

86. ISODON (Schrader ex Benth) Spach, Hist. Nat. Veg. Phan. 9: 162. 1840.

香茶菜属 *xiang cha cai shu*

Plectranthus L'Héritier sect. *Isodon* Schrader ex Benth, Labiat. Gen Spec. 40. 1832; *Rabdosia* (Blume) Hasskarl.

Shrubs, subshrubs, or perennial herbs. Rhizomes woody, massive. Leaves usually petiolate, dentate. Cymes (1–)3- to many flowered, in ± laxthyrses or narrow or open panicles, rarely in dense spikes. Flowers pedicellate. Calyx campanulate to tubular-campanulate, straight or declinate, often dilated; limb equally or subequally 5-toothed or 2-lipped, upper lip 3-toothed, lower lip 2-toothed. Corolla tube exserted, declinate or abruptly deflexed, sometimes straight, ± saccate to spurred abaxially near base, 2-lipped; upper lip 4-cleft, recurved or reflexed; lower lip entire, concave, navicular. Stamens 4, declinate; filaments free, edentate; anther cells 2, apex usually confluent. Style apex short 2-cleft. Nutlets subcircular or occasionally oblong to ovoid, glabrous or hairy, smooth, granular or dotted.

About 100 species: Asia, only a few species in Africa; 77 species in China.

- 1a. Fruiting calyx with 5, equal or subequal straight teeth.
 - 2a. Fruiting calyx tubular or tubular-campanulate to ovoid; inflorescences pyramidal paniculate.
 - 3a. At least some leaves in whorls of 3 or 4 1. *I. ternifolius*
 - 3b. Leaves always opposite.
 - 4a. Stems and inflorescences densely, spreading, purplish or brownish, villous-velutinous or softly tomentose; leaves corrugate.
 - 5a. Leaves ovate to triangular-ovate, 1.5–7 × 1–4 cm; petiole 2–8 mm; corolla purple to whitish blue 2. *I. enanderianus*
 - 5b. Leaves triangular-ovate, 1–2.5 × 1–2.5 cm; petiole 15–25 mm; corolla white 3. *I. brevifolius*
 - 4b. Stems and inflorescences with indumentum not as above; leaves not or only slightly rugulose.
 - 6a. Leaves long petiolate, slightly pubescent along midribs and veins; panicles without floral leaves; calyx gray lanate, glabrescent and tubular in fruit 4. *I. eriocalyx*
 - 6b. Leaves sessile or short petiolate; inflorescence and calyx not as above.
 - 7a. Leaves ovate, sometimes cordate, 1.5–5 × 0.8–4.5 cm; adaxially puberulent or finely pilose; abaxially gray tomentose; fruiting calyx densely pilose, ovoid 5. *I. phyllostachys*
 - 7b. Leaves broadly ovate, 7–17 cm, ca. 1/2 as wide as long; abaxially densely strigose, sparsely glandular; calyx pubescent 6. *I. pantadenius*
 - 2b. Fruiting calyx campanulate to broadly campanulate; inflorescences loosely paniculate.
 - 8a. Leaves lanceolate to narrowly lanceolate; calyx teeth lanceolate; nutlets apex pubescent 7. *I. nervosus*
 - 8b. Leaves broadly ovate to ovate-lanceolate; calyx teeth triangular; nutlets glabrous.
 - 9a. Fruiting calyx as long as wide; nutlets glandular 8. *I. amethystoides*
 - 9b. Fruiting calyx longer than wide; nutlets not glandular.
 - 10a. Terminal panicle few flowered, ca. 2 cm 9. *I. websteri*
 - 10b. Terminal panicle spreading, many flowered.
 - 11a. Adaxial leaf surface sparsely puberulent, abaxial surface whitish pilose along midrib and veins; calyx with minute hairs, glabrescent especially in fruit 10. *I. inflexus*
 - 11b. Leaves sparsely puberulent, glandular or glabrescent; calyx densely pubescent.
 - 12a. Leaves ovate to ovate-lanceolate, ± glabrescent, apex subacuminate, base cuneate, coarsely incurved, serrate; calyx densely whitish pubescent, teeth equal to calyx tube in length; stamens and style included; nutlets apex whitish barbate 11. *I. serra*
 - 12b. Leaves ovate to broadly ovate, sparsely puberulent, glandular; apical tooth ovate to lanceolate, apex acuminate, base broadly cuneate to abruptly attenuate, acutely serrate to crenate-dentate; calyx densely appressed whitish pubescent, bluish (especially in var. *glaucocalyx*), teeth shorter than calyx tube; stamens and style exserted; nutlets apex verruculose 12. *I. japonicus*
 - 1b. Fruiting calyx with subequal teeth or 2-lipped, recurved.
 - 13a. Cymes few flowered, axillary, in widely spaced verticillasters or in terminal racemose panicles; corolla tube conspicuously pouched or spurred on upper side near base; fruiting calyx conspicuously 2-lipped.
 - 14a. Leaves narrowly lanceolate to oblong, 3× or more longer than broad.
 - 15a. Corolla to 8 mm, tube conspicuously pouched, to 2 mm in diam. on upper side near base, abruptly declinate above base, slightly constricted, ca. 1.2 mm in diam. at throat 73. *I. gibbosus*
 - 15b. Corolla ca. 7 mm, tube pouched on upper side near base, not abruptly declinate above base, throat subequal to tube 74. *I. lungshengensis*
 - 14b. Leaves much narrower, 2× or less longer than broad.
 - 16a. Cymes in axils of mid and upper cauline leaves not reduced upwards, in many widely spaced verticillasters 75. *I. melissoides*
 - 16b. Cymes in axils of floral leaves gradually reduced toward branch apex, in terminal spicate panicles.
 - 17a. Petiole to 4.5 cm; corolla tube abruptly spurred on upper part near base, spur ca. 3 mm wide, conspicuously exserted, throat ca. 1.5 mm wide 76. *I. brevicealcaratus*
 - 17b. Petiole 0.2–1 cm; corolla tube saccate on upper part above base, tube equal in width elsewhere, ca. 2 mm in diam. at throat 77. *I. adenanthus*

- 13b. Cymes loosely many flowered, often conspicuously pedunculate, rarely in a dense verticillaster; corolla tube subequal or saccate, never short spurred on upper side near base; fruiting calyx with 5 subequal teeth or 2-lipped.
- 18a. Corolla 1.2–2.0 cm, tube 2 × or more longer than limb.
- 19a. Fruiting calyx conspicuously 2-lipped; corolla tube ca. 3 × longer than limb 13. *I. longitubus*
- 19b. Fruiting calyx inconspicuously 2-lipped; corolla tube less than 3 × longer than limb.
- 20a. Plants less than 30 cm tall; cymes 1–3-flowered, in narrow terminal panicles 14. *I. gesneroides*
- 20b. Plants more than 30 cm tall; cymes 3- to many flowered, in ± spreading panicles.
- 21a. Calyx broadly campanulate, purplish or dark purple-red.
- 22a. Panicles strongly spreading, to 30 × 8–9 cm; pedicels 2–7 mm 15. *I. forrestii*
- 22b. Panicles slightly spreading, (6–)10–15(–20) cm; floral leaves gradually becoming small bracts at apex; pedicels 1–3 mm 16. *I. irroratus*
- 21b. Calyx campanulate, not tinged purplish.
- 23a. Leaves rhombic, coarsely crenate-serrate above middle; petioles to 3.5 cm 17. *I. wardii*
- 23b. Leaves narrowly ovate, crenate-dentate above basal 1/3; petioles less than 1 cm 18. *I. bulleyanus*
- 18b. Corolla less than 1.2 cm, to 2 × as long as limb if tube stout.
- 24a. Fruiting calyx conspicuously 2-lipped.
- 25a. Calyx lips extending to middle of calyx.
- 26a. Cymes in narrow panicles.
- 27a. Leaf blade base cordate; panicles secund 58. *I. secundiflorus*
- 27b. Leaf blade base not cordate; panicles not secund.
- 28a. Stamens included; lower corolla lip usually longer than corolla tube 56. *I. coetsa*
- 28b. Stamens slightly exserted; lower corolla lip shorter than corolla tube 57. *I. phyllopodus*
- 26b. Cymes in spreading panicles.
- 29a. Leaf blade base cordate 59. *I. sculponeatus*
- 29b. Leaf blade base broadly cuneate to subcuneate, never cordate.
- 30a. Terminal panicles to 30 × 20 cm, of 5–11-flowered cymes 60. *I. megathyrsus*
- 30b. Terminal panicles 6–10(–15) × ca. 2.5 cm, of 3–5-flowered cymes 61. *I. henryi*
- 25b. Calyx lips extending below middle of calyx.
- 31a. Cymes in spreading panicles.
- 32a. Leaf blade base ± shallow cordate.
- 33a. Teeth of fruiting calyx broadly triangular, apex acute; filaments basally pilose 69. *I. scrophularioides*
- 33b. Teeth of fruiting calyx triangular to lanceolate-triangular, apex acuminate; filaments bearded below middle 70. *I. flabelliformis*
- 32b. Leaf blade base not cordate.
- 34a. Stem shallowly grooved, densely retrorse puberulent; leaves very broadly ovate to obovate, apex rounded, margin crenate-serrate, apical tooth acute; corolla reddish purple or white 71. *I. latifolius*
- 34b. Stem strongly grooved, puberulent on angles otherwise glabrous with scattered glands; leaves broadly ovate to ovate-orbicular, apex acuminate, margin coarse serrate or double serrate, apical tooth acuminate; corolla white 72. *I. weisiensis*
- 31b. Cymes in racemose or falsely racemose narrow panicles.
- 35a. Leaves crenate-serrate.
- 36a. Corolla less than 5.5 mm 66. *I. rosthornii*
- 36b. Corolla more than 5.5 mm.
- 37a. Stem densely retrorse white puberulent along angles; corolla gray or reddish, to 10 mm 67. *I. liangshanicus*
- 37b. Stem appressed pubescent; corolla purple or purple-red, ca. 8 mm 68. *I. macrocalyx*
- 35b. Leaves coarsely serrate, dentate, or serrate-dentate.
- 38a. Inflorescences racemose or falsely racemose (in latter case basal cymes of inflorescence each with 3 flowers and a short peduncle), terminal and axillary, elongated, 8–20 cm 62. *I. racemosus*
- 38b. Inflorescences ± conspicuously narrow paniculate.
- 39a. Leaf apex long acuminate, sometimes ± excised 63. *I. excisoides*
- 39b. Leaf apex not long acuminate, excised.
- 40a. Plants densely white pilose; leaves dentate-serrate 64. *I. albopilosus*
- 40b. Plants sparsely white puberulent; leaves coarsely serrate 65. *I. grosseserratus*
- 24b. Fruiting calyx with 5 equal or subequal teeth or inconspicuously 2-lipped.
- 41a. Leaf apex conspicuously excised.
- 42a. Abaxial leaf surface densely hairy; apical leaf tooth narrowly lanceolate, 2–2.5 cm, slightly cuneate, not extending to midrib of blade at base; cymes 10–15-flowered 19. *I. macrophyllus*
- 42b. Abaxial leaf surface sparsely hairy or subglabrescent; apical leaf tooth caudate, 4–6 cm, cuneate, extending to midrib of blade at base, entire or 1- to few serrate; cymes

