

A revision of *Clematis* sect. *Naraveliopsis* (Ranunculaceae)

WANG Wen-Tsai

(State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany, the Chinese Academy of Sciences, Beijing 100093, China)

Abstract *Clematis* sect. *Naraveliopsis* is revised in this paper. Twenty-one species with one subspecies and one variety of sect. *Naraveliopsis*, which are widespread in tropical Asia, are recognized. Of them, one species, *C. vietnamensis* W. T. Wang & N. T. Do, is described as new from Vietnam. They are keyed, described, and illustrated in most cases, and classified into three subsections. Brief taxonomic history and geographical distribution of the section are given, and its systematic position and origin are discussed. The classification proposed by Wang (2000) is revised with reduction of the subsection *Liboenses* ser. *Loureiriana*. According to the evolutionary trends observed, subsection *Liboenses*, characterized by having bisexual flowers and hairy stamens, and subsection *Macgregoriana*, characterized by having unisexual flowers, are regarded as advanced groups. In the primitive subsection *Smilacifolia*, characterized by having bisexual flowers and glabrous stamens, *C. smilacifolia* and *C. fulvicoma*, which have simple leaves, no staminodes, and short connective projections, are considered as the primitive species. *C. vietnamensis* and *C. loureiriana*, which have ternate leaves and staminodes, and *C. papillosa*, which have pinnate leaves and long connective projections, are recognized as the advanced species of that subsection. The montane regions of northern Indochina Peninsula plus southern Yunnan-Guizhou Plateau and the eastern Himalaya, where 13 species of sect. *Naraveliopsis* are concentrated, is regarded as the distribution centre. The part within the montane regions mentioned above, where the distribution areas of *C. smilacifolia* and *C. fulvicoma* overlap, may be the centre of origin of sect. *Naraveliopsis*.

Key words *Clematis*, sect. *Naraveliopsis*, taxonomic revision.

1 Brief taxonomic history

In the first revision of the genus *Clematis* published by de Candolle (1818), he for the first time described two species (*Clematis loureiriana* DC. and *C. hedyсарifolia* DC.) of sect. *Naraveliopsis*, which were placed in the group diagnosed as “Floribus paniculatis, foliis ternatim biternatimve sectis” under the large heterogeneous sect. *Flammula* DC.

In 1820, Wallich described the third species, *C. smilacifolia* Wall., of that section from northeastern India, which afterwards proved to be widespread in entire tropical Asia.

In the account of trib. *Clematideae* by Spach (1839), no species of sect. *Naraveliopsis* was included.

In his monograph of the *Clematis*, Kuntze (1885) noticed that *C. naravelioides* Kuntze (= *C. hedyсарifolia* DC.) and *C. smilacifolia* are characterized by having long connective projections, and placed these two species in his section I. *Scandentes aperulatae*, near *C. zeylanica* (L.) Poir. (*Naravelia zeylanica* (L.) DC.) and *C. dasyoneura* (Korth.) Kuntze (*Naravelia dasyoneura* Korth.), and treated *C. munroiana* Wight and *C. subpeltata* Wall. as infraspecific taxa of *C. smilacifolia*. Besides, he erroneously associated *C. hedyсарifolia* with *C. apiifolia* DC. and *C. crassifolia* Benth., two species belonging to sect. *Clematis*, in his section II. *Scandentes perulatae*, and erroneously treated *C. armandii* Franch. and

C. meyeniana Walp., also two species belonging to sect. *Clematis*, as varieties of *C. hedysarifolia*.

In his classification of the *Clematis*, Prantl (1888) reduced the genus *Naravelia* to sectional rank to accommodate the two species without petals, *C. munroiana* Wight and *C. smilacina* Bl. (= *C. smilacifolia* Wall.), and the other two species with petals, *C. zeylanica* (L.) Poiret and *C. dasyoneura* (Korth.) Kuntze. Besides, he erroneously associated *C. naravelioides* Kuntze (= *C. hedysarifolia* DC.) without petals with those two species with petals, and did not mention *C. hedysarifolia* at all.

In the accounts of *Clematis* by Schneider (1906) and by Rehder (1951), no species of sect. *Naraveliopsis* was included.

In his revision of the Chinese *Clematis*, on the basis of *C. loureiriana* DC., *C. filamentosa* Dunn, and *C. fulvicoma* Rehd. & Wils., Handel-Mazzetti (1939) described the new section *Naraveliopsis*. Since then, his new section has been unanimously adopted by Tamura (1955, 1967, 1987, 1995), Eichler (1958), Fang (1980), Snoeijer (1992), Johnson (1997), Grey-Wilson (2000), and Wang (1998, 2000) who proposed a classification for the sect. *Naraveliopsis*.

2 Systematic position

The plants of sect. *Naraveliopsis* with spreading, oblong or narrowly oblong sepals, usually glabrous stamens, narrowly linear filaments, and oblong or linear anthers show striking resemblance to those of sect. *Clematis*, and differ from the latter mainly in their anther apices bearing conspicuous connective projections. In having such a similar floral structure, sect. *Naraveliopsis* is obviously closely related to sect. *Clematis*, and may be derived from it (Wang, 2003), and thus should be a member of subgen. *Clematis* (Wang & Li, 2006).

3 Relationships among species

In analyses of morphological characters of sect. *Naraveliopsis*, several evolutionary trends were observed: (1) the leaves have been changing from simple to bipinnate or biternate; (2) the flowers from bisexual to unisexual, and from bearing no staminodes to bearing them; (3) the stamens from glabrous to hairy; and (4) the connective projections from short (0.5–0.7 mm long) to strongly elongate (up to 8.5–10 mm long). On basis of these evolutionary trends, I proposed a classification for sect. *Naraveliopsis* (Wang, 2000). In it, subsect. *Liboenses*, characterized by having bisexual flowers with hairy stamens and staminodes, and subsect. *Macgregorianaes*, characterized by having unisexual flowers, were regarded as advanced groups. However, in 2002, I found that in *C. munroiana*, the flowers usually have no staminodes, but occasionally have a few (*Anglade* 376). Since the character of staminode for delimiting the infrasectional subdivision proves to be unstable, subsect. *Liboenses* ser. *Loureirianaes*, established on the basis of *C. loureiriana* and characterized by having bisexual flowers with staminodes, should be abandoned. *C. loureiriana* needs to be transferred from subsect. *Liboenses* to subsect. *Smilacifoliaes*, and subsect. *Liboenses* then becomes monotypic and should be redefined by hairy stamens. In the primitive subsect. *Smilacifoliaes*, characterized by having bisexual flowers and glabrous stamens, *C. smilacifolia* and *C. fulvicoma*, which have simple leaves, flowers with no staminodes, and short connective projections, appear to be more primitive than other species. *C. vietnamensis* W. T. Wang & N. T. Do and *C. loureiriana*, having ternate leaves and staminodes, and *C. papillosa* H. Eichler, having pinnate leaves and long connective projections (up to 8.5 mm long), may represent the advanced species of that subsection.

4 Geographical distribution

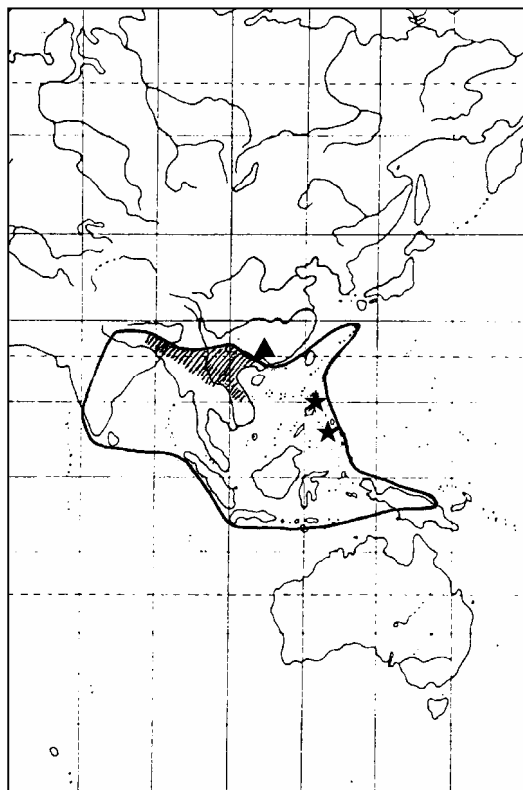
The present revision recognizes 21 species with one subspecies and one variety in sect. *Naraveliopsis*, which are widespread in tropical Asia. Of them, 12 species (*C. smilacifolia*, *C. fulvicoma*, *C. metuoensis* M. Y. Fang, *C. vietnamensis*, *C. loureiriana*, *C. crassipes* Chun & How, *C. gialaiensis* Serov, *C. andersonii* (Clarke ex Kuntze) H. Eichler, *C. menglaensis*, *C. pianmaensis* W. T. Wang, *C. fengii* W. T. Wang, and *C. tashiroi* Maxim.) belong to subsect. *Smilacifoliae* and one species (*C. liboensis* Z. R. Xu) belongs to subsect. *Liboenses*. They are concentrated in the montane regions of northern Indochina Peninsula plus the southern Yunnan-Guizhou Plateau and the eastern Himalaya. Of these 12 species, *C. smilacifolia* extends from those montane regions eastward, southward and westward widely to the Philippines, northern New Guinea, Indonesia, Sri Lanka, India, and western Nepal; *C. tashiroi* northeastward via Taiwan Island of China to Ryukyu Islands of Japan; and the remaining 10 species are endemics of those montane regions.

C. liboensis is a stenochoric species, confined in geographical distribution to limestone hills in Libo County on the southeastern Yunnan-Guizhou Plateau. In the Philippines there are three endemic species, *C. herrei* H. Eichler, belonging to subsect. *Smilacifoliae* and *C. antonii* H. Eichler and *C. macgregorii* Merr. (Eichler, 1958) belonging to subsect. *Macgregoriana*. Western Java has one endemic species, *C. korthalsii* H. Eichler. Southern Malay Peninsula and eastern Sumatra have another endemic species, *C. papillosa* (Eichler, 1958). There are three endemic species in southern India: *C. munroiana*, *C. hedyarifolia*, and *C. bourdillonii* Dunn (Kapoor, 1987). These last five species are members of subsect. *Smilacifoliae*.

According to distribution of the 21 species described above, the montane regions where the 13 species mentioned above are concentrated may be regarded as the distribution centre. Further, the part within those montane regions where the distribution areas of *C. smilacifolia* and *C. fulvicoma* overlap, appears to be the centre of origin of sect. *Naraveliopsis* (Fig. 1).

5 Taxonomic treatment

Clematis L. sect. **Naraveliopsis**
Hand.-Mazz. in Acta Hort. Gotob. 13: 219. 1939; Tamura in Sci. Rep. Osaka Univ. 4: 55. 1955; et 16: 35. 1967; H. Eichler in Bibl. Bot. 124: 43. 1958; M. Y. Fang in Fl. Reip. Pop. Sin. 28: 226. 1980; Tamura in Acta Phytotax. Geobot. 38: 42. 1987; et in Hiepko, Nat. Pflanzenfam., Zwei. Auf., 17a (4): 380. 1995; Snoeijer in Clematis



- Subsect. *Smilacifoliae*
- ▲ Subsect. *Liboenses*
- ★ Subsect. *Macgregoriana*
- ////// distribution centre

Fig. 1. Map showing distribution of the three subsections and the distribution centre of sect. *Naraveliopsis*.

1992: 16. 1992; M. Johnson, *Clematis* 511. 1997; Grey-Wilson, *Clematis* 54. 2000; W. T. Wang in *Acta Phytotax. Sin.* 38: 412. 2000. Lectotype: *C. smilacifolia* Wall.—Eichler, 1958.

Sect. *Pseudonaravelia* Janchen in *Denkschr. Akad. Wiss. Wien, Math.-Nat. Kl.* 108 (4): 43. 1949, nom. seminud. No type designated.

Sect. *Naraveliocarpa* Tamura in *Acta Phytotax. Geobot.* 51: 127. 2001. Type: *C. eichleri* (Tamura) Tamura.

Woody vines. Seedling leaves alternate (only known from *C. filamentosa* Dunn (= *C. loureiriana* DC.), Essig, 1991). Leaves opposite, ternate or pinnate, rarely simple, biternate, or bipinnate, often coriaceous, margin entire, rarely denticulate. Cymes axillary, rarely terminal, usually several- to many-flowered. Flower small or medium-sized, bisexual, rarely unisexual. Sepals 4(–5–6), white, yellow, or purple, spreading, often thick in texture, oblong, lanceolate, or linear, on margin velutinous. Stamens numerous, glabrous, rarely hairy, sometimes outermost stamens transformed into linear staminodes; filaments linear, rarely oblanceolate-linear; anthers oblong, narrowly oblong, or linear, with conspicuous connective projections. Carpels numerous. Achenes compressed, with elongate, plumose persistent styles.

Twenty-one species with one subspecies and one variety widespread in tropical Asia.

Johnson (1997) and Grey-Wilson (2000) all misplaced *C. hedysarifolia* DC., a member of sect. *Naraveliopsis*, in sect. *Flammula* DC., and *C. theobromina* Dunn, a member of sect. *Clematis* subsect. *Rectae* Prantl (Wang, 2000, 2003), in sect. *Naraveliopsis*.

Key to infrasectional taxa

1. Flowers bisexual.
 2. Stamens glabrous (subsect. 1. **Smilacifoliae**).
 3. Leaves simple.
 4. Staminodes absent.
 5. Leaves not reticulate; sepals 4(–5), inside glabrous.....1. **C. smilacifolia**
 6. Anthers narrowly oblong, (1–)2–3.5(–4) mm long; connective projections (0.5–)1–2 mm long; achenes narrowly ovate or narrowly rhombic, 6–8(–11) mm long.....1a. ssp. **smilacifolia**
 7. Leaves not or slightly peltate.....1ai. var. **smilacifolia**
 7. Leaves conspicuously peltate.....1aii. var. **peltata**
 6. Anthers linear, 4–6.5 mm long; connective projections up to 0.5 mm long; achenes broadly ovate or suborbicular, 4–6 mm long.....1b. ssp. **andamanica**
 5. Leaves finely reticulate on both surfaces; sepals 4–6, inside velutinous.....2. **C. fulvicoma**
 4. Staminodes present.
 8. Leaves only abaxially laxly reticulate; pedicel 2–3 cm long; sepals yellow, 1–1.5 cm long.....3. **C. metuoensis**
 8. Leaves finely reticulate on both surfaces; pedicel 5–7.5 cm long; sepals 2.8–3.2 cm long.....4. **C. vietnamensis**
 3. Leaves ternate or biternate, or pinnate or bipinnate.
 9. Petiole bases with stipule-like blades or strongly dilated; staminodes absent.
 10. Branches on nodes and stipule-like blades densely furfuraceous; sepals white; leaves pinnate, 7-foliolate.....14. **C. fengii**
 10. Branches and stipule-like blades not furfuraceous; sepals dark-purple or purple.
 11. Leaves ternate; sepals 4, 1.2–1.4 cm long; connective projections 3 mm long.....15. **C. herrei**
 11. Leaves pinnate, 5-foliolate, sometimes also ternate; sepals larger, 1.8–4 cm long; connective projections 0.5–2 mm long.
 12. Sepals 4, 3.5–4 cm long; connective projections 0.7 mm long.....16. **C. korthalsii**

