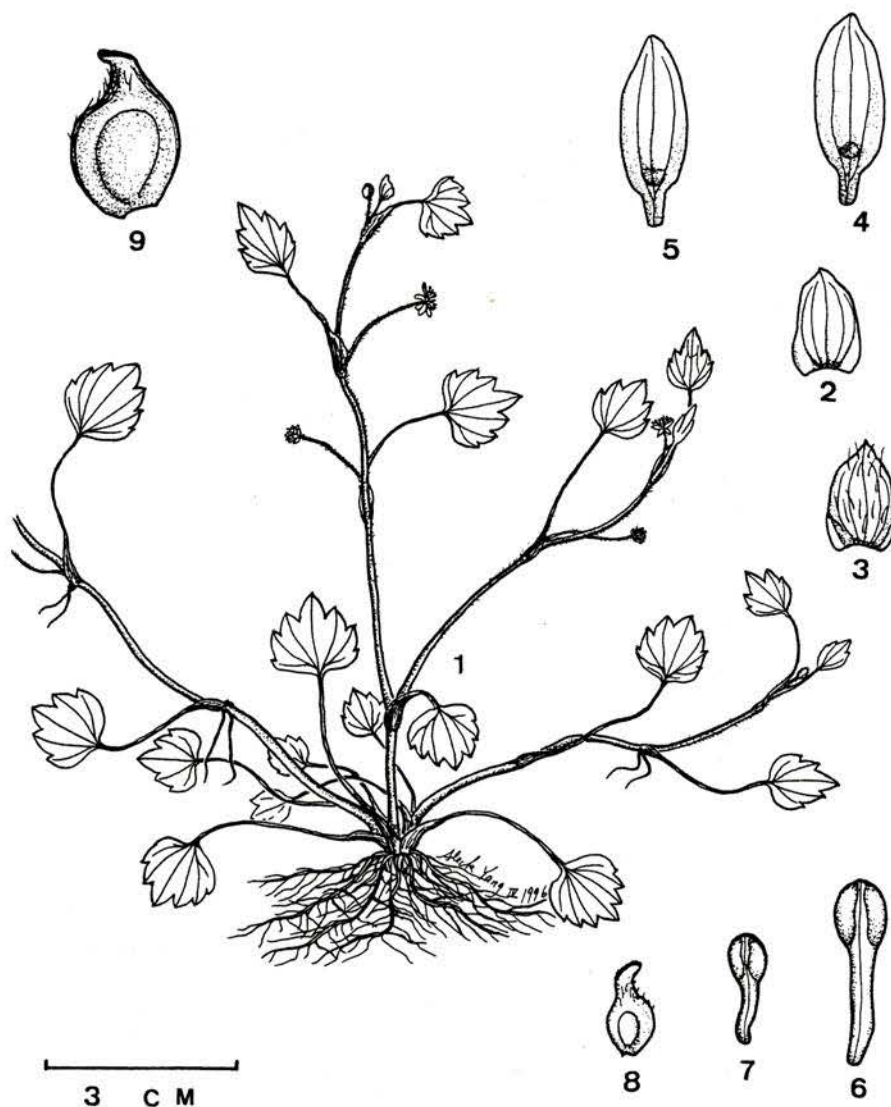


Fig. 11. *Ranunculus cheiophyllus* Hayata. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Petals, 4, adaxial and 5, abaxial sides; 6. & 7. Stamens; 8. Carpel; 9. achene.

Perennial rhizomatous glabrous or sparsely pubescent creeping herbs, 21—65 mm tall. Roots fibrous. Leaves monomorphic, simple, (9-)9.6—14.4(-18) mm long, (10-)10.4—13.8(-15) mm wide; orbicular, broadly ovate or elliptic, 5- or more lobed; apex acute; base rounded, obtuse, truncate or cordate; margin entire or sometimes coarsely serrate; glabrous or nearly so on adaxial surface, sparsely pubescent or subglabrous on abaxial surface; petioles 14—65 mm long, pubescent. Flowers solitary, axillary, 8—10 mm in diam., yellow; pedicels 12—66 mm long, pubescent. Sepals 5, 2—3 mm long; spreading, broadly elliptic or elliptic, sparsely pubescent outside, glabrous inside. Petals 3—5, 4 mm long, 2

mm wide; narrowly obovate or narrowly elliptic, glabrous on both sides. Stamens numerous, 2 mm long, anthers oblong, 1 mm long, filaments linear. Carpels many, sparsely pubescent or subglabrous; receptacles hairy. Fruiting head globose; achenes 1—1.5 mm long, elliptic-orbicular to obovate-orbicular, subglabrous, convex in lateral view; styles persistent, short, recurved.

Flowering (November-) January to May; fruiting April to June (-July).

Endemic ; wet places between 1000 and 2600 m in the central mountain (Fig. 12).

Ilan: Nanao: Mt. Taipingshan, *S. Sasaki s.n.* May 1932(TAI), *S. Suzuki* 3794(TAI). **Taichung:** Hoping: Mt. Chichiayangtashan, *S. Suzuki s.n.* Jul 1930(TAI), Hsinta camp to Mt. Pintianshan, 3200-3536 m, *J.C. Wang et al.* 4032(TAI). **Nantou:** Jenai: Mt. Chilaichunanshan, *S. Suzuki* 2259(TAI), 2236(TAI), Mt. Nengkaoshan, *S. Suzuki s.n.* Aug 1926(TAI), Wushe, *C.C. Chuang* 4262(TAI). **Chiayi:** Alishan: Mt. Alishan, *C.C. Chuang & Kao* 4222(TAI), *B. Hayata & Sasaki s.n.* Jan 1912(TAI), *s.n.* Apr 1914(TAIF), *C.H. Ou et al. s.n.* May 1988(TNM), Erwanping, *B. Hayata s.n.* 1912(TI), Sisters' Pond, *C.C. Hsu & Kuoh* 6740(TAI), 2000-2200 m, *Yang* 4510(TUNG), *Yang, Hsu & Wang* 5556(TUNG), Mt. Tashan, *S. Sasaki s.n.* May 1913(TAIF). **Hualien:** Hsiulin: Mt. Chungyangchienshan, 3300 m, *N. Fukuyama & Suzuki* 15095(TAI), 15100(TAI), Mt. Hohuanshan, *S.T. Chiu* 1912(TNM), *C.H. Ou & Kao* 9167(TAI), *S. Sasaki s.n.* Jun 1936(TAI), Tayulin, *C.C. Hsu & Hsu* 3778(TAI). **Taitung:** Peinan: Chipen-yue, *J. Ohwi* 1458(TI); Tajen: Tashulin to Chishueying, *Y. Yamamoto s.n.* Jun 1927(TI).

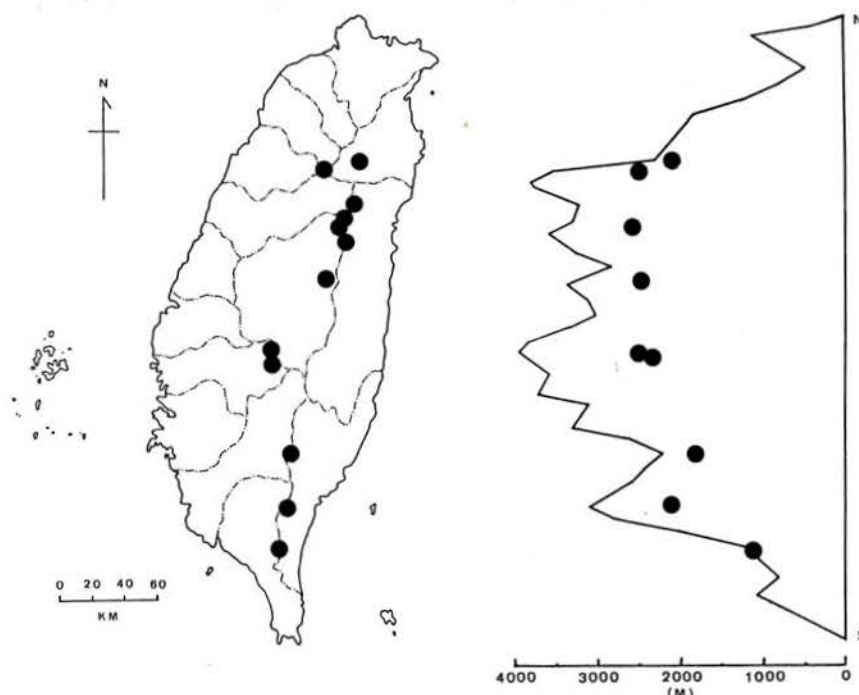


Fig. 12. Latitudinal and altitudinal distribution of *Ranunculus cheiophyllus*.

6.3. *Ranunculus formosa-montanus* Ohwi in Acta Phytotax. Geobot **2**(3): 154. 1933; Masamune, List Vasc. Pl. Taiwan 53. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 39. 1960; Liu & Hsieh, Fl. Taiwan **2**: 501. 1976; Liou, Fl. Reip. Pop. Sin. **28**: 299. 1980. Type: Formos: Taihokushu (Taichung): Nankotaisan (Mt. Nanhutashan), *J. Ohwi* 4027 (holotype: KYO!; isotype: TI!)

Ranunculus japonicus Thunb. var. *yakushimensis* (non Makino) Yamamoto, Suppl. Icon. Pl. Form. **3**: 30, fig. 10. 1927.

Ranunculus matsudai Hayata ex Masamune in Journ. Soc. Trop. Agr. 6: 570. 1934; *syn. nov.* Type: Formosa: Taichushu (Nantou): Nonkozan (Mt. Neng-kaoshan), *E. Matuda s.n.* Aug 1919 (lectotype is designated here: TI!); in monte Nankotaizan (Mt. Nanhutashan), 10,000-11,000 ft, *S. Sasaki s.n.* Jul 1922 (syntype: TI!).

蓬萊毛茛 (疏花毛茛, 南湖毛茛)

Perennial rhizomatous pubescent herbs, spreading or upright, 5—25(-30) cm tall. Roots fibrous. Leaves monomorphic, simple, (8-)9.9—22.7(-28) mm long, (9.0-)16.4—33.6(-46.0) mm wide; ovate, orbicular-cordate or deltoid, 3-partited, each segment 3-5-lobed; apex acute; base truncate or cordate; margin coarsely serrate; pubescent on both surfaces or sparsely pubescent on adaxial surface; petioles 1.5—12 cm long. Inflorescence a terminal cyme; pedicels 2.8—10.8 cm long, pubescent. Flowers (10-)15—24 mm in diam., yellow. Sepals 5, 4—5 mm long, 2 mm wide, spreading, broadly elliptic or elliptic, pubescent outside, glabrous inside. Petals 5, 7—12 mm long, 6—10 mm wide; obovate, glabrous on both sides. Stamens numerous, 2.5—4 mm long, anthers oblong, 1—1.5 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head ellipsoid; achenes 1.8—3 mm long, elliptic-orbicular to obovate-orbicular, glabrous, convex in lateral view; styles persistent, becoming a beaklike after anthesis, recurved.

Flowering May to July (-August); fruiting June to September (-October).

Endemic; open places and sunny slopes above 2600 m in the central mountains (Fig. 13).