- (1-)3-5-flowered 20. *I. excisus*
- 41b. Leaf apex not excised.
- 43a. Fruiting calyx with 5 short teeth to 1/3 as long as fruiting calyx tube; corolla tube spreading or straight.
- 44a. Corolla mostly yellow or yellowish, rarely rose 21. *I. flavidus*
- 44b. Corolla purplish, blue, rose, or white.
- 45a. Inflorescences gray tomentulose 22. *I. calcicolus*
- 45b. Inflorescences with hairs not as above, hairs never gray.
- 46a. Leaves narrowly lanceolate to elliptic-lanceolate, base narrowly cuneate, margin \pm remotely serrate above middle 23. *I. walkeri*
- 46b. Leaves ovate to ovate-lanceolate, base rounded to cuneate-attenuate, margin crenate or serrate except at base.
- 47a. Inflorescences papillate velutinous; leaves scaly hirsute especially on midrib and veins of abaxial surface 24. *I. yuennanensis*
- 47b. Inflorescences not papillate velutinous; leaves villous or hirtellous especially on midrib and veins of abaxial surface.
- 48a. Calyx densely villous 25. *I. hispidus*
- 48b. Calyx sparsely villous basally 26. *I. lophanthoides*
- 43b. Fruiting calyx with 5 long teeth more than 1/3 as long as fruiting calyx tube; corolla tube declinate.
- 49a. Calyx teeth extending to middle of calyx or more.
- 50a. Cymes in interrupted spikelike panicles 50. *I. interruptus*
- 50b. Cymes in \pm continuous narrow spikes.
- 51a. Calyx teeth apex filiform-acuminate 51. *I. barbeyanus*
- 51b. Calyx teeth apex never filiform-acuminate.
- 52a. Leaves subcircular to ovate-oblong, 1.2-1.8 \times 0.6-1.8 cm, strongly netted 52. *I. scoparius*
- 52b. Leaves larger, inconspicuously netted.
- 53a. Floral leaves bractlike; calyx teeth ovate-triangular 53. *I. muliensis*
- 53b. Floral leaves \pm similar to stem leaves; calyx teeth narrowly lanceolate to lanceolate-triangular.
- 54a. Panicles terminal, 1.5-13 cm, cymes 3-5(-11)-flowered, peduncle 2-5(-9) mm 54. *I. setschwanensis*
- 54b. Panicles terminal or axillary, to 20(-34) cm, cymes 3-15(-23)-flowered, peduncle 4-25(-48) mm 55. *I. angustifolius*
- 49b. Calyx with small teeth never extending to middle of calyx.
- 55a. Branchlets, leaves, and calyces sparsely hairy; leaves usually not corrugate.
- 56a. Stems ascending; branches and petioles densely pilose; stem leaves triangular-ovate, petiole 1.5-3 cm 43. *I. flexicaulis*
- 56b. Stems erect; branches and petioles sparsely pilose; stem leaves broadly ovate to oblong-lanceolate, petiole less than 1.5 cm.
- 57a. Stem leaves less than 2 cm.
- 58a. Stem leaves broadly truncate-ovate to subcircular, glandular puberulent 44. *I. glutinosus*
- 58b. Stem leaves mostly ovate, subrhombic-ovate, to oblong-lanceolate, sometimes broadly ovate, not glandular hairy.
- 59a. Corolla white, ca. 6 mm, tube included; calyx densely white pilose inside on teeth 45. *I. medilungensis*
- 59b. Corolla purplish, ca. 9 mm, tube exerted; calyx glabrous inside 46. *I. pharicus*
- 57b. Stem leaves more than 2 cm.
- 60a. Stems subcylindric, densely glandular pubescent; calyx teeth triangular, apex conspicuously mucronate 47. *I. mucronatus*
- 60b. Stems obtusely 4-angled, pubescent or glandular pubescent; calyx teeth ovate-triangular, apex acute, never mucronate.
- 61a. Branchlets and petioles densely gray pubescent, not glandular pubescent 48. *I. silvaticus*
- 61b. Branchlets and petioles densely glandular pubescent 49. *I. pleiophyllus*
- 55b. Branchlets, leaves, and calyces variously dense hairy; leaves mostly corrugate.
- 62a. Branchlets, leaves, and calyces densely stellate tomentose or stellate lanate.
- 63a. Calyx teeth ca. 1/3 as long as calyx tube.
- 64a. Leaves without a brown gland on lower surface of each tooth apex 29. *I. rugosus*
- 64b. Leaves with a brown gland on lower surface of each tooth apex.
- 65a. Panicles 8-20 cm 27. *I. leucophyllus*

- 65b. Panicles 3–5 cm 28. *I. adenolomus*
- 63b. Calyx teeth ca. as long as calyx tube.
- 66a. Leaves 3–8 cm 30. *I. grandifolius*
- 66b. Leaves less than 2.5 cm.
- 67a. Leaf blade base rounded to shallowly cordate 31. *I. oresbius*
- 67b. Leaf blade base cuneate to truncate-cuneate 32. *I. dawoensis*
- 62b. Branchlets, leaves, and calyces with different hairs than above.
- 68a. Leaves conspicuously discolored.
- 69a. Calyx teeth narrowly triangular or triangular-lanceolate.
- 70a. Leaves ovate, 1.5–3.5 × 1–2.8 cm, margin crenate, adaxially dusty pubescent; petiole 5–13 mm 33. *I. lihsienensis*
- 70b. Leaves lanceolate to oblanceolate, 0.8–1.5 × 0.5–0.7 cm, margin entire or obscurely few dentate above middle, adaxially densely tomentulose and papillate glandular; petiole 1–4 mm 34. *I. wikstroemioides*
- 69b. Calyx teeth triangular to ovate-triangular.
- 71a. Leaves 2.5–4.4 cm 35. *I. smithianus*
- 71b. Leaves less than 2 cm.
- 72a. Leaves oblong-ovate, ovate, to broadly ovate, adaxially glandular pubescent, margin coarsely crenate or entire, apex rounded; cymes widely spaced 36. *I. parvifolius*
- 72b. Leaves lanceolate to ovate-lanceolate, adaxially densely pilose, margin remotely crenulate-serrulate above middle to entire, apex acute; cymes compact, in terminal panicles 37. *I. tenuifolius*
- 68b. Leaves not discolored.
- 73a. Cymes sessile or very short pedunculate; branchlets, inflorescences, and calyces densely hirtellous 38. *I. hirtellus*
- 73b. Cymes conspicuously pedunculate; branchlets, inflorescences, and calyces not hirtellous.
- 74a. Leaves and branchlets densely tomentose when young, subglabrescent with age 39. *I. rubescens*
- 74b. Leaves and branchlets hairy.
- 75a. Leaves ovate-lanceolate, 3.5–6(–10) × 1.5–2.5(–4) cm 40. *I. loxothyrus*
- 75b. Leaves ovate-oblong, rhomboid, to ovate-triangular, less than 4 cm.
- 76a. Branchlets and petioles antrorsely dull yellow velutinous-pubescent; leaves ovate-oblong, 1–2.5 × 0.5–1.4 cm, base rounded 41. *I. xerophilus*
- 76b. Branchlets and petioles gray tomentulose; leaves rhombic to triangular-ovate, 1.5–4 × 1–2.5 cm, base broadly cuneate to truncate 42. *I. rugosiformis*

1. *Isodon ternifolius* (D. Don) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 140. 1929.

牛尾草 niu wei cao

Plectranthus ternifolius D. Don, Prodr. Fl. Nepal. 117. 1825.

Plants perennial, robust herbs or shrubs. Stems erect, 0.5–2(–7) m, densely tomentose-villous, much branched. Leaves opposite or in whorls of 3 or 4; petiole 2–3(–10) mm; leaf blade narrowly lanceolate to oblong, rarely ovate-oblong, 2–12 × 0.7–5 cm, papery to ± leathery, corrugate, adaxially pilose to villous, abaxially densely whitish or dull yellow tomentose, base broadly cuneate to cuneate, rarely rounded, apex acute to acuminate, rarely obtuse. Spikes terminal and axillary, compact, 9–35 × 6–10 cm; floral leaves similar to stem leaves, gradually reduced, bractlike apically. Calyx campanulate, ca. 2.3 × 2.5 mm, densely gray or dull yellow villous; teeth triangular, equal, ca. 0.5 mm; fruiting calyx dilated, tubular, ca. 4 mm, obscurely veined. Corolla white to purplish; upper lip purple spotted, 5–6 mm. Stamens and style usually included. Nutlets triquetrous, ovoid, ca. 1.8 × 1 mm, glabrous. Fl. Sep-Feb, fr. Dec-May.

Open hills, sparse forests; 100–2200 m. Guangdong, Guangxi, Guizhou, Yunnan [Bangladesh, India (Sikkim), Myanmar, Nepal, Vietnam].

Used medicinally.

2. *Isodon enanderianus* (Handel-Mazzetti) H. W. Li, J. Arnold Arbor. 69: 295. 1988.

紫毛香茶菜 zi mao xiang cha cai

Plectranthus enanderianus Handel-Mazzetti, Acta Horti Gothob. 9: 96. 1934.

Subshrubs 0.6–1.2(–2) m tall. Stems erect, densely spreading purplish or dull yellow villous-velutinous. Petiole 2–8 mm (excluding winged portion), densely puberulent; leaf blade ovate to triangular-ovate, 1.5–7 × 1–4 cm, ± membranous to papery, corrugate, base broadly cuneate, abruptly attenuate, margin serrate to subcrenate, apex acute to short acuminate, velvety, lateral veins ca. 4-paired. Thyrses 5–10 cm, lax, narrow; cymes pedunculate, 3–7-flowered, densely velvety; floral leaves ovate to subcircular. Calyx campanulate, 2.5–3 mm, pilose outside; teeth subequal, ovate-lanceolate to ovate-triangular, apex acute, ca. 1/2 as long as calyx; fruiting calyx tubular-campanulate, slightly dilated, to 4 mm, conspicuously veined. Corolla purple or whitish blue, 5–7 mm, sparsely puberulent outside, glandular. Stamens included. Style slightly exerted. Nutlets dark brown,

depressed subglobose, ca. 1 mm, glabrous. Fl. Aug-Sep, fr. Sep.

