A revision of *Clematis* sect. *Aspidanthera* s.l.

Ranunculaceae§ Continued

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Leaves ternate rarely simple pinnate or bipinnate. Flowering homotinous branches arising alone from axillary buds of old branch. Inflorescences arising from leaf axils of homotinous branch. Sepals 4 — 5 valvate oblong to linear outside on margin velutinous. Stamens slightly or two to three times shorter than sepals anthers oblong or narrowly oblong rarely linear § *C. aristata* connectives at apex projected. Staminodes 2 — 18.

Sixteen species in three series distributed in Australia§ S & E Indonesia§ Fiji§ New Caledonia§ Papua New Guinea§ Solomon Islands§ and Timor Island.

**Key to species and varieties**

1. Connective projections usually globose-conic 0.1 — 0.2 — 0.3 mm long.
2. Leaves simple ................................................................. 44. *C. dubia*
3. Leaves pinnate in *C. clemensis* sometimes simple.
4. Branches and abaxial surfaces of leaflets brownish-velutinous ............... 48. *C. archboldiana*
5. Branches and abaxial surfaces of leaflets usually glabrous or subglabrous rarely puberulous or densely puberulous.
6. Sepals outside glabrous only on nodes sparsely puberulous elsewhere glabrous.
7. Leaflets coriaceous connective projections 0.1 mm long ............... 49. *C. novacaledoniensis*

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Received 17 June 2003

Supported by the National Natural Science Foundation of China§ Grant Nos. 30070059§ 39570051 and the Special Project for Taxonomic and Floristic Researches from the Chinese Academy of Sciences§ 4 23 — 15 2004§

Acta Phytotaxonomica Sinica
7. Leaflets papery connective projections up to 0.2 mm long ............... 50. C. pickeringii
1. Connective projections thinly columnar or subulate 0.3 – 0.5 – 4.5 mm long.
8. Woody vines.
9. Leaves ternate.
10. Leaflets abaxially strongly reticulate coriaceous or thickly coriaceous.
11. Branches subglabrous leaflets coriaceous abaxially glabrous sepals 9 – 15 mm long stamens 5.5 – 7.5 mm long ................................................................. 52. C. phanerophlebia
11. Branches densely puberulous leaflets thickly coriaceous abaxially densely puberulous sepals shorter 6 – 8.5 mm long stamens shorter 2 – 4 mm long .................................. 53. C. sclerophylla
10. Leaflets abaxially not strongly reticulate mostly papery sometimes coriaceous.
12. Branches densely brownish-puberulous ovary glabrous .................................. 55. C. stenanthera
12. Branches glabrous subglabrous or sparsely white-puberulous ovary hairy.
13. Connective projections 0.15 – 0.5 mm long ........................................ 51. C. glycinoides
14. Leaflets margin entire undivided.
15. Leaflets ovate or broadly lanceolate ........................................ 51a. var. glycinoides
15. Leaflets orbicular-ovate ........................................ 51b. var. floribunda
14. Leaflets margin denticulate.
16. Leaflets ovate undivided ........................................ 51c. var. dentata
16. Leaflets linear-lanceolate or lanceolate 3-lobed or undivided ....... 51d. var. longifoliola
13. Connective projections longer 1 – 4.5 mm long in C. tenuimarginata the stamens are unknown and its staminodes are known having connective projections 1 mm long in C. aristata var. occidentalis the connective projections are sometimes less than 1 mm long.
17. Sepals slightly longer than stamens species occurring in E Indonesia Papua New Guinea and Solomon Islands.
18. Peduncles of pistillate cymes 3 – 9 cm long staminodes ca. 8 mm long with connective projections 1 mm long .................................................. 54. C. tenuimarginata
18. Peduncles of pistillate cymes up to 21 cm long staminodes longer 10 – 12 mm long with connective projections 2.5 – 3 mm long ................................. 56. C. papuasica
17. Sepals two or more than two times longer than stamens species endemic to Australia.............. ................................................................. 57. C. aristata
19. Anthers 2 – 3.5 mm long.
20. Leaflets margin dentate or denticulate.
21. Leaflets coriaceous ovate or narrowly ovate dentate anthers narrowly oblong or linear ........................................ 57a. var. aristata
21. Leaflets chartaceous lanceolate or narrowly triangular denticulate anthers narrowly oblong ........................................ 57c. var. browniana
20. Leaflets margin entire in var. occidentalis occasionally sparsely denticate chartaceous.
22. Leaflets at apex acute glabrous anthers linear connective projections 2 mm long ....... ................................................................. 57b. var. integrifolia
22. Leaflets at apex attenuate abaxially below puberulous anthers narrowly oblong or linear connective projections smaller 0.4 – 1.2 mm long ........... 57d. var. occidentalis
19. Anthers smaller 1 – 1.5 mm long oblong or narrowly oblong connective projections 3 – 3.5 mm long ........................................ 57e. var. longiseta
9. Leaves pinnate 5-foliolate sometimes ternate or binate .................................. 58. C. clitorioides
8. Low suffrutescent plants with erect or procumbent stems ................................ 59. C. gentianoides
23. Leaves simple.
24. Stem erect ........................................ 59a. var. gentianoides
24. Stem procumbent ........................................ 59b. var. procumbens
23. Leaves mostly ternate upper ones simple ......................................... 59c. var. tasmanica

Woody vines. Leaves ternate rarely simple. Sepals 4. Connective projection globose-conic 0.1 – 0.2 mm long rarely with a very short apiculum.

Seven species distributed in Norfolk Island and the northern part of Australia S & E Indonesia Fiji New Caledonia Papua New Guinea Solomon Islands and Timor Island.


Fig. 21 F I

Woody vine. Branches slender suberete shallowly 8 – 12-sulcate only on nodes sparsely appressed-puberulous elsewhere glabrous. Leaves simple leaf blades papery broadly or orbicular-ovate or ovate 2.8 – 8 × 2.8 – 5.8 cm apex slightly obtuse emarginate or retuse base cordate subcordate or rounded margin entire on both surfaces glabrous basal veins abaxially slightly or nearly flat petioles 2 – 7.5 cm long glabrous. Stamine cymes axillary and terminal 3 – many-flowered peduncles 1 – 2.5 cm long glabrous bracts narrowly triangular ca. 1.5 mm long. Stamine flower ca. 1 cm in diam. pedicel 5 – 8 mm long tuberulous sepals 4 linear 5.5 – 7.5 × 1 – 1.2 mm apex acute inside glabrous outside sparsely puberulous margin velutinous stamens 3 – 7 mm long glabrous anthers oblong 0.8 – 1.1 mm long connective projections globose-conic ca. 0.2 mm long. Pistillate cymes axillary and terminal 7 – many-flowered peduncles 3.8 – 5.5 cm long bracts petiolar foliaceous 0.5 – 3.5 cm long. Pistillate flower ca. 1.8 cm in diam. pedicel 5 – 10 mm long sepals 4 linear ca. 9 × 1 mm inside glabrous outside sparsely puberulous margin velutinous staminodes ca. 8 ca. 9 mm long ovaries puberulous styles ca. 9 mm long densely villous. Achenes compressed broadly lanceolate or long elliptic ca. 4.5 × 1.5 mm puberulous narrowly rimmed persistent styles 3.5 – 6.5 cm long plumose. Fl. May.

Australi Norfolk Island. On slopes or on mountain top.

Additional specimens examined.

Australia Norfolk Island Mt. Batutrack Christian s. n. K Briddle Track Ralston 17 GH Mt. Pitt Uhe 117 K between Mt. Pitt and Mt. Butes Ralston 16 GH.


Fig. 22 D I

Woody vine. Branches slender shallowly 6 – 8-sulcate only on nodes sparsely puberulous elsewhere glabrous. Leaves ternate leaflets thickly coriaceous oblong-elliptic lanceolate-oblong lanceolate or narrowly ovate 3 – 7.5 × 1.3 – 3.7 cm apex acuminate to attenuate base obtuse broadly cuneate or rounded margin usually near apex few-denticulate on both surfaces only near base very sparsely pilose or glabrous adaxially reticulate abaxially strongly reticulate basal veins abaxially strongly prominent petioles 3 – 6.3 cm long glabrous or sparsely puberulous. Stamine
cymes axillary, 3–4-flowered peduncles 4–10 cm long, puberulous bracts subulate, ca. 1.8 mm long. Stamine flower ca. 3 cm in diam. pedicel 1.3–2.4 cm long, densely puberulous sepals 4 white narrowly oblong, ca. 15 × 5 mm apex slightly obtuse inside glabrous outside sparsely puberulous margin velutinous, stamens 4–10 mm long, glabrous anthers narrowly oblong, 1.2–1.5 mm long, apex minutely apiculate or obtuse. Pistillate cymes axillary, 3-flowered peduncles ca. 5.5 cm long, with pedicels densely puberulous bracts subulate, 4 mm long. Pistillate flower 4–5 cm in diam. pedicel 2.7–3 cm long, sepals 4 white tinged with pink lanceolate-linear, 2.2–2.8 cm × 5 mm apex attenuate inside glabrous, outside sparsely puberulous margin velutinous staminodes ca. 2, 10–11 mm long ovaries densely puberulous styles 10–11 mm long densely villous. Fl. Aug. – Apr.