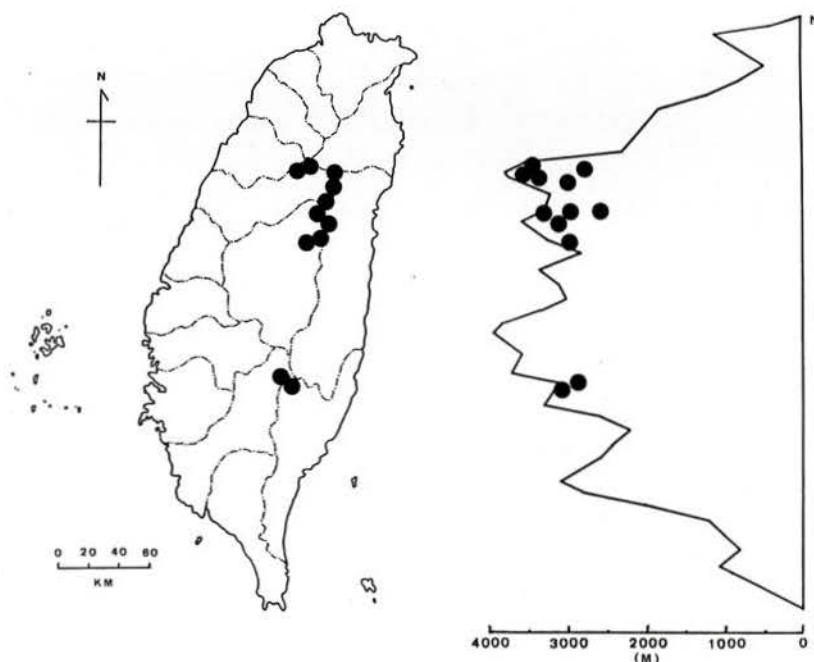


Fig. 13. Latitudinal and altitudinal distribution of *Ranunculus formosa-montanus*.

Ilan: Tatung: Mt. Nanhutashan, 3400-3740 m, *C.C. Hsu* 6036(TAI), *S. Sasaki s.n.* Jul 1922(TI).
Taichung: Hoping: Mt. Chichiayangtashan, *S. Suzuki s.n.* Jul 1930(TAI), Chikashanchuang, *S.T. Chiu* 2023(TNM), to 369-shanchuang, *T.C. Huang & Hsieh* 7178(TAI), Hsinta campus to Shancha Shelter, *J.C. Wang, Huang & Yang* 4559(TAI), Mt. Hsueshan, *U. Mori s.n.* Oct 1936(TAI), *S. Onuma* 19(TAI), *S. Sasaki s.n.* Jul 1931(TAI), Mt. Nanhutashan, *T. Suzuki, Fukuyama & Simada* 17429(TAI), 18052(TAI), 2450-3530 m,

J.C. Wang et al. 3652(TAI), 3300 m, *T. Yamazaki, Nanba & Tani* 309(TAI), 3400-3500 m, *C.M. Wang* 879(HAST, TNM), Shancha Shelter to Mt. Hsueshanpeifeng, 3100-3700 m, *J.C. Wang, Huang & Yang* 4591(TAI). **Nantou:** Jenai: Mt. Chilaichunanfeng, *S. Suzuki* 2259(TAI), 2336 (TAI), Mt. Nengkaoshan, *Y. Hashioka s.n.* Jul 1934(TAI), *S. Suzuki s.n.* Aug 1926 (TAI), Mt. Shimenshan, 3226 m, *S.T. Chiu, Chen & Chu* 2955(TNM), Sonhsuelou, *C.M. Wang s.n.* Jun 1992(TNM), to Tayulin, *C.S. Kuoh* 2875(TAI), Wuling, 3275 m, *C.H. Chen* 1056(HAST), to Mt. Hohuanshan, 3250-3416 m, *C.H. Chen* 1116(HAST), Wushe, *C.C. Chuang* 4262(TAI). **Kaohsiung:** Taoyuan: S. Cross-Island Highway, Tienchi to Yiakou, *T.C. Huang, Hsieh & Lin* 8943(TAI). **Hualien:** Hsiulin: Mt. Chungyangchienshan, 3300 m, *N. Fukuyama & Suzuki* 15095(TAI), 15100(TAI), Taroko National Park, Mt. Chilaishan, *H.Y. Shen & Liu* 81(HAST), Mt. Hohuanshan, 3000 m, *C.C. Wang* 1266(HAST), Mt. Nanhutashan, 3500 m, *Yang et al.* 5053(TUNG), 3500-3720 m, *Yang et al.* 5068(TUNG). **Taitung:** S. Cross-Island Highway, Mt. Kuanshanlinshan, *C.S. Kuoh* 11956(NCKU).

- 6.4. *Ranunculus japonicus* Thunb.** in Trans. Linn. Soc. **2**: 337. 1794; Hayata, Icon. Pl. Form. **1**: 28. 1911; Sasaki, List Pl. Form. **184**. 1928; Suzuki, Short Fl. Form. **66**. 1936; Masamune, List Vasc. Pl. Taiwan **53**. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 40. 1960; Liu & Hsieh, Fl. Taiwan **2**: 501. 1976; Liou, Fl. Reip. Pop. Sin. **28**: 312. 1980. —*Ranunculus acris* L. var. *japonicus* (Thunb.) Maxim. ex Makino et al., New Ill. Fl. Jap. **181.f.722**. 1961. 毛茛 Fig. 14

Perennial rhizomatous pubescent herbs, upright or spreading, 15—45 cm tall. Roots fibrous. Leaves dimorphic, sparsely pubescent on adaxial surface, pubescent or sparsely pubescent on abaxial surface. Radical leaves simple, 3-lobed to 3-partited, (17-)19.2—39.8(-53) mm long, (18-)26.9—59.3(-70) mm wide; orbicular or ovate; apex acute; base rounded, truncate or cordate; margin coarsely serrate; petioles 4.4—33.5 cm long. Cauline leaves 3-partite, segments narrowly oblong or narrowly elliptic; apex acute; base rounded or obtuse; margin entire or sometimes coarsely serrate; sessile or subsessile. Inflorescence in a terminal cyme; pedicels 2—8 cm long, pubescent. Flowers 8—20 mm long in diam., yellow. Sepals 5, 3.8—5 mm long, 1.5—2.5 mm wide, spreading, ovate or elliptic, pubescent outside, glabrous inside. Petals 5 or sometimes more, 8—13 mm long, 5—9 mm wide, obovate or narrowly obovate, glabrous on both sides. Stamens numerous, 2.5—4.5 mm long, anthers oblong, 1.0—1.5 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head ellipsoid to globose; achenes 1.5—4 mm long, ellipsoid-orbicular to obovoid-orbicular, glabrous, convex in lateral view; styles persistent, indistinct.

Flowering March to May; fruiting April to June.

Mainland China (except Xizang), Japan, Korea and Russia. Taiwan, limited distribution in open places and forest margins below 800 m of northern part (Fig. 15).

Taipei: Shimen: *Yang, Chang & Sung* 6250(HAST, TAI, TAIF, TNM, TNU), Fukueichiao, *T. Kawakami s.n.* May 1915(TAIF), *S. Sasaki s.n.* May 1915(TAIF). **Keelung:** Hsientung, *S. Suzuki* 4684(TAI), Keelung, *S. Sasaki s.n.* Apr 1910(TAIF), *s.n.* May 1923(TAI, TAIF), *T. Suzuki* 6693(TAI), *T. Tanaka & Shimada* 17794(TAI, TAIF), Paimiweng Fort, 60 m, *C.C. Wang & Chen* 963(HAST), Tawulun, *T. Kawakami & Simada* 4315(TAIF).

- 6.5. *Ranunculus junipericola* Ohwi** in Acta Phytotax. Geobot. **2(3)**: 154. 1933; Suzuki, Short Fl. Form. **66**. 1936; Masamune, List Vasc. Pl. Taiwan **53**. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 41. 1960; Liu & Hsieh, Fl. Taiwan **2**: 502. 1976; Liou, Fl. Reip. Pop. Sin. **28**: 273. 1980.

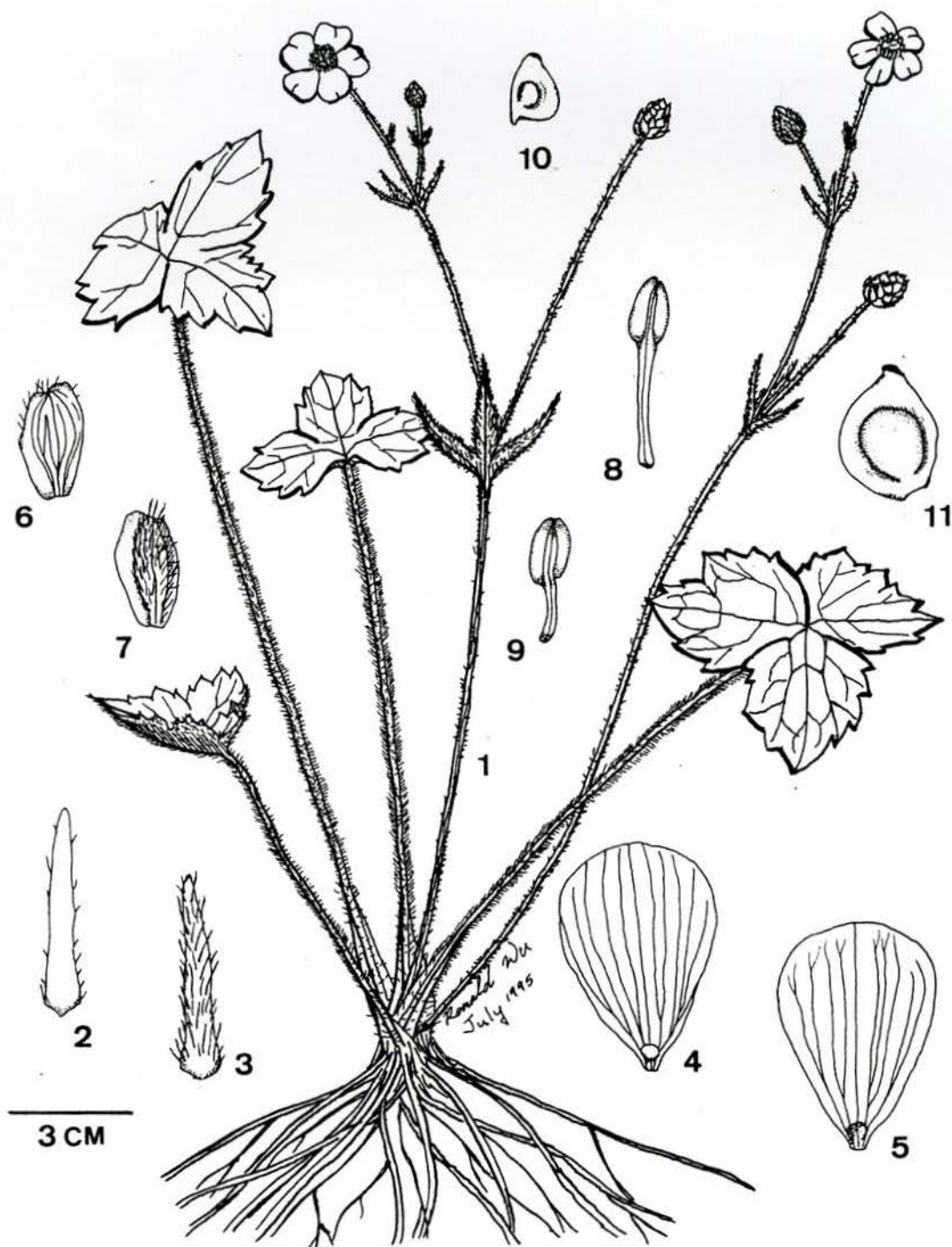


Fig. 14. *Ranunculus japonicus* Thunb. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Stamens; 6. Carpel; 7. Achene.