12. Sepals 4–6, 1.8–3 cm long; connective projections 0.5–2 mm long.....17. **C. tashiroi**
9. Petiole bases without stipule-like blades.
13. Staminodes present.
14. Filaments near apex abruptly narrowed.....9. **C. munroiana**
14. Filaments near apex not narrowed.
15. Sepals dark-purple, 2.8–3.2 mm long.....4. **C. vietnamensis**
15. Sepals white, 1–2 cm long.....5. **C. loureiriana**
13. Staminodes absent.
16. Leaves ternate.
17. Sepals inside hairy.....8. **C. andersonii**
17. Sepals inside glabrous.
18. Leaflets on both surfaces finely reticulate.
19. Branches puberulous; leaflets abaxially sparsely puberulous; sepals outside velutinous.....11. **C. hedysarifolia**
19. Branches glabrous or only on nodes sparsely puberulous; leaflets glabrous; sepals outside puberulous.....12. **C. bourdillonii**
18. Leaflets not reticulate.
20. Cymes terminal; filaments near apex not narrowed; anthers linear.
21. Pedicels puberulous; filaments linear, slightly narrower than anthers6. **C. crassipes**
21. Pedicels only near apex with a few short hairs, elsewhere glabrous; filaments oblanceolate-linear, broader than anthers.....7. **C. gialaiensis**
20. Cymes axillary; filaments near apex abruptly narrowed; anthers oblong or narrowly oblong.....9. **C. munroiana**
16. Leaves pinnate or bipinnate, or biternate.
22. Ovaries glabrous; leaves pinnate or bipinnate.....10. **C. menglaensis**
22. Ovaries hairy.
23. Branches 6–14-sulcate; connective projections 0.8–2.8 mm long, not papillose; leaves pinnate or biternate.
24. Leaflets on both surfaces reticulate; sepals 0.8–1.1 cm long.
25. Branches puberulous; leaves pinnate; sepals outside velutinous.....11. **C. hedysarifolia**
25. Branches glabrous or only on nodes sparsely puberulous; leaves biternate; sepals outside puberulous.....12. **C. bourdillonii**
24. Leaflets not reticulate; sepals larger, 2.2–3.5 cm long; leaves pinnate.
26. Sepals pinkish, dark-purple, or purple, ca. 2.2 cm long; filaments near apex abruptly narrowed; anthers 0.8–1.5 mm long.....9. **C. munroiana**
26. Sepals yellow, 2.7–3.5 cm long; filaments near apex not narrowed; anthers 1.6–2.8 mm long.....13. **C. pianmaensis**
23. Branches 24-sulcate; connective projections 6.5–8.5 mm long, papillose; leaves pinnate.....18. **C. papillosa**
2. Stamens hairy; staminodes present, linear, glabrous; leaves simple or ternate (subsect. 2. **Liboenses**).....19. **C. liboensis**
1. Flowers unisexual; leaves ternate; staminodes absent; stamens glabrous (subsect. 3. **Macgregoriana**).
27. Branches 16–20-sulcate; petiole with no stipule-like blade; cymes 10–25-flowered; sepals on both surfaces puberulous; connective projections 2 mm long.....20. **C. antonii**
27. Branches 8–14-sulcate; petiole base with stipule-like blade; cymes (1–)3–7-flowered; sepals inside glabrous; connective projections 3–10 mm long.....21. **C. macgregorii**

Subsect. 1. **Smilacifoliae** W. T. Wang in Acta Phytotax. Sin. 36: 163. 1998; et 38: 414. 2000. Type: *C. smilacifolia* Wall.

Subsect. *Liboenses* ser. *Loureiriana* W. T. Wang in Acta Phytotax. Sin. 38: 420. 2000, syn. nov. Type: *C. loureiriana* DC.

Flowers bisexual. Staminodes absent, rarely present. Stamens glabrous. Leaves simple, ternate, biternate, pinnate, or bipinnate.

Twenty-eight species with one subspecies and one variety widespread in tropical Asia.

1. *Clematis smilacifolia* Wall. in As. Res. 13: 402. 1820; DC., Prodr. 1: 10. 1824; Wall., Cat. n. 4683. 1831; Hook. in Curtis, Bot. Mag. 72: t. 4259. 1846; de Vries in Pl. Jungh. 1: 71. 1851; Hook. f. & Thoms., Fl. Ind. 6. 1855; Miq., Ann. Mus. Bot. Lugd.-Bat. 4: 66. 1868; Hook. f. & Thoms. in Hook. f., Fl. Brit. Ind. 1: 3. 1872; Kurz, For. Fl. Brit. Burma 1: 16. 1877; Kuntze in Verh. Bot. Ver. Brand. 26: 120. 1885, p.p.; Hall. in Ann. Jard. Bot. Buitenz. 14: 255. 1897, p.p.; Koorders, Fl. Celebes 327. 1898; Finet & Gagnep. in Lecomte, Fl. Gén. Indo-Chine 1: 3. 1907; Ulbr. in Notizbl. Bot. Gart. Berlin 9: 227. 1915; Merr. in J. Straits Branch Roy. As. Soc., spec. n.: 247. 1921; Ridl., Fl. Malay Penins. 1: 1. 1922; Merr., Enum. Philip. Flow. Pl. 2: 142. 1923; Craib, Fl. Siam. Enum. 1: 15. 1925; Rehd. in J. Arn. Arb. 10: 187. 1929; Kanjil. & Das, Fl. Assam 1: 1. 1935; Gagnep., Suppl. Fl. Gén. Indo-Chine 1: 3. 1938; H. Eichler in Bibl. Bot. 124: 44. 1958; Kapoor in Bull. Nat. Bot. Gard. Lucknow 78: 49. 1962; Backer & Bakh., Fl. Java 1: 144. 1963; Hara in Hara & Williams, Enum. Flow. Pl. Nepal 2: 16. 1979; Tamura in J. Phytogeogr. Taxon. 28: 14. 1980; Grierson & Long, Fl. Bhutan 1 (2): 288. 1984; Rau in Sharma et al., Fl. Ind. 1: 75. 1993; Tamura in Thai For. Bull. (Bot.) 25: 70. 1997; M. Johnson, Klematis 522. 1997; Grey-Wilson, Clematis 56. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 414. 2000; et in High. Pl. China 3: 529, fig. 847. 2000; et in Fl. Yunnan. 11: 236. 2000; W. T. Wang & Barth. in Fl. China 6: 368. 2001. Type: India. Assam: Sylhet, *Wallich 4683* (holotype, K!).

C. smilaccensis Bl., Cat. 77. 1823, nom. nud.

C. glandulosa Bl., Bijdr. 1: 1. 1825.—*C. smilacifolia* Wall. ssp. *glandulosa* (Bl.) Kuntze in Verh. Bot. Ver. Brand. 26: 121. 1885. Type: Indonesia. Java, *Blume 1454* (lectotype, L!—Eichler, 1958).

C. smilacina Bl., Bijdr. 1: 1. 1825. Type: Indonesia. Java, *Blume s.n.* (lectotype, L!—Eichler, 1958).

C. subpeltata Wall., Pl. As. Rar. 1: 19, pl. 20. 1829; Walp., Rep. 1: 5. 1845; Craib, Fl. Siam. Enum. 1: 15. 1925; Gupta in Bull. Nat. Bot. Gard. Lucknow 97: pl. 54. 1964.—*C. smilacifolia* ssp. *normalis* Kuntze var. *subpeltata* (Wall.) Kuntze in Verh. Bot. Ver. Brand. 126: 121. 1885.—*C. loureiriana* DC. var. *subpeltata* (Wall.) Hand.-Mazz. in Acta Hort. Gotob. 13: 219. 1939; Lauener & Green in Not. R. Bot. Gard. Edinb. 23: 582. 1961.—*C. smilacifolia* ssp. *smilacifolia* var. *subpeltata* (Wall.) Kapoor in Bull. Nat. Bot. Gard. Lucknow 124: 65. 1966; M. Johnson, Klematis 523. 1997. Type: “in monte Taong dong dicta prope Avam”, *Wallich 4684* (holotype, K?).

C. inversa Griff., Not. Dicot. 700. 1854; et Ic. Pl. As. 4: t. 645, fig. 7. 1854. Type: Without precise locality, *Griffith s.n.*, not seen.

C. zollingeri Turcz. in Bull. Soc. Nat. Mosc. 27: 274^{bis}. 1855.—*C. smilacifolia* ssp. *normalis* var. *zollingeri* (Turcz.) Kuntze in l.c. Type: Indonesia. Java, *Zollinger 1006* (holotype, LE!; isotypes, K!, P!).

C. smilacifolia ssp. *normalis* var. *chrysocarpa* Kuntze in l.c. Type: Sri Lanka. Without precise locality, *Thwaites s.n.*, not seen.

C. esquirolii Lév. & Van. in Bull. Herb. Boiss., ser. 2, 6: 504. 1906. Type: China. Guizhou (贵州): Pin-tong, 1904-12-25, *Esquirol 264* (holotype, E!).

C. smilacifolia var. *grandiflora* Craib, Fl. Siam. Enum. 1: 15. 1925. Type: Thailand. Maharat: Phrae, Hai Le Lami, 1921-02-18, *Kerr 4864* (holotype, BM!).

C. petelotii Gagnep. in Not. Syst. 15: 36. 1954, p.p. quoad descr. inflorescentiae, excl. descr. folii, quod id plantae Vitacearum est; Ho, Ill. Fl. Vietnam 1: 394, fig. 1105. 1991; M. Johnson, Klematis 521. 1997; Grey-Wilson, Clematis 55. 2000. Type: Vietnam. Tonkin: Hoa-binh, *Petelot 6703* (holotype, P!).

C. smilacifolia var. *angustifolia* Tamura in J. Phytogeogr. Taxon. 28: 14. 1980. Type: Thailand. Kanchanaburi, Ta Kanum, 1926-02-18, *Kerr 10529* (holotype, BK; isotype, K!).

C. loureiriana auct. non DC.: Merr. in Trans. Am. Philo. Soc. Philad., n. ser., 24: 154. 1935, p.p.; Hand.-Mazz. in Acta Hort. Gotob. 13: 219. 1939; Pei in Sunyatsenia 4: 161. 1940; Merr. & Chun in Sunyatsenia 5: 54. 1940; Gupta in Bull. Nat. Bot. Gard. Lucknow 54: pl. 13. 1961; How & W. T. Wang in Fl. Hainan. 1: 306. 1964; M. Y. Fang in Fl. Reip. Pop. Sin. 28: 228, pl. 76. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 111. 1984; Y. K. Li in Fl. Guizhou. 3: 67. 1986; W. T. Wang in Fl. Guangxi 1: 291. 1991; R. J. Wang in Fl. Guangdong 5: 10. 2003.

菝葜叶铁线莲

This species consists of two subspecies and one variety widespread in tropical Asia.

1a. ssp. *smilacifolia*

1ai. var. *smilacifolia*

Fig. 2: A, B

Woody vine. Branches shallowly 8–20-sulcate, glabrous. Leaves simple, glabrous; leaf blades subcoriaceous, ovate, deltoid-ovate, narrowly ovate, or oblong-ovate, 8–16(–20) × 5–12(–16) cm, apex slightly obtuse or acute, base cordate or subcordate, not or slightly peltate (i.e. the petiole 1–2(–5) mm above base inserted to the leaf blade), margin entire, rarely sparsely denticulate, basal veins 5–7, abaxially slightly prominent; petioles 3–6(–8) cm long. Cymes axillary, panicle-like, loosely flowered; peduncles 1–11 cm long, sparsely puberulous; bracts small, linear. Flower 3–5 cm in diam.; pedicel 3–11(–16) cm long, densely puberulous. Sepals 4–5, blue-purple, lanceolate-oblong, (16–)18–25 × 4–7 mm, inside glabrous, outside ferruginous-velutinous, apex slightly obtuse. Stamens 8–15 mm long, glabrous; anthers narrowly oblong, (1–)2–3.5(–4) mm long, connective projections (0.5–)1–2 mm long. Ovaries pubescent; styles ca. 7 mm long, densely villous. Achenes compressed, narrowly ovate or narrowly rhombic, 6–8(–11) × 2–4 mm, puberulous, rimmed; persistent styles 5–8 cm long, plumose. Fl. Jun.–Dec.

Bangladesh, Bhutan, Cambodge, S & SW China, NE E & S India, Indonesia, Laos, Malaysia, Myanmar, W Nepal, N New Guinea, Philippines, Sikkim, Sri Lanka, Thailand, and Vietnam. In bushes or forests; alt. 200–2500 m.

Additional specimens examined:

Bangladesh. Bailadilla Hill, Mooney 183 (K); Chhataund, Mooney 306 (K); Karlapat, Mooney 662 (K).

Bhutan. Jumudag, Grierson & Long 3049 (E, K); Ghuukarah, Ludlow et al. 6290 (UPS); without precise locality, Cooper 1685 (E).

Cambodge. Pakson, Poilane 15659 (P).

China. **Guangxi** (广西): Baise (百色), Baise Exped. (百色队) 55-1139 (IBSC, NAS, PE); Fangcheng (防城), S. C. Chen (陈少卿) 4208 (IBSC); He Xian (贺县), S. Q. Zhong (钟树权) 62731 (PE); Longlin (隆林), Geobot. Exped. (地植物队) 4820 (IBSC); Tianlin (田林), C. C. Chang (张肇骞) 10933 (IBSC). **Guizhou** (贵州): Ceheng (册亨), Z. Y. Cao (曹子余) 1053 (PE); Xingyi (兴义), Houang-tsao-pa (黄草坝), Cavalerie 7774 (K); Kwanlin, S. W. Teng (邓世纬) 1693 (NAS); Langdai (郎岱), Y. Tsiang (蒋英) 9509 (P); Luodian (罗甸), Lo-fu (罗斛), Cavalerie 2663 (PE), 3978 (E, P). **Hainan** (海南): Lingshui (陵水), C. Wang (王志) 36298 (IBSC, PE); Sanya (三亚), Z. X. Li (李泽贤) 3126 (IBSC); Yacheng (崖城), C. L. Tso & N. K. Chun (左景烈, 陈念劬) 44766 (IBSC). **Xizang** (西藏): Trachigong Dzong, Ludlow, Sherriff & Taylor 6742 (E). **Yunnan** (云南): Jingdong (景东), M. K. Li (李鸣岗) 1616, 2009 (PE); Menghai (勐海), C. J. Zhao (赵崇奖) 6 (PE); Mengzi (蒙自), Henry 9377 (LE); Pingbian (屏边), H. T. Tsai (蔡希陶) 52479 (PE); Puer (普洱), Y. Tsiang (蒋英) 12935 (IBSC, NAS, PE); Simao (思茅), Henry 12766 (E), 12766A (K, LE); Ta Ho, Forrest 27782 (E); Yingjiang (盈江), C. T. Ting et al. (丁志遵等) 162 (NAS); Yun Xian (云县), T. P. Zhu (朱太平) 532 (IBSC, PE); Without precise locality, Forrest 9505, 9687 (K).