Papua New Guinea. In forests or along edges of mossy forests 1600–2100 m.

In the genus Clematis only two species, C. cruttwellii and C. sclerophylla see below both endemic in the rain forests of Papua New Guinea have the thickest leaflets which are thickly coriaceous in texture and abaxially strongly reticulate. In ser. Pickeringianae C. cruttwellii is characterized by its thickest leaflets as just mentioned on the one hand and by its anther connective at apex projected into a very short apiculum scarcely 0.1 mm long on the other hand.


Fig. 22 J–L.

Woody vine. Branches nearly terete, shallowly 8–10-sulcate, puberulous. Leaves terete, leaflets thickly papery, ovate, 1.5–3.7 × 0.8–2.6 cm apex slightly obtuse, base subcordate truncate or rounded margin entire, adaxially appressed-puberulous, abaxially densely appressed-puberulous basal veins on both surfaces flat petioles 3–5 cm long, puberulous. Stamine cymes axillary, 7–many-flowered, often panicle-like peduncles 4–10 cm long, puberulous bracts petiolate, leaflet-like, 1.5–2 cm long. Stamine flower ca. 1.6 cm in diam. pedicel 9–20 mm long, with cyme rachis densely puberulous sepals 4 white linear-lanceolate, 8–9 × 2–2.5 mm apex attenuate inside glabrous, outside densely puberulous margin velutinous stamens 2.8–4.5 mm long, glabrous, anthers narrowly oblong, 1–1.2 mm long, connective projections obtusely and broadly conic ca. 0.2 mm long. Fl. Nov.

Papua New Guinea. Scrambling over bushes near stream 1200 m.


Woody vine. Branches terete, shallowly 14–16-sulcate, glabrous. Leaves terete, sometimes simple, leaflets chartaceous, ovate, 6.5–12 × 3.7–8 cm apex acuminate or acute, base rounded or abruptly contracted and decurrent, margin entire, seldom 1-dentate, on both surfaces glabrous or adaxially near base sparsely puberulous basal veins abaxially prominent or slightly prominent petioles 3.5–12 cm long. Stamine cymes axillary and terminal, many-flowered, panicle-like peduncles 0.2–2 cm long, glabrescent, bracts small, triangular. Stamine flower ca. 2 cm in diam. pedicel 8–16 mm long, puberulous sepals 4 white lanceolate-oblong, 8–13 × 2–4.2 mm apex acute inside glabrous outside also glabrous, margin velutinous stamens 4.5–10 mm long, glabrous, anthers oblong, 1–1.5 mm long, connective projections nearly globose ca. 0.1 mm long. Pistillate cymes similar to stamine ones. Pistillate flower also similar to stamine flower sepals lanceolate or narrowly ovate, 10–12 × 2–5 mm staminodes ca. 18 ca. 7 mm long.
ovaries puberulous, styles 4 – 6 mm long, densely villous. Achenes compressed, oblong, ca. 3 x 1 mm, densely puberulous, narrowly rimmed, persistent styles 3 – 4 cm long, plumose. Fl. Apr. – Sept.

Papua New Guinea. In forests or along forest edges 100 – 1300 m.

Additional specimens examined.


Wooly vine. Branches terete, shallowly 10-sulcate with petioles, peduncles and pedicels brown-velutinous. Leaves ternate, upper ones often simple, leaflets coriaceous, elliptic-ovate, elliptic or ovate, 2.5 – 6 x 1.2 – 3.7 cm, apex obtuse, base rounded, margin entire, adaxially more or less densely brownish-puberulous, glabrescent, abaxially densely brownish-velutinous, triplinerved midrib abaxially prominent, petioles 1.5 – 5 cm long. Stamine cymes and flowers unknown. Pistillate cymes axillary and terminal, 2 arising from a leaf axil: 5 – many-flowered, panicle-like, peduncles ca. 1 cm long, bracts linear, ca. 4 mm long. Pistillate flower ca. 1 cm in diam.: pedicel 0.5 – 1.2 mm long, sepals 4 lanceolate, ca. 5 x 2 mm, apex slightly acute, inside glabrous, outside brownish-velutinous, staminodes ca. 5 mm long, glabrous, sterile anthers ca. 0.5 mm long, connective projections subglobose 0.25 – 0.3 mm long, carpels ca. 25. Achenes compressed, subfusiform, ca. 2 – 2.5 x 1 mm, puberulous, persistent styles 1.5 – 2.3 cm long, brownish-plumose. Fl. Nov.

Indonesia: Irian Jaya. In rain forests, 2000 m.


Fig. 22 A – C

Wooly vine. Branches terete, shallowly 8 – 12-sulcate, glabrous or only on nodes sparsely puberulous. Leaves ternate, leaflets coriaceous, cordate or ovate, 3 – 7 x 2.8 – 5 cm, apex acute or acuminate, base cordate or subcordate, margin entire and slightly thickened, on both surfaces glabrous or abaxially near base with a few short hairs and glabrescent, basal veins abaxially slightly prominent or nearly flat, veinlets inconspicuous, petioles 2 – 6 cm long. Stamine cymes axillary and terminal, many-flowered, panicle-like, peduncles 2 – 6.5 cm long, sparsely puberulous, bracts petiolate, leaflet-like. Stamine flower 1.2 – 1.5 cm in diam.: pedicel 5 – 15 mm long, densely puberulous, sepals 4 white, narrowly lanceolate-oblong, 6 – 7 x 1.2 – 1.8 mm, apex acute, inside glabrous, outside puberulous, margin velutinous, stamens 2 – 6 mm long, glabrous, anthers narrowly oblanceolate 0.8 – 1 mm long, connective projections globose-conic, ca. 0.1 mm long. Pistillate cymes similar to stamine ones. Achenes dark red, compressed, lanceolate-oblong.
4 – 4. 5 × 2 – 2. 2 mm puberulous longitudinally 2-veined persistent styles ca. 4 cm long plumose. Fl. Mar. – Sept.

New Caledonia. In thickets or bushes 400 – 800 m.

Additional specimen examined.


Fig. 21® A – H® see p. 100®

Woody vine. Branches terete® shallowly 10 – 14-sulcate® subglabrous. Leaves ternate® leaflets papery ovate® orbicular-ovate® or ovate-elliptic® 3.5 – 10 × 2.4 – 10 cm® apex acute® obtuse® or acuminate® rarely emarginate® base rounded® subtruncate® or subcordate® margin entire® on both surfaces sparsely puberulous or glabrous® basal veins abaxially slightly prominent® petioles 5 – 11 cm long. Staminate panicle axillary and terminal® large® many-flowered® peduncles robust® bracts foliaceous or leaf-like. Staminate flower 1.2 – 2 cm in diam.® pedicel 8 – 20 mm long® densely puberulous® sepals 4® white® narrowly oblong-lanceolate or narrowly oblanceolate® 6 – 10 × 1.1 – 3 mm® inside glabrous® outside sparsely puberulous® margin velutinous® stamens 2 – 7 mm long® glabrous® anthers oblong® 0.8 – 1.5 mm long® connective projections subglobose or conic® 0.1 – 0.2 mm long. Pistillate panicles smaller than staminate ones® 9 – many-flowered. Pistillate flower 1.5 – 3 cm in diam.® pedicel 1.6 – 3.6 cm long® puberulous® sepals 4® white® narrowly oblong-lanceolate® 7 – 15 × 1.5 – 3 mm® inside glabrous® outside sparsely puberulous® margin velutinous® staminodes 8 – 16® 6.5 – 10 mm long® ovaries densely puberulous® styles 6 – 9 mm long® densely villous. Achenes compressed® narrowly lanceolate or fusiform® sometimes slightly arcuate® 4 – 8® 0.5 – 0.8 × 1.2 – 1.5 mm® puberulous® rarely glabrous® on each side longitudinally 3-costate® persistent styles 3.5 – 6 cm long® plumose. Fl. Mar. – Aug.

NW & NE Australia® Fiji® Indonesia® E Java® Bali® Lombok® Sumba® Flores® S Celebes® Buru® Ceram®® New Caledonia® SE Papua New Guinea® Solomon Islands® and Timor Island. From coast to montane regions® in forests or bushes® 20 – 1000 m.

Additional specimens examined.

Australia. Queensland® Dalrymple Heights® Clemens® s. n.® G® S® US® Atherton
Tableland Schodde 3291 GH. Without precise locality Dietrich s. n. US Statter s. n. BM.


Papua New Guinea. Kanosa Carr 11485 BM K Kirikirikoma Cruttwell 1153 K Menapi Cruttwell 991 1154 1155 1156 K Tarara Brass 8424 BM.

Timor Island. Without precise locality Teysmann K US.


Woody vine. Leaves ternate rarely pinnate or biternate. Sepals 4. Connective projections thinly columnar clavate or subulate 0.3 – 4.5 mm long.

Eight species widespread in Australia E Indonesia Papua New Guinea and Solomon Islands.


C. stenosepala DC. Syst. 147. 1818 et Prodr. 5 1824. Type Australia. Port Jackson R. Brown s. n. holotype G isotype BM.

C. stenopetala R. Br. ex DC. 11 cc. pro syn.

This species consists of four varieties distributed in E Australia with one variety extending to New Caledonia.

