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A REVISION OF RHODODENDRON
IV Subgenus Tsutsusi

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A revision of *Rhododendron* subgenus *Tsutsusi* is presented: section *Tsutsusi* with 66 species is equivalent to series *Azalea* subser. *Obtusum*; and section *Brachycalyx* with 15 species includes some species previously placed in subser *Schlippenbachii*. One new species in section *Tsutsusi*, *R. arunachalense* Chamberlain & Rae, *sp. nov.*, is described. Distribution maps are provided for most of the species.

CONTENTS

INTRODUCTION TO SUBGENUS TSUTSUSI

This account forms the fourth part of the Revision of the genus *Rhododendron* co-ordinated at the Royal Botanic Garden Edinburgh: Part I—subgenus *Rhododendron* sections *Rhododendron* and *Pogonanthum* (Cullen in *Notes RBG Edinb.* 39: 1–207, 1980); Part II—subgenus *Hymenanthes* (Chamberlain in *Notes RBG Edinb.* 39: 209–486, 1982); Part III—subgenera *Azaleastrum*, *Mumeazalea*, *Candidiastrum* and *Theorhodion* (Philipson & Philipson in *Notes RBG Edinb.* 44: 1–23, 1986).

Part IV covers subgenus *Tsutsusi*, and follows the circumscription proposed by Philipson & Philipson (*Notes RBG Edinb.* 40: 225–227, 1982). Two sections are recognized in the subgenus: section *Tsutsusi* is equivalent to the 'Obtusum' azaleas; section *Brachycalyx* includes *R. mariesii*, *R. reticulatum*, *R. weyrichii*, and their immediate allies. *R. tashiroi*, an anomalous species that lies between sections *Tsutsusi* and *Brachycalyx*, is here placed in the former section.

The account of subgenus *Pentanthera* section *Pentanthera*, the 'Luteum' azaleas by Dr. K. Kron has recently been submitted. This will go to press later this year as Part V of the Revision and it is expected that revisions of the remaining sections in subgenus *Pentanthera* will also appear in Part V.

In view of the small number of species in some of the subgenera described in

Parts III-V of the Revision, it has been decided to defer discussion of geographical distributions and taxonomic relationships for all of them. These will now appear with the account of subgenus *Pentanthera*.

Presentation of the Revision

The upsurge in the last twelve years in taxonomic studies in the genus *Rhododendron* is marked by the publication of a number of new taxa in subgenus *Tsutsusi*, both from China and Japan. Descriptions of the majority of the new species from China may be found in P. X. Tan's *Survey of the Genus Rhododendron in South China*, published in 1983. Most are not known in cultivation and many have been described in the absence of adequate field studies. In addition, as we have not had access to material of several of the types we are dependant on the type descriptions alone. It is possible that some of the species, for which we have inadequate information, are hybrids.

Among the more recently described Japanese taxa, particularly in section *Brachycalyx*, there are several for which we have seen no material and from the descriptions it appears that very narrow species, subspecies and varietal limits have been used. Where we have seen no material, we have accepted the original taxonomic circumscriptions and this should be borne in mind when reading this account.

The revision of subgenus *Tsutsusi* presented here closely follows the format adopted in the previous parts. The following points should be noted when using this account:
(a) Citation of Illustrations. It should be noted that only illustrations that adequately represent the relevant species are cited. Preference is given to illustrations that are readily available. It is therefore possible that illustrations do exist for species where none are cited.
(b) Geographical Distributions. This is indicated by country and province only. Chinese province names are given in their Pinyin transliteration.
(c) Identification of Specimens. As with the previous revisions a list of specimens seen or cited in available literature is given in alphabetical order of collector and in numerical order under each collector. Where possible Chinese collectors' names are cited in Pinyin with either the Wade Giles equivalent, or the spelling used in the literature, where this is considered to be helpful. Efforts have been made to avoid duplication, but it is possible that errors have been made, since the records have come from several different Chinese herbaria and from several literature sources. Specimens not seen by us are given in italics where we are reasonably certain the identification is reliable. These records were used when preparing the distribution maps.
(d) Maps. The maps presented here are of two types. Distribution maps for most of the Japanese species are available in *The Species of Rhododendron in Japan* (Togashi et al., 1981). Where information has been used from this source the distributions have been indicated by areas of shading on the distribution maps. Dot maps have been drawn where the source of information is individual records.

Taxonomic Characters

Some of the terms used in the species descriptions in subgenus *Tsutsusi* require some clarification and amplification.

Growth Habit

All species are shrubs; some are dwarf and creeping (*R. tsusiophyllum* and some forms of *R. kiusianum*); most are however moderately sized, from 0.5–4.5m tall.

Leaves

(a) section *Tsutsusi*. Most of the species in this section have leaves that are of two types (dimorphic). The summer leaves are generally small and are usually persistent throughout the whole year. The spring leaves are larger and are generally deciduous. There are some species where there is no distinction between the spring and summer leaves (the leaves are apparently monomorphic). In these species both the spring and summer leaves tend to be small so with herbarium material it can sometimes prove difficult determining whether the leaves are of one or two types.

In most species the leaves are scattered along the stems but in *R. tashiroi* they are in clusters of two or three at the ends of the branches. At maturity the leaves are more or less hairy, especially below and on the midrib.

(b) section *Brachycalyx*. The leaves of the species in this section are usually of one type and are deciduous. They are almost always clustered in whorls towards the apices of the branches and are usually rhombic in outline, with an indumentum that is sparse on the lamina, more dense on the midrib and often also on the petioles.

Indumentum

The indumentum of subgenus *Tsutsusi* is restricted to a few categories (see Fig. 1) as follows:

Simple Hairs. These are multicellular and may be weak or stiff (setose). The leaf indumentum in both sections is setose.

Flattened Hairs. These too are multicellular but are ribbon-like and sometimes lacerate at the apex. They are particularly well marked on the young stems of many of the species in section *Tsutsusi* whilst those in section *Brachycalyx* are setose.

Stipitate Glands. In some species of both sections *Tsutsusi* and *Brachycalyx* there are stipitate glands that may be short-stalked or more or less setose-glandular. These glands may occur on both the vegetative and floral parts of the plants.

Inflorescence

The flowers are solitary or arranged in subumbellate racemes with up to 4 flowers in section *Brachycalyx* and up to 15 flowers in section *Tsutsusi*.

Calyx

The calyx is often minute though it can be well developed with lobes up to 30mm in some species. In *R. hidakanum* (section *Brachycalyx*) the lobes are purple, like the

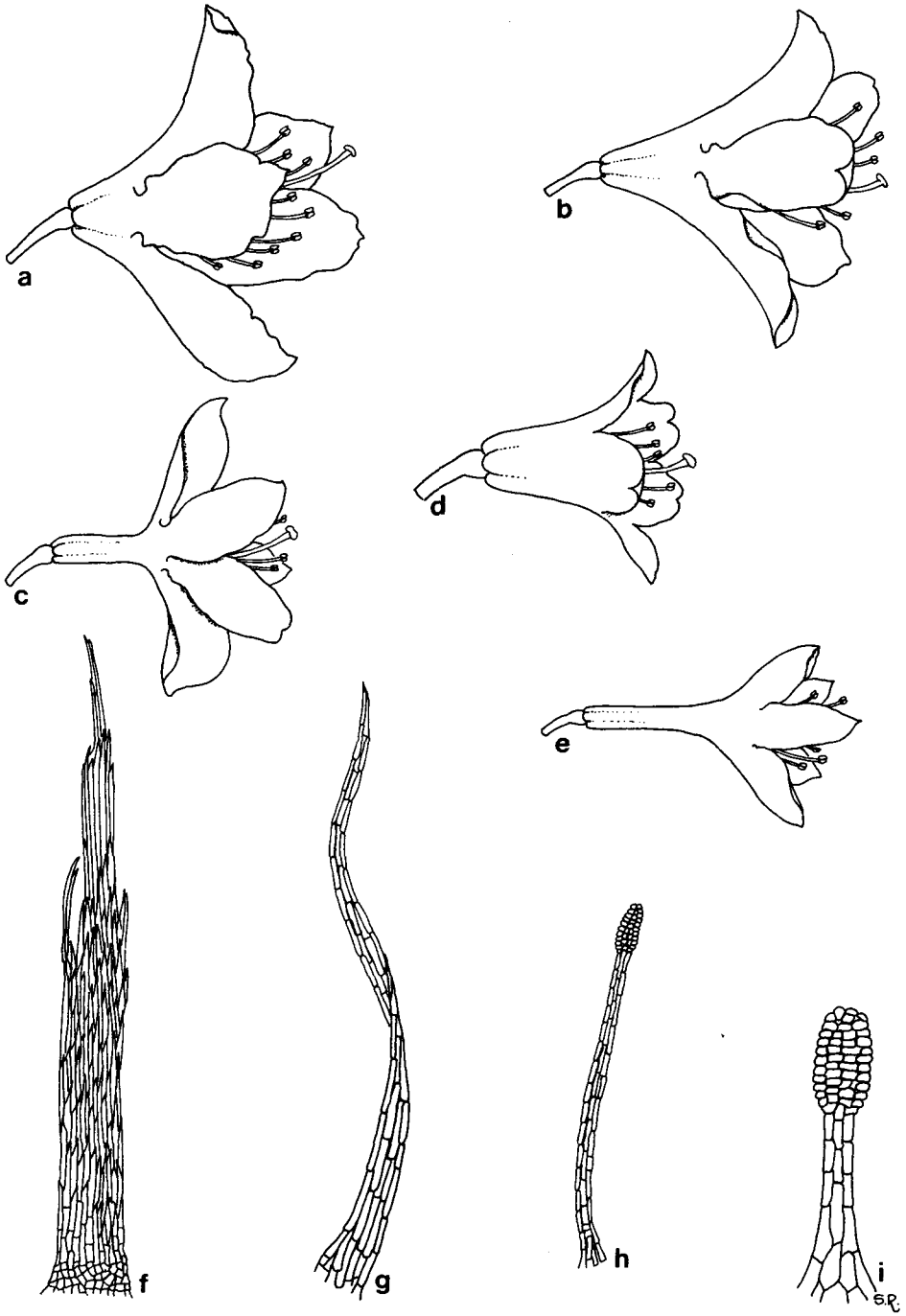


FIG 1. Rhododendron corolla shapes (a–e) and hair types (f–i) (diagrammatic): a, funnel-campanulate open: *R. wadanum*; b, funnel-shaped: *R. kaemferi*; c, funnel-campanulate: *R. microphyton*; d, rotate-campanulate: *R. hunanense*; e, tubular-campanulate: *R. mariae*; f, flattened and lacerate: *R. linearifolium*; g, simple: *R. nakaharai*; h, i, stipitate: h, *R. oldhamii*; i, *R. macrosepalum*.

corolla; in all other species the calyx is green. The indumentum of the calyx usually resembles that of the pedicels though in some species the lobes are ciliate.

COROLLA

The corolla is usually zygomorphic and generally 5-lobed (sometimes 4-lobed in *R. tschonoskyi* and *R. tsusiophyllum*). A range of corolla shapes (see Fig. 1) is categorized as follows:

Rotate-Campanulate. The tube is broad and short and the lobes are widely spreading.

Campanulate. The tube is parallel-sided from a broad base and the lobes are comparatively short and spreading.

Funnel-Campanulate. The tube is flared, widening above from a narrow base and the lobes are spreading.

Funnel-Shaped (*Infundibular*). Similar to funnel-campanulate but with less spreading lobes.

Tubular-Campanulate. The tube is narrow and parallel-sided, from a narrow base and the lobes are spreading.

STAMENS

There are (3–)5–10 zygomorphically arranged stamens; the filaments are glabrous to pilose towards the base.

STYLE

The style is usually glabrous for most of its length, though it is sometimes hairy at the extreme base, or occasionally glandular.

SEEDS

The seeds are relatively uniform, oblong to fusiform, unwinged, terete or angled to keeled.

TAXONOMIC ACCOUNT

Subgenus **Tsutsusi** (Sweet) Pojarkova in Fl. URSS 18: 55 (1952).

Shrubs, sometimes dwarf; indumentum of simple bristles that are sometimes ribbon-like and flattened, or of stiff glandular hairs. *Leaves* persistent and/or deciduous, in whorls of three or scattered along the stems. Vegetative buds and inflorescence enclosed within the same bud scales. *Flowers* variously shaped, from rotate to tubular-campanulate. *Stamens* (4–)5–10(–12). *Ovary* strigose to glandular. *Seeds* unornamented.

1a. Leaves linear to broadly ovate, usually of two kinds, the spring leaves larger and deciduous, the summer leaves smaller and persistent through the winter, if of one kind only then persistent, scattered along the stems (but see *R. tashiroi*); corolla rotate to tubular-campanulate _____ **Sect. Tsutsusi**

1b. Leaves rhombic to rhombic-ovate, of one kind, deciduous in winter, in pseudowhorls of (2–)3; flowers appearing before or with the leaves, corolla funnel-shaped to funnel-campanulate ____ **Sect. Brachycalyx (p. 143)**

Section **Tsutsusi** Sweet, Brit. Fl. Garden ser. 2, 2: 128 (1833). (based on 'Tsutsusi' Kaempfer, Amoen. Exot. Fasc. 845, 1712) = *R. kaempferi* Planchon.

Syn.: Series *Azalea* Subseries *Obtusum* & Subseries *Tashiroi*.

Genus *Tsusiophyllum* Maxim., Rhododendr. As. Orient. 12 (1870). Type species: *R. tsusiophyllum* Sugimoto.

Sect. *Tsusiopsis* Sleumer, Bot. Jahrb. 74: 527 (1949). Type species: *R. tashiroi* Maxim.

Subsect. *Dimorphica* P.X.Tan, Survey Gen. Rhododendron S. China 87 (1983). Type species: *R. simsii* Planchon.

Subsect. *Monomorphica* P.X.Tan, op. cit. 91 (1983). Type species: *R. ripaecola* P.X.Tan (a syn. of *R. naamkwanense* Merrill var. *naamkwanense*).

Subsect. *Obtusa* Spethmann, Pl. Syst. Evol. 157:23 (1987). Type species as for Section *Tsutsusi*.

Subsect. *Tashiroia* Spethmann, loc. cit. (1987). Type *R. tashiroi* Maxim.

Type species of section: *R. indicum* (L.) Sweet

1a. Shoots with spreading hairs ____ 2
b. Shoots with adpressed hairs ____ 13

2a. Flowers more than 25mm long (Japan, Taiwan) ____ 3
b. Flowers up to 25mm long or unknown (Mainland China) ____ 4

3a. Flowers 25–35mm, funnel-shaped; stamens (8–)10 ____ **22. oldhamii**
b. Flowers 35–50mm, broadly funnel-shaped; stamens 5(–7) ____ **27. macrosepalum**

4a. Stamens 10; inflorescence 3–4-flowered ____ **5. rufohirtum**
b. Stamens 5; inflorescence (3–)5–15-flowered ____ 5

5a. Leaves 9–15(–20) × 3–8cm; style glandular; filaments glabrous ____ **3. yaoshanicum**
b. Leaves smaller or if as large then filaments puberulent; style not glandular ____ 6

6a. Calyx 4–5mm, with narrowly lanceolate lobes ____ **7. rivulare**
b. Calyx 1.5–3mm, with broad or ± obsolete lobes ____ 7

7a. Corolla up to 10mm long ____ **4. hunanense**
b. Corolla 15–25mm long ____ 8

8a. Leaves 3.5–3.8cm, indumentum yellowish below ____ **8. apricum**
b. Leaves (3.5–)4–10cm, indumentum brown below ____ 9

9a. Inflorescence 5–6-flowered ____ **2. jinxiuense**

b. Inflorescence 10- or more-flowered ____ 10

10a. Leaves densely hairy below, hairs brownish-red ____ 11
b. Leaves sparsely hairy below, hairs not brownish-red ____ 12

11a. Corolla 15–20mm ____ **9. rufulum**
b. Corolla c.25mm ____ **10. florulentum**

12a. Corolla rotate-campanulate; 8mm broad near base ____ **1. rhuyuenense**
b. Corolla tubular-campanulate; at most 3–4mm broad near base ____ **11. kwangtungense**

13a. Stamens (6-)7–12 ____ 14
b. Stamens (3–)5(–6) ____ 37

14a. Calyx 5–15mm long ____ 15
b. Calyx 1–5mm long ____ 19

15a. Young shoots with flattened and pilose hairs ____ **30. mucronatum**
b. Young shoots with flattened hairs only ____ 16

16a. Leaves with dense sericeous indumentum below (China) ____ **21. pulchroides**
b. Leaves with sparse to scattered indumentum below (China, Japan, Korea) ____ 17

17a. Bud scales viscid on inner surface (China; Taiwan; S Japan, Ryukyu Islands) ____ **29. simsii**
b. Bud scales not viscid (Japan, Korea) ____ 18

18a. Corolla rose-red to scarlet (S Japan, Ryukyu Islands) ____ **26. scabrum**
b. Corolla pink (Korea; Japan, Tsushima Islands) ____ **28. yedoense var. poukhanense**

19a. Corolla 10–25mm long ____ 20
b. Corolla 20–60mm long ____ 27

20a. Leaves 0.5–1.5cm long, upper surface glabrescent or with scattered hairs borne on pustules ____ 21
b. Leaves (1–)1.5–8cm long, upper surface persistently hairy ____ 22

21a. Corolla c.15mm long ____ **42. noriakianum**
b. Corolla 20–25mm (–40mm) long ____ **49. nakaharai**

22a. Flowers lilac-purple (Philippines) ____ **46. subsessile**
b. Flowers pink to red (W China, Taiwan) ____ 23

23a. Flowers red (W & S China) ____ 24
b. Flowers pink (Taiwan) ____ 25

24a. Leaves acuminate, 2–2.7 × as long as broad (Sichuan, Yunnan) ____ **47. atrovirens**
b. Leaves acute, 3–6 × as long as broad (Hainan, Guangxi) ____ **20. hainanense**

25a. Style glabrous or hairy only at extreme base; pedicels 2–4mm, hidden by the persistent bud scales ____ **40. rubropilosum**
b. Style hairy in lower half; pedicels c.5mm, not hidden by the bud scales ____ 26

26a. Leaves sparsely hairy beneath; pedicels covered with whitish flattened hairs ____ **39 lasiostylum**
b. Leaves densely strigose beneath; pedicels covered with reddish-brown terete hairs ____ **23. taiwanalpinum**

27a. Leaves 0.5–3cm long; 1.2–2 × as long as broad ____ 28
b. Leaves 2–7cm long; 2.5–6 × as long as broad ____ 29

28a. Flowers scarlet; leaves chartaceous (Taiwan) **33. longiperulatum**
b. Flowers white to purplish pink; leaves subcoriaceous (Japan) ____ **32. eriocarpum**

29a. Flowers bright red to scarlet (see also 25. *kanehirai* from Taiwan) ____ 30
b. Flowers white to pink or rose-purple ____ 32

30a. Flowers 35–60mm long ____ **29. simsii**
b. Flowers 15–30mm long ____ 31

31a. Pedicels c.6mm; leaves acuminate (Sichuan, Yunnan) ____ **47. atrovirens**
b. Pedicels 2–3mm; leaves acute (Hainan, Guangxi) **20. hainanense**

32a. Flowers white, 40–50mm (Japan, Bonin Islands) ____ **31. boninense**
b. Flowers pink to rose-purple, rarely white, 25–40mm (China, S Japan) ____ 33

33a. Corolla narrowly funnel-campanulate ____ **19. subflumineum**
b. Corolla broadly funnel-shaped to funnel-campanulate ____ 34

34a. Calyx lobes rounded, 3–7mm long ____ **29. simsii**
b. Calyx minute, lobes up to 1mm long ____ 35

35a. Pedicels 8–15mm; shoot indumentum weak, soon deciduous; leaves probably monomorphic ____ **24. tashiroi**
b. Pedicels 5–8mm; shoot indumentum stiff, persistent; leaves dimorphic ____ 36

36a. Corolla tube c.10mm long, sparsely puberulous; leaves indistinctly crenulate, c.3 × as long as broad (Guangdong) ____ **13. tenuilaminare**
b. Corolla tube 15–25mm long, glabrous; leaves entire, 4 × as long as broad (Taiwan) ____ **25. kanehirai**

37a. At least some leaves more than 3cm long ____ 38
b. Leaves less than 3(–3.5)cm long ____ 54

38a. Corolla 5–10mm long, glandular on outer surface ____ 39
b. Corolla (10–)12–35mm long, glabrous or hairy (eglandular) on outer surface ____ 40

39a. Leaves 1.5–2cm broad; young shoots with at least some hairs glandular ____ **44. jinpingense**
b. Leaves 0.5–1.4cm broad; young shoots with an eglandular indumentum ____ **48. fuchsiifolium**
40a. Corolla tubular-campanulate ____ 41
b. Corolla funnel-shaped to funnel-campanulate ____ 43
41a. Leaves 2–2.5 × as long as broad; inflorescence 7–12-flowered ____ **14. mariae**
b. Leaves 3–4 × as long as broad; inflorescence 3–6(–12)-flowered ____ 42
42a. Corolla c.35mm; pedicels c.8mm ____ **12. lonicerifiorum**
b. Corolla 20–30mm; pedicels 10–15mm ____ **17. chrysocalyx**
43a. Corolla c.30mm; leaves c.6 × as long as broad ____ **18. meridionale**
b. Corolla 10–30mm; leaves 1.7–4 × as long as broad ____ 44
44a. Leaves 3.5–4 × as long as broad (Japan) ____ **37. tosaense**
b. Leaves 1.7–3(–3.3) × as long as broad (NE India,China, Vietnam, Japan) ____ 45
45a. Corolla lobes shorter than to as long as tube ____ 46
b. Corolla lobes 1.5–2.3 × as long as tube ____ 52
46a. Leaves 5.7–9cm long, apex acute to apiculate ____ **6. flumineum**
b. Leaves 1–5.5cm long, apex obtuse to acuminate ____ 47
47a. Filaments glabrous; corolla white ____ **15. cretaceum**
b. Filaments hairy; corolla rose-purple to red ____ 48
48a. Inflorescence 2–3-flowered; corolla 20–30mm ____ **35. kaempferi**
b. Inflorescence 3–10-flowered; corolla 12–16mm ____ 49
49a. Young leaves densely sericeous beneath; corolla tube hairy on outer surface ____ **54. seniavinii**
b. Young leaves sparsely to densely hairy beneath but not sericeous; corolla tube glabrous on outer surface ____ 50
50a. Inflorescence 8–10 flowered; leaves 1.7–1.8 × as long as broad ____ **65. huiyangense**
b. Inflorescence 3–6 flowered; leaves 2–3 × as long as broad ____ 51
51a. Corolla tube 4mm wide at base; style strigose in lower third (Guangdong) ____ **16. subcerinum**
b. Corolla tube 2–3mm wide at base; style glabrous (China, Yunnan, SW Sichuan; ?Thailand) ____ **43. microphyton**
52a. Corolla white tinged rose, tube papillate within ____ **52. saxicolum**
b. Corolla pink to reddish purple, tube glabrous within ____ 53
53a. Corolla pink, anthers without apical projections (NE India) ____ **53. arunachalense**
b. Corolla reddish purple, anthers with apical projection (China, Guangdong) ____ **57. bicorniculatum**

54a. Corolla 5–10(–11)mm long ____ 55
b. Corolla 10–50mm long ____ 62
55a. Corolla glandular or hairy on outer surface ____ 56
b. Corolla glabrous on outer surface ____ 60
56a. Corolla tubular-campanulate, lobes 0.5 × as long as tube ____ **66. tsusiophyllum**
b. Corolla open funnel-shaped to funnel-campanulate, lobes 1–1.2 × as long as tube ____ 57
57a. Corolla hairy on outer surface; style strigose ____ 58
b. Corolla glandular on outer surface; style glandular, sometimes also hairy ____ 59
58a. Leaves 0.7–1.1cm long; floral buds not sticky ____ **60. minutiflorum**
b. Leaves 1.5–1.8cm long; floral buds sticky or viscid ____ **59. viscigemmatum**
59a. Inflorescence 2–3-flowered; pedicels with eglandular hairs (Guangdong) ____ **58. chunii**
b. Inflorescence 3–5-flowered; pedicels with an understorey of glandular hairs (Guangxi Guizhou) ____ **48. fuchsiifolium**
60a. Leaves 0.6–0.8 × 0.3–0.5cm ____ **61. myrsinifolium**
b. Leaves 1–3.5 × 0.5–1.5cm ____ 61
61a. Corolla white (Japan) ____ **51. tschonoskii**
b. Corolla reddish to pale purple (Hunan) ____ **55. yangmingshanense**
62a. Leaves 3.5–4 × as long as broad ____ **37. tosaense**
b. Leaves 1–3 × as long as broad ____ 63
63a. Corolla 20–50mm ____ 64
b. Corolla 10–22mm ____ 68
64a. Leaves 2.3–3 × as long as broad; corolla 30–50mm **34. indicum**
b. Leaves 1.7–2.5 × as long as broad; corolla 10–30mm ____ 65
65a. Pedicels 2–3mm; filaments glabrous; calyx minute, c.1mm (Guangdong) ____ **56. naamkwanense**
b. Pedicels 3–10mm; filaments hairy or papillate; calyx 2–5mm (Taiwan, Japan) ____ 66
66a. Pedicels 10mm ____ **41. sikayotaizanense**
b. Pedicels 3–5mm ____ 67
67a. Anthers apiculate at base; flowers pink (Taiwan) ____ **38. breviperulatum**
b. Anthers without an apiculus; flowers red (in cultivation colour various; Japan) ____ **35. kaempferi**
68a. Style stipitate-glandular; corolla stipitate-glandular on outer surface ____ **45. subenerve**
b. Style eglandular-hairy or glabrous; corolla glabrous or hairy on outer surface ____ 69

69a. Leaves 0.2–0.6cm broad, up to 1.4cm long (Japan, Taiwan) _ 70
b. Leaves (0.5–)0.6–2.5cm broad, up to 4cm long (Japan, Mainland China) _____ 72

70a. Calyx with linear-lanceolate, c.4mm lobes; corolla red _____ **41. sikayotaizanense**
b. Calyx lobes rounded to ovate, up to 3mm long; corolla rose-pink (occasionally red-purple in *kiusianum*) _____ 71

71a. Flowers usually solitary; pedicels c.3mm _____ **50. serpyllifolium**
b. Flowers 2–3; pedicels 5–10mm _____ **36. kiusianum**

72a. Inflorescence 2–3-flowered (Japan) _____ **36. kiusianum**
b. Inflorescence 3–12-flowered (Mainland China) _____ 73

73a. Outer surface of corolla tube hairy _____ **54. seniavinii**
b. Outer surface of corolla tube glabrous _____ 74

74a. Inflorescence 8–12-flowered _____ 75
b. Inflorescence 2–6-flowered _____ 76

75a. Leaves 2–2.4 × as long as broad, apex acute _____ **62. unciferum**
b. Leaves 1.7–1.8 × as long as broad, apex blunt, mucronate _____ **65. huiyangense**

76a. Leaves with a dense covering of slender strigose hairs beneath; dwarf shrub, 0.3–2m (E Burma; SW China, Yunnan; ? Thailand) _____ **43. microphyton**
b. Leaves sparsely covered with broad flattened strigose hairs beneath; shrub, 1–3m (Guangxi, Guangdong, Fujian) _____ 77

77a. Filaments minutely pubescent below; corolla hairy within _____ **63. tsoi**
b. Filaments glabrous; corolla glabrous within _____ **64. gratiosum**

1. R. rhuyuenense Chun in P.X.Tan, Survey Gen. Rhododendron S. China 96 (1983). Type: Guangdong, Rhuyuan Xian, Ching-Si-Tung, in silvis montis saxis, 7 vi 1933, *X.P. Gao* (*S.P. Ko*) 52804 (holo. IBSC, iso. PE).

Syn.: *R. lingii* Chun in Ching, Icon. Corm. Sin. 3:151, f.4256 (1974)—chinese description only. Type as for *R. rhuyuenense*.

Shrub, 2–3m; young shoots spreading-stipitate-glandular, sticky. *Leaves* persistent, coriaceous dimorphic; spring leaves lanceolate-elliptic, 5.5–7.5 × 2.3–3cm, c.2.5 × as long as broad, apex acuminate, base cuneate, margin revolute, upper surface sparsely strigose, especially on midrib, lower surface setose; summer leaves 18–30 × 8–10mm, otherwise as for spring leaves; petioles 4–8mm, spreading-setose; *Inflorescence* 10–14-flowered; pedicels 13–15mm, strigose, sticky. *Calyx* minute, strigose, lobes triangular-lanceolate. *Corolla* rotate-campanulate, c.25mm, rose-red with purple flecks; tube c.10 × 8mm, glabrous. *Stamens* 5, filaments sparsely puberulent in lower half. *Ovary* strigose; style puberulent below. *Capsule* ovoid, c.7 × 5–6mm, strigose. China (Guangdong, Hunan, Jiangxi). Rocky places in upland woodlands, c.800m. **Map 1.**

Closely allied to both *R. yaoshanicum* and *R. jinxiuense* but differing from both in its broader corolla tube, etc.

2. R. jinxiuense Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 89,t.7 (1982). Type: China, Guangxi, Jinxiu Yaozu Zizhi Xian (Dayaoshan Xian), 1000m, 20 v 1964, *F.N. Wei* 894 (holo. IBK, n.v., iso. IBSC).

Shrub, c.3m; young shoots densely spreading-glandular-setose. *Leaves* persistent, coriaceous, dimorphic; spring leaves ovate to oblong-ovate, 7–10 × 2–2.5cm, 2–3 × as long as broad, apex acuminate, base rounded, upper surface soon glabrescent, lower surface with greyish brown indumentum, especially on veins and midrib; summer leaves 25–30 × 15–20mm, otherwise as for spring leaves; petioles 5–7mm, densely hirsute and glandular. *Inflorescence* 5–6-flowered; pedicels densely brownish-spreading- hairy. *Calyx* c.2mm, hirsute, lobes triangular-ovate, ciliate. *Corolla* funnel-shaped, 18–20mm, purple; tube c.7 × 4mm, glabrous. *Stamens* 5, filaments puberulent. *Ovary* densely hirsute; style hirsute below. *Capsule* not known.

China (Guangxi). Alt. 1000m. Known only from the type. **Map 1.**

Closely allied to *R. yaoshanicum* (q.v.).

3. R. yaoshanicum Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 3(1): 3, t.3 (1983). Type: China, Guangxi, Xiangzhou Xian, Guehen, 5 v 1931, *S.S. Ying* 2118 (holo. IBSC, iso. E).

Small shrub; young shoots spreading-glandular-setose; indumentum becoming pale greyish-brown, sometimes glabrous. *Leaves* chartaceous, scattered along branches; spring leaves oblong to oblong-lanceolate, 9–15(–20) × 3–8cm, apex acuminate, base broadly cuneate, margin setulose, upper surface glabrescent, lower surface sparsely setulose; summer leaves smaller, up to c.10 × 4mm, otherwise as for spring leaves; petioles 5–15mm, densely spreading-brownish-setose, also with short glandular hairs. *Inflorescence* 10–15-flowered; pedicels c.10mm, densely setulose. *Calyx* c.3mm, densely setulose, teeth minute. *Corolla* funnel-campanulate, 13–15mm, red; tube 7–8mm, glabrous. *Stamens* 5, filaments glabrous. *Ovary* brown-setulose; style glandular-setose in lower half. *Capsule* oblong to oblong-ovoid, 5–7mm.

China (Guangxi). **Map 1.**

Closely allied to *R. jinxiuense* but differing in its glandular style and glabrous filaments. Probably also allied to *R. kwangtungense*.

4. R. hunanense [Chun ex] P.X.Tan, Bull. Bot. Res. N.E. Forest Inst. 2(1): 92 (1982). Type: China, Hunan, Mang Shan, 1700m, 2 v 1934, *X.P. Gao*, (*S.P. Ko*) 54218 (holo. IBSC, photo. E; iso. PE).

Syn.: *R. hunanense* [Chun ex] P.X.Tan var. *mangshanicum* Tan, loc. cit., t.4 (1982). Type: China, Hunan, Yizhang Xian, Mang Shan, 500m, 26 x 1942, *S.Q. Chen* (*S.H. Chun*) 2937 (holo. IBSC, photo. E.)

Shrub, c.2m; young shoots densely covered with spreading hairs and villose glands. *Leaves* dimorphic, chartaceous; spring leaves elliptic to ovate-lanceolate, 3–7 × 1.5–

2.8cm, 2–2.2 × as long as broad, apex acute to acuminate, base cuneate, margin entire, ciliate, upper surface strigose, soon glabrescent, lower surface pale, densely brownish-villose-strigose; summer leaves obovate, 15–20 × 8-10mm, otherwise as for spring leaves; petioles 5–8 mm, densely strigose. *Inflorescence* c.10-flowered; pedicels 5–7mm, densely brownish-strigose. *Calyx* minute, densely strigose, lobes oblong. *Corolla* rotate-campanulate, pale lilac, with darker flecks, c.10mm; tube c.5 × 3mm. *Stamens* 5, densely puberulent below. *Ovary* densely strigose; style strigose at base. *Capsule* ovoid, 5–6 × c.5mm.
China (Hunan). Wooded valleys, 700–1700m. **Map 1.**

The type of var. *hunanense* is represented by two dissimilar specimens. One, which is labelled as the type, has relatively small spring leaves and the other, with larger leaves, resembles the type of var. *mangshanicum.*

4*. R. flosculum Fang & G.Z. Li, Bull. Bot. Res. N.E. Forest. Inst. 4(1): 4 (1984). Type: China, Guangxi, Ziyuan Xian, Maoer Shan, 1700m, 26 v 1982, *G.Z. Li* 10720 (holo. IBK, n.v.).

Differs from *R. hunanense* in its 2–3-flowered inflorescence, its glabrous stamens and in its less dense stem and leaf indumentum. The authors compare this species with *R. jinxiuense* but the description leads us to believe that it is closer to and possibly conspecific with *R. hunanense*, the specimens of which were probably not available to the authors. The type locality of *R. flosculum* is in E Guangxi, close to the western edge of the range of *R. hunanense.*

5. R. rufohirtum Hand.-Mazz., Anz. Akad. Wiss. Wien 1921(18): 9 (1921). Type: China, Yunnan, prope Hsinlung at septentr. urbis Yunnanfu, 2000m, 10 iii 1914, *Handel-Mazzetti* 493 (iso. E).
Much-branched shrub with slender branches; young shoots densely hirsute, with a dense covering of spreading brownish strigose and slender pilose hairs. Leaves ? monomorphic, chartaceous, ovate-lanceolate, 2.5–6.5 × 1.3–2.5cm, 2–2.5 × as long as broad, apex acuminate, base cuneate to almost rounded, margin entire, ciliate, upper surface pilose, lower surface pale, pilose, with an admixture of strigose hairs, especially on midrib; petioles 5–10mm, densely hairy. *Inflorescence* 3–4-flowered; pedicels c.5mm, covered with reddish-brown pilose hairs. *Calyx* densely covered with reddish-brown strigose hairs, lobes narrowly obovate, c.3mm. *Corolla* funnel-campanulate, deep rose, c.20mm; tube c.9mm, outer surface glabrous, inner surface papillate-pilose. *Stamens* 10, as long as corolla, filaments pilose below middle. *Ovary* densely hairy; style hairy at base. *Capsule* ovoid, c.8 × 6mm, brown-spreading-hairy.
China (E & S Yunnan, W Guizhou). Sandy soil, etc., 1800–2000m. **Map 1.**

Probably allied to *R. flumineum.*

6. R. flumineum Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 91 (1982). Type: China, Yunnan, Jinping Xian, 1800m, 30 iii 1958, *Q. Huang* 291 (holo. PE).
Shrub, 2–3m; young shoots densely adpressed-strigose. *Leaves* persistent, chartaceous, dimorphic; spring leaves elliptic, 5.7–9 × 2.3–3cm, 2.3–2.5(–3) × as long as broad,

apex acute to cuspidate, both surfaces with scattered adpressed hairs on lamina, hairs more dense on midrib; summer leaves (12–)25–30 × (8–)14–15mm; petioles 6–8mm, adpressed-strigose. *Inflorescence* 3–7-flowered; pedicels 4–8mm, densely golden-brown-strigose. *Calyx* c.1mm, strigose. *Corolla* funnel-campanulate, pinkish white to red, with darker flecks, c.18mm; tube c.9mm, 3mm broad at base, 6mm broad below lobes, glabrous on outer surface. *Stamens* 5, filaments glabrous. *Ovary* densely strigose; style strigose towards base. *Capsule* c.7 × 2.5mm, ovoid, strigose.
China (S Yunnan). Mixed forest, 1400–1750m. **Map 1.**

Closely allied to *R. rufohirtum* but differing in the greater number of flowers per inflorescence and in the adpressed-hairy indumentum on the shoots.

7. R. rivulare Hand.-Mazz., Anz. Akad. Wiss. Wien 1921(18): 8 (1921). Type: China, Guizhou, inter oppidum Duyun et vicum Lopusse, 750–900m, vii 1917, *Handel-Mazzetti* 10696 (holo. W, n.v., iso. E, fragm.).
Shrub, c.1m; young shoots covered with spreading, long and eglandular, and short and gland-tipped, ferrugineous hairs that become fuscous. *Leaves* dimorphic, chartaceous; spring leaves ovate-lanceolate, 4–9 × 1.5–5cm, 1.8–2.3 × as long as broad, apex acuminate to mucronate, base rounded, margin entire, upper surface sparsely pubescent at first, lower surface loosely hirsute and viscid when young; summer leaves 10–30 × 5–10mm, otherwise as for spring leaves; petioles 4–13mm, with long eglandular and short and glandular, ferrugineous hairs. *Inflorescence* many-flowered; pedicels c.10mm, pubescence as for petioles. *Calyx* c.4–5mm, lobes narrowly lanceolate, ciliate. *Corolla* tubular-campanulate, purplish-red, 22–25mm; tube c.10mm, outer surface glabrous, inner surface puberulent. *Stamens* 5, puberulent below middle. Ovary rufous-setose, style hairy at base. *Capsule* c.10mm long.
China (E Sichuan, Guizhou, Guangxi, Hunan, Fujian). Open woodland, ravines, 400–900m. **Map 2.**

8. R. apricum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 79, f.1 (1982). Type: China, Fujian, Shanghang Xian, Wong-Yong, 400–500m, 13 v 1974, *L.G. Li* (*L.K. Lee*) 740740 (holo. Inst. Mat. Med. Fujian).
Ic.: Tan, Survey Gen. Rhododendron S. China f.23 (1983).
Shrub; young shoots densely spreading-glandular-pubescent and setulose. *Leaves* dimorphic, coriaceous; spring leaves elliptic-oblong, 3.5–3.8 × 1.5cm, c.2 × as long as broad, apex shortly acuminate, margins entire; upper surface with lamina soon glabrescent, lower surface with a yellowish brown pubescence and a few short strigose hairs; summer leaves elliptic-oblong to linear, 15–18 × c.7mm, otherwise as for spring leaves; petioles 2–2.5mm, densely spreading-setulose and glandular pubescent. *Inflorescence* c.14-flowered, pedicels 5–7mm, densely strigose. *Calyx* strigose, lobes small, triangular. *Corolla* narrowly funnel-shaped, rose-red, c.18mm; tube 10mm, 2.5mm at base, 4mm broad below lobes. *Stamens* 5, filaments glabrous. *Ovary* setose; style glabrous. *Fruit* not known.
China (Fujian). **Map 2.**

Allied by the author to *R. falcinellum*, a species treated by us as a synonym of *R. rufulum*, but differing from the latter in the yellowish brown leaf indumentum, etc.

9. R. rufulum P.X.Tan, Survey Gen. Rhododendron S. China 100, f.24 (1983). Type: China, Fujian, Sanming Xian, Ziyangtou, 31 iv 1927, *Ling Ying* 216 (holo. IBSC, iso. KUN).

Syn.: *R. rufescens* P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst.2(4): 86 (1982) non Franchet (1895).

R. apricum P.X.Tan var. *falcinellum* P.X.Tan, op. cit. 80 (1982); *R. falcinellum* P.X.Tan, Survey Gen. Rhododendron S. China 98, f.23 (1983). Type: China, Fujian, Anxi Xian, lu-tin, 20 iv 1974, *L.G. Li* (*L.K Lee*) 740125 (holo. Inst. Mat. Med. Fujian).

? *R. spadiceum* P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 87 (1982). Type: China, Fujian, Shanghang Xian, Chungtu, 8 v 1974, *Y.Z. Jiang* 740703 (holo. Inst. Mat. Med. Fujian).

Shrub, to 2m; young shoots densely covered with spreading rufous glandular hairs. *Leaves* dimorphic, coriaceous, elliptic to elliptic-oblong, sometimes subfalcate; spring leaves 3.6–6 × 1.5–2.5cm, c.2.3 × as long as broad, apex acuminate, base cuneate, margin entire, upper surface densely strigillose, soon glabrescent, lower surface densely rufous-strigillose; summer leaves as for spring leaves but half the size; petioles 5–8mm, densely spreading-strigose. *Inflorescence* 3–14-flowered; pedicels c.10mm, densely strigose. *Calyx* densely strigose, lobes minute. *Corolla* tubular-campanulate, reddish-purple, 15–20mm; tube 7–10 × c.2mm, glabrous. *Stamens* 5, filaments glabrous. *Ovary* densely strigose; style glabrous. *Capsule* ovoid, 6–8 × c.4mm, densely reddish-brown strigose.

China (Fujian). Mixed woodland, c.500m. **Map 2.**

R. falcinellum differs only in its fewer (3–5-flowered) inflorescence; *R. rufulum* may also have subfalcate leaves. It is therefore not maintained as a separate taxon. *R. spadiceum* apparently only differs in the less coarse and spreading indumentum on the young shoots and petioles. It is almost certainly synonymous with or a hybrid of *R. rufulum*, but without reference to further material we are not sure of its status.

R. rufulum is allied to *R. florulentum* (q.v.).

9*. R. taipaoense T.C. Wu & P.X.Tan, Med. Mat. Guangd. 4: 36, f.5 (1978). Type: China, Guangdong, Dabu Xian, 700m, 9 vi 1957, *L. Teng* 4963 (holo. IBSC). **Map 2.**

Doubtfully distinct from *R. rufulum* but with leaf indumentum deciduous and possibly with a crenate calyx.

10. R. florulentum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 80, f.2 (1983). Type: China Fujian, Longyan Xian, Yen-Chung, 10 v 1974, *L. G. Li* (*L. K. Lee*) 740501 (holo. Inst. Mat. Med. Fujian).

Syn.: *R. hepaticum* P.X.Tan, Survey Gen. Rhododendron S. China 98, f.3 (1983). Type: China, Guangdong, Jiaoling Xian, Shek-

wu Chuen, Tafong Chang, 1100m, 9 v 1957, *L. Teng* 4669 (holo. IBSC).

R. piceum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 83 (1983). Type: China, Fujian, Sanming Xian, Shiao-Hu, 20 iv 1964, *Fujian Forestry Coll.* (*Silvicul Fok.*) 86 (holo. IBSC).

Shrub, c.2m; young shoots densely spreading-setulose and glandular-hairy. *Leaves* persistent, dimorphic, elliptic; spring leaves 3.5–8.5 × 1.2–4.5cm, 2.2–3 × as long as broad, apex acute to acuminate, base cuneate, margin entire, upper surface becoming greyish-setulose, lower surface with a ± dense reddish-brown setulose indumentum; summer leaves smaller, 22–30mm, otherwise as for spring leaves; petioles 5–10mm, densely brownish-setulose. *Inflorescence* 7–14-flowered; pedicels 10–20 mm, densely brownish-strigose. *Calyx* minute, indumentum as for pedicels, lobes narrowly triangular to ± absent. *Corolla* tubular-campanulate, reddish purple to rose, c.25mm; tube 14–16 × 2–3mm, glabrous; lobes 8–10mm. *Stamens* 5, filaments glabrous or puberulent below. *Ovary* densely brownish-strigose; style glabrous. *Capsule* 5–8mm, ovoid, densely brownish-strigose.

China (E Guangdong, S Hunan, W Fujian). Open woodland, c.1100m. **Map 2.**

R. hepaticum differs from *R. florulentum* only in the somewhat larger leaves and is thus treated here as a synonym.

The discoloured leaves that are used to separate *R. piceum* from the other two species may well be due to different drying techniques and are not of any taxonomic value.

11. R. kwangtungense Merrill & Chun, Sunyatsenia 1: 76 (1930). Type: China, Guangdong, Lokchang, 18 v 1929, *Zo, Jing Lie* (*Tso, C.L.*) 20627, n.v.

Syn.: *R. fongkaiense* C.N. Wu & P.X.Tan, Mat. Med. Guangdong 4: 34, f.2 (1978). Type: China, Guangdong, Fongkai Xian, *L. Teng* 11072 (holo. IBSC).