Type: Formosa: Taichushu (Nantou), Kiraishu-nampo (Mt. Chilaichunanfeng), *J. Ohwi* 3307 (holotype: KYO!, isotype: TAI!), m. Niitaka (Mt. Yushan), *J. Ohwi* 3655 (paratype: KYO!), m. Daisuikutsu (Mt. Tashuikushan), *J. Ohwi* 3786 (paratype: KYO!); Tahokushu (Taichung): m. Nankotaisan (Mt. Nanhutashan), *J. Ohwi* 4019 (paratype: KYO!).

高山毛茛 (檜林毛茛) Fig. 16

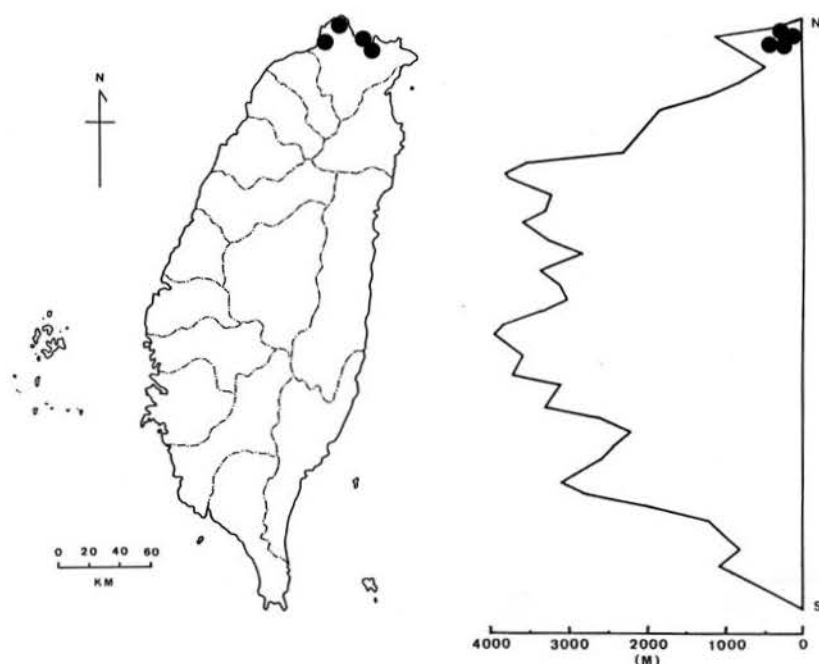


Fig. 15. Latitudinal and altitudinal distribution of *Ranunculus japonica*.

Perennial rhizomatous pubescent herbs, upright, 8—30 cm tall. Roots fibrous. Leaves dimorphic, glabrous or nearly so on both surfaces except margin slightly pubescent. Radical leaves simple, 3-lobed or 3-partite, (12-)14.7—21.3(-24) mm long, (12-)14.6—23.2(-30) mm wide; ovate or deltoid; apex acute; base rounded, obtuse or cordate; margin entire or coarsely serrate; petioles 2—5 cm long. Cauline leaves 3-parted, segments narrowly oblong or lanceolate; apex acute; base obtuse; margin entire; petioles short to nearly absent, sparsely pubescent. Inflorescence a terminal cyme or flowers solitary axillary; pedicels 2—5.4 cm long, pubescent. Flowers 8—12 mm long in diam., yellow. Sepals 5, 4—5 mm long, 2—3.5 mm wide, spreading, elliptic, pubescent outside, glabrous inside. Petals 5, 4.5—7 mm long, 2—3 mm wide; oblong or elliptic, glabrous on both sides. Stamens numerous, 3 mm long, anthers oblong, 1 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head ellipsoid; achenes 1.5—2.5 mm long, ellipsoid-orbicular to obovoid-orbicular, glabrous, laterally convex; styles persistent, becoming a beaklike after anthesis, recurved.

Flowering May to July; fruiting June to September.

Endemic; wet places and coniferous woods above 2700 m in the central mountains (Fig. 17).

Hsinchu: Chienshih: Mt. Tapachienshan, S. Sasaki s.n. Jul 1932(TAI), Shancha Shelter to Mt. Tapachienshan, 3000-3500 m, J.C. Wang, Huang & Yang 4569(TAI). **Taichung:** Hoping: Mt. Hsueshan, S.T. Chiu 1998(TNM), S. Sasaki s.n. Jul 1932(TAI), S. Suzuki s.n. Jul 1930(TAI), 369-shanchuang to Tsueichi, 3200-3884 m, J.C. Wang, Huang & Tang 4421(TAI), 4423(TAI), 4454(TAI), Mt. Hsueshanpeifeng to 369-shanchuang, J.C. Wang, Huang & Yang 4635(TAI), Yunlingshanchuang to Mt. Shenmachengshan, 2700-2900 m, C.M. Wang 982(TNM). **Chiayi:** Alishan: Mt. Yushan, 3700 m, T. & F. Yamazaki 1074(TAI). **Hualien:** Hsiulin: Mt. Hohuanshan to Tayuling, 3200-2650 m, T.T. Lin s.n. Jun 1983 (TAIF).



Fig. 16. *Ranunculus junipericola* Ohwi. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Petals, 4, adaxial and 5, abaxial sides; 6. & 7. Stamens; 8. Carpel; 9. Achene.

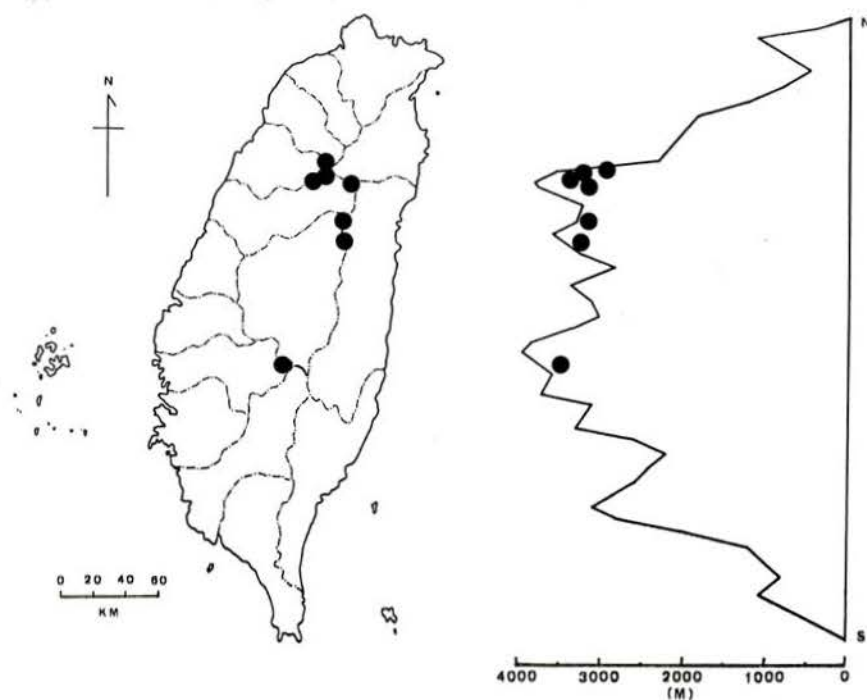


Fig. 17. Latitudinal and altitudinal distribution of *Ranunculus junipericola*.

6.6. *Ranunculus morii* (Yamamoto) Ohwi in Journ. Jap. Bot. **12**: 333. 1936; Masamune, List Vasc. Pl. Taiwan 53. 1954; Liu & Hsieh, Fl Taiwan **2**: 502. 1976. — *Anemone taraoi* (Makino) Takeda var. *morii* Yamamoto, Suppl. Icon. Pl. Form. **3**: 26. 1927. — *Pulsatilla morii* (Yamamoto) Masamune in Trans. Nat. Hist. Soc. Form. **22**: 232. 1932.

Type: In montibus centralibus, *U. Mori* s.n. s.d.

森氏毛茛 (長柄毛茛) Fig. 18

Ranunculus taizanensis Yamamoto in Journ. Soc. Trop. Agr. **4**: 188. 1932. Type: Taichung, Mt. Nanhutashan, 3353-3658 m, *S. Sasaki* s.n. Jul 1922 (holotype: TI!; isotype: TAI!).

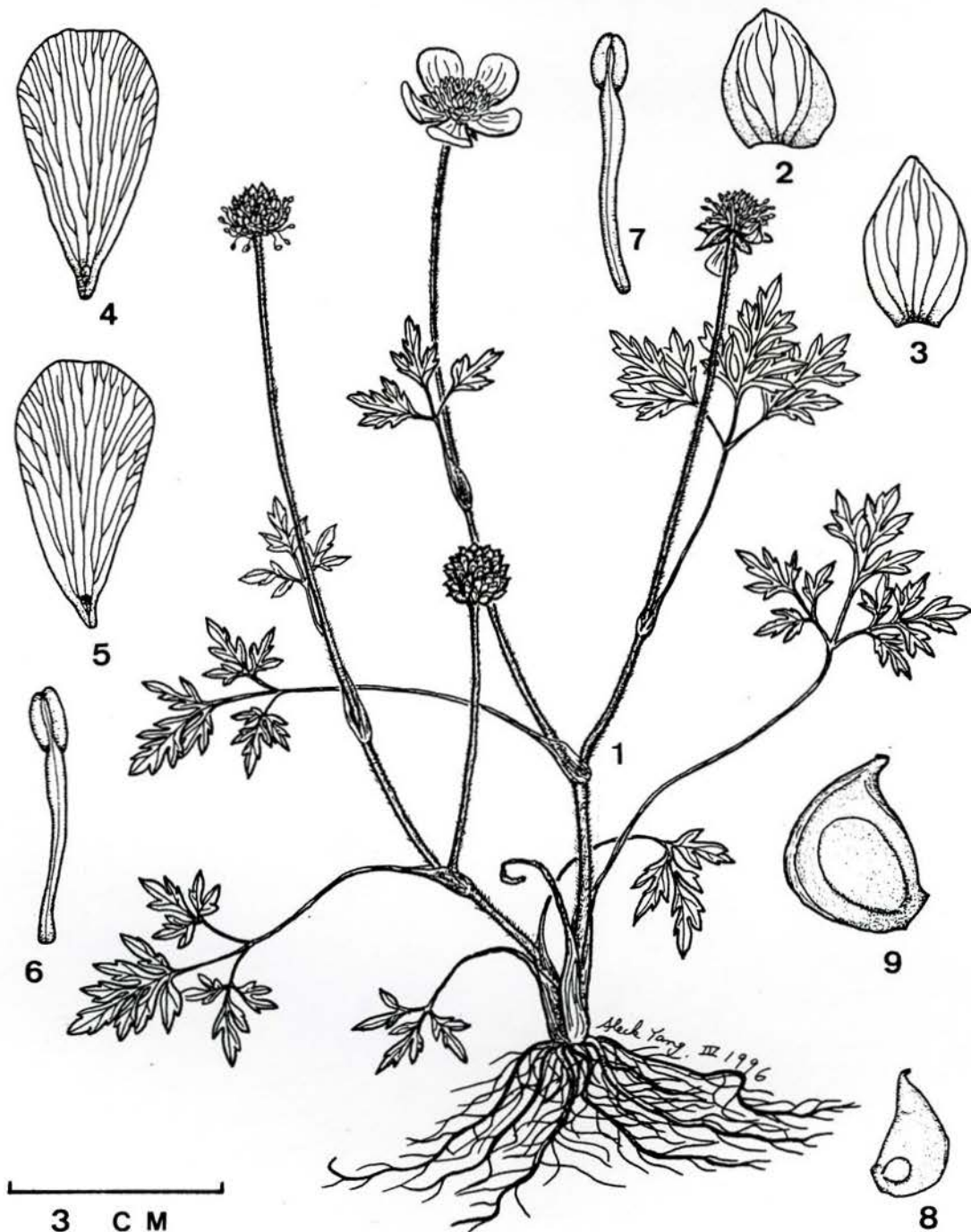


Fig. 18. *Ranunculus morii* (Yamamoto) Ohwi. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Petals, 4, adaxial and 5, abaxial sides; 6. & 7. Stamens; 8. Carpel; 9. Achene.