51a var. glycinoides Fig. 23 C D

Woody vine. Branches shallowly 8 – 12-sulcate only on nodes puberulous elsewhere glabrous rarely sparsely puberulous. Leaves ternate leaflets papery ovate narrowly ovate or broadly lanceolate 3 – 10 x 1.5 – 5 cm apex acute base rounded or subcordate margin entire on both surfaces glabrous rarely very sparsely puberulous basal veins flat or slightly prominent petioles 4 – 9 cm long. Stamine cymes axillary and terminal 9 – many-flowered usually paniculate peduncles 2 – 8 cm long bracts small linear or foliaceous. Stamine flower 1 – 2 3.8 cm in diam. pedicel 3 – 13 19 mm long densely puberulous sepals 4 white narrowly oblong 6 – 10 18 x 1.2 – 2.8 4 mm apex acute or obtuse inside glabrous outside puberulous margin subvelutinous stamens 3 – 9 mm long glabrous anthers oblong or narrow oblong 1 – 2 mm long connective projections subterete 0.15 – 0.5 mm long. Pistillate cymes
similar to staminate ones. Pistillate flower 6 - 4 cm in diam. pedicel 6 - 1 cm - 20 mm long usually densely puberulous sepal 4 narrowly oblong 10 - 1 cm - 24 - 17 cm x 2 - 2.5 - 3.8 mm inside glabrous outside puberulous margin subvelutinous staminodes 7 - 12 - 6 - 10 mm long ovaries puberulous styles 7 - 9 mm long densely villous. Achenes compressed ovate ca. 2.5 x 1.2 mm puberulous persistent styles 3 - 4 cm long plumose. Fl. Aug. - Dec.

Australia. New South Wales Queensland Victoria. In forests or along forest edges 400 - 1000 m.

Additional specimens examined.


51b. var. floribunda Domin in Bibl. Bot. 89 663. 1925. Type Australia. Queensland banks of the Brisbane River 1824-10 Cunningham s. n. holotype K.

C. glycinoides auct. non DC. Guiller Fl. Nouv.-Caledon. 118. 1948.
Leaflets orbicular-ovate margin entire.
E Australia and New Caledonia.

Additional specimens examined.

Australia. Lord Howe Island in the east of Australia Gillvray 72 K.

New Caledonia. Dumbea Valley Mackee 2586 K P US.

51c. var. dentata Domin in Bibl. Bot. 89 663. 1925. Type Australia. Port Jackson 1802-05 R. Brown 4857 lectotype K designated here Cote orientale 1844 - 1846 M. Verraux. s. n. syntypes K US.

Fig. 23 H Leaflets ovate margin sparsely denticulate.

Australia E New South Wales.

51d. var. longifoliosa W. T. Wang var. nov. Type Australia. New South Wales south bank of Nepean River near Douglas Park fl. cream white 1977-09-21 Haegi 1448 holotype here designated K.

Fig. 23 E - G

A var. glycinoides differt foliolis linear-lanceolatis vel lanceolatis margin sparse denticulatis vel dentatis indivisis vel saepe supra basis 3-lobatis lobis lateralibus multo brevioribus quam lobo mediano.

Leaflets linear-lanceolate or lanceolate margin sparsely denticulate or dentate above base often 3-lobed lateral lobes much shorter than central lobe or undivided.

Australia E New South Wales. In bushes or forests by river.


Fig. 24 L N

Woody vine more or less turning black when drying. Branches shallowly 8 10-sulcate subglabrous. Leaves tinate upper ones sometimes simple leaflets coriaceous elliptic-ovate oblong or ovate 4 10 14 1 8 5 7 cm apex acuminate base rounded subtruncate or broadly cuneate margin entire rarely 2 5-dentate per side adaxially on basal veins sparsely pilose glabrescent reticulate abaxially glabrous strongly reticulate petioles 2 1 16 cm long. Stamine panicles axillary ca. 30 cm long many-flowered peduncles ca. 5 cm long bracts subulate ca. 4 mm long Stamine flower 1 2 1 4 cm in diam pedicel 5 11 mm densely puberulous sepals 4 white narrowly oblong 6 8 5 1 2 2 mm apertuse inside glabrous outside puberulous on margin velutinous stamens 5 5 7 mm long glabrous anthers narrowly oblong or oblong 0.75 1.5 2 mm long connective projections 0.3 0.5 mm long. Pistillate panicles smaller than stamine ones 12 20 cm long peduncles 2.5 5.6 cm long bracts subulate ca. 4 mm long or ovate up to 4 cm long. Pistillate flower 1 1.4 cm in diam pedicel 7 18 mm long sepals 4 white linear-lanceolate 9 15 1.4 3 mm inside glabrous outside puberulous margin velutinous staminodes ca. 4 6 7 mm long ovaries puberulous styles 5 6 mm long densely villous. Achenes compressed subfusiform 2 3 0.8 1.2 mm densely puberulous persistent styles 2.2 3.2 cm long plumose. Fl. Jul. Oct.

E Indonisia Irian Jaya and Papua New Guinea. In forests or bushes 600 2500 m. Additional specimens examined.

Indonisia. Irian Jaya Kurime Milliken 1556 K.


Fig. 24 A F

Woody vine. Branches nearly terete shallowly 10 12-sulcate usually densely puberulous. Leaves tinate leaflets thickly coriaceous elliptic-ovate or broadly ovate rarely long elliptic or narrowly ovate 5 9.5 2.5 6 cm apex acuminate rarely long acuminate base rounded margin entire adaxially at first densely appressed-puberulous afterwards glabrescent abaxially
densely puberulous and reticulate basal veins abaxially strongly prominent petioles 3 – 8 cm long.

Axillary staminate panicles up to 30 cm long many-flowered peduncles ca. 7 cm long with rachis and pedicels yellowish-velutinous bracts subulate ca. 8 mm long. Staminate flower ca. 8 mm in diam. pedicel 2 – 4 mm long sepals 4 white narrowly oblong or obovate-oblong 3.5 – 4.8 x 1 – 1.8 mm apex truncate sometimes emarginate inside glabrous 3-veined outside densely puberulous margin velutinous stamens 2 – 4 mm long glabrous anthers oblong-elliptic 0.8 – 1 mm long connective projections shortly subulate ca. 0.5 mm long. Pistillate panicles similar to staminate ones. Pistillate flower 1.2 – 1.6 cm in diam. pedicel 3 – 12 mm long sepals 4 white narrowly oblong or linear 6 – 8.5 x 1 – 2 mm apex obtuse inside glabrous 3-veined outside puberulous margin velutinous staminodes ca. 3 6.5 – 10 mm long ovaries puberulous styles 4 – 6 mm long densely villous. Achenes compressed narrowly elliptic or narrowly rhombic-ovate 2.2 – 2.8 x 1 – 1.2 mm puberulous persistent styles 2 – 4.5 cm long plumose. Fl. Sept. – Mar.

Indonesia Irian Jaya and Papua New Guinea. In forests or by river 10 – 810 m.

Additional specimen examined.

Papua New Guinea. Morobe Clemens 1098 G.


Woody vine. Branches shallowly ca. 10-sulcate very sparsely puberulous or glabrous. Leaves ternate leaflets papery to coriaceous oblong or oblong-ovate 8 – 13.5 x 3 – 5.7 cm apex acuminate or long acuminate base broadly cuneate or rounded margin entire on both surfaces glabrous or abaxially sparsely appressed-puberulous basal veins abaxially slightly prominent petioles 7 – 11.5 cm long. Staminate panicles and flowers unknown. Pistillate panicles axillary many-flowered peduncles 3 – 9 cm long puberulous bracts triangular ca. 4 mm long. Pistillate flower ca. 2 cm in diam. pedicel 1 – 2 cm long densely brownish-puberulous sepals 4 white narrowly oblong or linear-lanceolate 10 – 12 x 1.5 – 3 mm apex slightly acute inside glabrous outside brownish-puberulous margin velutinous staminodes 6 – 8 ca. 8 mm long sterile anthers 0.5 – 0.7 mm long connective projections thinly clavate ca. 1 mm long ovaries densely puberulous styles ca. 6 mm long densely brownish-villous. Achenes slightly compressed narrowly ellipsoid 4 – 4.5 x 1.5 – 1.7 mm puberulous narrowly rimmed persistent styles 5.5 – 6 cm long plumose. Fl. Oct. – Nov.

E Indonesia.


Woody vine often turning blackish when drying. Branches shallowly 10-sulcate on nodes densely brownish-puberulous elsewhere sparsely puberulous or glabrescent. Leaves ternate leaflets papery ovate broadly ovate or elliptic 7 – 12.5 x 4 – 6.5 cm apex acute or acuminate base rounded broadly cuneate or cuneate margin entire adaxially below on basal veins sparsely puberulous abaxially glabrous basal veins abaxially prominent petioles 4.5 – 8 cm long. Stamine
panicles solitary or paired; axillary; many-flowered; peduncles 1.5–3.5 cm long; bracts triangular; 2–3 mm long. Stamine flower ca. 1 cm in diam. pedicel 10–20 mm long; densely brownish-puberulous sepals 4; lanceolate-oblong; 10 × 2–2.5 mm; apex obtuse; inside glabrous; outside puberulous; margin velutinous; stamens 4–6.7 mm long; glabrous; anthers oblong ca. 1.7 mm long; connective projections thinly clavate ca. 1.7 mm long. Pistillate panicles similar to stamine ones. Pistillate flower also similar to stamine flower; staminodes 12–14; 8–8.5 mm long; ovaries glabrous; styles 4.5–5 mm long; densely villous. Fl. Feb.–Mar.