Shrub, to 2.5m; young shoots densely clothed with spreading strigose hairs and stipitate glands. *Leaves* dimorphic, subcoriaceous; spring leaves lanceolate to oblong-lanceolate, up to 8 × 2.5cm, c.3 × as long as broad, apex acuminate, base cuneate, upper surface sparsely setose when young, soon glabrescent, lower surface pale, sparsely setose, especially on midrib and veins; summer leaves 20–30 × 8–14mm, otherwise as for spring leaves; petioles 2.5–4mm, setose. *Inflorescence* c.12-flowered; pedicels covered with strigose hairs and stipitate glands. *Calyx* c.1.5mm with broad lobes, long-ciliate. *Corolla* tubular-campanulate, white to pale purple, 20–22mm; tube c.10mm, cylindrical, glabrous. *Stamens* 5, glabrous. *Ovary* densely long-setose; style glabrous. *Capsule* c.9mm long, setose.

China (Guangxi, Guangdong, Hunan). In thickets. **Map 3.**

12. R. loniceriflorum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 81, f.3 (1982). Type: China, Fujian, Anxi Xian, Lutin, 20 iv 1974, *L.G. Li* (*L.K. Lee*) 740123 (holo. Inst. Mat. Med. Fujian).

Ic.: Tan, Survey Gen. Rhododendron S. China f.4 (1983).
Shrub; young shoots covered with adpressed strigose hairs. *Leaves* dimorphic, coriaceous; spring leaves lanceolate to oblong-lanceolate, 4.5–5.5 × 1.2–1.6cm, c.3.5 × as long as broad, apex acute, base narrowly cuneate, margin entire, revolute, upper surface sparsely strigose, lower surface with a felted red-brown strigose indumentum; summer leaves 15–20 × 5–7mm, otherwise as for spring leaves; petioles c.6mm, densely strigose. *Inflorescence* 4–5-flowered; pedicels c.8mm, strigose. *Calyx* densely strigose, lobes triangular, c.1.5mm. *Corolla* tubular-campanulate, pale reddish-purple, c.35mm; tube 18–25 × 3mm at base, widening to 7mm below lobes, hairy within. *Stamens* 5, puberulent in lower half. *Ovary* covered with reddish-brown strigose hairs; style strigose at base. *Mature capsule* not known.
China (Fujian). Open woodlands. **Map 3.**

Closely allied to *R. mariae* but with larger corollas, the tubes of which are hairy within.

13. R. tenuilaminare P.X.Tan, Survey Gen. Rhododendron S. China 102, f.25 (1983). Type: China Guangdong: Conghua Xian, Rui-tin, in monte saxi calcarei, inter dumentum, 14 iii 1973, *S.Q Chen* (*S.H. Chun*) 18485A (holo IBSC).
Shrub, to 1m; young shoots adpressed-sericeous. *Leaves* persistent, dimorphic, chartaceous; spring leaves oblong, 4.5–5 × 1.5–1.8cm, c.3 × as long as broad, apex mucronate, base cuneate, margin indistinctly crenulate-strigose, upper surface with brown strigose hairs, lower surface paler, with adpressed strigose hairs, more dense on midrib; summer leaves ovate to obovate, 20–26 × c.10mm, otherwise as for spring leaves; petioles 1–3mm, densely blackish-brown-strigose. *Inflorescence* 3-flowered; pedicels 5–6mm, densely brownish-sericeous. *Calyx* 2mm, strigose, lobes obsolete. *Corolla* funnel-campanulate, 32mm, rose-purple; tube 10 × 3–6mm, sparsely puberulous. *Stamens* 7, filaments puberulent below. *Ovary* densely strigose; style reddish-pilose at base. *Capsule* c.9 × 5mm, densely grey-strigose.
China (Guangdong). **Map 3.**

The author compared this species with *R. mariae* but it is clearly distinct in the shape of the corolla, etc.

14. R. mariae Hance, J. Bot. 20: 230 (1882). Type: China, Guangdong, circa coenobium Fi-loi-tsz, ad angustias Tsing-un, fl. North River, 2 iv 1882, *Henry* (Hb. Hance 22025) (holo. BM).
Shrub 1–3m; young shoots covered with adpressed flattened reddish-grey hairs. *Leaves* dimorphic, coriaceous; spring leaves elliptic, 2–9.5 × 1–4cm, 2–2.5 × as long as broad, apex acute, mucronulate, base cuneate, margin entire, upper surface ± glabrescent, lower surface with scattered adpressed rufous hairs; summer leaves obovate, 10–40 × 5–20mm, otherwise as for spring leaves; petioles 2–4mm, densely covered with reddish strigose hairs. *Inflorescence* 7–12-flowered; pedicels 4–6mm, densely strigose. *Calyx* minute, covered with shining red-brown hairs, lobes inconspicuous. *Corolla* tubular-campanulate, lilac-pink, apparently without flecks, c.20mm, lobes spreading; tube c.10mm, c.3mm wide at base, c.4mm wide below lobes, glabrous.

Stamens 5, filaments glabrous. *Ovary* densely covered with shining rufous-brown hairs; style glabrous. *Capsule* ovoid, 6–8 × c.2mm, densely strigose.
China (Guizhou, Guangxi, Guangdong, Hunan). Open scrub, stream-sides, to 300m (1450m in subsp. *kwangsiense*). **Map 4.**

1a. Leaves (4.5–)6–8 × 2–3.7cm; corolla tube c.1mm at base _____ **14a.** subsp. **mariae**
1b. Leaves 4–5.5 × 1.5–1.8cm; corolla tube c.2mm at base _____ **14b.** subsp. **kwangsiense**

14a. subsp. **mariae**.

Syn.: *R. papyrociliare* P.X.Tan, Guihaia 3: 179 (1983). Type: China, Guangxi, Singan Hsin (Xingan Xian), *Guangxi Pl. Exp.* 583 (holo. IBSC).

R. papyrociliare is described as differing from subsp. *mariae* in its thinner leaves and shorter calyx lobes. These two characters however, apparently vary independently from one another.

14b. subsp. **kwangsiense** (P.X.Tan) Chamberlain & Rae, **comb. et stat. nov.**

Syn.: *R. kwangsiense* [Hu ex] P.X. Tan, Survey Gen. Rhododendron S. China 105, f.7 (1983). Type: China, Guangxi, Longsheng Xian, 1450m, 31 iii 1955, *Kwangfu Exp.* 353 (holo. IBSC, iso. KUN).

R. kwangsiense P.X.Tan var. *salicinum* Tan, loc. cit. (1983). Type: China, Guangxi, Lingui Xian, 1952, *C.F. Liang* 30202 (holo. IBSC).

R. kwangsiense P.X.Tan var. *subfalcatum* P.X.Tan, loc. cit. (1983). Type: sine loco, 13 vi 1928, *R.C. Ching* 5937 (holo. IBSC).

R. kwangsiense P.X.Tan var. *obovatifolium* P.X.Tan, loc. cit. (1983). Type: China, Guangdong, Xinyi Xian, 1931, *X.P. Gao* (*S.P. Ko*) 51190 (iso. KUN).

We consider that the varieties described by Tan are not worthy of formal recognition. Subsp. *kwangsiense* tends to have a more westerly distribution than does subsp. *mariae* but there is considerable overlap between the two subspecies.

R. mariae is allied to *R. chrysocalyx* and *R. meridionale* but generally has broader leaves than either.

15. R. cretaceum P.X.Tan, Survey Gen. Rhododendron S. China 108, f.9 (1983). Type: China, Guangdong, Rhuyuan Xian, 12 iv 1934, *X.P. Gao* (*S.P. Ko*) 54106 (holo. IBSC).
Shrub, c.1.5m; young shoots adpressed-strigose at first, soon glabrescent. *Leaves* dimorphic, chartaceous; spring leaves ovate, 4–5 × 2–2.3cm, c.2 × as long as broad,

apex acute to shortly acuminate, base cuneate, margin ciliate towards base, upper surface initally adpressed-strigose, soon glabrescent, lower surface adpressed brownish-strigose especially on midrib; summer leaves 12–18 × 10mm, otherwise as for spring leaves; petioles 2–4mm, strigose. *Inflorescence* 5–6-flowered; pedicels 3–5mm, reddish strigose. *Calyx* densely strigose, lobes c.3mm. *Corolla* funnel-campanulate, white with red flecks, c.16mm; tube c.9mm long, 5mm wide at base, hairy on outer surface, tapering. *Stamens* 5, filaments glabrous. *Ovary* densely reddish-brown-strigose; style strigose at base. *Capsule* not known.
China (Guangdong). Woodland. **Map 4.**

Only known from the type. Superficially resembling *R. mariae* but differing in the short, hairy corolla tube.

16. R. subcerinum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 88, t.1 (1982). Type: China, Guangdong, Yangchun Xian, Sian-Ja-Dong, in rimis rupium, 31 x 1935, *Huang Zhi* (*Wang, C.*) 38590 (holo. IBSC).
Shrub; young shoots covered with adpressed densely brown strigose hairs. *Leaves* dimorphic, coriaecous, clustered towards apex; spring leaves obovate to obovate-elliptic, 4.5–5.5 × 2–2.5cm, apex abruptly acuminate to broadly mucronate, base attenuate or narrowly cuneate, margin strongly revolute, upper surface green, yellow when dried, midrib slightly raised, glabrescent, lower surface pale green, sparsely strigose, midrib distinctly raised, with adpressed strigose hairs; summer leaves elliptic, 23 × 4–10mm, otherwise as for spring leaves; petioles 3–5mm, sparsely strigose. *Inflorescence* c.6-flowered; pedicels 6–10mm, yellow-brown-strigose. *Calyx* cup-shaped, lobes deltoid, strigose. *Corolla* funnel-campanulate, c.19mm, red; tube 9 × 4mm. *Stamens* 5, unequal, exserted, filaments compressed-puberulous for the most part. *Ovary* light brown strigose; style strigose in lower third. *Capsule* ellipsoid, 10mm, brown-strigose.
China (Guangdong). Only known from the type. **Map 4.**

Allied to *R. seniavinii*, but with larger flowers.

17. R. chrysocalyx Lévl. & Van., Repert. Spec. Nov. Regni Veg. 2: 113 (1906). Syntypes: Kouy-Tchéou (Guizhou), route de Mou-you-se à Tchen-Lin, vi 1904, *Cavalerie* 2059 (E); Pin-Fa bord des ruisseaux, 25 iv 1904, *Cavalerie* 1796 (E).

Syn.: *R. spinigerum* Lévl., Bull. Acad. Géog. Bot. 24: 251 (1914). Type: Kouy-Tchéou (Guizhou), Ilot a Pia Quay-Ho, 700m, 2 v 1912, *Esquirol* 3560 (holo. E).
R. kouytchense Lévl., Fl. Kouy-Tchéou 152 (1914), nom. nud., pro syn. sub. *R. chrysocalyx*.
R. xiushanense Fang in Acta Phytotax. Sin. 21: 461 (1983). Type: China, Sichuan, Xiushan, Baigeqiao, 370m, 17 v 1978, *S.X. Tan* 354 (holo. SZ).

Deciduous or semi-evergreen shrub, to 2m; densely branched, branchlets with dense coarse flat, yellowish-brown, adpressed hairs. *Leaves* persistent coriaceous, dimorphic, lanceolate to oblanceolate; spring leaves 1.5–6 × 0.5–1.5cm, apex acute, base cuneate,

margin slightly crenulate, upper surface lustrous, glabrous except for a few coarse flat adpressed hairs on the midrib, net-veins conspicuously impressed, lower surface with few and similar hairs; summer leaves 5–10 × 3–5mm, otherwise as for spring leaves; petioles 3–5mm, covered with adpressed flat yellowish-brown hairs. *Inflorescence* (3–)6–12-flowered; pedicels 10–15mm, densely hairy. *Calyx* minute, hairy. *Corolla* tubular-campanulate, rose, 20–30mm, glabrous; tube 7–15mm, 3mm wide at base. *Stamens* 5, longer than corolla, papillate below middle. *Ovary* densely hairy, hairs coarse, lustrous, yellowish-red, adpressed; style glabrous. *Capsule* ovoid, densely hairy.

China (Guizhou, N Guangxi, W Hubei, SE Sichuan). Thickets, 700m. **Map 4.**

18. R. meridionale P.X.Tan, Guihaia 2: 71, t.4 (1982). Type: China, Guangxi, Fangcheng Xian, Nasuo, 5 iv 1956, *Hopu Exp.* 2320 (holo. IBSC).

Shrub, 2–3m; young shoots covered with ± adpressed-strigose hairs. *Leaves* dimorphic, chartaceous; spring leaves narrowly lanceolate, 2–7.5 × 0.3–1.2cm, c.6 × as long as broad, apex acute, base cuneate, margin entire, ciliate, upper surface sparsely strigose, lower surface paler, sparsely strigose, more densely so on midrib; summer leaves 13–23 × 4–5mm, otherwise as for spring leaves; petioles c.1mm, strigose. *Calyx* c.1mm, lobes minute, strigose. *Corolla* funnel-campanulate, lilac-purple, c.30mm; tube c.13mm, 5–6mm wide at base, widening above, glabrous. *Stamens* 5, puberulent below. *Ovary* densely strigose; style glabrous or strigose below. *Capsule* ovoid, 8–10mm long, strigose.

China (SW Guangxi). **Map 5.**

1a. Spring leaves 50–75mm long _____ **18a.** var. **meridionale**
1b. Spring leaves not more than 20mm long _____ **18b.** var. **minor**

18a. var. **meridionale.**

Syn.: *R. meridionale* P.X.Tan. var. *setistylum* P.X.Tan, Guihaia 2: 71, t.4 (1982). Type: China, Guangxi, Fangcheng Xian, Shiwandashan, 500–630m, 27 iii 1944, *S.Q. Chen* (*S.H. Chun*) 4811 (holo. IBSC).

Ic.: Tan, Survey Gen. Rhododendron S. China t.28 (1983).

18b. var. **minor** P.X.Tan, Guihaia 2: 71, t.4 (1982). Type: China, Guangxi, Kan Tung, Miu Shan, N Luchen, 900m, 18 vi 1928, *R.C. Ching* 6142 (holo. IBSC; iso. A, PE).

Closely allied to *R. hainanense* and perhaps conspecific, but differing in the ± obsolete calyx, in the fewer (5) stamens and in the 5–6-flowered inflorescence. Most of the material cited by Tan comes from Shiwanda Shan in Guangxi Prov. or close to it. Typical *R. hainanense* also apparently occurs on the same mountain, and at least one specimen (*Ceng, H.D.* 24778) from that locality is intermediate, with the small calyx of *R. meridionale*, but the 3-flowered inflorescence and 7 stamens of *R. hainanense*. Several of Tan's records of both species from Shiwanda Shan, refer to fruiting specimens and are evidently identified on the basis of the presence or absence

of a large calyx. As there is no difference in the vegetative characters, in the absence of flowers there must be some doubt as to the identity of these specimens.

Var. *satistylum* is distinguished by its strigose style base, a difference that we find unconvincing. Var. *minor* has a distinctive appearance on account of its small leaves and is maintained here, even though the type and only specimen seen lacks flowers.

18.* R. longifalcatum P.X.Tan, Guihaia 2: 73, f.6 (1982). Type: China Guangxi, Shangsi Xian, Shiwandashan, 200m, 8 iii 1944, *S.Q. Chen* (*S.H. Chun*) 4664 (holo. IBSC).

Map 5.

Differs from *R. meridionale* in its apparantly thinner, oblong lanceolate leaves that are more densely tomentose below, in its calyx with crenulate lobes and in its obovate oblong corolla lobes.

Known only from the type. Tan separates *R. meridionale* from *R. longifalcatum* in his key by the stamens being longer than the style.

19. R. subflumineum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 94 (1982). Type: China, Hunan, Mang Shan, 500m, 4 v 1957, *L.H. Liu* (*L.H. Lau*) 422 (holo. IBSC).

Shrub, to 3m; young shoots densely adpressed brown-strigose, becoming pale greyish-brown, sometimes glabrescent. *Leaves* crowded towards ends of branches, dimorphic, coriaceous, elliptic-oblong; spring leaves 3.5–4.5 × 1.3–1.8cm, apex shortly acute, base cuneate, margin strigose, upper surface brown-strigose, lower surface silky reddish-brown-strigose; summer leaves smaller, oblong-lanceolate, 16–20 × 6–7mm, otherwise as for spring leaves; petioles 4mm, densely brown-strigose. *Inflorescence* 5–6(–8)-flowered; pedicels 10mm, densely brown-strigose. *Calyx* minute, strigose, lobes crenulate. *Corolla* narrowly funnel-campanulate, 28mm, pinkish-red; tube 15mm, glabrous. *Stamens* 8–9, puberulent to above middle. *Ovary* densely silky brown-strigose; style glabrous. *Capsule* 7mm, ovoid, densely strigose.

China (N Guangdong, S Hunan). Riversides, 550m. **Map 5.**

Close to *R. meridionale* but more densely hairy and with 8–9 stamens.

20. R. hainanense Merrill, Philipp. J. Sci. 21: 350 (1922). Type: China, Hainan, eastern part of the Island, i 1921, *K.L. Schaeffer* (holo. K).

Shrub, 1–2m, with many erect twiggy branches; young shoots covered with flattened brown adpressed hairs. *Leaves* monomorphic, subpersistent, subcoriaceous, lanceolate, 2–5 × 0.7–1.4cm, 3–6 × as long as broad, apex acute, base cuneate, margin entire, upper surface with scattered red-brown hairs and with midrib impressed, lower surface glaucous, with scattered red-brown hairs, midrib covered with long shining adpressed red-brown hairs; petioles 2–4mm, covered with adpressed red-brown hairs. *Inflorescence* 1–3-flowered; pedicels 2–3mm, covered with adpressed hairs. *Calyx* densely pilose and ciliate, lobes lanceolate, 2–4mm. *Corolla* funnel-shaped, bright red, 20–30mm; tube c.12mm, outer surface glandular, inner surface hairy. *Stamens* 10, pubescent below. *Ovary* densely setose-pilose, style glabrous. *Capsule* ovoid, c.8mm long.

China (Hainan Island, Guangxi). Mountain tops, thickets amongst rocks, rocks by rivers, 500–1000m. **Map 5.**

Closely allied to *R.meridionale*, which may be conspecific.

21. R. pulchroides Chung & Fang, Acta Phytotax. Sin. 6: 171 (1957). Type: China, Guangxi, Lungsheng Hsien, Pingshui Hsiang Hungtan, 970m, 12 vi 1955, *Kwangfu Exp.* 536 (holo. SZ).

Ic.: Acta Phytotax. Sin. 6, t.42 (1957).

Small loosely branched shrub, c.1m, with short slender branches; young shoots clothed with grey flattened hairs, becoming ± glabrescent when older. *Leaves* deciduous; spring leaves oblong-elliptic 2–2.5 × 0.6–0.8(–1)cm, 2.5–3.2 × as long as broad, apex acute-apiculate, base cuneate, margins entire, ciliate, upper surface with lamina glabrescent, indumentum ± persistent on midrib and lateral veins, lower surface ± densely brownish-sericeous, indumentum more dense on midrib; petioles densely villose. *Inflorescence* 1–2-flowered; pedicels c.10mm, pilose. *Calyx* 5–6mm, sericeous-pilose. *Corolla* funnel-campanulate, 25–30mm, purplish red; tube 15mm, glabrous. *Stamens* 10, filaments minutely pilose below. *Ovary* densely sericeous-pilose; style glabrous. *Capsule* unknown.

China (N Guangxi). 970m. **Map 5.**

Known only from the type. Closely allied to *R. simsii* but generally more densely hairy.

22. R. oldhamii Maxim., Rhododendr. As. Orient. 34 (1870). Type: Taiwan, prope Tansoy, 1884, *Oldham* 212 (iso. BM, K, PE).

Syn.: *R. oldhamii* Maxim. var. *glandulosum* Hayata in J. Coll. Sci. Imp. Univ. Tokyo 25: 153 (1908). Syntypes: Taiwan; Suizan, in montibus Morrison, 7702ft, x 1905, *Nagasawa* 668; 8000ft, *Nagasawa* 2210; 9000ft, x 1906, *Nagasawa* 1807; in montibus centralibus, 10000ft, xi 1906, *Kawakami & Mori* 1860, omnes n.v.

R. ovatosepalum Yamamoto in J. Soc. Trop. Agric. 5: 405 (1933). Type: Tawian, Pref. Shinchiku, iv 1918, *Simada*, n.v.

Ic.: Komatsu, Icon. Pl. Koisikav. 2: t.119 (1914); Bot. Mag. 150: t.9059 (1924); Fl. Taiwan 4: 34 (1978).

Much-branched shrub, to 3m; young shoots densely clothed with spreading red-brown glandular hairs intermixed with scattered ± spreading, flattened hairs. *Leaves* dimorphic, persistent, chartaceous; spring leaves ovate-lanceolate 3.5–6 × 1.8–2.5cm, 2–2.4 × as long as broad, apex acute to mucronate, base rounded to broadly cuneate, margin entire, covered with light brown long pilose hairs on both surfaces, hairs somewhat longer on midrib; summer leaves 15–20 × 8–10mm, otherwise as for spring leaves; petioles 4–9mm, covered with spreading pilose hairs. *Inflorescence* 1–3-flowered; pedicels 5–10mm, covered with spreading glandular red-brown hairs. *Calyx* green, glandular-hairy and pilose, lobes ovate-lanceolate, c.2mm, ciliate. *Corolla* funnel-shaped, 25–35mm, orange-red to coral-pink; tube c.12mm, outer surface gla-

brous, inner surface papillate. *Stamens* (8–)10, unequal, as long as or longer than corolla, filaments papillate below middle. *Ovary* densely glandular-setose; style glabrous. *Capsule* ovoid, 8–10mm, glandular-setose.
China (Taiwan). Sandstone cliffs etc., sea-level–2450m. **Map 5.**

A distinctive species with no close allies.

23. R. taiwanalpinum Owhi, J. Jap. Bot. 13: 339 (1937). Type: Taiwan, Nankotaisan, *Ohwi* 2580 (holo. KYO, n.v.).
Ic.: Proc. Nat. Sci. Counc. 6: 28, f.18 (1973).
Shrub, 1–1.5m; young shoots covered with adpressed brown hairs. *Leaves* monomorphic, subpersistent, coriaceous, ovate-oblong to oblong-lanceolate, 1.5–2(–3) × 0.7–1.2(–1.8)cm, 1.7–2 × as long as broad, apex acute, mucronate, base cuneate, margin entire, upper surface sparsely strigose, lower surface densely strigose; petioles 2–3mm, adpressed-strigose. *Inflorescence* (1–)2–3-flowered; pedicels 5–7mm, densely covered with reddish-brown hairs. *Calyx* densely reddish-brown-hirsute, lobes rounded, 1–2mm. *Corolla* broadly funnel-campanulate, 10–15(–20)mm long, 15–20mm across, pink with rose flecks; tube 4–6mm, glabrous. *Stamens* 9–10, unequal, filaments villose in lower half. *Ovary* greyish-pubescent; style pubescent in lower half. *Capsule* not known.
China (N Taiwan). Alpine meadows, 2800–3000m. **Map 6.**

Originally described as being allied to *R. oldhamii* but lacking the glandular indumentum of that species.

The holotype cannot be located at Kyoto. Therefore our knowledge of this species is based on a specimen that lacks flowers (*Yamazaki et al.* 235) from the type locality.

24. R. tashiroi Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 64 (1887). Type: in Japoniae australis ins. Tanega-sima, *Tashiro* (holo. LE, n.v.).
Ic.: Stevenson (ed.), Sp. Rhodod. 122 (1930); Togashi et al., Species Rhododendron Japan 122–128 (1982).
Branched shrub, 2–6m; young shoots covered with ± flattened weak brown hairs, soon becoming glabrous. *Leaves* apparently monomorphic, persistent, 2–3 at apex of branches, elliptic-obovate, 4.5–7 × 1.5–2.5cm, apex acute, base cuneate, margin ± entire, both surfaces at first clothed with adpressed grey-brown hairs, becoming glabrous above, lower surface glabrous except along midrib; petioles 4–10mm, covered with adpressed brown hairs. *Inflorescence* 2–5-flowered; pedicels 8–15mm, densely clothed with strigose brown hairs. *Calyx* 1mm, densely clothed with strigose brown hairs. *Corolla* broadly funnel-campanulate, 25–40mm, pale rose-purple, sparingly spotted. *Stamens* 10(–12), glabrous. *Ovary* densely clothed with adpressed, flattened, shiny brown hairs; style thickened towards apex, glabrous. *Capsule* 8–12mm, clothed with flattened brown hairs.
Japan (Liukiu and Kawanabe Islands, Yakushima, Kyushyu), S Taiwan?. Evergreen forests, on slopes, 0–500m. **Map 7.**

The hybrid between *R. tashiroi* and *R. reticulatum* has been named *R.* × *takamashanianum* Sugimoto (*J. Geobot.* 22: 53, 1975).

25. R. kanehirai Wilson in Wilson & Rehder, Monogr. Azaleas 28 (1921). Type: Taiwan, prov. Taihoku, Urai, in a garden at the police station, 1 iv 1918, *Wilson* 10276, n.v.

Ic.: The Rare and Threatened Plants of Taiwan 1: 78 (1980).

Much-branched shrub, 1–2.5m; young shoots densely clothed with adpressed broad flattened stiff, persistent chestnut-brown hairs. *Leaves* dimorphic, persistent; spring leaves oblanceolate to narrowly obovate, 2–5 × 0.5–1.5cm, apex acute, gland-tipped, base cuneate, margin entire, both surfaces sparsely strigose, especially on midrib; summer leaves 15–30 × 2–6mm, otherwise as for spring leaves; petioles 2–5mm, densely strigose. *Inflorescence* 1(–2)-flowered; pedicels 5–8mm, densely chestnut-strigose. *Calyx* c.1mm, indumentum as for pedicels. *Corolla* funnel-campanulate, 25–40mm, pink (or carmine to scarlet); tube 15–25mm, glabrous. *Stamens* 10, as long as corolla, unequal, filaments papillose below middle. *Ovary* densely clothed with grey or chestnut-brown strigose hairs; style glabrous or with a few adpressed hairs at base. *Capsule* cylindric-oblong, c.10mm long.

China (N Taiwan). 400m. **Map 6.**

Apparently closely allied to *R. tashiroi* from the southern islands of Japan and possibly conspecific. Wilson originally described the flower colour as being scarlet or carmine; later authors have suggested that it is pink. Also allied to *R. indicum* but differing in the number of stamens, etc.

26. R. scabrum G. Don, Gen. Syst. 3: 846 (1834). Type not designated.

Loosely branched shrub, 1–2m; young shoots covered with adpressed grey-brown hairs that gradually disappear. *Leaves* persistent, coriaceous, dimorphic; spring leaves elliptic to lanceolate, 3–9 × 2–3.5cm, (1.5–)2–3.2 × as long as broad, apex acute, base broadly cuneate, margin entire to subcrenulate, ciliate, both surfaces with scattered adpressed pilose hairs, lower surface paler than upper; summer leaves elliptic to lanceolate, 30–40 × 10–15mm, apex acute to rounded and mucronulate, otherwise as for spring leaves; petioles 2–4mm, stout, flattened, covered with adpressed flattened grey-brown strigose hairs. *Inflorescence* 2–6-flowered; pedicels 10mm, densely fulvous-strigose hairs glandular or eglandular. *Calyx* covered with adpressed grey pilose or glandular-pilose hairs, lobes oval, rounded, c.5mm. *Corolla* broadly funnel-shaped, 45–60mm long, c.50mm across, rose-red to scarlet, with dark flecks on upper lobes; tube 15–20mm, glabrous. *Stamens* 10, shorter than corolla, filaments pilose below middle. *Ovary* eglandular- or glandular-pilose; style glabrous. *Capsule* ovoid c.10mm, sparsely hairy.

1a. Pedicels, calyx and ovary eglandular-pilose _ **26a.** subsp. **scabrum**
1b. Pedicels, calyx and ovary glandular-pilose ___ **26b.** subsp. **amanoi**

26a. subsp. **scabrum.**

Syn.: *R. maximum* sensu Thunberg, Fl. Japan 181 (1784), non L. (1753).
R. indicum Sweet var. *sinensis* Miquel, Ann. Mus. Lugduno-

Batavum 1: 33 (1863). Type: Japan, locis clivosis, *Thunberg, Siebold, Burger*, n.v.

R. sublanceolatum Miquel, Ann. Mus. Lugduno-Batavum 2: 163 (1866); *R. indicum* Sweet var. *sublanceolatum* (Miquel) Makino, Bot. Mag. Tokyo 18: 100 (1904). Type not known.

R. sublateritium Komatzu, Bot. Mag. (Tokyo) 32: 12 (1918). Type not known.

R. liukiuense Komatzu, loc cit. (1918). Type not known.

? *R. yakuinsulare* Masamune, Trans. Trop. Agric. 2: 38 (1930); ? *R. simsii* Planchon var. *yakuinsulare* (Masamune) Yamazaki, J. Jap. Bot. 49: 272 (1974). Type not known.

R. scabrum G.Don f. *linearisepalum* Sugimoto, J. Geobot. 22: 52 (1975). Type not known.

Ic.: Bot. Mag. 139: t.8478 (1913); Togashi et al., Species Rhododendron Japan 130–132 (1982).

Japan (Ryukyu Islands). In open forest. **Map 8.**

In Ohwi & Kitagawa (*New Flora Japan*: 1157, 1983) *R. yakuinsulare* is mentioned under *R. scabrum* and there is no entry for *R. simsii*. Since we have seen neither the type specimen nor the original description we are uncertain of the true status and affinities of this taxon.

26b. subsp. **amanoi** (Owhi) Chamberlain & Rae, **comb. et stat. nov.**

Syn.: *R. amanoi* Owhi, Bull. Nat. Sci. Mus. Tokyo n.s. 1,1: 4 (1954). Type: Japan, Ryukyu, Ins. Iriomote, Inaba, secundum fluvii Uranchi, 21 vi 1953, *T. Amano* 7185, n.v.

Ic.: Togashi et al., Species Rhododendron Japan 134–137 (1982).

Japan (S Ryukyu Islands). **Map 8.**

Subsp. *amanoi* apparently differs in its glandular indumentum and slightly smaller flowers. Furthermore, it replaces subsp. *scabrum* in the Southern Ryukyu Islands.

27. R. macrosepalum Maxim., Rhododendr. As. Orient. 31 (1870). Type; two plants cultivated by Maximovicz, originating in Japan, 'in alpe altissime Nikkoo' (n.v.).

Syn.: *R. linearifolium* Sieb. & Zucc. var. *macrosepalum* (Maxim.) Makino, Bot. Mag. (Tokyo) 27: 108 (1913).

R. hortense Nakai in Nakai & Koidz., Trees Shrubs Japan ed. 1: 122 (1922).

Ic.: Gartenflora 19:t. 662 (1870); S. Okuyama, Coloured Illust. Wild Pl. Japan 1: t.25, f.2 (1960); Togashi et al., Species Rhododendron Japan 186–189 (1982).

Low shrub, 0.3–1m; young shoots covered with greyish spreading-pilose, sometimes glandular hairs, also with a few bristles. *Leaves* dimorphic, ± deciduous, chartaceous; spring leaves ovate-elliptic, 2.5–7 × 1.5–2.5cm, 1.7–2.5 × as long as broad, apex acute, base cuneate, margin entire, upper surface sparsely glandular-pilose, lower surface more densely pilose, with a few setose hairs on midrib and main veins; summer

leaves oblanceolate, 12–20 × 3-6mm, otherwise as for spring leaves; petioles c.5mm, densely pilose, also with a few flattened spreading setae. *Inflorescence* 2–10-flowered; pedicels 10–25mm, covered with long spreading pilose, partly glandular hairs. *Calyx* glandular-pilose, lobes lanceolate to broadly oblong, 15–30mm. *Corolla* broadly funnel-shaped, lilac-pink to rose-purple, with purple flecks on upper lobe, 35–50mm; tube 15–20mm, glabrous. *Stamens* 5(–7), slightly shorter than corolla, filaments pubescent below middle. *Ovary* glandular-setose, style glabrous. *Capsule* ovoid, c.10mm, setose. Japan (Honshu, Shikoku). Thickets, open forest, 150–400m. **Map 9.**

Possibly hybridizing with *R. kaempferi* (q.v.). *R. macrosepalum* may be the wild species from which *R. linearifolium* is derived.

27*. R. × enomotoi Yamazaki, J. Jap. Bot. 51: 31 (1976)—*R. macrosepalum* × *R. indicum*. Type: Japan, Prov. Aichi, Kitashidara-gun, cult., 27 v 1974, *F. Yamazaki* 974 (holo. TI, n.v.).

This hybrid will key down to *R. macrosepalum* but differs in its smaller, 5–7mm, calyx, etc.

28. R. yedoense Maxim. in Regel, Gartenflora 35: 565, t.1233 (1886). Type: a cultivated plant exhibited in St Petersburg in 1884, originating from Japan [n.v.], or the plate cited above.

Compact densely branched shrub, 1–2m; young shoots clothed with adpressed flattened strigose hairs, glabrescent in second year. *Leaves* dimorphic, ± deciduous, chartaceous; spring leaves elliptic-lanceolate to oblanceolate, 3–8 × 1–2.5cm, 2–3 × as long as broad, apex acute and mucronate, base cuneate, margin entire, ciliate, both surfaces with scattered adpressed shining brown strigose hairs, lower surface paler than upper; summer leaves thicker, upper surface soon glabrescent, otherwise as for spring leaves; petioles 3–6mm, covered with loosely adpressed strigose hairs. *Inflorescence* 2–3-flowered, flowers opening with or shortly before the leaves; pedicels 5–10mm, covered with loosely adpressed strigose hairs. *Calyx* green, covered with adpressed strigose hairs, lobes ovate, acute or obtuse, 5–8mm. *Corolla* broadly funnel-shaped, 35–40mm, 50mm across, rose to pale lilac-purple (sometimes double in cultivated varieties), with flecks, fragrant, lobes c.25mm; tube glabrous. *Stamens* 10, subequal, shorter than corolla, filaments papillose below middle. *Ovary* densely covered with adpressed hairs; style glabrous or pilose towards base. *Capsule* ovoid, 5–8mm, densely strigose, with persistent calyx.

1a. Flowers double; calyx to 15mm (cultivated) ___ **28a.** var **yedoense**
1b. Flowers single; calyx 5–8mm (native) _____ **28b.** var **poukhanense**

28a. var. **yedoense**.

Known only in cultivation.

28b. var. **poukhanense** (Lévl.) Nakai, Bot. Mag. (Tokyo) 4: 274, Jap. (1920).

Syn.: *R. poukhanense* Lévl., Repert. Spec. Nov. Regni Veg. 5: 100 (1908). Type: Korea, in acre Pouk Han, 3 vi 1901, *Faurie* s.n. (holo. E).

R. hallaisanense Lévl., Repert. Spec. Nov. Regni Veg. 12: 101 (1913); *R. yedoense* Maxim. var. *hallaisanense* (Lévl.) Yamazaki, J. Jap. Bot. 62: 260(1987). Type Korea, Quelpaert, Hallaisan, 1200m, x 1907, *Taquet* 305 (holo. E).

R. coreanum Rehder, Mitt. Deutsch. Dendrol. Ges. 22: 259 (1913). Type: a cultivated specimen flowering in the Arnold Arboretum on 6 v 1911, raised from seed collected by J.G. Jack in Korea, Pack Han, Seoul, on 25 ix 1905 (n.v.).

Ic.: Togashi et al, Species Rhododendron Japan 182-184 (1982).

Korea, Japan (Tsushima), native. Rocky ground among shrubs, c.1100m. **Map 10.**

Probably most closely allied to *R. mucronatum.*

29. R. simsii Planchon, Fl. des Serres 9:78 (1854). Based on *Azalea indica* sensu Sims, Bot. Mag. 35: t.1480 (1812), non L. (1753). Type: a plant grown by James Vere in 1812 near London, or the plate cited.

Much-branched twiggy shrub, 1–3m; young shoots densely covered with adpressed flattened shining brown strigose hairs; bud scales viscid on inner surface. *Leaves* dimorphic, chartacerous; spring leaves ovate-lanceolate to linear-elliptic, 3–7 × (0.6–)1–2cm, (2–)2.5–4(–7) × as long as broad, apex acute, base cuneate, margin entire, upper surface sparingly adpressed-strigose, lower surface paler, more densely strigose, especially on the midrib and veins; summer leaves elliptic to oblong-elliptic, 10–20 × 5–10mm, apex often rounded, otherwise as for spring leaves; petioles 3–6mm, covered with adpressed red-brown strigose hairs. *Inflorescence* 2–6-flowered; pedicels 5–10mm, densely strigose. *Calyx* strigose; lobes ovate-lanceolate, 3–7mm, ciliate, apex blunt. *Corolla* broadly funnel-shaped, 25–60mm, white to dark red, upper lobes with darker flecks; tube 7–33mm, glabrous. *Stamens* (8–)10, as long as corolla, filaments pubescent below middle. *Ovary* densely strigose; style strigose at base. *Capsule* 5–10mm, strigose.

1a. Corolla rich red to carmine, 35–60mm long ——— **29a.** var. **simsii**

1b. Corolla white to rose-pink, 25–40mm long **29b.** var. **mesembrinum**

29a. var. **simsii.**

Syn.: *R. indicum* Sweet var. *ignescens* Sweet, Brit. Fl. Garden ser. 2,2: t.128 (1833). Type: the plate cited, painted from a specimen that originated from China.

R. calleryi Planchon, Fl. des Serres 9: 81 (1854). Syntypes: China, *Callery* 50, 150 (P, n.v.); *Fortune* 72 (P, n.v.).

R. indicum Sweet var. *simsii* (Planchon) Maxim. Rhododendr. As. Orient. 38 (1870).

leaves oblanceolate, 12–20 × 3-6mm, otherwise as for spring leaves; petioles c.5mm, densely pilose, also with a few flattened spreading setae. *Inflorescence* 2–10-flowered; pedicels 10–25mm, covered with long spreading pilose, partly glandular hairs. *Calyx* glandular-pilose, lobes lanceolate to broadly oblong, 15–30mm. *Corolla* broadly funnel-shaped, lilac-pink to rose-purple, with purple flecks on upper lobe, 35–50mm; tube 15–20mm, glabrous. *Stamens* 5(–7), slightly shorter than corolla, filaments pubescent below middle. *Ovary* glandular-setose, style glabrous. *Capsule* ovoid, c.10mm, setose. Japan (Honshu, Shikoku). Thickets, open forest, 150–400m. **Map 9.**

Possibly hybridizing with *R. kaempferi* (q.v.). *R. macrosepalum* may be the wild species from which *R. linearifolium* is derived.

27*. R. × enomotoi Yamazaki, J. Jap. Bot. 51: 31 (1976)—*R. macrosepalum* × *R. indicum*. Type: Japan, Prov. Aichi, Kitashidara-gun, cult., 27 v 1974, *F. Yamazaki* 974 (holo. TI, n.v.).

This hybrid will key down to *R. macrosepalum* but differs in its smaller, 5–7mm, calyx, etc.

28. R. yedoense Maxim. in Regel, Gartenflora 35: 565, t.1233 (1886). Type: a cultivated plant exhibited in St Petersburg in 1884, originating from Japan [n.v.], or the plate cited above.

Compact densely branched shrub, 1–2m; young shoots clothed with adpressed flattened strigose hairs, glabrescent in second year. *Leaves* dimorphic, ± deciduous, chartaceous; spring leaves elliptic-lanceolate to oblanceolate, 3–8 × 1–2.5cm, 2–3 × as long as broad, apex acute and mucronate, base cuneate, margin entire, ciliate, both surfaces with scattered adpressed shining brown strigose hairs, lower surface paler than upper; summer leaves thicker, upper surface soon glabrescent, otherwise as for spring leaves; petioles 3–6mm, covered with loosely adpressed strigose hairs. *Inflorescence* 2–3-flowered, flowers opening with or shortly before the leaves; pedicels 5–10mm, covered with loosely adpressed strigose hairs. *Calyx* green, covered with adpressed strigose hairs, lobes ovate, acute or obtuse, 5–8mm. *Corolla* broadly funnel-shaped, 35–40mm, 50mm across, rose to pale lilac-purple (sometimes double in cultivated varieties), with flecks, fragrant, lobes c.25mm; tube glabrous. *Stamens* 10, subequal, shorter than corolla, filaments papillose below middle. *Ovary* densely covered with adpressed hairs; style glabrous or pilose towards base. *Capsule* ovoid, 5–8mm, densely strigose, with persistent calyx.

1a. Flowers double; calyx to 15mm (cultivated) ___ **28a.** var **yedoense**
1b. Flowers single; calyx 5–8mm (native) _____ **28b.** var **poukhanense**

28a. var. **yedoense**.

Known only in cultivation.

28b. var. **poukhanense** (Lévl.) Nakai, Bot. Mag. (Tokyo) 4: 274, Jap. (1920).

Syn.: *R. poukhanense* Lévl., Repert. Spec. Nov. Regni Veg. 5: 100 (1908). Type: Korea, in acre Pouk Han, 3 vi 1901, *Faurie* s.n. (holo. E).

R. hallaisanense Lévl., Repert. Spec. Nov. Regni Veg. 12: 101 (1913); *R. yedoense* Maxim. var. *hallaisanense* (Lévl.) Yamazaki, J. Jap. Bot. 62: 260(1987). Type Korea, Quelpaert, Hallaisan, 1200m, x 1907, *Taquet* 305 (holo. E).

R. coreanum Rehder, Mitt. Deutsch. Dendrol. Ges. 22: 259 (1913). Type: a cultivated specimen flowering in the Arnold Arboretum on 6 v 1911, raised from seed collected by J.G. Jack in Korea, Pack Han, Seoul, on 25 ix 1905 (n.v.).

Ic.: Togashi et al, Species Rhododendron Japan 182-184 (1982).

Korea, Japan (Tsushima), native. Rocky ground among shrubs, c.1100m. **Map 10.**

Probably most closely allied to *R. mucronatum.*

29. R. simsii Planchon, Fl. des Serres 9:78 (1854). Based on *Azalea indica* sensu Sims, Bot. Mag. 35: t.1480 (1812), non L. (1753). Type: a plant grown by James Vere in 1812 near London, or the plate cited.

Much-branched twiggy shrub, 1–3m; young shoots densely covered with adpressed flattened shining brown strigose hairs; bud scales viscid on inner surface. *Leaves* dimorphic, chartacerous; spring leaves ovate-lanceolate to linear-elliptic, 3–7 × (0.6–)1–2cm, (2–)2.5–4(–7) × as long as broad, apex acute, base cuneate, margin entire, upper surface sparingly adpressed-strigose, lower surface paler, more densely strigose, especially on the midrib and veins; summer leaves elliptic to oblong-elliptic, 10–20 × 5–10mm, apex often rounded, otherwise as for spring leaves; petioles 3–6mm, covered with adpressed red-brown strigose hairs. *Inflorescence* 2–6-flowered; pedicels 5–10mm, densely strigose. *Calyx* strigose; lobes ovate-lanceolate, 3–7mm, ciliate, apex blunt. *Corolla* broadly funnel-shaped, 25–60mm, white to dark red, upper lobes with darker flecks; tube 7–33mm, glabrous. *Stamens* (8–)10, as long as corolla, filaments pubescent below middle. *Ovary* densely strigose; style strigose at base. *Capsule* 5–10mm, strigose.

1a. Corolla rich red to carmine, 35–60mm long _____ **29a.** var. **simsii**

1b. Corolla white to rose-pink, 25–40mm long **29b.** var. **mesembrinum**

29a. var. **simsii.**

Syn.: *R. indicum* Sweet var. *ignescens* Sweet, Brit. Fl. Garden ser. 2,2: t.128 (1833). Type: the plate cited, painted from a specimen that originated from China.

R. calleryi Planchon, Fl. des Serres 9: 81 (1854). Syntypes: China, *Callery* 50, 150 (P, n.v.); *Fortune* 72 (P, n.v.).

R. indicum Sweet var. *simsii* (Planchon) Maxim. Rhododendr. As. Orient. 38 (1870).

R. indicum Sweet var. *formosanum* Hayata, Icon. Pl. Formosan. 3: 134 (1913). Type: Taiwan, Kusukusu, iii 1898, *C. Owarari*, n.v.

R. annamense Rehder, J. Arnold Arb. 10:182 (1929). Type: Vietnam, prov. Thua-Thien, Hue, i–iv 1927, *Squires* 94 (iso. BM, E, K).

R. bicolor P.X.Tan, Survey Gen. Rhododendron S. China 101 (1983). Type : China, Guangdong, Conghua Xian, Rui-tin, 16 iii 1973, *S.Q. Chen* (*S.H. Chun*) 18492 (holo. IBSC).