Perennial sparsely pubescent herbs, upright, 5—20 cm tall. Roots fibrous. Leaves monomorphic, biternate to bipinnate, 2.6—4.15 cm long, 3.45—5 cm wide; ovate or deltoid, deeply linear lobed to partite; apex acute; base obtuse; subcoriaceous; margin coarsely serrate; glabrous on both surfaces or sparsely pubescent on abaxial surface; petioles 34—90.5 mm long, sparsely pubescent. Flowers solitary, axillary, 2—2.5 cm long in diam., yellow; pedicels 3—11.5 cm long, pubescent. Sepals 5, 5—7 mm long, 3—4 mm wide, spreading, broadly elliptic or ovate, glabrous on both sides, deciduous. Petals 5(-8), 9—12 mm long, 4—6 mm wide; narrowly obovate or obovate, glabrous on both sides. Stamens numerous, 4—7.5 mm long, anthers oblong, 1—1.5 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head globose; achenes 2—4 mm long, obovate-orbicular, glabrous, laterally convex; styles persistent, short, recurved.

Flowering (April-) May to June; fruiting (May) June to July.

Endemic; locally above 3000 m in Hsueshan and Nanhutashan (Fig. 19).

Ilan: Tatung: Mt. Nanhutashan, T.C. Huang 7814(TAI), G. Masamune & Mori s.n. Jul 1931(TAI), 3500 m, T. Suzuki, Hukuyama & Simada 17393(TAI), 3600 m, T. Suzuki, Hukuyama & Simada 18083(TAI). **Taichung:** Hoping: Mt. Hsueshan, S.T. Chiu 2007(TNM), S. Sasaki s.n. Jul 1932(TAI), 3600 m, S.P. Li 172(TNM), Mt. Nanhutashan, 3400-3500 m, C.M. Wang 890(HAST,TNM). **Hualien:** Hsiulin: Mt. Nanhutashan, S. Suzuki s.n. Jul 1922(TAI).

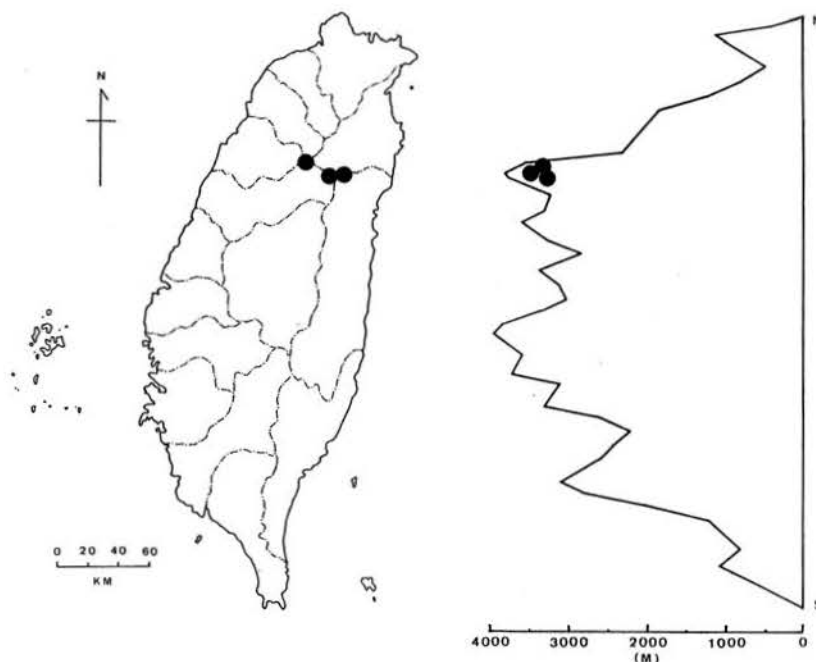


Fig. 19. Latitudinal and altitudinal distribution of *Ranunculus morii*.

6.7. *Ranunculus nankotaizanus* Ohwi in Acta Phytotax. Geobot. **2**(3): 155. 1933; Suzuki, Short Fl. Form. 66. 1936; Masamune, List Vasc. Pl. Taiwan 53. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 43. 1960; Liu & Hsieh, Fl. Taiwan **2**: 504. 1976.

Type: Formosa: Taichung: m. Nankotaisan (Mt. Nanhutashan), J. Ohwi 4179 (holotype: KYO!; isotype: TAI!)

南湖毛茛 Fig. 20

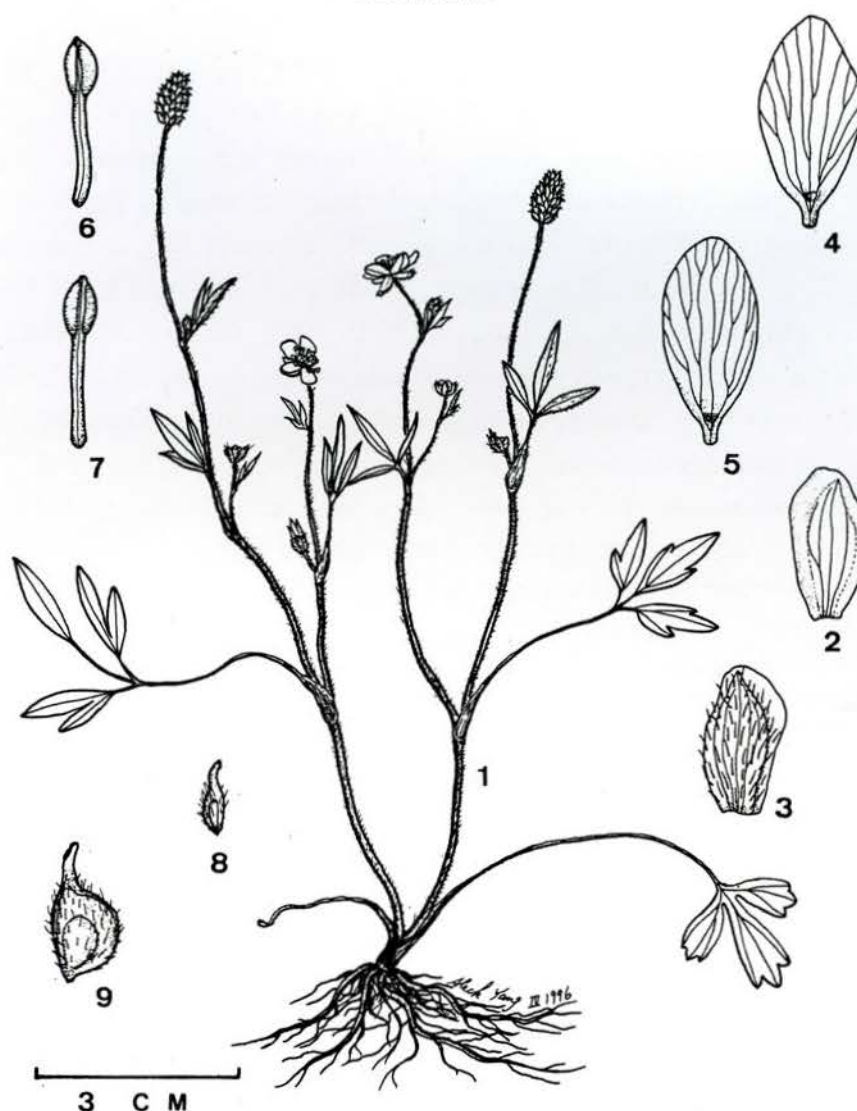


Fig. 20. *Ranunculus nankotaizanus* Ohwi. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Petals, 4, adaxial and 5, abaxial sides; 6. & 7. Stamens; 8. Carpel; 9. Achene.

Perennial rhizomatous pubescent herbs, upright, 8–20 cm tall. Roots fibrous. Leaves dimorphic, subglabrous on adaxial surface, pubescent sometimes sparsely, on abaxial surface. Radical leaves simple, 3-parted or ternate, terminal segment 1.5–1.8 cm long, 4–18 mm wide; ovate, deltoid, narrowly elliptic or narrowly obovate; 3-lobed to 3-parted; apex acute; base acute, rounded or obtuse; margin entire; petioles 2.5–3.8 cm long. Cauline leaves 3-parted, segments narrowly oblong or lanceolate; apex acute; base obtuse or rounded; margin entire; petioles short or nearly absent. Inflorescence a terminal cyme; pedicels 2–7.5 cm long, pubescent. Flowers 6–12 mm long in diam., yellow. Sepals 5, spreading, elliptic, pubescent outside, glabrous inside. Petals 5, 5–7 mm long, 2.5–4 mm wide; obovate or elliptic, glabrous on both sides. Stamens numerous, 2.5 mm long, anthers oblong, 1 mm long, filaments linear. Carpels many, pubescent; receptacles pubescent. Fruiting head ellipsoid; achenes 1.5–2.5 mm long, ellipsoid-orbicular to obovoid-orbicular, pubescent, laterally convex; styles persistent, becoming beaklike after anthesis, recurved.

Flowering June to July (-August); fruiting July to August.

Endemic; above 2600 m on Mt. Nanhutashan (Fig. 21).

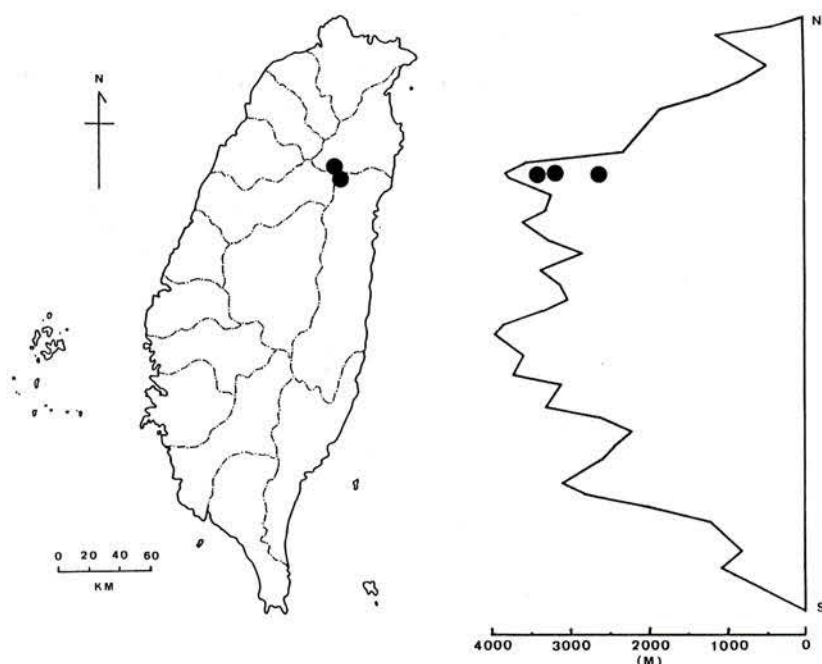


Fig. 21. Latitudinal and altitudinal distribution of *Ranunculus nankotaizanus*.