E Indonesia.


Fig. 24 G–K

Woody vine. Branches shallowly 10–12-sulcate; puberulous; glabrescent. Leaves ternate; leaflets papery; elliptic; ovate or narrowly ovate; 5–9–17 cm; 2.5–4–8–15 cm; 19 mm; apex acuminate or acute; base rounded; subcordate or broadly cuneate; margin entire or both surfaces glabrous or subglabrous; or abaxially on midrib with sparse short hairs; basal veins abaxially prominent; petiole 4–5–1–8–15 cm long. Stamine panicles axillary; large; many-flowered; peduncles 3.4–8.5 cm long; puberulous; bracts subulate-linear; ca. 10 mm long. Staminate flower 1.5–2 cm in diam. pedicel 8–15–25 mm long; densely puberulous sepals 4; white; narrowly oblong or lanceolate-oblong; 7–9–10–12–2–3 mm; apex obtuse; inside glabrous; outside puberulous; margin velutinous; stamens 5–6–7 mm long; glabrous; anthers oblong or narrowly oblong; 1–1.5 mm long; connective projections subulate; 1.3–2.5–4.5 mm long. Pistillate panicles similar to stamine ones; peduncles up to 21 cm long. Pistillate flower similar to stamine flower; staminodes 6–8; 10–12 mm long; ovaries densely puberulous; styles 6–7 mm long; densely villous. Achenes compressed; narrowly ovate or broadly lanceolate; 4–5 × 1.6–2 mm; puberulous; timidly rimmed; persistent styles 4–6–8 mm long; plunose. Fl. Jan.–Aug.

E Indonesia; Papua New Guinea and Solomon Islands. In forests or bushes or by river 5–2000 m.

Additional specimens examined.

Indonesia. Irian Jaya Mt. Cycloon; Royen & Sleumer 657; K; Talaud Island; Lam 2540 K.

Papua New Guinea. Gulf District; Schodde 4231 K; Morobe; Henty 11678; Milar 18900; Milar & Henty 14409; Rau 171 K; Northern District; Milar 23501; 23516; K; Milne Bay District; Leack 56022 K. Solomon Islands. Malaita Island; Kajewski 239 K.


This species consists of ca. 5 varieties occurring in mainland Australia with one variety extending to Tasmania.

57a. var. *aristata* Fig. 25[16] A[17] B


Additional specimens examined.


Type Australia. New South Wales Illawara Backhouse s. n. holotype K.

This variety differs from var. *aristata* in its entire or subentire leaflets. Leaflets chartaceous narrowly ovate apex acute glabrous. Anthers linear ca. 3 mm long connective projections ca. 2 mm long.

Australia SE New South Wales.

Additional specimens examined.

**Australia. New South Wales** Port Jackson Callany s. n. K Blue Mountains Cunningham 6. K.


Type Australia. Without precise locality. R. Brown 4851 lectotype K designated here isolectotype BM New South Wales MacArthur 56 syntype K Backhouse s. n. syntype K.

This variety differs from var. *aristata* in its lanceolate or narrowly triangular leaflets.

Leaflets chartaceous apex attenuate margin denticulate glabrous or abaxially below sparsely puberulous. Anthers narrowly oblong 3 – 3.2 mm long connective projections nearly as long as anthers 2.5 – 3 mm long. Fl. Dec.

Australia E New South Wales. In forests.

Additional specimens examined.

**Australia.** Canberra Hartley et al. 13544 13548 K Capital Terretray Cudgenby Yapp 16 GH Nowra Rodway 53 K.


*C. elliptica* Endl. in Hügel 1 c. Type unknown.


*C. cognata* Steud. in 1. c. 263. Type Middletownbay 1830-09 Preiss 1846 isotype G.

*C. discolor* Steud. in 1. c. 262. Type Halfwayhouse 1839-09 Preiss 1344 holotype.


Fig. 25 C D

This variety differs from var. *aristata* in its usually densely puberulous branches and peduncles usually entire leaflets and shorter connective projections which are 0.4 – 1 – 1.2 mm long.

Leaflets chartaceous lanceolate or narrowly ovate apex attenuate margin entire rarely sparsely denticulate abaxially near base sparsely puberulous glabrous. Anthers narrowly oblong or linear 2 – 3.5 mm long connective projections 2 – 3 times shorter than anthers 0.4 – 1.2 mm long.

Australia Western Australia.
Fig. 25.  A B □ Clematis aristata R. Br. ex Ker Gawler var. aristata.  A □ stamineate flowering branch B □ stamens from Schodde 5100[].  C D □ C. aristata var. occidentalis Benth.  C □ stamineate flowering branch D □ stamens from Morrison s. n[].  E G □ C. citorhoides DC.  E □ stamineate flowering branch F □ stamineate cyme G □ stamens from Anonymous 146[].
Additional specimens examined.


This variety differs from var. **aristata** in its long acuminate leaflets and in shorter anthers 1 — 1.5 mm long© 2 — 3 times shorter than connective projections.

Leaflets narrowly ovate© margin denticulate© glabrous. Sepals 10 x 2.6 © 3.5 mm. Anthers oblong or narrowly oblong© connective projections 3 — 3.5 mm long.

**Australis** Queensland©.


C. **clitoroides** DC.© var. **decipiens** Domin in l. c. © M. Johnson© l. c. 499. Type© Australia©. Tasmania© Holanton© J. D. Hooker 121© syntype© K©.


C. **arista** auct. non R. Br. ex Ker Gawler© Walsh in Walsh & Entwisle© Fl. Victoria 3© 38. 1996.

Fig. 25© E — G

Woodly vine. Branches terete© very shallowly sulcate© on nodes sparsely puberulous© elsewhere glabrous. Leaves pinnate© 5-foliolate© sometimes biteminate or ternate© leaflets coriaceous or chartaceous© variable in shape and size© lanceolate© narrowly ovate© or ovate© sometimes lanceolate-linear© 1 — 6.4 x 0.6 — 2.8 cm© apex attenuate or acute© base broadly cuneate© rounded© or subcordate© margin entire© occasionally sparsely denticulate or dentate© on both surfaces glabrous or on midrib with a few hairs© basal veins abaxially slightly prominent© petioles 2.8 — 6 cm long. Staminate cymes axillary© 2 — 5-flowered© or flowers solitary in leaf axils© peduncles 0.6 — 2 cm long.
bracts petiolate; ternate. Stamine flower 3 – 4 cm in diam. pedicel slender 3 – 7 cm long; near apex puberulous; sepals 4; narrowly oblong or oblong-elliptic 14 – 30 x 3 – 7.5 mm; apex attenuate or acute; inside glabrous; outside with a few hairs or glabrous; margin velutinous; stamens 5 – 10 mm long; glabrous; anthers linear or narrowly oblong 2.2 – 3.6 mm long; connective projections subulate 0.8 – 1.5 mm long. Pistillate cymes axillary 2 – 6-flowered; or flowers solitary in leaf axils; peduncles 0.1 – 1.7 cm long; bracts petiolate; simple; narrowly ovate; ca. 1 cm long; or ternate. Pistillate flower 3 – 5 cm in diam. pedicel 3 – 7 cm long; sparsely puberulous; sepals 4; lanceolate-oblong or linear 12 – 28 x 3 – 6 mm; apex attenuate; inside glabrous; outside sparsely puberulous; margin velutinous; staminodes ca. 8; 10 mm long; ovars puberulous; styles ca. 7 mm long; densely villous. Achenes compressed; narrowly elliptic; ca. 4 x 1.6 mm; puberulous; narrowly rimmed; persistent styles 1.6 – 3.5 cm long; plumose. Fl. Sept. – Dec.


Additional specimens examined.


Anonymous 146 G Archer s. n. P Gunn s. n. G S 40 P J. D. Hooker s. n. UPS Milligan 22 P.

Ser. 3. Gentianoides W. T. Wang ser. nov. Type C. gentianoides DC.

Plantae suffruticosae; parvae. Caules erecti vel procumbentes. Folia simplicia vel ternata. Sepala 4 – 6. Connectivorum projectione subulate-columnares 0.5 – 0.9 mm longae.

Small suffruticose plants. Stems erect or procumbent. Leaves simple or ternate. Sepals 4 – 6. Connective projections subulate-columnar 0.5 – 0.9 mm long.

One species endemic to Tasmania.


This species consists of three varieties.