R. viburnifolium W.P. Fang, Acta Phytotax. Sin. 21: 469 (1983). Syntypes: China, Sichuan, Hejiang, Fubaolinchang, Jiaozi Shan, 680–1750m, 20–25 v 1981, *D.W. Liao et al.* 1-63 (syn. SZ); 3-28 (syn. SZ); 4-2, n.v.

Ne Upper Burma, China (widespread in W, C, S & E), Hongkong, S Taiwan, Laos, Thailand, S Japan (Ryukyu Is.). Open woodland, amongst scrub, often near water, 600–2700m. **Map 6.**

There is some doubt as to the identity of the type of *R. simsii* as the plate cited is atypical in its narrowly lanceolate calyx lobes and in its hairy corolla. It is not clear whether the type had a spreading or adpressed indumentum on its young shoots. However, in other respects it matches our concept of var. *simsii.*

R. annamense is a narrow-leaved form (leaves 4–7 × as long as broad) that occurs sporadically with the typical broad-leaved form in Laos, Vietnam, S China, and NE Burma (*Kingdon-Ward* 1792, 3007, 5568, 6607 & 22036). This form is not formally recognized as there is no clear demarcartion between it and var. *simsii* sensu stricto.

The type of *R. bicolor* has relatively small flowers but within the range of var. *simsii.* The bicoloured nature of the stamens mentioned in the type description may by an artifact due to drying conditions.

We can see no reason for maintaining *R. viburnifolium* as distinct from var. *simsii.*

29b. var. **mesembrinum** [Balf. f. & Forrest ex] Rehder in Stevenson (ed.), Species Rhododendron 105 (1930).? Lectotype: China, Yunnan, Jang-tzow Shan, Shweli-Salween Divide, 2500m, v 1919, *Forrest* 17914 (holo. E).

Ne Upper Burma, China (Yunnan). Forest margins, etc. 1800-2700m. **Map 6.**

Close to var. *simsii* but with a more restricted distribution; differing in its generally smaller and paler flowers.

R. simsii is cultivated widely in the warm temperate parts of E Asia and many cultivars are known. *R. vittatum* (Fortune) Planchon (*R. simsii* var. *vittatum* (Fortune) Wilson) is one of these cultivated forms with flowers white striped lilac-purple, occasionally with individual flowers that are pure white or lilac-purple.

The purple-flowered *R. bellum* from Guangxi Province will probably key down to *R. simsii* (see p. 115).

30. R. mucronatum (Blume) G. Don, Gen. Syst. 3: 846 (1834). Type: 'e regno Chinensi allata', n.v.

Syn.: *Azalea mucronata* Blume, Bijdr. 853 (1826).

Shrub, 1–2m; young shoots densely clothed with loosely adpressed flattened strigose hairs intermixed with softer grey-brown, sometimes glandular, pilose hairs. *Leaves* dimorphic, chartaceous; spring leaves ovate-lanceolate, 3.5–5 × 1.5–2cm, 2–2.5 × as long as broad, apex acute or obtuse, mucronate, base cuneate, margin entire, both surfaces clothed with adpressed reddish-grey pilose hairs, especially on midrib; summer leaves oblanceolate, 15–30 × 5–10mm, c.3 × as long as broad, otherwise as for spring leaves; petioles 3–5mm, densely clothed with spreading flattened strigose and softer pilose hairs. *Inflorescence* 1–3-flowered; pedicels 10–15mm, clothed with soft spreading pilose, sometimes glandular and flattened, strigose hairs. *Calyx* glandular-pubescent, lobes lanceolate, up to 15mm long, often slightly erose. *Corolla* widely funnel-shaped, white to rose-pink or red, 25–50mm; tube 12–25mm, glabrous. *Stamens* 10, c. as long as corolla, papillate below middle. *Ovary* setose; style glabrous. *Capsule* conic-ovoid, c.5mm long.

1a. Flowers white (only known in cultivation) **30a.** var. **mucronatum**
1b. Flowers rose-pink (native in S Japan) _____ **30b.** var. **ripense**

30a. var. **mucronatum.**

Syn.: *Azalea rosmarinifolia* Burmann, Fl. Ind. 43, t.3, f.3 (1768); *Rhododendron rosmarinifolium* (Burmann) Dippel, Handb. Laubholzk. 1: 421 (1889), non Vidal (1886). Type: 'habitat in Japonia colitur in Java', cult., n.v.

A. ledifolia Hooker, Bot. Mag. 56: t.2901 (1829); *Rhododendron ledifolium* (Hooker) G. Don, Gen. Syst. 3:846 (1834). Type presumed to be the plate cited.

A. liliiflora Poiteau, Annal. de From. 104 (1829). Type not designated.

Rhododendron leucanthum Bunge, Mem. Acad. Imp. Sci. St. Pétersbourg Divers Savans 2: 115 (1833). Type: in frigidis Pekingensis colitur, ii 1831, *Bunge*, n.v.

R. burmannii G. Don, loc. cit. (1834).

R. argyi Lévl., Repert. Spec. Nov. Regni Veg. 12: 102 (1913). Type: China, Jiangxi, Long-se, Long Chien, Vou-Sie, 20 iv 1863, *d'Argy* (holo. E).

Var. *mucronatum* is the widely cultivated white form of the species. It may occur in the wild as the albino form of var. *ripense*.

30b. var. **ripense** (Makino) Wilson in Wilson & Rehder, Monogr. Azaleas 72 (1921).

Syn.: *R. ripense* Makino, Bot. Mag. (Tokyo) 22: 55 (1908). Syntypes: Japan, Prov. Tosa, Ochi, side of River Niyodo, 1884, 1885, 1889, *Makino*, n.v.; Prov. Iyo, Shingu, side of River Dozangawa, 3 v 1893, *Makino*, n.v.

Ic.: Togashi et al., Species Rhododendron Japan 174–176 (1982).

Japan (SW Honshu, Shikoku, NE Kyushyu). Rocks by streams, etc. **Map 11.**

Closely allied to *R. macrosepalum* but differing in the smaller leaves, adpressed-hairy shoots, etc. Widely cultivated, with many distinct garden forms, of which one is represented by the type of var. *mucronatum*. These have almost certainly been derived from var. *ripense*, a native of S Japan.

31. R. boninense Nakai, Bot. Mag. (Tokyo) 34: 324, Jap. (1920). Type: Japan, Bonin Islands, *T. Nakai & H. Toyoshima*, n.v.

Ic.: Toyoda, Fl. Bonin Is. 174 (1981); Togashi et al., Species Rhododendron Japan 138–140 (1982).

Much-branched shrub, to 2m; young shoots covered with adpressed rufous hairs. *Leaves* persistent, monomorphic, oblong-lanceolate, 2–5 × 1–2cm, apex subacute, mucronulate, base cuneate, upper surface sparsely covered with adpressed straight rufous hairs, lower surface with impressed veins and densely covered with adpressed straight rufous hairs; petioles 5–10mm, channelled above, indumentum as for leaves. *Inflorescence* 4–6-flowered; pedicels 4–6mm, covered with adpressed rufous hairs and subtended by the sub-persistent bud-scales. *Calyx* with 5 minute acute or rounded teeth covered with adpressed rufous hairs. *Corolla* funnel-campanulate, white, 40–50mm long and as wide. *Stamens* 10, papillose below middle. *Ovary* densely covered with adpressed strigose hairs; style pilose below middle. *Capsule* 10–20mm, oblong-ovoid, covered with grey-brown hairs.

Japan (Bonin Islands). **Map 8.**

This is the only *Rhododendron* found in the Bonin Islands. It grows on the cliffy summit of Tsutsyiyama. The foliage resembles that of *R. simsii* and the flowers those of *R. mucronatum*.

32. R. eriocarpum (Hayata) Nakai, Trees Shrubs Japan ed. 1, 1:97 (1922). Type: Japan, Liukiu, Nakanoshima, 2 viii 1910, *Hayata* 96 (holo. TI).

Syn.: *R. indicum* Sweet var. *eriocarpum* Hayata, Icon. Pl. Formosan. 3: 134 (1913).

R. indicum Sweet var. *tamurai* [sphalm. pro *tamuræ*] Makino in Bot. Mag. Tokyo 18: 102, 103, t. (1904); *R. tamurae* (Makino) Masamune, Prelim. Rep. Veg. Yakus. 106 (1929) & Mem. Sci. Agric. Taihoku Imp. Univ. Bot. 11(4): 349 (1934). Type: Japan, Tokyo, cult., vi 1904, *Makino*, n.v.

R. eriocarpum (Hayata) Nakai var. *tawadae* Ohwi in Bull. Nat. Sci. Mus. Tokyo n.s. 1: 4 (1954); *R. tawadae* (Ohwi) Ohwi. J. Jap. Bot. 29: 369 (1954). Type: Japan, Ryukyu, vertice M. Uwotsuridake ins. Uwotsuri, 300–320m, 17 iv 1953; *Tawada* 29, n.v.

Ic.: Togashi et al., Species Rhododendron Japan 147–150 (1982).

Dwarf shrub, to at least 0.4m; young shoots densely covered with broad flattened brown adpressed hairs. *Leaves* monomorphic, persistent, subcoriaceous, obovate to

elliptic, 1.7–2.5 × 1–1.5cm, c.1.7 × as long as broad, apex bluntly mucronate, base broadly cuneate, margin entire, upper and lower surfaces strigose, especially on midrib; petioles 2–5mm, densely adpressed-strigose. *Inflorescence* 1–2-flowered; pedicels c.10mm, densely adpressed-strigose. *Calyx* adpressed-strigose, lobes broadly ovate, 2–3mm. *Corolla* broadly funnel-campanulate, white to purplish pink, with darker flecks, c.30mm; tube c.15mm, glabrous. *Stamens* c.9, papillate below. *Ovary* strigose; style glabrous. *Capsule* 7–10mm.

Japan (Kyushyu, Ryukyu Islands). Thickets, open woodland, c.300m. **Map 12.**

Contrary to Ohwi's most recent statement in the new edition of his *Flora of Japan*, we are convinced that *R. tamurae* is a synonym of *R. eriocarpum*. *R. tawadae* is described as having small reddish-purple flowers; this agrees better with *R. eriocarpum* than it does with *R. simsii*, with which it has been synonymized in the past.

33. R. longiperulatum Hayata, Icon. Pl. Formosan. 3: 138 (1913). Type: Taiwan, Mt Daiton, viii 1910, Shimada, (holo. TI).

Erect shrub, young shoots densely clothed with adpressed flattened hairs. *Leaves* dimorphic, sub-persistent, chartaceous; spring leaves ovate to ovate-lanceolate, 1–3 × 0.5–1.5cm, 1.7–2 × as long as broad, apex acute, base cuneate, margin entire, upper surface sparsely strigose, lower surface densely strigose, especially on midrib and veins; summer leaves up to 10 × 6mm, otherwise as for spring leaves; petioles 1–2mm, strigose. *Inflorescence* 1–3-flowered; pedicels c.12mm, stout, densely clothed with shining adpressed rufous hairs. *Calyx* indumentum as for pedicels, lobes c.2mm, acute. *Corolla* funnel-shaped, scarlet, c.30mm; tube c.20mm. *Stamens* 9–10, included within tube, sparsely pilose towards base. *Ovary* densely pilose; style glabrous. *Capsule* pubescent, 8–15mm long.

Taiwan. Grasslands, 700–1000m. **Map 14.**

Apparently allied to *R. kanehirai* but differing in its shorter, broader leaves and smaller flowers.

34. R. indicum (L.) Sweet, Brit. Fl. Garden ser. 2,2: t.128 (1833).

Syn.: *Azalea indica* L., Sp. Pl. 150 (1753)—based on 'Chamaerhododendron exoticum, amplissimis floribus lilaceis' of Breynius (Prodr. 1: 23, 1680).

A. macrantha Bunge, Mem. Soc. Etr. Acad. Sci. St. Pétersb. 2: 115 (1833). Described from China, Beijing.

A. indica L. var. *lateritia* Lindley, Edward's Bot. Reg. 20: t.1700 (1834). Type: a plant originating in China, cultivated by Mr Knight (or the plate drawn from it).

Rhododendron decumbens [D. Don ex] G. Don, Gen Syst. 3: 846 (1834). Described from a plant grown by Knight & Tate, originally from China.

Azalea danielsiana Paxton, Mag. Bot. 1: t.129 (1834). Type: the plate cited, of a plant grown by Mr Tate, originally introduced by Capt. Daniels in 1830.

Rhododendron crispiflorum Hooker, Bot. Mag. 79: t.4726 (1853). Type: a plant grown by Standish & Noble, originating as a garden plant in China (or the plate drawn from it).

R. breynii Planchon, Fl. des Serres 9: 77 (1855), nom. superfluum.

R. sieboldii Miquel var. *serrulatum* Miquel, Ann. Mus. Bot. Lugduno-Batavum 1: 33 (1863). Described from a specimen collected by Keiske on Mt Kirisima, Satsuma Prov, Japan.

R. balsaminiflorum Carrière, Rev. Hort. 432, t. (1882). Type: a double-flowered form from Japan, brought by Viesener to France in 1872 (or the plate cited).

R. hannoense Nakai, Bot. Mag. (Tokyo) 29: 261 (1915)—Japanese text. Type not known.

Ic.: Togashi et al., Species Rhododendron Japan 146, 151–153 (1982).

Much-branched shrub, usually low and prostrate, though sometimes up to 2m; young shoots covered with adpressed flattened chestnut-brown setose hairs. *Leaves* dimorphic, chartaceous; spring leaves narrowly lanceolate to oblanceolate, 2–3 × 0.8–1cm, 2.3–3 × as long as broad, apex acute, base cuneate, margin remotely crenate-serrulate, ciliate, upper surface with scattered bristles, lower surface paler, with setose bristles restricted to midrib; summer leaves 10–18 × 3–5mm, otherwise as for spring leaves; petioles 2–4mm, clothed with adpressed chestnut-brown setose hairs. *Inflorescence* 1–2-flowered; pedicels 5–10mm, clothed with brown strigose hairs. *Calyx* with brown strigose hairs, especially on lobe margins, lobes ovate to orbicular, c.1mm long. *Corolla* broadly funnel-shaped, bright red to scarlet, occasionally rose-red, 30–50mm; tube half the length of corolla, glabrous. *Stamens* 5, as long as or slightly exceeding the corolla, filaments scabrid below. *Ovary* densely covered with adpressed shining brown hairs; style glabrous. *Capsule* oblong-ovoid, c.10mm long, densely strigose.

Japan (S & W Honshu, Kyushyu). Wooded river banks, etc.; also widely cultivated and sometimes escaping. **Map 12.**

Many forms of this species are known in cultivation. All are presumed to have been derived from Japanese stock though many 18th and 19th century introductions into Europe arrived via China. The extensive synonymy, of which only a part is cited above, reflects the popularity of this species in cultivation.

35. R. kaempferi Planchon, Fl. des Serres 9: 77 (1854).

Syn.: *'Tsutsusi'* Kaempfer, Amoen. Exot. Fasc. 845, t.846 (1712)—basionym, (Sloane Hb 211:8, 62, BM).

Azalea kaempferi (Planchon) André, Belgique Hort. 15: 184 (1865); *Rhododendron indicum* (L.) Sweet var. *kaempferi* (Planchon) Maxim., Rhododendr. As. Orient. 38 (1870); *R. scabrum* G. Don var. *kaempferi* (Planchon) Nakai, Bot. Mag. (Tokyo) 33: 208 (1919).

Rhododendron sieboldii Miquel, Ann. Bot. Mus. Lugduno-Batavum 1: 33 (1863). Described from Japan.

R. kaempferi Planchon var. *macrogemma* Nakai, Trees, Shrubs

Japan ed. 1: 103 (1922); *R. macrogemma* (Nakai) Nakai, Bot. Mag. (Tokyo) 45: 128 (1931). Type: Japan, Idzu Prov, Oshima, near Senzu, *Okubo*, n.v.

Ic.: Fl. Suzakiensis t.186 (1980); Togashi et al., Species Rhododendron Japan 154–156 (1982).

Shrub, 1–3 m; young shoots densely covered with adpressed flattened red-brown strigose hairs. *Leaves* dimorphic, persistent, chartaceous; spring leaves lanceolate to elliptic, 2–4(–5) × 1–2.5cm, 1.7–2.3 × as long as broad, apex acute or obtuse, base cuneate, margin entire, strigose on both surfaces, especially on midrib; summer leaves 10–20 × 5–10mm, otherwise as for spring leaves; petioles 3–5mm, indumentum as for young shoots. *Inflorescence* 2–3-flowered; pedicels 3–5mm, densely covered with adpressed brown strigose hairs. *Calyx* 3–5mm, strigose, lobes divided to base, ovate-orbicular. *Corolla* funnel-shaped, 20–30mm, red (in cultivated forms from pink to salmon-red); tube 10–15mm, glabrous. *Stamens* 5(–6), longer than corolla, filaments papillate in lower half. *Ovary* densely red-brown strigose; style glabrous. *Capsule* c.5mm long, setose.

Japan (C Hokkaido to Yakushima). Mixed deciduous forest, 600–1000m. **Map 13.**

Closely allied to *R. indicum* and possibly conspecific, but differing in its broader leaves and greater stature. *R. kaempferi* hybridises with *R. kiusianum* where the ranges of the two overlap. *R. kaempferi* is widely cultivated and consequently there are a number of cultivars available. Forms with stamens and pistil petaloid (var. *plenum* Nakai) and with petaloid calyx (var. *komatsui* Nakai) have been found in the wild.

35*. R. × transiens Nakai, Trees Shrubs Japan ed 1,1: 103 (1922)—**(R. kaempferi × R. macrosepalum)**.

Syn.: *R. tectum* Koidzumi, Bot. Mag.(Tokyo) 37: 38 (1923)—Japanese text. Type: Japan, Yamashiro, Kyoto, Daimonji-yama, 16–18 v 1920, *Koidzumi*, n.v.

R. poukhanense Lévl. f. *obtusifolium* Komatzu and f. *acutifolium* Komatzu, Bot. Mag. (Tokyo) 32: 37,38 (1918)—Japanese text.

R. indicum Sweet var. *mikawanum* Makino, Bot. Mag. (Tokyo) 23: 251 (1909). Type: Japan, Takashi-mura, 25 x 1893, *Makino*, n.v.

The specimens seen labelled *R. transiens* and *R. tectum* are compatible with the proposed parentage of this natural hybrid that occurs within the area of overlap between the ranges of the two putative parents. The specimens tend to have the larger leaves and flowers of *R. macrosepalum* but the adpressed shoot indumentum of *R. kaempferi*. The sepal lobes are intermediate in size and shape between those of the two species.

35*. R. × komatsui Yamazaki, J. Jap. Bot. 51: 31 (1976).—**(R. kaempferi × R. mucronatum** var. **ripense)**.

Syn.: *R. purpureum* Komatzu, Bot. Mag. (Tokyo) 32: (16) (1918), non G.Don (1834); *R. tectum* Koidz. var. *purpureum* (Komatzu)

Hara, Enum. Sperm. Jap. 1: 54 (1948). Type: C Japan, Umato Prov., n.v.

R. kaempferi Planchon var. *purpureum* Nakai, Tress Shrubs Japan ed. 1: 103 (1922). Type: Japan, Prov. Yamaguchi, Miya-gun, T. *Nakai*, s.n. (holo. TI, n.v.).

We have not seen any material of this hybrid and are not therefore able to comment on Yamazaki's synonymy quoted above.

36. R. kiusianum Makino, Bot. Mag. (Tokyo) 28: 174 (1914). Type: as for *R. indicum* var. *amoenum* forma *japonicum* Maxim. (see below).

Dwarf much-branched shrub, 0.6–1m; young shoots covered with adpressed flattened red-brown hairs. *Leaves* monomorphic, deciduous, oval-obovate, 0.5–2 × 0.2–1.5cm, c.2 × as long as broad, apex acute, base cuneate, margin entire, both surfaces covered with red-brown strigose hairs; petioles 1–3mm, densely covered with red-brown strigose hairs. *Inflorescence* 2–3-flowered; pedicels 5–10mm, covered with red-brown hairs. *Calyx* 2–3mm, indumentum as for pedicels, lobes ovate c.2mm. *Corolla* funnel-shaped, 15–20mm, usually rose-pink though occasionally with a wide range of colours from rose to deep purple, lobes 7–10mm; tube glabrous. *Stamens* 5, longer than or as long as the corolla, pubescent below the middle. *Ovary* densely covered with red-brown strigose hairs; style glabrous. *Capsule* 5–6 × c.4mm, strigose.

Japan (Kyushyu). In open woodland on hillsides, 600–800m. **Map 9**.

The nomenclature of this species has been confused by the cultivated forms and hybrids that include *R. obtusum* and *R. amoenum*, as well as at least some of the Kurume cultivars.

1a. Leaves oval to obovate, 0.5–2 × 0.2–1cm ___ **36a.** var. **kiusianum**

1b. Leaves ovate-elliptic, 1–3 × 0.5–1.5cm _____ **36b.** var. **sataense**

36a. var. **kiusianum**.

Syn.: *R. indicum* (L.) Sweet var. *amoenum* (Lindley) Maxim. forma *japonicum* Maxim., Rhododendr. As. Orient.· 41 (1870)—basionym; *R. kaempferi* Planchon var. *japonicum* (Maxim.) Rehder in Sargent, Trees and Shrubs 2: 30 (1907); *R. indicum* (L.) Sweet var. *japonicum* (Maxim.) Makino, Bot. Mag. (Tokyo) 22: 56 (1908); *R. obtusum* var. *japonicum* (Maxim.) Kitamura, Acta Phytotax. Geobot. 25 (2-3): 37 (1972). Type: Japan, in Kiusiu prov. Simabara vulcano Wuzen, medio, Maijo florens (iso. BM).

Ic.: Togashi et al., Species Rhododendron Japan 158–160 (1982).

36b. var. **sataense** (Nakai) Chamberlain & Rae, **comb. et stat. nov.**

Syn.: *R. sataense* Nakai, Bull. Nat. Sci. Mus. Tokyo 27: 33 (1949). Type: Japan, Kyushyu, Prov. Osuma, in montibus Sata, cum

R. obtusum et eius varietate latifolio mixte, 16 iv 1948, *Nakai & Maruyama*, n.v.

Ic.: Togashi et al., Species Rhododendron Japan 162–165 (1982).

Var. *sataense* is intermediate between var. *kiusianum* and *R. kaempferi* and may have arisen as a hybrid of these two taxa. According to Doleshy (*J. Amer. Rhodod. Soc.* 37:88, 1983) var. *sataense* occurs in stabilized populations in which the type variety does not occur, and is less variable than plants from those populations where hybrids between *R. kiusianum* and *R. kaempferi* are known to occur. The flower colour of var. *sataense* is variable, as it is in some though not all populations of var. *kiusianum*.

36*. R. saisiuense Nakai, Bot. Mag. (Tokyo) 49: 587 (1935). Type: a cultivated plant exhibited in Tokyo in 1935 by Suzuki; originally from Mt Hallasan, Quelpaert Island, Korea.

We are uncertain of the status of *R. saisiuense* as we have not seen any herbarium specimens. Plants in cultivation at Edinburgh under this name appear to be small forms of *R. kiusianum*. There is however no independent evidence that *R. kiusianum* occurs anywhere within the boundaries of Korea.

37. R. tosaense Makino, Bot. Mag. (Tokyo) 18: 101 (1904). Syntypes: Japan, Tosa, Takaoka-giri, 1885, *Makino*, n.v.; Sodayama-mura, 5 iv 1887, *Makino*, n.v.; Kamibun-mura, xii 1888, *Makino*, n.v.

Syn.: *R. obtusum* Planchon var. *tosaense* (Makino) Kitamura, Acta Phytotax. Geobot. 25(2–3): 37 (1972).

R. komiyamae Makino, J. Jap. Bot. 3(5): 17 (1926). Syntypes: Japan, Prov. Suruga, Mt Ashitaka, Komiyama, 10 vi 1925, *Sawada*, n.v.

R. miyazawae Nakai & Hara, J. Jap. Bot. 11: 823 (1935). Type: Japan, Kyushu, prov. Hiuga circa Tomitaki-machi, Higashi-usuki-gun, 12 iv 1929, *Miyazawa* 112, n.v.

R. surugaense [Sugimoto ex] Kurata, Ill. Imp. Tr. Jap. 4: 182, t.37 (1973). Type: as for *R. komiyamae*.

Ic.: Togashi et al., Species Rhododendron Japan 166–173 (1982).

Much-branched shrub, 1.5–2m; young shoots clothed with adpressed flattened grey-brown strigose hairs. *Leaves* deciduous or partly persistent, crowded at the ends of branchlets, dimorphic; spring leaves oblanceolate to oblanceolate-spathulate, 0.7–4 × 0.2–1cm, 3.5–4 × as long as broad, apex acute, base cuneate, margin entire, with scattered adpressed grey hairs on both surfaces; summer leaves minute, 3–7mm long, otherwise as for spring leaves; petioles 2–4mm, adpressed-strigose. *Inflorescence* 1–6-flowered; pedicels 4–10mm, densely adpressed-strigose. *Calyx* covered with flattened strigose hairs, lobes broadly ovate, c.2mm, ciliate. *Corolla* funnel-shaped, 18–25mm, purplish-pink with or without darker flecks, rarely white with a faint pink flush; tube 10–14mm, glabrous. *Stamens* 5(–10), unequal, c. as long as the corolla, filaments

coarsely papillate in lower half. *Ovary* densely strigose, style glabrous. *Capsule* not known.

Japan (Kyushyu, Shikoku, S Honshu). Open slopes, etc. c.100m. **Map 10.**

R. komiyamae from S Honshu is said to differ from *R. tosaense* in the strict sense (from Shikoku and S Honshu) in its 10 as opposed to 5–6 stamens. We are unable to confirm the constancy of this difference from the few specimens that we have seen and are following Rehder's treatment in reducing *R. komiyamae* to a synonym of *R. tosaense*.

38. R. breviperulatum Hayata, Icon. Pl. Formosan. 3: 129 (1913). Type: Taiwan, Nanto, Mt Pusasai, iv 1909, *Mori*, n.v. (holo. TI).

Ic.: Kanehira, Formos. Trees, 318 (1917)—leaf only.

Much-branched shrub; young shoots slender, covered with adpressed flattened shining brown hairs. *Leaves* persistent, chartaceous, ovate-elliptic, 1–3 × 0.6–1.7cm, 1.8–2.5 × as long as broad, apex obtuse and mucronate, margin entire, base broad, cuneate-rounded, both surfaces with scattered adpressed pilose shining brown hairs that turn grey, upper surface with impressed midrib, lower surface reticulate; petiole 2–5mm. *Inflorescence* 2–several-flowered; pedicels 3–5mm, covered with shiny flattened white hairs. *Calyx* 2–4mm, indumentum as for pedicels, 5-lobed. *Corolla* funnel-campanulate, rose-pink with crimson spotting on upper lobes, 25mm. *Stamens* 5(–6), filaments pilose below middle, anthers apiculate at base. *Ovary* conic, densely pilose; style pilose at base, dilated at apex. *Capsule* not known.

China (Taiwan). **Map 14.**

The plant in cultivation in Edinburgh has a low, spreading habit. In this it apparently matches the type specimen.

39. R. lasiostylum Hayata, Icon. Pl. Formosan. 3: 135 (1913). Type: Taiwan, in monte Randaisan, vi 1911, *Mori* s.n. (holo. TI, n.v.).

Syn.: *R. sasakii* Wilson, J. Arnold Arb. 6: 181 (1925). Type: Taiwan, Nanto Prov., Horisha, planted in a hotel garden, apparently collected in the wild (holo. A).

Shrub, 1–2m; young shoots densely clothed with a mixture of adpressed villose and flattened strigose hairs. *Leaves* dimorphic, deciduous to ± persistent, subcoriaceous; spring leaves obovate to elliptic, 2–4 × 1.2–2cm, 1.7–2.5 × as long as broad, apex rounded to acute, mucronate, base cuneate, margin entire, both surfaces with sparse adpressed greyish-brown strigose hairs; summer leaves oblong-obovate to oblanceolate, 13–40 × 4–20mm, up to 4 × as long as broad, otherwise as for spring leaves; petioles 2–4mm, adpressed-strigose. *Inflorescence* 2–3-flowered; pedicels c.5mm, densely covered with whitish flattened hairs. *Calyx* 2–3mm, densely strigose, lobes 1–3mm. *Corolla* funnel-shaped, pink, c.20mm; tube c.7mm long, glabrous. *Stamens* 10, c. as long as corolla, filaments papillate below middle. *Ovary* densely strigose; style strigose below. *Capsule* ovoid, c.8mm, strigose.

China (Taiwan). Mountain sides, 2375–3350m. **Map 14.**

The type specimen of *R. sasakii* was said to be red-flowered whereas the flowers of *R. lasiostylum* are pink. However, the type specimen of *R. lasiostylum* is poor, making its true identity uncertain. We therefore follow Wilson's concept of the species that is apparently based on *Wilson* 10020 (BM!, K!).

This species is allied to *R. rubropilosum* but differs in its larger, often obovate, leaves, etc.

40. R. rubropilosum Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 173 (1911). Syntypes: Taiwan, Tozan, in montibus Morrison, x 1906, *Nakahara*, n.v.; central mountains, xi 1906, *Kawakami & Mori* 1857 (TI), 1859 (TI); Randazian, v iii 1908, *Hayata & Mori* 7044, n.v.

Syn.: *R. caryophyllum* Hayata, Icon. Pl. Formosan. 3: 130, t.23 (1913). Type: Taiwan, 1909, *Mori* s.n., n.v.

R. randaiense Hayata, Gen. Index Fl. Formosa 43 (1917)—nomen nudum.

Shrub, to 3m; young shoots densely covered with adpressed flattened grey to reddish-brown hairs. *Leaves* monomorphic, chartaceous, oblong-lanceolate to elliptic, 1–3(–5.5) × 0.5–1(–2.5)cm, 2–3 × as long as broad, apex acute and with a glandular mucro, base cuneate, margin entire, upper surface with pale grey adpressed hairs, lower surface clothed with flattened adpressed red-brown hairs, especially on midrib; petioles 3–5mm, densely covered with flattened red-brown hairs. *Inflorescence* 2–4-flowered; pedicels 2–4mm, densely strigose, hidden by bud scales. *Calyx* minute, densely covered with strigose red-brown hairs. *Corolla* funnel-shaped, pink with rose flecks, 10–15(–25)mm. *Stamens* 7–10, filaments pilose towards base. *Ovary* covered with pale grey soft hairs; style with a few flattened brown hairs at base. *Capsule* conic-ovoid, c.5mm long, covered with shaggy red-brown hairs.

Taiwan (Ilan, Nantou, Chiaye). 2400–3000m. **Map 15.**

41. R. sikayotaizanense Masamune, Trans. Nat. Hist. Soc. Formosa 29: 27 (1939). Type: Taiwan, Mt Sikayotaizan, 1936, *Mori* s.n., n.v.

Shrub; young shoots covered with adpressed-strigose hairs. *Leaves* monomorphic, coriaceous, oblong to ovate-oblong, 0.4–1.4 × 0.2–0.6cm, 2–2.2 × as long as broad, apex apiculate, base cuneate, upper surface sparsely adpressed-hirsute, lower surface adpressed-hirsute, with a densely pilose midrib; petioles not known. *Inflorescence* 2–3-flowered; pedicels c.10mm, ± pilose. *Calyx* with linear-lanceolate, ciliate lobes, c.4mm long. *Corolla* campanulate, red, c.20mm. *Stamens* 4–6, unequal, filaments sparsely hirsute. *Ovary* densely hirsute; style glabrous. *Capsule* not known.

Taiwan. **Map 16.**

Resembles *R. rubropilosum*, *R. nakaharai* and *R. noriakianum* but differs in having fewer stamens. We have seen no material of this species.

42. R. noriakianum Suzuki, Trans. Nat. Hist. Soc. Formosa 25: 40 (1935). Type: Taiwan, Hsinchu, Sikayotasan, *Fukyama* 3005, n.v.

Low shrub; young shoots adpressed-strigose, soon glabrescent. *Leaves* monomorphic, deciduous, chartaceous, ovate to ovate-oblong, 0.7–1.5 × 0.4–0.6cm, 1.7–2.5 × as long as broad, apex obtuse, apiculate, base cuneate, margin entire, upper surface glabrescent; petioles 1–2mm, strigose. *Inflorescence* 3–4-flowered; pedicels 3–4mm, densely pilose. *Calyx* densely pilose, lobes acute. *Corolla* funnel-shaped, 15mm, red, details of tube not known. *Stamens* 7–10, unequal, slightly exserted; filaments pubescent below. *Ovary* pubescent; style glabrous.

China (N Taiwan). Open grasslands, 2000–3000m. **Map 16.**

Apparently allied to *R. nakaharai* and *R. longiperulatum* but differing in the smaller corolla and slightly exserted stamens.

43. R. microphyton Franchet, Bull. Soc. Bot. Fr. 33: 235 (1886). Type: China, Yunnan, in montibus circa Tali, 2130m, *Delavay* (iso. K).

Syn.: *R. microphyton* Franchet var. *trichanthum* A.L. Zhang, Acta Bot. Yunnanica 4: 249 (1982). Type: China: Yunnan, Bijiang, 28 vi 1979, *A.L. Zhang* 79-2093 (holo. KUN, n.v.).

Ic.: Stevenson (ed.), Sp. Rhodod. 91 (1930).

Upright shrub, usually dwarf, 0.3–2m; young shoots covered with adpressed flattened brown hairs. *Leaves* monomorphic, chartaceous, elliptic to lanceolate, 1–4 × 0.5–1.5cm, 2–2.6 × as long as broad, apex obtuse to acute, mucronulate, base cuneate, margin entire, both surfaces with adpressed red-brown hairs, the lower surface paler, with a denser indumentum; petioles 1–4mm, covered with brown strigose hairs. *Inflorescence* 3–6-flowered, with smaller axillary inflorescences below the terminal ones; pedicels 3–7mm, covered with shining chestnut-brown hairs. *Calyx* densely covered with brown strigose hairs; lobes lanceolate, 1–2mm. *Corolla* funnel-campanulate, usually purple-rose, occasionally white flushed pink, with crimson flecks, 10–15(–22)mm; tube 6–8mm, 2–3mm wide at base, glabrous on outer surface, pubescent within. *Stamens* 5, longer than corolla, filaments sparsely pilose below middle. *Ovary* densely covered with shining chestnut-brown hairs; style glabrous. *Capsule* c.8 × 4mm, densely strigose.

E Burma, China (Yunnan, SW Sichuan), Thailand?. Open scrub, 1800–3050m. **Map 14.**

There is some doubt over the identity of the specimen from Thailand (see note under *R. saxicolum*).

44. R. jinpingense Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 85 (1982). Type: China, Yunnan, Jinping Xian, 1850m, 13 iv 1964, *S.C. Tung* 494 (holo. SZ, n.v.).

Shrub; young shoots slender, densely covered with brownish strigose hairs intermixed with glandular setae. *Leaves* dimorphic, thickly chartaceous, elliptic to elliptic-oblong; spring leaves 3.5–4.5(–5) × 1.5–2cm, apex shortly acuminate, base broadly cuneate to obtuse, margin entire, lower surface pale, main and lateral veins strigose; summer leaves smaller; petioles 2–3mm, densely brownish-setose strigose. *Inflorescence* 3–5-flowered; pedicels 2–10mm, densely brownish-setose-strigose. *Calyx* to 3mm, lobes

oblong-ovate, sparsely glandular. *Corolla* funnel-shaped, reddish, with darker flecks, c.10mm; tube cylindrical, c.5 × 2mm, lobes sparsely glandular on outer surface. *Stamens* 5, filaments puberulent below; style sparsely glandular in lower half. *Capsule* not known.

China (Yunnan). **Map 14.**

Allied by the author to *R. microphyton* but differing in smaller and glandular flowers; also allied to *R. subenerve* but differing in its larger thicker leaves. The apparently narrowly tubular flower may also be a reliable character to separate this species from *R. microphyton*. Since we have not seen any material of this species we cannot be certain of its affinities.

45. R. subenerve P.X.Tan, Survey Gen. Rhododendron S. China 108, f.29 (1983) & Guihaia 3,3: 180 (1983). Type: China, Guangxi, Guangyang Xian, Baijing, 22 ix 1958, *Chen, Z.Z.* 52211 (holo. IBSC, n.v., photo. E).

Syn.: ? *R. glandulostylum* Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 84 (1982), non *R. glandulistylum* Komatsu (1918). Type: China, Guangxi, Jinxiu Yaozu Zizhi Xian (Dayaoshan Xian, Jinxiuqu), 1260m, 4 v 1964, *F.N. Wei* 809 (holo. IBK, n.v.).

Shrub, c.2m; young shoots densely adpressed-strigose. *Leaves* ? dimorphic, chartaceous, elliptic-oblong to narrowly elliptic; spring leaves 2.5–3(–3.5) × 0.8–1.4cm, 2.5–3 × as long as broad, apex subacuminate, base cuneate; margin obscurely crenate, ciliate; upper surface adpressed-strigose at first, later glabrescent, lower surface pale at maturity, ± glabrescent except for the strigose midrib reddish-brown-strigose; summer leaves 12–15 × 7–8mm, otherwise as for spring leaves; petioles 2–4mm. *Inflorescence* 3–6-flowered; pedicels c.5mm, glandular and densely strigose. *Calyx* c.3 mm, densely strigose, lobes c.1mm, triangular. *Corolla* funnel-shaped, red, with purple flecks, 12–16mm; tube 6–8mm, c.4mm broad, shortly stipitate-glandular on outer surface, puberulent within; lobes 6–8mm. *Stamens* 5, filaments puberulent. *Ovary* densely reddish-brown-strigose; style stipitate-glandular for most of its length, also strigose at base. *Capsule* not known.

China (Guangxi). Woodland etc, 1260–1700m. **Map 15.**

From the descriptions and photographs available it seems most probable that *R. glandulostylum* is a synonym of *R. subenerve*. In any case a new name is required if *R. glandulostylum* Fang & He is maintained as a separate species. The original authors suggest that *R. glandulostylum* is allied to *R. microphytum* and, from the evidence before us, this seems likely. The chief differences are in the size and texture of the leaves. Probably also allied to *R. fuchsiifolium* but apparently differing in the less acuminate leaves, etc.

46. R. subsessile Rendle, J. Bot. 34: 357 (1896). Type: Philippines, Luzon district of Lepanto, Mount Data, *Whitehead, Merrill* 4606 (holo. BM).

Much-branched shrub; shoots densely covered with adpressed flattened brown hairs. *Leaves* dimorphic, chartaceous; spring leaves elliptic-lanceolate, 2.5–4 × 0.9–1.2cm,

2–4 × as long as broad, margin entire, slightly recurved, apex acute and mucronate, base cuneate, both upper and lower surfaces at first clothed with rufous-grey silky hairs, at maturity with white adpressed hairs on upper surface, midrib impressed above, prominent below; summer leaves c.15 × 7mm, otherwise as for spring leaves; petioles 2–5mm, clothed with adpressed chestnut-brown hairs. *Inflorescence* 2–4-flowered; pedicels 5–7mm, clothed with adpressed ferrugineous hairs, hidden by the bud scales. *Calyx* small, with oval lobes, densely clothed with flattened brown hairs. *Corolla* funnel-campanulate, 15–20mm, lilac-purple; tube c.8mm, 3mm wide at base, glabrous. *Stamens* 6–10, slightly exserted, papillose below the middle. *Ovary* densely covered with ferrugineous flattened hairs; style exserted, with a few flattened brown hairs at base. *Capsule* conic-ovoid, densely covered with flattened adpressed rufous hairs.

Philippine Islands (Luzon). **Map 15.**

47. R. atrovirens Franchet, Bull. Soc. Bot. Fr. 33: 235 (1886). Type: China, Yunnan, prope Tchen-fong-chan, haud procul a Takouan, *Delavay* (iso. E, K?).

Large shrub or small tree; young shoots covered with adpressed flattened brown hairs. *Leaves* monomorphic, persistent, elliptic, 2–8 × 1–3cm, 2–2.7 × as long as broad, apex acuminate, margin entire, base broadly cuneate to ± rounded; both surfaces covered with adpressed shining brown hairs, glabrescent above except on midrib, lower surface paler, persistently adpressed brown-hairy, densely so on midrib and veins; petioles 5–8mm, strigose. *Inflorescence* 2–4-flowered; pedicels 6mm, densely covered with adpressed flattened shining brown hairs. *Calyx* 2–4mm, indumentum as for pedicels, lobes short, deltoid. *Corolla* funnel-campanulate, glabrous, red with darker flecks at base of upper lobes, 15–30mm; tube 7–10mm, glabrous, 4mm wide at base. *Stamens* 10, unequal, to c.30mm, shortly pilose below middle. *Ovary* densely covered with adpressed flattened shining brown hairs; style glabrous. *Fruit* not known.

China (S Sichuan, NE Yunnan). Thickets, 750–1800m. **Map 15.**

48. R. fuchsiifolium Lévl., Repert. Spec. Nov. Regni Veg. 13: 148 (1914). China, Guizhou, Pin-fa, 20 v 1907, *Cavalerie* 3221 (holo. E).

Syn.: *R. tenue* [Ching ex] Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 87, t.5 (1982). Type: China, Guangxi, Xingan Xian, Jiu Qu, Leigontien, ad Tangton, vi 1953, *Guangxi Pl. Exp.* 677 (holo. PE, iso. IBSC).

Upright shrub; young shoots covered with flattened adpressed brown hairs. *Leaves* apparently monomorphic, elliptic to ovate, 1–4 × 0.5–1.4cm, 2–2.5 × as long as broad, apex acute or acuminate, base cuneate, margin entire, upper surface strigose, lower surface with flattened strigose hairs on midrib, otherwise glabrous; petioles 3–5mm, densely covered with brown strigose hairs. *Inflorescence* 3–5-flowered; pedicels 3–5mm, covered with shiny long brown strigose hairs, with an understorey of glandular hairs. *Calyx* densely covered with brown flattened strigose hairs, lobes 2–4mm, linear-lanceolaate. *Corolla* funnel-shaped, pale rose, 5–10mm; tube 3–5mm, with five rows of glandular hairs on outer surface. *Stamens* 5, c. as long as corolla, glandular

below middle. *Ovary* covered with shining red-brown hairs; style glandular and pilose below middle, shorter than stamens. *Capsule* not known.
China (Guizhou, Guangxi). **Map 15.**

The recently described *R. tenue* lacks flowers but in all other respects resembles *R. fuchsiifolium.*

49. R. nakaharai Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 153 (1908). Type: China N Taiwan, in Monte Shichiri, (Chihsinshan), vii 1905, *Nakahara* 82 (holo. TI).

Ic.: Proc. Nat. Sci. Counc. (Life Sci.) 6: 26, f.11 (1973).

Low, prostrate, much-branched shrub; young shoots covered with adpressed flattened shining brown hairs. *Leaves* persistent, chartaceous, monomorphic, elliptic to elliptic-obovate, 0.5–1.2 × 0.2–1cm, 2–2.5 × as long as broad, apex acute or mucronulate, base cuneate, margin entire, upper surface with scattered pilose hairs borne on raised pustules, lower surface paler, with scattered adpressed shining brown hairs; petioles 1–4mm, densely strigose. *Inflorescence* 2–3-flowered; pedicels 3–5mm, densely covered with flattened shining brown hairs. *Calyx* strigose, lobes c.2mm, ciliate. *Corolla* funnel-campanulate, dark-red, 20–25mm; tube villous within. *Stamens* 10, longer than corolla, filaments pilose in lower half. *Ovary* densely setose; style glabrous. *Capsule* not known.
China (N Taiwan). **Map 15.**

Allied to *R. serpyllifolium* but differing in the number of stamens, etc.

The corollas are described in *Fl. Taiwan* (3: 32) as being 35mm and 40mm across. These measurements are significantly larger than those cited in the type description and those on the type specimen itself.

50. R. serpyllifolium (A. Gray) Miquel, Ann. Mus. Lugduno-Batavum 2:165 (1865–66). Type: Japan, cult., *Morrow & Williams*, n.v.

Syn.: *Azalea serpyllifolia* A. Gray, Perry Jap. Exped.2: 315 (1857).
Rhododendron serpyllifolium var. *albiflorum* Makino, Bot. Mag (Tokyo) 22:57 (1908). Described from the western mountains of Japan.

Ic.: Bot. Mag. 122: t.7503 (1896); Togashi et al., Species Rhododendron Japan 179-180 (1982).