Ilan: Tatung: Mt. Nanhutashan, 3400 m, *M. Tamura, Shimizu & Kao 20868*(TI). **Hualien:** Hsiulin: Mt. Nanhutashan, 2700 m, *T. Suzuki, Fukuyama & Simada 17622*(TAI), 3600 m, *Yang et al. 5051*(TUNG).

6.8. *Ranunculus sceleratus* L. Sp., Pl. 1: 551. 1753; Hayata, Icon. Pl. Form. 3: 3. 1913; Sasaki, List Pl. Form. 185. 1928; Handel-Mazzetti, Symb. Sin. 7: 298. 1931; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. 2: 78. 1932; Suzuki, Short Fl. Form. 66. 1936; Ovchinnikov, Fl. USSR. 7: 408. 1937; Handel-Mazzetti, in Acta Hort. Gotob. 13: 162. 1939; Masamune, List Vasc. Pl. Taiwan 54. 1954; Huang in Bull. Natl. Taiwan Norml. Univ. 5: 44. 1960; Liu & Hsieh, Fl. Taiwan 2: 504. 1976; Liou, Fl. Reip. Pop. Sin. 28: 310. 1980. 石龍芮

Annual glabrous herbs, aquatic or semi-aquatic, upright, 10—50 cm tall. Roots fibrous. Leaves dimorphic, glabrous on both surfaces. Radical leaves simple, 3-parted or more irregular lobed, (1.3-)2.01—3.69(-5.1) cm long, (2-)3.05—5.81(-8.2) cm wide; orbicular, ovate or deltoid, 3 or more lobed; apex acute; base rounded, truncate or cordate; margin coarsely serrate; petioles 3—9.5 cm long. Cauline leaves 3-lobed to 3-parted, 2.25—4.25 cm long, 3.35—5.95 cm wide; segments narrowly elliptic or narrowly oblong; apex acute; base rounded or truncate; margin coarsely and irregularly serrate or entire; short petiolate or sessile. Inflorescence terminal cyme; pedicels 5—27 mm long, sparsely pubescent. Flowers 5—8 mm long in diam., yellow. Sepals 5, 2.5—3.5 mm long, spreading, broadly elliptic or elliptic, pubescent outside, glabrous inside. Petals 5, 3—4 mm long, obovate, glabrous on both sides. Stamens more than 10, 1.5—2 mm long, anthers ovate or oblong, 0.5 mm long, filaments linear. Carpels many, glabrous; receptacle glabrous. Fruiting head ellipsoid; achenes 1 mm long, obovoid-orbicular, glabrous, laterally compressed; styles persistent, short.

Flowering (January-) February to May; fruiting (February-) March to June or into summer.

Widely distributed in temperate and subtropical areas worldwide; Taiwan growing open places, stream sides and forest margins throughout (Fig. 22).

Taipei City: Hsinyi District: Yungchi Road, C.C. Hsu 4345(TAI), Sect. 3, Keelung Road, C.C. Hsu 4455(TAI), 6659(TAI); Shihlin: Yuanshan, Chou et al. 7575(TAI). **Keelung:** Keelung, T. Kawakami & Sasaki s.n. Apr 1911(TI); Patoutze, 0-50 m, C.I. Peng 7570(HAST). **Taipei:** Kongliao: Auoti, 0-50 m, S.F. Huang 3517(TAI); Shimen: Fukueichiao, S. Sasaki s.n. Mar 1924(TAI). **Hsinchu:** Hsinchu, Y. Simada 1137c(TAI), Lake Chintsaohu, T.C. Huang & Huang 13024(TAI); Hsinchuangzu, C.I. Peng 6371(HAST). **Taichung:** Chinshui, Kanglangli, C.I. Peng 4480(HAST); Salu, C.S. Kuoh 10740(TAI); Wuchi, M.T. Kao 9699(TAI). **Taitung:** Haituan: S. Cross-Island Highway, Hsianyang, C.S. Kuoh 11276(NCKU).

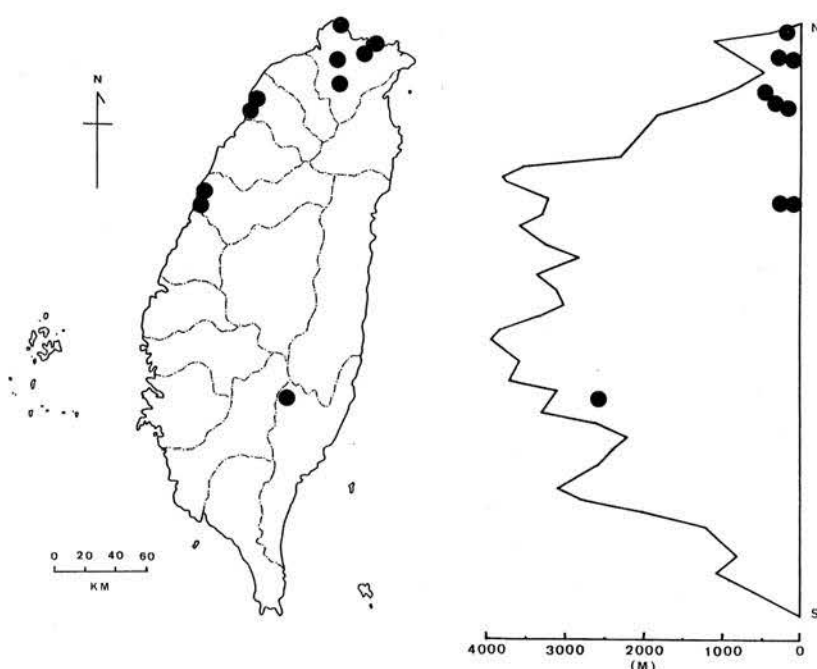


Fig. 22. Latitudinal and altitudinal distribution of *Ranunculus sceleratus*.

6.9. *Ranunculus sieboldii* Miq. in Ann. Mus. Bot. Lugd.-Bat. **3**: 5. 1876; Handel-Mazzetti in Symb. Sin. **7**: 302. 1931; Ohwi, Fl. Jap. 449. 1965; Liu, Fl. Reip. Pop. Sin. **28**: 321. 1980. — *Ranunculus pensylvanicus* L. var. *sieboldii* (Miq.) Ito in Journ. Coll. Sci. Univ. Tokyo **12**: 276. 1899. — *Ranunculus cantoniensis* DC. var. *sieboldii* (Miq.) Kitamura ex Hatusima, Fl. Ryukyu **279**. 1971.

揚子毛茛 (辣子草)

Annual rhizomatous pubescent herbs, spreading or upright, sometimes creeping, 15–40 cm tall. Roots fibrous. Leaves monomorphic, ternate or simple, terminal ones 3-parted, (1.5-)2.14–4.4(-5.5) cm long, (2.3-)2.33–3.65(-5.1) cm wide; ovate or widely elliptic, unlobed or 3-lobed; apex acute; base obtuse; margin coarsely serrate; sparsely pubescent on adaxial surface, pubescent on abaxial surface; petioles 6.4–12.5 cm long. Inflorescence a cyme; pedicels 1.1–9.4 cm long, pubescent. Flowers 8–12(-15) mm in diam., yellow. Sepals 5, spreading, broadly elliptic or elliptic, pubescent outside, glabrous inside. Petals 5, 4–5 mm long, obovate or elliptic, glabrous on both sides. Stamens numerous, 2.5–3.5 mm long, anthers oblong, 1–1.5 mm long, filaments linear. Carpels many, glabrous; receptacle

glabrous. Fruiting head globose; achenes 3 — 5 mm long, obovoid-orbicular, glabrous, laterally compressed; styles persistent, short, recurved.

Flowering September to April in next year; fruiting late September to June(-August).

Distributed in southern mainland China (Yunnan, Sichuan, Guizhou, Hubei, Hunan, Guangxi, Jiangxi, Jiangsu, Zhejiang, Fujian, Shaanxi, Gansu), Taiwan and Japan. Taiwan, narrowly distributed in semi-wet places and forest margins between 1000 and 3000 m in the central and northern parts of the island (Fig. 23).

Taoyuan: Fuhsin: Palin to Mt. Tamanshan, 1000-1500 m, *J.M. Hu & Yang 741*(TAI). **Taichung:** Hoping: Mt. Anmashan, *T.C. Huang 8109*(TAI), 35 K, *C.M. Kuo 7493*(TAI). **Nantou:** Luku: Hsitou, *T. Chen 10104*(TAI), *Y.H. Hwang s.n.* Nov 1992(TNM), *H.N. Yang 1638*(TAI), 1600 m, *C.C. Hsu 5087*(TAI), to God-Tree, 1000 m, *C.C. Hsu 6116*(TAI), *Yang 153*(TAI). **Chiayi:** Alishan: Mt. Alishan, *Y.F. Chen 4022*(TAI), 2230 m, *C.C. & R. Hsu 3911*(TAI).

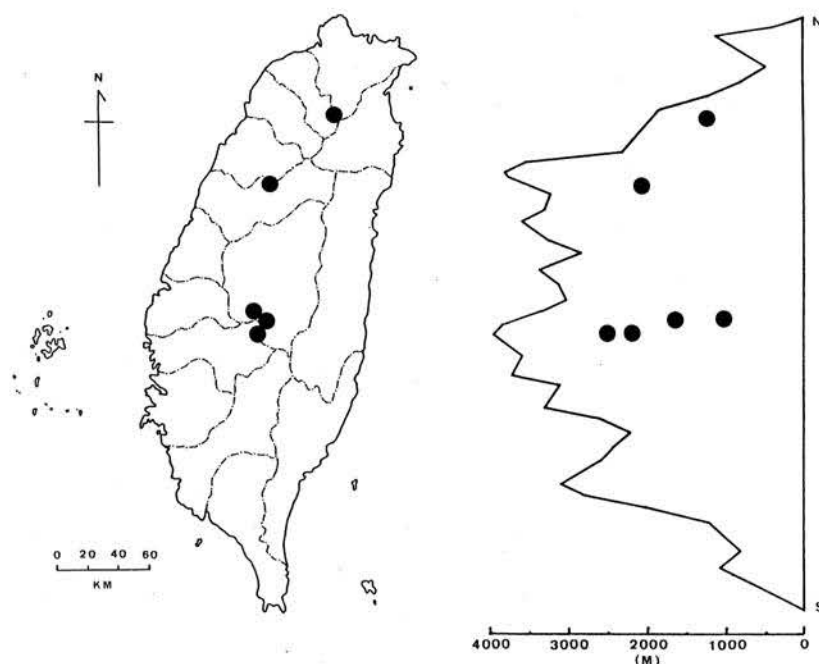


Fig. 23. Latitudinal and altitudinal distribution of *Ranunculus sieboldii*.