- Hills, forests, thickets; 700–2500 m. Sichuan, Yunnan.

3. *Isodon brevifolius* (Handel-Mazzetti) H. W. Li, J. Arnold Arbor. 69: 296. 1988.

短叶香茶菜 duan ye xiang cha cai

Plectranthus brevifolius Handel-Mazzetti, Acta Horti Gothob. 13: 368. 1939.

Shrubs. Stems erect, to 1 m tall, much branched, densely appressed, flaccid dull yellow velutinous at apex. Petioles of stem leaves 1.5–2.5 cm; leaf blade triangular-ovate, 1–2.5 × 1–2.5 cm, papery, strongly corrugate, minutely hispid, abaxially densely yellowish or white glandular, base cuneate, margin serrulate above base, apex acute to slightly obtuse, lateral veins ca. 3-paired. Panicles (2–)3–7 cm; cymes 3–5-flowered, pedunculate; floral leaves ovate, 0.7–1.5 × 0.7–1.5 mm. Calyx campanulate ca. 1.5 mm, densely villous; teeth 5, narrowly triangular, 1/2 as long as calyx, apex acute. Corolla white, to 7 mm, puberulent outside, tube ca. 3.5 mm. Nutlets unknown. Fl. Oct.

- Stony slopes; 2000 m. Yunnan.

4. *Isodon eriocalyx* (Dunn) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 137. 1929.

毛萼香茶菜 mao e xiang cha cai

Plectranthus eriocalyx Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 155. 1913; *Rabdosia eriocalyx* (Dunn) H. Hara var. *laxiflora* C. Y. Wu & H. W. Li.

Plants perennial, herbs or shrubs, 0.5–3 m tall. Stems reddish, densely appressed pubescent. Petiole 0.6–5 cm; leaf blade ovate-oblong to ovate-lanceolate, 2.5–18 × 0.8–6.5 cm, papery, sparsely pubescent on veins, base broadly cuneate to rounded, abruptly attenuate, margin crenate-serrate to crenate-dentate, sometimes entire, apex acuminate. Panicles spikelike, terminal and axillary, 2.5–35 cm × ca. 1 cm, densely whitish floccose-puberulent; cymes compact, many flowered. Calyx campanulate, 1.5–1.8 × 1.8–2 mm, gray lanate, glabrescent; teeth ovate, subequal, ca. 1/3 as long as calyx; fruiting calyx straight, dilated, ca. 4 mm. Corolla purplish or purple, 6–7 mm, pilose outside. Style included or sometimes exerted. Nutlets dull yellow, ovoid. Fl. Jul–Nov, fr. Nov–Dec.

- Sunny slopes, thickets; 700–2600 m. Guangxi, Guizhou, Sichuan, Yunnan.

5. *Isodon phyllostachys* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 121. 1929, excl. syn.

叶穗香茶菜 ye sui xiang cha cai

Plectranthus phyllostachys Diels, Notes Roy. Bot. Gard. Edinburgh 5: 230. 1912; *Rabdosia phyllostachys* (Diels) Kudô; *R. phyllostachys* var. *leptophylla* C. Y. Wu.

Shrubs or subshrubs 0.9–3 m. Branches erect, densely spreading pilose, glabrescent. Petiole 1–6 mm, pilose; leaf blade ovate, 1.5–5 × 0.8–4.5 cm, corrugate, adaxially puberulent or pilose, abaxially gray tomentose, base cordate, margin crenate, apex obtuse, sometimes acute. Panicles spikelike, 4–25 × 1–2 cm.; cymes 4–15-flowered, pedunculate; upper floral leaves bractlike. Calyx campanulate, ca. 2 × 2 mm, densely pilose outside; teeth ovate-triangular, ca. 1/2 as long

as calyx; fruiting calyx dilated, ovoid, teeth ca. 1/3 as long as calyx. Corolla yellowish or white with purple spots, ca. 6 mm, pilose outside, tube ca. 3 mm. Nutlets brown, ovoid. Fl. Aug–Oct, fr. Oct.

- Thickets, grassy hills; 1000–3000 m. Sichuan, Yunnan.

6. *Isodon pantadenius* (Handel-Mazzetti) H. W. Li, J. Arnold Arbor. 69: 298. 1988.

全腺香茶菜 quan xian xiang cha cai

Plectranthus pantadenius Handel-Mazzetti, Symb. Sin. 7: 944. 1936

Herbs perennial, with small reddish glands throughout. Stems 70–90 cm, pubescent, basally leafless, glabrescent. Leaves sessile, broadly ovate, 7–17 cm, ca. 1/2 as wide as long, adaxially densely strigose, sparsely glandular, abaxially densely glandular, strigose on veins, base cuneate-attenuate, margin crenate-dentate, apex caudate-acuminate, lateral veins 3–5-paired. Panicles ± terminal, spikelike, to 18 cm; cymes 7–9-flowered; floral leaves ovate, shorter than cymes. Calyx campanulate, 1–2 mm, pubescent outside; teeth 5, subequal, broadly ovate, shorter than calyx tube. Corolla 4–5 mm; tube straight, 2.5–3.5 mm; limb much shorter than tube, densely pilose outside, glandular. Stamens and style much exerted. Nutlets unknown. Fl. Sep.

- Grassy areas with *Pteridium*; 2800 m. Yunnan.

7. *Isodon nervosus* (Hemsley) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 123. 1929.

显脉香茶菜 xian mai xiang cha cai

Plectranthus nervosus Hemsley, J. Linn. Soc., Bot. 26: 272. 1890.

Herbs perennial, to 1 m tall. Stems erect, unbranched or few branched, pubescent, glabrescent. Petiole 2–10 mm, obsolete in basal leaves, pubescent; leaf blade lanceolate, 3.5–13.5 × 1–2 cm, papery, adaxially pubescent along veins, abaxially glabrescent, base cuneate, margin coarsely crenate, apex acuminate; lateral veins 4- or 5-paired, elevated. Panicles terminal, loose; cymes pedunculate, (3–)5–9(–15)-flowered; bracts narrowly lanceolate, 1–1.5 cm, densely pubescent; bracteoles linear, 1–2 mm. Calyx purplish, campanulate, ca. 1.5 mm, densely pubescent outside; teeth 5, lanceolate, subequal, apex acute, ca. 0.8 mm; fruiting calyx broadly campanulate, ca. 2.5 × to 3 mm; teeth triangular-lanceolate, erect, ca. 1.3 mm. Corolla blue or purple, 6–8 mm, sparsely pilose outside; tube 3–4 mm. Stamens exerted. Style exerted. Nutlets ovoid, 1–1.5 mm, apex pubescent. Fl. Jul–Oct, fr. Aug–Nov.

- Grassy banks, forest margins, shady areas in forests, among bushes; 100–1700 m. Anhui, Guangdong, Guangxi, Guizhou, Henan, Hubei, Jiangsu, Jiangxi, Shaanxi, Sichuan, Zhejiang.

Used medicinally.

8. *Isodon amethystoides* (Benth) H. Hara, J. Jap. Bot. 60: 233. 1985.

香茶菜 xiang cha cai

Plectranthus amethystoides Benth, Labiat. Gen. Spec. 45. 1832; *P. daitonensis* Hayata.

Herbs erect, perennial. Stems 30–150 cm tall, densely appressed incurved-pilose or puberulent, axillary branchlets

sterile. Petiole 0.2–2.5 cm; leaf blade ovate-orbicular to lanceolate, 0.8–11 × 0.7–3.5 cm, thin papery, adaxially olive green, ± densely hispidulous, sometimes subglabrous, abaxially greenish, pilose or tomentulose, sometimes subglabrous, base abruptly attenuate or broadly cuneate-attenuate, margin crenate except for entire base, apex acuminate to obtuse. Panicles terminal; cymes loose, many flowered, 2–9 × 1.5–8 cm, with divaricate elongated branchlets; floral leaves ovate, similar to stem leaves, smaller. Calyx campanulate, ca. 2.5 × 2.5 mm, sparsely hirtellous or subglabrous outside, with scattered white or yellow glands; teeth 5, subequal, triangular, ca. 1/3 as long as calyx; fruiting calyx erect, broadly campanulate, 4–5 × ca. 5 mm. Corolla white bluish, white, or purplish, purple bluish on upper lip, ca. 7 mm, sparsely puberulent outside. Stamens included. Style included. Nutlets ovoid, ca. 2 mm, brown to yellow or white glandular. Fl. Jun-Oct, fr. Sep-Nov.

• Forests, wet grassy areas; 200–900 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Jiangxi, Taiwan, Zhejiang.

Used medicinally.

9. *Isodon websteri* (Hemsley) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 130. 1929.

辽宁香茶菜 *liao ning xiang cha cai*

Plectranthus websteri Hemsley, J. Linn. Soc., Bot. 26: 275. 1890.

Herbs perennial. Stems erect, sparsely retrorse white pilose along angles, glabrescent at apex, unbranched or branched. Petiole 0.5–3 cm, sparsely white pilose; leaf blade broadly ovate, 3–6 × 1.5–3.5 cm, adaxially sparsely pilose along veins, otherwise subglabrous, abaxially pilose along midvein otherwise glabrous, sparsely yellowish glandular, base broadly cuneate, margin crenate-serrate, apex acute to subacuminate, lateral veins 4–9-paired. Panicles terminal, few flowered, ca. 2 cm; cymes 3-flowered; floral leaves ovate-lanceolate, shorter than cymes, except lowermost 1 or 2; bracts and bracteoles minute, linear, 1–1.5 mm. Calyx campanulate, ca. 1.5 mm, pubescent outside; teeth triangular, apex acute, ca. 0.5 mm; fruiting calyx dilated, to 5.5 mm, glabrescent, rigid, bluish. Corolla blue, 4–6 mm, pilose outside. Stamens exerted. Style exerted. Nutlets brown, oblate, glabrous. Fl. Sep, fr. Oct.

• Valleys at low elevation. Liaoning.

10. *Isodon inflexus* (Thunberg) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 127. 1929.

内折香茶菜 *nei zhe xiang cha cai*

Ocimum inflexum Thunberg, Syst. Veg., ed. 14, 546. 1784; *Plectranthus inflexus* (Thunberg) Vahl ex Bentham var. *canescens* Nakai; *P. inflexus* var. *macrophyllus* Maximowicz.