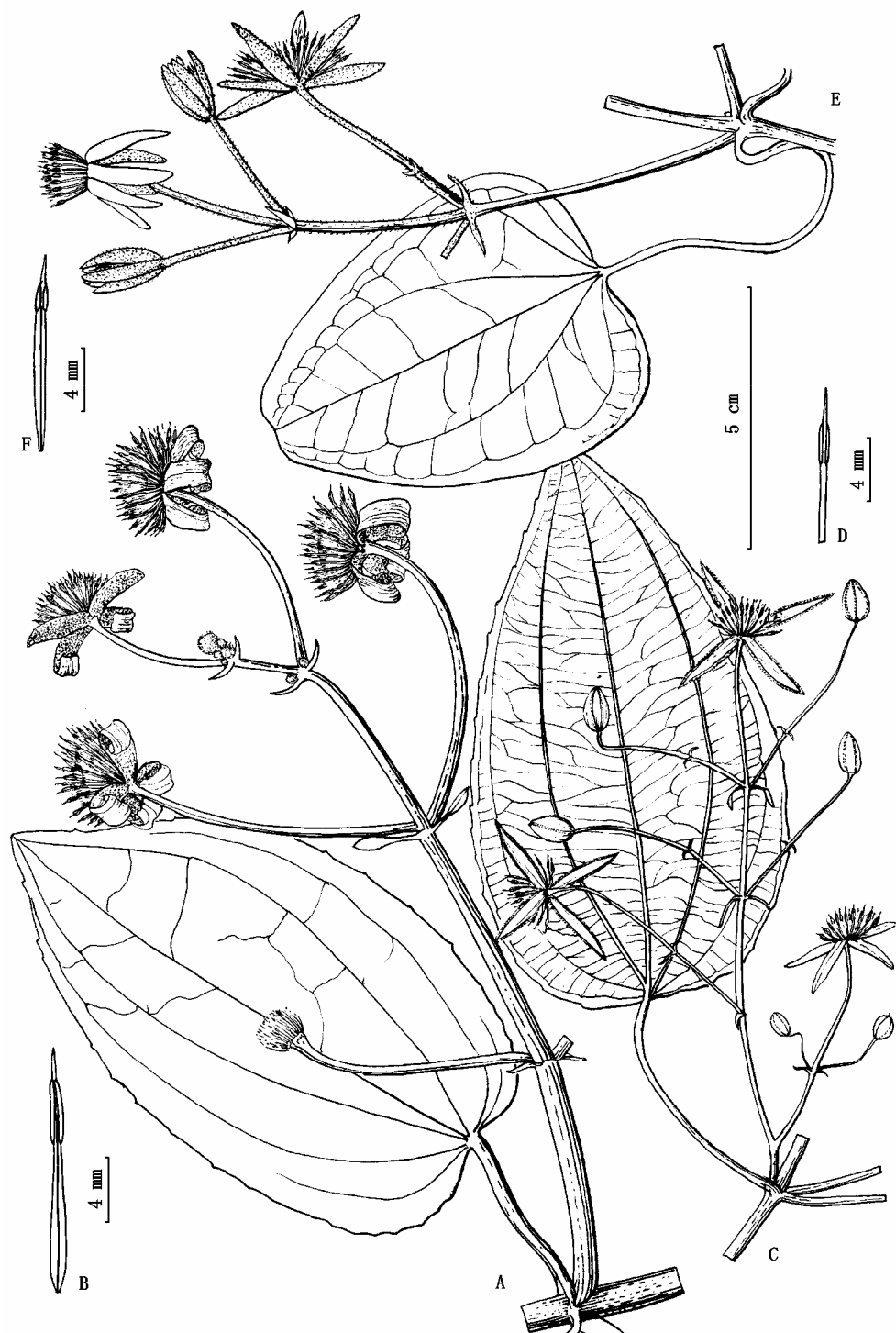


Fig. 2. A, B, *Clematis smilacifolia* Wall. var. *smilacifolia*. A, flowering branch; B, stamen. Drawn from Y. Tsiang 12935. C, D, *C. metuoensis* M. Y. Fang. C, flowering branch; D, stamen. Drawn from *Qinghai-Xizang Exped.* 74-4341. E, F, *C. fulvicoma* Rehd. & Wils. E, flowering branch; F, stamen. Drawn from Shimizu *et al.* 19159.

India. Hassan Distr.: Mysore, Salolanha 15833 (E); Khasia, J. D. Hooker & Thomson s.n. (G, K, LE, UPS), 1068 (P), Griffith 521 (K); Naga Hills, Bor s.n. (K).

Indonesia. Celebes: Gintoe, Eyma 1699 (K); Koclaur, Kauden 270 (S); Kolone Dale, Eyma 3392 (K); Makale, Kjellberg 1665 (S); Malili, Kjellberg 2094 (S); Sulawesi, Darnaedi 2238, Hennipman 6033 (K); Tandong, Eyma 1116 (K); Tomohon, Sarasin 531 (K). **Flores:** Messe, Kostermans 777 (K). **Irian Jaya:** Gjellerup 128, 421 (K). **Java:** Without precise locality, Horsfield 9 (K), Kacher 9210 (K), Leeuwen 14134 (K), Van Steenis 17532 (K). **Kalimantan:** Sabah, Kalantas 91654 (K). **Lombok,** Bloembergen 3017, Elbert 1833 (K). **Moluccas,** Reinwardt s.n. (P). **Sumatra:** Hoeta Bagasa, Boeea 6693 (S); Jambi, Morley 435 (K); Mamas River, Wilde 18389 (K); Sampongo, Forbes 1788 (K).

Laos. Basin d'Attopen, Harmand s.n. (K); Khua Kau San, Spire 854 (P).

Malaysia. Malay Peninsula: Lunjie Penang, Curtis 1048 (K); Pulan Tuigs, Suiken 857 (K). **Sarawak:** Bangarmassing, Motley 987 (K); Distr. Bau, Anderson 8440 (K); Mt. Kinabalu, Clemens 28383 (K), Chew, Corner & Stainton 2826 (K, LE); Mt. Start, Haviland 1501 (K).

Myanmar. Myitkyina: Kachin Hills, Toppin s.n. (E); Wa State: Naulwa Chaung, Maung Po Khant 15244 (K).

Nepal. Chösang, Thids s.n. (E).

Philippines. Cebu, Cuming 1771 (K). **Ifugao,** Conklin & Buwaya 79621 (K). **Luzon:** Bengnet, Elmer 6526, 8682 (K); Bontoc, Ramos 38138 (P); Cusiguran, Ramos 45231 (P); Mt. Lomutan, Ramos 29595 (P); Mt. Maquilang, Mabesa 26181 (NAS). **Mindoro,** Ramos 46365 (IBSC, P).

Sri Lanka. Without precise locality, Pierre s.n. (P), Thwaites 2690 (G, K).

Thailand. Bukanun, Kerr 9862 (BM, K); Chiangmai, Hosseus 297 (G, K, P), Collins 1212, Kerr 1552 (K); Doi Sutep, Kerr 6705, Maxwell 93-14 (P); Mekang, Garrett 304 (K); Pah-chong, Marcan 1549 (K); Sep Mi Prik, Garrett 150 (BM); Song Thaw, Larsen 9482 (K); Uгна Sian, Harmand 1073 (K).

Vietnam. Pan Nhou, Poilane 27037 (BM, K, P, US); Tonkin: Ngoai Chou, Bon 1289 (P); Top Theh, Sino-Vietnam Exped. 65-2208 (NAS, PE).

1aii. var. **peltata** (W. T. Wang) W. T. Wang in Acta Phytotax. Sin. 38: 415. 2000; et in Fl. Yunnan. 11: 238. 2000; W. T. Wang & Barth. in Fl. China 6: 368. 2001.—*C. loureiriana* DC. var. *peltata* W. T. Wang in Acta Phytotax. Sin. 6: 220. 1957; M. Y. Fang in Fl. Reip. Pop. Sin. 28: 230, pl. 78, fig. 7. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 111. 1984; W. T. Wang in Fl. Guangxi 1: 291. 1991. Type: China. Yunnan (云南): Pingbian (屏边), 1956-06-24, Sino-Russ. Exped. (中苏考察队) 4019 (holotype, PE!); the same locality, 1934-06-30, H. T. Tsai (蔡希陶) 60592 (paratype, PE!); Xichou (西畴), 1947-09, K. M. Feng (冯国楦) 11610, 11956 (paratypes, PE!); Mile (弥勒), 1932-12-01, H. T. Tsai (蔡希陶) 51370 (paratype, PE!).

C. subpeltata auct. non Wall.: Ho, Ill. Fl. Vietnam 1: 395, fig. 1107. 1991.

盾叶铁线莲

This variety differs from var. *smilacifolia* in the leaf blades being conspicuously peltate, with the petioles inserted to leaf blades 6–15 mm above base.

China (W Guangxi and SE Yunnan) and N Vietnam. In mixed forests or by rivers; alt. 900–1600 m.

Additional specimens examined:

China. Guangxi (广西): Longlin (隆林), D. Fang (方鼎) 25538 (GXMI); Napo (那坡), D. Fang (方鼎) 22261 (GXMI). **Yunnan** (云南): Mengzi (蒙自), Henry 13561 (BM, E); Pingbian (屏边), H. T. Tsai (蔡希陶) 61746 (PE); Yuanyang (元阳), Lüchun Exped. (绿春队) 74-1608 (PE).

Vietnam. Tonkin: Chapa, Petelot 3763, 4582 (P); Lai Chan, Poilane 27037 (P).

1b ssp. **andamanica** Kapoor in Kew Bull. 19: 333, fig. 1. 1965; Rau in Sharma et al., Fl. Ind. 1: 76. 1993; M. Johnson, Klematis 524. 1997; Grey-Wilson, Clematis 57. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 415. 2000. Type: India. Andaman Islands: Naumnagar, 1890-09-27, *King's Collector 147* (holotype, CAL); Port Monab, 1890-10-31, *King's Collector 149* (paratype, CAL!).

This subspecies differs from ssp. *smilacifolia* in its longer and linear anthers 4–6.5 mm long, shorter connective projections less than 0.5 mm long, and broadly ovate or suborbicular achenes.

India (Andaman Islands). In tropical evergreen forests.

Additional specimens examined:

India. Andaman Islands: Ali Masjed, 1893-10-28, King's Collector s.n. (G); Jusunabad, 1893-12-23, King's collector s.n. (G); Naumnagar Hills, King's Collector s.n. (US).

2. *Clematis fulvicoma* Rehd. & Wils. in Sarg., Pl. Wils. 1: 327. 1913; Hand.-Mazz. in Acta Hort. Gotob. 13: 219. 1939; W. T. Wang in Acta Phytotax. Sin. 6: 390. 1957; H. Eichler in Bibl. Bot. 124: 49. 1958; Kapoor in Bull. Bot. Surv. Ind. 11: 190. 1971; M. Y. Fang in Fl. Reip. Pop. Sin. 28: 230. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 109. 1984; Naithani, Flow. Pl. India, Nepal & Bhutan 8. 1990; Ho, Ill. Fl. Vietnam 393, fig. 1101. 1991; Rau in Sharma et al., Fl. Ind. 1: 63. 1993; Tamura in Thai For. Bull. (Bot.) 25: 73. 1997; M. Johnson, *Clematis* 515. 1997; Grey-Wilson, *Clematis* 56. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 416. 2000; et in Fl. Yunnan. 11: 236. 2000; W. T. Wang & Barth. in Fl. China 6: 368. 2001. Type: China. Yunnan (云南): Mengzi (蒙自), *Henry 9377* (holotype, GH!; isotype, K!).

滇南铁线莲 Fig. 2: E, F

Woody vine. Branches shallowly 10–20-sulcate, glabrescent. Leaves simple, glabrous; leaf blades subcoriaceous, ovate, cordate, or triangular, (5.6–)10–17(–19) × (4.5–)9–14.5(–18) cm, apex acute, obtuse, or acuminate, base rounded, broadly cuneate, subtruncate, or subcordate, margin entire, both surfaces finely reticulate, basal veins 5–7, prominent; petioles 6–11 cm long. Cymes axillary, 3–7-flowered, often panicle-like; peduncles 1.6–5.2 cm long, puberulous; bracts subulate or linear, 3–8 mm long. Flower 2–4.5 cm in diam.; pedicel 2–3.8 cm long, densely ferruginous-puberulous. Sepals 4–6, lanceolate-linear or oblong, 10–24 × 3–4.5 mm, inside brown-velutinous, outside ferruginous-velutinous, apex obtuse. Stamens 6–14 mm long, glabrous; anthers narrowly oblong or oblong, 1–3 mm long; connective projections 0.5–1.5 mm long. Ovaries densely pubescent; styles ca. 6 mm long, densely villous. Achenes compressed, rhombic-elliptic, 6–7 × 3–4 mm, pubescent, rimmed; persistent styles 4–5 cm long, yellowish-plumose. Fl. Sept.–Dec.

China (Hong Kong, S Yunnan), India (Khasia), Laos, Myanmar, N Thailand, and Vietnam. In forests or bushes, or by streams; alt. 800–1500 m.

Additional specimens examined:

China. Hong Kong (香港): Lantau Island (大屿岛), Taai Ue Shan, W. T. Tsang (曾怀德) 16498 (NAS). **Yunnan (云南):** Jingdong (景东), B. Y. Qiu (邱炳云) 52635 (PE); Luxi (路西), H. T. Tsai (蔡希陶) 56995 (IBSC, NAS, PE); Malipo (麻栗坡), C. W. Wang (王启无) 83983, 86469 (IBSC, PE, WUK); Pingbian (屏边), X. Wang et al. (王孝等) 100386 (IBSC); Xichou (西畴), K. M. Feng (冯国楯) 12530 (PE, WUK).

Laos. Without precise locality, Poilane 2158, 2371 (P), 28682 (GH, P).

Myanmar. Amherst, Lace 5650 (K); Maymyo, Khant 16399 (K).

Thailand. Chiangmai, Shimizu et al. 19159 (K, P); Doi Angka, Coolidge & Carpenter 78 (K); Hue Me Kanu, Kerr 4864 (K).

3. *Clematis metuoensis* M. Y. Fang in Fl. Reip. Pop. Sin. 28: 230, 359, pl. 80, figs. 4–7. 1980; et in Fl. Xizang. 2: 93. 1985; M. Johnson, *Clematis* 519. 1997; Grey-Wilson, *Clematis* 54. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 416. 2000; W. T. Wang & Barth. in Fl. China 6: 368. 2001. Type: China. Xizang (西藏): Mêdog (墨脱), Beiben (背奔), 1974-08-19, *Qinghai-Xizang Exped. (青藏队) 74-4341* (holotype, PE!).

墨脱铁线莲 Fig. 2: C, D

Woody vine. Branches indistinctly 10-sulcate, glabrous. Leaves simple, glabrous; leaf blades coriaceous or papery, ovate or broadly ovate, 7–15 × 4–12.6 cm, apex acuminate, base rounded or subcordate, inconspicuously peltate, margin entire, abaxial surface reticulate, basal veins abaxially prominent; petioles 4–7 cm long. Cymes axillary, 3–7-flowered, often raceme-like; peduncles 0.5–5.5 cm long, glabrous; bracts subulate, ca. 4 mm long, sparsely pilose. Flower 2.5–3 cm in diam.; pedicel 2–3 cm long, glabrous. Sepals 4, yellow, linear-lanceolate or oblong-lanceolate, 10–15 × 3–4.5 mm, inside glabrous, outside brown-velutinous, margin white-velutinous, apex attenuate. Stamens about as long as sepals,

glabrous, outer ones sterile, becoming staminodes, narrowly linear, inner ones fertile, their anthers narrowly oblong, ca. 2.2 mm long, with connective projections ca. 1.5 mm long. Ovaries pubescent; styles ca. 6 mm long, densely villous. Achenes compressed, narrowly ovate, 2–3 × 1.5 mm, pubescent; persistent styles up to 4.5 cm long, plumose. Fl. Aug.

China (SE Xizang). In mixed forests; alt. 800–1100 m.

Additional specimen examined:

China, Xizang (西藏): Mêdog (墨脱), W. L. Chen (陈伟烈) 10876 (PE).

4. *Clematis vietnamensis* W. T. Wang & N. T. Do, sp. nov. Type: Vietnam. Ha Giang Prov.: Quan Bar. Str., 2000-04-03, *H. K. Harder et al. DKH4974* (holotype, HN; isotypes, HN, MO).

Fig. 3: D–G

Affinis *C. smilacifoliae* Wall. et *C. fulvicomae* Rehd. & Wils., ab illa foliis utrinque subtiliter reticulatis, flore staminodiis instructo, sepalis extus puberulis haud velutinis differt, ab hac flore 4-sepalo staminodiis instructo, sepalis intus glabris haud brunneo-velutinis recedit.

Liana lignosa. Caules usque ad 15 m longi, glabri, ramis 10–12-costatis. Folia glabra, simplicia, laminis papyraceis ovatis vel deltoideo-ovatis 8–15 cm longis 4–13 cm latis apice obtusis vel emarginatis basi rotundatis abrupte cuneatis margine integris utrinque subtiliter reticulatis, nervis basalibus 7 subtus prominulis, vel ternata, foliolis ovatis vel anguste ovatis 12–15 cm longis 5.5–8 cm latis apice obtusis basi truncato-rotundatis 5-nervibus; petioli 3–7 cm longi. Cymae axillares, laxae 3–7-florae; pedunculi 5–8 cm longi; bracteae petiolatae, anguste ellipticae vel anguste ovatae, 1.5–6 cm longae. Flos ca. 5.5 cm diam.; pedicellus 5–7.5 cm longus, prope apicem sparse adpresso-puberulus. Sepala 4, siccitate atropurpurea, late linearia, 28–35 mm longa, 4.5–7 mm lata, apice obtusa, intus glabra, extus adpresse brunneo-puberula, margine griseo-velutina. Stamina glabra, extima ca. 20, antheris carentia sterilia, in staminodia transientia, linearia, 30–35 mm longa, 1.2–1.8 mm lata, apice attenuata vel acuminata, uninervia, reliqua ca. 50 fertilia, 10–32 mm longa, filamentis linearibus 4–27 mm longis 0.5–1.5 mm latis uninervibus, antheris oblongis anguste oblongis vel linearibus 1.5–3 mm longis, connectivorum projectionibus lineari-lanceolatis 1–2 mm longis. Carpella numerosa, 9–11 mm longa, ovariis dense pubescentibus, stylis 8–10 mm longis dense villosis.