59a. var. gentianoides Fig. 23 A H see p. 107

Small suffruticose plant. Stem erect 10 – 36 cm tall; shallowly 4 – 8-sulcate glabrous or only on nodes sparsely puberulous. Leaves simple; subsessile; coriaceous; lanceolate or linear-lanceolate 4 – 7.5 x 0.5 – 1.6 cm; apex slightly acute; base attenuate; margin entire; sometimes sparsely denticulate; on both surfaces glabrous; basal veins 3; axially slightly prominent or flat; the lateral ones often inconspicuous. Flowers solitary; terminal. Stamine flower 2.5 – 7 cm in diam. pedicel 4 – 9 cm long; glabrous; sepals 4 – 5; white; often tinged with pink; oblong or oblong-lanceolate 14 – 40 x 3 – 8 mm; apex acute; inside glabrous; outside very sparsely puberulous; margin densely puberulous; stamens 4 – 15 mm long; glabrous; anthers narrowly oblong 2 – 3 mm long; connective projections 0.5 – 0.9 mm long. Pistillate flower 2.5 – 5 cm in diam. sepals 4 – 6; lanceolate-oblong or narrowly oblong 14 – 27 x 2.2 – 7 mm; apex acute; inside glabrous; outside sparsely puberulous; margin densely puberulous; staminodes ca. 8; 8 – 11 mm
long ovaries puberulous styles 9 – 11 mm long densely villous. Achenes compressed oblong-elliptic ca. 5 x 1.8 mm puberulous persistent styles ca. 3.2 cm long plumose. Fl. Nov. – Jan. Australia Tasmania. In forests 100 – 270 m. Additional specimens examined.


C. gentianoides var. **scandens** Gunn ex Kuntze in 1. c. pro syn.


Stem procumbent above ascending. Leaves petiolate mostly ternate upper ones simple leaflets oblong lanceolate or narrowly lanceolate margin dentate or entire 3-lobed or undivided. Flowers in axillary 1 – 3-flowered cymes. Sepals up to 40 x 7 mm.

Australia Tasmania.


Leaves ternate rarely simple pinnate or binate. Flowering homotinous branches arising alone from axillary buds of old branch. Sepals 4 – 8 in imbricate sometimes partly valvate C. afoliatum C. paniculatum oblong to linear rarely obovate-elliptic outside on margin not velutinous. Stamens slightly or two or more times shorter than sepals anthers oblong or narrowly oblong rarely linear C. fosteri C. australis connectives at apex not projected rarely slightly projected C. australis. Staminoides 2 – 6 – 8 – 13.

Eleven species in four series endemic to New Zealand.

**Key to species**

2. Leaflet blades strongly reduced usually wanting .......................................................... 60. C. afoliatum
3. Leaves ternate with well developed leaflet blades.
4. Bracteoles free spathulate sepal greenish or yellowish ................................................. 61. C. marata
5. Bracteoles connate at base ovate sepals brown or purplish ........................................ 62. C. quadribracteolata

2. Woody vines leaves compound sepal lanceolate–oblong or lanceolate.
5. Leaves usually once ternate leaves usually undivided rarely lobed not once to twice pinnate.

6. Sepals of staminate flower white up to 4 cm long stamens more than 50 .............. 63. *C. paniculata*

6. Sepals of staminate flower yellowish or yellow in *C. fosteri* sometimes greenish-white smaller up to 2 cm long stamens fewer than 35.

7. Pedicels of pistillate flowers densely puberulous or velutinous anthers oblong 1 mm long sepals inside glabrous.

8. Leaflets papery sepals outside puberulous anthers at apex obtuse or minutely apiculate flowers faintly scented ......................................................... 64. *C. cunninghamii*

8. Leaflets subcoriaceous sepals outside densely puberulous anthers at apex obtuse flowers very fragrant ......................................................... 65. *C. foetida*

7. Pedicels of pistillate flowers puberulous anthers linear or narrowly oblong 1.6 – 2.8 mm long sepals inside usually puberulous sometimes nearly glabrous ............................................. 66. *C. fosteri*

5. Leaves mostly biternate or ternate and the leaflets once to twice pinnate.

9. Sepals inside puberulous ovary and achene puberulous.

10. Leaves twice or once ternate leaflets usually 2 – 3-lobed anthers narrowly oblong or oblong 1.2 – 2 mm long apex obtuse ............................................. 67. *C. hookeriana*

10. Leaves ternate leaflets once to twice pinnate anthers linear or narrowly oblong 2 – 2.8 mm long apex minutely apiculate ............................................. 68. *C. australis*

9. Sepals inside glabrous ovary and achene glabrous ......................................................... 69. *C. petriei*

4. Low erect shrub leaves simple palmately 3-lobed sepals obovate-elliptic ..................... 70. *C. marmoraria*


One species.


tavan* Waitaki Valley* Hector & Buchanan 2 syntype K."


Woody vine. Branches finely shallowly ca. 16-sulcate glabrous. Leaf blade usually wanting when present then small either simple ovate entire or ternate Tamura 1995 petiole 5 – 12 cm long glabrous tendril-like. Stamine cymes axillary 1 – 3-flowered peduncles wanting bracts ovate ca. 2 mm long. Stamine flower ca. 2 cm in diam. pedicel ca. 2 cm long densely puberulous sepals 4 greenish-yellow lanceolate or oblong-lanceolate ca. 18 x 4.5 – 6.5 mm apex obtuse inside only near apex sparsely puberulous elsewhere glabrous outside densely apressed-puberulous stamens 6 – 9 mm long glabrous anthers narrowly oblong ca. 2.5 mm long apex minutely apiculate or obtuse. Pistillate cymes axillary 2 – 4-flowered peduncles wanting bracts ovate ca. 1.5 mm long. Pistillate flower ca. 1.8 cm in diam. pedicel 1.2 – 1.8 cm long densely puberulous without or rarely with a pair of bracteoles sepals 4 oblong-lanceolate ca. 15 x 4 mm inside near apex while outside on entire surface puberulous staminodes ca. 2 mm long ovaries puberulous styles 5 – 6 mm long densely villous. Achenes compressed oblong ca.
4 × 2 mm] narrowly rimm[ persistent styles ca. 2 cm long] plumose. Fl. Aug. – Nov.

In rocky and open places] or in scrub[s. Webb et al. 1988).

Additional specimens examined.


Amstr.


Two species.


Fig. 26] D – G


Specimens examined.


Fig. 26.  
A – C. * Clematis quadrirameolata* Colenso.  
A ▶ staminate flowering branch ▶ B ▶ stamen ▶ from Gardner 3146 ▶ C ▶ pistillate flowering branch ▶ from Colenso s. n. ▶.  
D – G. * C. marata* Arn.  
D ▶ staminate flowering branch ▶ E ▶ stamen ▶ from Philipson s. n. ▶ F ▶ pistillate flower ▶ G ▶ staminode ▶ from Lothian s. n. ▶.  
H – J. * C. afoliate* Buchan.  
H ▶ staminate flowering branch ▶ I ▶ stamen ▶ J ▶ pistillate flower ▶ from Kirk s. n. ▶.


Fig. 26 A – C

Woody vine. Branches slender[+a] shallowly 4 – 6-sulcate[+] glabrous or sparsely puberulous. Leaves ternate[+a] leaflets coriaceous[+] linear[+] linear-oblong[+] ovate[+] or elliptic[+] 3 – 12 × 2 – 4 mm; undivided or 2 – 3-lobed[+] on both surfaces very sparsely puberulous or glabrous[+] basal veins obscure[+] petioles 1.5 – 4.2 cm long. Stamine cymes axillar[+] 1 – 3-flowered[+] peduncles nearly absent[+] bracts triangular[+] ca. 1 mm long. Stamine flower 1.5 – 2.5 cm in diam. [Pedicel 3 – 7 mm long[+] densely puberulous[+] bracteoles opposite[+] ovate[+] 2.5 – 3 mm long[+] base connate[+] sepals 4[+] purple-brown[+] linear[+] 7 – 12 × 1.5 – 2 mm[+] apex acute[+] inside glabrous[+] outside puberulous[+] stamens 2 – 7 mm long[+] glabrous[+] anthers oblong[+] 0.8 – 1 mm long[+] apex obtuse. Pistillate cymes similar to stamine cymes[+] 1-flowered[+] Pedicilate flower 0.8 – 1 cm in diam. [Pedicel 5 – 9 mm long[+] densely puberulous[+] bracteoles similar to those of stamine flower[+] sepals 4[+] linear[+] 6.5 – 12 × 1.2 – 2 mm[+] apex acute[+] inside glabrous[+] outside densely puberulous[+] staminodes ca. 2[+] 4 – 7 mm long[+] ovaries puberulous[+] styles 5 – 8 mm long[+] densely villous. Achenes compressed[+] narrowly ovate[+] ca. 2 mm long[+] puberulous or glabrous[+] persistent styles 1.8 – 2.5 cm long[+] plume[+] Fl. Sept. – Oct.


Additional specimens examined.


Seven species.


New Zealand Fl. 1 pl. 1. 1914. Type possibly the same as that of C. integrifolia Forst. f.

C. indivisa var. lobata Hook. f. in Curtis' Bot. Mag. 74 t. 4398. 1848 van Houtte Fl. Serres 4 pl. 402. 1848 Kirk l. c. Type no type specimen designated.