Herbs perennial. Stems flexuous, erect, 40–100(–150) cm tall, much branched basally, densely retrorse white pilose along angles. Petiole 0.5–3.5 cm, densely white pilose; leaf blade broadly triangular-ovate to ovate, 3–5.5 × 2.5–5 cm, papery, adaxially olive green, sparsely puberulent, abaxially greenish, whitish pilose along veins, base broadly cuneate, abruptly attenuate-decurrent, margin coarsely crenate-serrate above base, apex acute to obtuse; lateral veins ca. 4-paired, slightly impressed adaxially, elevated abaxially. Panicles

narrow, 6–10 cm; cymes 3–5-flowered, pedunculate, terminal and axillary; floral leaves sessile, ovate, margin remotely serrate or subentire. Calyx campanulate, ca. 2 mm, pubescent outside, glabrescent; fruiting calyx slightly dilated, to 5 mm, conspicuously veined. Corolla reddish to purplish, ca. 8 mm, puberulent outside, sparsely glandular; tube ca. 3.5 mm. Stamens included. Style included. Nutlets brownish, broadly ovoid, ca. 1.5 mm, glabrous. Fl. Aug-Oct, fr. Oct.

Sparse valley forests, streamsides, hills, sunny areas; 200–1400 m. Hebei, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shandong, Zhejiang [Japan, Korea].

11. *Isodon serra* (Maximowicz) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 125. 1929.

溪黄草 *xi huang cao*

Plectranthus serra Maximowicz, Mélanges Biol. Bull. Phys.-Math. Acad. Imp. Sci. Saint Pétersbourg 9: 428. 1875.

Herbs perennial. Stems erect, to 1.5(–2) m tall, ± glabrescent basally, densely retrorse pubescent, much branched at apex. Petiole 0.5–3.5 cm, broadly winged at apex, densely pubescent; leaf blade ovate to ovate-lanceolate, 3.5–10 × 1.5–4.5 cm, thin papery, adaxially dark green, abaxially greenish, ± glabrescent, sparsely yellowish glandular, base cuneate, margin coarsely incurved serrate, apex ± acuminate; lateral veins 4- or 5-paired, elevated. Panicles loose, 10–20 cm, terminal; cymes 5- to many flowered, pedunculate; floral leaves short petiolate, lanceolate to linear-lanceolate; bracteoles 1–3 mm, pubescent. Calyx campanulate, ca. 1.5 mm, densely whitish pubescent outside, glandular; teeth erect, narrowly triangular, subequal, ca. 0.8 mm; fruiting calyx dilated, broadly campanulate, base ± urceolate, ca. 3 mm, conspicuously veined. Corolla purple, to 6 mm, puberulent outside; tube ca. 3 mm. Stamens included. Style included. Nutlets broadly ovoid, ca. 1.5 mm, apex whitish barbate. Fl. Aug-Oct, fr. Sep-Oct.

Hills, riverbanks, streamsides, thickets, forests, sandy areas; 100–1200 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Heilongjiang, Henan, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Shaanxi, Shanxi, Sichuan, Taiwan, Zhejiang [Korea, Russia].

12. *Isodon japonicus* (N. Burman) H. Hara, Enun. Spermat. Japon. 1: 206. 1948.

毛叶香茶菜 *mao ye xiang cha cai*

Herbs perennial. Stems erect, 40–150 cm tall, base woody, subglabrous, apex pubescent, glandular, much branched. Petioles 1–3.5 cm, pubescent; leaf blades ovate to broadly ovate, (4–)6.5–13 × (2.5–)3–7 cm, papery, pubescent or puberulent, glandular, adaxially dark green, abaxially greenish, base broadly cuneate, abruptly attenuate, margin crenate-serrate, apex acuminate, apical tooth ovate to lanceolate; lateral veins 5-paired, elevated. Panicles loose, patent, terminal; cymes (3–)5–7-flowered, pedunculate, pubescent, glandular; floral leaves ovate, much shorter than cymes, except basal 1 or 2; bracteoles linear, ca. 1 mm. Calyx campanulate, 1.5–2 mm, bluish or densely appressed whitish pubescent outside; teeth triangular, 0.5–0.7 mm, apex acute, lower 2 slightly longer and wider; fruiting calyx tubular-campanulate, to 4 mm, conspicuously veined, slightly curved. Corolla purplish to blue, with dark spots on upper lip, ca. 5 mm. Stamens exerted. Style exerted. Nutlets brownish, triquetrous, ovoid, ca. 1.5 mm, glabrous except apex verruculose. Fl. Jul-Aug, fr. Sep-Oct.

Hills, thickets, valleys, forests, forest margins, grasslands; 0–2100 m. Gansu, Hebei, Heilongjiang, Henan, Jiangsu, Jilin, Liaoning, Shaanxi, Shandong, Shanxi, Sichuan [Japan, Korea, Russia].

- 1a. Leaves pubescent, glandular, serrate to crenate-serrate; calyx densely appressed whitish pubescent 12a. var. *japonicus*
1b. Leaves sparsely puberulent, glandular, obtusely serrate; calyx bluish, densely appressed pubescent 12b. var. *glaucocalyx*

12a. *Isodon japonicus* var. *japonicus*

毛叶香茶菜 *mao ye xiang cha cai*

Scutellaria japonica N. Burman, Fl. Indica 130. 1768; *Amethystanthus japonicus* (N. Burman) Nakai; *Isodon glaucocalyx* (Maximowicz) Kudô var. *japonicus* (N. Burman) Kudô; *Plectranthus glaucocalyx* Maximowicz var. *japonicus* (N. Burman) Maximowicz; *P. japonicus* (N. Burman) Koidzumi.

Leaves pubescent, glandular, margin serrate to crenate-serrate. Calyx densely appressed whitish pubescent.

Hills, thickets, valleys; 0–2100 m. Gansu, Henan, Jiangsu, Shaanxi, Sichuan [Japan, Korea].

Used medicinally for stomach cancer.

12b. *Isodon japonicus* var. *glaucocalyx* (Maximowicz) H. W. Li, J. Arnold Arbor. 69: 307. 1988.

蓝萼变种 *lan e bian zhong*

Plectranthus glaucocalyx Maximowicz, Prim. Fl. Amur. 212. 1859; *Amethystanthus galucocalyx* (Maximowicz) Nemoto; *Isodon glaucocalyx* (Maximowicz) Kudô; *P. japonicus* (N. Burman) Koidzumi var. *glaucocalyx* (Maximowicz) Koidzumi; *Rabdosia japonica* (N. Burman) H. Hara var. *glaucocalyx* (Maximowicz) H. Hara.

Leaves sparsely puberulent, glandular, margin obtusely serrate. Calyx bluish, densely appressed pubescent outside.

Hilly forest margins, grasslands, forests; 0–1800 m. Hebei, Heilongjiang, Jilin, Liaoning, Shandong, Shanxi [Japan, Korea, Russia].

13. *Isodon longitubus* (Miquel) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 139. 1929.

长管香茶菜 *chang guan xiang cha cai*

Plectranthus longitubus Miquel, Ann. Mus. Bot. Lugduno-Batavum 2: 102. 1865; *Amethystanthus longitubus* (Miquel) Nakai; *Rabdosia longitubus* (Miquel) H. Hara.

Herbs perennial, to 1 m tall. Stems ascending, purplish, densely retrorse pubescent, branched basally. Petiole (0.2–)0.5–2 cm, densely pubescent; leaf blade lanceolate-ovate to ovate, 3.5–12 × 2–4 cm, papery, adaxially olive green, pubescent along veins, otherwise minutely strigose, abaxially green-purple, densely pubescent on veins, sparsely golden glandular, base cuneate to cuneate-decurrent, margin serrate except for entire base, apex short acuminate; lateral veins 3- or 4-paired, elevated. Panicles 10–20 cm, terminal and axillary; cymes 1–3(–5)-flowered, pedunculate, finely pubescent; upper floral leaves subsessile, bractlike, margin entire; bracteoles linear, finely pubescent. Calyx campanulate, to 4–6 mm, purplish, finely pubescent along veins outside and margin, otherwise glandular, 2-lipped to middle; upper lip

reflexed, with 3, triangular, ± acute short teeth; lower lip with 2, ovate-triangular, ± acute teeth; fruiting calyx to 6 mm, conspicuously veined. Corolla purple-blue, to 2 cm, puberulent outside; tube ca. 3/4 as long as limb. Stamens included. Style included. Nutlets dark brown, depressed globose, ca. 1.5 mm wide, verruculose. Fl. Jun-Oct, fr. Oct.

Streamsides in forests; 500–1100 m. Anhui, Zhejiang [Japan].

14. *Isodon gesneroides* (J. Sinclair) H. Hara, J. Jap. Bot. 60: 234. 1985.

荳苳香茶菜 *ju tai xiang cha cai*

Plectranthus gesneroides J. Sinclair, Notes Roy. Bot. Gard. Edinburgh 20: 124. 1948; *Rabdosia gesneroides* (J. Sinclair) H. Hara.

Herbs perennial, less than 30 cm tall. Stems ascending, repent, producing fibrous rootlets basally, densely glandular pubescent, few leaved. Petiole 0.8–1.5 cm, densely glandular pubescent; leaf blade of lower stem leaves ovate to orbicular-ovate, 3–5.5 × 2–3 cm; blade of upper leaves larger, rhombic-ovate, papery, adaxially sparsely strigose-hirtellous, yellowish glandular, abaxially subglabrous, base broadly cuneate-attenuate, margin remotely coarse crenate-serrate, apex obtuse to acute; lateral veins 3- or 4-paired, slightly elevated adaxially. Panicles terminal, to 15 cm, few flowered; cymes 1–3-flowered, pedunculate, densely glandular pubescent; floral leaves sessile, broadly ovate to ovate-lanceolate, apex acuminate; bracteoles linear, ca. 1 mm. Calyx broadly campanulate, ca. 3 mm, puberulent and glandular outside; teeth subequal, triangular-ovate, ca. 1.5 mm. Corolla purple, ca. 1.3 cm, pilose outside, glandular, tube ca. 8 mm. Stamens included. Style included. Nutlets unknown. Fl. Aug.

• Limestone cliffs in woods; 3000 m. Sichuan.

15. *Isodon forrestii* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 130. 1929.

紫萼香茶菜 *zi e xiang cha cai*

Plectranthus forrestii Diels, Notes Roy. Bot. Gard. Edinburgh 5: 229. 1912; *Rabdosia forrestii* (Diels) H. Hara; *R. forrestii* var. *intermedia* C. Y. Wu & H. W. Li.