Low, much-branched shrub; shoots slender, clothed with adpressed flattened chestnut-brown hairs. *Leaves* monomorphic, deciduous, crowded at end of short branchlets, obovate-oblong or elliptic, 0.3–1 × 0.3–0.5cm, 1–2 × as long as broad, apex obtuse or acute, base cuneate, upper surface with scattered strigose brown hairs and pustules, lower surface with hairs mainly on midrib, with pustules; petioles 1mm, strigose. *Inflorescence* 1(–2)-flowered; pedicels 3mm, strigose, hidden beneath the bud scales. *Calyx* small. *Corolla* short, funnel-form, c.17mm, rose-pink; tube with outer surface glabrous, papillate within. *Stamens* 5, papillate for most of their length. *Ovary* densely covered with pale flattened hairs; style glabrous. *Capsule* unknown.
Japan (Central and Southern). 300m. **Map 17.**

51. R. tschonoskii Maxim., Rhododendr. As. Orient. 42, t.3 (1870). Type: Japan, in Nippon borealis (Nambu) mediae alpibus, 1865, 1866, *Tschonosky* (iso. BM, K).
Much-branched shrub, 0.3–1.5m; young shoots densely covered with adpressed flattened rufous hairs. *Leaves* monomorphic, chartaceous, lanceolate to elliptic, 1–3.5 × 0.3–1cm, 2–2.3 × as long as broad, apex acute, base cuneate, margin entire, both surfaces with scattered adpressed whitish to pale brown villous hairs, especially on midrib; petioles 1–5mm, covered with adpressed red-brown hairs. *Inflorescence* 3–6-flowered, flowers appearing after leaves; pedicels c.3mm, covered with adpressed whitish hairs. *Calyx* minute, covered with flattened pale brown strigose hairs, lobes c.1mm. *Corolla* 4–5-lobed, funnel-shaped, white, 7–9mm; tube cylindrical, c.5mm, glabrous on outer surface, hairy within. *Stamens* 4–5, longer than corolla, filaments pubescent below the middle. *Ovary* densely covered with pale brown strigose hairs; style glabrous. *Capsule* ovoid, 2–5mm long, densely strigose.

1a. Leaves 4–5-nerved, 10–20mm long _____ **51a.** var. **tschonoskii**
1b. Leaves 3-nerved, 20–35mm long _____ **51b.** var. **triverve**

51a. var. **tschonoskii**.
Syn.: *R. tschonoskii* Maxim. var. *typicum* f. *tetramerum* Makino, Bot. Mag. (Tokyo) 18: 66 (1904); *R. tschonoskii* Maxim. var. *tetramerum* (Makino) Komatzu, Bot. Mag. (Tokyo) 32: 15 (1918)—Japanese text; *R. tetramerum* (Makino) Nakai, Bull. Nat. Sci. Mus. Tokyo 31: 82 (1952). Type not designated.
Ic.: Nakai, Fl. Sylv. Kor. 8: t.17 (1919); Togashi et al., Species Rhododendron Japan 190–192 (1982).
S Korea, Japan (Hokkaido, E & S Honshu, Shikoku, Kyushyu), USSR (Kamchatka). Rocky mountain summits, 1500–1800m. **Map 18.**

51b. var. **trinerve** (Franchet) Makino, Bot. Mag. (Tokyo) 18: 66 (1904).
Syn.: *R. trinerve* Franchet, Bull. Herb. Boiss. 5: 920 (1897). Syntypes: Japan, Shonai, cult., vi 1888, *Faurie* 2674, n.v.; Abashiri, viii 1892, *Faurie* 8566, n.v.
Ic.: Togashi et al., Species Rhododendron Japan 194–196 (1982).
Japan (NW Honshu). Rocky ridges, etc. 700–1000m. **Map 18.**
Var. *trinerve* is generally more luxuriant, at least vegetatively, than var. *tschonoskii*. Togashi (op. cit.) suggests that it replaces var. *tschonoskii* in NW Honshu.

52. R. saxicolum Sleumer, Blumea, suppl. 4: 49 (1958). Type: Vietnam, Tonkin, prov., Lac-Kay, Col de Le Qui-Ho, environs de Cha-Pa, 1800m, *Poilane* 25419 (holo. L, iso. P).
Shrub, 3–6m; young shoots at first covered with adpressed red-brown setose hairs, soon glabrescent. *Leaves* dimorphic, persistent, subcoriaceous; spring leaves ovate to ovate-oblong 4–7.5 × 2–3.5cm, 2–2.2 × as long as broad, apex acuminate, gland-tipped, base broadly cuneate, margin entire, upper surface glabrescent though with a

few persistent strigose hairs on the midrib, lower surface with scattered adpressed strigose hairs, persisting on the lamina; summer leaves 15–20 × 5–10mm, otherwise as for spring leaves; petioles 3–7mm, densely adpressed-stirgose. *Inflorescence* 3–4(–5)-flowered; pedicels 3–7mm, densely rufous-strigose. *Calyx* c.2mm, covered with strigose hairs, lobes lanceolate. *Corolla* funnel-shaped, white tinged with rose, 15–20mm; tube 5–7mm, glabrous on outer surface, papillate within. *Stamens* 5, slightly longer than corolla, hairy below middle. *Ovary* densely rufous-strigose; style hairy at base. *Capsule* ovoid, 7–9mm long.

Vietnam. Rocky soil in forest, 400–1800m. **Map 15.**

Allied to *R. seniavinii* but with a laxer inflorescence, etc.

A specimen from Thailand (*Garrett* 837), may belong to this species but differs in its larger flowers (25mm) and its glabrous style. Sleumer (op. cit.) refers this and one other specimen, also from Thailand (*Put* 3325), to *R. microphyton* on account of the glabrous styles. The latter, however, has flowers with lobes significantly longer than tube, a characteristic of *R. saxicolum*. In any case size of flowers and leaves is more extreme for *R. microphyton* than it is for *R. saxicolum*.

53. R. arunachalense Chamberlain & Rae, **sp. nov.** (see p. 197). Type: N E India, Arunachal Pradesh, Subansiri district, Yachuli, 1500m, 28 iv 1977, *H.B. Naithani* Ser.II:894 (holo. E, iso. DD).

Shrub, 4.5m; young shoots adpressed-brown-strigose. *Leaves* probably dimorphic, chartaceous; spring leaves elliptic–ovate lanceolate, 3.5–6.5 × 1.6–2.8cm, c.2.3 × as long as broad, apex acuminate, base cuneate, margin with stiff incurved hairs, ± entire, upper surface sparsely adpressed-strigose, lower surface adpressed rufous-strigose, densely so on midrib and lateral veins; petioles 6–12mm, densely adpressed strigose. *Inflorescence* 3-flowered; pedicels 5–7mm, densely brown-strigose with large stiff and thinner crisped hairs. *Calyx* ± obsolete, strigose. *Corolla* open funnel-shaped, light pink, darker inside, 23–27mm; tube 6–7mm, glabrous, 3mm broad at base, 6mm broad above. *Stamens* 5, 30mm long, scabrid at base. *Ovary* densely strigose; style glabrous 35mm. *Capsule* unknown.

N E India (Arunachal Pradesh). River beds, 1500m.

Probably allied to *R. saxicolum* but with a more acute leaf, corolla darker, tube glabrous within.

This new species is geographically isolated, and is the most westerly of the subgenus.

54. R seniavinii Maxim., Rhododendr. As. Orient. 33: t.3, f.21-24 (1870). Type: S China, *Seniavin* (holo. LE, n.v., iso. PE).

Ic.: Tan, Survey Gen. Rhododendron S. China f.11 (1983).

Shrub, to 2m; shoots densely covered with adpressed flattened grey or rufous-grey hairs. *Leaves* dimorphic, persistent or subpersistent; spring leaves ovate-oblong to lanceolate, 1.5–6 × 0.8–2.5cm, 2–3 × as long as broad, apex acuminate or acute, base broadly cuneate, upper surface glabrous or glabrescent when mature, lower surface densely clothed with long strigose rufous or grey-brown hairs; summer leaves smaller, 10–20 × 5–8mm, ovate to broadly oval, apex acute to obtuse; petioles 3–

8mm, densely strigose. *Inflorescence* 3–10-flowered; pedicels 3–5mm, densely stigose. *Calyx* c.3mm, lobes lanceolate, covered with straight grey or rufous-grey hairs. *Corolla* funnelform, white suffused rose to light purple, with upper lobe spotted, 12–17mm; tube 7–10mm, 2mm wide at base, sparsely hairy within outer surface sparsely hairy to stipitate-glandular. *Stamens* 5, clothed with strigose hairs; style villose at base. *Capsule* up to 8mm, narrowly ovoid, densely strigose.
China (Guizhou, Hunan, Fujian). Thickets, wooded slopes, 600–1400m. **Map 16.**

54* R. qianyangense M.Y.He, Bull. Bot. Res. N.E. Forest. Inst. 5(4): 115 (1985). Type: China, Hunan, Qianyang Xian, Luo-ong-ha-mian-shan, Xia-ping-kou, 1120m, 7 v 1959, *P.X.Tan* 60590 (holo. IBSC, n.v.).
Map 16.

From the description this species appears to be very close to *R. seniavinii* but apparently differs in its stamens having glabrous filaments. While Tan does not cite this specimen, there is another (*Tan* 60559) which was collected in the same locality, that is referable to *R. seniavinii.*

55. R. yangmingshanense P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 97, t.1 (1982). Type: China, Hunan, Ningyuan Xian, Yangming Shan, 250m, 4 iv 1942, *T. Tsiang & S.Q. Chen* (*S.H. Chun*) 365 (holo. IBSC).
Shrub; young shoots densely greyish-brown sericeous-strigose. *Leaves* dimorphic, coriaceous; spring leaves oblong-lanceolate, 2.5–3 × 1.2–1.3cm, c.1.5 × as long as broad, apex acuminate, base cuneate, margin undulate, densely ciliate, upper surface grey-strigose; summer leaves oblong-elliptic to elliptic, 10–20 × 5–8mm; petioles 5–10mm, densely spreading-strigose. *Inflorescence* 5–8-flowered; pedicels 4–5mm, densely strigose. *Calyx* 1.5–2mm, densely brownish-strigose, lobes crenulate. *Corolla* funnel-campanulate, 8–10mm, reddish to pale purple; tube 5–6mm, glabrous. *Stamens* 5, filaments pubescent below. *Ovary* densely sericeous-strigose; style base strigose. *Capsule* ovoid, c.6 × 3.5mm, strigose.
China (Hunan). Open woodland, 250m. **Map 16.**

Probably allied to *R. seniavinii*, with which it shares a characteristic sericeous indumentum, but differing in its less hairy leaves, and corollas glabrous on the outer surface.

56. R. naamkwanense Merrill, Lingnan Sci. J. 13: 42 (1934). Type: China, Guangdong, Naamkwam Shan, Zengcheng Xian, 20 iv 1932, *W.T. Tsang* (*Huang, H.D.*) 20392 (holo. PE, iso. K).
Dwarf shrub, to 0.5m; young shoots covered with adpressed flattened brown strigose hairs. *Leaves* monomorphic, persistent, coriaceous, obovate to oblanceolate, 1–2.5 × 0.5–1.2cm, c.2 × as long as broad, apex mucronate, base cuneate, margin entire, upper surface glabrescent, lower surface with sparse adpressed strigose hairs, especially on midrib; petioles c.3mm, densely adpressed-strigose-hairy. *Inflorescence* 2–4-flowered; pedicels 2–3mm, pilose. *Calyx* minute, densely strigose. *Corolla* funnel-campanulate,

rose, with or without darker flecks, c.30mm; tube c.10mm, glabrous. *Stamens* 5, filaments glabrous. *Ovary* densely pilose; style glabrous. *Capsule* not known.
China (Guangdong, Jiangxi). Moist shaded cliffs, c.500m. **Map 16.**

1a. Leaves with conspicuous lateral veins beneath; corolla apparently without flecks _____ **56a.** var. **naamkwanense**
1b. Leaves with lateral veins obsolete beneath; corolla with dark flecks _____ **56b.** var. **cryptonerve**

56a. var. **naamkwanense**.
Syn.: *R. ripaecola* P.X.Tan, Survey Gen. Rhododendron S. China 110 (1983). Type: China, Guangdong, Ruyuan Xian, 20 xi 1933, *X.P. Gao* (*S.P. Ko*) 53773 (holo. IBSC).

56b. var. **cryptonerve** P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 94 (1982). Type: China, Guangdong, Pingyuan Xian, 500m, 27 iv 1957, *L. Teng* 4437 (holo. IBSC, n.v.).
Since we have seen no material of var. *cryptonerve* we are dependent on Tan's brief description for our understanding of this taxon.

57. R. bicorniculatum P.X.Tan, Survey Gen. Rhododendron S. China 104, f.5 (1983). Type: China, Guangdong, Conghua Xian, Rhu-Tin, in rivulo, prope vallem, 16 iii 1973, *S.Q. Chen* (*S.H.Chun*) 18489 (holo. IBSC).
Shrub c.1m, young shoots densely covered with reddish-brown strigose hairs. *Leaves* dimorphic, coriaceous; spring leaves obovate to obovate-elliptic 3.5–5 × 1.5cm, 2.2–2.6(–3.3) × as long as broad, apex shortly acuminate, margin revolute, base cuneate, upper surface sparsely strigose at first, becoming glabrescent, lower surface pale, adpressed reddish-brown-strigose, especially on midrib; summer leaves spathulate-ovate, 15–20 × 7–9mm, otherwise as for spring leaves; petioles short. *Inflorescence* 2–4-flowered; pedicels c.5mm, densely reddish-brown-strigose. *Calyx* strigose, minute. *Corolla* funnel-campanulate, reddish purple, 18mm; tube c.5mm. *Stamens* 5, pubescent below, anthers with apical projections. *Ovary* strigose; style glabrous. *Fruit* cylindrical, strigose, 12–13 × 3–4mm.
China (Guangdong). By streams. **Map 19.**
Close to *R. naamkwanense* but differing in its larger leaves, 4-flowered inflorescence, and in the form of the anthers.

58. R. chunii Fang, Sunyatsenia 7:1 (1948). Type: China, Guangdong, Kock-Kiang (Qujiang), Chut-Hsin Tun, 18 iv 1930, *X.P. Gao* (*S.P. Ko*) 50411 (holo. SYS; iso. E, PE).
Small shrub, to 2m; young shoots covered with adpressed flattened strigose red-brown hairs. *Leaves* monomorphic, coriaceous, persistent, elliptic to oblong-ovate, 1–2 × 0.5–0.9cm, 2 × as long as broad, apex acuminate, base broadly cuneate, margin entire, upper surface strigose, lower surface paler, strigose, especially on midrib;

petiole 2–3mm, strigose. *Inflorescence* 2–3-flowered; pedicels 5–7mm, densely brown-strigose. *Calyx* strigose; lobes 1–2mm, oblanceolate. *Corolla* funnel-shaped, lilac-purple, upper lobes flecked, 9–10mm; tube c.6 × 3mm, with 5 rows of glands on outer surface, also glandular within. *Stamens* 5, sub-equal, filaments minutely hairy below. *Ovary* densely covered in fine brown hairs; style covered with fuscous setose hairs and glands in lower half. *Ripe capsule* not known.
China (N Guangdong). Wooded slopes and ravines. **Map 19.**

Tan describes the leaves as being dimorphic, the spring leaves 38–40 × 10–15mm; specimens seen by us do not confirm this.

59. R. viscigemmatum P.X.Tan, Guihaia 3: 181 (1983). Type: China, Guangxi, He Xian, Gupo Shan, 1000m, 9 viii 1958, *Y.K. Li* 401515, (holo. IBSC, n.v.).
Shrub, c.3.5m, shoots punctulate, adpressed-hairy; floral buds viscid. *Leaves* dimorphic, chartaceous; spring leaves elliptic to oblong-elliptic, 1.5–1.8 × c.0.7cm, apex shortly acute or acuminate, margin entire, ciliate, upper surface adpressed-strigose, lower surface paler, with a brown pannose indumentum intermixed with brownish strigose hairs; summer leaves 5–9mm long, otherwise as for spring leaves; petioles 4–6mm, densely brownish-sericeous-strigose. *Inflorescence* 3–4-flowered; floral buds viscid; pedicels 3–4.5mm, densely strigose. *Calyx* small, brownish-strigose, lobes crenate. *Corolla* funnel-campanulate, c.9mm, colour unknown; tube 4 × 3mm, outer surface hairy, inner surface glabrous. *Stamens* 5, filaments puberulent below. *Ovary* strigose; style densely strigose in lower half. *Capsule* ovoid, 5–6 × c.4.5mm, strigose.
China (NE Guangxi). **Map 19.**

We have seen only a photograph of the type of *R. viscigemmatum* from which the leaf measurements have been taken. Tan describes them as being 25–35mm long but this does not tally with the photograph which is of the only specimen known.

Allied by the author to *R. polyraphidoideum* and *R. mariae* but apparently closer to *R. minutiflorum*, a species that also occurs in Eastern Guangxi, in the same general area as the type of *R. viscigemmatum*.

59*. R. hejiangense M.Y.He, Bull. Bot. Res. N.E. Forest. Inst. 5(4): 118 (1985). Type: China, S Sichuan, Hejiang Xian, Fubaodawuji Banchanggou, 23 v 1980, *Agricultural Exp.* 44 (holo. SZ, n.v.).
Shrub, c.1m; young shoots densely reddish-strigose. *Leaves* subcoriaceous, oblong, 1–2.5 × 0.7–1.3cm, apex acute, mucronate, base rounded, margin recurved, upper surface sparsely strigose, the hairs sometimes restricted to the base of the midrib, lower surface yellowish-brown-strigose; petioles 3mm, strigose. *Inflorescence* 3–6-flowered; pedicels c.6mm, densely reddish-strigose. *Calyx* minute. *Corolla* funnel-campanulate, white, with purple flecks on the upper lobes, c.11mm; tube c.6mm, slightly strigose on outer surface, puberulous within. *Stamens* 5, filaments glabrous. *Ovary* densely sericeous-strigose; style sparsely strigose in lower half.
China (S Sichuan). **Map 19.**

This species should key down to *R.viscigemmatum* but it may be distinguished by its white flowers, glabrous filaments, etc. Since we have not seen the types of either

species we are not certain whether there is a true affinity between them although we note that there is a marked disjunction in their ranges.

60. R. minutiflorum Hu in J. Arnold Arb. 12:155 (1931). Type: China, Guangxi, Chufeng, N of Huchen hsien 1120m, 9 vi 1928, *R.C. Ching* 5860 (holo. PE).
Shrub, to 2.3m; young shoots with dense flattened adpressed reddish-brown setose hairs. *Leaves* monomorphic, subcoriaceous, broadly obovate to oblong, 0.7–1.1 × 0.3–0.5cm, 1.4–2.3 × as long as broad, apex shortly acuminate, base cuneate, margin revolute and minutely crenulate, upper surface setose, lower surface paler, setose on midrib and margin, otherwise glabrous; petioles c.2mm, setose. *Calyx* c.1mm, setose, lobes rounded. *Corolla* funnel-shaped, colour unknown, c.6mm; tube c.2.5mm, outer surface reddish-hairy, glabrous within. *Stamens* 5, long-exserted, filaments puberulent below. *Ovary* densely setose; style setose below. *Capsule* not known.
China (Guangxi). 900–1120m. **Map 19.**

R. myrsinifolium is closely allied to this species and may be conspecific (q.v.).

61. R. myrsinifolium [Ching ex] Fang & He, Bull. Bot. Res. N.E. Forest. Inst. 2(2): 88 (1982). Type: China, Guangxi, Fang-Cheng Xian, Nalexiang, Marxia, 1000m, 26 iv 1956, *Hopu Pl. Exp.* 2511 (holo. PE, iso. IBSC.)

Syn.: *R. caespitulum* P.X.Tan, Survey Gen. Rhododendron S. China 110, f.26 (1983). Type as for *R. myrsinifolium.*

Small shrub, to 1.5m; young shoots covered with adpressed flattened brown hairs. *Leaves* monomorphic, persistent, coriaceous, elliptic to obovate, 0.6–0.8 × 0.3–0.5cm, 1.6–2 × as long as broad, apex acute, base cuneate, margin obscurely crenate, both surfaces glabrescent, lower surface paler, with a few hairs on midrib; petiole 1–2mm, indumentum as for shoots. *Inflorescence* 2–3-flowered; pedicels c.4mm long, densely brownish-setose. *Corolla* campanulate, purple, c.10mm; tube c.4mm long, 2mm wide, glabrous. *Stamens* 5, exserted, filaments glabrous. *Ovary* strigose; style setose below. *Capsule* not known.
China (Guangxi). 1000m. **Map 19.**

Known only from the type. Allied to *R. minutiflorum* but differing in the smaller, coriaceous leaves.

62. R. unciferum P.X.Tan, Guihaia 2: 73 (1982). Type: China, Guangxi, Heng Xian, Maan Shan, 740m, *Z.Z. Chen* 50300 (iso. KUN).
Much-branched shrub; young shoots densely adpressed-strigose. *Leaves* possibly dimorphic, ovate to broadly elliptic, 2.5–3 × c.1.2cm, 2–2.4 × as long as broad, apex acute, base cuneate, upper surface ± glabrescent though with some indumentum persisting on midrib, lower surface with adpressed strigose hairs, scattered on lamina, dense on midrib; petioles 3–4mm, adpressed-strigose. *Inflorescence* 8–12-flowered; pedicels c.3mm, brown-strigose. *Calyx* minute, brown-strigose. *Corolla* probably campanulate, colour unknown, c.12mm; tube c.5 × 3mm, glabrous. *Stamens* 5, filaments

glabrous, anthers with unciform basal appendages. *Ovary* densely strigose; style glabrous. *Capsule* unknown.

China (Guangxi). 740m. **Map 20**.

Known only from the type. The isotype seen is insect-damaged; the few remaining anthers apparently lack the appendages described by Tan. Probably close to *R. minutiflorum* but with larger leaves and with more flowers per inflorescence.

63. R. tsoi Merrill agg.

Shrub, 1–2m; young shoots covered with adpressed brownish strigose hairs. *Leaves* thinly to thickly coriaceous, monomorphic ? to dimorphic, elliptic to broadly ovate; spring leaves 1.3–2.2 × 0.6–1.4cm, 1.5–2.2 × as long as broad, apex rounded to acuminate, margin entire, upper surface sparsely villose to setose when young, soon glabrescent, lower surface with scattered brown strigose hairs arising from bulbous bases, especially on midrib; petioles 2–4mm, densely strigose. *Inflorescence* 3–5-flowered; pedicels 2–6mm, densely strigose. *Calyx* 3–5mm, indumentum as for pedicels, lobes c.3mm. *Corolla* funnel-campanulate, 12.5–20mm, rose to purple, with darker flecks on upper lobe; tube 3–9mm long, c.3mm wide, hairy on the inner surface, glabrous on outer surface. *Stamens* 5, filaments minutely pubescent below. *Ovary* densely strigose; style glabrous. *Capsule* 9–10 × 5–6mm, densely strigose.

This aggregate contains several closely allied taxa, some of which have been described as species, although all may be conspecific. As we have not seen two of the crucial types we are not certain of the affinities of all the taxa. However, on present evidence we recognize three entities within the complex.

We do not follow Tan in considering that the distinction can be made between taxa with dimorphic and those with apparently monomorphic leaves. Indeed, we are not convinced that he has interpreted all the cited specimens within this complex correctly, even if the distinction were to be maintained. Furthermore, the relative length of the style and stamens may well reflect the maturity of the flowers, and again does not have any taxonomic significance.

The three entities recognized are: 1, *R. tsoi* Merrill in the strict sense; 2, *R. polyraphidoideum* P.X.Tan; and 3, plants collected in NW Fujian province in S China (*R.* aff. *polyraphidoideum*). These may be keyed out as follows:-

1a. Flowers c.20mm long; leaves ovate, 1.5–2.2 × 0.8–1.5cm _____ **3.** aff. **polyraphidoideum**

1b. Flowers 12–15mm long; leaves elliptic to ovate, 0.5–2 × 0.5–0.8cm _____ 2

2a. Leaves thickly coriaceous, broadly elliptic to obovate _____ **1. tsoi**

2b. Leaves thinly coriaceous, elliptic _____ **2. polyraphidoideum**

1. R. tsoi Merrill, Lingnan Sci. J. 13: 142 (1934). Type: China, Guangdong, Naam Kwan Shan, Tseng-shing distr., 25 iv 1932, *W.T. Tsang* 20332 (iso. E, IBSC, PE).

Syn.: *R. tingwuense* P.X.Tan, Med. Mat. Guangdong 4: 36, f.6 (1978).

Type: Guangdong, Gaoyao Xian, Dingwushan, 900m, *P.X. Tan* 7317 (holo. IBSC).

R. subenerve P.X.Tan var. *nudistylum* P.X.Tan, Survey Gen. Rhododendron S. China 108, t.29 (1983). Type: China, Guangdong, Huiyang Xian, Lianhua Shan, 11–31 viii 1935, *W.T. Tsang* 25586 (holo. IBSC, iso. A).

Leaves weakly dimorphic, thickly coriaceous; spring leaves 15–18 × 9–11mm, apex rounded to acute. *Corolla* 8–10mm long.
China (Guangdong). **Map 20.**

2. R. polyraphidoideum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 84, f.4 (1983). Type: China, Fujian, Congan Xian, Singan chuen, 3 iv 1975, *L.G. Li* (*L.K. Lee*) 75103 (holo. Inst. Mat. Med. Fujian, iso. PE).

Syn.: *? R. crassimedium* P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 96 (1982). Type: China, Jiangxi, Suichuan Xian, in summo montium, 1000m, 27 iv 1959, *S.S.Lai* (*S.S. Lei*) 279 (holo. LBG, n.v.).

? R. hypoblematosum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 90, f.2 (1982). Type: China, Jiangxi, Suichuan, Jinggang Shan, 1000m, *S.S. Lai* (*S.S. Lei*) 660055 (holo. LBG, n.v.).

Leaves dimorphic, thinly coriaceous; spring leaves elliptic, 15–18 × c.6mm. *Corolla* 12–14.5mm.
China (Fujian, Jiangxi). **Map 20.**

While Tan describes *R. crassimedium* as having monomorphic leaves the figure cited suggests that they could have been dimorphic. The one specimen seen of *R. hypoblematosum* (*S.S. Lei* 3965) closely resembles the type of *R. polyraphidoideum* in its elliptic, thinly coriaceous leaves. However, from the cited figure, the type of *R. hypoblematosum* appears to be closer to *R. tsoi.*

3. R. aff. **polyraphidoideum**. Based on two specimens from China, NW Fujian, *La Touche* (E); Pikeng, Wuyi Mts, 25 v 1988, *L.G. Ling* 10343 (E).
Leaves strongly dimorphic, thinly coriaceous; spring leaves broadly ovate, up to 22 × 14mm, apex blunt to subacute. *Corolla* up to 20mm.
Map 20.

Known only from two specimens. Further material is required to confirm the constancy of the differences mentioned above.

64. R. gratiosum P.X.Tan, Survey Gen. Rhododendron S. China 105, f.27 (1983). Type: China, Guangxi, Beilun, 590m, 22 iv 1956, *Hopu Pl. Exp.* 2463 (holo. IBSC).
Shrub, 3m; young shoots covered with adpressed grey-brown hairs, becoming glabrous. *Leaves* dimorphic, coriaceous, elliptic; spring leaves 2–2.8 × c.1cm, 2–2.8 × as long as broad, apex mucronate, base acuminate to acute, upper surface with a few strigose hairs, especially on midrib, lower surface more densely strigose; summer leaves smaller, 16–19 × 8–9mm; petioles 3–6mm, strigose. *Inflorescence* 5–6-flowered;

pedicels 4–6mm, covered with brown strigose hairs. *Calyx* indumentum as for pedicels. *Corolla* funnel-campanulate, pale purple or red, c.16mm; tube 9 × 2.5–3mm, glabrous. *Stamens* 5, filaments glabrous. *Ovary* densely strigose; style glabrous. *Capsule* not known.
China (Guangxi, Guangdong). **Map 20.**

65. R. huiyangense Fang & M.Y. He, Bull. Bot. Res. N.E. Forest. Inst. 3(1): 4 (1983). Type: China, Guangdong, Huiyang Xian, Bai-yun-zhang, 850m, iii 1932, *T.M. Tsui* 129 (holo. PE, iso. K).
Shrub, to 1.5m; shoots slender, covered with dense, adpressed strigose hairs, twigs with grey-brown hairs, becoming glabrous. *Leaves* ? dimorphic, thick, coriaceous, obovate-elliptic, 1–3.5 × 0.6–2cm, 1.7–1.8 × as long as broad, apex blunt mucronate, base obtuse to cuneate, margin entire, upper surface of leaf almost glabrous, with a few scattered chestnut hairs on midrib, lower surface with scattered chestnut adpressed hairs, especially on midrib; petiole 4–7mm, densely covered with brown strigose hairs. *Inflorescence* 8–10-flowered; pedicels 2–4mm, densely covered with dark brown bristle-like hairs. *Calyx* cup-shaped, indumentum as for pedicels. Corolla funnel-shaped, glabrous, red, 15mm, lobes oblong; tube c.7mm. *Stamens* 5, unequal, filaments flattened, papillate. *Ovary* ovoid, densely covered with dark brown bristle-like hairs; style glabrous. *Capsule* not known.
China (Guangdong). **Map 20.**

Allied to *R. tsoi* and *R. chunii* but differing in the larger leaves, etc.

66. R. tsusiophyllum Sugimoto, J. Jap. Bot. 31: 64 (1956). Type: Japan, 'in Nippon mediae montibus Hakone, *Tanaka & Ycutschima'* n.v.

Syn.: *Tsusuiophyllum tanakae* Maxim., Rhododendr. As. Orient. 12, t.3 (1870)—basionym.
R. tanakae (Maxim.) Ohwi, Fl. Japan 889 (1953) & Bull. Nat. Sci. Mus. Tokyo 33: 81 (1953) ? *comb. inval.*, non *R. tanakai* Hayata, Ic. Pl. Formosan. 4: 15 (1914).

Ic.: Togashi et al., Species Rhododendron Japan 198–201 (1982).
Dwarf shrub, to c.30cm; young shoots covered with adpressed flattened strigose hairs. *Leaves* monomorphic, obovate, 1–1.2 × 0.5–0.7cm, 1.7–2 × as long as broad, apex acute, base cuneate, margin entire, ciliate, upper surface ± glabrous when mature, lower surface with a few strigose hairs on midrib, otherwise glabrous; petiole c.1mm, strigose. *Inflorescence* 1–4-flowered; pedicels very short, apparently hairy. *Calyx* minute, lobes ciliate. *Corolla* (4–)5-lobed, tubular-campanulate, pink in bud, becoming white, c.9mm; tube c.6mm, broadest towards base, pubescent on outer surface. *Stamens* (4–)5, as long as corolla, filaments pubescent in lower half. *Ovary* strigose; style glabrous. *Capsule* c.5mm, ovoid.
Japan (S Honshu and adjacent islands). Open slopes. **Map 8.**

A distinct species, apparently without close relatives. The combination *R. tanakae* (Maxim.) Ohwi is apparently invalid as the source of the basionym was not fully cited.

Doubtful or Incompletely Known Taxa

R. bellum W.P.Fang & G.Z.Li, Bull. Bot. Res. N.E. Forest Inst. 4(1): 3, t.3 (1984). Type: China, NE Guangxi, Xingan Xian, 800 m, 16 v 1982, *G.Z.Li* 11526 (holo. IBK). Shrub, 2–3m; young shoots glabrescent. *Leaves* chartaceous, elliptic to oblong-elliptic, 3–5 × 1.2–2.5cm, apex acute, mucronate, base broadly cuneate or rounded, upper surface glabrescent lower surface pale, sparsely strigose at first, soon glabrescent; petioles c.5mm, sparsely strigose. *Inflorescence* 2–4-flowered; pedicels 8–10mm, densely brown-strigose. *Calyx* c.1mm, lobes rounded, strigose. *Corolla* funnel-shaped, purple, 30–33mm; tube 15-18 mm, 3–4mm wide at base, glabrous. *Stamens* 10, filaments glabrous. *Ovary* brown-hairy; style glabrous.
China (Guangxi, Guangdong). 800–1900m.

Allied by the authors to *R. simsii* but distinguished from that species by the purple flowers and stamens with glabrous filaments. *R. bellum* may be a hybrid between *R. simsii* and *R. mariae* subsp. *kwangsiense*, both of which occur close to the type locality. It may also be be allied to *R. subflumineum*, from which it differs by its glabrous stamens.

It is noted that the single specimen cited by the authors from Guangdong Province, *Tan, P.X.* 60326 (not seen by us) was referred to *R. simsii* by the collector.

R. chaoanense D.C. Wu & P.X. Tan, Med. Mat. Guangdong 4:35, f.4 (1978). Type: Guangdong: Chaoan Xian, in dumeto montis, 28 iv 1975, *D.C. Wu* (*T.C. Wu*) 902 (holo. Herb. Inst. Mat. Med. Guangdong, n.v.).

Apparently close to *R. simsii* but differing in its obscure calyx lobes, 7 stamens and longly exserted style.
China (Guangdong). Only known from the type.

Apart from the minute calyx this species closely resembles *R. simsii* and could be a hybrid of it.

R. litchifolium D.C. Wu & P.X. Tan, Med. Mat. Guangdong 4:35, f.3 (1979). Type: China, Guangdong, Haifeng Xian, Lien Hua Shan, 4 iii 1975, *D.C. Wu* (*T.C. Wu*) 900 (holo. Herb. Inst. Mat. Med. Guangdong, n.v.).

This species is said by the authors to resemble *R. mariae* but it differs in the shining leaves with whitish-grey strigose indumentum and in the corolla with acute to mucronate lobes. Since we have not seen the type we cannot confirm the affinities of this species, which is known only from the type.

R. nanpingense P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 82 (1982). Type: China, Fujian, Nanping, 18 iii 1931, *Y. Ling* 2300 (holo. IBSC, n.v.)
Ic.: Tan, Survey Gen. Rhododendron S. China f.8 (1983).

This may be synonymous with *R. mariae*; the specimen seen, (*Ling, Y.* 2204) is etiolated. The key accompanying the type description suggests that this species may be distinguished from *R. mariae* by its style which is supposed to be about the same length as the stamens. In *R. mariae* the style is supposedly longer than the stamens.

The proportional length of style and stamens is an unreliable character as it apparently depends on the age of the flower. Both the specimens cited by Tan under *R. nanpingense* are also cited under *R. seniavinii.*

R. obtusum (Lindley) Planchon, Fl. Des. Serres 9: 80 (1854). Type: a plate, Bot. Reg. 32 t. 37 (1846), prepared from a plant grown in the Royal Horticultural Society Garden, sent by Fortune in 1844 from Shanghai.

Syn.: *Azalea obtusa* Lindley, J. Hort. Soc. Lond. 1: 152, (1846); *Rhododendron indicum* Sweet var. *obtusum* (Lindley) Maxim., Rhododendr. As. Orient. 40 (1870).

Azalea amoena Lindley, Paxton's Fl. Garden 3: 81, t.182 (1852); *Rhododendron amoenum* (Lindley) Planchon, Fl. Des. Serres 9: 80 (1854); *R. indicum* Sweet var. *amoenum* (Lindley) Maxim., Rhododendr. As. Orient. 40 (1870); *R. obtusum* Planchon f. *amoenum* (Lindley) Wilson, Monograph Azaleas 32 (1921). Type: a plant grown by Standish and Noble of Bagshot, exhibited in the R.H.S., originating from plants sent by Fortune from a nursery near Shanghai.

R. thunbergii Planchon, Fl. Des. Serres 9: 78 (1854), nom. nud.

R. macrostemon Maxim., Rhododendr. As. Orient. 41, t.3 (1870). Syntypes: Japan, Hondo Prov., *Musashi*; Tokyo, cult. 1862 (iso. K, n.v.).

R. obtusum and many of the forms and varieties described within it are cultivated selections of *R. kaempferi*, of *R. kiusianum* or of hybrids between these two species. Since the derivation of the cultivated type of *R. obtusum* is not certain, neither *R. kaempferi* nor *R. kiusianum* can be safely synonymized with it. It therefore seems wise to treat *R. obtusum* as a group of cultivars, some of which may have a complex parentage.

The Kurume *Azaleas* may have arisen from the same complex of species.

R. petilum P.X.Tan, Survey Gen. Rhododendron S. China 101 (1983). Type: Fujian, Nanping Xian, Wen-lan, in declivitate, in cultis, 9 iii 1973, *L.G. Li* (*L.K. Lee*) 73009 (holo. Inst. Mat. Med. Fujian).

Differs from *R. simsii* in its slender, elongate branches, smaller flowers, 23mm long, with crenulate calyx lobes, and in regular pale red corolla.

China (Fujian); known only from the type.

The single collection of this species was made from cultivated ground, and it seems probable that it is a hybrid of *R. simsii.*

R. pinetorum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(1): 93 (1982). Type: China, Hunan, Huitong Xian, in sylva Pini massonianae, 31 vii 1956, *Huang, De Zhen* (*Teh-Cheng Wong*) 247 (holo. IBSC).

Shrub; young shoots covered with glandular strigose and puberulous spreading hairs.

Leaves dimorphic, subcoriaceous; spring leaves oblong ovate-oblong 4–6 × 1–1.3cm 2.2–2.4 × as long as broad, apex acuminate, base cuneate, margin revolute, ciliate, upper surface glabrescent except for a puberulous midrib, lower surface with a bistratose indumentum, the upper layer brownish-strigose, the lower densely pilose; summer leaves similar but smaller, 20–30 × 10–12mm; petioles 6–8mm, brownish, glandular-strigose. Flowers unknown. *Calyx* in fruit with linear subulate lobes c.5mm long. *Capsule* oblong, c.10 × 3mm, densely spreading-glandular-strigose; pedicels 15–18mm; style glabrous.
China (Hunan). Pine forests.

A distinctive species but without flowers its affinities are uncertain.

R. polyraphidoideum var. **montanum** P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 85 (1982). Type: Guangxi, Daming shan, 25 viii 1951, *B.X. Cai* (*C.S. Tsai*) 5401 (holo. IBSC, n.v.).

We cannot confirm that var. *montanum* is related to var. *polyraphidoideum*; the only specimen seen (*Cai, C.X.* 5154) has no flowers or fruit. Indeed, it seems more likely that it may be allied to *R. viscigemmatum*, although it probably differs in its spreading-strigose hairs on the stems and petioles and its non-viscid floral buds.

R. × pulchrum Sweet, Brit. Fl. Garden ser. 2,2: t.117 (1832). Described from a plant raised from seed by Mr Smith of Kingston; the type is presumed to be the plate cited above.

Syn.: *R. indicum* (L.) Sweet var. *smithii* Sweet, Hort. Brit. ed. 2: 343 (1830)—basionym for *R.* × *pulchrum*; *R. phoeniceum* f. *smithii* (Sweet) Wilson in Wilson & Rehder, Monogr. Azaleas 62 (1921).

According to Sweet this is a hybrid between *R. ledifolium* and the old red *R. indicum*. This taxon may be loosely grouped with the 'Azalea indica' hybrids though it is not certain that they have the same parentage.

R. rhodanthum M.Y.He, Bull. Bot. Res. N.E. Forest. Inst. 5(4): 116 (1985). Type: China, Hunan, Lingling Xian, Yangmingshan, Huang- jiang-yuan, 300m, 9 iv 1942, *Y.Tsiang & S.Q.Chen* 670 (holo. IBSC, n.v.).
Shrub, c.1m; young shoots yellowish-brown-strigose. *Leaves* chartaceous, elliptic to oblong-elliptic, 3–4 × 1–1.5cm, apex acuminate, mucronate, base sub-cuneate, when young densely brown-sericeous-strigose on both surfaces, becoming sparsely brown-strigose above; petioles 2–4mm, brown-strigose. *Inflorescence* 1–2-flowered; pedicels c.7mm long, densely brown-sericeous-strigose. *Calyx* with lobes ovate, strigose. *Corolla* funnel-campanulate, rose, with darker flecks, 23mm; tube c.14 × 3mm sparsely villous on outer surface. *Stamens* 6–7, puberulent in lower half. *Ovary* densely brown-sericeous-strigose; style strigose in lower third.

Known only from the type. Allied by the original authors to *R. yangmingshanense* but apparently closer to *R. subflumineum*, from which it differs in its hairy corolla tube and style. The 6–7 stamens may suggest that this is a hybrid between *R. mariae*,

with 5 stamens, and a species with 10 stamens. P.X. Tan assigned this type specimen to *R. simsii.*

R. saxatile B.Y.Ding & Y.Y.Fang, Bull. Bot. Res. N.E. Forest. Inst. 7(1): 29 (1987). Type: China, Zhejiang, Pingyang Xian, Nanyangdang, 60-400m, 11 v 1985. *B.Y.Ding* 4082 (holo. HZU, n.v.).

Shrub, 30–120cm; young shoots densely covered with red spreading strigose hairs intermixed with crisped pubescent hairs. *Leaves* subcoriaceous, dimorphic; spring leaves ovate-elliptic to ovate, 2–5 × 1–2.5cm, apex acute, base rounded to broadly cuneate, upper surface strigose, soon glabrescent, lower surface strigose and sericeous; summer leaves 10–20 × 7–12mm, otherwise as for spring leaves; petioles 2–6mm, indumentum like that of young shoots. *Inflorescence* 2–5-flowered; pedicels c.5mm, densely strigose and crisped-pubescent. *Calyx* small, densely crisped-sericeous and strigose. *Corolla* funnel-shaped, white, with red flecks on the upper three lobes, 15-18mm; tube 5–8mm. *Stamens* 5, filaments glabrous. *Ovary* densely brown-crisped-sericeous; style glabrous or sparsely hairy at base.

China (Zhejiang). Rock fissures and woodland, 60–400m.

The original authors considered that this species was distantly allied to *R. rufulum.* However, from the description *R. saxatile* seems to key down with *R. jinxiuense.* This is clearly a distinct species, geographically isolated from its possible allies. Without access to the type specimen we are unable to confirm its exact affinities.

R. seniavinii var. **crassifolium** P.X.Tan, Survey Gen. Rhododendron S. China 110 (1983). Type: China, Jiangxi, Suichuan Xian, *S.S. Lai* (*S.K. Lai*) 5361 (holo. IBSC).

Both specimens cited by Tan are in fruit and may not be related to var. *seniavinii.* Both could be a form of *R. chunii,* with a denser but coarser indumentum and longer pedicels. They also closely resemble *R. hypoblematosum* but have a thicker leaf texture. Since flowering material of this taxon is not available we hesitate to assign these two specimens to a species.

R. sparsifolium W.P. Fang, Acta Phytotax. Sin. 21: 462 (1983). Type: China, Sichuan, Hejiang, Fubaolinchang, 800–1000m, 19–22 v 1981, *Q.J. Tian et al.* 2–38, 3–14, 1–21, n.v.

Shrub, c.3m; indumentum of young shoots unknown. *Leaves* dimorphic, coriaceous, persistent, oblong-elliptic to elliptic, 2.5–3.5(–4) × 0.8–1.2cm, apex acuminate, base cuneate, margin entire; upper surface glabrous, lower surface pale, finely hairy; petioles c.3mm, glabrous. *Inflorescence* 5–7-flowered; pedicels 10–15mm, densely yellowish-hairy. *Calyx* c.3mm hairy, lobes ovate. *Corolla* funnel-shaped, c.15mm, rose; tube 6–8mm, glabrous. *Stamens* 5, shorter than corolla, filaments glabrous. *Ovary* densely hairy; style hairy in lower half. *Capsule* unknown.

China (Sichuan). 800–1000m.

Known only from the specimens cited above which we have not seen. Distantly allied by the author to *R. seniavinii,* but with smaller leaves and with hirsute pedicels and ovaries.

Section **Brachycalyx** Sweet, British Fl. Garden ser.2,1:95 (1831).

Syn.: Sect. *Azalea* Subser. *Schlippenbachii* p.p.

Sect. *Verticillatae* Nakai, Trees Shrubs Japan ed.1: 43 (1922). Lectotype: *R. reticulatum* D. Don (see Hara in J. Jap. Bot. 49: 354, 1974).

Subsect. *Brachycalyces* (Sweet) Spethmann, Pl. Syst. Evol. 157:28 (1987).

Type species of section: *R. farrerae*.