C. indivisa var. decomposita Kirk et var. linearis Kirk l. c. Type no type specimen designated.

Fig. 27 H I

Woody vine. Branches stout shallowly 8 – 12-sulcate puberulous or nearly glabrous. Leaves ternate leaflets coriaceous ovate elliptic-ovate or broadly ovate 2 – 3 – 7.5 x 1.2 – 1.8 – 4 cm apex obtuse or rounded sometimes emarginate margin entire undivided or 3-lobed 3-parted and dentate on both surfaces glabrous basal veins flat or nearly flat petioles 2.4 – 5 cm long sparsely puberulous or glabrous. Stamine cymes axillary 1 – 7-flowered often paniculate peduncles wanting or short bracts ovate ca. 3 mm long sometimes foliaceous. Stamine flower 2.5 – 3.5 – 8 cm in diam. pedicel 2.5 – 6.5 cm densely puberulous sepals 5 – 8 white oblong narrowly oblong or lanceolate-oblong 12 – 28 – 40 – 50 x 6 – 20 mm apex obtuse or rounded inside glabrous outside puberulous stamens 8 – 13 mm long glabrous anthers oblong 1.5 – 2 mm long apex obtuse. Pistillate cymes 5 – 15-flowered peduncles 3 – 18 mm long or wanting bracts triangular or linear 3 – 7 mm long. Pistillate flower 2.5 – 5 cm in diam. pedicel 1 – 3.4 cm long densely puberulous sepals 5 – 7 oblong or ovate-oblong 13 – 26 x 11 mm inside glabrous outside puberulous staminodes ca. 12 7 – 9 mm long ovaries puberulous styles 7 – 9 mm long densely villous. Achenes compressed nearly fusiform ca. 4 x 2 mm puberulous persistent styles 3 – 5.2 cm long plumose. Fl. Aug. – Nov.

New Zealand widespread on North Island and South Island. In lowland forests or along forest margin Webb et al. 1988.

Specimens examined.


Fig. 27.  A B Clematis cunninghamii Turcz.  A staminate flowering branch B stamens from Cheeseman s. n. C C. fosteri Gmelin. C staminate flowering branch D stamens from Stephenson 42. E G C. foetida Raoul. E leaflet F staminate flower G stamens from Kelly s. n. H I C. paniculata Gmelin. H staminate flowering branch I stamen from Cooper s. n.

Fig. 27 A B

Woody vine. Branches slender\[ shallowly 6 – 8-sulcate\] sparsely puberulous. Leaves ternate\[ leaflets papyraceous\] ovate or narrowly ovate\[ 1 \– 5. 6. 2. \times 0. 8 – 3. 4. \times 4. 8. cm\] apex acute\[ often shortly apiculate\] base rounded\[ subcordate\] or cordate\[ margin entire\] sometimes 1 – 2-dentate\[ seldom 2-lobed\] adaxially sparsely while abaxially more or less densely puberulous\ basal veins flat\[ petioles 2 – 5. 5 cm long. Stamine cymes axillary\[ 2 – 7-flowered\] sometimes stamine flowers singularly axillary\[ peduncles 0. 15 – 3. 5 cm long\] densely puberulous\ bracts linear or foliaceous. Stamine flower 1. 4 – 2. 5 cm in diam. \[ pedicel 0. 7 – 2. 5 cm long\] densely puberulous\ sepals 5 – 7\[ yellowish\] linear-lanceolate or narrowly oblong\[ 6 – 13. 1. 2 – 3. 5 mm\] apex acute\[ inside glabrous\] outside puberulous\ stamens 2 – 9 mm long\] glabrous\ anthers elliptic-oblong\] ca. 1 mm long\] apex minutely pubescent or obtuse. Pistillate cymes axillary\[ 1 – 5-flowered\] peduncles 0. 2 – 3 cm long\] bracts linear\[ 1 – 3 cm long. Pistillate flower 1. 2 – 1. 8 – 3 cm in diam. \[ pedicel 0. 7 – 2 cm long\] densely puberulous\ sepals 6 – 7\[ greenish-yellow\] linear-lanceolate or narrowly oblong\[ 6. 5 – 10. 15 \times 1. 5 – 2. 5 mm\] inside glabrous\ outside puberulous\ staminodes 3 – 10\] 4 – 6 mm long\] ovaries puberulous\ styles 5 – 7 mm long\] densely villous. Achenes compressed\ tufted\] ca. 4 \times 1. 5 mm puberulous\ persistent styles ca. 3 cm long\] plumose. Fl. Sept. – Nov.

New Zealand North Island Auckland Gisborne. In lowland forests or along forest margins.


Specimens examined.

New Zealand. Hokinanga Berggren s. n. SUPS Little Barrier Island Mokoworth s. n. US Shakespear s. n. K Pokeneo Kirk 236 GH Wara Wara Cooper 35570 US Phangarei Cheeseman s. n. G Mt. Wellington Cheeseman s. n. GH without precise locality Cunningham 636 K J. D. Hooker 345 K s. n. S W. J. Hooker s. n. GH Kirk 131 GH US.


Fig. 27 E – G

Woody vine. Branches shallowly 10 – 12-sulcate\[ puberulous\] glabrescent. Leaves ternate\[ sometimes pinnate or biternate\] leaflets subcoriaceous\[ ovate or narrowly ovate\] 2 – 5 \times 1 – 3 cm\] apex acute or obtuse\[ base rounded or subcordate\] margin entire or sparsely denticulate or crenate\ on both surfaces when young densely when mature sparsely appressed-puberulous\] glabrescent\ basal veins abaxially nearly flat\[ petioles 3 – 6 cm long. Stamine cymes axillary\[ 2 – 7\] many-flowered\] often panicle-like\] peduncles 1 – 19 mm long\] densely puberulous\ bracts deltoide\[ 2. 5 – 3. 5 mm long. Stamine flower 1. 7 – 2. 2 cm in diam. \[ pedicel 8 – 11 mm long\] densely puberulous\ sepals 4 – 6\[ yellow\] ovate-oblong or narrowly oblong\[ 5 – 10 \times 1. 2 – 5 mm\] apex obtuse\] inside glabrous\ outside densely puberulous\ stamens 3 – 6 mm long\] glabrous\ anthers oblong\] ca. 1 mm long\] apex obtuse. Pistillate cymes axillary\[ ca. 15 – flowered\] panicle-like\] peduncle 0 – 5 mm long\] bracts sessile\] triangular\[ 2. 5 – 3. 5 mm long\] sometimes shortly petiolate\] suborbicular\[ 0. 5 – 1 cm long. Pistillate flower 1. 4 – 1. 8 cm in diam. \[ pedicel 6 – 15 mm long\]
velutinous sepals 4 – 6 ovate-oblong or ob lanceolate 7 – 11 × 2 – 5 mm apex slightly obtuse inside glabrous outside densely puberulous staminodes ca. 4 4 – 5 mm long ovaries puberulous styles 5 – 6 mm long densely villous. Achenes compressed elliptic 2 – 3 × 1 – 1.5 mm puberulous persistent styles ca. 1.8 cm long plumose. Fl. Sept. – Nov.


Additional specimens examined.

New Zealand Bay of Islands J. D. Hooker s. n. K. Canterbury Banks Peninsula Hasell 71 295 Kelly s. n. K. Peel Forest Anderson 188 K. USPF Port Hills Simpson 7722 AK K. without precise locality Philipson 10074 K. Marlborough Tibell NZ 245 UPS North Island without precise locality Kirk 236 GH USPF without precise locality 1883-09 Colenso s. n. K.


Fig. 27 C D

Woodly vine. Branches slender shallowly 6 – 10-sulcate glabrous. Leaves ternate leaflets subcoriaceous ovate or narrowly ovate 1.8 – 6 × 1.4 – 4 cm apex acute or obtuse base cordate or subcordate margin dentate or crenate sometimes entire axially glabrous abaxially on midrib sparsely pilose or nearly glabrous basal veins abaxially nearly flat petioles 3 – 6.5 cm long. Stamine cymes axillary 1 – 10-flowered peduncles 1 – 10 mm long or nearly wanting bracts triangular 1 – 3 mm long. Stamine flower 2.5 – 4 cm in diam. pedicel 1 – 3.5 cm long puberulous sepals 5 – 8 narrowly oblong or oblong 13 – 20 × 2.5 – 8 mm apex obtuse or slightly acute on both surfaces more or less densely puberulous or inside nearly glabrous stamens 5 – 9 mm long glabrous anthers narrowly oblong 1.5 – 2.8 mm long apex obtuse or with very small apicula 0.1 mm long. Pistillate cymes axillary 1 – 4 – 10-flowered peduncles 0.6 – 1 cm long bracts sublinear or narrowly triangular ca. 3 mm long. Pistillate flower ca. 1.8 cm in diam. pedicel 1.2 – 1.5 cm long puberulous sepals ca. 6 narrowly oblong or 1.1 – 2 × 3 mm inside glabrous outside sparsely puberulous staminodes ca. 4 4 5 mm long ovaries puberulous styles 5 – 6 mm long densely villous. Achenes compressed narrowly ovate ca. 4 × 0.2 mm puberulous indistinctly rimmed persistent styles ca. 2 cm long plumose. Fl. Sept. – Nov.