Woody vine. Stem up to 15 m long, glabrous; branches 10–12-costate. Leaves glabrous, simple or ternate; leaf blades of simple leaves papery, ovate or deltoid-ovate, 8–15 × 4–13 cm, apex obtuse or emarginate, base rounded, abruptly cuneate, margin entire, both surfaces finely reticulate, basal veins 7, abaxially slightly prominent; leaflets of ternate leaves ovate or narrowly ovate, 12–15 × 5.5–8 cm, apex obtuse, base truncate-rounded, basal veins 5; petioles 3–7 cm long. Cymes axillary, loosely 3–7-flowered; peduncles 5–8 cm long; bracts petiolate, narrowly elliptic or ovate, 1.5–6 cm long. Flower ca. 5.5 cm in diam.; pedicel 5–7.5 cm long, near apex sparsely appressed-puberulous. Sepals 4, when drying dark-purple, broadly linear, 28–35 × 4.5–7 mm, inside glabrous, outside appressed-brown-puberulous, margin grey-velutinous, apex obtuse. Stamens glabrous, outermost ones ca. 20 sterile, without anthers and becoming staminodes, linear, 30–35 × 1.2–1.8 mm, 1-veined, apex attenuate and acuminate; the other ca. 50 ones fertile, 10–32 mm long, with filaments linear, 4–27 × 0.5–1.5 mm, 1-veined, and anthers oblong, narrowly oblong, or linear, 1.5–3 mm long, their connective projections linear-lanceolate, 1–2 mm long. Carpels numerous, 9–11 mm long; ovaries densely pubescent; styles 8–10 mm long, densely villous.

Vietnam.

5. *Clematis loureiriana* DC., Syst. 1: 144. 1818; Prodr. 1: 5. 1824; Merr. in Trans. Am. Philo. Soc. Philad., n. ser., 24: 154. 1935, p.p. excl. syn. *C. smilacifolia* Wall.; H. Eichler in Bibl. Bot. 124: 47. 1958; Gupta in Bull. Nat. Bot. Gard. Lucknow 80: pl. 33. 1963; Kapoor in I.c. 124: 69. 1966; Ho, Ill. Fl. Vietnam 1: 394, fig. 1104. 1991; M. Johnson, Klematis 517. 1997;

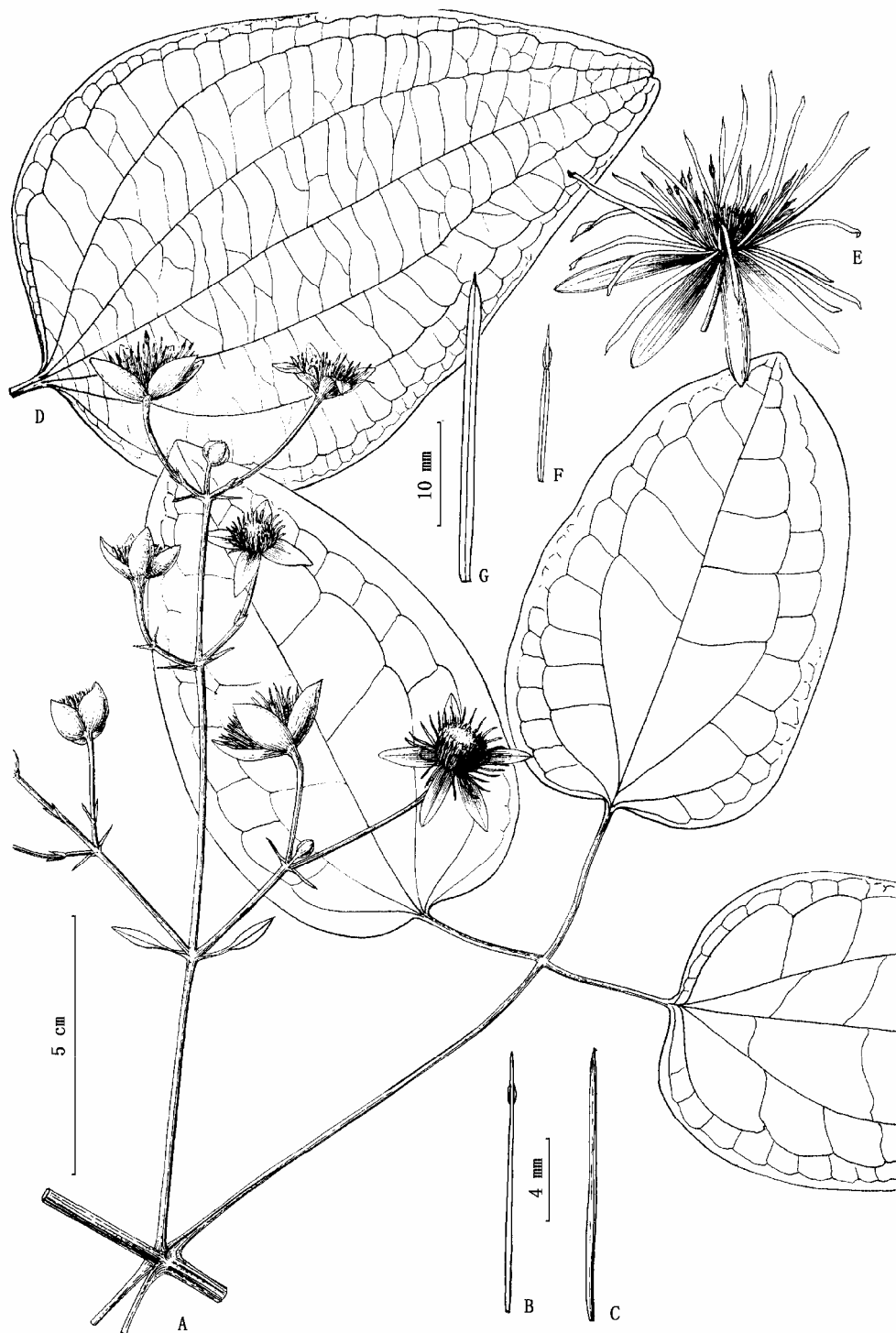


Fig. 3. A–C, *Clematis loureiriana* DC. A, flowering branch; B, stamen; C, staminode. Drawn from *Petelot 2671*. D–G, *C. vietnamensis* W. T. Wang & N. T. Do. D, leaf; E, flower; F, stamen; G, staminode. Drawn from *Harder et al. DKH4974*.

Grey-Wilson, *Clematis* 56. 2000; W. T. Wang in *Acta Phytotax. Sin.* 38: 420. 2000; et in *High. Pl. China* 3: 530, fig. 847. 2000; W. T. Wang & Barth. in *Fl. China* 6: 369. 2001. Type: Vietnam. Without precise locality, *Loureiro s.n.* (holotype, not seen).

C. filamentosa Dunn in *J. Bot.* 47: 197. 1909; Hand.-Mazz. in *Acta Hort. Gotob.* 13: 214. 1939; M. Y. Fang in *Fl. Reip. Pop. Sin.* 28: 233, pl. 78, figs. 1–6. 1980; W. T. Wang in *Fl. Guangxi* 1: 291. 1991; M. Johnson, *Clematis* 514. 1997; Grey-Wilson, *Clematis* 56. 2000; R. J. Wang in *Fl. Guangdong* 5: 12. 2003. Type: China. Hong Kong (香港): New Territories, Ha Hang, 1904-01-01, *Dunn* (Hongk. Herb.) 1099 (holotype, K!).

C. dioica auct. non L.: Lour., *Fl. Cochinch.* 344. 1790.

丝铁线莲 Fig. 3: A–C

Woody vine. Branches terete, shallowly ca. 10-sulcate, glabrous. Leaves ternate, glabrous; leaflets papery, ovate, or broadly or narrowly ovate, 5–11 × 3.8–8(–9) cm, apex obtuse, base subcordate, cordate, rounded, or broadly cuneate, margin entire, basal veins abaxially slightly prominent; petioles 4–13 cm long. Cymes axillary, laxly 7–9-flowered, panicle-like; peduncles 0.5–5 cm long, puberulous; bracts linear or subulate, 4–6 mm long. Flower 2–4 cm in diam.; pedicel 3–8 cm long, densely puberulous. Sepals 4, white, narrowly ovate or ovate-lanceolate, 10–20 × 5–8 mm, inside glabrous, outside densely appressed-puberulous or velutinous, margin velutinous, apex slightly acute. Outer stamens sterile, becoming staminodes, without anthers, narrowly linear, 10–15 mm long, glabrous. Inner stamens fertile, 5–8 mm long, glabrous; anthers narrowly oblong, 2–2.8 mm long; connective projections lanceolate-linear, 1.5–3 mm long. Ovaries densely pubescent; styles ca. 6.5 mm long, densely villous. Achenes compressed, narrowly ovate or subfusiform, 6–10 × 1–2 mm, pubescent, narrowly rimmed; persistent styles 3–5 cm long, plumose. Fl. Nov.–Dec.

China (S Fujian, Guangdong, Guangxi, Hainan, Hong Kong) and Vietnam. In bushes or forests, or by streams; alt. 180–1600 m.

Additional specimens examined:

China. Fujian (福建): Nanjing (南靖), South China Exped. (华南队) 65-624 (IBSC). **Guangdong** (广东): Dinghu Shan (鼎湖山), K. C. Ting & G. L. Shi (丁广奇, 石国良) 1196, 1306, 2014 (IBSC); Fengkai (封开), Guangdong 74 Exped. (广东74队) 4644 (IBSC); Gaoyao (高要), L. Teng (邓良) 10114 (IBSC); Huaiji (怀集), W. T. Tsang (曾怀德) 23197, 23356 (G, IBSC); Huidong (惠东), B. Y. Chen et al. (陈邦余等) 653 (IBSC); Lechang (乐昌), N. K. Chun (陈念劬) 42174, C. Wang (黄志) 31353 (IBSC, PE); Luofu Shan (罗浮山), S. P. Kao (高锡朋) 52487, L. Teng (邓良) 338 (IBSC); Ruyuan (乳源), B. Y. Chen & Z. Y. Chen (陈邦余, 陈忠毅) 1, 8 (IBSC); Xinfeng (新丰), Guangdong 77 Exped. (广东77队) 5615 (IBSC); Xinxing (新兴), C. Wang (黄志) 38879 (IBSC); Xinyi (信宜), C. Wang (黄志) 37771 (IBSC, NAS, PE); Yangchun (阳春), N. Liou (刘念) 3132 (IBSC). **Guangxi** (广西): Baise (百色), Baise Exped. (百色队) 55-1802 (IBSC, PE); Mingjiang (明江), H. Y. Liang (梁向日) 69198 (PE); Lingui (临桂), S. C. Chen et al. (陈少卿等) 536 (IBSC, LE); Longzhou (龙州), H. Y. Liang (梁向日) 67501, P. X. Tan (谭沛祥) 57066 (IBSC), Morse 206 (K); Yongning (邕宁), C. C. Chang (张肇騫) 14244 (IBSC); Wantian, S. C. Chen et al. (陈少卿等) 536 (LE). **Hainan** (海南): Baisha (白沙), S. K. Lau (刘心祈) 25503 (IBSC); Lingshui (陵水), C. Wang (黄志) 36357 (IBSC).

Vietnam. Tonkin: Binhlong, Coloni 2193 (P); Bac Giang, Coloni 3181, 3189 (P); Chan-moi, Balansa 1514 (K); Dong Mo, Petelot 6946 (P); Hoa Binh, Petelot 6717 (P); Ke Lon, Petelot s.n. (P); Mt. Vo-ka, Bon 4082 (K); Ninh-Binh, Bon 1947, 3703 (P); Tien-yen, W. T. Tsang (曾怀德) 27397 (IBSC, K, P); Yen-lang, Balansa 3373 (P). **Annam:** Balong, Poilane 1146 (K, P).

6. Clematis crassipes Chun & How in *Acta Phytotax. Sin.* 7: 3, pl. 1, fig. 2. 1958; How & W. T. Wang in *Fl. Hainan*. 1: 307. 1964; M. Y. Fang in *Fl. Reip. Pop. Sin.* 28: 232, pl. 77. 1980; M. Johnson, *Clematis* 524. 1997; Grey-Wilson, *Clematis* 58. 2000; W. T. Wang in *Acta Phytotax. Sin.* 38: 416. 2000; W. T. Wang & Barth. in *Fl. China* 6: 368. 2001; R. J. Wang in *Fl. Guangdong* 5: 12. 2003. Type: China. Hainan (海南): Baoting (保亭), Taipingtung, 1935-05-29, *F. C. How* (侯宽昭) 72662 (holotype, IBSC!; isotype, PE!); Dan Xian (儋县),

1928-06-23, *W. T. Tsang* (曾怀德) 444 (paratype, IBSC!); Mt. Baishishan, between Lingao (临高) and Chengmai (澄迈), 1928-06-12, *W. T. Tsang* (曾怀德) 744 (paratype, IBSC!; isoparatype, NAS!).

C. crassipes Chun & How var. *pubipes* W. T. Wang in Acta Bot. Yunnan. 4: 135. 1982; et in Fl. Guangxi 1: 291. 1991; M. Johnson, *Clematis* 514. 1997; Grey-Wilson, *Clematis* 58. 2000; W. T. Wang & Barth. in Fl. China 6: 369. 2001.—*C. pubipes* (W. T. Wang) W. T. Wang in Acta Phytotax. Sin. 38: 416, fig. 3: 8–10. 2000. Type: China. Guangxi (广西): Shangsi (上思), Shiwandashan (十万大山), 1966-05-08, *S. G. Li* (李树刚) 4934 (holotype, GXMI!).

粗柄铁线莲 Fig. 4: D–F

Woody vine. Branches shallowly 8–10-sulcate, glabrous. Leaves ternate; leaflets coriaceous, oblong-ovate or ovate, 7–12.5 × 2.4–9 cm, apex acute or acuminate, base truncate, rounded, or subcordate, margin entire or remotely crenulate, both surfaces glabrous or sometimes abaxial surfaces sparsely puberulous, basal veins 5, abaxially slightly prominent; petioles 3–12 cm long. Cymes terminal, 3–10(–18)-flowered; peduncles robust, 1.5–2.5 cm long, rusty-puberulous; bracts triangular or subulate, 1.5–15 mm long. Flower 4–6 cm in diam.; pedicel robust, 3–10 cm long, above appressed-rusty-puberulous. Sepals 4, white, caducous, oblong-ovate, 20–30 × 7–15 mm, inside glabrous, outside rusty-puberulous, margin velutinous, apex acute or slightly obtuse. Stamens 11–13 mm long, glabrous; filaments linear, slightly narrower than anthers; anthers linear, 6–7 mm long; connective projections 0.5–1.5 mm long. Ovaries pubescent; styles 10–11 mm long, densely villous. Achenes compressed, narrowly rhombic-elliptic, 4–6.5 × 2–2.6 mm, pubescent, narrowly rimmed; persistent styles 4–8 cm long, tawny-plumose. Fl. May–Jun.

China (W Guangdong, S Guangxi, Hainan) and N Vietnam. In bushes or forests, or by lakes; alt. 350–950 m.

Additional specimens examined:

China. Guangdong (广东): Xinyi (信宜), *S. P. Kao* (高锡朋) 51632 (IBSC). **Guangxi** (广西): Longzhou (龙州), *S. P. Kao* (高锡朋) 55349 (IBSC); Luoxiang (罗香), *S. S. Sin* (辛树帜) 20494 (IBSC); Shangsi (上思), Pinglu Shan (平陆山), Anonymous 198 (IMD). **Hainan** (海南): Ledong (乐东), Jianfengling (尖峰岭), *Z. L. Chen* (陈泽廉) 30349, *Q. Huang* (黄全) 820691 (IBSC), *Y. L. Zhang* (张镜铨) 337 (PE); Lingshui (陵水), Diaoluo Shan (吊罗山), Guangdong 76 Exped. (广东76队) 5360 (IBSC); Wuzhi Shan (五指山), Anonymous 198 (IMD).