1a. Leaves ovate to oblong-lanceolate, broadest below middle; stamens 10; ovary not glandular (China) ____ 2

b. Leaves usually ovate-rhombic, broadest at about the middle; stamens 5–10; style and/or ovary sometimes glandular ____ 4

2a. Leaves with a thin floccose indumentum beneath; calyx lobes distinct ____ **3. daiyunicum**

b. Leaves villose beneath at first, soon glabrous; calyx lobes indistinct ____ 3

3a. Leaves 1.5–3cm; petioles 1–3mm, densely villose; corolla pale purple or lilac ____ **2. farrerae**

b. Leaves 3–5(–8)cm; petioles ± glabrous, 5–20mm; corolla rose-purple ____ **1. mariesii**

4a. Flowers appearing before or after the leaves, red to deep rose-pink ____ 15

b. Flowers appearing before or with leaves, magenta to rose-purple ____ 5

5a. Style stipitate-glandular below ____ **4. wadanum**

b. Style eglandular, sometimes pubescent below ____ 6

6a. Ovary at least partly glandular ____ 7

b. Ovary pubescent, eglandular ____ 10

7a. Stamens 5 ____ **5. dilatatum**

b. Stamens (8–)10 ____ 8

8a. Calyx minute, ciliate; lower surface of leaves with scattered adpressed hairs or glabrous ____ 9

b. Calyx c.3 mm, sometimes ciliate; lower surface of leaves adpressed-hairy, hairs longer on nerves ____ **6. hidakanum**

9a. Petioles glandular; leaves rhombic; young shoots glabrous ____ **7. decandrum**

b. Petioles eglandular, pilose, at least when young; leaves broadly ovate-rhombic, acute; young shoots hairy ____ **8.viscistylum**

10a. Corolla 30–40mm; inflorescence 2–4-flowered ____ **14. weyrichii**

b. Corolla 20–30mm; inflorescence 1–2-flowered ____ 11

11a. Petioles pilose, sometimes densely so ____ 12

b. Petioles glabrous, at least in lower part ____ 13
12a. Petioles and basal part of leaf midrib pilose, sometimes sparsely so ____ **9. reticulatum**
b. Petioles and basal part of leaf midrib densely lanate or villose ____ **12. nudipes**
13a. Leaf apex acuminate, lamina sparsely covered with brown hairs when young; capsule 4–5mm broad ____ **10. kiyosumense**
b. Leaf apex acute, lamina glabrous or hairy beneath when young; capsule 2–3mm broad ____ 14
14a. Pedicels and calyx densely pilose; leaves glabrous beneath, even when young, midrib pilose below ____ **11. mayebarae**
b. Pedicels glabrous above; leaves adpressed-hairy beneath when young, midrib densely villose near base ____ **12. nudipes**
15a. Flowers deep rose-pink ____ **14. sanctum**
b. Flowers red ____ **15. amagianum**

1. R. mariesii Hemsley & Wilson, Kew Bull. 1907: 244 (1907). Syntypes: China, Hubei, 200–600m, *Wilson* 29 (E); Chongyang, *Henry* 5274 (E), 5947 (K); Badong (Pating), *Henry* 1422 (K); Nanto, *Henry* 3829 (K); Jiangxi, Kiukiang (Jiujiang ?), *Maries*, n.v.

Syn.: *R. umbelliferum* Lévl., Repert. Spec. Nov. Regni Veg. 12: 102 (1913). Type: China, Guizhou, Pin fa, 2 iv 1902, *Cavalerie* 10 (holo. E).

R. shojoense Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30: 174 (1911). Type: Taiwan, Nantou, *Kawakami & Mori* 1160, n.v.

R. gnaphalocarpum Hayata, Ic. Pl. Formosan. 3: 132 (1913). Type: China, Fujian, Isan, 1910, *Nagasawa* 239, n.v.

Shrub or small tree, 1–3m; young shoots at first covered with adpressed yellowish hairs, becoming glabrous and grey. *Leaves* deciduous, ovate-lanceolate, sometimes broadly ovate, 3–7.5 × 2–4.5cm, apex acute, upper surface dark green, lower surface pale; petioles 5–20mm, glabrous. *Inflorescence* 1–2-flowered, flowers appearing before leaves; pedicels 5–8mm, enclosed by bud scales, villose. *Calyx* minute, covered with grey/yellowish adpressed hairs. *Corolla* funnelform, 25–30mm, rose-purple, upper lobe spotted, 20–25mm, oblong. *Stamens* 10, equal, glabrous. *Ovary* yellowish-grey-villose; style glabrous. *Capsule* c.10mm, cylindric, villose.

China (W Hubei, E Sichuan, Guizhou, Guangxi, Guangdong, Fujian, Hunan, Jiangxi, Zhejiang, Auhui), Taiwan. Cliffs and thickets, 200–1300m. **Map 21**.

Differing from *R. farrerae* in its larger leaves and longer, glabrescent petioles and pedicels. Specimens from E Sichuan and W Hubei have broader, ovate-lanceolate leaves that apparently flush while the flowers are open; the remainder of the material has rhombic leaves that apparently flush after the flowers have opened. However, there are no other morphological differences between these two groups of plants so we are hesitant to describe them as separate entities without further field studies.

2. R. farrerae Tate apud Sweet, Brit. Fl. Garden ser. 2: 1,t.95 (1831). Type: a plant introduced by Capt. Farrer from China in 1829 (n.v.).

Syn.: *Azalea farrerae* (Tate) Koch, Dendr. 2(1): 178 (1872).
Rhododendron farrerae Tate var. *leucotrichum* Franchet, J. Bot. (Morot) 394 (1895). Syntype: China, E Sichuan, aux environs de Tchen-keou-tin, *Farges* 50, 846, n.v.
Azalea squamata Lindley, J. Hort. Soc. Lond. 1:152 & Bot. Reg. t.3 (1847). Type: China, Hongkong, Mt Victoria, 550m, *Tate* (holo. BM).
Rhododendron cinereoserratum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 77 (1982). Type: China Fujian, Nanjing Xian, Hexi, Ling hai, *Univ. Amoy* 20 (holo. Amoy Univ.)

Ic.: Tan, Survey Gen. Rhododendron S. China f.22,2 (1983).

Dwarf shrub; young shoots becoming glabrous. *Leaves* ovate, 1.5–3 × 1–2cm, apex acute, upper and lower surface with long brown hairs, becoming glabrous; petioles 1–3mm, densely villose. *Inflorescence* 1–2-flowered; pedicels short, hidden by bracts, densely villose. *Calyx* minute, densely villose. *Corolla* open-campanulate, pale purple or lilac, upper lobe spotted, 20–30mm, lobes 15mm, broadly oblong. *Stamens* 10, unequal, glabrous. *Ovary* densely hairy; style glabrous. *Fruit* not known.

China (E Guangxi, Guangdong, Fujian, Jangxi, Hunan). Mixed woodland, 600m. **Map 22.**

Forms with more or less crenate leaves have been referred to *R. cinereoserratum* Tan, the type of which has unusually narrow leaves. However, there are specimens with broader but toothed leaves and there are also analagous forms of *R. mariesii*. We do not therefore consider that there is any justification in maintaining *R. cinereoserratum* as a distinct taxon.

3. R. daiyunicum P.X.Tan, Bull. Bot. Res. N.E. Forest. Inst. 2(4): 78 (1982). Type: China, Fujian, Dehua Xian, prope Catervam Daiyuan, 20 iv 1975, *L.K. Ling* 3040 (holo. Fujian Normal Univ.)

Syn.: *R. daiyuenshanicum* P.X.Tan, Survey Gen. Rhododendron S. China 96, f.22, 3 (1983). Type as above.

Shrub; young shoots becoming glabrous. *Leaves* coriaceous, oblong-lanceolate, 2.8–3.8 × 1.3–1.7cm, apex slightly acute, upper surface greenish, opaquely brown when dry, lower surface paler below, covered with thin lanate indumentum, with the midrib setulose; petioles 3–4mm, densely brownish, strigose with some longer setose hairs. *Inflorescence* 1-flowered; pedicels 6–8mm, densely strigose. *Calyx* densely brown-strigose, lobes crenulate, 5mm. *Corolla* obliquely funnel-campanulate, rose, c.25mm, lobes 20–22mm, obovate-oblong. *Stamens* 10, filaments puberulent. *Style* glabrous. *Fruit* not known.

China (Fujian). **Map 22.**

Known only from the type. Allied to *R. farrerae* but differing in several distinctive characters.

4. R. wadanum Makino, J. Jap. Bot. 1: 21 (1917). No type cited.

Syn.: *R. glandulistylum* Komatsu, Bot. Mag. (Tokyo) 32: 10 (1918)—Japanese text.

R. wadanum Makino var. *leucanthum* Makino, J. Jap. Bot. 3: 11 (1926)—English text. Type: Japan, Prov. Sagmai, Hakone, *Sawada*, n.v.

R. reticulatum D.Don var. *wadanum* (Makino) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 22 (1969).

Ic.: Togashi et al., Species Rhododendron Japan 82–84 (1982).

Shrub or small tree; young shoots villose. *Leaves* rhombic, 3–5 × 2–4cm, apex acute but with blunt tip, upper surface sparsely villose when young, soon glabrescent, lower surface sparsely villose, more densely so on midrib; petioles 4–7mm, densely villose. *Inflorescence* 1–2-flowered, flowers appearing before leaves; pedicels 3–10mm, with eglandular or glandular hairs. *Calyx* minute, ciliate. *Corolla* funnel-campanulate, rich rose-pink, 22–30mm. *Stamens* 10, unequal, filaments glabrous. *Ovary* densely villose; style stipitate-glandular in lower half. *Capsule* 8–15 × 4–5mm.

Japan (SE Honshu). Mixed forest, 950–1500m. **Map 23.**

A distinct species on account of its glandular style. A white-flowered form has been referred to var. *leucanthum* Makino.

5. R. dilatatum Miquel, Ann. Mus. Bot. Lugduno-Batavum. 1: 34 (1863). Type: Japan, *Siebold*, n.v.

Ic.: Togashi et al., Species Rhododendron Japan 61–64 (1982).

Shrub or small tree; shoots glabrous. *Leaves* rhombic, 3–5 × 1.5–3.5cm, apex acuminate, both surfaces covered with adpressed pilose hairs when young, at maturity upper surface glabrous, lower surface with sparse pilose hairs; petioles 3–5mm, papillate. *Inflorescence* 1–3-flowered, flowers appearing before leaves; pedicels 5–8mm, covered with adpressed brown hairs and glands. *Calyx* minute, glandular, lobes ciliate. *Corolla* open funnel-shaped, 20–30mm, rose-purple, lobes 15–25mm, oblong. *Stamens* 5, filaments glabrous. *Ovary* glandular; style glabrous.

Japan (S Honshu). c.1000m. **Map 24.**

Rehder states that the type lacks flowers. Therefore our concept of *R. dilatatum* follows that of Maximovicz (in *Rhododendr. As. Orient.* 27, 1870).

6. R. hidakanum Hara, J. Jap. Bot. 49: 353 (1974). Type: Japan Hokkaido, Maruyama, Shoya, 80m, 11 ix 1974, *Hara et al.* (holo. TI, n.v.).

Syn.: *R. dilatatum* Miquel var. *boreale* Sugimoto, New Keys Woody Pl. Japan 509 (1972). Type as above.

Ic.: Togashi et al., Species Rhododendron Japan 70–73 (1982).

Shrub, to 3m; young shoots greyish, ± glandular, later glabrescent. *Leaves* broadly rhombic-ovate, 2.5–6 × 1.5–5cm, apex shortly cuspidate, base broadly cuneate, upper surface sparsely glandular ar first, covered with long white hairs, later glabrescent, with persistent hair bases, lower surface pale, with adpressed hairs, or glabrous though with minute papillate glands and long hairs on the nerves; petioles 5–12mm, glandular.

Inflorescence 1–3-flowered; pedicels 10–15mm, glandular, pilose below. *Calyx* c.3mm, glandular, sometimes ciliate. Corolla funnel-campanulate, 25–30mm, magenta, lobes c.17mm, oblong-obovate. *Stamens* 10, unequal, filaments glabrous. *Ovary* shortly stipitate-glandular, with scattered pilose hairs; style glabrous. *Capsule* 9–11 × c.3mm. Japan (S Hokkaido). Wooded mountain slopes. **Map 24.**

Apparently allied to *R. decandrum* on account of its glandular ovary but with a more northerly distribution. The most significant differences appear to be in the larger calyx and less hairy leaves of *R. hidakanum*.

7. R. decandrum (Makino) Makino, J. Jap. Bot. 1: 21 (1917)—English text. Type: Japan, Prov. Tosa in Shikoku, Ochi, iv 1887, *Makino*, n.v.

Syn.: *R. dilatatum* Miq. var. *decandrum* Makino, Bot. Mag. Tokyo 7: 134 (1893).

R. inobeanum Honda, Bot. Mag. Tokyo 53: 383 (1939). Type: Japan, Shikokui, Awa Prov. Sanakoti, 1939, *Inobe* (holo. TI, n.v.).

R. decandrum Makino forma *lasiocarpum* Hara, Enum. Sperm. Jap. 1: 29 (1949).

R. decandrum Makino var. *pilosum* Hara, loc. cit. (1949).

? *R. dilatatum* Miquel var. *satsumense* Yamazaki, J. Jap. Bot. 56: 263 (1981). Type: Japan, Pref. Obsumi, Tatakuma-yama, Nanatsudani, 400m, cult. in Tokyo, 20 v 1974, *Yamazaki* 2533 (holo. TI, n.v.).

Ic.: Togashi et al., Species Rhododendron Japan 58–61 (1982).

Shrub or small tree; young shoots soon glabrous. *Leaves* broadly rhombic, 2–3(–6) × 2–4cm, apex acuminate, upper surface with glands, especially on midrib and veins, also with a few scattered hairs, lower surface with scattered villose hairs and glands; petioles 10–15mm, sparsely glandular, also with villose hairs. *Inflorescence* 1–3-flowered, flowers appearing before leaves; pedicels 5–8mm, villose, densely so at base, also with glands. *Calyx* minute, glandular, lobes ciliate. *Corolla* open funnel-campanulate, 25–28mm, magenta, spotted; lobes c.20mm, narrowly oblong. *Stamens* 10, unequal, filaments glabrous. *Ovary* glandular, with a few villose hairs; style glabrous. *Capsule* 8–15mm, curved.

Japan (S Honshu, Shikoku). Forested hillsides, 800m. **Map 24.**

R. dilatatum var. *satsumense* is described as differing from *R. decandrum* in its dilatate-ovate leaves, shining above, in the involucre being lightly reflexed before anthesis, in the glabrescent floral buds and in the glandular-punctate, usually not ciliate, capsules. We assume that this taxon has ten stamens since it has been allied by the original author to *R. decandrum*; we have not however seen any material of it.

8. R. viscistylum Nakai, Bot. Mag. (Tokyo) 49: 498 (1935). Type: Japan, Kyushyu, prov. Osumi, Takakumayama, 5 v 1932, *Sugimoto* (holo. TI, n.v.).

Syn.: *R. decandrum* Makino var. *viscistylum* (Nakai) Hatusima, Sci. Rep. Yukosuka City Mus. 15: 21 (1969).

Ic.: Togashi et al., Species Rhododendron Japan 74–77 (1982).
Shrub, 2–3m; young shoots soon glabrescent. *Leaves* rhombic, 1.4–4.3 × 0.7–1.3cm, apex acute, upper surface with a brown pilose indumentum at first, later glabrescent, lower surface pale, with punctate glands, sometimes viscous; petioles 3–5mm, with long eglandular hairs, at least when young. *Inflorescence* 1(–2)-flowered, flowers appearing before the leaves; pedicels 5–6mm, brown-pilose and glandular-verrucose. *Calyx* minute, brown-ciliate. *Corolla* open funnel-campanulate, c.17mm, reddish-purple, with flecks, lobes oblong or elliptic, c.12mm. *Stamens* 10, unequal, filaments glabrous. *Ovary* glandular and viscous, with brown hairs at apex; style glabrous, viscous. *Capsule* c.4mm.
Japan (Kyushyu). Upland forests. **Map 25.**
Close to *R. decandrum*.

9. R. reticulatum D. Don in G. Don, Gen, Syst. 3: 846 (1834). Type: A plant cultivated by Mr Knight in 1834 (n.v.).

Syn.: *R. rhombicum* Miq., Ann. Mus. Lugduno-Batavum 2: 164 (1865). Type: A specimen collected by *Buerger*, n.v.
R. rhombicum Miq. var. *albiflorum* Makino, Bot. Mag. (Toyko) 18: 66 (1904). Type: Fl. white; Prov.Zyodaizi-yama in Sakawa spont., iv 1885, *T. Makino*.
R. sakawanum Makino, J. Jap. Bot. 3:11 (1926). Type: as for *R. rhombicum* var. *albiflorum* Makino.
R. reticulatum D. Don var. *bifolium* Yamazaki, J. Jap. Bot. 62: 288 (1987). Type: Japan, Shikoku, Tokoshima Pref., Oshima, Mugisho, *K. Abe* 35670 (holo. TI, n.v.).
R. reticulatum D. Don var. *parvifolium* Yamazaki, J. Jap. Bot. 59: 209 (1984). Type; Japan, Shikoku, Pref. Kohchi, Takaoka-gun, Hidaka-mura, Nishikiyama, 21 x 1942, *Yashinaga* 24 (holo. TI, n.v.)

Ic.: Bot. Mag. 43: t.6972, (1887); Stevenson (ed.), Sp. Rhodod. 116 (1930).
Shrub or small tree, 1–8m; young shoots soon glabrous. *Leaves* rhombic-ovate, 3–6 × 1.5–4cm, apex acute, upper surface at first covered with short hairs, soon becoming glabrous, lower surface with short brown hairs, mainly on midrib and veins; petioles 2–5mm, covered with brown bristle-like hairs. *Inflorescence* 1–2(–3)-flowered, flowers appearing before the leaves; pedicels 5–8mm covered with adpressed brown hairs, glandular. *Calyx* minute, ciliate, villous, glandular. *Corolla* funnel-campanulate, rose-purple, rarely white, 25–30mm, lobes 15mm, oblong. *Stamens* 10, unequal, filaments glabrous. *Ovary* villous; style glabrous (? occasionally pubescent below). *Capsule* 10mm, curved.
Japan (S Honshu, Shikoku, Kyushyu). Forest hillsides, 400–700m. **Map 25.**

The rare white-flowered form of *R. reticulatum* has been called *R. rhombicum* var. *albiflorum* Makino (*R. sakawanum* Makino). A form with more densely hairy leaves, possibly approaching *R. nudipes* var. *lagopus*, has been referred to *R. ciliatum* of Nakai.

Yamazaki distinguishes var. *bifolium* on its two large leaves and one smaller leaf per whorl. This is a feature that occurs occasionally, sometimes along with normal whorls with three equal-sized leaves, on the same plant.

R. reticulatum apparently hybridizes with *R. tashiroi* (q.v.).

10. R. kiyosumense (Makino) Makino, Fl. Jap. ed.2: 880 (1931).

Syn.: *Azalea kiyosumensis* Makino, J. Jap. Bot. 6: 18 (1929); *R. dilatatum* Miq. var. *kiyosumense* (Makino) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 22(1969). Syntypes: Japan, Prov. Awa, Mt Kiyosumi,1929, *Suszuki*, n.v.; 1929, *Makino*, n.v.

Rhododendron shimidzuanum [Honda ex] Makino , Fl. Jap. ed. 2: 890 (1931).

Ic.: Togashi et al., Species Rhododendron Japan 67–69 (1982).

Shrub or small tree; shoots glabrous. *Leaves* rhombic, 3–5 × 2.5–3cm, apex acuminate, upper and lower surfaces sparsely covered with brown hairs when young, midrib glabrous or shortly pilose beneath, margins ciliate; petioles 4–8mm, mostly glabrous, with scattered brown hairs near leaf base. *Inflorescence* 1–2-flowered; pedicels 3–5mm, with scattered brown hairs. *Calyx* minute, ciliate. *Corolla* open funnel-campanulate, 20–30mm, purple, lobes 10–20mm, oblong. *Stamens* 10, filaments glabrous. *Ovary* densely strigose; style glabrous. *Capsule* 4–10 × 4–5mm, curved.

Japan (E Honshu). Forests, 650m. **Map 25.**

11. R. mayebarae Nakai & Hara, J. Jap. Bot. 11: 825 (1935). Type: Japan, Kyushyu Prov., Higo, in Mt Kurobaru, 1017m, 24 iv 1927, *Mabare* 2159, n.v.

Syn.: *R. nudipes* var. *mayebarae* Nakai & Hara in Acta Phytotax. Geobot. 25 (2-3): 37 (1972).

R. mayebarae Nakai var. *obsumiense* Yamazaki, J. Jap. Bot. 59: 209 (1984). Type: Japan, Pref. Kagoshima, Aranishiyama, 800-900m, 21 ix 1977, *Takeda* (holo. TI, n.v.).

Ic.: Togashi et al., Species Rhododendron Japan 94–96 (1982).

Shrub; young shoots glabrous. *Leaves* ovate-rhombic, 2.5–3 × 1.5–1.7cm, apex acute, upper surface at first hairy, lower surface with lamina glabrous, veins and midrib with brown hairs, especially towards base; petioles very short. *Inflorescence* 1-flowered, flowers appearing before leaves; pedicels 10–15mm, densely brownish setose-pubescent. *Calyx* inconspicuous. *Corolla* open funnel-campanulate, c.25mm, deep magenta, spotted, lobes c.20mm, oblong. *Stamens* 10, unequal, filaments glabrous. *Ovary* densely brownish setose-strigose; style glabrous. *Capsule* 8 × 3mm.

Japan (S Kyushyu). Wooded hillsides, 600–1000m. **Map 24.**

Close to *R. nudipes* but differing in the less hairy leaf undersurfaces and the densely pubescent pedicels. Var. *obsumiense* is supposed to differ in the sparsely hirsute lower surface of its leaves. We do not consider this to be a sufficient difference to merit recognition.

12. R. nudipes Nakai, Bot. Mag. (Tokyo) 40: 484 (1926). Type: Japan, Kyushyu, Mt Higo, Prov. Asosan, *Ogata* (holo. TI, n.v.).
Shrub or small tree; shoots glabrous. *Leaves* broadly rhombic, 2–8 × 1–6.5cm, apex acute, tip blunt, upper and lower surfaces covered with long brown hairs when young, becoming glabrous on upper surface; petioles 3–10mm, densely pale brown-villous with the lower half glabrous, to densely lanate. *Inflorescence* 1–2-flowered; pedicels 5–10mm, covered with brown pubescent hairs. *Calyx* minute. *Corolla* funnel-campanulate, 20–30mm, rose-purple, lobes c.20mm, broadly oblong. *Stamens* (? 5–)8–10, glabrous. *Ovary* densely pale brown-villous; style glabrous. *Capsule* 2–3mm, ovoid.

In the last ten years a number of infra-specific taxa have been published within *R. nudipes* mostly by Yamazaki. We have not seen material of most of these and, as the type descriptions are inadequate and non-comparative, it has not been possible to produce a key. The following treatment and synonymy follows Yamazaki without attempting to make any assessment of the validity of the taxa included.

12a. subsp. **nudipes**.

12ai. var. **nudipes**.

Syn.: *R. nagasakianum* Nakai, Bot. Mag. (Tokyo) 40: 484 (1926). Type: Japan, Kyushyu, Nagasaki Prov., Hizen, *Maximovicz* (holo. ? LE, n.v.; iso. ? BM, Hb. Hance 13570).

R. nagasakianum Nakai var. *gracilescens* Nakai, op. cit. 485 (1926). Type: Japan, Kyushyu, Mt Fugendake, montium Unzen, Prov. Hiaen, *Anon.* (holo. KYL, n.v.).

R. reticulatum D.Don var. *nudipes* (Nakai) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 23 (1969).

Ic.: Togashi et al., Species Rhododendron Japan 86–89 (1982).
Japan (Honshu, Kyushyu). Light forest, 200–1000m. **Map 23**.

The Maximovicz material of *R. nagasakianum* seen at the BM, which may be an isotype, has corollas with at least 8 stamens, not 5 as stated by Nakai. Therefore, on the basis of this specimen, we reduce *R. nagasakianum* to a synonym of var. *nudipes*.

12aii. var. **tokushimense** Yamazaki, J. Jap. Bot. 56: 364 (1981); op. cit. 59: 210 (1984). Type: Japan, Shikoku, Pref. Awa, Miyahama Sasa-toge, 14 viii 1947, *C.Abe* (holo.TI, n.v.).
Capsule cylindrical, 13–20 × 4–5mm.
Japan (Shikoku). Known only from the type.

12b. subsp. **niphophilum** Yamazaki, J. Jap. Bot. 56: 363 (1981).Type: Japan, Oziya Shi, Oziya, 100m, 3 viii 1964, cult. Tokyo, 18 v 1974, *T. & F.Yamazaki* (holo. TI, n.v.).

12bi. var. **niphophilum**.
Leaves rhombic, widest at the middle. *Corolla* red-purple. *Capsule* 8–10 × 4–5mm.
Japan (Honshu). 100–700m.

12bii. var. **lagopus** (Nakai) Yamazaki, J. Jap. Bot. 59: 210 (1984).

Syn.: *R. lagopus* Nakai, Bot. Mag. (Tokyo) 40: 483 (1926); *R. wadanum* Makino var. *lagopus* (Nakai) Hara, Enum. Sperm. Jap. 1: 78 (1948); *R. reticulatum* D.Don var. *lagopus* (Nakai) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 22 (1969). Syntypes: Japan, Hondo, Mt Daisen, fl. & fr., *A.Kimura* (holo. TI, n.v.).

Ic.: Togashi et al., Species Rhododendron Japan 90–93 (1982).

Leaves rhombic, 35–50 × 25–40mm, apex acute, upper and lower surfaces sparsely pilose, more densely so on midrib towards base; petioles densely lanate. *Calyx* c.2mm, densely villose. *Stamens* 10. *Ovary* villose; style glabrous. *Capsule* 10–13 × c.3mm, curved.

Japan (SW Honshu, Shikoku). Rocky mountain slopes, c.400m.

12biii. var. **kirishimense** Yamazaki, J. Jap. Bot. 59: 209 (1984). Type: Japan, Kyushyu, Pref. Miyazaki, Kirishimayama, Sonoura, 1100m, 27 viii 1972, *T.Minamidami* (holo. TI, n.v.).

Young shoots pubescent. *Leaves* small, 1.5–4.5 × 1.2–3cm, apex obtuse. *Capsule* suberect, cylindrical.

Japan (Kyushyu). 1100m.

12biv. var. **tsurugisanense** Yamazaki, op. cit. 210 (1984). Type: Japan, Pref. Tokushima, Mt Tsurugisan, 1800m, 9 viii 1976, *Yamazaki* 1128 (holo. TI, n.v.).

Young shoots and petioles densely lanate. *Leaves* sub-chartaceous, large, in fruit sparsely pubescent below.

Japan (Shikoku). 1800m.

13. R. weyrichii Maxim., Rhododendr. As. Orient. 26, t.2 (1870). Type: in Archipelago Gotto , Insula Sylvestri,1853, *Weyrich*, n.v.

Syn.: *R. shikokianum* Makino, Bot. Mag. (Tokyo) 6: 53 (1892). Type: Japan, Tosa, *Sakawa* (iso. K).

Ic.: Togashi et al., Species Rhododendron Japan 98–101 (1982).

Shrub or small tree; young shoots soon becoming glabrous. *Leaves* broadly rhombic 3.5–8 × 1.5–6cm, apex acute, upper surface at first with scattered brown pilose hairs, soon glabrescent, lower surface with scattered brown hairs, mainly on midrib; petioles 5–7mm, covered with brown pilose hairs, later glabrous. *Inflorescence* 2–4-flowered, flowers appearing before the leaves; pedicels 2–4mm, densely covered with brown pilose hairs. *Calyx* minute, ciliate. *Corolla* open funnel-campanulate, 30–40mm, pink with darker flecks, lobes c.20mm, oblong. *Stamens* 10, unequal, filaments glabrous. *Ovary* densely pilose; style glabrous or pubescent below, sometimes also papillate. *Capsule* 10–20mm, curved, with adpressed villose hairs.

Japan (Kyushyu, Shikoku, SE Honshu), Korea. **Map 26.**

14. R. sanctum Nakai, Bot. Mag. (Tokyo) 46: 630 (1932). Syntypes: Japan, Hondo, Ise Prov., *Ando* (TI); Shimajiyama, *Nakai*, n.v.

Syn.: *R. weyrichii* Maxim. var. *sanctum* (Nakai) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 23 (1969).

Ic.: Togashi et al., Species Rhododendron Japan 102–105 (1982).

Tree, to 5m; young shoots becoming glabrous. *Leaves* broadly rhombic, 3–8 × 2.5–6cm, apex acuminate, upper surface densely hairy at first, becoming glabrous, lower surface with scattered hairs persisting along midrib; petioles 2–4mm, densely covered with red-brown pilose hairs. *Inflorescence* 3–4-flowered, flowers appearing before leaves; pedicels 5–10mm, densely pilose. *Calyx* minute, densely pilose. *Corolla* funnel-campanulate, 25–35mm, rose-pink, rarely white, with darker flecks, lobes 20mm, oblong. *Stamens* 10, unequal, glabrous. *Ovary* densely pilose; style pilose in lower half. *Capsule* c.10mm, pilose.

Japan (Hondo). Mountain sides. **Map 26.**

The type seen differs from Nakai's description in having corollas 25–35mm long; the concept used here is based on this type.

15. R. amagianum Makino, J. Jap. Bot. 7:21 (1930). Type: Japan, Prov. Idzu, Mt Amagi, *Makino*, n.v.

Syn.: *R. weyrichii* Maxim. var. *amagianum* (Makino) Hatusima, Sci. Rep. Yokosuka City Mus. 15: 23 (1969).

Ic.: Togashi et al., Species Rhododendron Japan 106–109 (1982).

Tree, to 5m; young shoots densely covered with white soft hairs, later glabrescent. *Leaves* broadly ovate-rhombic, 4–9 × 3–9cm, apex acuminate, upper surface with long scattered brown hairs, lower surface with adpressed brown pubescent hairs, especially on midrib; petioles 5–10mm, densely adpressed-brown-pubescent. *Inflorescence* 1–3-flowered; pedicels 6–13mm, densely pubescent. *Corolla* open-campanulate, 25–40mm, reddish-orange, upper lobe with darker flecks, lobes 25mm, oblong. *Stamens* 10, glabrous. *Ovary* densely brown-pubescent; style with white pubescent hairs at base. *Capsule* ovoid, 15–20mm, densely pubescent.

Japan (Hondo, Idzu Peninsula). c.100m. **Map 26.**

Closely allied to *R. sanctum* and possibly conspecific; differing in its often longer pedicels and in its red flowers. *R. amagianum* apparently flowers in mid July, about one month later than *R. sanctum*, and has an extremely restricted range.

Species Incompletely Known

R. amakusaense (Yamazaki) Yamazaki, J. Jap. Bot. 62: 72 (1987).

Syn.: *R. viscistylum* Nakai var. *amakusaense* Yamazaki J. Jap. Bot. 59: 208 (1984). Type: Japan, Kyushu, Amakusa Islands, Kami-shima, Nokodake, 24 viii 1978, *K. Takeda* (holo. TI, n.v.).

Leaves rhombic-ovate, at first long-pilose, becoming sparsely pubescent below. *Capsule* arcuate-cylindrical, 7–11 × 2.5–3.5mm.

Japan (Amakusa Islands). Only two specimens known.

Probably allied to *R. viscistylum*.

R. hyugaense (Yamazaki) Yamazaki, J. Jap. Bot. 62: 72 (1987).

Syn.: *R. viscistylum* Nakai var. *hyugaense* Yamazaki, J. Jap. Bot. 59: 208 (1984). Type: Japan, Kyushyu, Pref. Miyazaki, Koyu-gun, Nishimera, Shiono, 500m, 11 ix 1978, *K.Takeda* 89101 (holo. TI, n.v.).

Leaves ovate to ovate-elliptic, apex acuminate, both surfaces long-pilose at first, becoming glabrous. *Capsule* globose-cylindrical, 5–9 × 4–5mm.

Japan (Kyushyu). c.500m.

Probably allied to *R. viscistylum*.

R. osuzuyamense Yamazaki, J. Jap. Bot. 59: 208 (1984).

Syn.: *R. dilatatum* Miquel var. *glaucum* Hatusima, Sci. Rep. Yokosuka City Mus. 15: 22 (1969). Syntypes: Prov. Hyuga, Mt Osuzu, 1100–1300m, *Sako* 3348, n.v.; *Hatusima & Sako* 31427, n.v.—basionym; *R. viscistylum* Nakai var. *glaucum* (Hatusima) Sugimoto, New Keys Woody Pl. Japan 509 (1972).

Japan (Kyushyu).

Probably allied to *R. viscistylum* or to *R. mayebarae* but, without access to either a description or specimens we cannot confirm this.

R. yakumontanum (Yamazaki) Yamazaki, J. Jap. Bot. 62: 72 (1987).

Syn.: *R. nudipes* Nakai subsp. *yakumontanum* Yamazaki, J. Jap. Bot. 56: 364 (1981). Type: Japan, Yakushima, Pref. Obsumi, Nagata-dake, 25 vii 1927, *Masamune* (holo. TI, n.v.).

Shoots slender, arcuate-ascendant. *Leaves* dilatate-ovate, brownish pilose on upper surface towards base when in fruit. Flowering buds ovate-globose, densely yellowish-brown-pubescent.

Japan (Yakushima).

Since we have no material available we are dependent on the type description, a translation of which is provided above. From this description we are uncertain of the true affinities of this species but can only assume that it is related to *R. nudipes*.

Identification of Specimens

This list includes the identifications of all numbered herbarium specimens studied during the preparation of this revision. In addition unconfirmed literature records are included; the numbers that refer to these specimens are italicised. While care has been taken to cite the names of Chinese collectors in a recognizable form, either in Pinyin, or in an agreed and listed spelling, we cannot guarantee that they are all correct or that some collectors are not duplicated with different spellings. Some of the more commonly cited collectors are cross-referenced, both in Wade Giles and in Pinyin.

Abe: *s.n.* nudipes var. takushimense; *35670* reticulatum

Agricultural Exp.: *44* hejiangense

Alcasid: 1815 subsessile

Amano: 6957 scabrum subsp. amanoi
Amoy Univ.: 20 farrerae
Anon.: 2 microphyton; 9 simsii var. simsii; 21, 23, 24, 26 microphyton; 30 simsii var. simsii; 37 mariesii; 48 farrerae; 84 simsii var. simsii; 90 farrerae; 92a kwangtungense; 99 simsii var. simsii; 101 farrerae; 109 simsii var. simsii; 164 farrerae; 172 microphyton; 174 mariesii; 183 polyraphidoideum; 187, 235, 236, 237, 238, 239, 241, 242, 243, 244, 246, 247 simsii var. simsii; 306 polyraphidoideum; 377, 380, 433 simsii var. simsii; *434* rivulare; 469 simsii var. simsii; 584 polyraphidoideum; 601, 605, 620 simsii var. simsii; 765 oldamii; 767 simsii var. simsii; 839, 915, 963 mariesii; 1005, 1084 simsii var. simsii; 1095 meridionale var. meridionale; 1215 florulentum; 1275, 1443 simsii var. simsii; 1525 mariesii; 2007, 2021, 2050 simsii var. simsii; 2057 yedoense var. poukhanense; 2072, 2073, 2098 simsii var. simsii; 2477 kwangtungense; 2750 mariesii; 2758 simsii var. simsii; 2839 simsii var. mesembrinum; 3574, 3593 mariae subsp. mariae; 3845, 3989 simsii var. simsii; 5116 microphyton; 5116, 5144 simsii var. simsii; 5532 farrerae; 5885 simsii var. simsii; 7724 mariesii; 8254 microphyton; 10626, 13175 simsii var. simsii; 20201, 20592 mariesii; 23068 minutiflorum; 23136 simsii var simsii; 25077 minutiflorum; 25529 simsii var. simsii; 25552, 25893 mariesii; 26406 simsii var. simsii; 27105, 27935, 28028 mariesii; 28142 simsii var. simsii; 28935 mariesii; 29625, 30283 simsii var. simsii; 31711 kwangtungense; 34158 mariesii; 40400 mariae subsp. mariae; 42734 naamkwanense var. naamkwanense; 103733 mariesii; 74-4531 kwangtungense
Anshun Exp.: 891 rufohirtum
Bai, J.L. & Ling, R.: 4087 farrerae; 4135 mariesii
Bao, S.Y.: 38, 207 simsii var. simsii
Barnes: 922 subsessile
Bartlett: 13249 subsessile
Beijing Inst. Bot.: 1140625 microphyton
Bijie Exp.: 1699 rivulare; 5089 seniavinii
Bisset: 235 mucronatum; 237 sanctum; 1121 kaempferi; 1300 serpyllifolium; 2109 macrosepalum; 2112 wadanum; 2113 serpyllifolium; 3685 dilatatum; 3728 indicum; 3936 nudipes var. nudipes; 4018 tsusiophyllum
Bisset, J.: 1121b weyrichii
Bock von Rosthorn: 2148 simsii var. simsii
Bodinier: 1096 simsii var. simsii; 1099 farrerae
Boehinco: 3780 wadanum
Bon: *264, 439* simsii var. simsii
Bor: 36 mucronatum
Boufford & Hsien, C.F.: 3828 rubropilosum
Boufford & Wood: 18957 macrosepalum; 18960 kaempferi
Brooks: 516 kaempferi
Cadiere: 1 simsii var. simsii (annamense)
Cai, Cang Xing: 5134, 5401 polyraphidoideum var.montanum
Canton Agric. Coll.: *531a* simsii var. simsii; 531b mariae subsp. mariae
Canton Christian Coll.: 12391 chunii
Carles: 128 simsii var. simsii
Cavalerie: 10 mariesii; 1559 rivulare; 1796, 2059 chrysocalyx; 3221 fuchsiifolium; 3892, 4490 simsii var. simsii; 8121 microphyton

Celestino: 4328 subsessile
Ceng, Cang Jiang (*Tseng, C.J.*)
Ceng, H.D.: 16703 farrerae; 20019 simsii var.simsii; 20332 tsoi; 20392 naamkwanense var. naamkwanense; 20507 farrerae; 20680 kwangtungense; 20778 rivulare; 20999 kwangtungense; 21212 florulentum; 21214 farrerae; 21269 simsii var. simsii; 21412 farrerae; 21468 mariesii; 21566 florulentum; 21949,21951 meridionale var. meridionale; 21952 hainanense; 21974 meridionale var. meridionale; 21983 hainanense; 22010, 22110, 22186 meridionale var. meridionale; 22229, 22528 mariae subsp. mariae; 23491 simsii var. simsii; 23545 mariesii; 23669, 23677 simsii var. simsii; 23710 mariesii; 24023 mariae subsp. mariae; 24180, 24470 meridionale var. meridionale; 24570 hainanense; 24696 mariae subsp. mariae; 24777 hainanense; 24778 meridionale aff.; 25020, 25048, 25060 simsii var. simsii; 25061, 25087 farrerae; 25155 simsii var. simsii; 25203, 25221 mariae subsp. mariae; 25335 naamkwanense var. naamkwanense; 25379, 25487, 25586 tsoi; 25588, 25645 farrerae; 25669 simsii var. simsii; 25778 farrerae; 26252, 26318, 26360 simsii var. simsii; 27059 saxicolum; 27674, 27847 simsii var. simsii; 28295 mariae subsp. mariae; 28329 simsii var. simsii; 28410 rivulare; 28489 minutiflorum; 28755 mariae subsp. mariae; 28947 simsii var. simsii
Challenger Exp.: 189 kaempferi
Champion: 123 simsii var. simsii
Chang, A.L.: *79-2093* microphyton
Chang, C.C. (*Zhang, Z.S.*)
Chang, C.Z.: 3584, 4420 simsii var. simsii
Chang, H.C.: 1849 rufulum
Chang, H.F.: 292 simsii var. simsii
Chang, H.J.: 3790 mariesii; *14147* nakaharai
Chang, K.C.: 92 naamkwanense var. naamkwanense; 376, 1071 mariesii
Chang, S.Y.: 2127, 3024 pulchrum
Chang, S.Z.: 5198 simsii var. simsii
Chang, Y.P.: 277 simsii var. simsii; 735 microphyton
Chang, Y.P. & Tsang, T.S.: 4856 seniavinii
Chang, Z.R.: 4870, 5462, 5599 simsii var. simsii
Chang, Z.S.: 400330, 401187, 401262, 401492, 401496 mariesii
Chang, Z.Y.: 18314, 25632 mariesii
Chao, Ching Sheng: 5027, 5163, 5693, 5915, 5947, 116670 microphyton
Chao, T.M. & Kao, M.T.: *6182* rubropilosum
Chen: 696, 3089, 3587 microphyton
Chen, Bi En: *2454, 2586* simsii var. simsii
Chen, Bing Ying: 53680 microphyton
Chen, C.: 2309 simsii var. simsii
Chen, D.R.: 7306 mariae subsp. mariae; 7307, 7315 simsii var.simsii; 7339 tsoi
Chen, G.Y.: 2375, 2487 mariesii
Chen, Heng Chun: 500047 rivulare
Chen, H.C. et al.: *500044* mariesii
Chen, Huan Yong (*Chun, W.Y.*)
Chen, Jie (*Chen, C.*)
Chen, K.Y.: 1401 simsii var. simsii

Chen, Li Qing: 93228 simsii var. simsii; 94461, 94729, 94734 rivulare; 832287, 900004, 900006 simsii var. simsii

Chen, Li Qing & Xu, Y.B.: 10203 rivulare

Chen, Liu Sin: 256 microphyton

Chen, M.: 631, 765 mariesii; 3589 mariae subsp. mariae

Chen, N.Q. & Tso, C.L.: 43666, 44285 hainanense

Chen, Nian Qu: 40258, 40439, 40874 simsii var. simsii; 40884 farrerae; 40910, 41329 mariae subsp. mariae; 41991 kwangtungense; 42111a mariesii; 42111b farrerae; 42160 simsii var. simsii; 42167 farrerae; 42179 kwangtungense; 42600 farrerae; *42749* simsii var. simsii; 43020 minutiflorum

Chen, Q.L.: 191 simsii var. simsii

Chen, Qi: 10528 simsii var. simsii

Chen, R.A. & Zhang, B.M.: 60692 mariae subsp. mariae

Chen, R.F.: 30409, 30457 mariae subsp. mariae

Chen, S.: 13 simsii var. simsii; 48, 983, 1125, 1197, 1663, 2480, 2756, 2758, 2837, *2849*, 2955, 3045, 3417, 3555, *3721* mariesii

Chen, S.Q.: 226 mariesii; 1600, 1643, *2514* kwangtungense; 2591, 2714 hunanense; 2736 simsii var. simsii; 2937 hunanense; 2940 mariesii; 2996, 3356 simsii var. simsii; 3845, 3907, 4544 meridionale var. meridionale; 4548 hainanense; *4664* longifalcatum; 4807 hainanense; 4809, 4811 meridionale var. meridionale; 5544 mariae subsp. mariae; 7234 simsii var. simsii; 7743 hainanense aff.; 8753 simsii var. simsii; 8785 meridionale var. meridionale; 8805 mariae subsp. kwangsiense; 8837 rivulare; 9584, 9589 simsii var. simsii; 9721, 9821 mariae subsp. mariae; 10689 minutiflorum; 12206, 12212, 14144 rivulare; 14208, 14302, 14331 mariae subsp. mariae; 14356 rivulare; 14523 mariae subsp. mariae; 14689 minutiflorum; 14914 mariae subsp. mariae; 15487 rivulare; 15542 simsii var. simsii; 16052 rivulare; 16148 mariesii; 16246, 16323 mariae subsp. mariae; 16450, 16456, 16570 rivulare; 16939 mariae subsp. mariae; 17077 rivulare; 17095 mariae subsp. mariae; 17175 rivulare; 17188 mariae subsp. mariae; 18255 farrerae; 18256 simsii var. simsii; *18260* mariae subsp. mariae; 18485a tenuilaminare; 18486 naamkwanense var. naamkwanense; 18489 bicorniculatum; 18490 naamkwanense var. cryptonerve; 18492 simsii var. simsii; 18493 mariae subsp. mariae

Chen, Shao Jin: *131* mariesii

Chen, T.C.: 74 rivulare; 75 mariae subsp. mariae; 305, 316 rivulare; 367 mariae subsp. mariae; *369* minutiflorum; 686 rivulare; 3508 kwangtungense

Chen, W.: 94 mariesii

Chen, W. & Huang, J.: 81101 simsii var. simsii

Chen, W.C.: 10808 simsii var. simsii

Chen, X.C.: *1177* simsii var. simsii; 1305 farrerae; 1409 simsii var. simsii; *1531, 1874, 1929* farrerae; *3273, 3471* simsii var.simsii

Chen, Z.: 86 simsii var. simsii

Chen, Z.Z.: 46 mariesii; 50298 minutiflorum; 50300 unciferum; 50325 simsii var. simsii; 50815, 50817 mariae subsp. mariae; 50867 rivulare; 51036 minutiflorum; 51051 mariae subsp. mariae; 51122, 51125 minutiflorum; 51180 mariae subsp. mariae; 51216, 51407, 51889 mariesii; 52211 subenerve; 52367 minutiflorum; 52530 seniavinii; 52887 simsii var. simsii; 53212 mariae subsp. mariae; 53702 minutiflorum