6.10. *Ranunculus taisanensis* Hayata in Journ. Coll. Sci. Univ. Tokyo **30**: 20. 1911, Icon. Pl. Form. **1**: 27. 1911; Sasaki, List Pl. Form. 185. 1928; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. **2**: 78. 1932; Ohwi in Acta Phytotax. Geobot. **2**: 155. 1933; Suzuki, Short Fl. Form. 66. 1936; Huang in Bull. Natl. Taiwan Norml. Univ. **5**: 44. 1960; Liu & Hsieh, Fl. Taiwan **2**: 506. 1976; Liou, Fl. Reip. Pop. Sin. **28**: 314. 1980.

Type: Formosa: Miaoli: Bioritsu: Rokujio-taisan, *T. Kawakami & Mori s.n.* s.d. (holotype: TI!)

鹿場毛茛 (臺灣毛茛) Fig. 24

Ranunculus geraniifolium Hayata, Icon. Pl. Form. **3**: 7. 1913. Type: Formosa: Mt. Morrison, *T. Kawakami & Sasaki s.n.* Oct 1909 (holotype: TI!)

Ranunculus taisanensis var. *tripartitus* Ohwi in Acta Phyto. Geobot. **2**(3): 156. 1933; *syn. nov.*
Type: Formosa: Takaoshu (Kaohsiung): m. Daibu (Mt. Tawushan), *J. Ohwi 1807* (holotype: KYO!)

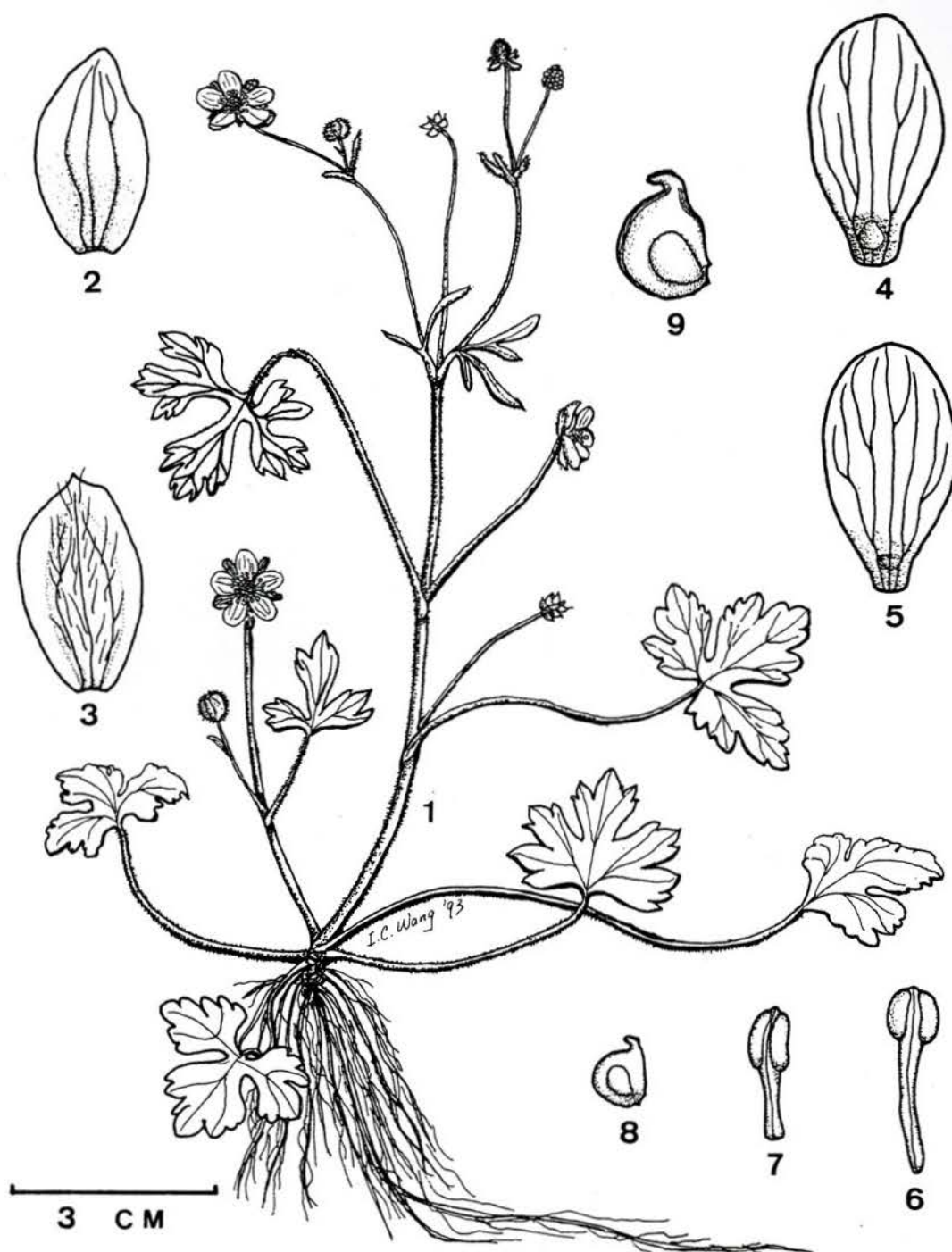


Fig. 24. *Ranunculus taisanensis* Hayata. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4. & 5. Petals, 4, adaxial and 5, abaxial sides; 6. & 7. Stamens; 8. Carpel; 9. Achene.

Perennial rhizomatous pubescent herbs, upright, 5 — 20(-25) cm tall. Roots fibrous. Leaves monomorphic, simple, (0.6-)1.1—1.94(-3.9) cm long, (1.3-)1.71—2.95(-5) cm wide; ovate or deltoid, 3-lobed to 3-parted; apex acute; base obtuse, truncate or cordate; margin coarsely serrate; pubescent on both surfaces or sparsely pubescent on adaxial surface; petioles 2 — 12 cm long. Inflorescence a terminal cyme; pedicels 1.2 — 4.6 cm long, pubescent. Flowers *ca.* 5.0—10.0(-15.0) mm long in diam., yellow. Sepals 5, 4—4.5 mm long, 2—2.5 mm wide, spreading, broadly elliptic or elliptic, pubescent outside, glabrous

inside. Petals 5 to 10, 3.5—5 mm long, 2—3 mm wide; narrowly obovate or elliptic, glabrous on both sides. Stamens numerous, 2—2.5 mm long, anthers oblong, 1 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head ellipsoid to globose; achenes 1—3 mm long, ellipsoid-orbicular to obovoid-orbicular, glabrous, laterally convex; styles persistent, short, recurved.

Flowering April to September (-October); fruiting May to October (-December).

Endemic; widely distributed throughout between 1500 and 3500 m (Fig. 25).

Ilan: Nanao: Shihkuei to Tungshan, *T. Suzuki* 8691(TAI), Mt. Taipingshan, 1870 m, *S.F. Huang* 4773(TAI); Tatung: Chialoshan to Hsulawa (Nanao), *T. Suzuki* 7235(TAI), Chiliting to Mt. Nanhutashan, 2500-2780 m, *C.C. Hsu* 5886(TAI), *G. Masamune & Mori s.n.* Jul 1931(TAI), Mt. Nanhutashan, 2600-3000 m, *M.T. Kao* 5205(TAI). **Hsinchu:** Chienshih: Mt. Itseshan, *S. Sasaki s.n.* Jul 1933(TAI), Mt. Tapachienshan, *N. Fukuyama s.n.* Jul 1932(TAI). **Miaoli:** Taian: Mt. Hsueshan, *Y.C. Jeng* 1492(TAI), Mt. Hsishihshan, *C.M. Kuo* 8547A(TAI), *Y.P. Yang s.n.* May 1977(TAIF), Kuanwu to Kuaishan Giant tree, 2000 m, *J.C. Wang et al.* 8354(HAST), Mt. Tahsueshan, 2380 m, *C.M. Wang* 1696(TNM), Tahsueshan forest road, 230 forest track, 2400 m, *Yang & Cheng* 6401(TNM). **Taichung:** Hoping: Fushoushan Farm, *Y.C. Liu et al.* 4406(TCF), Hsinta campus to Shancha Shelter, 2700-3200 m, *J.C. Wang, Huang & Yang* 4560(TAI), Mt. Hsueshan, *T. Hosokawa* 2355(TAI), *K. Mori s.n.* Oct 1936(TAI), Wuling, 369 Lodge to Mt. Hsueshan, *T.C. Huang & Hsieh* 7197(TAI), 3100-3884 m, *D.S. Hsu & Moore* 713(HAST), Mt. Nanhutashan, *S. Suzuki s.n.* Jul 1937(TAI), 3400-3500 m, *C.M. Wang* 909(TNM), 3500 m, *T. Suzuki, Hukuyama & Simada* 17438(TAI), Shancha Shelter to Mt. Hsueshanpeifeng, *J.C. Wang, Huang & Yang* 4601(TAI). **Nantou:** Hsinyi: Loloku to Kuankao, 1500-2500 m, *S.F. Huang, Yang & Hsieh* 5277(TAI), to Chungyangchinkuang, 2500-2900 m, *S.F. Huang, Yang & Hsieh* 5307(TAI), to Patungkuan, 2650-3000 m, *C.I. Peng* 8153(HAST), Patungkuan, *R.S. Lin s.n.* May 1992(TNM), *H. Simada* 895(TAI), Tungpu, *F.Y. Lu & Ou* 1013(TCF), Tungpushanchuang to Tatchia-anbu, 2500-2900 m, *W.P. Leu et al.* 1092(HAST,TNM), Wanghsiang, *F.Y. Lu & Ou* 3922(TCF), Mt. Yushan, *Y. Hashioka s.n.* Jul 1933(TAI), *S. Sasaki s.n.* Aug 1935(TAI), Yushan forest track, *S.C. Sheen* 25(TNM); Jenai: Mt. Nengkaoshan, *Y. Kudo & Mori s.n.* Jul 1930(TAI), *E. Matuda s.n.* Aug 1919(TAIF), *Ran.6*(TI), to Weishang, *S. Suzuki* 2559(TAI), Piluhsi, *F.Y. Lu & Ou* 3569(TCF), Mt. Pilushan, 2600-2900 m, *H.S. Lin & Lin s.n.* Jul 1990(TNM), Tienchih, 2400-2800 m, *C.C. Liao et al.* 1350(HAST), Tsuefeng, *M.S. Li* 3487(TCF), 2000-2300 m, *C.C. Hsu* 11566(TAI), Tunyuan to Yunhai, 2000-2400 m, *C.C. Liao et al.* 1302(HAST), Yuanfeng, 2756 m, *C.M. Wang* 5(TNM), 22(TNM), Zueyenhsi Nature Reserve, 2150 m, *C.M. Wang & Chen* 582(TNM); Luku: Hsitou to Hsiti, *M.T. Kao* 7187(TAI). **Chiayi:** Alishan: Mt. Alishan, *J.M. Chao & Kao* 6189(TAI), *C.C. Chuang & Kao* 4217(TAI), *Jen & Kao s.n.* Jul 1957(TAI), *C.S. Kuoh s.n.* Jun 1970(TAI), *F.Y. Lu & Ou* 3622(TCF), *S. Sasaki s.n.* s.d.(TI), *Y. Yamamoto & Mori s.n.* Nov 1932(TAI), Chushan, *Y. Hashioka s.n.* Jul 1933(TAI), *J.C. Wang et al.* 6398(HAST), Mt. Erhyushan to Mt. Shihshan, 2000 m, *T. Suzuki* 18152(TAI), Tashan, *T. Nakamura* 4088(TAI), Paiyunshanchuang, *F.Y. Lu & Ou* 3720(TCF), 3500 m, *Y.F. Chen* 9844(TAI), Mt. Yushanhsishan, *S. Suzuki s.n.* Jul 1933(TAI). **Kaohsiung:** Maolin: Mt. Chuyunshan, *Y. Yamamoto & Mori* 519(TAI), 568(TAI); Taoyuan: Mt. Kuanshan, *S. Sasaki s.n.* Oct 1933(TAI), 2600 m, *N. Fukuyama s.n.* Jul 1935(TAI), 3200 m, *N. Fukuyama s.n.* Jul 1935(TAI), S. Cross-Island Highway, 139-140 km, 2430 m, *C.C. Wang, Liao & Hsu* 1117(HAST), Bridge Chinchingchiao to Mt. Takuanshan, 2400-2500 m, *S.F. Huang, Wang & Yang* 3609(TAI), Kuaiku, 2450-2550 m, *K.C. Yang* 2151(TAI), 2580 m, *C.C. Wang, Liao & Hsu* 1092(HAST), near Mt. Takuanshan, 2500 m, *T.Y. Lin et al.* 524(HAST,TAIF, TNM). **Hualien:** Hsiulin: Chilaihshi, *E. Matuda s.n.* Aug 1919(TAIF), Mt. Chungyangchienshan, 2400 m, *T. Suzuki & Fukuyama* 16266(TAI), 3200 m, *N. Fukuyama & Suzuki* ST15083(TAI), Mt. Hohuanshan, *M.T. Kao* 7788(TAI), 8821(TAI), *C.S. Kuoh, Huang & Kao* 7044(TAI), *C.H. Ou & Kao* 9167(TAI), to Tayuling, 3200-2650 m, *T.T. Lin s.n.* s.d.(TAIF), to Yingfeng, 2800 m, *K.C. Yang s.n.* Jul 1995(TAIF), Hoping forest track, 41-36 K, 1900-1700 m, *S.F. Huang, Yang & Hu* 5168(TAI), 5171(TAI), Mt. Nanhutashan, 2700 m, *T. Suzuki, Hukuyama & Simada* 17610(TAI), Mt. Nengkaoshan, *S. Sasaki s.n.* Aug 1929(TAI), 2300 m, *N. Fukuyama* 4428(TAI), Pilu to Pilushenmu, 2250 m, *C.I. Peng* 9237(HAST), Tayuling, 2400-2500 m, *C.I. Peng* 9147(HAST), 2565 m, *C.C. & R. Hsu* 3778(TAI), *C.S. Kuoh, Huang & Kao* 7020(TAI), 2900 m, *Kuoh, Chuma & Chang* 8559(TAI), to Kenankuan, *C.C. Hsu & Kuoh* 7173(TAI). **Taitung:** Haituan: Mt. Kuanshanlingshan, *S.T. Chiu* 1418 (TNM), Mt. Hsiangyangshan, 3494-3600 m, *S.T. Chiu, Chu & Chao* 2895(TNM); Peinan: Chippongoe, *J. Ohwi* 1511(TI).