Vietnam. Tonkin: Dam-na, Sai Wong Mo Shan, *W. T. Tsang* (曾怀德) 30012 (IBSC).

7. *Clematis gialaiensis* Serov in Bot. Zhurn. 79 (7): 106. 1994. Type: Vietnam. Prov. Gialai-Kontum, Kbang, vill. Tram Lap, 1989-01-04, *Averianov, Hiep et al.* 4159 (holotype, LE!).

Fig. 4: A–C

Woody vine. Branches glabrous. Leaves ternate, glabrous; leaflets subcoriaceous, ovate, 2–8 × 0.8–4 cm, apex acute or acuminate, base cuneate, margin entire, basal veins abaxially nearly flat; petioles ca. 3.5 cm long. Cymes terminal, ca. 20 cm long, 8-flowered; peduncles robust, 0.7–2 cm long, glabrous; bracts ternate, glabrous, leaflets narrowly ovate or oblong, 4–17 × 1–5 mm, or smaller, linear, 5 × 1 mm. Flower ca. 3 cm in diam.; pedicel robust, 2.5–5.8 cm long, on apex sparsely appressed-puberulous, elsewhere glabrous. Sepals 4, caducous, subcoriaceous, ovate, 15–20 × 7–10 mm, inside glabrous, outside appressed-puberulous, margin grey-velutinous, apex acute. Stamens 10–12 mm long, glabrous; filaments oblanceolate-linear, slightly broader than anther; anthers linear, 5–7 mm long, connective projections ligulate, 0.5–0.6 mm long. Carpels with long styles as long as stamens, densely

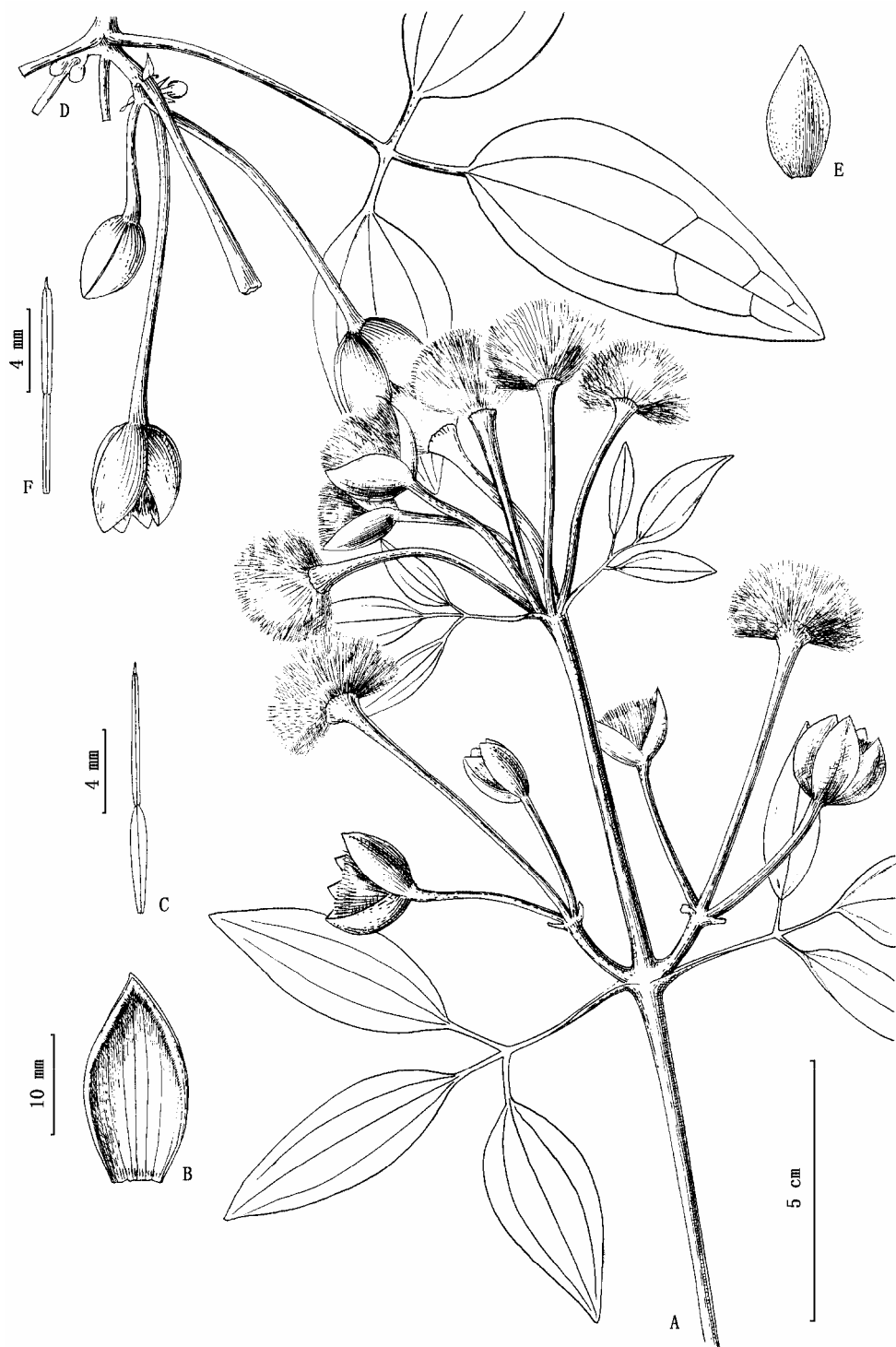


Fig. 4. A–C, *Clematis gialaiensis* Serov. A, flowering branch; B, sepal inside; C, stamen. Drawn from *Russ.-Vietnam Exped. LX-VN 4159*. D–F, *C. crassipes* Chun & How. D, flowering branch; E, sepal outside; F, stamen. Drawn from *S. G. Li 4934*.

villous. Fl. Jan.

Vietnam.

In having ternate leaves, terminal cymes, robust peduncles and pedicels, ovate sepals, and linear anthers *C. gialaiensis* is closely related to *C. crassipes* (see above), and differs from the latter in its glabrous peduncles and nearly glabrous pedicels, and oblanceolate-linear filaments, which are slightly broader than anthers, and are unique in sect. *Naraveliopsis*.

8. *Clematis andersonii* (Clarke ex Kuntze) H. Eichler in *Bibl. Bot.* 124: 47. 1958; Gupta in *Bull. Nat. Bot. Gard. Lucknow* 97: pl. 49. 1964; Kapoor in *l.c.* 124: 19. 1966; Rau in Sharma et al., *Fl. Ind.* 1: 57. 1993; M. Johnson, *Klematis* 512. 1997; W. T. Wang in *Acta Phytotax. Sin.* 38: 417. 2000.—*C. smilacifolia* Wall. ssp. *andersonii* Clarke ex Kuntze in *Verh. Bot. Ver. Brand.* 26: 121. 1855. Type: Sikkim. Darjeeling, 1869-11-01, *Clarke 10349* (lectotype, BM!—Eichler, 1958; isolectotypes, G!, K!, L!).

C. smilacifolia Wall. ssp. *munroiana* auct. non (Wight) Kuntze: *Grey-Wilson, Clematis* 57. 2000, p.p. quoad syn. *C. andersonii* (Clarke ex Kuntze) H. Eichler.

Fig. 5: C–E

Woody vine. Branches indistinctly angulate, shallowly 10-sulcate, glabrous. Leaves ternate, glabrous; leaflets papery, narrowly ovate or elliptic-ovate, 12–16 × 4.5–6.5 cm, apex long acuminate or caudate-acuminate, base broadly cuneate, margin remotely denticulate, basal veins abaxially prominent; petioles ca. 10 cm long. Cymes axillary and terminal, laxly 1–9-flowered; peduncles 11–17 cm long, glabrous; bracts petiolate, long elliptic, 0.8–1.8 cm long. Flower ca. 4 cm in diam.; pedicel 4.5–7 cm long, glabrous, seldom below sparsely puberulous. Sepals 4–5, coriaceous, linear, 20 × 3–4 mm, inside below velutinous or densely puberulous, outside fulvous-velutinous, 3(–4)-ribbed, apex attenuate. Stamens 12–20 mm long, glabrous; anthers oblong or narrowly oblong, 1–2.5 mm long; connective projections 0.6–1 mm long. Ovaries densely pubescent; styles 6–8 mm long, densely villous. Fl. Oct.–Nov.

Sikkim.

9. *Clematis munroiana* Wight, *Ill. Ind. Bot.* 1: 5, t. 1. 1840; Gamble, *Fl. Madras* 1: 3. 1915; Mukerjee in *Bull. Bot. Surv. Ind.* 1: 139. 1959; Gupta in *Bull. Nat. Bot. Gard. Lucknow* 80: pl. 40. 1963; Kapoor in *l.c.* 124: 53. 1966; Rau in Sharma et al., *Fl. Ind.* 1: 71. 1993; M. Johnson, *Klematis* 519. 1997; Matthew, *Fl. Palni Hills S. India* 1: 4. 1999; W. T. Wang in *Acta Phytotax. Sin.* 38: 417. 2000.—*C. smilacifolia* Wall. ssp. *munroiana* (Wight) Kuntze in *Verh. Bot. Ver. Brand.* 26: 120. 1885; Grey-Wilson, *Clematis* 57. 2000, p.p. excl. syn. *C. andersonii* (Clarke ex Kuntze) H. Eichler. Type: India. Pulney Mountains, 1836-09, *Wight s.n.* (lectotype, K!).

Fig. 5: A, B

Woody vine. Branches shallowly 6–8-sulcate, glabrous. Leaves ternate or pinnate, 5-foliolate, glabrous; leaflets herbaceous, ovate or narrowly ovate, 6–9.5 × 3–4 cm, apex acuminate or acute, base rounded, subcordate, or broadly cuneate, margin entire, basal veins usually 5, abaxially slightly prominent; petioles ca. 5.5 cm long. Cymes axillary, laxly 3–9-flowered, often panicle-like; peduncles 1.8–3.8 cm long, glabrous; rhachis glabrous or on nodes sparsely pilose; bracts and bracteoles leaflet-like, ovate or narrowly ovate, up to 6.5 cm long, bracts sometimes ternate. Flower ca. 4 cm in diam.; pedicel 2.8–7 cm long, near apex sparsely rusty-puberulous, elsewhere glabrous. Sepals 4, pinkish or dark-purple, lanceolate or linear-lanceolate, ca. 22 × 6–8 mm, inside glabrous, outside rusty-velutinous, margin fulvous- or yellowish-velutinous, apex attenuate. Stamens 10–25 mm long, glabrous; filaments at apex abruptly narrowed; anthers oblong or narrowly oblong, 0.8–1.5 mm long, connective projections 0.8–1.5 mm long. Staminodes usually wanting, sometimes present (*Anglade* 376), 3–7, narrowly linear, 25–32 mm long, glabrous. Ovaries densely pubescent; styles 8–10 mm long, densely villous. Achenes compressed, broadly rhombic, 5–6 × 4–5 mm, sparsely



Fig. 5. A, B, *Clematis munroiiana* Wight. A, flowering branch; B, two stamens. Drawn from *Matthew 50546*. C–E, *C. andersonii* (Clarke ex Kuntze) H. Eichler. C, terminal leaflet; D, cyme; E, stamen. Drawn from *Clarke 10349*.

pubescent, rimmed; persistent styles 5–7 cm long, plumose. Fl. Aug.–Dec.

S India. In subtropical forests; alt. 900–2000 m.

Additional specimens examined:

India. Bastar State, Kanger, Mooney 870 (K); Concan, Stocks s.n. (K); Hassan Distr., Mysore, Saldanha 15833 (K); Kodaikanal, Dindigul, Matthew 51693 (K); Madras, Joseph 14213 (L), Lawson s.n. (K); Neilcoonel, Gibson s.n. (K); Palni Hills, Matthew 50546 (K); Pulney Hills, Anglade 376 (G).

10. *Clematis menglaensis* M. C. Chang in Fl. Reip. Pop. Sin. 28: 235, 360, pl. 79. 1980; C. Y. Wu, Ind. Fl. Yunnan. 1: 111. 1984; M. Johnson, Klematis 518. 1997; Grey-Wilson, Clematis 55. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 417. 2000; et in Fl. Yunnan. 11: 234. 2000; W. T. Wang & Barth. in Fl. China 6: 369. 2001. Type: China. Yunnan (云南): Mengla (勐腊), 1936-11, *C. W. Wang* (王启无) 80746 (holotype, KUN; isotypes, GH!, PE!), 80841 (paratypes, GH!, KUN!, PE!); Pingbian (屏边), 1954-10-15, *K. M. Feng* (冯国楦) 5046 (paratype, not seen).

Naravelia eichleri Tamura in Acta Phytotax. Geobot. 37: 109. 1986.—*Clematis eichleri* (Tamura) Tamura in Thai For. Bull. (Bot.) 25: 70, fig. 3. 1997; et in Acta Phytotax. Geobot. 51: 127, fig. 1. 2001. Type: Thailand. Chiangmai: Ban Pon Yeang, 2400 ft., 1913-02-02, *Kerr 2903* (holotype, BM).

勐腊铁线莲 Fig. 6: D, E

Woody vine. Branches terete, shallowly 14–20-sulcate, only on nodes sparsely puberulous, elsewhere glabrous. Leaves pinnate or bipinnate; leaflets papery, ovate, narrowly ovate, or long elliptic, 4.6–9.8 × 2.6–4.8 cm, apex acute or shortly acuminate, base rounded or subcordate, margin entire, both surfaces glabrous or adaxial surfaces on basal veins sparsely puberulous, basal veins 5–7, abaxially slightly prominent; petioles 6–10 cm long, near apex sparsely puberulous. Cymes axillary or terminal, laxly 7–many-flowered, often panicle-like; peduncles 1.4–8.5 cm long, glabrous; bracts narrowly triangular or subulate, 1–2 mm long, puberulous. Flower 1.8–3 cm in diam.; pedicel 1.2–5 cm long, glabrous or near apex sparsely puberulous. Sepals 4, caducous, white, narrowly oblong or elliptic-oblong, 8–11 × 3–4 mm, inside glabrous, outside subglabrous or above sparsely puberulous, margin velutinous, apex slightly acute. Stamens 10–17 mm long, glabrous; anthers narrowly oblong, 1.2–3 mm long; connective projections 0.3–0.5 mm long. Ovaries glabrous; styles 5–6 mm long, densely villous. Achenes compressed, fusiform, 8–10 mm long, glabrous, narrowly rimmed, 1-ribbed per side; persistent styles 5–7.5 cm long, plumose. Fl. Aug. –Nov.

China (S Yunnan) and N Thailand. In forests or on cliffs; alt. 600–1000 m.

Additional specimens examined:

Thailand. Doi Kuhn Dahn National Park, Maxwell 93-1392 (GH); Doi Phu-kha, Khit 182 (S).

11. *Clematis hedysarifolia* DC., Syst. 1: 148. 1818; et Prodr. 1: 6. 1824; Hook. f. & Thoms., Fl. Ind. 7. 1855; et in Hook. f., Fl. Brit. Ind. 1: 4. 1872; Kuntze in Verh. Bot. Ver. Brand. 26: 151. 1885; Finet & Gagnep. in Bull. Soc. Bot. France 50: 527. 1903; Talbot, For. Fl. Bombay 1: 5. 1909; Mukerjee in Bull. Bot. Surv. Ind. 1: 139. 1959; Gupta in Bull. Nat. Bot. Gard. Lucknow 54: pl. 12. 1961; Kapoor in l.c. 78: 37. 1962; Rau in Sharma et al., Fl. Ind. 1: 66. 1993; M. Johnson, Klematis 638. 1997; Grey-Wilson, Clematis 104. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 417. 2000. Type: India. Circa Daogown, *A. P. Hore* s.n. (holotype, not seen).