Herbs perennial. Stems numerous, 60–100(–180) cm tall, robust, pilose. Petiole ca. 5 mm, densely pilose; leaf blade ovate to rhombic-ovate, 5–10 × 4–7 cm, papery, densely pilose, sparsely yellowish glandular, adaxially olive green, abaxially greenish, base broadly cuneate-decurrent, margin crenate-dentate except for entire base, apex obtuse to acute; lateral veins 4-paired, conspicuously elevated. Panicles patent, to 30 × 8–9 cm; cymes 7–11-flowered, pedunculate, densely glandular pubescent; floral leaves bractlike, ovate, 5–7 mm; bracteoles spatulate, 2–3 mm, ciliate. Pedicel 2–7 mm. Calyx dark purple-red, broadly campanulate, 4–5 mm, pubescent on veins outside otherwise yellowish glandular, slightly 2-lipped; teeth ovate-lanceolate, apex acuminate; fruiting calyx dilated, 7–8 mm, conspicuously veined. Corolla dark blue, bluish, or reddish, to 1.6 cm, pilose outside especially basally; tube ca. 1 cm. Stamens included. Style included. Nutlets yellow-brown, ovoid, ca. 1.8 × 1.5 mm. Fl. Jul-Aug, fr. Aug-Sep.

• Stony grasslands, forest margins, grassy openings in pine forests; 2600–3500 m. Sichuan, Yunnan.

16. *Isodon irroratus* (Forrest ex Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 121. 1929.

露珠香茶菜 lu zhu xiang cha cai

Plectranthus irroratus Forrest ex Diels, Notes Roy. Bot. Gard. Edinburgh 5: 228. 1912; *Rabdosia irrorata* (Forrest ex Diels) H. Hara; *R. irrorata* var. *crenata* C. Y. Wu; *R. irrorata* var. *longipes* C. Y. Wu & H. W. Li; *R. irrorata* var. *rungshiaensis* C. Y. Wu & H. W. Li.

Shrubs erect, 30–100 cm tall. Stems erect or ascending, brown-gray, much branched at apex; puberulent. Petiole 1–2 mm; leaf blade ovate to broadly ovate, 1.5–3 × 1.3–2.5 cm, papery, abaxially sparsely hirtellous along veins, sparsely yellowish glandular, base broadly cuneate, margin crenate except for entire base, apex obtuse; lateral veins 3- or 4-paired, elevated. Panicles slightly patent, (6–)10–15(–20) cm, glandular pubescent; floral leaves similar to stem leaves, smaller; bracteoles linear, 1–2 mm. Pedicel 1–3 mm. Calyx purplish, 4–5 mm, slightly declinate, broadly campanulate, hirtellous on veins outside, sparsely yellowish glandular, ± 2-lipped; teeth lanceolate-ovate, 1–1.5 mm, lower 2 slightly wider; fruiting calyx dilated, 6–7 mm, conspicuously 10-veined. Corolla blue or purple, sparsely pubescent outside, tube to 1 cm, limb ca. 5 mm. Stamens included. Style included. Nutlets dark brown, ovoid, ca. 1.5 mm wide, glabrous. Fl. Jul–Aug, fr. Aug–Oct.

• Dry shady areas among shrub layer in pine, bamboo, and fir forests; 2700–3500 m. Xizang, Yunnan.

17. *Isodon wardii* (Marquand & Airy Shaw) H. Hara, J. Jap. Bot. 60: 237. 1985.

西藏香茶菜 xi zang xiang cha cai

Plectranthus wardii Marquand & Airy Shaw, J. Linn. Soc., Bot. 48: 216. 1929; *Rabdosia wardii* (Marquand & Airy Shaw) H. Hara.

Shrubs patent, to 2 m tall. Branches densely pubescent. Stem leaves opposite; petiole slender, (1–)1.5–3.5 cm, pubescent; leaf blade rhombic, (2–)3–6 × (1.5–)2.5–4 cm, subglabrous or sparsely pubescent on veins, base broadly cuneate, margin coarsely crenate-serrate above middle, apical tooth acuminate or ± obtuse. Panicles terminal, 15–20 cm; cymes 3–7-flowered, pedunculate, pubescent; floral leaves similar to stem leaves, smaller, margin entire; bracteoles linear, to 1.5 mm. Pedicel to 3 mm. Calyx campanulate, ca. 3.5 mm, pubescent outside, 2-lipped nearly to middle; teeth triangular-lanceolate, lower 2 slightly longer, apex acuminate. Corolla pale violet, to 1.2 cm, puberulent outside. Stamens included. Style included. Nutlets unknown. Fl. Jul.

• Xizang.

18. *Isodon bulleyanus* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 124. 1929.

苍山香茶菜 cang shan xiang cha cai

Plectranthus bulleyanus Diels, Notes Roy. Bot. Gard. Edinburgh 5: 229. 1912; *P. provicarii* H. Léveillé; *Rabdosia bulleyana* (Diels) H. Hara; *R. bulleyana* var. *foliosa* C. Y. Wu; *R. provicarii* (H. Léveillé) H. Hara.

Shrubs 60–90 cm tall, much branched near base. Branches slender, purple, densely whitish hispidulous. Leaves opposite; petiole 1–3 mm, hispidulous; leaf blade narrowly ovate, (1.5–)4–6 × (1–)2–2.5 cm, thin papery, adaxially

sparsely whitish hirtellous, abaxially glandular, whitish hispidulous on veins, base cuneate, margin crenate-dentate above basal 1/3 or coarsely serrate above base, apex acute. Panicles terminal, 6–10 cm; cymes (1–)3–5-flowered, pedunculate, white pilose; bracts ovate, 5–13 × 3–7 mm, margin entire; bracteoles linear, to 1 mm. Pedicel 1.5–3 mm. Calyx campanulate, ca. 2.5 mm, whitish pilose or pubescent outside, glandular, 2-lipped to middle; teeth subequal, ovate-triangular, apex acute. Corolla dark blue except pinkish at base, to 1.4 cm, basally pilose outside. Stamens included. Style included. Nutlets brown, triquetrous, ovoid, glabrous. Fl. Jun–Sep, fr. Sep.

• Dry areas among scrub or in sparse mixed forests; 2400–3200 m. Yunnan.

19. *Isodon macrophyllus* (Migo) H. Hara, J. Jap. Bot. 60: 235. 1985.

岐伞香茶菜 qi san xiang cha cai

Amethystanthus macrophyllus Migo, J. Shanghai Sci. Inst. 3: 230. 1937.

Herbs or subshrubs, perennial. Stems numerous, 1–1.5 m tall, woody at base, densely floccose-puberulent. Petiole (1–)3–5 cm, densely puberulent; blade of stem leaves subcircular to orbicular-ovate, occasionally broadly lanceolate, (5.5–)10–15 × (4.7–)5–10 cm, papery, adaxially puberulent, glabrescent, densely puberulent along veins, abaxially densely tomentulose, base cuneate to rounded, abruptly attenuate, margin coarsely crenate-serrate, apex excised, apical tooth narrowly lanceolate 2–2.5 cm; lateral veins ca. 4-paired, elevated abaxially. Panicles terminal or axillary, to 15 cm; cymes 10–15-flowered, pedunculate, densely pubescent; floral leaves bractlike, spatulate; bracteoles minute, linear, ca. 1 mm, densely pubescent. Calyx campanulate, 2.2–2.4 mm, densely pubescent outside, slightly 2-lipped; lower 2 teeth ovate-triangular, 1–1.5 mm, apiculate; upper 3 teeth smaller; fruiting calyx dilated, obviously veined, 2-lipped to 1/3 its length. Corolla bluish or purplish, 5–6 mm, tube ca. 2.5 mm. Stamens exerted. Style exerted. Nutlets obovoid, ca. 2.5 mm, hairy, glandular. Fl. and fr. Sep–Oct.

• Anhui, Jiangsu.

20. *Isodon excisus* (Maximowicz) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 133. 1929.

尾叶香茶菜 wei ye xiang cha cai

Plectranthus excisus Maximowicz, Prim. Fl. Amur. 213. 1859; *Amethystanthus excisus* (Maximowicz) Nakai; *Rabdosia excisa* (Maximowicz) H. Hara.

Herbs perennial. Stems numerous, erect, 60–100 cm tall, semiwoody basally, sparsely pubescent. Petiole 0.6–6 cm, sparsely pubescent; blade of lower leaves broadly cuneate to ± truncate and abruptly attenuate-decurrent, margin coarsely dentate-serrate, adaxially strigose-hispidulous, densely pubescent on veins, abaxially glabrous, yellow glandular, sparsely pubescent on veins; stem leaves opposite, orbicular or orbicular-ovate, (4–)6–13 × (3–)4–10 cm, base cuneate, margin entire or 1- to few serrate, apex excised, apical tooth 4–6 cm; lateral veins 3- or 4-paired, elevated. Panicles terminal or axillary, 6–15 cm; cymes (1–)3–5-flowered, pedunculate, densely pubescent; floral leaves bractlike, ovate, to 5 mm; bracteoles linear, ca. 1 mm. Pedicel 1–2 mm. Calyx campanulate, ca. 3 mm, pubescent outside, glandular, 2-

lipped to 2/3 its length; lower lip slightly longer than upper lip, to 1.8 mm; teeth narrowly triangular, acute; fruiting calyx slightly dilated, ca. 4 mm, obscurely 2-lipped, teeth subequal. Corolla purplish, purple, or blue, to 9 mm, puberulent outside, glandular, tube ca. 4 mm. Stamens and style included or slightly exerted. Nutlets brown, obovoid, ca. 1.5 mm, hairy, glandular. Fl. Jul-Aug, fr. Aug-Sep.

Grasslands, forest margins, forests; 500–1100 m. Hebei, Heilongjiang, Jilin, Liaoning, Shanxi [Japan, Korea, Russia].

21. *Isodon flavidus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 234. 1985.

淡黄香茶菜 dan huang xiang cha cai

Plectranthus flavidus Handel-Mazzetti, Symb. Sin. 7: 942. 1936.

Herbs perennial. Stems 40–90 cm tall, glabrous, narrowly winged on angles. Stem leaves opposite; petiole less than 1 cm; leaf blade ovate, rhombic to ovate-oblong, 3.5–15 × 1.2–6.7 cm, membranous or papery, adaxially olive green, scurfy-strigillose, glabrescent, abaxially greenish, glabrous, with scattered brown or dark glands, base broadly cuneate to ± truncate-attenuate, margin crenate, apex acute. Panicles terminal, 4.5–35 × 3.2–7(–10) cm; cymes 3–15-flowered, pedunculate, short papillose velutinous; floral leaves subsessile or sessile, lanceolate, ca. 5 mm, upper floral leaves bractlike; bracteoles linear, 1–2 mm. Pedicel 4–10 mm. Calyx campanulate, ca. 2.5 × 3 mm, reddish brown glandular, short papillose velutinous, slightly 2-lipped; teeth almost 1/2 as long as calyx, broadly ovate-triangular, apex acute, lower 2 teeth slightly longer; fruiting calyx 4–4.5 mm, obliquely tubular-campanulate, teeth much shorter than calyx tube. Corolla mostly yellow or yellowish, rarely rose, ca. 7 mm, limb with scattered red glands. Stamens exerted. Style exerted. Nutlets greenish, ovoid, ca. 1 mm, glabrous. Fl. and fr. Sep–Nov.