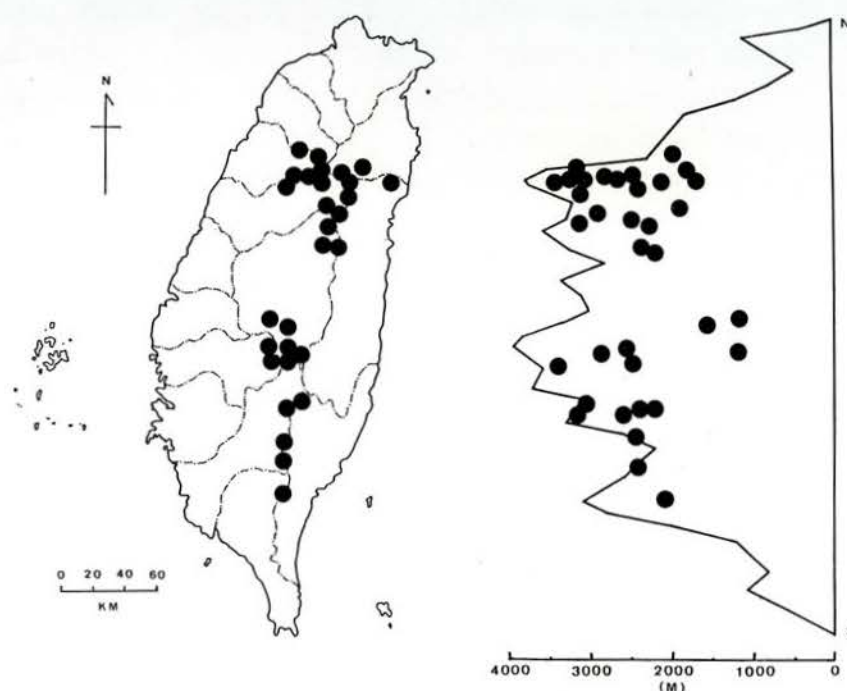


Fig. 25. Latitudinal and altitudinal distribution of *Ranunculus taiwanensis*.

- 6.11. *Ranunculus ternatus* Thunb. ex Murray, Syst. Veg. ed. 14:516. May-June, 1784, Fl. Jap. 241. 1784, Trans. Linn. Soc. 2: 336. 1794; Maxim., Fl. Asia Or. Fragn. 3. 1879; Hemsl. in Journ. Linn. Soc. Bot. 26: 16. 1886; Hayata, Icon. Pl. Form. 29. 1911; Yamamoto, Suppl. Icon. Pl. Form. 3: 32. 1927; Sasaki, List Pl. Form. 185. 1928; Kudo & Masamune in Ann. Rep. Taihoku Bot. Gard. 2: 78. 1932; Huang in Bull. Natl. Taiwan Norml. Univ. 5: 44. 1960; Liu & Hsieh, Fl. Taiwan 2: 508. 1976; Liou, Fl. Reip. Pop. Sin. 28: 302. 1980.**

Ranunculus zuccarinii Miq. in Ann. Mus. Bot.-Lugd. Bat. 3: 5. 1867.

Ranunculus leiocladus Hayata, Icon. Pl. Form. 3: 7. 1913. Type: Formosa: Toyen (Taoyuan): Chureki (Chungli), T. Kawakami & Simada s.n. Mar 1909 (TI!).

Ranunculus formosanus Masamune in Journ. Soc. Trop. Agr. 2(1): 48. 1930. Type: Taipei: Tanshui, G. Masamune s.n. Feb 1930 (holotype: TAI!).

小毛茛 (貓爪草)

Perennial rhizomatous sparsely pubescent or subglabrous herbs, upright or spreading, 10—25(-30) cm tall. Roots fibrous. Leaves dimorphic, sparsely pubescent or nearly absent on adaxial surface, pubescent or sparsely pubescent on abaxial surface. Radical leaves simple, 3-parted or ternate, (0.7-)1.18—2.14(-2.4) cm long, (1)1.21—2.21(-3.1) cm wide; orbicular, ovate or broadly elliptic, unlobed, 3-lobed to 3-parted; apex acute; base rounded, obtuse, truncate or cordate; margin serrate or coarsely serrate; petioles 5—8.5 cm long. Cauline leaves 3-parted, segments narrowly oblong or lanceolate; apex acute; base rounded or truncate; margin coarsely serrate or entire; sessile or subsessile. Inflorescence a terminal cyme; pedicels 2.1—3.5 cm long, pubescent. Flowers 5—14 mm in diam., yellow. Sepals 5, spreading, broadly elliptic or elliptic, pubescent outside, glabrous inside, concave. Petals 5

or more, 5—7 mm long, obovate, narrowly obovate or elliptic, glabrous on both sides, claw 0.8 mm long. Stamens numerous, 2.5 mm long, anthers oblong, 1 mm long, filaments linear. Carpels many, glabrous; receptacles glabrous. Fruiting head ellipsoid to globose; achenes 1—1.5 mm long, ellipsoid-orbicular to obovoid-orbicular, glabrous, laterally convex; styles persistent, slender, hardly recurved.

Flowering (January-) February to April (-May); fruiting March to May (-June).

Distributed in mainland China (Guangxi, Jiangsu, Zhejiang, Jiangxi, Hunan, Anhui, Hubei and Henan), Taiwan and Japan. Taiwan, semi-wet places and open places below 500 m in the northern part (Fig. 26).

Taipei City: Peitou District: Mt. Tatumshan, *S. Suzuki* s.n. Apr 1932(TAI). **Taipei:** Pali: Mt. Kuanyingshan, *C.C. Chuang* 2557(TAI), *Nakamura* 4277(TAI), *N. Fukuyama* 4654(TAI), Pali, *C.M. Kuo* 4723(TAI); Shimen: Shimen, *S.H. Lin* 688(TAI), *H.N. Yang* 2555(TAI); Tanshui, Tanshui, *T. Kawakami & Nakahara* 4698(TAIF), *T. Kawakami & Simada* 9266(TAI), *S. Sasaki* s.n. Mar 1924(TAIF), *H. Simada* 1179(TAI), *S. Suzuki* 4205(TAI), s.n. May 1940(TAI), *T. Tanaka & Shimada* 10961(TAI); Yingko, *C.C. Kou & Kao* 4499(TAI). **Taoyuan:** Chungli, *H. Simada* s.n. Mar 1909 (TAIF); Hsutsukang, *S. Sasaki* s.n. May 1909(TAIF).

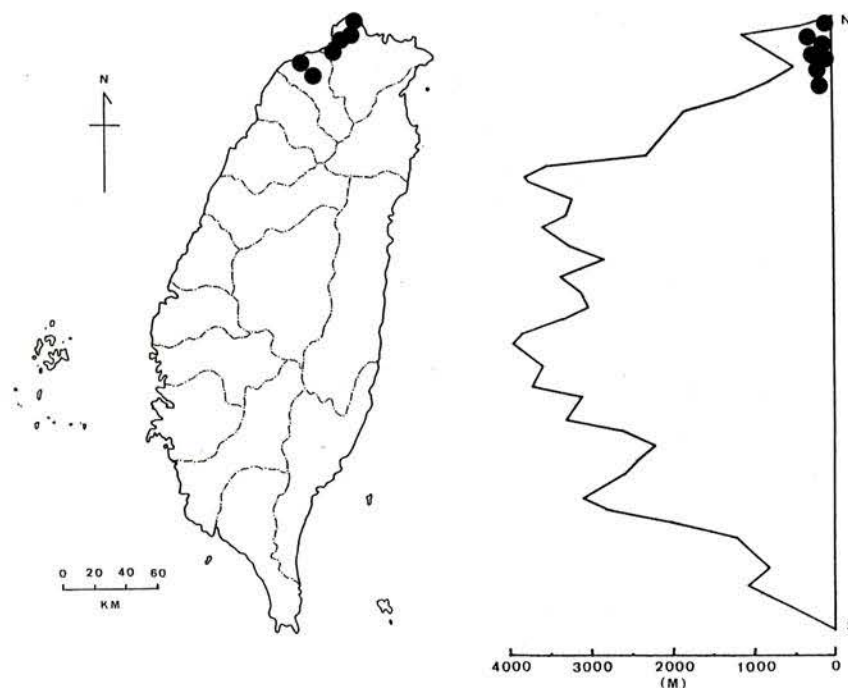


Fig. 26. Latitudinal and altitudinal distribution of *Ranunculus ternatus*.