C. naravelioides Kuntze in Verh. Bot. Ver. Brand. 26: 119. 1885. Type: India. Syntypes collected from Concan, Belgaum, and Khasia, but collector's names of specimens not stated.

Fig. 7: F, G

Woody vine. Branches shallowly 12–14-sulcate, appressed-puberulous. Leaves ternate or pinnate, 5-foliolate; leaflets coriaceous, narrowly to broadly ovate, 3–9 × 1.2–5 cm, apex

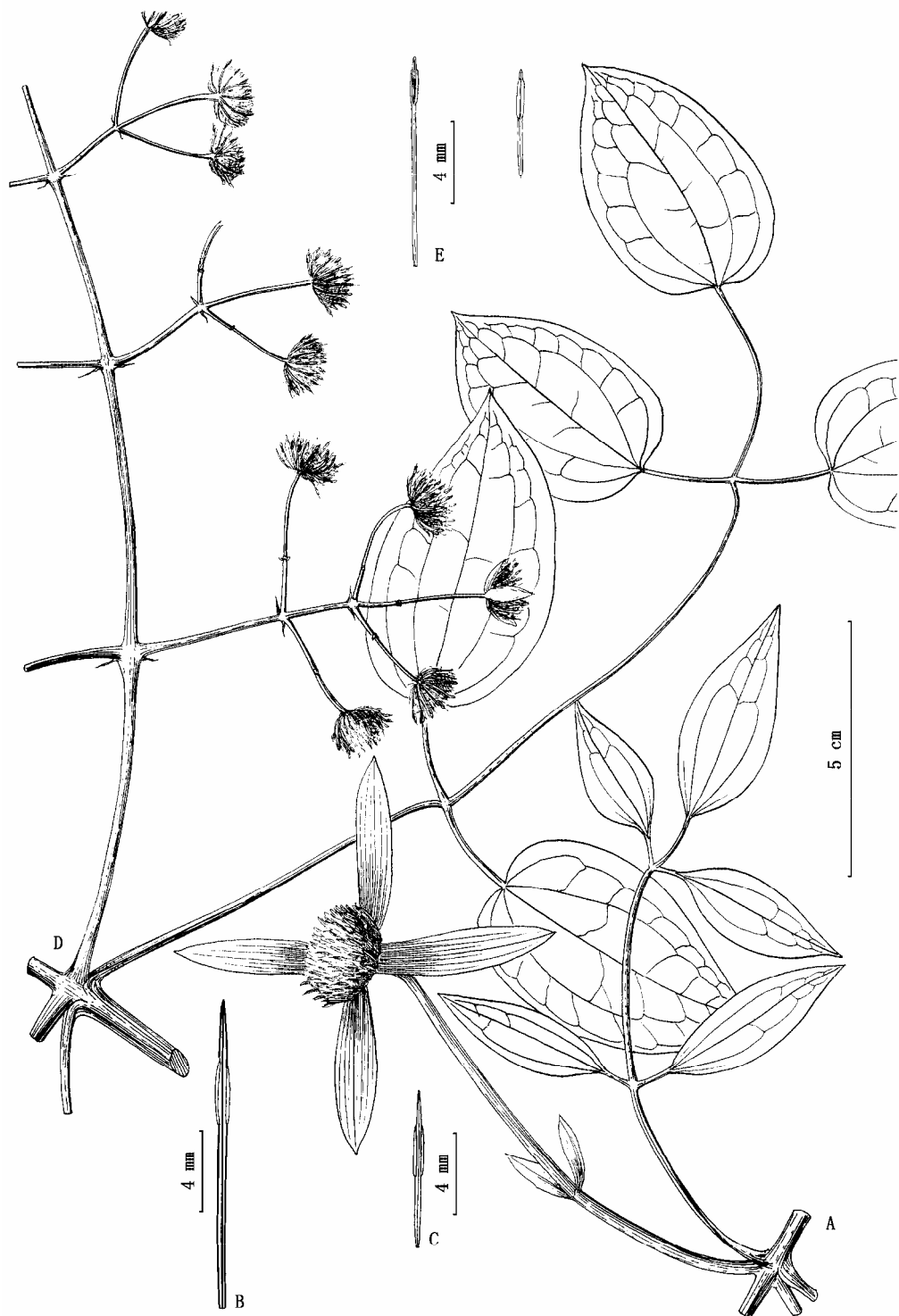


Fig. 6. A–C, *Clematis pianmaensis* W. T. Wang. A, flowering branch; B, C, stamens. Drawn from *West-Yunnan Exped. 11094*. D, E, *C. menglaensis* M. C. Chang. D, flowering branch; E, two stamens. Drawn from *Khit 182*.

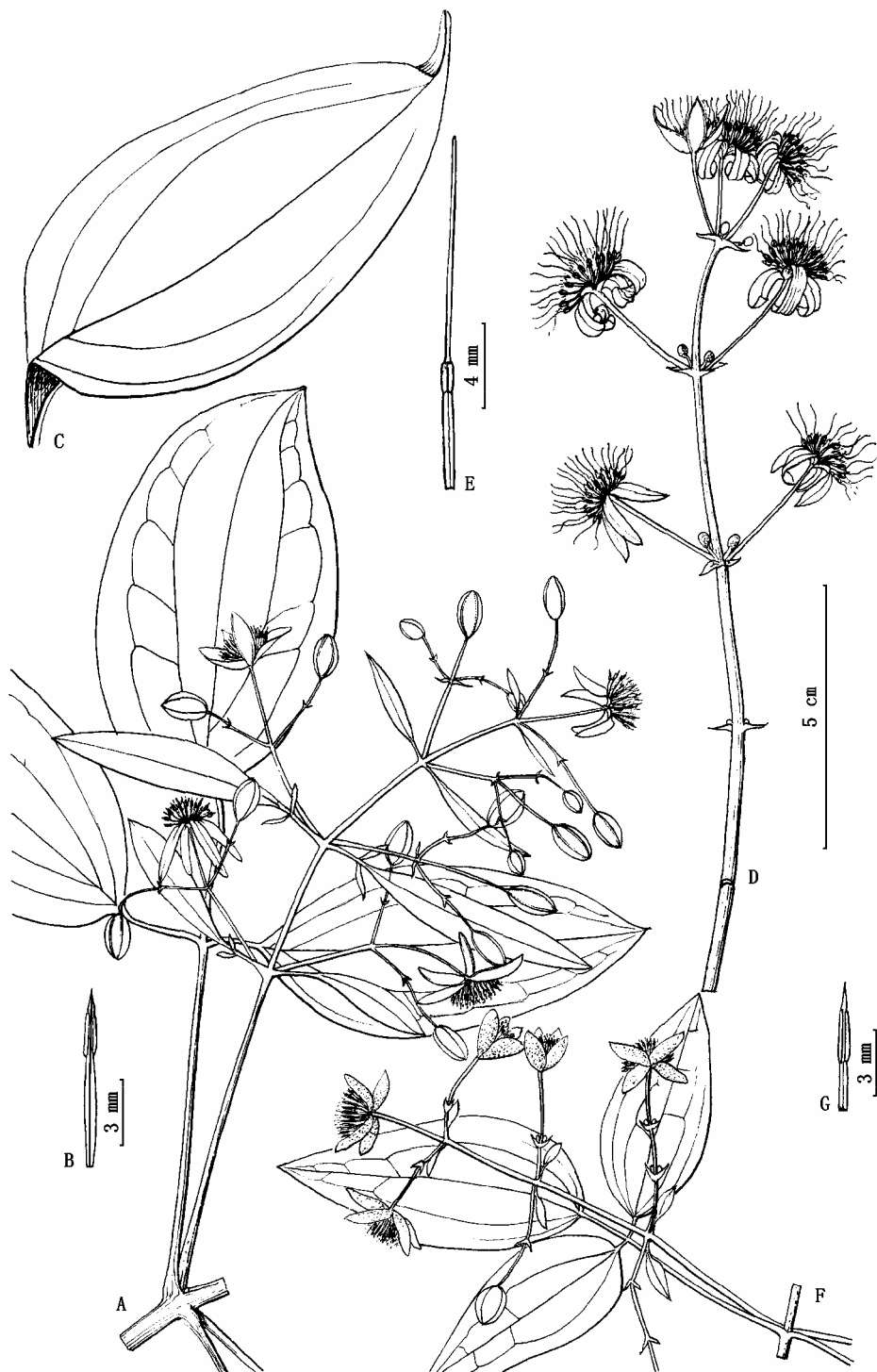


Fig. 7. A, B, *Clematis bourdillonii* Dunn. A, flowering branch; B, stamen. Drawn from *Bourdillon 5*. C–E, *C. papillosa* H. Eichler. C, leaflet; D, inflorescence; E, stamen. Drawn from *Boeea 7157*. F, G, *C. hedysarifolia* DC. F, flowering branch; G, stamen. Drawn from *Talbot 3167*.

slightly acute, base rounded or subcordate, margin entire or sparsely denticulate or dentate, undivided, seldom 3-lobulate, adaxial surface glabrous, abaxial surface on basal veins sparsely pilose, both surfaces distinctly reticulate, basal veins abaxially strongly prominent; petioles 3–6.5 cm long, puberulous. Cymes axillary and terminal, 7–many-flowered, panicle-like; peduncles 1.4–4 cm long, puberulous; bracts petiolate, ovate or narrowly ovate, 2–10 mm long. Flower 1.7–2 cm in diam.; pedicel 1–3 cm long, densely puberulous. Sepals 4, narrowly oblong or oblong-lanceolate, 8–10 × 2.8–3.2 mm, inside glabrous, outside brownish-velutinous, apex acute. Stamens 5–6.5 mm long, glabrous; anthers narrowly oblong, 2–2.2 mm long; connective projections subulate, 1–1.5 mm long. Ovaries densely pubescent; styles ca. 6 mm long, densely villous. Achenes compressed, broadly elliptic or ovate, 4.5–5 × 3 mm, appressed-pubescent, tumidly rimmed; persistent styles 2–3 cm long, plumose.

India (Gujarat, Maharashtra, Goa, and Karnataka—Rau, 1993, l.c.). In forests; alt. 500–1500 m.

Additional specimens examined:

India. Bombay, Talbot 3167, Dalzell s.n. (K); Concan, Law s.n. (G), Fernandes 20 (GH, K); Khasia, J. D. Hooker & Thomson s.n. (LE).

12. *Clematis bourdillonii* Dunn in Kew Bull. 1914: 181. 1914; Gamble, Fl. Presid. Madras 1: 3. 1915; Gupta in Bull. Nat. Bot. Gard. Lucknow 80: pl. 24. 1962; Kapoor in l.c. 124: 21. 1966; Rau in Sharma et al., Fl. Ind. 1: 59. 1993; M. Johnson, Klematis 513. 1997; Grey-Wilson, Clematis 55. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 418. 2000; Murthy in J. Bombay Nat. Hist. Soc. 99: 148. 2002. Type: India. Travancore: Merchiston Estate, alt. 750 m, 1895-04-09, *Bourdillon 554* (lectotype, K!), *860* (syntype, not seen).

Fig. 7: A, B

Woody vine. Branches shallowly 14-sulcate, glabrous or on nodes sparsely puberulous. Leaves ternate or biternate; leaflets thickly papery, oblong-elliptic or oblong-ovate, 6–9 × 3–4.5 cm, apex obtuse or slightly acute, base rounded or broadly cuneate, margin entire, both surfaces glabrous and reticulate, basal veins prominent; petioles 5–6 cm long, sparsely puberulous. Panicles axillary, many-flowered; peduncles 3.8–6 cm long, glabrous; bracts foliaceous, ca. 3 cm long, or simple, small, deltoid, 2 mm long. Flower ca. 2 cm in diam.; pedicel 1.2–1.6 cm long, glabrous. Sepals 4, lanceolate-oblong, 9–11 × 3–4 mm, inside glabrous, outside appressed-brownish-puberulous, margin velutinous, apex slightly obtuse. Stamens 6–7 mm long, glabrous; anthers oblong, ca. 2 mm long; connective projections narrowly lanceolate, 1–2 mm long. Ovaries densely pubescent; styles ca. 5 mm long, densely villous. Fl. Apr.

S India. In evergreen forests; alt. 500–1000 m (Rau, 1993, l.c.).

13. *Clematis pianmaensis* W. T. Wang in Acta Bot. Yunnan. 6: 381, fig. 5: 1–4. 1984; M. Johnson, Klematis 522. 1997; Grey-Wilson, Clematis 57. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 418. 2000; et in Fl. Yunnan. 11: 236. 2000; W. T. Wang & Barth. in Fl. China 6: 369. 2001. Type: China. Yunnan (云南): Pianma (片马), 1980-09-20, *West Yunnan Exped.* (滇西队) 11094 (holotype, YUNU!).

片马铁线莲 Fig. 6: A–C

Woody vine. Branches shallowly 10-sulcate, glabrous. Leaves pinnate, 5-foliolate, glabrous; leaflets papery, narrowly ovate or narrowly elliptic, 3–7.8 × 1.4–3.2 cm, apex acuminate or acute, base broadly cuneate or rounded, margin entire, basal veins flat; petioles 4–8 cm long. Cymes axillary or terminal, laxly (1–)5–9-flowered; peduncles 4–10 cm long, glabrous; bracts foliaceous, or simple, leaflet-like. Flower ca. 6 cm in diam.; pedicel 6.5–9 cm long, glabrous. Sepals 4, yellow, lanceolate-oblong, 27–35 × 8–10 mm, inside glabrous, outside densely yellowish-velutinous, apex slightly acute. Stamens 8–24 mm long, glabrous; anthers oblong, 1.6–2.8 mm long; connective projections subulate or linear, 0.7–2.8 mm long.

Ovaries pubescent; styles 7–14 mm long, densely villous. Fl. Sept.

China (W Yunnan). Alt. 2200 m.

14. *Clematis fengii* W. T. Wang in Acta Phytotax. Sin. 38: 418, fig. 3: 4–7. 2000; W. T. Wang & Barth. in Fl. China 6: 369. 2001. Type: China. Yunnan (云南): Xichou (西畴), Fadou (法斗), alt. 1500–1600 m, fl. white, 1947-09-21, *K. M. Feng* (冯国楹) 12016 (holotype, PE!; isotype, IBSC!).

国楣铁线莲 Fig. 8: C–F

Woody vine. Branches fistulose, shallowly 10–18-sulcate, on nodes densely white-furfuraceous, elsewhere glabrous. Leaves pinnate, 7-foliolate; leaflets papery, ovate, 4–6 × 2.2–4 cm, apex acuminate, base rounded, margin entire, both surfaces glabrous, basal veins 5, adaxially inconspicuous, abaxially nearly flat; petioles ca. 7 cm long, glabrous, at base with small stipule-like blades abaxially densely white-furfuraceous. Cymes axillary, sparsely 3-flowered; peduncles 7.8–14 cm long, glabrous; bracts caducous. Flower ca. 5 cm in diam.; pedicel robust, 6–11 cm long, glabrous. Sepals 4, white, oblong-lanceolate, 27–32 × 6–9 mm, inside glabrous, outside densely fulvous-furfuraceous-velutinous, margin white-velutinous, apex slightly acute. Stamens 7–20 mm long, glabrous; anthers oblong or narrowly oblong, 0.5–2 mm long; connective projections subulate, 0.5–1 mm long. Ovaries densely pubescent; styles ca. 8 mm long, densely villous. Fl. Sept.–Oct.

China (SE Yunnan). In mixed forests in valley; alt. 1160–1600 m.

Additional specimens examined:

China. Yunnan (云南): Pingbian (屏边), *K. M. Feng* (冯国楹) 5046 (WUK).

15. *Clematis herrei* H. Eichler in Bibl. Bot. 124: 48, t. 4. 1958; M. Johnson, *Clematis* 515. 1997; Grey-Wilson, *Clematis* 54. 2000. Type: Philippines. Negros Island: Los Cuernos, 1931-06, *Herre 1134* (holotype, GH!).