• Mixed forests, wet forest margins; 1500–2600 m. Guizhou, Yunnan.

22. *Isodon calcicolus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 233. 1985.

灰岩香茶菜 hui yan xiang cha cai

Herbs perennial. Stems erect, numerous, 40–60 cm tall, branched at apex, densely retrorse gray tomentose. Stem leaves opposite; petiole 1–2 mm; leaf blade narrowly lanceolate to obovate-lanceolate, 3–9 × 0.5–1.5(–2.5) cm, papery, adaxially green, densely pilose or papillose glandular hairy, abaxially rusty, gray, or white tomentulose or densely papillose hairy or glandular, base narrowly attenuate, margin crenulate-serrulate except base, apex acute; lateral veins ca. 4-paired, immersed adaxially, elevated abaxially. Panicles terminal, loose, 10–30 cm; cymes 3–7-flowered, pedunculate, densely gray tomentose; floral leaves subsessile, lanceolate, less than 1 cm; bracteoles minute, linear, less than 1 mm. Pedicel 1–4 mm. Calyx campanulate, ca. 2 mm, densely gray tomentose outside, obscurely 2-lipped, teeth ovate-triangular, subequal, shorter than calyx tube; fruiting calyx tubular-campanulate, to 4 mm, curved, 10-veined, lower 2 teeth longer. Corolla white, purplish, or rose, 6–7 mm, white pilose outside, glandular, tube slightly exerted. Stamens exerted. Style exerted. Nutlets brownish yellow, triquetrous, ovoid, ca. 1 mm, glabrous. Fl. Sep–Oct, fr. Oct–Nov.

• Hills, slopes, grasslands; 1600–3000 m. Yunnan.

- 1a. Adaxial leaf surface densely pilose, abaxial surface rust colored tomentulose on elevated veins, otherwise gray tomentulose and glandular; corolla white or purplish 22a. var. *calcicolus*
- 1b. Leaves white tomentulose on elevated vein meshes of lower surface otherwise densely papillose glandular hairy; corolla white or rose 22b. var. *subcalvus*

22a. *Isodon calcicolus* var. *calcicolus*

灰岩香茶菜 hui yan xiang cha cai

Plectranthus calcicolus Handel-Mazzetti, Symb. Sin. 7: 944. 1936.

Leaf blade densely pilose adaxially, abaxially rust colored tomentulose on elevated midvein and veins, otherwise gray tomentulose and glandular. Corolla white or purplish.

• Grassy slopes, grasslands near forest margins in limestone regions; 1600–2600 m. Yunnan.

22b. *Isodon calcicolus* var. *subcalvus* (Handel-Mazzetti) H. W. Li, J. Arnold Arbor. 69: 323. 1988.

近无毛变种 jin wu mao bian zhong

Plectranthus calcicolus Handel-Mazzetti var. *subcalvus* Handel-Mazzetti, Acta Horti Gothob. 13: 378. 1939.

Leaf blade white tomentulose on elevated vein meshes abaxially otherwise densely papillose glandular hairy. Corolla white or rose.

• Grassy hills; 2600–3000 m. Yunnan.

23. *Isodon walkeri* (Arnott) H. Hara, J. Jap. Bot. 26: 237. 1985.

长叶香茶菜 chang ye xiang cha cai

Plectranthus walkeri Arnott, Pug. Pl. Ind. Or. 36. 1836; *Isodon stracheyi* (Benth. ex J. D. Hooker) Kudô; *P. brandisii* Prain; *P. stracheyi* Benth. ex J. D. Hooker; *P. veronicifolius* Hance; *Rabdosia stracheyi* (Benth. ex J. D. Hooker) H. Hara.

Herbs perennial. Stems 40–60 cm tall, repent at base, ascending, unbranched or branched, puberulent or scaly pilose. Stem leaves opposite; petiole 2–12 mm; leaf blade narrowly lanceolate or lanceolate to elliptic-lanceolate, 2.4–7.5 × 0.6–2.1 cm, papery, adaxially olive green, glabrous, scaly hispidulous on veins, abaxially greenish, subglabrous, sparsely brown glandular, base narrowly cuneate, margin ± remotely serrate above middle, apex acuminate. Panicles terminal, 4–30 × 2.5–6 cm; cymes 3–15-flowered, pedunculate, scaly pilose; floral leaves bractlike, ovate to lanceolate; bracteoles minute, linear, ca. 1 mm. Calyx campanulate, ca. 2 × 1.6 mm, conspicuously 10-veined, brown glandular, subglabrous or scaly pilose on veins, slightly 2-lipped; teeth ovate, lower 2 a little longer; fruiting calyx ca. 3 × 1.1 mm, lower lip much longer than upper. Corolla rose or white, 6–7 mm, tube 3–3.5 mm. Stamens and style much exerted. Nutlets ovoid, slightly compressed. Fl. Nov–Jan, fr. Dec–Jan.

Streambanks, wet areas in forests; 300–1300 m. Guangdong, Guangxi, Yunnan [India, Laos, Myanmar, Sri Lanka].

24. *Isodon yuennanensis* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 237. 1985.

不育红 bu yu hong

Plectranthus yuennanensis Handel-Mazzetti, Symb. Sin. 7: 943. 1936.

Herbs perennial. Rhizomes tuberous, with red buds. Stems 30–70 cm tall, mostly unbranched, whitish puberulent, villous. Stem leaves opposite, sessile; leaf blade narrowly to broadly ovate, 2.5–6 × 1.4–3.8 cm, adaxially olive green, strigose, abaxially greenish, densely purplish glandular, scaly hirsute especially on veins, base cuneate to attenuate, margin crenate, apex acute, occasionally obtuse. Panicles terminal or axillary, 7–34 cm; cymes 5–15-flowered, divaricate, pedunculate, papillose velutinous; floral leaves bractlike except basal leaves, triangular to lanceolate, 2–3 mm, entire; bracteoles minute, narrowly lanceolate to linear, 1–2 mm. Calyx campanulate, ca. 2.8 mm, ca. 2.8 mm in diam. at mouth, puberulent outside, red glandular; teeth slightly shorter than calyx tube, broadly ovate, lower 2 larger; fruiting calyx to 5 mm, nodding, recurved at throat, teeth much shorter than calyx tube. Corolla yellowish or whitish, dark or red-purple on upper lip, with purple spots on lower lip, 4–5 mm, tube a slightly longer than calyx. Stamens exerted. Style exerted. Nutlets dark brown, compressed ovoid, ca. 1.2 × 0.8 mm, glabrous. Fl. and fr. Aug–Oct.

• Grasslands, pine forests; 1800–3000 m. Sichuan, Yunnan.

Used medicinally.

25. *Isodon hispidus* (Benth) Murata, Acta Phytotax. Geobot. 24: 82. 1969.

刚毛香茶菜 gang mao xiang cha cai

Plectranthus hispidus Benth, Pl. Asiat. Rar. 2: 17. 1831; *Isodon nigropunctata* Murata; *P. chienii* Sun ex C. H. Hu; *Rabdosia hispida* (Benth) H. Hara; *R. shimizuana* Murata.

Herbs perennial. Stems repent-ascending, 33–100 cm tall, densely brownish villous. Stem leaves opposite, sessile or subsessile; leaf blade ovate to elliptic, 3–11.5 × 1.5–5.5 cm, papery, adaxially olive green, hispidous, abaxially greenish, sparsely dark brown glandular, densely patent villous on veins, base cuneate or rounded, decurrent-attenuate, margin serrate, apex acute to acuminate. Panicles terminal and axillary, 4.5–11 × 2.5–4 cm; cymes densely brownish villous; floral leaves and bracts ovate, 7–14 mm; bracteoles ovate, much shorter than pedicels. Pedicel 3–6 mm. Calyx campanulate, ca. 2 mm, ca. 2 mm wide at mouth, densely villous outside, with reddish brown glands, 2-lipped; teeth broadly triangular, ca. 1/2 as long as calyx, lower 2 slightly larger; fruiting calyx dilated, ca. 3 × 1.5–1.8 mm. Corolla white or pink-lavender, sometimes with purple spots on upper lip, 5.5–6 mm, sparsely pubescent outside; tube 3.2 mm, straight; upper lip ca. 1.5 mm, lower lip ca. 3.2 mm. Stamens and style much exerted. Nutlets compressed ovoid, minutely punctate. Fl. and fr. Oct–Nov.

Open areas, woods; 1300–2000 m. Yunnan [India, Laos, Myanmar, Thailand].

26. *Isodon lophanthoides* (Buchanan-Hamilton ex D. Don) H. Hara, J. Jap. Bot. 60: 235. 1985.

线纹香茶菜 xian wen xiang cha cai

Herbs perennial, repent at base, with underground globose root tubers. Stems 0.5–1.5 m tall, erect to ascending, puberulent or pilose, many leafed at base. Stem leaves opposite; petiole equal to or longer than blade; leaf blade broadly lanceolate to ovate, 1.5–20 × 0.5–8.5 cm, papery,

minutely hirsute, adaxially olive green, abaxially greenish, sparsely brown glandular, base cuneate to rounded, rarely shallow cordate, margin crenate, apex obtuse to acuminate. Panicles terminal and axillary, 7–20 × 3–6 cm; cymes helicoid, 11–13-flowered, pedunculate; floral leaves bractlike, ovate; bracteoles linear, 3–5 mm, slightly longer than pedicels. Calyx campanulate, ca. 2 mm, ca. 1.7 mm wide at mouth, base sparsely villous outside, sparsely red-brown glandular, 2-lipped to 2/3 its length; teeth ovate-triangular, lower 2 longer; fruiting calyx elongated, 4.5–5 mm. Corolla white or rose, with purple spots on limb, 2–7 mm; tube 3.7–5 mm, straight; upper lip 1.6–2 mm, lower lip slightly longer. Stamens and style much exerted. Nutlets brown, compressed ovoid, ca. 1 × 0.75 mm, glabrous, smooth. Fl. and fr. Aug–Dec.