Cheng: 2729, 2926, 3015, 3222, 3726 simsii var. simsii; 1975-94 mariesii
Cheng, M.: 1161, 1396 mariesii
Cheng, Sang Yong: 10191, 10374 microphyton
Cheng, Wan Chun: 2280 mariesii
Cheng, W.C. & Hwa: 377 mariesii; 453, 879 simsii var. simsii; 897, 1027 mariesii
Cheng, W.C. et al.: 4028, 4820 mariesii
Cheng, Y.Q.: 170104 mariesii; 170139 kwangtungense
Cheo & Wilson: 12741 mariesii
Chi, T.C.: 3205 rivulare; 3338 seniavinii; 335 rivulare
Chiao, Y.: 14446 simsii var. simsii
Chiao, Z.S.: 16 rufulum; 205, 268 rivulare; 921 rufulum
Chien: 5893 simsii var. mesembrinum
Chien, C.Y.: 2092 farrerae; 7956, 14530 simsii var. simsii
Chien, Sung Shu: 403, 820, 926 mariesii; 5893 simsii var. simsii
Chien, T.C.: *7217* rubropilosum
Ching & Zo, J.L.: 365 mariesii
Ching, R.C.: 109 mariesii; 1271 simsii var. simsii; 1342, 2124 mariesii; 2236 seniavinii; 2641 simsii var. simsii; 2815 mariesii; 2902 simsii var. simsii; 2903, 3063 mariesii; 3111 simsii var. simsii; 5815 rivulare; *5860* minutiflorum; 5893 rivulare; *5937*, 6041 mariae subsp. kwangsiense; *6088* mariesii; 6142 meridionale var. minor; 6321 chrysocalyx; 7179 mariae subsp. mariae; 8063 meridionale var. meridionale; 8066 hainanense; 8088 meridionale var. meridionale; *11145*, 11147 mariesii; 22679 simsii var. simsii
Chingshan Exp.: *427* mariae subsp. mariae
Chou, P.C.: 80128 meridionale var. meridionale; 80207 mariae subsp. kwangsiense;
Chou, T.Y.: 531, 532, 668 mucronatum
Chow, H.C.: 7 simsii?; 108, 322 mariesii; 370 simsii var. simsii; 622 mariesii; 1791, 9090, 9137, 9217, 9666 simsii var. simsii
Chow, H.P.: 2082, 2541 mariesii
Chow, K.S.: 1973-109, 1975-094 mariesii
Chu, K.L.: 898 simsii var. simsii; 1955, 2083 mariesii
Chu, Sui Fa: 4729, 20251 microphyton
Chu, T.S.: 355 farrerae
Chuang, C.C. & Kao, M.T.: *233* lasiostylum; *4443* taiwanalpinum;
Chun, N.K. (*Chen, N.Q.*)
Chun, S.S.: 12394 simsii var. simsii
Chun, W.P.: 3968 mariesii
Chun, Woon Young: 3671, 3673 mariesii; 3674 simsii var.simsii; 3676 mariesii; 3740, 5437 simsii var. simsii; 5442 farrerae; 5564, 5668, 5843 simsii var. simsii; 5888 kwangtungense; *5917* mariae subsp. mariae; *6203* simsii var. simsii; 6503 mariae subsp. mariae; 6525 simsii var. simsii; 7993 kwangtungense; 8226 simsii var. simsii; 12012 mariae subsp. mariae
Chung, D.Z.: 80064, 80067 kwangtungense
Chung, H.H. (*Zhong, X.X.*)
Chung, I.C.: 987 yedoense var. poukhanense
Chung, P.C. (*Zhong, P.Q.*)
Chung, Z.S.: 10713 simsii var. simsii; 10829 farrerae; 80902, 81551 simsii var. simsii;

81560 seniavinii; 81621 mariesii; 81821 rivulare; 81963 seniavinii; 82036, 83441 mariesii; 83520, 84522 simsii var. simsii; 85044 rivulare; 90957 mariae subsp. mariae; 808053, 808582 simsii var. simsii; 808594, 808624 mariesiil 808835, 808838 rivulare; 808880, *808884*, 808889, 808930 simsii var. simsii

Creech: *156* taiwanalpinum; *465, 1473* rubropilosum; *1496* oldhamii; *1533* kanehirai; *1541* rubropilosum; *1571* oldhamii; *1596* lasiostylum

Dai, Tian Long: 1834 mariesii; 1837 simsii var. simsii; 100001; 102855, 103986 mariesii; 104456, 104674 simsii var. simsii; 105783 mariesii; 106226 simsii var. simsii

Dalziel: s.n. farrerae

Davis et al.: 7254 yedoense var. poukhanense

Dayaoshan Exp.: 10883 mariae subsp. kwangsiense; 10957 kwangtungense; 11459, 11482 mariae subsp. kwangsiense; 11556, 11631 kwangtungense; 11925 meridionale var. meridionale; 12169 minutiflorum; 12226 kwangtungense; 12440 mariesii; 12447, 12972, 13379 kwangtungense; 13387, 14137 mariae subsp. kwangsiense; 14211, 14425, 14434 kwangtungense

Delavay: 303 atrovirens; 1122 simsii var. simsii

Deng, Ce Long: 13284, 13327 simsii var. simsii

Deng, M.B.: 3922, 4796 mariesii

Deng, S.W.: 900115 mariesii; 90324 chrysocalyx

Deng, Sian Fu: 125 simsii var. simsii

Ding, B.Y.: *4082* saxatile

Ding, G.Q.: 6015 mariae subsp. kwangsiense

Ding, G.Q. & Shi, G.L.: 210 mariae subsp. mariae; 227 mariesii; 260 tsoi; 586 mariesii

Doleshy & Doleshy: 831 sanctum

Dorsett & Morse: 520 kaempferi

Du, Da Hua: 84, 3190 simsii var. simsii

Ducloux: 16 simsii var. simsii; 91, 102, 105, 110 microphytom; 1269 simsii var. simsii

Dunn: 2882 mariesii; 5886 farrerae

Dunn, S.T.: 2881 simsii var. simsii

E China Exp.: 6642 simsii var. simsii

Eberhardt: *2060, 2799* simsii var. simsii (annamense)

Ecology Team: s.n. atrovirens

Elmer: 5799, 8595, 14298 subsessile

Endo: *111* hyugaense

Enomoto: 7167 × tectum; 7168 sanctum; 7170 sanctum f. albiflorum; 8679 tosaense; 8691 kiusianum var. sataense 10957 mucronatum var. ripense

Esquirol: 3560 chrysocalyx

Fan, C.S. & Li, Y.Y.: 13 simsii var. simsii; 182 mariesii

Fang, F.: 23939, 24511 mariesii

Fang, Ming Yuan: 23929 mariesii; 24002 simsii var. simsii; 24511 mariesii; 24826 simsii var. simsii;

Fang, W.Z.: 25 mariesii

Fang, Wen Pei: 45 mariesii; 825, 1032, 6413 simsii var. simsii; 9996, 9997, 10083 mariesii; 12157, 12395, 13209, 13630, 14206, 14281, 15687, 16299, 18098 simsii var. simsii

Farges: *50, 846* farrerae; 838 simsii var. simsii; s.n. mariesii

Farrer: 800 simsii var. simsii; 806 microphyton; 808 simsii var. simsii; 917 simsii var. mesembrinum

Faurie: 165 rubropilosum; 636 tschonoskii var. tschonoskii; 661 kaempferi; 664, 666, 670 yedoense var. poukhanense; 800, 875, 879 tschonoskii var. tschonoskii; 1448 nudipes var. lagopus; 1449 mucronatum; 1450 tschonoskii var. tschonoskii; 1863, 1864 weyrichii; 1872 rubropilosum; 1874 tschonoskii var. tschonoskii; 2128 kaempferi; 2133, 2300 mucronatum; 4444 tschonoskii var. tschonoskii; 5435 scabrum subsp. scabrum; 5831 tschonoskii var. tschonoskii; 6786 mucronatum var. ripense; 7820 macrosepalum; 13386 tschonoskii var. tschonoskii

Fedorov et al.: 131, 684 microphyton

Fei, L.S. & Wang, A.J.: 615 farrerae

Fei, L.S. & Wu, D.C.: 743, 744, 745 mariae subsp. mariae

Feng, C.F. & Kao, M.T.: *4866* rubropilosum

Feng, G.M.: 218 simsii var. simsii; 4892 flumineum; 6875, 10167, 10263, 10274, 10297, 10402 microphyton; 10693 simsii var. simsii; 10929 flumineum; 12073 microphyton; 12664 simsii var. simsii; 12949, 13221, 13496 microphyton; 13684, 13810, 13811 flumineum; 22048 simsii var. simsii; 24199 flumineum; 73-473 simsii var. simsii

Forbes: 2039 farrerae

Forrest: 2282 simsii var. simsii; 4172 microphyton; 4173 simsii var. simsii; 6768, 7504, 7505 microphyton; 7832 simsii var. mesembrinum; 7891, 9476, 9927 microphyton; 11824 simsii var. simsii; 11948 simsii var. mesembrinum; 12084, 12085, 12369 microphyton; 17914 simsii var. mesembrinum; 17918, 18731, 21087 21088, 21089 microphyton; 21124 simsii var. simsii; 24037 simsii var. mesembrinum; 24038, 24053 simsii var. simsii; 24080 simsii var. mesembrinum; 24083, 24088 microphyton; 24105 simsii var. mesembrinum; 24133 microphyton; 24157 simsii var. mesembrinum; 24639 microphyton; 25478, 25491 simsii var. simsii; 25492 simsii var. mesembrinum; 25638, 25813 microphyton; 26024 simsii var. simsii; 26025 microphyton; 26027, 26282, 26450 simsii var. simsii; 26460 microphyton; 26479, 27371 simsii var. simsii; 27428, 27433 microphyton; 28322 simsii var. simsii; 28345, 29117, 29446, 29447 microphyton; 29481 simsii var. simsii; 29484 microphyton; 29526 simsii var. simsii; 29535, 29541 simsii var. mesembrinum; 29630 simsii var. simsii

Fortune: 122 farrerae; 152, 153, A72 simsii var. simsii

Fu, C.C.: 2448 simsii var. simsii

Fu, J.X.: 1390, 1562 simsii var. simsii

Fu, K.I.: 555 hainanense

Fu, K.J.: 4920 mariesii; 11653 simsii var. simsii

Fudan Minhou Exp.: *40077, 58164, 60584, 64136* simsii var. simsii

Fudan Univ.: *57729, 58259,* 91817 mariesii

Fudan W Min Team: *84150* simsii var. simsii

Fujian Agric. Coll.: *400977* simsii var. simsii

Fujian Forestry Coll.: 86 florulentum

Fujian Med. Res. Inst.: *12, 17,* 761, 771, 781 seniavinii

Fujian Normal Coll.: *400395* simsii var. simsii; 400438 mariesii; *400546, 400564* simsii var. simsii; 400598, 400787, 400818, 400996 mariesii; s.n. farrerae

Fujisan Med. Res. Inst.: 3974 wadanum

Fukuoka: 6784 tschonoskii var. tschonoskii; 7252 wadanum; 7600 yedoense var. yedoense
Fukuoka & Konta: 201 tschonoskii var. trinerve
Fukuoka et al.: 1034 macrosepalum
Furuse: 2282 simsii var. simsii; 6136 kaempferi; s.n. nudipes aff.
Gao, Xi Pong: 50132, 50205, 50206, *50219*, 50220, 50221 simsii var. simsii; 50357, 50398 chunii; *50404* mariesii; 50405 mariesii; 50411 chunii; 50433 simsii var. simsii; 50435 kwangtungense; 50522 simsii var. simsii; 50883, 50996 mariae subsp. mariae; 51120 mariesii; 51190, 51224 mariae subsp. kwangsiense; 51865 kwangtungense; 52276 hainanense; 52433 simsii var. simsii; 52536 kwangtungense; 52581 farrerae; 52597 simsii var. simsii; 52804 rhuyuenense; 52830 simsii var. simsii; *52924*, 53312 farrerae; 53548 simsii var. simsii; 53773 naamkwanense var. naamkwanense; 53776, 54096 simsii var. simsii; 54098 farrerae; 54106 cretaceum; 54135 naamkwanense var. naamkwanense; 54218 hunanense; 54267 kwangtungense; 54312 subflumineum; *54622* rhuyuenense; 56082 simsii var. simsii
Garrett: 837 saxicolum?
Gen, B.G.: 246 mariesii
Gilchrist: 38 farrerae; 66 mariesii
Ging, T.S.: 7491 simsii var. simsii
Gong, Xian Shui: 3618, 3623 microphyton
Gong, Wan Yu: 306 simsii var. simsii
Gongcheng Exp.: *197* rivulare
Goodspeed: 32-2352 simsii var. simsii
Greatex: H230/51 kiusianum var. kiusianum; H2320/51a nudipes var. nudipes; H2320/51b wadanum
Gressitt: 121 lasiostylum; 347 oldhamii; 1286 apricum?
Guan, D.: 1466 simsii var. simsii
Guan, G.J.: 136, 140, 300 mariesii
Guan, G.J. & Dai, T.L.: 47, 800, 1149, 2047 simsii var. simsii; 2191 mariesii
Guan, X.J.: 308, 2057, 2105 simsii var. simsii
Guan, Zong Tian: 6067, 6072, 7334 9244 microphyton
Guangxi Exp.: 27 simsii var. simsii; 40 rivulare; 159 rivulare; 436 mariae subsp. kwangsiense; 583, 609 mariae subsp. mariae; 623 mariae subsp. kwangsiense; 651 mariesii; 677 fuchsiifolium; 690 mariesii; 3522, 3545, *3560* mariae subsp. mariae; 3815 rivulare
Guizhou Exp.: 607 seniavinii; 867 mariae subsp. mariae; 74-445, 74-847, 74-957 rivulare
Guo, P.Z.: 1810, 4300 mariesii
Guo, Su Bai: *80112* simsii var. simsii; 80403 kwangtungense
Hainan Exp.: 414 hainanense
Hance: 6706 farrerae
Hancock: 32 simsii var. simsii; 96 subsessile; 155 simsii var. simsii
Handel-Mazzetti: 241 mariae subsp. mariae; 289 mariesii; 480 simsii var. simsii; 493 rufohirtum; 1104, 6094, 6108 microphyton; 6184 simsii var. simsii; 10696 rivulare; 11569 simsii var. simsii; 13084 microphyton
Hasegawa: 1419 tschonoskii var. tschonoskii
Hashimoto: 1622 macrosepalum

Hatsusima: 13851 serpyllifolium; 14197 tschonoskii var. tschonoskii; 16475 nudipes var. nudipes
Hatusima: *29548, 29582* reticulatum f. viscosum
Hatusima & Sako: *30322* hyugaense; *31427* osuzuyamense
Hayasi: 329 mariesii; 334 lasiostylum
Hayata & Mori: *7044* rubropilosum
He, G.S.: 1473 farrerae
He, H.D.: *60182* simsii var. simsii
He, H.J.: 130016 simsii var. simsii
He, J.: 2256 farrerae; 2607 simsii var. simsii
He, T.: *1955* simsii var. simsii; *1982* mariesii; *2052* simsii var. simsii; *2256* mariesii
He, Xian Su: 2392 mariesii
He, Xiang You: 20906, 22749 simsii var. simsii; 23456 mariesii
Henan Exp.: 8026 simsii var. simsii
Henry: 588 oldhamii; 782, 1160 simsii var.simsii; 1422 mariesii; 3194 simsii var. simsii; 3829, 5274, 5947 mariesii; 9900, 11596 simsii var. simsii; 12983, 14596 microphyton
Hers: 1153, 1284 simsii var. simsii; 2305 mariesii; H248 simsii var. simsii
Hi, Chan Xue: 75121 oldhamii
Hongkong Herb.: 229 mariesii; 8263, 11676, 17323 farrerae
Ho: 60630 simsii var. simsii
Ho, S.M.: 166 simsii var. simsii
Ho, S.Y.: 5122 farrerae; 5125, 9992, 13061 simsii var. simsii
Ho, Y.Y.: 20933, 22339, 24320, 25966, 28441, 29938, 30263, 30473, 30793, 31113, 36081 mariesii
Hopu Pl. Exp.: 2320 meridionale var. meridionale; 2463 gratiosum; 2511 myrsinifolium
Horie: 101984 serpyllifolium
Hosie: 30 simsii var. simsii
Hosoi: 2157 tschonoskii var. tschonoskii; 2158 kaempferi
Hotta: 14872 kaempferi
Hou, Quan Zhao (*How, F.C.*)
How, Fook Chew: 72612, 72620, 73720 hainanense;74226 mariae subsp. mariae
Hsia, D.Y.: BG6 simsii var. simsii
Hsieh, C.S.: *1292* taiwanalpinum
Hsu, C.C.: *8900* rubropilosum; *10230* simsii var. simsii; *10594, 12411* lasiostylum
Hsu, C.C. et al.: *8872* rubropilosum; *10571* simsii var. simsii; *11366* lasiostylum; *12460* sikayotaizanense; *13823* rubropilosum; *13942* taiwanalpinum; *13956* lasiostylum; *14129, 14146* taiwanalpinum; *14153* noriakianum; 14218 mariesii
Hu: 9186 simsii var. simsii
Hu, Chi Ming: 2141 mariesii; 2559 simsii var. simsii; 2564, 2769 mariesii; 3068, 3289, 3341 simsii var. simsii; 3635 mariesii; 3735, 4290 simsii var. simsii; 4878 mariesii; 4939, 5377, 5615 simsii var. simsii; 12118 naamkwanense var. naamkwanense
Hu, C.M. & Li, Q.H.: 1394 simsii var. simsii
Hu, C.M. & Ling: 2086 simsii var. simsii
Hu, Hsen Hsu: 179 mariesii; 2645 simsii var. simsii
Hu, S.Y.: 10204 farrerae
Hu, W.K.: 12125 simsii var. simsii

Hu, Xian Su (*Hu, H.H.*)
Huang & Kao: *1746* rubropilosum
Huang, C.: 820375 hainanense
Huang, Cheng: 102735, 161410 mariae subsp. mariae; 162732 farrerae; 162735 mariae subsp. mariae; 164277 kwangtungense; 164368 hainanense aff.
Huang, D.A.: 60067, 60125 mariae subsp. kwangsiense; 60131 rivulare
Huang, De Zhen: 247 pinetorum; 248 simsii var. simsii; 255 rivulare; 822 simsii var. simsii
Huang, J.H.: 130544 simsii var. simsii
Huang, Mao Xian: 110040 hainanense/meridionale; 111420 polyraphidoideum var. montanum; 111916, 111993 rhuyuenense; 112004 farrerae; 112057 polyraphidoideum var. montanum; 112740; 374333 mariesii
Huang, Q.: 291 flumineum; 663 simsii var. simsii
Huang, R.K.: 506, 512 mariae subsp. mariae
Huang, S.C.: 3674 minutiflorum
Huang, S.T.: 1141 simsii var. simsii; 3684 seniavinii
Huang, Shu Mei: 190784 farrerae
Huang, T.C.: *3362* nakaharai; *4091* rubropilosum; *4659* taiwanalpinum; *4678, 4682* rubropilosum; *5490* mariesii; *6083* oldhamii; *7081* sikayotizanense; *7174* taiwanalpinum; *7258* sikayotaisanense; *7675* oldhamii; *7748, 7770, 8600* sikayotaisanense
Huang, Y.: *125* rivulare
Huang, Y.Z.: 129 simsii var. simsii
Huang, You Ru: *2016, 2040, 2158, 2179, 2323* mariesii
Huang, Zhi & Teng, L.: 541 mariae subsp. mariae
Huang, Zhi: 30457 mariae subsp. mariae; 30458 simsii var. simsii; 30649, 32049 mariae subsp. mariae; 32093 simsii var. simsii; 35177, *35185* hainanense; 38130, 38547 simsii var. simsii; 38590 subcerinum; 39057 rivulare; 39135, 39297 mariesii; 39459 mariae subsp. kwangsiense; 39467 minutiflorum; *39614* yaoshanicum; 40007 rivulare; 40260 minutiflorum; 40546 rivulare; 40706, 42456 simsii var. simsii; 43623 mariae subsp. mariae; *44281* simsii var. simsii; 44287, 44368 rhuyuenense
Hui: 12065 seniavinii
Hunan Forestry Coll.: 77-0389 mariesii
I.S.A.Y.: 178 naamkwanense var. cryptonerve
Idzumi & Togashi: 377 amagianum; 383 kiusianum var. kiusianum; 399 tsusiophyllum; 441 serpyllifolium
Ikegami: 5096 tschonoskii var. trinerve; 5103, 23599 nudipes var. nudipes
Inst. Chinese Trad. Med.: 7300059 kwangtungense
Jacobs: 7021, 7194 subsessile
Jian, Z.P. (*Tsien, C.P.*)
Jiang, R.B.: 81-0016 chrysocalyx; 82-0003, 82-0042 seniavinii
Jiang, S.H.: 2362 mariesii
Jiang, Xiao Yao: 926, 1885, 2091, 3720 simsii var. simsii
Jiang Ying (*Tsiang, Y.*)
Jiang, Y.Z.: 740703 rufulum; 740737 simsii var. simsii
Jiang, Z.P.: 400806, 501218 farrerae
Jiang, Z.Y.: 2874 farrerae

Jiangxi Exp.: *2989* mariesii
Jiangxi Normal Coll.: 1119 mariesii; 1203 farrerae
Jin, D.H.: *9814* mariae subsp. mariae
Jinyuan Med. Inst.: 129 simsii var. simsii
Judd, W.N.: 78-476 oldhamii
Kadota: *1003* nudipes var. niphophilum; 1919 macrosepalum
Kanai: *371* nudipes var. niphophilum; 3852, 6425, 8674 wadanum; 9413 dilatatum
Kanai et al.: 6358 kaempferi; 9664 macrosepalum
Kao, M.T.: *3393* rubropilosum; *5262* taiwanalpinum; *6700* rubropilosum; *7964* oldhamii; *8604* noriakianum
Kato: 2982 tschonoskii var. tschonoskii; 5408 serpyllifolium
Kawada: 102313 reticulatum
Kawakami & Mori: *1160* mariesii; *1857, 1859* rubropilosum
Keng, Yi Li: 60 simsii var. simsii; 531 mariesii; 630 simsii var. simsii; 2372, 2650 mariesii
Kermode: 1792 microphyton; 16602 simsii var. mesembrinum; 17191 microphyton; 17245 simsii var. mesembrinum
Kerr: 8837 simsii var. mesembrinum; 20091 simsii var. simsii
Kingdon-Ward: 1541 microphyton; 1792, 3007 simsii var. simsii; 3664 microphyton; 3684, 5502, 5508, 5568, 6607, 22036 simsii var. simsii
Kitamura & Murata: *1958* nudipes var. niphophilum; 3011 macrosepalum
S.P.Ko (*Gao, X.P.*)
Koyama: 921 macrosepalum; 1845 reticulatum
Koyama & Murata: 439 weyrichii
Kuenberg: s.n. nudipes var. lagopus
Kung, S.S. (*Gong, X.S.*)
Kunming Botanical Inst.: 101921 microphyton
Kuo, C.C.: *912* breviperulatum; *1905* mariesii
Kuoh, C.S.: *2339* nakaharai; *3712* oldhamii; *3822* rubropilosum; *4262, 4333* oldhamii
Kuoh, C.S. et al.: *6980* rubropilosum
Kurata: *574* hyugaense; *999, 1000* osuzuyamense
Kurokawa & Togashi: 132 wadanum
Kwangfu Exp.: 85 rivulare; 96 simsii var. simsii; 101, 103 rivulare; 147 farrerae; 148 simsii var. simsii; 166 rivulare; 204 farrerae; *230* minutiflorum; 264 simsii var. simsii; 265, 353 mariae subsp. kwangsiense; 536 pulchroides; 1099 rivulare
Kwangtung Exp.: 71-0209, *71-0715* simsii var. simsii; 73-0001 rhuyuenense; *73-0048, 73-0744* simsii var. simsii; 73-0746 rhuyuenense; 73-0748, *73-0755* chunii; 73-1123 rhuyuenense; 74-5241 mariesii
La Touche: 10, 15, 17, 41, 53 simsii var. simsii; 129 tsoi aff.; 131 seniavinii; 202, 204 simsii var. simsii
Lai, M.J.: 13283 lasiostylum
Lai, S.K.: 3519 simsii var. simsii
Lai, S.S.: 43 mariesii; *120* simsii var. simsii; *279* polyraphidoideum; *605* simsii var. simsii; *969* mariesii; 1409, *1489*, 1787, 1988 simsii var. simsii; 2138 mariesii; 2165, 2479 simsii var. simsii; 2481 mariesii; 3965 polyraphidoideum; 3970, 4187 simsii var. simsii; 4208, 4815 polyraphidoideum; 5361 seniavinii var. crassifolium; 660055, 660512 polyraphidoideum

Lai, S.S. et al.: 5950 mariesii
Lai, T.S.: 5397 mariesii
Lakshnakara: 1389 simsii var. simsii
Lao, An Guo: 312 mariesii
Lau & Lie: 12 mariesii
Lau, L.H. (*Liu, L.H.*)
Lau, S.K.: 885, 2006 mariae subsp. mariae; 4500 mariesii; 4671 simsii var. simsii; 23916, *24667* mariae subsp. mariae; 25010 simsii var. simsii; 27961, 27995, 28383 hainanense; 28533 mariae subsp. kwangsiense; 27955 hainanense
Law, Y.C. (*Liu, Y.G.*)
Law, Y.P.: 488 simsii var. simsii
Leano: 25125 subsessile
Lee, C.T. (*Li, Z.T.*)
Lee, W.C. & Kao, M.T.: *K3940* oldhamii
Lei, S.S. (*Lai, S.S.*)
Levine: 438 simsii var. simsii; 1533 farrerae; 1563 mariae subsp. mariae
Li: 68 microphyton; 131 simsii var. simsii
Li, An Ren: 7850 microphyton
Li, Bing Gui: 13 hunanense; 35 mariesii; 42 simsii var. simsii; 101 hunanense; *132* rhuyuenense; 750145 mariesii
Li, Bing Gui & Wang, S.B.: 5104, 5281 kwangtungense; 5283 hunanense
Li, De Jiu: 3609 microphyton
Li, G.F.: 60425, 60475 60480, 60532 mariesii; 60595, 60665, 60694, 60776 simsii var. simsii; 61180 mariesii; 61381, 61387, 61655, 62050, 62064 simsii var. simsii; 63681 mariesii; 64084 simsii var. simsii; 64107 mariesii; 64208, 64365 simsii var. simsii; 64725 rivulare; 64830, 64958, 65059 simsii var. simsii
Li, G.Z.: 10626 bellum; *10720* flosculum; 11526 bellum; 11541 mariae subsp. kwangsiense; *11620* flosculum
Li, G.Z. & Huang, F.X.: *39, 134* bellum
Li, H.C.: 5596, 6209, 6211 mariesii; 6436 chrysocalyx; 7274, 7296, 7741 simsii var. simsii
Li, L.G.: *731* rufulum; *741* florulentum; *821* loniceriflorum; *841, 851* florulentum; *7487* seniavinii; *64073, 65093* simsii var. simsii; *720310*, 730008 seniavinii; 730009 petilum; 740123 loniceriflorum; 740125 rufulum; 740501 florulentum; 740740 apricum; 750103 polyraphidoideum
Li, M.K.: 477, 704, 2116 microphyton; 3398 simsii var. simsii
Li, M.R.: 1029, 1084 microphyton
Li, M.S.: 931 seniavinii
Li, P.Y.: 8760 mariesi
Li, Q.H. & Chen, C.: *103, 303, 481, 519, 593, 1268* simsii var. simsii
Li, S.G.: 80902 simsii var. simsii
Li, S.T.: 80-390 simsii var. simsii
Li, X.G.: 200087 mariae subsp. kwangsiense; 200748 naamkwanense var. naamkwanense; 200953 taipaoense; 200996 farrerae; 201347 mariae subsp. mariae; 201454, 201579 farrerae; 201931, 202362 mariesii; 202426 taipaoense; 202549 florulentum; 202824 seniavinii; 203904, 203966 farrerae; 204345 mariesii; 204346 simsii var. simsii

Li, X.P.: 12193 mariesii
Li, Y.K.: 400031 mariae subsp. kwangsiense; 400170, 400309, 400482 mariae subsp. mariae; *401515* viscigemmatum; 402782 simsii var. simsii; 403015 rivulare
Li, Y.K. & Shue: 548 mariae subsp. mariae
Li, Z.T.: 239, 1016 seniavinii; 1866 simsii var. simsii; 2010 seniavinii; 2113, 2473 rivulare; 2629 seniavinii; 603074 mariae subsp. mariae; 603522 minutiflorum; 603739 mariae subsp. kwangsiense; 604110 kwangtungense
Li, Z.T. & Chen Y.C.: 600053 simsii var. simsii; *600150*, 600207 rivulare; *600462*, 600502 minutiflorum
Li, Zhang Yu et al.: 1449 seniavinii
Liang, B.H.: 83479 mariesii; 83599 hunanense; 84170, 84172 kwangtungense; 84208 mariesii; 84314 mariae subsp. mariae; 84468, 84585, 84760 kwangtungense; 84906 simsii var. simsii; 85921 mariesii; 85937 simsii var. simsii
Liang, Chou Fen: *30202* mariae subsp. kwangsiense; *30241*, 30304 farrerae; 30308, 30711 rivulare; 31812 mariesii
Liang, H.: 100170 simsii var. simsii
Liang, H.R. & Wong, Y.C.: 31284 kwangtungense
Liang, Xiang Ri: 60030, 60400, 60817, *60827* mariae subsp. mariae; 63701b, 64087, 68059 hainanense; 69929 meridionale var. meridionale; 70050 mariae subsp. mariae
Liang, Yuan: 7846 microphyton
Liao & Kuo: *2155* oldhamii
Liao, D.W. et al.: *1-63, 3-28, 4-02* simsii var. simsii
Libo Exp.: 1589 seniavinii; 2019 mariesii; 2226 seniavinii
Lin, H.C.: *13349* taiwanalpinum
Lin, L.G.: *700* simsii var. simsii; 6000, 6047 rufulum; 1043 tsoi aff.; *1350* mariesii; 1352 farrerae; 3040 daiyunicum; *6930* mariesii
Lin, L.G.J.: *103* mariesii
Lin, Qing Zhong: 92 mariesii; 273 tsoi; 519 hunanense; 10086 seniavinii
Lin, Rong: 2004 nanpingense?; 2070 rufulum; *2071* simsii var. simsii; 2204, *2300* nanpingense; 2844 simsii var. simsii; *2847*, 3124, 3351, 3368, 3494 rufulum; 3749 simsii var. simsii; 3931, 3939 rufulum; *3979* simsii var. simsii; 4407 rufulum; *15037* simsii var. simsii
Ling, B.J.: 1 farrerae
Ling, K.: 12524, 13957 mariesii
Ling, L.K. (*Lin, L.G.*)
Ling, P.P.: 14 mariesii
Ling, P.R. & Sun, S.S.: 61 simsii var. simsii
Ling, Qing: 770490 microphyton
Ling, W.P.: 361 mariesii
Ling, Y.C.: 2016, 2232, *2321*, 2688 rufulum
Ling, Ying: 82, 122 simsii var. simsii; 200, 216 rufulum; *251, 751, 757*, 13034, *15220* simsii var. simsii
Ling, Yong (*Lin, Rong*)
Lingnan Univ. Herb.: *6408* mariae subsp. mariae
Liu et al.: *334* taiwanalpinum; *429, 979, 2034, 2035* oldhamii
Liu, C.F.: 632, 1078, 1839 mariesii
Liu, J.H.: 529 kanehirai

Liu, L.F.: 5516 mariae subsp. kwangsiense
Liu, L.H.: 359 rivulare; 421, 422 subflumineum; 428 kwangtungense; 778 rhuyuenense; 1814 farrerae; 1852, 15713 simsii var. simsii
Liu, L.H. & He, G.Z.: 15431 simsii var. simsii; 16221, 16277 seniavinii; 16604 rivulare
Liu, Mei Guang: 665 mariae subsp. mariae
Liu, Mei Yi: 2572 simsii var. simsii
Liu, S.L.: 1056 simsii var. simsii
Liu, S.R.: *20013* simsii var. simsii
Liu, Shen E.: 859 mariae subsp. mariae; 13135, 13145, 13589, 14539, 14568, 15680, 15797, 15863, 15909, 15949, 15955, 16098, 16104, 16448, 16892, 17352, 17477, 17564, 19157, 19628, 20851, 45876 microphyton
Liu, T.N. (*Liu, S.E.*)
Liu, T.S. et al.: 233 lasiostylum
Liu, Tang Rui: 225 simsii var. simsii
Liu, Tang Shui: *179* kwangtungense
Liu, Xin Qi (*Lau, S.K.*)
Liu, Y.G.: 103 mariae subsp. mariae; 133 simsii var. simsii; *324* naamkwanense var. cryptonerve; 963 mariae subsp. mariae; 2572 polyraphidoideum var. montanum; 2665 mariae subsp. mariae; 3117 rhuyuenense
Liu, Z.F.: 1891 seniavinii
Liu, Z.Y.: 3485 microphyton
Lo, L.T.: 424 farrerae
Loher: 3756, 3757, 3760 subsessile
Long, H.Y.: 7800-258, 7800-332, 7800-416 mariesii
Longsheng Exp.: 50015, 50050 rivulare; 50133 mariae subsp. mariae; 50156, 50168, 50191 rivulare
Lu, C.W.: 1042 rivulare
Luchun Exp.: 692 flumineum
Luh, C.Y.: 1042 mariesii
Lui, Feng Xuen: 10935 simsii var. simsii
Lui, Q.H.: 2514 mariae subsp. mariae; 2537 minutiflorum
Luo, Zong Chuen: 870 seniavinii
Lushan Bot. Garden: *18, 184, 279, 1770* simsii var. simsii; 3437 mariesii
Ma, Y.H.: 312 mariesii
Maingay: 882 kaempferi
Maire: 7, 321 simsii var. simsii; 1098, 1099 simsii var. mesembrinum; 1101, 1102, 1944 microphyton; s.n. atrovirens
Makino: 99862 decandrum; 99867, 99872 dilatatum; 99890, 99892, 99893, 99894, 99896, 99897, 99898, 99899, 99901, 99902, 99903, 99904, 99906, 99908, 99910, 99911, 99913, 99915 kaempferi; 99918 kiusianum var. sataense; 99919 kaempferi; 99925, 99926, 99927, 99928, 99929 kiusianum var. kiusianum; 99933, 99934 nudipes var. lagopus; 99936 macrosepalum; 101593, 101596, 101598, 101600, 101601, 101603, 101604, 101612, 101630, 101633, 101642, 101643, 101644, 101651, 101664, 101681, 101688 kaempferi; 101707, 101710, 101711, 101713, 101719, 101726 kiusianum var. kiusianum; 101729, 101730 nudipes var. lagopus; 101736, 101748, 101750, 101759, 101762, 101768 macrosepalum; 101789, 101791, 101792, 101794, 101795, 101796, 101797, 101799, 101800 mucronatum; 101806 macrosepalum;

101812 mucronatum; 101831, 101837 nudipes var. nudipes; 101904, 101906 reticulatum; 101925 mucronatum var. ripense; 101936 reticulatum f. albiflorum; 101937, 101939 sanctum; 101942 kiusianum var. sataense; 101945 kiusianum var. kiusianum; 101958 scabrum subsp. scabrum; 101983, 101989, 101991, 101992, 101994, 101995, 101996 serpyllifolium; 102011, 102014 eriocarpum; 102052, 102053 tosaense; 102067 tschonoskii var. trinerve; 102078, 102081, 102087 tschonoskii var. tschonoskii; 102098, 102099, 102100, 102103 wadanum; 102112, 102113, 102116, 102118, 102120, 102124 weyrichii; 102129, 102130 yedoense var. yedoense; 102222, 102224 decandrum; 102227 macrosepalum; 102250, 102251, 102252, 102253 kaempferi; 102265 kiusianum var. kiusianum; 102266 kiusianum var. sataense; 102267, 102268, 102269, 102270 kiyosumense; 102273, 102276 macrosepalum; 102279, 102280 mucronatum var. mucronatum; 102307, 102315 reticulatum; 102316 nudipes var. nudipes; 102319, 102322 reticulatum; 102325 nudipes/kiyosumense; 102326 mucronatum var. ripense; 102331, 102332 sanctum; 102344, 102346, 102347, 102348 serpyllifolium; 102365, 102366 wadanum; 102369, 102372, 102374 weyrichii

Mao, P.Y.: 1412 simsii var. simsii

Mao. S.H.: 122, 265 mariesii

Maries: 472 wadanum

Masamune: s.n. yakumontanum

Masamune et al.: *2915* taiwanalpinum

Mathew: 4888 mariae subsp. mariae

Matsudo: 221 decandrum

Maximovicz: s.n. reticulatum

Mayebara: *2159* mayebarae; *5425* hyugaense

McCalf: *518, 708, 7413* simsii var. simsii

McClure: 348 florulentum; 1502 simsii var. simsii; 1509 huiyangense; 13308 simsii var. simsii

McGregor: 136 microphyton

McLaren: 36, microphyton A0039 microphyton AA068 simsii var. simsii; AA074, AA076 microphyton; AA080, AA082, AA083 simsii var. mesembrinum; AA086 microphyton; AA093 simsii var. simsii; AA098, AA110, AA112, AA121, AA125, AA127, AA145, AA166, C0047, L0039 microphyton; L0152, U0002 simsii var. simsii; U0025, U0068, U0085 microphyton; U0188, U0195 simsii var. simsii

Mendoza: 40327 subsessile

Merrill: 2015 mariae subsp. mariae; 4606, 4690, 4815 subsessile; 11103 mariae subsp. mariae

Metcalf: 7338, 7412 farrerae

Meyer: 1607 simsii var. simsii

Min, Y.: *177, 292, 740507* simsii var. simsii

Minamidani: *s.n.* nudipes var. kirishimense

Mizushima: 123 dilatatum; 284 tschonoskii var. tschonoskii; 808 amagianum; 888 kaempferi; 979, 991, 993 dilatatum; 1056 kaempferi; 1252 tschonoskii var. tschonoskii; 1365, 1366 wadanum; 1375 kaempferi; 1432, 1433, 1435 wadanum; 1510, 1822 kaempferi; 1872, 1874 wadanum; 1884 dilatatum; 1930, 1957, 1962 kaempferi; 1972 wadanum; 2077, 2210 tschonoskii var. tschonoskii; 2335 dilatatum; 2366 wadanum; 2423 kaempferi; 2449 serpyllifolium; 2457 amagianum; 3010 nudipes var. nudipes; 10192 tschonoskii var. tschonoskii; 10886 kaempferi; 11096 tschonoskii var. tri-

nerve; 11097 tschonoskii var. tschonoskii; 11304, 11426, 11452 kaempferi; 11637, 11648, 14404 dilatatum

Mo, X.M.: *20694*, 21198, 21319 simsii var. simsii; 21507 mariesii

Mori: 331 oldhamii

Murata: 547 wadanum; 2086 tschonoskii var. tschonoskii; 9519 reticulatum; 9706 nudipes var. nudipes; 9836 reticulatum; 11559 macrosepalum; 12527 kaempferi; 15008 weyrichii; 18651 mucronatum var. ripense; 19013 tschonoskii var. trinerve; 19470 nudipes var. nudipes; 40952 reticulatum

Murata & Konta: 480 serpyllifolium

Murata & Nishushimura: 680 serpyllifolium

Murata & Shimizu: *824* nudipes var. tsurugisanense

Murata & Yang, T.Y.: 17627 oldhamii

Murata et al.: 112 kiyosumense; *148* nudipes var. niphophilum; 223 weyrichii; 976 nudipes var. nudipes; 4592 dilatatum; *20590* nudipes var. niphophilum

Muroi: 2 kaempferi; 292 reticulatum; 300 serpyllifolium; 311 kaempferi; 324 serpyllifolium; 538 kaempferi; 587 weyrichii; 627, 909 serpyllifolium; 997 reticulatum; 1123 kaempferi; 1125, 1136 nudipes var. lagopus; 1137, 1141 kaempferi; 1153 reticulatum; 1519, 1536, 1632 serpyllifolium; 1663 reticulatum; 1705 serpyllifolium; 1714 reticulatum; 1866 mucronatum var. ripense; 1892 serpyllifolium; 1998 mucronatum var. ripense; 2083 nudipes var. nudipes; 2106 serpyllifolium; 2111 kaempferi; 2124 nudipes var. nudipes; 2138 kaempferi; 2414, 2830 serpyllifolium; 3110 kaempferi; 3115 serpyllifolium; 3368, 3396 tschonoskii var. tschonoskii; 3426, 3691, 3973 kaempferi; 4136, 4157 tschonoskii var. tschonoskii; 4301 yedoense var. poukhanense; 4339, 4362, 4385, 4392, 4458 tschonoskii var. tschonoskii; 4519, 4668 kaempferi; 4809, 4891 reticulatum; 5152 yedoense var. poukhanense; 5266 dilatatum; 5536, 5560 kaempferi; 5765 tschonoskii var. tschonoskii; 5809 kiusianum var. kiusianum; 5848 kaempferi; 5849 serpyllifolium; 5851 kaempferi; 5858 reticulatum; 5866 kaempferi; 5874 serpyllifolium; 6225 kaempferi; 6275, 6316, 6354 reticulatum; 6420 kiusianum var. kiusianum; 6430 serpyllifolium; 6467 kiusianum var. kiusianum; 6471 serpyllifolium; 6497, 6557, 6629 reticulatum; 6636, 6656 serpyllifolium; 6682 kaempferi; 6688 kiusianum var. kiusianum; 6712 serpyllifolium

Naamkwan Exp.: 70910 naamkwanense var. naamkwanense; 71415 tsoi; 82405 naamkwanense var. naamkwanense

Nagasawa: 239 mariesii

Naite: s.n. tashiroi

Naithani: 2:894 arunachalense.

Nakai, T.: *s.n.* x komatzui

Nakaike: 644 scabrum subsp. amanoi

Nakamura: *3627* breviperulatum

Nan, Z.D.: 6083, 6158 kwangtungense

Nan, Z.P. & Tan, P.X.: 61909 simsii var. simsii

Nanjing Forestry Coll. Exp.: *6237*, 7250-29 mariesii

Naruhashi: 1296 mucronatum var. ripense; 1300 weyrichii

Naruhashi & Konta: 43 reticulatum

Naruhashi et al.: 1358 nudipes var. lagopus

Nie, M.X.(Ni, N.C.): *1998* simsii var. simsii; *2026* mariesii; 2118 simsii var. simsii; *2483* mariesii; 2705, 3519, *3735*, 3970 simsii var. simsii; 4878, 4896 mariesii; *5085*

simsii var. simsii; 5950 mariesii; 6391, 6489 simsii var. simsii; 6821 mariesii; 7741, 8056 simsii var. simsii; *8267* rhuyuenense 8340, 8560, 8764, 9897 simsii var. simsii

Nie, M.X. & Chen, S.L.: 6905, 6906 mariesii; 7204 simsii var. simsii; 7205 mariesii

Nie, M.X. & Lai, S.K.: 3068, 4290 simsii var. simsii

Nie, M.X. & Lai, S.S.: 2485 mariesii

Nishida: 10490 serpyllifolium

Niu, S.S.: *7993* kwangtungense

Ohashi et al.: 1380 kaempferi; 1381, 2040 wadanum; 9082 tashiroi

Ohwi: 212 kaempferi

Ohwi & Okamoto: 442 wadanum; 478 dilatatum

Oldham: 505, 506, 507 kaempferi; 511 weyrichii

Page: 10090, 10093, 10095 rubropilosum

Pei: 3847 simsii var. simsii; 3986 mariesii

Peking Centre: *69, 929, 1107* microphyton; *1360* simsii var. simsii

Peking Centre Jiangxi Tm.: *2882*, 4148 simsii var. simsii

Peng, P.S.: 790 mariesii

Petelot: *3826* saxicolum; *4218* simsii var. simsii; *6340* saxicolum

Pl. Geog. Exp.: 16 farrerae; 7365 mariesii; 7911 farrerae

Poilane: *7932, 17076*, 25419 saxicolum; *29733, 29744, 29777*, 32197, simsii var. simsii (annamense)

Price: 96, 278, 693 oldhamii; 802a oldhamii?; 843 lasiostylum; 943 rubropilosum; F30 oldhamii

Put: 3325 saxicolum?

Qi, C.J. (Chi, T.C.)