New Zealand North Island from 36° southwards South Island Nelson Marlborough. In lowland forests or along forest margins Allan 1961 Webb et al. 1988.

Specimens examined.

New Zealand Auckland Molesworth s. n. AK Canterbury Moore s. n. USPF.
Greymouth® Helm s. n. P® Horopito® McKenzie s. n. AK® Hunterville® Burgers s. n. K® Meramari® Kirk s. n. GH® Motuara Island® Beever 9130® AK® Ohakune® Attwood s. n. US® Pukenua Bay® MID s. n. AK® Taupo Co.® Gardner 3985® AK® Te Kuiti® Kopaki® Hynes s. n. AK® Thames District® Adams s. n. AK® Thames® Cheeseman s. n. US® Wellington® Kirk s. n. GH® Travers s. n. AK® without precise locality® Stephenson 42® C®.

Due to that “the Clematis fosteri complex is highly variable” Webb et al. 1988 reduced C. australis Kirk® C. hookeriana Allan® and C. petrii Allan into the synonymy of C. fosteri Gmelin. On the basis of his cultivation of the plants of the relevant four taxa the horticulturist Elliott 1993 did not agree to the lumping of the four taxa into one. After their intensive study of the C. fosteri complex® Heenan & Cartman® 2000® reinstated C. petrii as an independent species® and continued to reject C. hookeriana and C. australis. During the preparation of the present revision I have examined some herbarium material of this complex borrowed from several herbaria® and failed to find any intermediate form between C. fosteri and C. hookeriana or C. australis as stated by Heenan & Cartman® 2000®. At the same time® however® I found out several differential morphological characters among them® C. petrii just as Heenan & Cartman® 2000® noted® has sepals inside glabrous and glabrous ovaries and achenes® and by these characters it may be distinguished from other three taxa® C. australis is characterized by its pinnatifoliate leaflets and apiculate anthers® and by these characters may be differentiated from both C. fosteri and C. hookeriana® in which the leaflets are not pinnatifoliate and the anthers are not apiculate at apex® and C. hookeriana® in its usually binary leaves® smaller leaflets which are at apex rounded or obtuse and usually sparsely lobed® and smaller usually oblong anthers® obviously differs from C. fosteri® in which the leaves are once ternate® the leaflets are larger® apex acute® and undivided® and the anthers are larger® usually linear in outline. According to my observation on the specimens of the four taxa mentioned above® for the time being in the present revision I would like to adopt the treatment of the New Zealand Clematis made by Allan® 1961® maintaining C. hookeriana Allan® C. australis Kirk® and C. petrii Allan all as independent species® however® for the elucidation of the relationships among the four members of the C. fosteri complex further study is still needed.


C. hookeriana Allan var. lobulata Allan® 1. c.® Type® New Zealand. Port Nicholson® 1928-11-13® Allan s. n.® holotype®.


Fig. 28® A – C

Woody vines. Branches slender® shallowly 4 – 6-sulcate® glabrous. Leaves twice or once ternate® leaflets subcoriaceous or chartaceous® broadly ovate® ovate® or rhombic® 0.6 – 1.5 x 0.4 – 1.4 cm® apex rounded or obtuse® sometimes acute® base broadly cuneate or subtruncate® margin sparsely crenate® sometimes entire® 3-lobed to 3-parted® sometimes undivided® on both surfaces glabrous or abaxially below sparsely pilose® basal veins abaxially obscure® petioles 1.2 – 4 cm long. Stamine cymes axillary® 1 – 5-flowered® peduncles 1 – 17 mm long® bracts linear or leaflet-like® 2.5 – 8 mm long. Stamine flower 2 – 3 cm in diam.® pedicel 0.7 – 2.5 cm long® puberulous® sepals 5 – 6® pale yellow® lanceolate-oblong or broadly lanceolate® 11 – 16 x 3 – 6 mm® apex obtuse® on both surfaces appressed-puberulous or inside glabrous® stamens 4 – 8 mm long® glabrous® anthers oblong or narrowly oblong® 1.2 – 2 mm long® apex obtuse. Pistillate cymes axillary® 1 –
Fig. 28.  A – C  Clematis hookeriana  Allan.  A ♀ staminate flowering branch ♂ stamens ♀ achenes from Stephenson 42. D – H  C. petriei  Allan. D ♀ staminate flowering branch ♂ ♂ two stamens from Garnock-Jones & Nilsson 61. F ♂ gynoecium ♂ carpels from Melville 5052. H ♀ achenes from Petrie s. n.. 1 – 4  C. australis  Kirk. I ♀ pistillate flowering branch ♂ ♂ staminodes from Esler s. n.. K ♀ staminate flowers ♂ stamens from Kirk s. n.. M ♀  C. marmoraria  Sneddon ♂ leaf from Dodsworth s. n..
3-flowered peduncles 2–9 mm long bracts linear or leaflet-like 3–8 mm long. Pistillate flower 1.5–2.4 cm in diam. pedicel 1–4 cm long puberulous sepals 5–6 lanceolate-oblong or broadly lanceolate 8–11 × 3–4.5 mm apex obtuse on both surfaces appressed-puberulous outside on margin densely puberulous staminodes ca. 3–5 ovary puberulous style 5–7 mm long densely villous. Fl. Nov. – Jan.

New Zealand on shores of Cook Strait and Cook Strait islands.

Specimens examined.

New Zealand. North Island Port Nicholson Kirk 502 GH US Wellington Kirk s. n. AK without precise locality Stephenson 42 G.


Fig. 28 I – L

Woody vine. Branches slender shallowly 4–8 sulcate sparsely pubescent glabrescent or subglabrous. Leaves ternate leaflets subcoriaceous ovate or deltoid in outline 2–4 × 3–6 cm once or twice pinnate ultimate lobes petiolulate or sessile ovate or rhombic 0.4–2 cm long pinnatifid or pinnatilobed on both surfaces nearly glabrous or very sparsely puberulous basal veins obscure petioles 0.8–4.5 cm long. Stamine cymes axillary 1–4-flowered peduncles 0.1–3 cm long puberulous bracts lanceolate-linear 4–5 mm long. Stamine flower ca. 3 cm in diam. pedicel 2.2–3.8 cm long puberulous sepals 5–6 white or very pale yellow narrowly lanceolate 15–20 × 3–5 mm apex slightly acute on both surfaces more or less densely puberulous stamens 6–9 mm long glabrous anthers linear or narrowly oblong apex minutely apiculate. Pistillate cymes arising from axils of reduced or normal leaves on lower or basal part of branch 1–3-flowered peduncles 0.5–2.4 cm long bracts triangular or linear 2–4 mm long. Pistillate flower ca. 2 cm in diam. pedicel 0.7–3 cm long puberulous sepals 4–6 broadly lanceolate 10–18 × 3–6 mm apex obtuse or slightly acute inside glabrous outside appressed-puberulous staminodes 4–7 ca. 5 mm long style ca. 6 mm long densely villous. Achene compressed fusiform or narrowly elliptic 3–5 × 1.2–2 mm puberulous persistent styles 2–3 cm long plumose. Fl. Nov. – Dec.


New Zealand. Canterbury Hynes s. n. AK Melville & Fisher 5444 AK K 5445 AK Petrie 1481 US Philipson 10148 K Lake Pearson Kirk s. n. GH Lake Rotoiti Esler s. n. AK Nelson Cook s. n. AK Fosberg 30648 US Mellor s. n. AK Parris & Croxall s. n. AK Sexton s. n. AK Walker 5036 US without precise locality Travers s. n. S.

isolateype AK.

Woody vine. Branches slender, obscurely 4-sulcate, puberulous when young, glabrescent at length. Leaves binate or ternate, leaflets coriaceous, ovate, rhombic-ovate, narrowly ovate or elliptic, 6 - 16 × 2.5 - 14 mm, apex obtuse, often minutely mucronate, base subtruncate, broadly cuneate or cuneate, margin entire or obtusely 1-denticulate, undivided or 3-parted, on both surfaces glabrous or abaxially on midrib with a few hairs, midrib abaxially nearly flat, lateral basal veins obscure, petioles 1 - 2.8 cm long. Stamine cymes axillary, nearly sessile, 1 - 6-flowered, bracts triangular, ca. 3 mm long, base connate, bracteoles spathulate or linear, 4 - 7 mm long. Stamine flower 2 - 3 cm in diam. Pedicel 5 - 9 mm long, densely puberulous, sepals 5 - 6 - 8 mm, yellow-green, lanceolate or broadly lanceolate, 11 - 16 × 3 - 7.5 mm, apex obtuse, inside glabrous, outside appressed-puberulous, stamens 5 - 9 mm long, glabrous, anthers narrowly oblong, 1.5 - 2.5 mm long, apex obtuse. Pistillate cymes axillary, nearly sessile, 1 - 3-flowered, similar to stamine cymes. Pistillate flower 1.5 - 2 cm in diam. Pedicel 7 - 15 mm long, densely puberulous, sepals 5 - 6 - 8 mm, yellow-green, elliptic-oblong or narrowly oblong, 9 - 11 × 3 - 5 mm, apex obtuse, inside glabrous, outside appressed-puberulous, staminodes 6 - 12 - 7 mm long, ovary glabrous, style 5 - 7 mm long, densely villous. Achenes compressed, ovate, 4 - 5 mm long, glabrous, rimmed, persistent styles ca. 3 cm long, plumose. Fl. Nov. - Dec.