Hills, forests, ravines, thickets, rice paddies, streamsides; 400–3000 m. Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang [India (Sikkim), Laos, Myanmar, Nepal, Thailand, Vietnam].

1a. Plants to 1.5 m tall; leaf apices acuminate.

2a. Leaves ovate, to 20 × 8.5 cm

..... 26b. var. *gerardianus*

2b. Leaves ovate-lanceolate to lanceolate, 5–8.5 × 1.5–3.5 cm

..... 26c. var. *graciliflorus*

1b. Plants 0.5–1 m tall; leaf apices obtuse.

3a. Corolla 6–7 mm

..... 26a. var. *lophanthoides*

3b. Corolla 2–3 mm

..... 26d. var. *micranthus*

26a. *Isodon lophanthoides* var. *lophanthoides*

线纹香茶菜 xian wen xiang cha cai

Hyssopus lophanthoides Buchanan-Hamilton ex D. Don, Prodr. Fl. Nepal. 110. 1825; *Isodon striatus* (Benth) Kudô; *Orthosiphon bodinieri* Vaniot; *O. glabrescens* Vaniot; *Plectranthus esquiroii* H. Léveillé; *P. fangii* Sun; *P. stocksii* J. D. Hooker; *P. striatus* Benth; *P. volkensianus* Muschler; *Rabdosia fangii* (Sun) H. Hara; *R. lophanthoides* (Buchanan-Hamilton ex D. Don) H. Hara.

Plants 50–100 cm tall. Leaf apices obtuse. Corolla 6–7 mm.

Wet hills, forests, ravines; 500–3000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang [India (Sikkim), Myanmar, Nepal, Thailand, Vietnam].

Used medicinally.

26b. *Isodon lophanthoides* var. *gerardianus* (Benth) H. Hara, J. Jap. Bot. 60: 235. 1985.

狭基变种 xia ji bian zhong

Plectranthus gerardianus Benth, Pl. Asiat. Rar. 2: 17. 1830; *P. striatus* Benth var. *gerardianus* (Benth) Handel-Mazzetti; *P. tatei* Hemsley; *Rabdosia lophanthoides* (Buchanan-Hamilton ex D. Don) H. Hara var. *gerardiana* (Benth) H. Hara.

Plants 30–150 cm tall. Leaves ovate, to 20 × 8.5 cm, base cuneate, apex acuminate.

Forests, thickets; 400–2900 m. Gansu, Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Xizang, Yunnan [India (Sikkim), Laos, Myanmar, Nepal, Thailand, Vietnam].

Used medicinally.

26c. *Isodon lophanthoides* var. *graciliflorus* (Benth) H. Hara, J. Jap. Bot. 60: 235. 1985.

细花变种 xi hua bian zhong

Plectranthus graciliflorus Benth. Prodr. 12: 56. 1848; *P. gerardianus* Benth. var. *graciliflorus* (Benth.) J. D. Hooker; *P. striatus* Benth. var. *graciliflorus* (Benth.) Handel-Mazzetti; *Rabdosia lophanthoides* (Buchanan-Hamilton ex D. Don) H. Hara var. *graciliflora* (Benth.) H. Hara.

Plants 40–100 cm tall. Leaves ovate-lanceolate to lanceolate, 5–8.5 × 1.5–3.5 cm, scabrous on veins, sparsely brown glandular, adaxially slightly scabrous, subglabrous, abaxially reddish brown when dry, base cuneate, apex acuminate.

Rice paddies, ravines. Fujian, Guangdong, Jiangxi [India (Sikkim), Myanmar, Nepal, Vietnam].

26d. *Isodon lophanthoides* var. *micranthus* (C. Y. Wu) H. W. Li, J. Arnold Arbor. 69: 336. 1988.

小花变种 xiao hua bian zhong

Rabdosia lophanthoides (Buchanan-Hamilton ex D. Don) H. Hara var. *micrantha* C. Y. Wu, Fl. Yunnan. 1: 775. 1977.

Leaves sparsely hirtellous, abaxially purplish. Corolla 2–3 mm.

- Streamsides, forests; 1100–1900 m. Guizhou, Yunnan.

27. *Isodon leucophyllus* (Dunn) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 122. 1929.

白叶香茶菜 bai ye xiang cha cai

Plectranthus leucophyllus Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 157. 1913; *P. pachythyrus* Handel-Mazzetti; *P. thiothyrus* Handel-Mazzetti; *Rabdosia leucophylla* (Dunn) H. Hara; *R. pachythyrsa* (Handel-Mazzetti) H. Hara; *R. thiothyrsa* (Handel-Mazzetti) H. Hara.

Shrubs erect, 50–120 cm tall, much branched, densely gray scaly stellate tomentose or lanate except on corolla; branchlets densely hairy when young, glabrescent. Stem leaves opposite; petiole 0.5–1.5 cm, densely hairy; leaf blade ovate to triangular-ovate, 2–6 × 1.3–4 cm, papery, rugose, adaxially ± densely hairy, abaxially gray, densely hairy, with a brown gland at tooth apex, base obtuse to rounded-cuneate, margin crenate, apex obtuse to slightly acute; lateral veins 3- or 4-paired, oblique, immersed adaxially, elevated abaxially. Cymes 3–9-flowered, remote or compact, in pyramidal panicles 10–24 cm; floral leaves and bracts longer or shorter than cymes; bracteoles minute, linear, ca. 1 mm. Calyx tubular-campanulate, straight or slightly curved, 2.5–3(–4) mm, 10-veined, densely hairy outside; teeth triangular-lanceolate, ca. 1/4 as long as calyx, subequal; fruiting calyx slightly dilated, tubular, base urceolate, slightly curved, glabrescent. Corolla rose, purple, to dark purple-blue, 3–5(–7) mm, puberulent on limb outside; upper lip as long as lower lip, ca. 1.5 mm. Stamens included. Style included. Nutlets yellow-brown, ovoid, ca. 1.5 mm, glabrous. Fl. Jul–Oct, fr. Oct–Nov.

- Thickets on dry slopes; 1400–2900 m. Sichuan, Yunnan.

28. *Isodon adenolomus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 233. 1985.

腺叶香茶菜 xian ye xiang cha cai

Plectranthus adenoloma Handel-Mazzetti, Symb. Sin. 7: 938. 1936; *Rabdosia adenoloma* (Handel-Mazzetti) H. Hara.

Shrubs. Stems ca. 90 cm tall, erect, much branched; branches densely whitish stellate tomentose, glabrescent. Stem leaves opposite; petiole 0.5–1 cm, densely gray stellate tomentose; leaf blade narrowly ovate to orbicular-ovate, 2–3.5 × 1.2–1.7 cm, papery, adaxially densely gray stellate tomentose, with immersed veins, abaxially densely fulvous stellate tomentose, with elevated veins, base broadly cuneate, margin crenate with a brown gland at tooth apex abaxially, entire along basal 1/3, apex obtuse to rounded. Panicles terminal, 3–5 cm; cymes 3–5-flowered, densely stellate tomentose; floral leaves and bracts longer than cymes. Pedicel 2–4 mm. Calyx campanulate, ca. 2 mm, densely fulvous stellate tomentose outside; teeth equal, triangular, ca. 1/3 as long as calyx. Corolla purple-red, ca. 7 mm, sparsely pilose outside, tube slightly exerted, limb 2-lipped. Stamens included. Style nearly included. Nutlets unknown. Fl. Jul.

- Open stony hills; 2300–3300 m. Sichuan, Yunnan.

29. *Isodon rugosus* (Wallich ex Benth.) Codd, Taxon 17: 239. 1968.

皱叶香茶菜 zhou ye xiang cha cai

Plectranthus rugosus Wallich ex Benth., Pl. Asiat. Rar. 2: 17. 1830; *Isodon plectranthoides* Schrader ex Benth.; *I. rugosus* (Wallich ex Benth.) Murata.

Shrubs erect, much branched, to 1.5 m tall; branchlets slender, densely stellate tomentose. Stem leaves opposite; petiole 2–10 mm, densely tomentose; leaf blade ovate to elliptic, 1–3.5 × 0.5–1.8 cm, papery, rugose, adaxially olive green, densely stellate tomentose, abaxially gray tomentose, base broadly cuneate to rounded, margin crenulate, apex obtuse; lateral veins 4- or 5-paired, immersed adaxially, elevated abaxially. Cymes axillary, pedunculate, in stellate tomentose panicles, basal cymes long branched to 21- or more flowered, apical cymes 3–5-flowered; floral leaves slightly longer than cymes, upper ones much shorter, subsessile, ovate. Pedicel 2–3 mm. Calyx campanulate, ca. 2 mm, densely stellate tomentose outside; teeth broadly triangular, subequal, minute, ca. 1/3 as long as calyx tube; fruiting calyx slightly dilated, tubular-campanulate, slightly curved, ca. 3 mm, conspicuously 10-veined. Corolla white, tinged rose, or dark lilac on upper lip, ca. 7 mm, sparsely stellate tomentose outside, glandular, tube ca. 3 mm. Stamens included. Style included. Nutlets dark brown, triquetrous, oblong, ca. 1.5 mm, glabrous. Fl. Jul–Sep, fr. Aug–Oct.

Thickets on hills, valleys; 1800–2700 m. Xizang [Afghanistan, Bangladesh, Bhutan, India (Sikkim), Nepal, Pakistan].

30. *Isodon grandifolius* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 234. 1985.

大叶香茶菜 da ye xiang cha cai

Shrubs much branched, 1.2–1.8 m tall. Branches densely stellate tomentose, glabrescent. Stem leaves opposite; petiole 1–2.5 cm, densely yellow stellate tomentose; leaf blade triangular-ovate to oblong, rarely obovate, 3–8 × 1–2.5 cm, papery, rugulose, adaxially olive green, densely stellate pilose, abaxially densely stellate tomentose, base rounded to truncate-rounded, margin crenulate, apex acute to subobtusely. Panicles terminal or axillary, pyramidal, very compact; cymes sessile or pedunculate. Pedicel 1–2 mm, tomentose. Calyx campanulate, ca. 2.5 mm; teeth subequal, ca. 1/2 as long as calyx, triangular, apex acuminate. Corolla pale blue, 6–7 mm,

straight, limb sparsely stellate pilose outside. Stamens exerted. Style exerted. Nutlets unknown. Fl. Sep.

• Thickets, meadows, along water courses; 2700–3300 m. Sichuan, Yunnan.

1a. Leaves ovate-lanceolate, rarely obovate; cymes sessile 30a. var. *grandifolius*

1b. Leaves triangular-ovate to oblong; cymes ± pedunculate 30b. var. *atuntzeensis*

30a. *Isodon grandifolius* var. *grandifolius*

大叶香茶菜 da ye xiang cha cai

Plectranthus grandifolius Handel-Mazzetti, Acta Horti Gothob. 13: 371. 1939; *Rabdosia grandifolia* (Handel-Mazzetti) H. Hara.