Woody vine. Branches terete, shallowly 12-sulcate, glabrous. Leaves ternate, rarely simple, glabrous; leaflets ovate or ovate-elliptic, 5–8.5 × 2.5–4.5 cm, apex acute or acuminate, mucronate, base rounded, margin entire or repand, basal veins 3–5(–7), abaxially prominent; petioles 1.5–5.5 cm long, at base with auriculate blades, which are connate with those of the opposite leaves. Cymes axillary, 1–3-flowered; peduncles very short, with pedicels densely brown-puberulous; bracts oblong-linear or oblong-spathulate, 7–10 mm long. Flower ca. 2.5 cm in diam.; pedicel 1.5–4 cm long. Sepals 4, purple, oblong, 12–14 × 3–3.5 mm, inside subglabrous, outside densely brown-velutinous, apex obtuse. Stamens 7–13 mm long, glabrous; anthers oblong, 3–4 mm long; connective projections ca. 3 mm long. Ovaries pubescent; styles ca. 5 mm long, densely villous. Fl. Jun.

Philippines (Negros Island). In montane regions at an elevation of ca. 1700 m.

16. *Clematis korthalsii* H. Eichler in Bibl. Bot. 124: 47, t. 3. 1958; Backer & Bakh., Fl. Java 1: 144. 1963; M. Johnson, *Clematis* 516. 1997; Grey-Wilson, *Clematis* 57. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 419. 2000. Type: Indonesia. Java, 1896-11-06, *Kooders 25929β* (holotype, L).

C. coriacea Korth. in Nederl. Kruidk. Arch. 1: 208. 1847, non DC., 1818; de Vriese in Pl. Jungh. 72. 1851; Walp., Ann. 4: 5. 1857; Miq., Fl. Ind. Bat. 1 (2): 3. 1853; Koord. Exkfi. Java 2: 220. 1912.—*C. smilacifolia* Wall. ssp. *normalis* Kuntze var. *coriacea* (Korth.) Kuntze in Verh. Bot. Ver. Brand. 26: 121. 1885.—*C. smilacifolia* β *normalis* subvar. *coriacea* Kuntze ex Hall. in Ann. Jard. Bot. Buitenz. 14: 256, t. 18. 1897. Type: Indonesia. Java: “in sylvis montis Gédé”, Korthals (holotype, not seen).

C. smilacifolia Wall. var. *stipulata* Miq., Ann. Mus. Lugd.-Bat. 4: 66. 1868. Type: Indonesia. Java: Without precise locality, *Junghuhn s.n.* (holotype, L).

Fig. 10: A, B

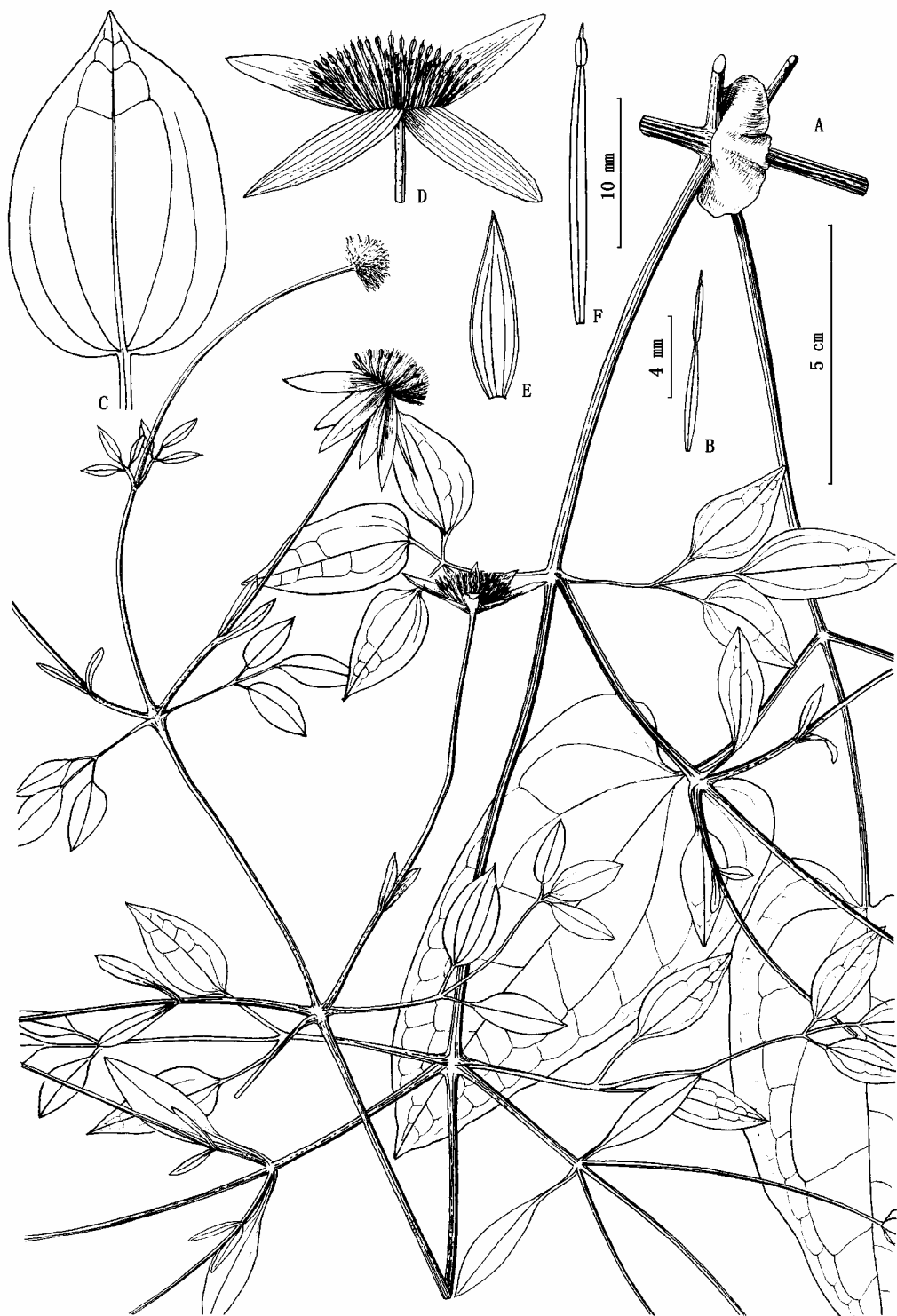


Fig. 8. A, B, *Clematis tashiroi* Maxim. A, flowering branch; B, stamen. Drawn from Boufford & Bartholomew 25123. C-F, *C. fengii* W. T. Wang. C, leaflet; D, flower; E, sepal outside; F, stamen. Drawn from K. M. Feng 12016.

Woody vine. Branches terete, shallowly 18-sulcate, glabrous. Leaves ternate or pinnate, 5-foliolate, glabrous; leaflets papery, ovate, 4–9 × 2.7–4.8 cm, apex attenuate or acuminate, base rounded, truncate, or subcordate, margin entire, basal veins 5–7, abaxially prominent; petioles 6–9 cm long, at base with stipule-like auriculate blades ca. 1 cm long. Cymes axillary, 1(–3)-flowered, glabrous; peduncles 0.5–5.5 cm long; bracts petiolate, long elliptic, 0.8–1.2 cm long. Flower ca. 7 cm in diam.; pedicel 10–18(–25) cm long, glabrous. Sepals 4, dark-purple, oblong or narrowly oblong, 35–40 × 6–7 mm, inside glabrous, outside brown-velutinous, apex acute or attenuate. Stamens 15–21 mm long, glabrous; anthers linear, 3–3.5 mm long; connective projections nearly cylindrical, 0.7–1 mm long. Ovaries densely pubescent; styles ca. 9 mm long, densely villous. Achenes compressed, elliptic or obovate-elliptic, ca. 7.5 × 3 mm, pubescent, rimmed; persistent styles 7–9 cm long, plumose. Fl. Sept.

Indonesia (W Java). In rain forests; alt. 1300–1600 m (Eichler, 1958).

Additional specimens examined:

Indonesia. Java: Tjibodas-Tjibeureum, Mt. Gedeh, Kera 8298 (L).

17. *Clematis tashiroi* Maxim. in Bull. Acad. Sci. St.-Petersb. 32: 477. 1888; Sasaki, List Fl. Formos. 184. 1928; Tamura in Acta Phytotax. Geobot. 15: 18. 1953; Hatusima, Fl. Ryukyus 277. 1971; Liu & Hsieh in Fl. Taiwan 2: 492. 1976; M. Y. Fang in Fl. Reip. Pop. Sin. 28: 232, fig. 34. 1980; Tamura in Satake et al., Wild Flow. Japan 2: 174. 1982; W. T. Wang in Bull. Bot. Res. Harbin 7: 103. 1987; T. Y. Yang & T. C. Huang in Taiwania 40: 242, fig. 18. 1995; et in Fl. Taiwan, 2nd ed., 2: 539, pl. 254. 1996; M. Johnson, Klematis 525. 1997; Grey-Wilson, Clematis 58. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 419. 2000; W. T. Wang & Barth. in Fl. China 6: 369. 2001. Type: Japan. Without precise locality, “Archipelago Ya-yama inter insulas Liu-kiu et Taiwan sito”, 1868, *Tashiro 40* (holotype, LE!).

C. longisepala Hayata in J. Coll. Sci. Univ. Tokyo 25: 41. 1908; et Ic. Pl. Formos. 1: 21. 1911. Type: China. Taiwan: Mt. Morrison, 1906-10-12, *Kawakami & Mori 2018* (holotype, TI!).

C. tozanensis Hayata in J. Coll. Sci. Univ. Tokyo 25: 42. 1908; et Ic. Pl. Formos. 1: 22, pl. 3. 1911. Type: China. Taiwan (台湾): Mt. Morrison, Tozan, 1906-10, *Nakahara s.n.* (holotype, TI!).

C. yingtzulinia S. S. Ying in Quart. J. Chin. For. 20: 127, pl. 2. 1987; M. Johnson, Klematis 526. 1997. Type: China. Taiwan (台湾): Pinglin, Yingtzulin, 1987-09, S. S. Ying (应绍舜) s.n. (holotype, NTUF).

长萼铁线莲 Fig. 8: A, B

Woody vine. Branches shallowly 8–15-sulcate, glabrous. Leaves pinnate, 5-foliolate, or ternate, glabrous; leaflets papery, ovate or narrowly ovate, 3–22 × 1.6–12 cm, apex acute or acuminate, base rounded or subcordate, margin entire, basal veins abaxially slightly prominent or nearly flat; petioles 3.5–9.4 cm long, at base strongly dilated and connate with the widened parts of the opposite petioles. Cymes axillary; (1–)3–8-flowered, glabrous; peduncles 1.5–6 cm long; bracts petiolate, narrowly ovate or long elliptic, 1.8–5.5 cm long. Flower 3–6 cm in diam.; pedicel 5.5–12 cm long, glabrous. Sepals 4–6, dark-purple, narrowly oblong, linear, or lanceolate-oblong, 18–30 × 4–8 mm, inside glabrous, outside brown-velutinous, apex acute. Stamens 6–22 mm long, glabrous; anthers narrowly oblong or linear, 2–3.5 mm long; connective projections 0.5–2 mm long. Ovaries pubescent; styles 6–9 mm long, densely villous. Achenes compressed, narrowly elliptic, 4–5 × 2–2.8 mm, sparsely pubescent, inconspicuously rimmed; persistent styles 4–6 cm long, plumose. Fl. Aug.–Oct.

China (Taiwan), Japan (Ryukyu Islands), and N Vietnam. On beaches, by streams, on slopes, or at forest margins; alt. 50–2800 m.

Additional specimens examined:

China. Taiwan (台湾): Ali Shan (阿里山), E. H. Wilson 10797 (K); Bunkiko, Faurie s.n. (G); Hualian

(花莲), H. Keng & M. T. Kao 2596 (LE); South Cape, Henry 1320 (K); Taidong (台东), H. Keng & M. T. Kao 2662 (GH).

Japan. Okinawa Pref.: Yaeyama Islands, Furuse 1040, 4156, 4378, 4562 (K); Okinawa Island, Towad 2247 (US).

Vietnam. Tonkin: Mt. San-ta-van, Petelot 6425 (P).

18. Clematis papillosa H. Eichler in *Bibl. Bot.* 124: 50, t. 4. 1958; M. Johnson, *Klematis* 520. 1997; Grey-Wilson, *Clematis* 55. 2000; W. T. Wang in *Acta Phytotax. Sin.* 38: 420. 2000. Type: Indonesia. Sumatra: Asahan, near Huta Bagasan, 1934-09-1935-02, Boeea 7157 (holotype, SING; isotypes, GH!, S!, US!).

Fig. 7: C-E

Woody vine. Branches terete, shallowly ca. 24-sulcate, on nodes sparsely puberulous, elsewhere glabrous. Leaves pinnate, 5-7-foliolate, glabrous; leaflets coriaceous, oblong-ovate or elliptic-ovate, 8-14 × 4.5-8 cm, apex acuminate, base rounded, margin entire, basal veins 3-5(-7), slightly prominent; petioles up to 6 cm long. Cymes axillary, many-flowered, panicle-like; peduncles 1.8-3 cm long, with rhachises densely brown-puberulous; bracts scale-like. Flower ca. 2.5 cm in diam.; pedicel 1.5-3(-4) cm long, densely brown-puberulous. Sepals 4, ovate-oblong, 10-14 × 3-5 mm, inside near apex puberulous, outside densely appressed-brown-puberulous, margin velutinous, apex obtuse. Stamens 9-13 mm long, glabrous; anthers oblong, ca. 1.5 mm long; connective projections 6.5-8.5 mm long, papillate. Ovaries pubescent; styles ca. 5 mm long, densely villous. Fl. Aug.

Indonesia (Sumatra: Asahan) and Malaysia (Malay Peninsula: Tupai near Taiping).

Subsect. 2. **Liboenses** W. T. Wang in *Acta Phytotax. Sin.* 36: 164. 1998; et 38: 420. 2000.

—Subsect. *Liboenses* ser. *Liboenses* W. T. Wang in l.c. 38: 420. 2000, syn. nov. Type: *C. liboensis* Z. R. Xu.

Leaves simple or ternate. Flowers bisexual. Stamens puberulous. Staminodes present.

One species, endemic to SE Guizhou, China.

19. Clematis liboensis Z. R. Xu in *Acta Phytotax. Sin.* 26: 150, fig. 1. 1988; M. Johnson, *Klematis* 516. 1997; R. J. Wang in *J. Trop. Subtrop. Bot.* 7: 27. 1999; Grey-Wilson, *Clematis* 56. 2000; W. T. Wang in *Acta Phytotax. Sin.* 38: 421. 2000; W. T. Wang & Barth. in *Fl. China* 6: 370. 2001. Type: China. Guizhou (贵州): Libo (荔波), Yongkang (永康), Yaolan (瑶兰), 1984-04-18, Z. R. Xu (许兆然) 1519 (holotype, SYS!; isotype, IBSC!).

荔波铁线莲 Fig. 9

Woody vine. Stem up to 5 m long, glabrous. Leaves simple or ternate, glabrous; leaf blades of simple leaves thickly papery, broadly ovate, 4.5-10 × 3.6-6 cm, apex slightly obtuse, base subcordate, margin denticulate; leaflets of ternate leaves triangular-ovate or ovate, 5-8 × 2.9-5.2 cm, apex acuminate, base subtruncate, subcordate, or rounded, margin denticulate, basal veins on both surfaces prominent; petioles 3.7-7 cm long. Cymes axillary, laxly 5-flowered, raceme-like, glabrous; peduncles 3.5-5.5 cm long; bracts petiolate, ovate. Flower ca. 7 cm in diam.; pedicel 5-10 cm long, glabrous. Sepals 6, white, narrowly oblong or linear, 25-38 × 3-5 mm, inside glabrous, outside ferruginous-puberulous, margin white-velutinous, apex obtuse. Outer stamens sterile, becoming staminodes, narrowly linear or linear 12-24 mm long, glabrous. Inner stamens fertile, 7-12 mm long; filaments linear, 3-7 mm long, puberulous; anthers linear or narrowly oblong, 3-4 mm long, puberulous; connective projections 1.5-2 mm long, sparsely pilose. Ovaries densely puberulous; styles ca. 6 mm long, densely villous. Fl. Apr.