New Zealand, South Island, Marlborough, N Canterbury. In open shrubland, ca. 660 m. Additional specimens examined.


One species.


Fig. 28, M

Low subshrub with elongate slender suckers. Aerial stem erect or decumbent, glabrous. Leaves simple, almost glabrous, leaf blade coriaceous or subcoriaceous, broadly ovate or polygonous-ovate, up to 3 × 4 cm, base cordate or subcordate, 3-sect segments shortly petiolulate or sessile, 2 - 3-sect or 2 - 3-parted, ultimate lobules cuneate, linear, or linear-lanceolate, 1 - 3-dentate or entire, petioles 5 - 18 mm long. Cymes axillary, 1-flowered, peduncles 2.5 - 4 cm, 6 - 7.5 mm long, with pedicels tawny-puberulous, bracts ca. 2 mm long, 3-lobulate, bracteoles narrowly oblanceolate, 2 - 7.7 mm long, undivided or lobulate. Stamine flower 2 - 3 cm in diam., sepals 5 - 8 mm, white, obovate-elliptic, 6 - 14 x 3 - 6, 10.5, 11 mm, apex rounded or obtuse, inside glabrous, outside puberulous, stamens 5 - 9 mm long, glabrous, anthers oblong, 1 - 1.8 mm long, apex minutely apiculate. Pistillate flower similar to stamine flower, but smaller, 1.5 - 2.4 cm in diam., staminodes 8 - 13, ovary puberulous, style densely villous.
Achenes ovate 3 – 4 mm long, puberulous, persistent styles 1.5 – 3 cm long, plumose. Fl. Nov. – Dec.

**New Zealand** Nelson. On slopes in crevices of limestone 1280 – 1462 m.

Specimen examined.

**New Zealand.** NW Nelson Arthur Range summit of Hoary Head J. Smith Dodsworth s. n. AK.

I have seen only a vegetative specimen Dodsworth s. n. of this species. Upon the original description the above floral description is based.


Leaves once to thrice pinnate. Inflorescences arising from leaf axils of hornotinous branch. Sepals 5 – 6 valvate those of staminate flower spreading and those of pistillate flower erect linear or lanceolate-linear nearly as long as or slightly shorter than stamens outside on margin velutinous. Pistillate flower having no staminodes.

Two species endemic to Madagascar.


Leaves pinnate 5-foliolate sometimes ternate leaflets 2.5 – 3 – 6 cm long.

One species.


C. saxicola Hils. & Bojer ex Baill. in l. c. nom. nud.


C. grata Hoffman ex Kuntze in l. c. 1885 pro syn. non Wall. 1831.


C. perrieri Lév. var. parvifolia Lév. in l. c. Type Madagascar. Malazamba 1907-05 Perrier s. n. holotype P.


Fig. 29 A – D

Woody vine. Branches terete, shallowly 14-sulcate, sparsely puberulous, glabrescent. Leaves pinnate 5-foliolate sometimes ternate leaflets chartaceous or subcoriaceous ovate 2.5 – 3 – 6 cm apex acute obtuse or shortly acuminate base rounded margin entire on both surfaces glabrous or abaxially puberulous basal veins abaxially slightly prominent petioles 3.5 – 6 cm long, glabrous. Staminate cymes axillary 6 – 30 cm long 7 – many-flowered often panicule-like peduncles 3 – 9 cm long, puberulous bracts petiolate ovate or elliptic 1 – 3.5 cm
long. Stamine flower 1.2 – 1.7 cm in diam. pedicel 1 – 2.3 cm long densely puberulous sepals 4 – 6 spreading linear or narrowly oblong 6 – 7 x 1.2 – 2.2 mm apex obtuse inside glabrous outside densely puberulous margin velutinous stamens 5 – 9 mm long glabrous anthers oblong 0.8 – 1 mm long apex obtuse. Pistillate cymes axillary and terminal 4 – 10 flowered peduncles 2 – 2.4 cm long with pedicels densely puberulous bracts petiolate ovate 0.6 – 1.2 cm long. Pistillate flower ca. 1 cm in diam. pedicel 0.5 – 1 cm long sepals 4 erect linear 9 – 12 x 1.4 – 2 mm apex acute inside glabrous outside velutinous staminodes wanting ovary densely pubescent styles ca. 7 mm long densely villous. Achenes compressed elliptic ca. 3 x 2 mm pubescent persistent styles 2.5 – 4 cm long plumose. Fl. Mar. – Jun.

Madagascar. On slopes in stony places 200 – 1000 m.

Additional specimens examined.


Leaves thrice or twice pinnate leaflets numerous smaller 0.3 – 2.2 cm long.

One species.


Fig. 29 E – J

Suffrutescent vine. Branches subterete slender ca. 2 mm in diam. shallowly 10-sulcate densely appressed-puberulous. Leaves thrice or twice pinnate pinnae 3 – 4 pairs leaflets coriaceous or chartaceous broadly ovate ovate or elliptic 0.3 – 2.2 x 0.2 – 1.4 cm apex acute or obtuse often mucronate base rounded truncate or cuneate margin entire rarely 1-denticulate undivided or sometimes 2 – 3 lobed adaxially subglabrous or sparsely puberulous abaxially sparsely or densely appressed-puberulous basal veins abaxially slightly prominent peltioles 2 – 4.8 cm long puberulous. Stamine cymes axillary and terminal 5 – 20 flowered peduncles 3.6 – 4.1 cm long densely puberulous bracts foliaceous. Stamine flower 1.8 – 2 cm in diam. pedicel 1.6 – 2.4 cm long densely puberulous sepals 4 spreading ob lanceolate-linear 5 – 9 x 1.5 – 1.8 mm apex obtuse inside glabrous outside densely puberulous stamens 6 – 8 mm long glabrous anthers oblong 0.8 – 1.2 mm long apex obtuse. Pistillate cymes axillary 3 – 5 flowered peduncles 0.8 – 3 mm long densely puberulous bracts foliaceous. Pistillate flower ca. 6 mm in diam. pedicel 5 – 10 mm long densely puberulous sepals 4 erect lanceolate-linear ca. 8.5 x 2.5
mm² apex attenuate inside glabrous outside appressed-puberulous staminodes wanting ovaries densely puberulous styles ca. 4.6 mm long densely villous. Achenes compressed rhombic 3 – 4 × 2 – 2.6 mm² puberulous narrowly rimmed persistent styles 2.7 – 4 cm long plumose. Fl. Mar. – May.

Madagascar.

Additional specimens examined.

**Acknowledgements**  I am most grateful to the directors and curators of AK BM G GH K L LE LINN MO NY P S UPS and US for kindly inviting me to visit their herbaria or/and sending herbarium material on loan to F. Jacquemoud M. Hecquet and N. Fumeaux G for providing many phototypes and some literature to E. K. Cameroon AK and A. R. Brach GH for providing some literature to ZHANG Yu-Hua ZJMA for providing many photos of the New Zealand Clematis to LI Liang-Qian MU Xi-Jin QIN Hai-Ning YANG Qin-En ZHANG Zhi-Yun FU De-Zhi ZHANG Xian-Chun ZHU Xiang-Yun LIN Qi YANG Yong 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.

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花序自当年生枝的叶腋发出)与具两性花的威灵仙组欧洲铁线莲亚组的花极为相似,区别主要在于本亚组的花为单性,由此判断可能是单性铁线莲组,(-'/%0&1#2%的原始群,源出于欧洲铁线莲亚组。本组的第二亚组种,分布于北美西南部)与在亲缘关系上极为相近,区别只在于其花序或具花当年生枝与数叶一同由老枝的一个腋芽中发出,此亚组当是从衍生出的一个小群。第三亚组种,特产澳大利亚)也与相近缘,但此亚组的萼片变狭长,多呈条形或狭条形,常*+倍长于多少变短的雄蕊,雌花的退化雄蕊数目变少,,-*()枚,根据这些进化特征,推测此亚组也源出于。第四亚组,2'(&%&%种,分布于澳大利亚、新几内亚及邻近岛屿)与在亲缘关系上相近,但本亚组的花药药隔顶端具短或长的突起而不同,根据此进化特征,推测本亚组系由后者演化而出。第五亚组,6#7%-#&%"%,(,,种,特产新西兰)的花构造与分布于澳大利亚的相似,但其萼片为覆瓦状排列,外面边缘不被短绒毛,在多数种多于*)枚,为./枚而不同。据0123"4的研究,本亚组中的花有)枚萼片,排成(轮,每轮的(枚萼片均为近镊合状排列;另外,在花的-枚萼片中,)+枚为覆瓦状排列,其他-枚有时内向镊合状排列。从上述情况可见此亚组的萼片覆瓦状卷叠式可能是由镊合状卷叠式演变而来的一种次生现象,并由此推测,此亚组可能与相同,也源自美洲的。最后一个亚组种,特产马达加斯加)的雌花萼片直上展,退化雄蕊完全消失,具有这些进化特征,当是单性铁线莲组的进化群,可能源出自具定数或少数退化雄蕊的。