Qi, P.X.: 1565 mariesii

Qian, S.X.: *581* polyraphidoideum

Qin, H.F.: 700001 rivulare; 700143 kwangtungense; 700705 minutiflorum; 700795 rivulare; 700835, 701154 mariae subsp. mariae

Qin, H.F. & Li, Z.T.: 70012 mariae subsp. mariae; 70013 mariae subsp. kwangsiense; 70333 minutiflorum

Qingnan Exp.: 584, 878, 1807, 2065, 3351, 3476 seniavinii

Qiu, Bing Yuan: 195 farrerae; 52404, 54495, 58907, 59075, 596152 microphyton

Quisunbing & Sulit: 82398 subsessile

Ramos & Edward: 10308, 37708, 40308 subsessile

Rock: 3008, 3046, 3058, 3106, 3163, 7075, 7077, 7272, 7974, 8008, 8010 microphyton; 25217 simsii var. simsii; 25222, 25227a, 25228, microphyton; 25233 simsii var. simsii; 25239 microphyton

Saito: *14716* nudipes var. niphophilum

Sako: *3348, 3252* osuzuyamense

Sampson: 376 simsii var. simsii

Sands: 3155 subsessile

Santos: 38 subsessile

Sasaki : 333 rubropilosum; 21518 kanehirai

Sato: 10449 tashiroi; 10450 serpyllifolium

Savatier: 737 kiyosumense; 766 macrosepalum;

Sawada: 860 amagianum; 861 dilatatum; s.n. tosaense

Schaeffer: s.n. hainanense

Schindler: 443 marisii; 445 simsii var. simsii
Schneider: 98, 175 microphyton; 353 rufohirtum; 876 microphyton; 4040 rufohirtum;
Schoch: 350c rufohirtum
Shen, S.J.: *167* simsii var. simsii
Shi, G.L. : 11363 mariesii
Shi, G.L. & Ling, T.: *324* mariae subsp. mariae
Shimizu: *3266* oldhamii; 17239 nudipes var. nudipes
Shimizu & Chuang: 20136 nakaharai; 20197 rubropilosum
Shiota: 2336 wadanum; 2504 nudipes?; 2508 kaempferi; 2533, 2534, 2535 tschonoskii var. tschonoskii; 2738 serpyllifolium; 4898 reticulatum; 6969 nudipes var. nudipes;
Shizong Exp.: 68, 69, 74, 112, 164, 165, 166, 167, 168, 169, 174 simsii var. simsii
Shui: 4562 microphyton
Sichuan Econ. Pl. Exp.: 377 simsii var. simsii
Sichuan & Guizhou Exp.: 2210 mariesii
Silvestri : 1696, 1701 simsii var. simsii
Sinclair: 9393 wadanum; 9408 kaempferi
Sinclair & Edemo: 9802 subsessile
Sino-American Bot. Exp.: 84-0774 simsii var. simsii; 84-0787 mariesii; 84-1014 microphyton; 84-1425, 84-1932 simsii var. simsii
Sino-British Exp. Cangshan: 629, K113, K143 microphyton
Sino-German Exp.: 142, 150 simsii var. simsii; 155 mariesii; 165 simsii var. simsii; 998 mariae subsp. mariae; 1081, 1171 simsii// var. simsii
Sino-Russian Exp.: 32 microphyton; 1412, 1481 flumineum
Smith: 48 hainanense
Smith, H. : 1670 microphyton
Sonohara et al.: 7102 tashiroi
S China Bot. Inst.: *120* simsii var. simsii; 1543 mariesii; *171937, 171939, 220197, 220855,* 271636 rivulare; 373755 farrerae
S Guizhou Exp.: 179, 361, 423, 516, 696, 876 simsii var. simsii; 879, 1042 mariesii; 1433, 1442, 2064 simsii var. simsii; 2065 seniavinii; 2839, 3743 rivulare; 4239 simsii var. simsii; 4264 mariesii; 5701 microphyton; 8472 mariesii
SW Normal Coll.: 216 mariesii
Spaulding: 461 microphyton
Squires: 94 simsii var. simsii (annamense)
Steward: 2440, 5236, 5262 simsii var. simsii
Steward et al.: 147 simsii var. simsii; 280 mariae subsp. mariae; 721 simsii var. simsii; 773 seniavinii; 822 seniavinii aff.
Su Koe: 9176 microphyton; 9265, 9830, 9858 simsii var. simsii; 9876 microphyton; 17250 simsii var. mesembrinum
Su, S.M.: 419 mariesii
Sugimoto: 2527 serpyllifolium
Sulit : 7493, 7572 subsessile
Sun, San Shen: 14, 41 simsii var. simsii
Sun, S.C.: 1060 simsii var. simsii
Susuki: 10, 28, 70, 105 kaempferi; 106 wadanum; 5750, 13217 oldhamii; 21277 macrosepalum; AA1026 dilatatum; *ST16433* oldhamii
Susuki, M. et al.: 9580 wadanum

Tagawa: 7208, 1069 macrosepalum; *24323* dilatatum var. satsumense; *89101, 89102, 89103* hyugaense; *s.n.* amakusaense; *s.n.* mayebarae var. obsumiense

Takahashi: 358 kaempferi; 1009 serpyllifolium; 1013 decandrum; 1033 macrosepalum

Tan, P.X. (*Tam, P.C.*): 7317 tsoi; 7318 mariesii; 7328 mariae subsp. mariae; 7332 mariesii; 7333; 7335 mariae subsp. mariae; 7336 simsii var. simsii (annamense); 7344 kwangtungense; 7345, 7347 7348 simsii var. simsii; 8045, 57958, 58090, 58329, 58474, 58608, 58939 mariae subsp. mariae; 58964 simsii var. simsii; 59466 mariae subsp. mariae; 59772 minutiflorum; 59970 mariae subsp. mariae; 60326 simsii var. simsii; 60344 mariae subsp. mariae; 60559 seniavinii; 60590 qianyangense; 61275 hunanense; 61685 kwangtungense; 61824 mariae subsp. mariae; 62369 mariesii; 62425 kwangtungense; 62643 mariesii; 62736 rivulare; 62806 farrerae; 62812 mariesii; 63017 rivulare; 63385 seniavinii

Tan, S.X.: 354 chrysocalyx

Tan, Ying Hua: *223*, 565 simsii var. simsii; 608 mariae subsp. mariae; 617 farrerae

Tanaka: 71 kaempferi; 526 rubropilosum; 1758, 10993 oldhamii; 100388 kaempferi; 100453 reticulatum;

Tang, H.C.: 81, 489 farrerae; 1267 simsii var. simsii; 2269 farrerae

Tang, Rui Jin: *1213, 6745*, 6803, 7491, *7526, 13560*, simsii var. simsii; *13565* mariesii

Tang, You Heng: 71 simsii var. simsii

Tang, Z.Z.: *3896* farrerae; 50468 simsii var. simsii

Tam, P.C. (*Tan, P.X.*)

Taoda: 3285 weyrichii; 3445 reticulatum

Taquet: 305 yedoense var. poukhanense; 307, 1089 weyrichii; 1090, 1091 yedoense var. poukhanense; 2970 weyrichii; 2972 yedoense var. poukhanense; 4678 weyrichii; 4679, 4690, 5783, 5784 yedoense var. poukhanense; 5785, 5786, 5787 weyrichii

Tashiro: 101952 scabrum var. scabrum

Tawada: 13272 kaempferi; 13279 tschonoskii var. tschonoskii

Ten, S.: 83, 86, 1417 microphyton

Teng, L.: 112 kwangtungense; 314 mariae subsp. mariae; 322 simsii var. simsii; 329 mariae subsp. mariae; 350 mariesii; 909, 1007 kwangtungense; 1124 simsii var. simsii; 3587 hainanense; 3994 mariesii; 4012 simsii var. simsii; 4157 mariesii; 4437 naamkwanense var. cryptonerve; 4669 florulentum; 4674 farrerae; 4862 simsii var. simsii; 4963 florulentum; 5107 farrerae; 5614 rhuyuenense; 6161 simsii var. simsii; 6982, 7654 kwangtungense; 8045, 8597, 8624 mariae subsp. mariae; 8654 rivulare; 8926, 9990, 9992 simsii var. simsii; 10105 mariae subsp. mariae; 10513, 11070 simsii var. simsii; 11071 farrerae; 11072 kwangtungense; 11073 mariae subsp. mariae

Teng, S.F. (*Deng, S.F.*)

Tian, Q.J. et al.: *1-21, 2-38, 3-14* sparsifolium

Tianluoshan Exp.: 2560, 3358, 3391 hainanense

To, K.P.: 2370 mariae subsp. mariae

Togashi: 33 serpyllifolium; 336 indicum; 340 sanctum; 379 dilatatum; 380 indicum; 381 kaempferi; 385 nudipes var. nudipes; 388 sanctum; 390 serpyllifolium f. albiflorum; 391 tosaense; 392 tashiroi; 393 tosaense; 394 tschonoskii var. tschonoskii; 395 wadanum; 397 reticulatum; 698 macrosepalum; 729 nudipes var. nudipes; 927 macrosepalum; 1029 serpyllifolium; 1460 tashiroi; 1644 weyrichii; 7893 wadanum; 9096 kaempferi; 9097, 10227 reticulatum; 10610 wadanum; 10633 nudipes var. nudipes

Togashi & Idzumi: 339 reticulatum
Tohda, H. et al.: 2013 kaempferi
Toyoshima: 10229 boninense
Tsai, C.S. (*Cai,C. X.*)
Tsai, H.T.: 53025 microphyton; 53051 simsii var. simsii; 53343, 53349, 53424, 53478, 53929, 54929, 55597 microphyton; 55640 simsii var. simsii; 55646, 55670, 56630 microphyton; 57043 simsii var. simsii; 58539, 59160 microphyton
Tsang, C.Y.: 25171 simsii var. simsii
Tsang, T.H. & Cheng, Y.T.: 148, 268 chrysocalyx
Tsang, T.S.: 400821, 401298 seniavinii
Tsang, W.T. (*Ceng, H.D.*)
Tseng, C.J.: *150* simsii var. simsii; *12646* mariae subsp. mariae
Tseng, C.J. & Ling, P.: *1001* simsii var, simsii
Tseng, Y.C. (*Cheng, Y.Q.*)
Tsiang, C.J.: 5342 simsii var. simsii
Tsiang, Hsin Hing: 20417 microphyton
Tsiang, Y. & Chen, S.Q.: 365, 374 yangmingshanense; 400 simsii var. simsii; *670* rhodanthum
Tsiang, Y. & Wang, H.: 16299, 16300 microphyton
Tsiang, Ying (*Jiang, Y.*): 274 simsii var. simsii; 587 farrerae; 589 mariae subsp. mariae; 595 farrerae; 1292, 1311 kwangtungense; 1508, 1980 mariae subsp. mariae; 4786, 5012, 5872 rivulare; 9072 simsii var. simsii; 10351 mariesii; 10358, 10570 simsii var. simsii; 11105 mariesii; 16595 farrerae; 120250 microphyton
Tsien, C.P.: 50098 rivulare; 50269, 50277 mariae subsp. mariae; 50305, 50306 rivulare; 50403 seniavinii; 50640, 50804 rivulare; 51101 mariesii; 51683 rivulare
Tsoong, C.H.(*Chung, Z.S.*)
Tsoong, K.K.: 59, D12 mariesii
Tsui, T.M.: 129 huiyangense; 766 mariae subsp. mariae
Tu, D.H.: 2750 mariesii
Tung, S.C.: *494* jinpingense
Uno: 22920, 23594, 23750 yedoense var. poukhanense
Ushiwa: 1c-f eriocarpum
Ushiyama: 30146 yedoense var. poukhanense
Van Royen & Sleumer: 5613 subsessile
Wakama: 2705, 2707 kaempferi; 6691, 6695 scabrum subsp. amanoi
Wang, A.J.: 1 farrerae; 610, 612, 613, 614, 616, 617 mariae subsp. mariae; 618 bicorniculatum 619, 800 mariae subsp. mariae; 3016 tsoi
Wang, C. (*Huang, Z.*)
Wang, C.(*Z.*) *& Liu, S.E.*: 638 pulchrum
Wang, C.W.: 62770, 62781, 62789, 73115, 73332 microphyton; 73653 simsii var. simsii; 82538, 82692, 83877, 84156 microphyton; 84269 simsii var. simsii; 84317, 84971, 85062, 86574, 86754, 86786 microphyton; 87057, 87442 simsii var. simsii; 87653, 87779, 87799 microphyton; 87935, 88923, simsii var. simsii; 89143 microphyton; 89158 simsii var. simsii
Wang, C.W. & Liu, Y.: 90832, 90833, 90834 simsii var. simsii
Wang, D.X.: *122, 238, 413* simsii var. simsii; 700, 809, 921 rufulum; *975, 1062* simsii var. simsii; 1087 rivulare; *1347* simsii var. simsii

Wang, F.T.: 1045, 1700, 20445 simsii var. simsii; 22749, 22793 atrovirens; 22797 simsii var. simsii

Wang, H.C.: 112 simsii var. simsii; 1651, 1672, 1695, 1700, 1710, 1775, 1874, 1876, 2647, 3443, 3514 microphyton; 3545 simsii var. simsii; 3574, 3681, 3786, 3789, 3827, 3831, 3836, 3838, 3841, 3854, 3859, 3890, 3972, 3974, 3978, 3985, 3988 microphyton; 4177, 4191, 4192 simsii var. simsii; 4193, 4195, 4324, 4326, 4328, 4329, 4331 microphyton; 4333 simsii var. simsii; 4336, 4343, 4586, 4589, 4616 microphyton; 4630 simsii var. simsii; 4712, 4718, 4720 microphyton

Wang, H.J. et al.: 422, 431 mariesii

Wang, J.C.: 204 simsii var. simsii

Wang, J.X.: 1707 mariesii

Wang, Ming Jing (*M.K.*): *150* mariesii; 478 simsii var. simsii; 1229 mariesii; *1230* simsii var. simsii; 2452 mariesii; 3032 polyraphidoideum; 3245 mariesii

Wang, P.H.: 12, 1277 simsii var. simsii

Wang, Q.J.: 2585 simsii var. simsii

Wang, S.W. & Chang, K.C.: 358 mariesii

Wang, T.H.: 3, 135 simsii var. simsii; 12065 seniavinii

Wang, T.P.: 1046, 10812 simsii var. simsii; 10657 mariesii; 11446 simsii var. simsii; 11463 mariesii

Wang, W.C.: 2065 mariesii; 60363 simsii var. simsii

Wang, Z.R.: 3619 minutiflorum; 5339 simsii var. simsii

Wang, Zuo Bin (*Wang, T.P.*)

Way, M.J.: 3148 mariesii

Wei, C.F. (*Wei, Z.F.*)

Wei, F.N.: *772, 809* subenerve; 894 jinxiuense

Wei, Z.F.: 120029 mariae subsp. mariae; 120391 simsii var. simsii; 120934 mariesii; 121593 farrerae ; 121779, 121819 mariae subsp. mariae

Wei, Z.Y.: 40205, 40301 mariae subsp. mariae

Wenshan Exp.: 222 microphyton

Wilford: 145 farrerae

Wilson: 1682 simsii var. simsii; 3472, 3473 simsii var. mesembrinum; 3474, 3475 simsii; A00569 simsii var. mesembrinum?. A00606, A01681 mariesii; A05143 simsii var. simsii; A06003 indicum; A06005 tashiroi; A06158 reticulatum; A06278 kaempferi; A06338 kiusianum var. kiusianum; A06339 mucronatum?; A06439, A06448 dilatatum; A06558, A06573 reticulatum; A06574 macrosepalum; A06575 kaempferi; A06596 macrosepalum; A06610 kaempferi; A06640 wadanum; A06679 kaempferi; A06705 nudipes var. lagopus; A06807 kaempferi; A06816 indicum var. crispiflorum; A06818, A06880, A06888, A06932 indicum; A07122, A07233, A07234, A07235 tschonoskii var. tschonoskii; A07455 indicum; A07583, A07657 tschonoskii var. tschonoskii; A07694 nudipes var. lagopus; A07709 indicum; A07794 macrosepalum; A07801 tosaense; A07813 weyrichii; A07842 reticulatum; A08046 scabrum subsp. scabrum; A08095 tashiroi; A08200, A08416 kaempferi; A08417 kiusianum var. kiusianum; A08420, A08424 kaempferi; A08472, A09396 yedoense var. poukhanense; A09411 weyrichii; A09458 yedoense var. poukhanense; A09595 tschonoskii var. tschonoskii; A09728 rubropilosum; A09778 oldhamii; A09779 rubropilosum; A09980 oldhamii; A10020 lasiostylum; A10029, A10165 oldhamii; A10276 kanehirai; A10316 oldhamii; A10326 kaempferi; A10327, A10328, A10329 kiu-

sianum var. kiusianum; A10330 kaempferi; A10333 kiusianum var. kiusianum; A10334, A10343 kaempferi; A10344 scabrum subsp. scabrum; A10346 × tectum?; A10347 kaempferi; A10348, A10355 macrosepalum; A10365, A10368 kaempferi; A10369 reticulatum; A10379, A10380, A10381 kaempferi; A10939 rubropilosum; A10957 kiusianum var. kiusianum; A11175 oldhamii; V00029 mariesii

Wong, H.D.: *8178* kwangtungense

Wong, S.: 161405 farrerae

Wood & Boufford: 3676 macrosepalum; 3727, 3752 kaempferi; 3827 lasiostylum

Wright: 171 tashiroi; 172 scabrum subsp. scabrum; 195 farrerae

Wright, C.: 186, 483 farrerae

Wu, C.A.: 7353, 7762, 7954, 9054 microphyton; 9568 flumineum; 9671 simsii var. simsii

Wu, C.N. & Tan, P.C.: *7340* kwangtungense

Wu, D.C.: 741 simsii var. simsii; 742, 746, 747, 748 mariae subsp. mariae; *751* bicorniculatum; *900* litchiifolium; *902* chaoanense; *904* simsii var. simsii; *905* mariae subsp. mariae; *906, 907* naamkwanense var. naamkwanense; *3017* kwangtungense; 751031 taipaoense

Wu, S.: 7737 simsii var. simsii

Wu, S.K.: 6882, 8162 simsii var. simsii; 61-3589 flumineum

Wu, S.Z.: 70004 simsii var. simsii; 70180 mariae subsp. mariae

Wu, W.C.: 3576, 4031 mariesii

Wu, Zheng Yi: L-131 simsii var. simsii; L-146, 77-1203 mariesii

Wuyi Exp.: 80-0201, 80-0937, 80-0987, 80-2241 farrerae

Xhong, H.H. & Sun, S.C.: 696 mariesii

Xiamen University Exp.: *233* farrerae; 296 rufulum; *8564* farrerae

Xiao, J.G. & Qi, C.J.: 3335 seniavinii

Xie, L.: 38 mariae subsp. mariae

Xie, L.S.: 682 hainanense

Xin, S.Z.: *259*, 372 minutiflorum; *404* mariesii; *8961* minutiflorum; 9366, 9454, *11024* kwangtungense; 20035 rivulare; *20206* minutiflorum; 21018, 21119 mariae subsp. kwangsiense; 21136 farrerae; 21188 yaoshanicum; *21255* minutiflorum; 22010, 22104, 22120 mariae subsp. kwangsiense; 23758 mariesii

Xing, J.C.: 16352, 17861 simsii var. simsii

Xiong, J.: 840 mariae?; *2309* simsii var. simsii; *2389*, 2437 mariesii; *3819* simsii var. simsii; *4769* mariesii; *5144, 5976* simsii var. simsii; *5982* mariesii

Xiong, Ji Hua (*Hsiung*): 90589, 90675, 91588, 91982, 92888, 92889, 93025, 93830 mariesii

Xiong, J.H. & Tso, S.L.: 90761, 93142 simsii var. simsii

Xiong, Jie: 1770 simsii var. simsii

Xiong, Y.G.: *240, 4137* simsii var. simsii; *4138, 5500* mariesii; *5522* simsii var. simsii; *7914* mariesii; *9851* simsii var. simsii

Xu, Bing Sheng: 1319 mariesii

Xu, Su Gui: 4618 microphyton

Xu, X.H.: *1048* simsii var. simsii

Xun, J.: 2422, 2431, 3032 polyraphidoideum

Yamamoto & Mori: *YM105* oldhamii; *YM473* breviperulatum

Yamazaki: 235 taiwanalpinum; 690 tosaense; 691 kiyosumense; 746 kaempferi; 883 tschonoskii var. tschonoskii; *974* x enomotoi; 1032 tschonoskii var. tschonoskii;

1051, 1128 nudipes var. tsurugisanense; 1362 indicum; 2299 dilatatum; *2533, 2574* dilatatum var. satsumense; 3807 dilatatum; 3818 kaempferi; 6168 indicum; 6208 wadanum; 6503 dilatatum; 6738 nudipes var. niphophilum; 6899 tashiroi; 7255 amagianum; *7706* yakumontanum; 7716 nudipes var. nudipes; 7742 indicum; 7747 tashiroi; 9502 kiyosumense; 9769 mayebarae; *10564* nudipes var. niphophilum; 19123 tashiroi

Yamazaki & Kanai: 7821, 10959 reticulatum

Yang: 3044 simsii var. simsii; 3059 mariesii; 3066 simsii var. simsii; 101443, 101683 microphyton

Yang, B.M.: 2425 mariesii

Yang, G.B. & Yao Gan: 2401 mariae subsp. mariae

Yang, G.H.: 54281, 54841, 55850, 57706 simsii var. simsii; 57761 mariesii; 57762 simsii var. simsii; 57764, 57782, 57888 mariesii; 57889 simsii var. simsii; 57890, 58282 mariesii; 58284 simsii var. simsii; 58314, 59910 mariesii; 59938, 65203 simsii var. simsii; 65503, 65530 mariesii; 65626 simsii var. simsii

Yang, J.X. & Liang, Y.M.: 2880 mariesii

Yang, Qing Zhou: 1578 mariesii

Yang, S.H.: 56925 simsii var. simsii

Yang, Xiang Xie: 10302 mariesii; 60363 simsii var. simsii; 650218, 650454 mariesii; 650643, 651043, 652219 simsii var. simsii

Yang, Y.C.: 427 simsii var. simsii

Yang, Z.P.: 1125 mariesii

Yao, Q.F.: 10 mariesii

Yi, W.C.: 62, 82, 828 microphyton

Yie, D.M.: 1089 mariesii

Yieh, D.C.: 375 mariesii

Ying, S.S.: *617, 1121* rubropilosum; *2530* tashiroi; *3825* sikayotaizanense; *4765, 4770, 4774, 4780* mariesii; *4781, 4782, 4783, 4784, 4785, 4786* nakaharai

Yoshinaga: *24, 31* reticulatum

Yu, P.H.: 318 chrysocalyx; 332 rufohirtum; 575 simsii var. simsii

Yu, S.L.: 100332 rivulare; 900429 mariae subsp. mariae; 900515 simsii var. simsii

Yu, T.T.: *737* simsii var. simsii; 5079 farrerae; 8167 simsii var. mesembrinum; 15812, 17734, 17908 microphyton

Yu, Wang: 21707 simsii var. simsii

Yu, Z.R.: 1536, 1566 mariesii

Yuan, S.F.: *6310, 6508* farrerae; 63411 minutiflorum

Yue, Jun San: 1893 simsii var. simsii; 2639, 3132 simsii var. simsii; 3417 mariesii; 4380 seniavinii var. crassifolium; 4910 simsii var. simsii; 5098 mariesii

Yue, Jun San et al.: 1088, 4117 simsii var. simsii

Zang, Shiu Yin: 3099, 3434 simsii var. simsii

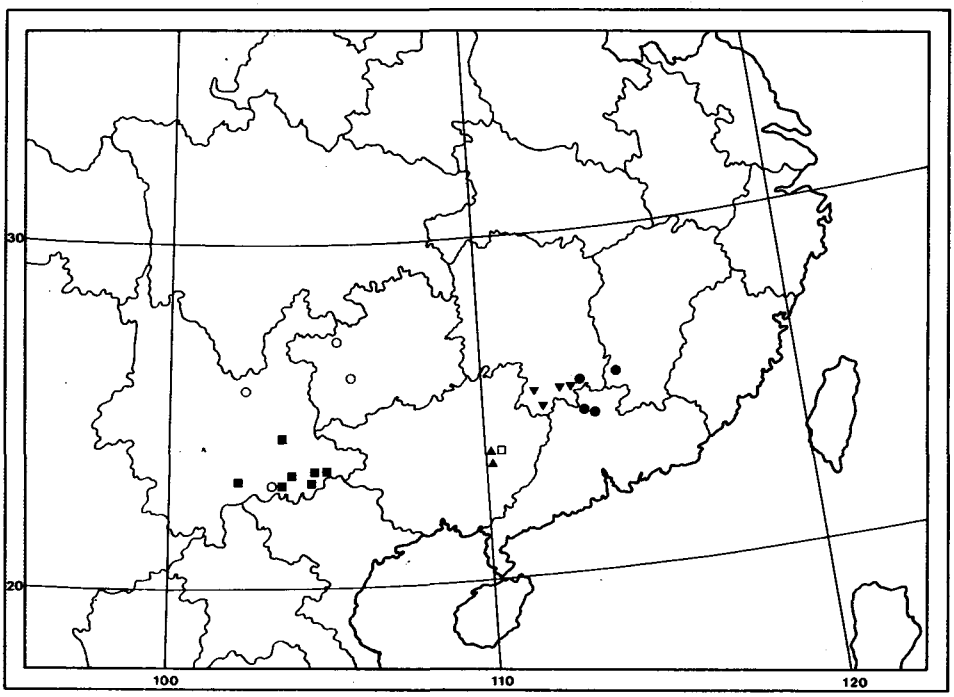
Zhang, H.D.: 3533, 4641 simsii var. simsii

Zhang, Q.Q.: *7713.0003* mariesii

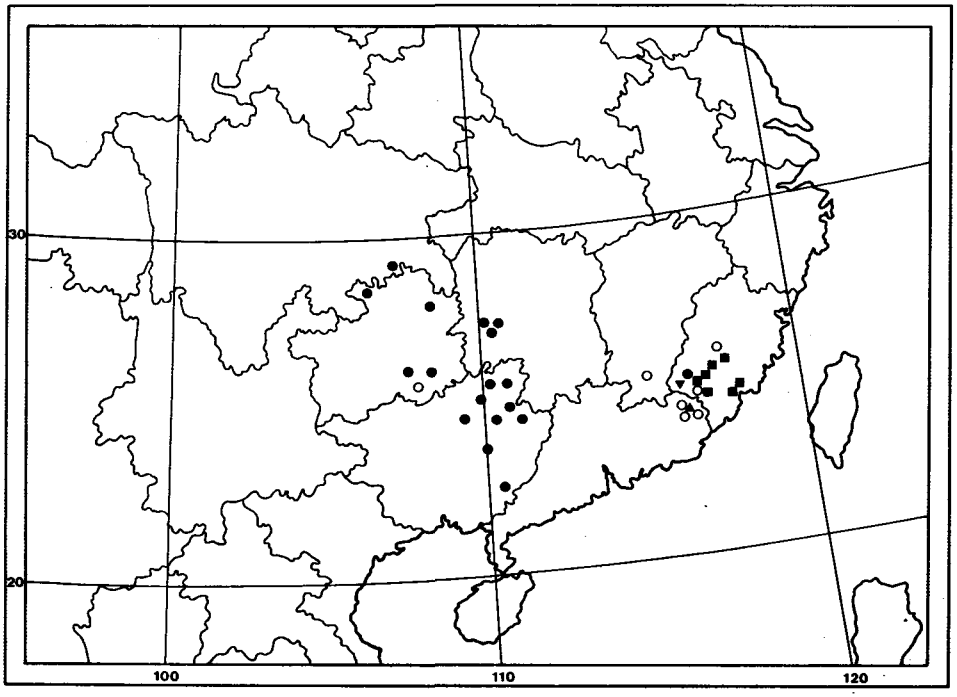
Zhang, S.Y.: 2813 mariesii; 2875 farrerae; 3722, 3852, 4459, 4562, 4640, 4879, 5617, 6218, 6385, 6513, 6917, 6989, 7317 mariesii

Zhang, Z.S.: 10334, 11056 mariae subsp. mariae; 11401 simsii var. simsii; 11408, 11409, 11426, 12225 mariae subsp. mariae; 12418 hainanense; 12419, 13184 meridionale var. meridionale; 14890 mariae subsp. mariae

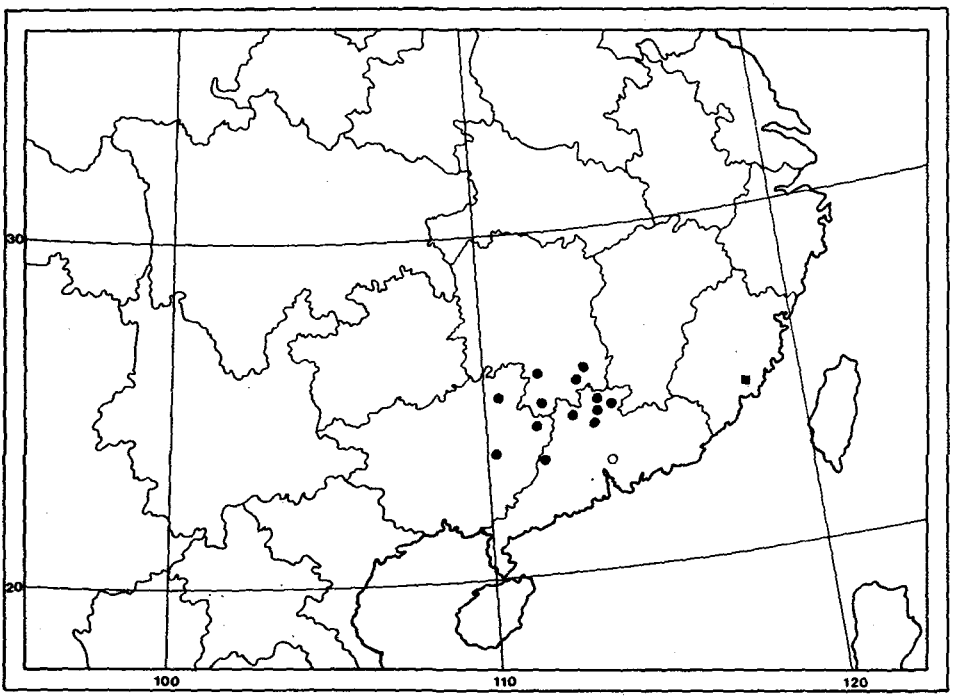
Zhang, Ze Yin: 25171 simsii var. simsii
Zhangjiang Exp.: *3571* simsii var. simsii; 3690, 4244 gratiosum; 4266 hainanense aff.
Zhao, B.H.: 205 mariesii
Zhao, D.M.: *766* simsii var. simsii
Zhao, N.: 2079 microphyton
Zhao, Shi Dong: 165 microphyton
Zhejiang Forestry Coll.: T80-12-079 mariesii
Zhen, Q.X.: 815-64 mariesii
Zhong, P.Q.: 88 mariesii; 89 rufulum; 238, 429, *479* simsii var. simsii; 903a mariesii; 903b, 927a farrerae; 927b mariesii; 1008 rufulum; 1545 rivulare; 2730, 3481, 4211 mariesii; s.n. farrerae
Zhong, S.C.: 463463 mariesii
Zhong, X.X.: 1164, 1252, simsii var. simsii; 1258, 1273, 1274 mariesii; 1275 mucronatum; 1280, 1356, *2050* simsii var. simsii; 2250 farrerae; 2613 mariesii; 2616, 2805 simsii var. simsii; 2904 seniavinii; 3080 simsii var. simsii; *3205* farrerae; 3209, *3349* simsii var. simsii; 3708 farrerae; *4486, 5947* simsii var. simsii; *6552* farrerae; 7719 simsii var. simsii; 7799 farrerae; 8508 simsii var. simsii; 8564 farrerae; 11252 simsii var. simsii
Zhong, X.X. & Sun, S.C.: 522, 1457 simsii var. simsii
Zhongshan Univ.: 160845 simsii var. simsii; s.n. mariesii
Zhou, He Chang: 6102 simsii var. simsii
Zhou, Hong Fu: 26023 mariesii; 26193 simsii var. simsii; 26194 mariesii; 26530, 26597 simsii var. simsii; 26608 mariesii; 26701, 26895 simsii var. simsii; 26986 mariesii
Zhou, Hong Fu & Li, He-I: 107687 mariesii; 107753 simsii var. simsii; 108187 mariesii; 108949 simsii var. simsii; 109471, 110734, 110735, mariesii; 110738 simsii var. simsii; 110824, 110858 mariesii
Zhou, Jing Shang: 111 simsii var. simsii
Zhou, H.F. & Li, H.I.: 111009 simsii var. simsii
Zhu, Guo Fang (*Cheo*): 135 mariesii; 136, *137, 138* simsii var. simsii
Zhu, H.C.: 124, 139, 719 mariesii
Zhu, T.P. & Liu, Z.F.: 836 simsii var. simsii
Zhu, Zhi Xiong: *297* kwangtungense
Zo, Jing Lie: 134, 833, 927, 1338, 2064 mariesii; 20270 kwangtungense; *20590* simsii var. simsii; 20627 kwangtungense; 21848 mariae subsp. mariae; 23452 meridionale var. meridionale
Zollinger: 382 kiusianum var. kiusianum
Zou, X.L. & Mai, Y.F.: 60655 simsii var. simsii
Zou, Y.: 210 simsii var. simsii



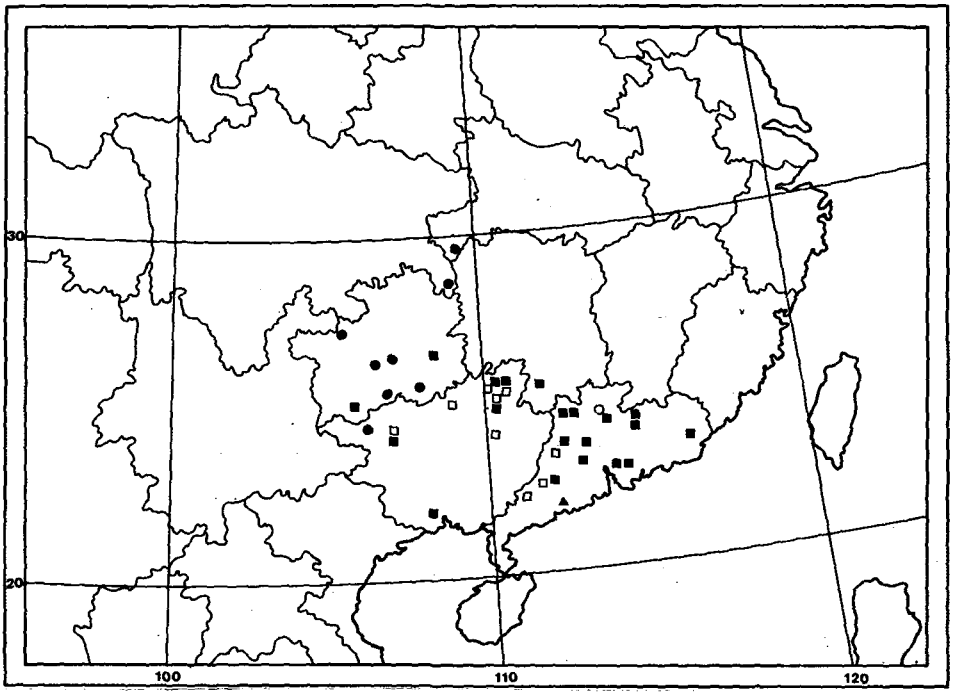
MAP 1. ● *R. rhuyuenense*; □ *R. jinxiuense*; ▲ *R. yaoshanicum*; ▼ *R. hunanense*; ○ *R. rufohirtum*; ■ *R. flumineum*.



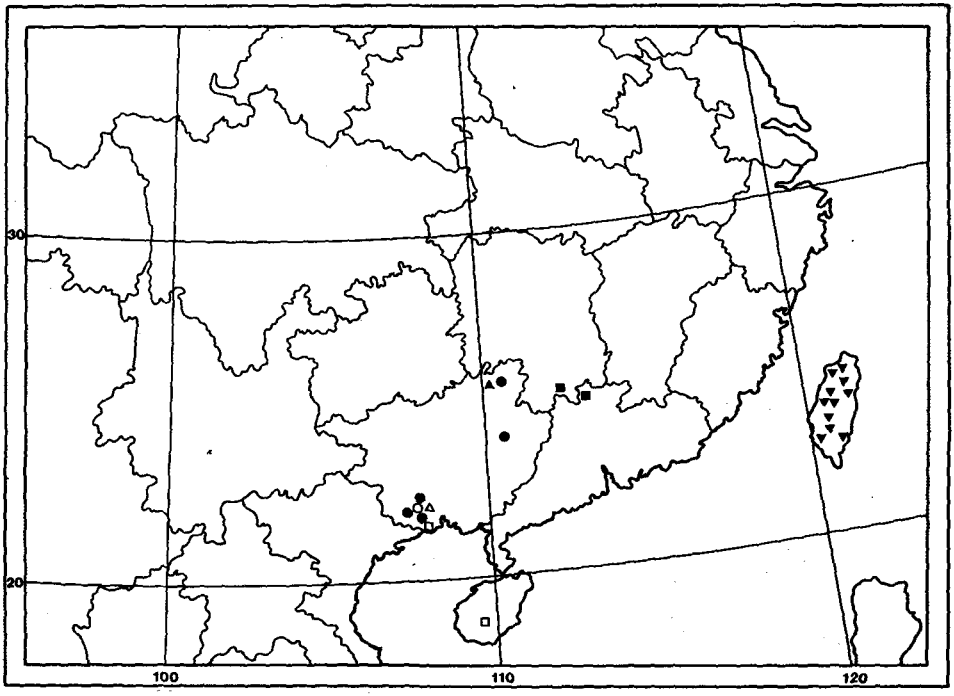
MAP 2. ● *R. rivulare*; ▼ *R. apricum*; ■ *R. rufulum*; ▲ *R. taipaoense*; ○ *R. florulentum*.



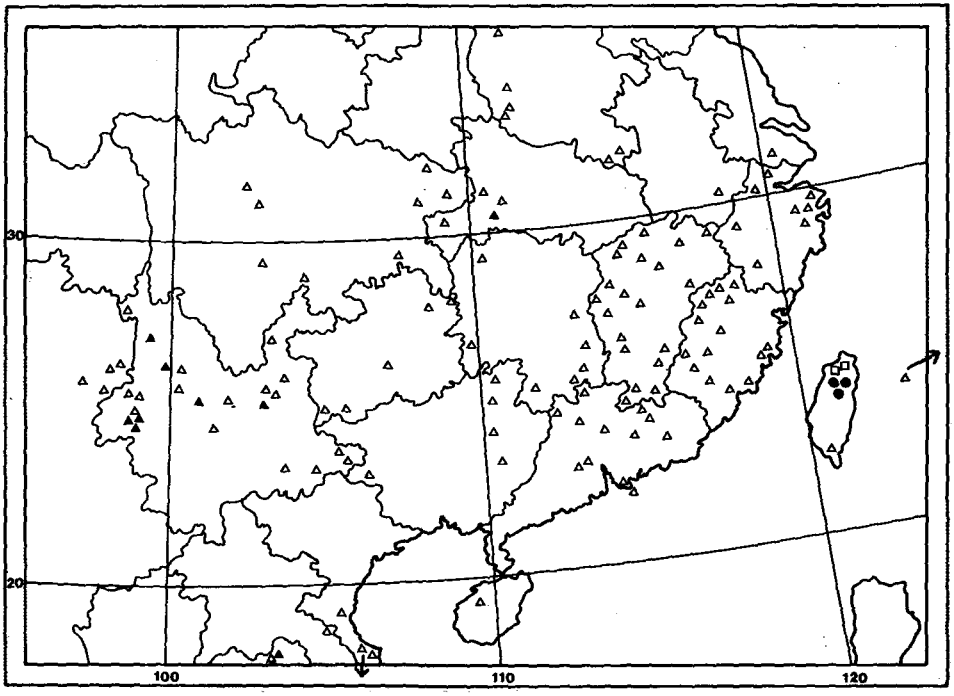
MAP 3. ● *R. kwangtungense*; ■ *R. loniceriflorum*; ○ *R. tenuilaminare*.



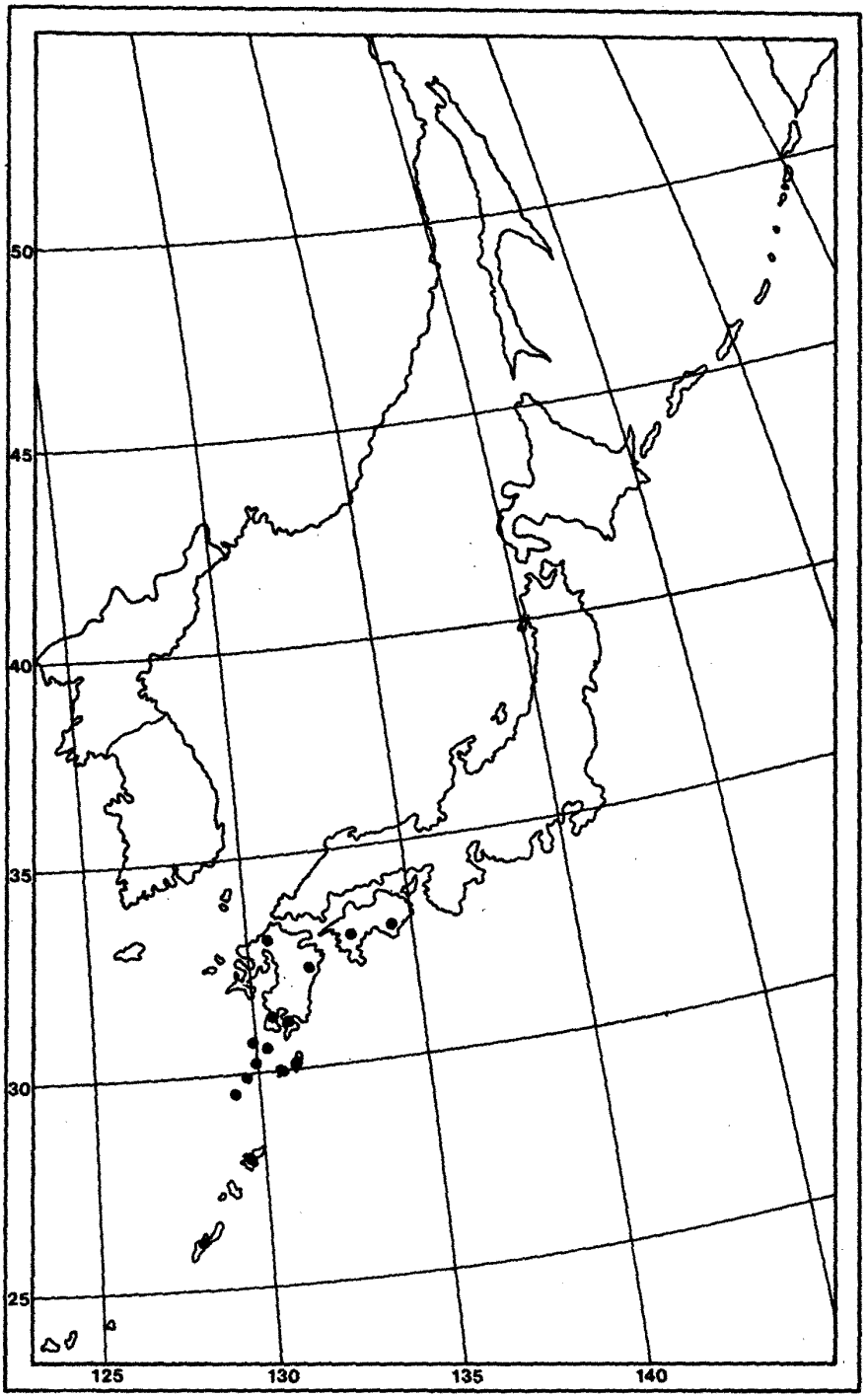
MAP 4. ■ *R. mariae* subsp. *mariae*; □ subsp. *kwangsiense*; ○ *R. cretaceum*; ▲ *R. subcerinum*; ● *R. chrysocalyx*.