China (SE Guizhou). In forests on lime-stone hill; alt. 800 m.

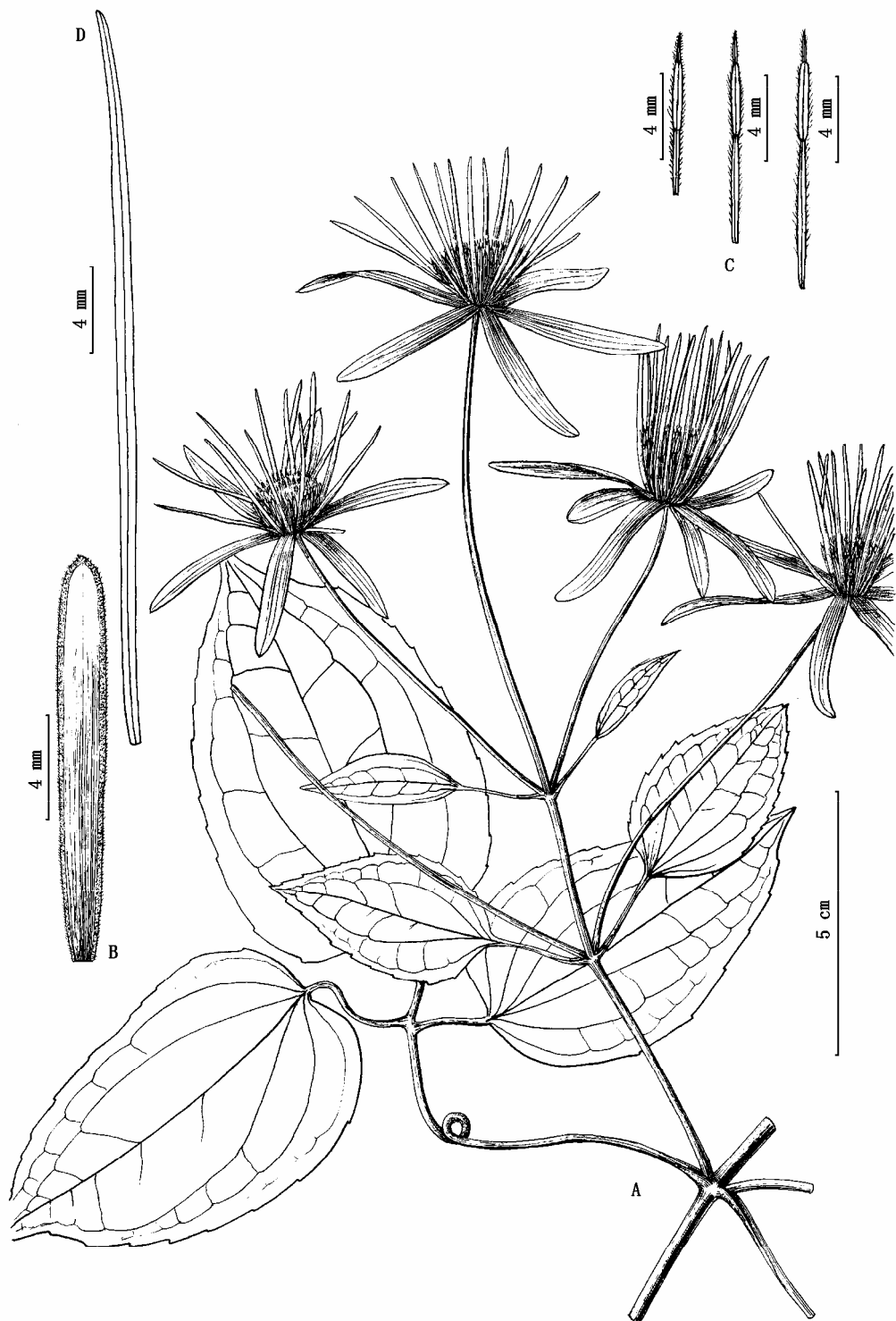


Fig. 9. *Clematis liboensis* Z. R. Xu. A, flowering branch; B, sepal outside; C, three stamens; D, staminode. Drawn from the isotype, Z. R. Xu 1519.

Subsect. 3. **Macgregoriana** W. T. Wang in Acta Phytotax. Sin. 38: 421. 2000. Type: *C. macgregorii* Merr.

Leaves ternate. Flowers unisexual. Staminate flower with glabrous stamens. Pistillate flower with narrowly linear, glabrous staminodes.

Two species, endemic to the Philippines.

20. *Clematis antonii* (Elmer) H. Eichler in Bibl. Bot. 124: 51, t. 4. 1958; M. Johnson, Klematis 512. 1997; Grey-Wilson, Clematis 54. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 421. 2000.—*Naravelia antonii* Elmer in Leaflets Philip. Bot. 8: 2800. 1915; Merr., Enum. Philip. Flow. Pl. 2: 142. 1923. Type: Philippines. Mindanao Island: Mt. Urdaneta, 1912-09, Elmer 13734 (holotype, PNH; isotypes, BM!, K!).

Naravelia philippinensis Merr. in Philip. J. Sci. 11: 7. 1916. Type: Philippines. Luzon: Mt. Begacaua, 1915-08-21, Ramos BS23459 (holotype, PNH; isotypes, BM!, K!, US!).

Woody vine, dioecious. Branches terete, shallowly 16–20-sulcate, glabrous. Leaves ternate, glabrous; leaflets papery or subcoriaceous, broadly ovate, ovate, or oblong-ovate, 6–10(–12) × 3.5–6.5(–9) cm, apex obtuse or acuminate, base rounded or subcordate, margin entire, basal veins slightly prominent; petioles 6–12 cm long. Staminate panicles axillary, 10–25-flowered; peduncles 1.3–3.5 cm long, puberulous; bracts deltoid, ca. 1 mm long. Staminate flower: pedicel 8–16 mm long, densely brownish-puberulous; sepals 4, oblong, 7–9 × 3–4 mm, on both surfaces densely brownish-puberulous, margin velutinous, apex slightly acute; stamens ca. 8 mm long, glabrous; anthers oblong, ca. 1 mm long; connective projections subulate, ca. 2 mm long. Pistillate panicles similar to staminate ones. Pistillate flower unknown. Achenes compressed, narrowly elliptic, ca. 5 × 2 mm, pubescent, rimmed; persistent styles 6.5–8(–12) cm long, plumose. Fl. Jul. –Aug.

Philippines (NE Mindanao, SE Luzon). In thickets; alt. 800–1200 m.

Additional specimen examined:

Philippines. Luzon: Mt. Balusan, Elmer 17314 (K).

21. *Clematis macgregorii* Merr. in Philip. J. Sci. Bot. 5: 347. 1910; et Enum. Philip. Flow. Pl. 2: 142. 1923; H. Eichler in Bibl. Bot. 124: 50. 1958; M. Johnson, Klematis 518. 1997; Grey-Wilson, Clematis 55. 2000; W. T. Wang in Acta Phytotax. Sin. 38: 421. 2000. Type: Philippines. Luzon, alt. 2100 m, 1909-07-04, *McGregor BS 9929* (holotype, PNH); Mt. Pulog, *McGregor 4347, 8372* (paratypes, not seen).

Fig. 10: C–E

Woody vine, dioecious. Branches terete, shallowly 8–14-sulcate, glabrous. Leaves ternate, upper ones sometimes simple, glabrous; leaflets thickly papery, ovate, 4.5–7 × 2.5–5 cm, apex acuminate or obtuse, base cordate or truncate, margin sparsely denticulate or entire, basal veins nearly flat; petioles 4–9 cm long, at base strongly widened into stipule-like blades, which are often connate with those of the opposite leaves. Staminate cymes axillary, (1–)3–7-flowered, often raceme-like; peduncles 1.8–2.8 cm long, glabrous; bracts linear or spatulate, ca. 7 mm long. Staminate flower: pedicel 0.8–2.5 cm long, densely brown-puberulous; sepals 4, narrowly lanceolate-oblong, 7–11 × 2.5–3 mm long, inside glabrous, outside densely brown-puberulous; stamens numerous, (4–)6–18 mm long, glabrous; filaments 2–9 mm long; anthers oblong, ca. 1 mm long; connective projections linear or narrowly linear, 3–10 mm long. Pistillate cymes similar to staminate ones; peduncles up to 3.5 cm long; bracts petiolate, narrowly ovate, ca. 2 cm long. Pistillate flower: pedicel densely brown-puberulous; sepals 4, narrowly oblong, 15–18 × 2.3–3(–3.5) mm, inside sparsely, outside densely brown-puberulous, apex obtuse; staminodes 6–8, narrowly linear, glabrous; carpels numerous, ca. 6 mm long; ovaries densely pubescent; styles ca. 5 mm long, densely villous. Achenes compressed, broadly elliptic or orbicular-ovate, ca. 4 × 3 mm, pubescent, broadly rimmed; persistent styles 4.5–5.5 cm long, plumose. Fl. Sept.



Fig. 10. A, B, *Clematis korthalsii* H. Eichler. A, flowering branch; B, stamen. Drawn from *Kera* 8298. C–E, *C. macgregorii* Merr. C, fruiting branch. Drawn from *Jacobs* 7035; D, staminate flower; E, stamen. Drawn from *Ramos & Edano* BS 40315.

Philippines (N Luzon). At edges of mossy forests; alt. 2000–2500 m.

Additional specimens examined:

Philippines. Luzon: Mt. Baudan, Ramos & Edano BS40315 (P); Mt. Data, Ramos & Edano BS 40291 (K); Mt. Pulog, Ramos & Edano BS 45019, Jacobs 7035 (K).

Acknowledgements I would like to express my sincere thanks to the directors and curators of BM, CAL, E, G, GXMI, IBSC, IMD, K, KUN, L, LE, MO, NAS, P, S, SYS, TI, UPS, US, WUK, and YUNU for kindly inviting me to visit their herbaria and/or sending herbarium material on loan; to A. Weber (WU) for kindly providing some literature on *Clematis*; to LI Liang-Qian, QIN Hai-Ning, ZHANG Xian-Chun, ZHANG Zhi-Yun, WANG Zhong-Tao, and BAN Qin for various kinds of help during the preparation of the present revision; and to SUN Ying-Bao for making the drawings.

References

- De Candolle A P. 1818. *Clematis*. Regni vegetabilis systema naturale. Paris 1: 131–167.
- Eichler H. 1958. Revision der Ranunculaceen Malesiens. Bibliotheca Botanica 124: 1–110.
- Essig F B. 1991. Seedling morphology in *Clematis* (Ranunculaceae) and its taxonomic implications. Sida 14: 377–390.
- Fang M-Y (方明渊). 1980. *Clematis* sect. *Naraveliopsis*. In: Flora Reipublicae Popularis Sinicae (中国植物志). Beijing: Science Press. 28: 226–235.
- Grey-Wilson C. 2000. *Clematis* the Genus. Portland, Oregon: Timber Press.
- Handel-Mazzetti H. 1939. Plantae Sinenses a Dre. H. Smith annis 1921–1922, 1924 et 1934 lectae. Acta Horti Gotoburgensis 13: 37–219.
- Johnson M. 1997. Släktet Klematis. Södertälje: M Johnsons Plantskola AB.
- Kapoor S L. 1987. Observations on phytogeography and endemism in *Clematis* Dill. ex Linn. (Ranunculaceae), with special reference to India taxa. Bulletin of the Botanical Survey of India 29: 103–119.
- Kuntze O. 1885. Monographie der Gattung *Clematis*. Verhandlungen des Botanischen Vereins für Brandenburg (Abhandlungen) 26: 83–203.
- Prantl K. 1888. Beiträge zur Morphologie und Systematik der Ranunculaceen. Botanische Jahrbücher 9: 225–273.
- Rau M A. 1993. *Clematis*. In: Sharma B D, Balakrishnan N P, Rao R R, Hajra P K eds. Flora of India. Vol. 1. Calcutta: Botanical Survey of India.
- Rehder A. 1951. *Clematis*. Manual of cultivated trees and shrubs. 2nd ed. New York: The MacMilan Company. 206–220.
- Schneider C K. 1906. Illustriertes Handbuch der Laubholzkunde. Jena: Verlag von Gustav Fisher. 1: 273–294.
- Spach E. 1839. Trib. *Clematideae*. Histoire des naturelle végétaux. Phanérogames. Paris 7: 257–284.
- Tamura M. 1955. Systema *Clematidis* Asiae Orientalis. Science Reports, Osaka University. 4: 43–55.
- Tamura M. 1967. Morphology, ecology and phylogeny of the Ranunculaceae. VII. Science Reports, Osaka University 16: 21–43.
- Tamura M. 1987. A classification of genus *Clematis*. Acta Phytotaxonomica et Geobotanica 38: 33–34.
- Tamura M. 1995. *Clematis* L. In: Heipko P ed. Engler's Die Natürlichen Pflanzenfamilien. 2nd ed. Berlin: Duncker & Humbolt. 17a (4): 368–387.
- Wallich N. 1820. Descriptions of some rare Indian plants. Asiatic Researches 13: 396–415.
- Wang W-T (王文采). 1998. Notulae de Ranunculaceis Sinensibus (XXII). Acta Phytotaxonomica Sinica (植物分类学报) 36: 150–172.
- Wang W-T (王文采). 2000. Notes on the genus *Clematis* (Ranunculaceae) (II). Acta Phytotaxonomica Sinica (植物分类学报) 38: 401–429.
- Wang W-T (王文采). 2003. A revision of *Clematis* sect. *Clematis* (Ranunculaceae). Acta Phytotaxonomica Sinica (植物分类学报) 41: 1–62, 97–172.
- Wang W-T (王文采), Li L-Q (李良千). 2005. A new system of classification of the genus *Clematis* (Ranunculaceae). Acta Phytotaxonomica Sinica (植物分类学报) 43: 431–488.

铁线莲属菝葜叶铁线莲组修订

王文采

(系统与进化植物学国家重点实验室, 中国科学院植物研究所 北京 100093)

摘要 对毛茛科Ranunculaceae铁线莲属*Clematis*的菝葜叶铁线莲组sect. *Naraveliopsis*进行了全面修订, 确定此组共含21种1亚种和1变种; 写出此组的分类学简史和地理分布, 并讨论了此组在铁线莲属中的系统位置; 将此组划分为3亚组, 写出分亚组、分种检索表, 以及各种植物的形态描述、地理分布、生长环境等, 并附有多数种的墨线图。根据对此组植物形态特征的分析, 观察到以下重要演化趋势: (1)叶从单叶演变到二回羽状复叶或二回三出复叶; (2)花从两性到单性, 从无退化雄蕊到有退化雄蕊; (3)雄蕊从无毛到有毛; (4)药隔突起从短(0.5–0.7 mm)到长(8.5–10 mm)。根据上述演化趋势, 花两性、雄蕊被毛、退化雄蕊存在的荔波铁线莲亚组subsect. *Liboenses*(1种, 特产贵州荔波)和花由两性变为单性的亚组subsect. *Macgregoriana*(2种, 特产菲律宾)被认为是菝葜叶铁线莲组的进化群。在原始的菝葜叶铁线莲亚组subsect. *Smilacifoliae*(花两性, 雄蕊无毛; 18种, 广布亚洲热带地区)中, 具单叶, 花无退化雄蕊, 药隔突起较短的菝葜叶铁线莲*C. smilacifolia*和滇南铁线莲*C. fulvicoma*被认为是较原始的种, 而具三出复叶和退化雄蕊的*C. vietnamensis*和丝铁线莲*C. loureiriana*, 以及具羽状复叶和长药隔突起(长达10 mm)的*C. papillosa*等3种则被认为是此亚组的进化种。自中南半岛北部山地向西经云贵高原南部至喜马拉雅东部山区集中分布有菝葜叶铁线莲组的13种植物, 这一山区地带被认为是此组的分布中心。在此山区地带中, 菝葜叶铁线莲的分布区和滇南铁线莲的分布区重叠部分的山区可能是此组的起源中心。

关键词 铁线莲属; 菝葜叶铁线莲组; 分类学修订