7. TROLLIUS L. 金蓮花屬 (金梅草屬)

Perennial erect herbs with thick short rhizomes. Leaves simple, radical and/or cauline, alternate, ternately or palmately divided, usually 5-partite, sharply serrate; petiolate. Flowers solitary or rarely in cyme, terminal, bisexual, actinomorphic, colored; sepals 5, petaloid, yellow, rarely pale purple, imbricate, usually deciduous; petals 5 or more, linear, short-clawed, nectariferous at the base; stamens numerous, anthers ellipsoid or long-globose, filaments narrowly linear; carpels 5 to many, sessile, ovules many, 2-seriate at base of the

carpel. Follicles subcoriaceous, nerves elevated, reticulate, styles persistent after anthesis. Seeds many, globose or nearly so, smooth.

About 31 species in temperate regions of the northern hemisphere; 16 species in mainland China and one species in Taiwan.

Trollius taihasenzanensis Masamune in Journ. Soc. Trop. Agr. 6: 570. 1934; Wang, Fl. Reip. Pop. Sin. 27: 70. 1979.

Type: Taihasenzan, Masamune s. n. July 6, 1934.

臺灣金蓮花 (金梅草) Fig. 27

Trollius asiaticus auct. non L.: Masamune in Bot. Mag. Tokyo 51: 234. 1937; Liu & Hsieh in Fl. Taiwan 2: 513. 1976.

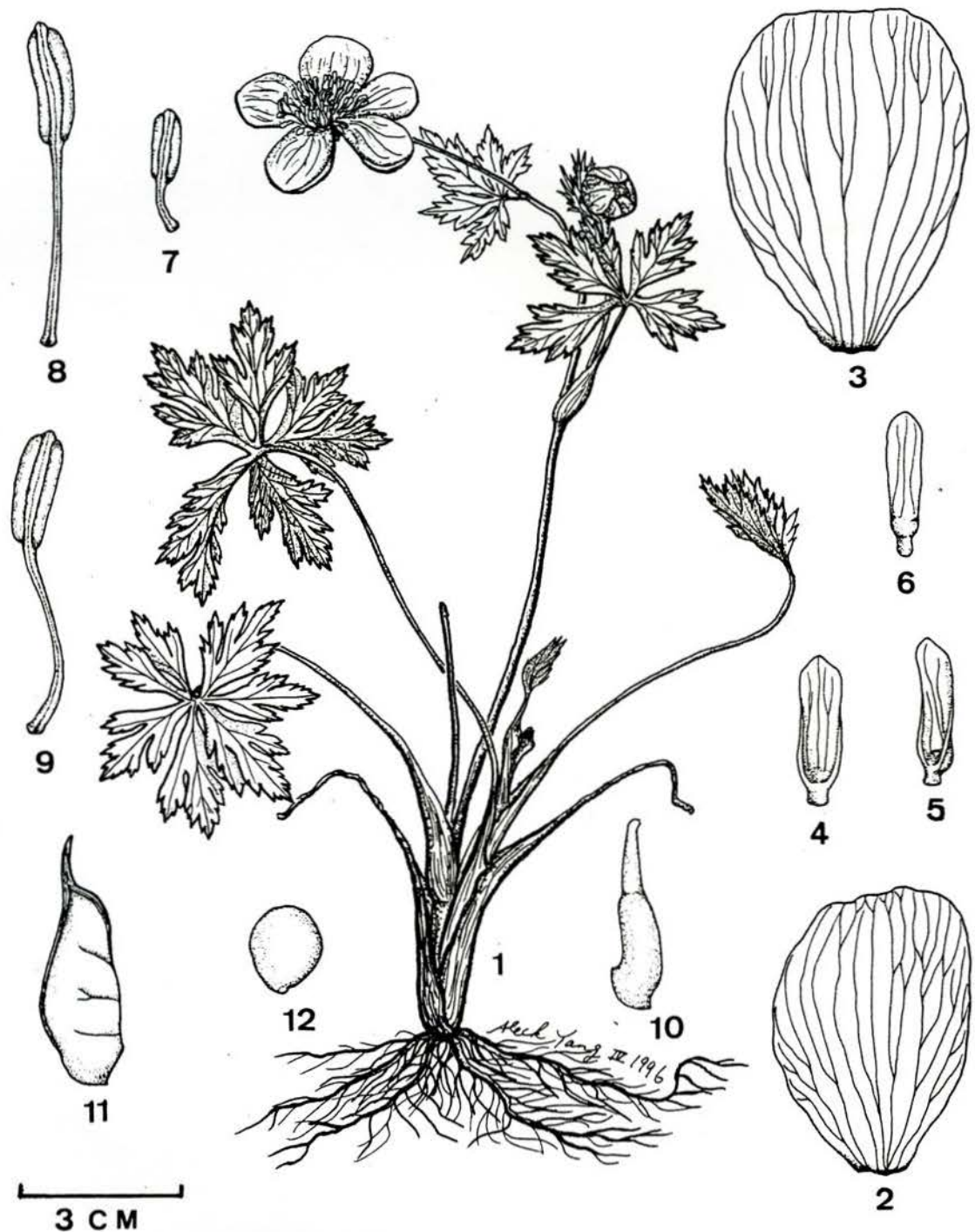


Fig. 27. *Trollius taihasenzanensis* Masamune. 1. Habit; 2. & 3. Sepals, 2, adaxial and 3, abaxial sides; 4.-6. Petals, 4 and 5, adaxial side, 6, abaxial side; 7.-9. Stamens; 10. Carpel; 11. Achene; 12. Seed.

Perennial erect herbs, stem glabrous, 20 — 35 cm tall. Leaves radical and cauline, palmately divided, 5 — 7-partite, 20 — 45 mm long, 40 — 65 mm wide; apex acute; base cordate; margin serrate; glabrous on both sides; petioles 6.0 — 18.0 cm long. Flowers solitary or sometimes in cyme, terminal, 27 — 40 mm diam., golden or yellowish-orange; pedicels 4.0 — 16.0 cm long. Sepals 5, *ca.* 12 — 19 mm long, 9 — 14 mm wide, broadly ellipsoid or obovoid. Petals 12, *ca.* 3 — 4 mm long, 0.5 — 1.0 mm wide, linear-ellipsoid, short-clawed, nectariferous at base. Stamens numerous, 6 — 12 mm long; anthers elliptic-linear, 2 — 3 mm long; connective shortly excurrent beyond pollen sacs; filaments narrowly linear. Carpels 6 — 15, *ca.* 6 mm long, glabrous. Follicles 8 — 14 mm long, glabrous, triangular-gibbous, keeled on ventral surface; styles persistent after anthesis, *ca.* 2 mm long. Seeds many, *ca.* 1.5 mm long, ellipsoid-globose, smooth.

Flowering May to July; fruiting June to August.

Endemic; narrowly distributed in northern part above 3000 m, on Tapachienshan and Chilaishan (Fig. 28).

Hsinchu: Chienshi: Mt. Tapachienshan, *M.T. kao 8496* (TAI), *S. Sasaki s.n.* Jul 1932 (TAI). **Taichung:** Hoping: Mt. Chungyangchienshan, *N. Fukuyama & Suzuki 15181* (TAI). **Hualien:** Shiulin: Mt. Chilaishan, 3300 m, *Yang & Sung 6078* (HAST, TNM, TAI).

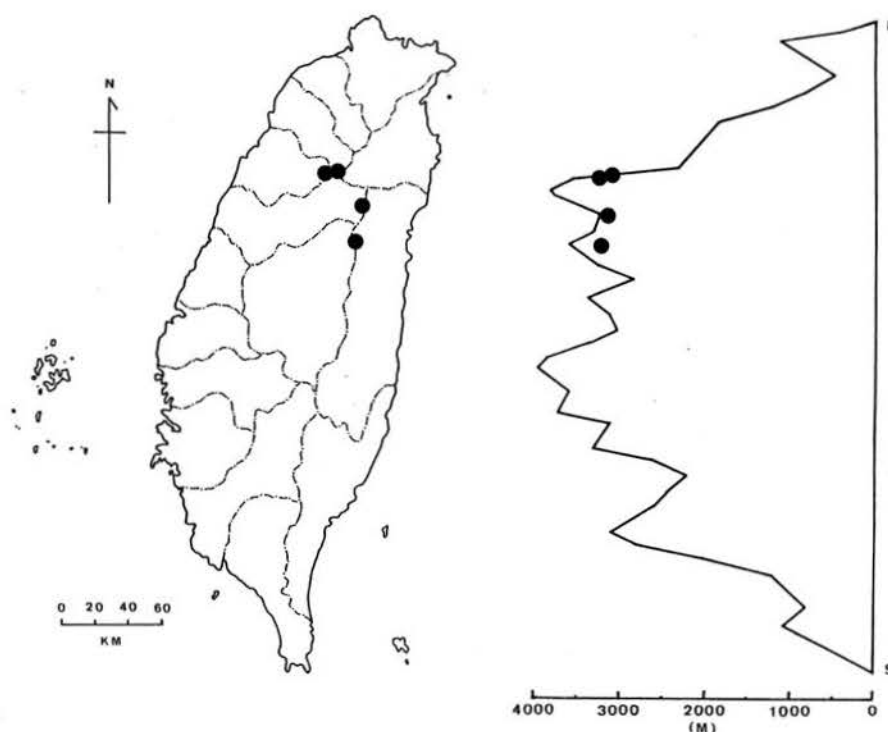


Fig. 28. Latitudinal and altitudinal distribution of *Trollius taihasenzanensis*.

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臺灣毛茛科植物之新見(6)－臺灣毛茛科的一些屬

楊宗愈^(1,3)、黃增泉⁽²⁾

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摘 要

本篇是有關臺灣產毛茛科 (Ranunculaceae) 植物一些屬的分類學之研究，計有烏頭屬 (*Aconitum* L.)、銀蓮花屬 (*Anemone* L.)、雞爪草屬 (*Calathodes* Hook.f. & Thomson)、黃連屬 (*Coptis* Salisb.)、人字果屬 (*Dichocarpum* W.T. Wang & Hsiao)、毛茛屬 (*Ranunculus* L.) 與金蓮花屬 (*Trollius* L.) 等七屬，共十九個分類群。文中對每一分類群皆有詳細描述，並附其檢索表及在臺之分布圖。

關鍵詞：烏頭屬，銀蓮花屬，雞爪草屬，黃連屬，人字果屬，毛茛屬，金蓮花屬，毛茛科，分類學，臺灣。

1. 國立自然科學博物館蒐藏研究組，台中市 404，臺灣，中華民國。

2. 國立臺灣大學植物學系，台北市 106，臺灣，中華民國。

3. 通信聯絡員。