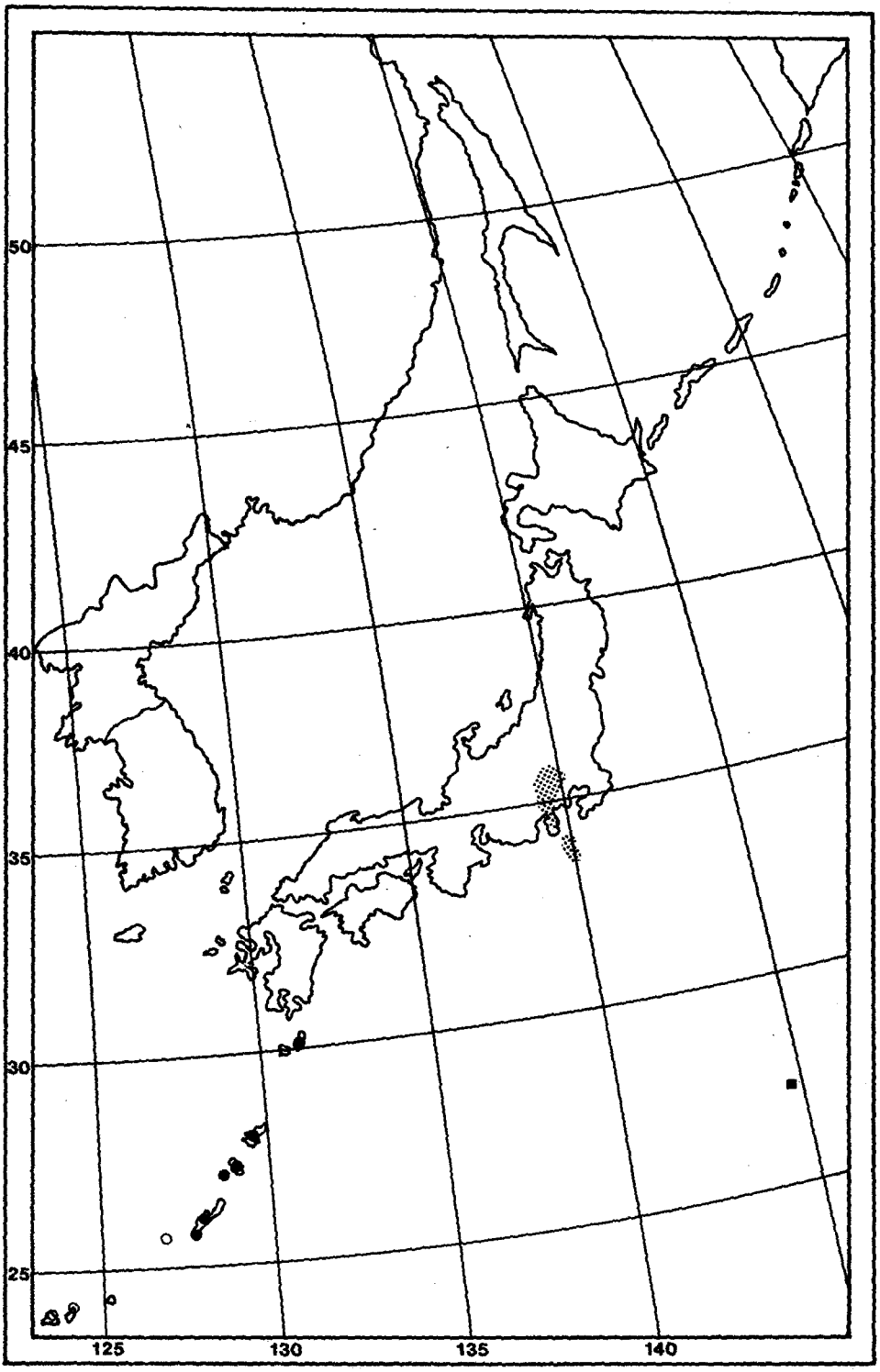
MAP 5. ● *R. meridionale* var. *meridionale*; ○ var. *minor*; △ *R. longifalcatum*; ■ *R. subflumineum*; □ *R. hainanense*; ▲ *R. pulchroides*; ▼ *R. oldhamii*.



MAP 6. ● *R. taiwanalpinum*; □ *R. kanehirai*; △ *R. simsii* var. *simsii*; ▲ var. *mesembrinum*.

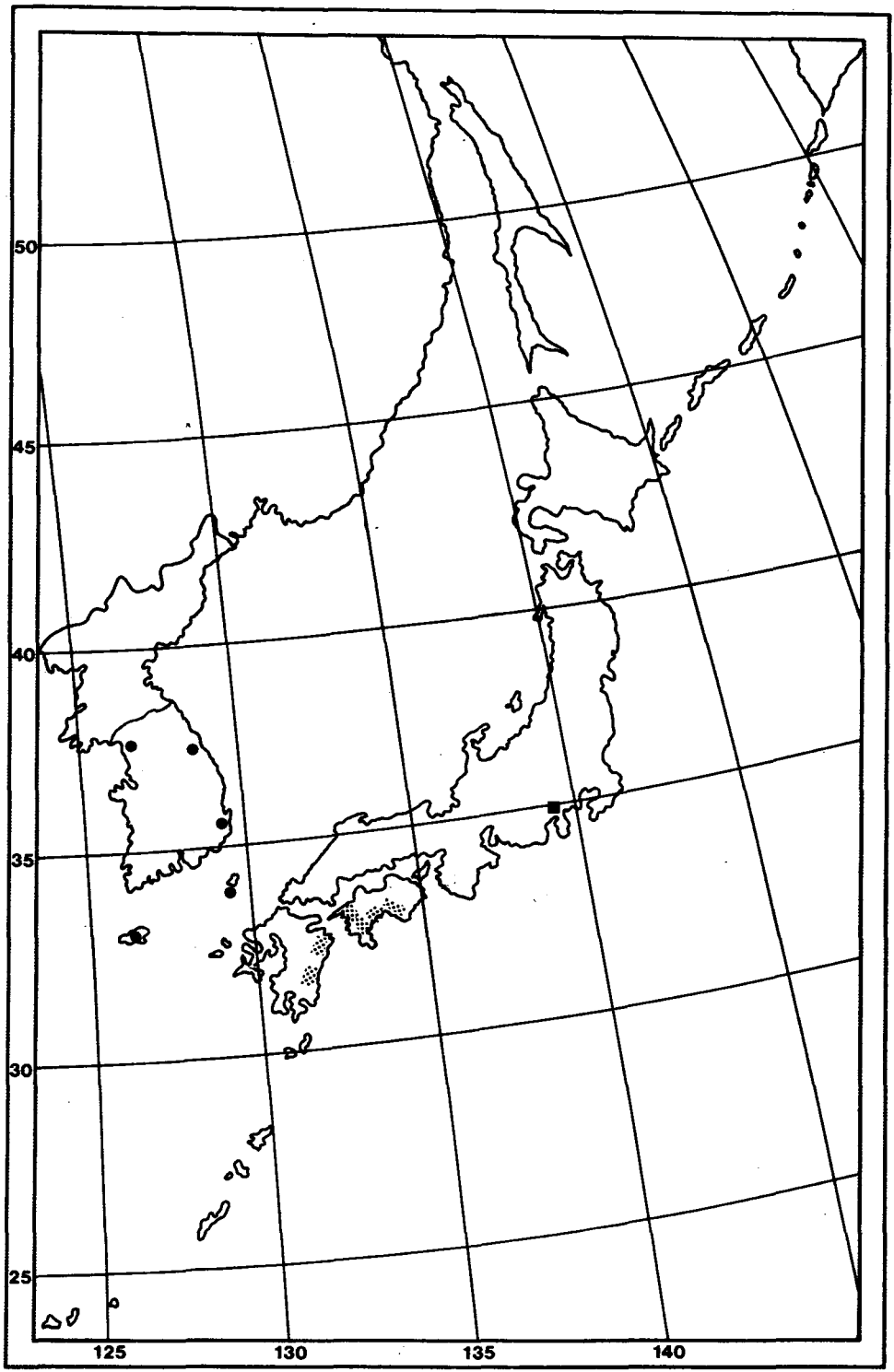


MAP 7. ● *R. tashiroi*—records from Taiwan (Pingtung County, Tawushan) not mapped.



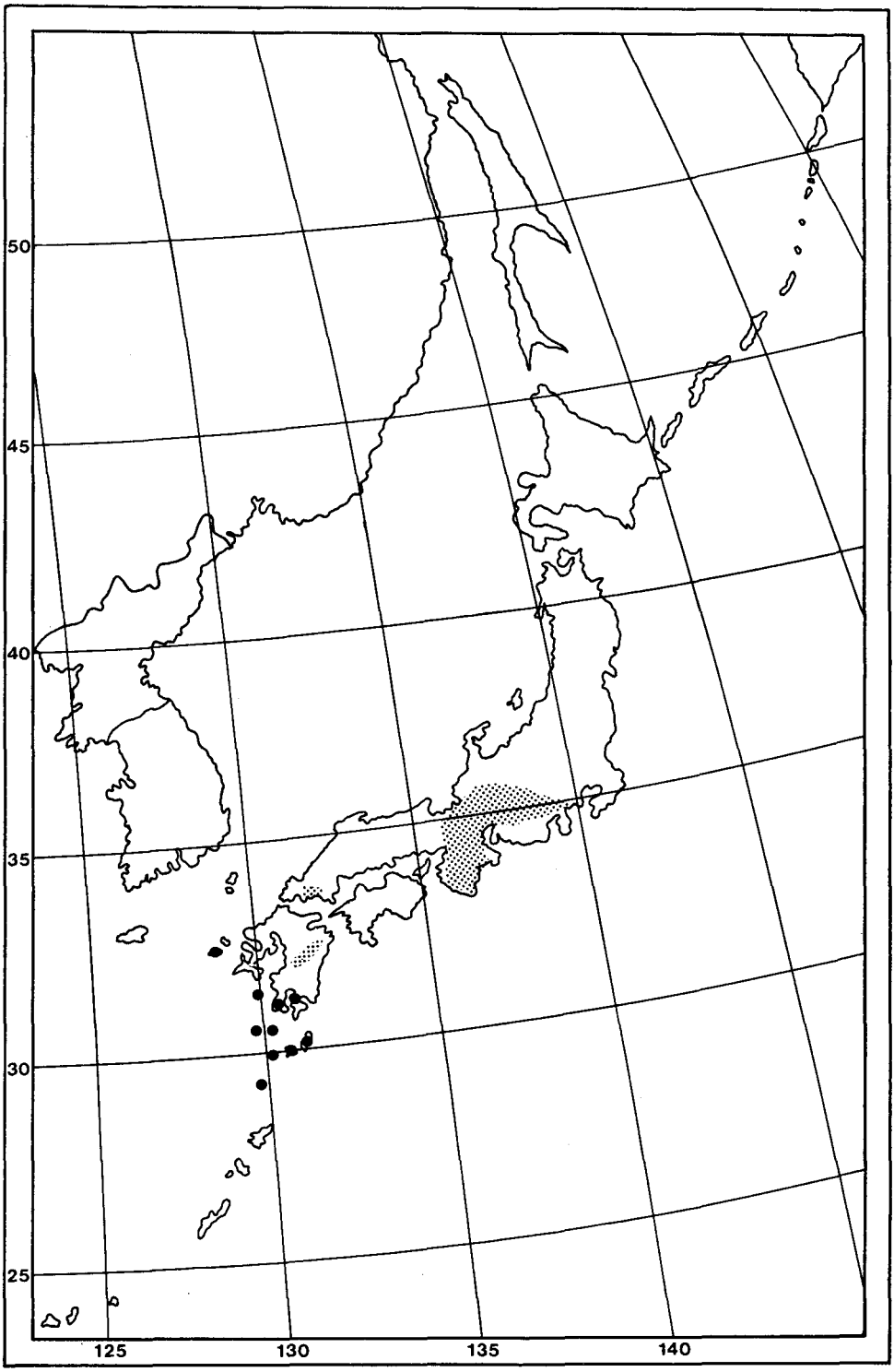
MAP 8. ● *R. scabrum* subsp. *scabrum*; ○ subsp. *amonoi*; ■ *R. boninense*; shaded area *R. tsusiophyllum*.

MAP 9. Shaded area *R. macrosepalum*; ● *R. kiusianum*.



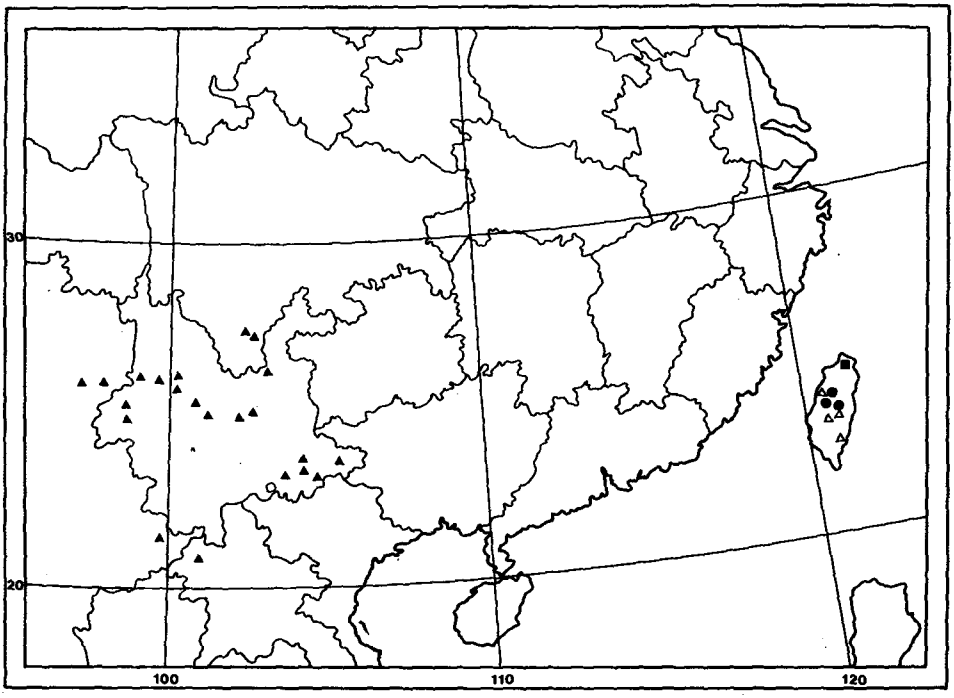
MAP 10. ● *R. yedoense* var. *poukhanense*; ■ and shaded area *R. tosaense*.

MAP 11. Shaded area *R. mucronatum* var. *ripense*.

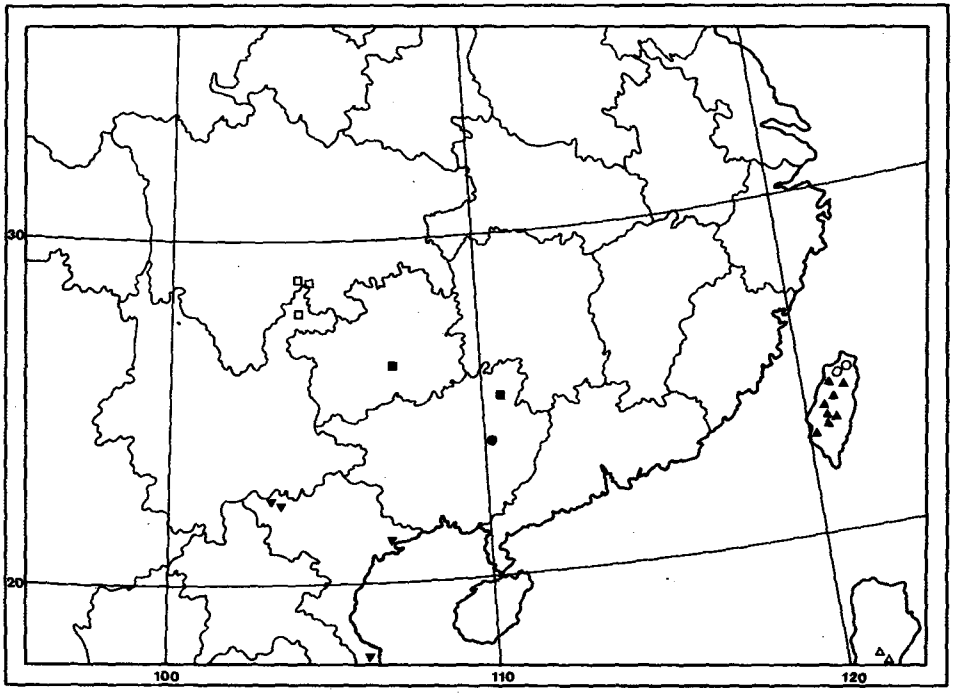


MAP 12. ● *R. eriocarpum*; shaded area *R. indicum*.

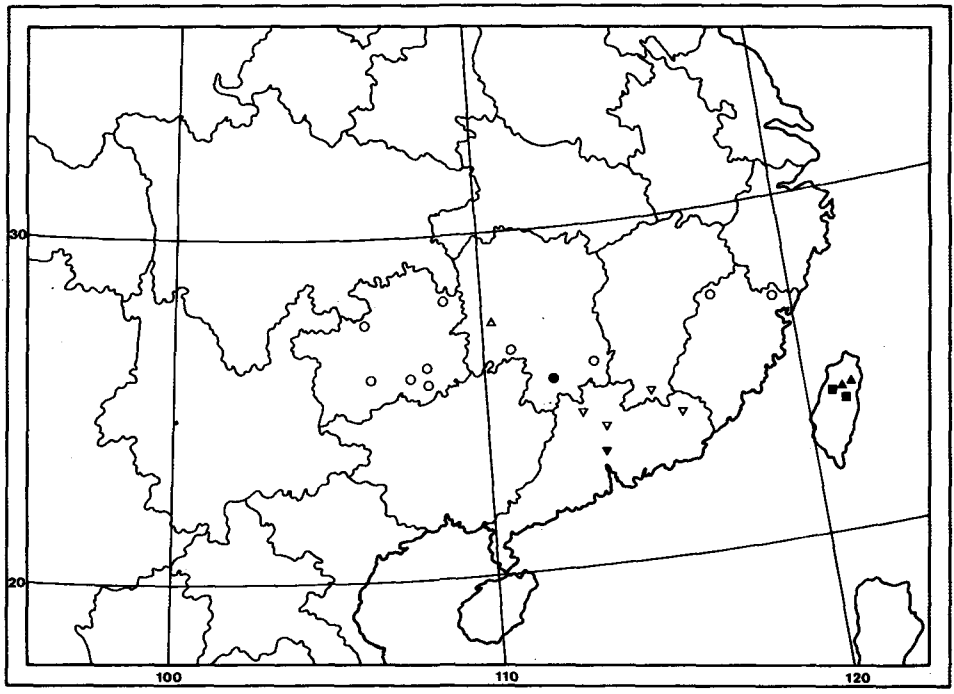
MAP 13. ● *R. kaempferi.*



MAP 14. ■ *R. longiperulatum*; ● *R. breviperulatum*; △ *R. lasiostylum*; ▲ *R. microphyton*; ○ *R. jinpingense*.

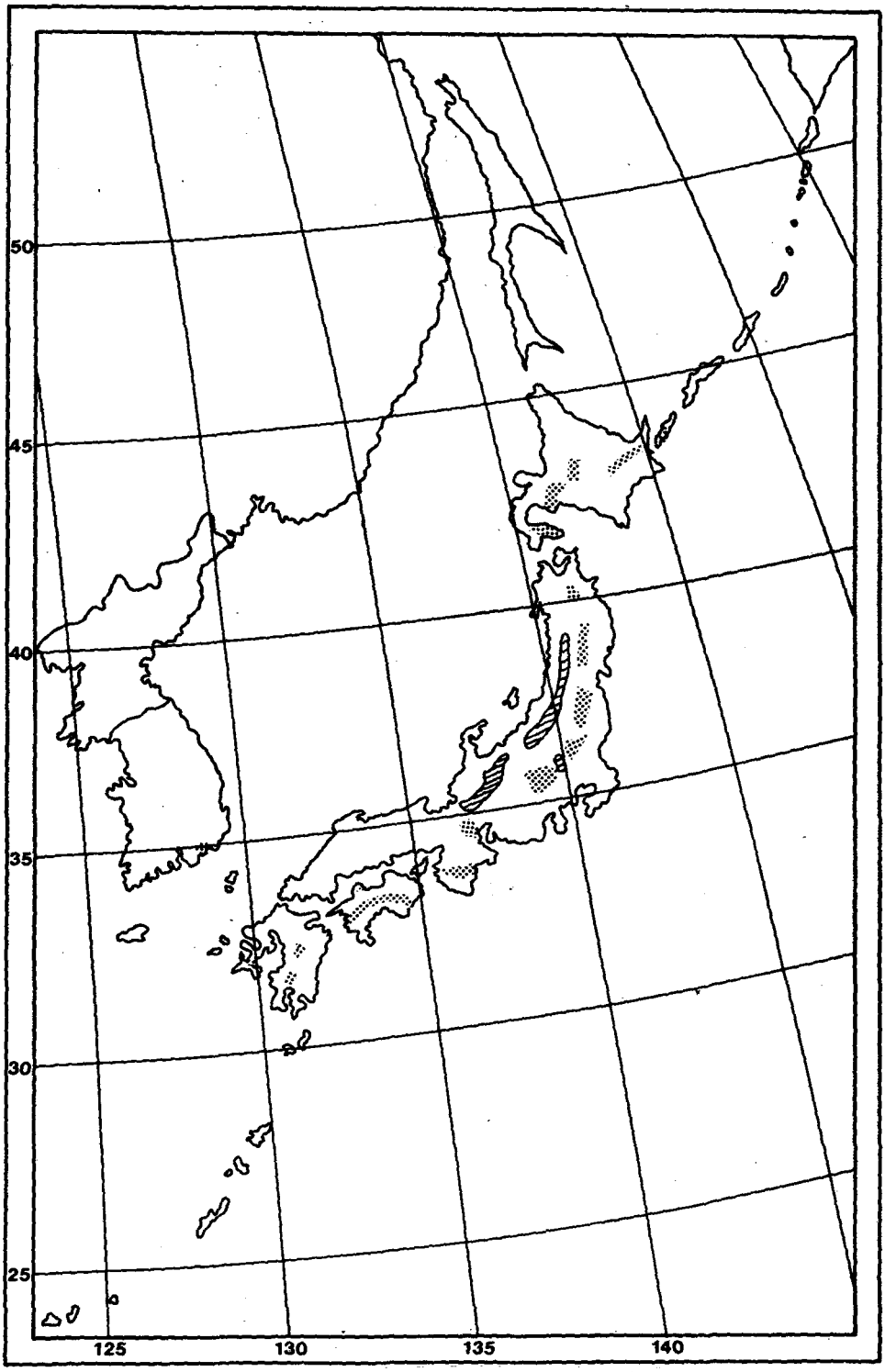


MAP 15. ▲ *R. rubropilosum*; ● *R. subenerve*; △ *R. subsessile*; □ *R. atrovirens*; ■ *R. fuchsiifolium*; ○ *R. nakaharai*; ▼ *R. saxicolum*.

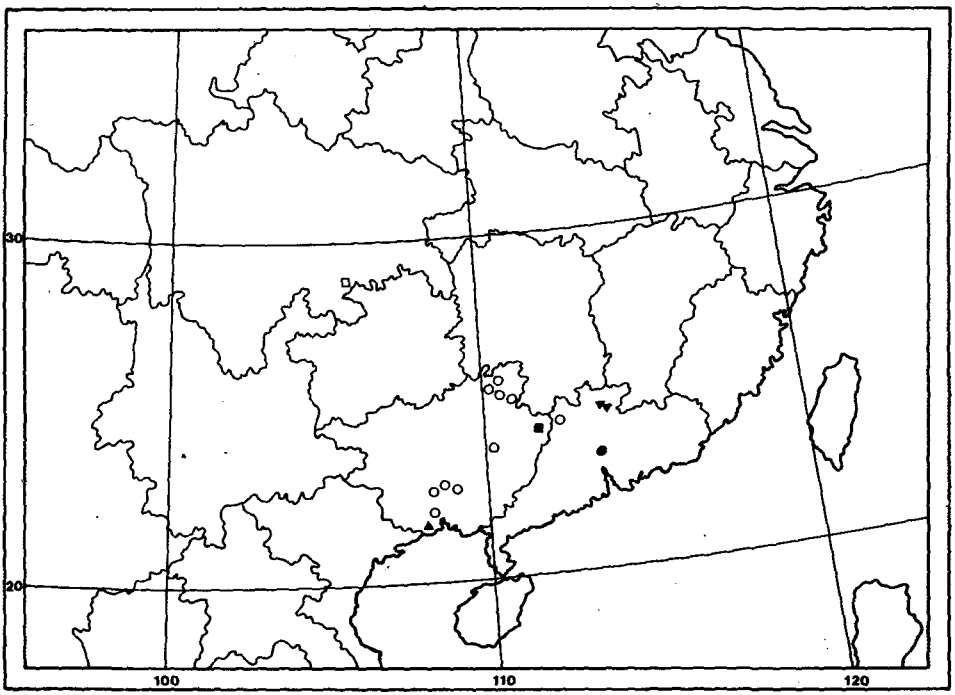


MAP 16. ▲ *R. sikayotaizanense*; ■ *R. noriakianum*; ○ *R. seniavinii*; △ *R. qianyangense*; ● *R. yangmingshanense*; ▼ *R. naamkwanense* var. *naamkwanense*; ▽ var. *cryptonerve*.

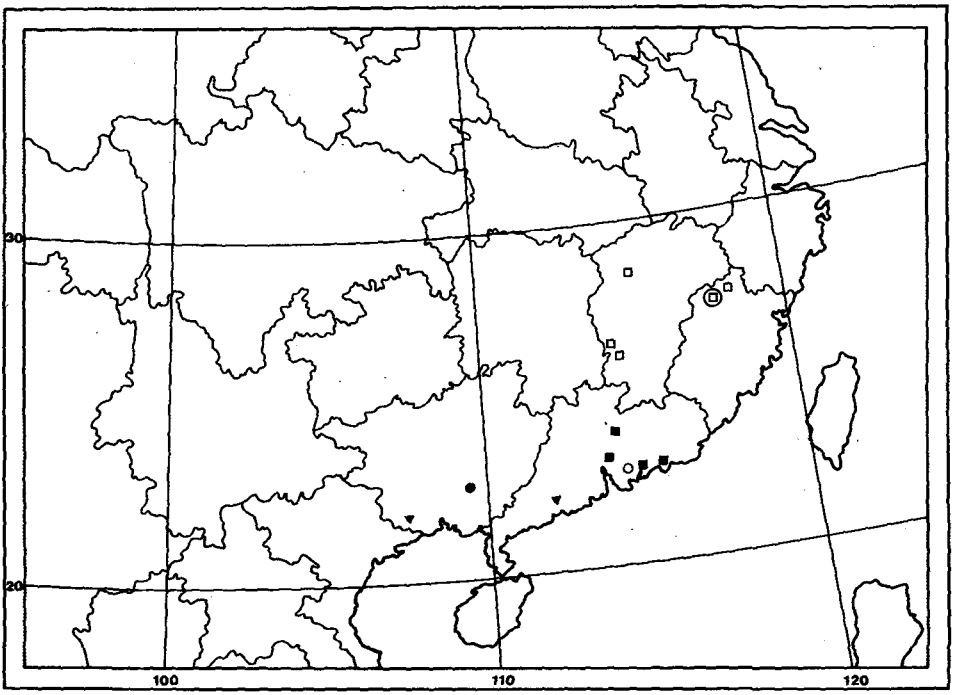
MAP 17. ● and shaded areas *R. serpyllifolium*.



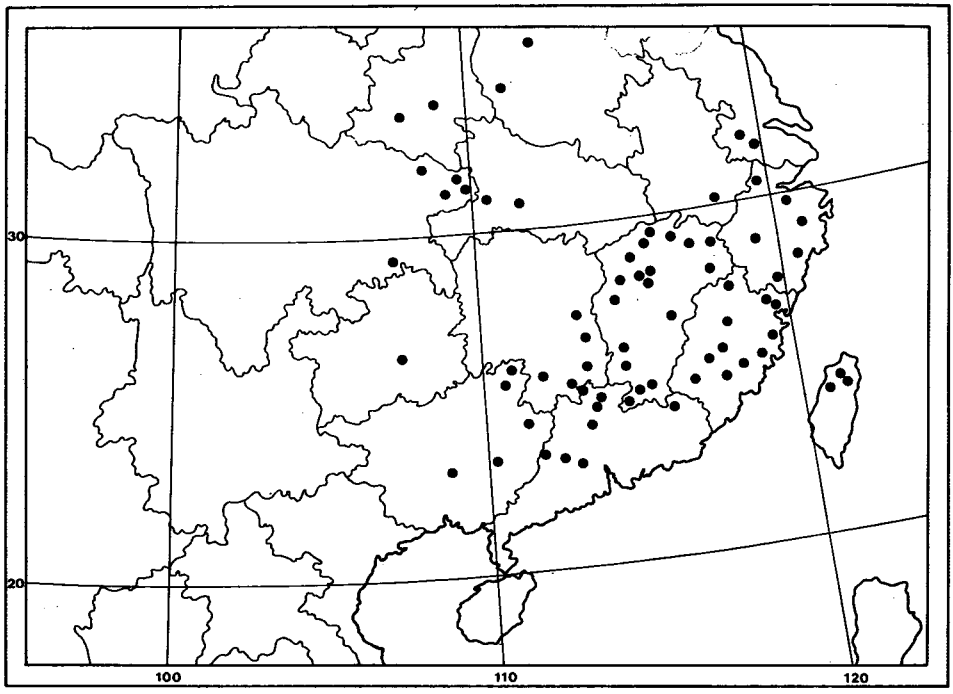
MAP 18. Shaded area *R. tschonoskii* var. *tschonoskii*; hatched area var. *trinerve*.



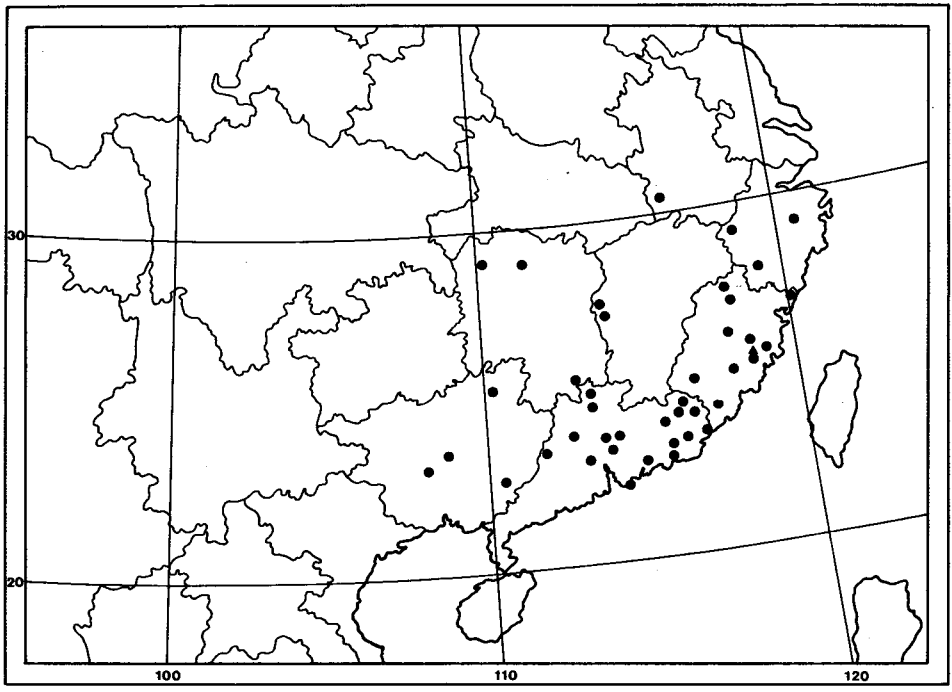
MAP 19. ● *R. bicorniculatum*; ▼ *R. chunii*; ■ *R. viscigemmatum*; □ *R. hejiangense*; ○ *R. minutiflorum*; △ *R. myrsinifolium*.



MAP 20. ● *R. unciferum*; ■ *R. tsoi*; □ *R. polyraphidoideum*; ⊡ aff. *R. polyraphidoideum*; ▼ *R. gratiosum*; ○ *R. huiyangense*.

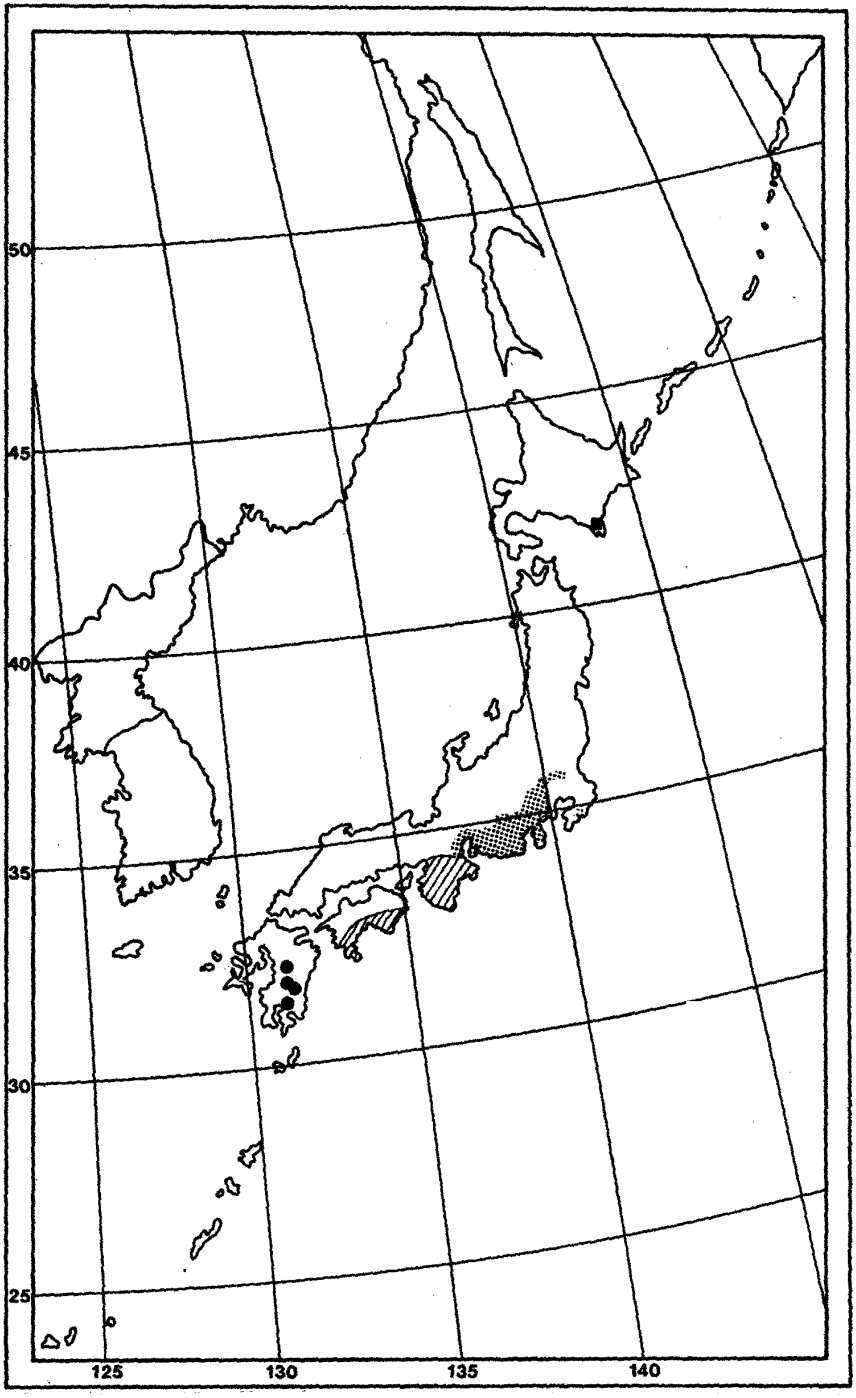


MAP 21. ● *R. mariesii.*

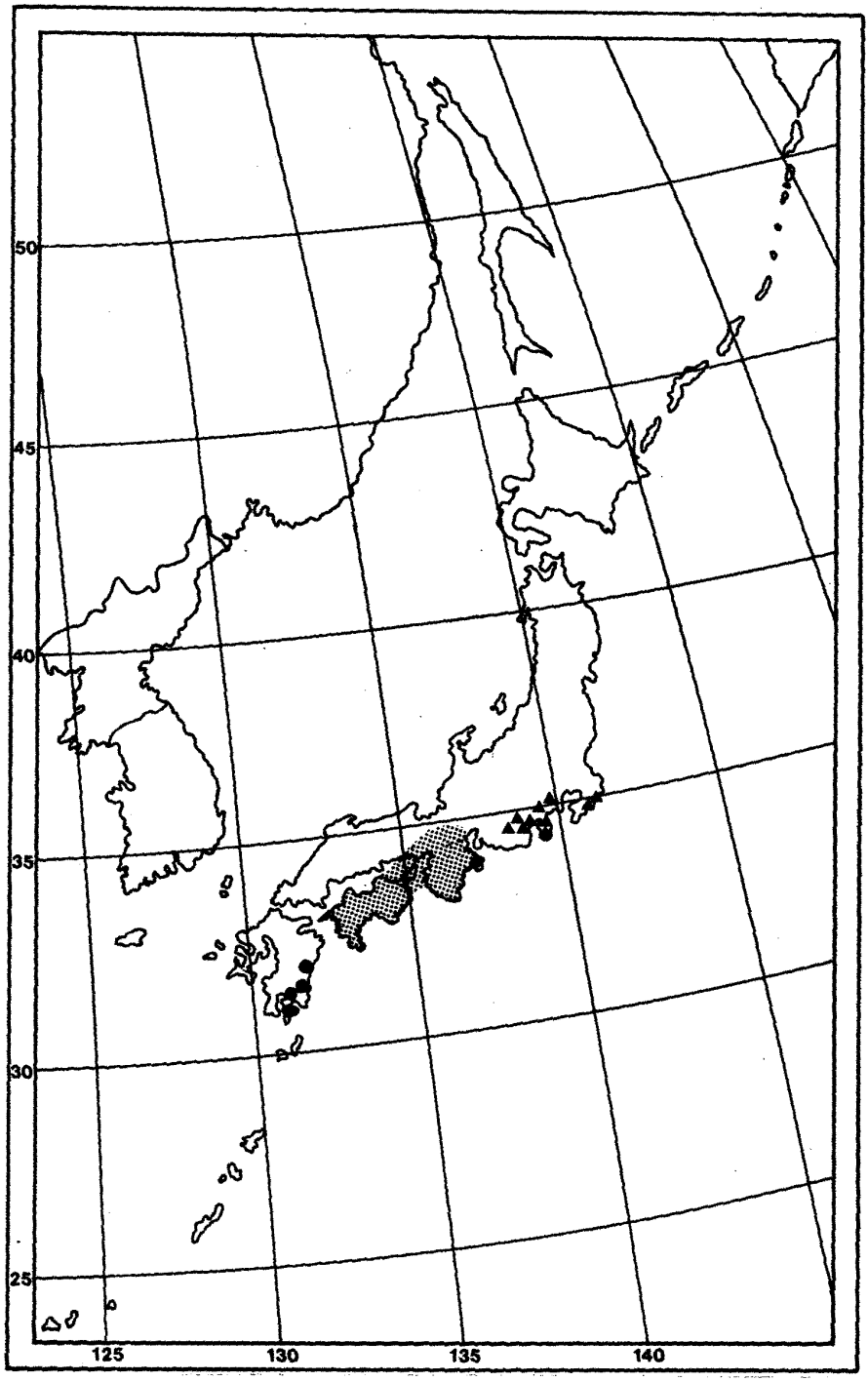


MAP 22. ● *R. farrerae*; ▲ *R. daiyunicum.*

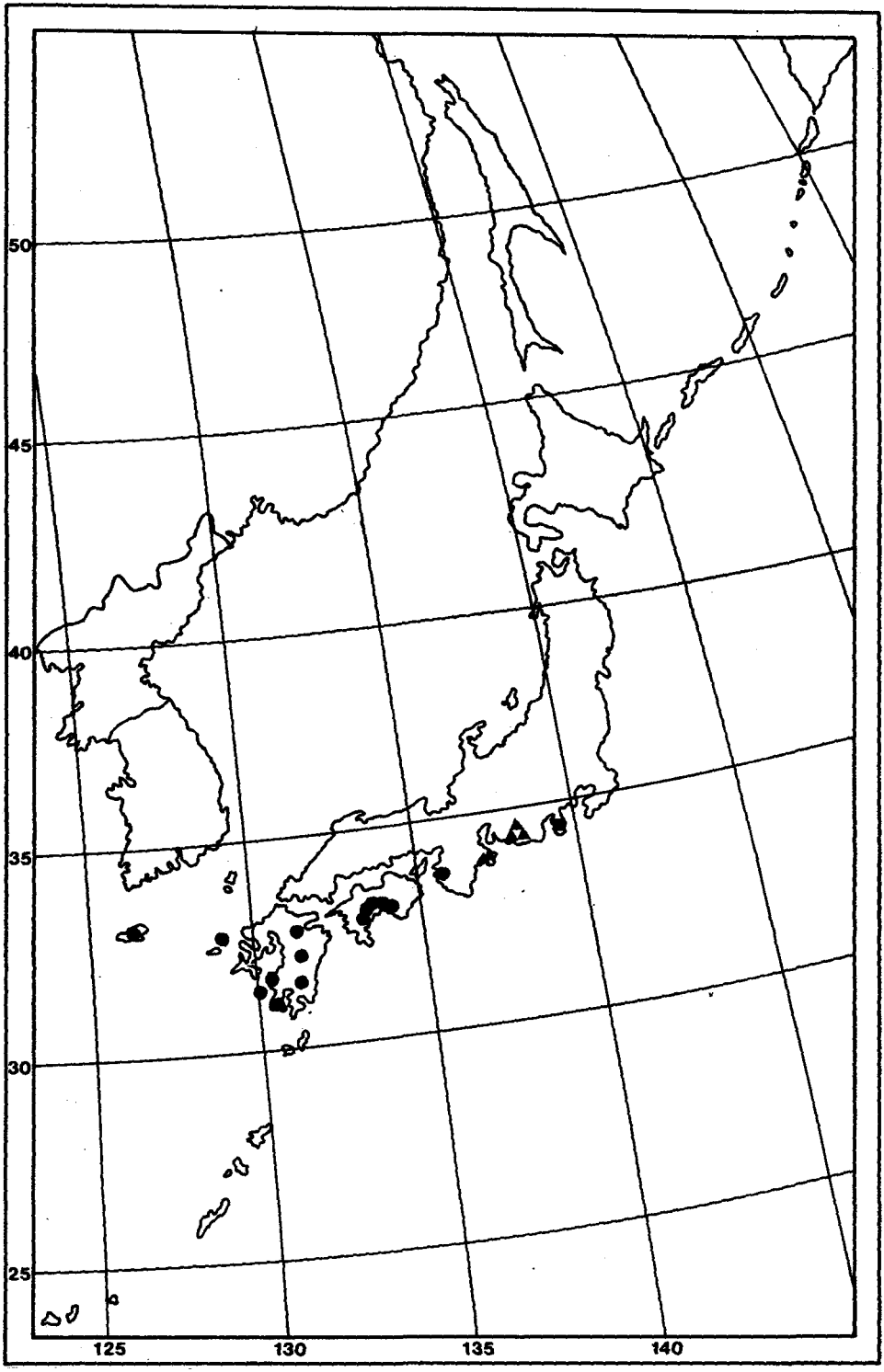
MAP 23. Hatched area *R. wadanum*; ● *R. nudipes*.



MAP 24. Hatched area *R. dilatatum*; ■ *R. hidakanum*; shaded area *R. decandrum*; ● *R. mayebarae*.



MAP 25. ● *R. viscistylum*; shaded area *R. reticulatum*; ▲ *R. kiyosumense*.



MAP 26. ● *R. weyrichii*; ▲ *R. sanctum*; ■ *R amagianum*,

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We acknowledge with gratitude the directors of the herbaria of the Royal Botanic Garden, Kew, the Natural History Museum, London, the Museum National d'Histoire Naturelle, Paris, the Arnold Arboretum, Kyoto and Tokyo for facilities and loan of specimens. We are grateful for the assistance that Dr Chamberlain has received from the Royal Society and from the Academia Sinica which enabled him to make five trips to China. We would like to thank the directors of the Academia Sinica Institutes of Botany in Beijing and Kunming, the South China Botanical Institute, and the Department of Biology, Sichuan University for permission to consult their herbaria and for providing interpreters. Lastly we thank those staff of the Royal Botanic Garden Edinburgh who have contributed in various ways to the production of this Revision.

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APPENDIX

R. arunachalense Chamberlain & Rae, **sp. nov.** (sect. Tsutsusi) p. 131.

R. saxicolo fortasse affinis sed foliis acutioribus, colore corollae et corollae tubo intus glabro differt.

Frutex ad 4.5m alta. *Rami* juveniles pilis fuscis adpressis vestiti. Folia verosimiliter dimorphica, chartacea. *Folia* vernalia ovato-elliptica vel lanceolata, 35–65mm longa, 16–28mm lata, apice acuminata, basi cuneata, pagina inferiore praesertim ad costam pilis strigosis adpressis rufis vestita. *Petioli* 6–12mm longi, dense adpresse strigosi. *Inflorescentia* 3-flora; pedicellis 5–7mm longis,indumento denso fusco e pilis magnis strigosis et pilis tenuioribus crispatis constante. *Calyx* minutus,strigosus. *Corolla* late infundibularis, extra dilute rosea, intus saturate rosea, 23-27mm longa. *Tubus* corollae glaber, 6–7mm longus, basi 3mm latus, supra ad 6mm dilatans. *Stamina* 5, 30mm longa, basi scabrida. *Ovarium* dense strigosum; stylus glaber, 35 mm longus. *Capsula* ignota.

NE INDIA: Arunachal Pradesh, Subansiri District, Yachuli, river beds, 1500m, 28 iv 1977, *H.B. Naithani* Ser.II:894 (holo. E, iso. DD).

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