Leaves ovate-lanceolate, rarely obovate. Cymes sessile.

• Thickets, along water courses; 3000–3300 m. Yunnan.

30b. *Isodon grandifolius* var. *atuntzeensis* (C. Y. Wu) H. W. Li, J. Arnold Arbor. 69: 342. 1988.

德钦变种 de qin bian zhong

Rabdosia grandifolia (Handel-Mazzetti) H. Hara var. *atuntzeensis* C. Y. Wu, Fl. Yunnan. 1: 783. 1977.

Leaves ovate, triangular-ovate, to oblong. Cymes ± pedunculate.

• Hillside meadows; 2700 m. Sichuan, Yunnan.

31. *Isodon oresbius* (W. Smith) Kudô, Mem. Fac. Sci. Agr. Taihoku 2: 120. 1929.

山地香茶菜 shan di xiang cha cai

Plectranthus oresbius W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 118. 1916; *Rabdosia oresbia* (W. Smith) H. Hara.

Shrubs to 60 cm, much branched. Branches subglabrous, bark peeling, branchlets densely gray stellate tomentulose. Petiole ca. 3 mm; leaf blade ovate, 0.7–1.5 cm × 5–13 mm, papery, corrugate, adaxially stellate villous, simple hairy, abaxially gray stellate tomentulose, base rounded to shallowly cordate, margin crenate, apex obtuse, lateral veins 3- or 4-paired. Panicles terminal, densely gray stellate tomentulose; cymes few, pedunculate, 3–5-flowered; floral leaves similar to stem leaves, reduced apically, margin entire; bracteoles linear, to 2 mm. Calyx campanulate, ca. 4 × 3.5–4 mm, whitish stellate villous, simple tomentose mainly on tube; teeth subequal, narrowly triangular, ca. 2 mm, ca. 1 mm wide at base. Corolla purplish or purple-blue, stellate pilose, tube slightly exerted, limb 2-lipped; upper lip almost as long as lower, ca. 3.5 mm. Stamens included. Style included. Nutlets unknown. Fl. Jul-Sep.

• Open dry rocky areas, thickets; 2100–3400 m. Sichuan, Yunnan.

Used medicinally.

32. *Isodon dawoensis* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 233. 1985.

道孚香茶菜 dao fu xiang cha cai

Plectranthus dawoensis Handel-Mazzetti, Acta Horti Gothob. 13: 371. 1939; *Rabdosia dawoensis* (Handel-Mazzetti) H. Hara.

Shrubs to 25 cm, branched. Branchlets gray stellate tomentulose. Petiole 2–8 mm; leaf blade ovate to ovate-triangular, 1–2.5 × 0.6–1.7 cm, papery, adaxially corrugate, densely scaly-pilose, abaxially densely stellate tomentulose, base cuneate to truncate-cuneate, margin coarsely crenate except at base, with an obscure gland at tooth apex, apex acute to obtuse, lateral veins 3- or 4-paired. Panicles spikelike, 2–7 cm, whitish or greenish stellate, minutely tomentulose; cymes 3–5-flowered; bracts sessile, ovate-lanceolate to lanceolate, basally leaflike; bracteoles minute, linear. Pedicel 1–2 mm. Calyx funnelform, ca. 2 mm, whitish stellate tomentose; teeth equal, triangular, ca. 1/2 as long as calyx, apex acute. Corolla white, 7–9 mm, pilose, tube ca. 3 mm. Stamens included. Style included. Nutlets unknown. Fl. Sep.

• Hilly loess; 3000 m. Sichuan.

33. *Isodon lihsienensis* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

理县香茶菜 li xian xiang cha cai

Rabdosia lihsienensis C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 586. 1977.

Shrubs ca. 1 m. Branches yellowish gray; branchlets yellow brownish, pubescent. Petiole 5–13 mm, pubescent; leaf blade ovate, 1.5–3.5 × 1–2.8 cm, papery, adaxially dusty pubescent, abaxially densely whitish floccose-tomentulose, base broadly cuneate to truncate-cuneate, margin crenate, apex obtuse. Panicles terminal, 1.4–4.5 cm, puberulent; cymes 1–4-flowered; lower floral leaves similar to stem leaves, margin entire; upper floral leaves bractlike, ovate to rhombic, 4–6 × 2.5–4 mm; bracteoles linear, less than 1 mm. Calyx campanulate, ca. 3.5 × 4 mm, minutely glandular hairy, floccose-puberulent especially at base and margins, 2-lipped; teeth slightly longer than calyx tube, triangular-lanceolate, apex acuminate. Corolla purplish with purple spots, ca. 9 mm, sparsely puberulent outside, tube ca. 4.5 mm, limb 2-lipped; upper lip almost as long as lower, ca. 4.5 mm. Stamens included. Style included. Nutlets unknown. Fl. Jul-Sep.

• Forests; 2500 m. Sichuan.

34. *Isodon wikstroemioides* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 237. 1985.

尧花香茶菜 rao hua xiang cha cai

Plectranthus wikstroemioides Handel-Mazzetti, Acta Horti Gothob. 13: 369. 1939; *Rabdosia wikstroemioides* (Handel-Mazzetti) H. Hara.

Shrubs 0.6–1.5 m, much branched. Branches grayish brown, glabrescent; branchlets brown, densely glandular tomentulose. Petiole 1–4 mm, densely tomentulose, glandular; leaf blade lanceolate to oblanceolate, 0.8–1.5 cm × 5–7 mm, papery, adaxially densely tomentulose, papillate glandular, abaxially gray, densely floccose-tomentose, yellowish glandular, base broadly cuneate to ± truncate, abruptly attenuate, margin entire to obscurely few dentate above middle, apex acute to rounded, lateral veins 3–5-paired. Cymes axillary, shorter than floral leaves, pedunculate, 3–5-flowered; peduncle densely glandular, tomentulose; upper floral leaves gradually smaller, narrower. Pedicel 1–3 mm, densely glandular, tomentulose. Calyx campanulate, ca. 4

mm, densely glandular tomentose, 10-veined; teeth subequal, narrowly triangular, ca. 1/3 as long as calyx, apex acute; fruiting calyx tubular-campanulate, ca. 6 mm, conspicuously veined. Corolla purplish or yellowish white, ca. 7 mm, whitish puberulent outside; tube straight, ca. 3 mm. Stamens included. Style included. Nutlets dark brown, triquetrous, oblong, to 1.5 mm, glabrous. Fl. and fr. Aug-Oct.

• Hills, valleys, thickets; 2300–3200 m. Sichuan, Xizang, Yunnan.

35. *Isodon smithianus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 237. 1985.

马尔康香茶菜 ma er kang xiang cha cai

Plectranthus smithianus Handel-Mazzetti, Acta Horti Gothob. 9: 93. 1934; *Rabdosia smithiana* (Handel-Mazzetti) H. Hara.

Shrubs 50–100 cm. Branchlets yellow-brown, sparsely minutely pubescent or glabrescent. Petiole 0.3–2.4 cm; leaf blade rhombic-ovate to ovate, 2.5–4 × 0.9–2 cm, thin papery, adaxially papillate, glandular, sparsely hirtellous especially along margin, abaxially puberulent, base cuneate to truncate, margin sparsely coarse crenate to crenate-dentate, apex obtuse, lateral veins 3- or 4-paired. Panicles terminal, racemose; cymes pedunculate, 1–7-flowered; floral leaves and bracts entire; bracteoles linear, ca. 1 mm. Pedicel 2–6 mm. Calyx campanulate, ca. 3 × 3 mm, gray tomentulose, 2-lipped nearly to middle; teeth subequal, ovate-triangular; fruiting calyx ca. 5 mm, slightly curved, conspicuously veined. Corolla white on upper lip, purple-red on lower, 7–9 mm, pubescent outside, limb 2-lipped; upper lip as long as lower lip, ca. 4 mm. Stamens and style slightly exerted. Nutlets yellow-brown, triquetrous, ovoid, ca. 1.5 mm, glabrous. Fl. Jul-Sep.

• Thickets; 2600–3500 m. Sichuan, Xizang.

36. *Isodon parvifolius* (Batalin) H. Hara, J. Jap. Bot. 60: 236. 1985.

小叶香茶菜 xiao ye xiang cha cai

Caryopteris parvifolia Batalin, Trudy Imp. S. Peterburgsk. Bot. Sada 13: 98. 1893; *Isodon discolor* (Dunn) Kudô; *Plectranthus discolor* Dunn; *P. parvifolius* (Batalin) P'ei; *Rabdosia parvifolia* (Batalin) H. Hara.

Shrubs 50–100 cm, much branched. Branches slender, yellowish gray, glabrescent, branchlets appressed whitish tomentulose. Petiole 2–12 mm; leaf blade oblong-ovate to broadly ovate, 4–15 × 4–14 mm, papery, adaxially minutely glandular pubescent, abaxially densely appressed gray tomentulose, base short truncate-attenuate, margin entire or coarsely crenate, apex rounded, lateral veins 3- or 4-paired. Cymes axillary, widely spaced, 1–7-flowered, 0.8–2.3 cm, pedunculate; peduncle 2–12 mm. Calyx campanulate, ca. 3 × 3 mm, densely whitish tomentulose, slightly 2-lipped; teeth ovate-triangular, subequal, slightly longer than calyx tube, lower 2 slightly longer; fruiting calyx dilated. Corolla purplish, ca. 9 mm, pilose, tube ca. 4 mm. Stamens and style slightly exerted. Nutlets brown, glabrous. Fl. Jun-Oct, fr. Jul-Nov.

• Dry thickets; 1600–2800 m. Gansu, Shaanxi, Sichuan, Xizang.

37. *Isodon tenuifolius* (W. Smith) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 119. 1929.

细叶香茶菜 xi ye xiang cha cai

Plectranthus tenuifolius W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 118. 1916; *Rabdosia tenuifolia* (W. Smith) H. Hara.

Shrubs to 1 m, much branched. Branchlets densely minutely gray tomentose. Petiole 3–5 mm; leaf blade lanceolate to ovate-lanceolate, 0.8–2 cm × 5–10 mm, papery, adaxially densely pilose, abaxially very densely minutely gray tomentose, base cuneate to rounded, margin remotely crenulate-serrulate above middle to entire, apex acute or slightly acute; lateral veins 3- or 4-paired, yellowish white adaxially. Cymes axillary, pedunculate, 5–7-flowered, shorter than subtending leaves, in terminal panicles to 20 cm; upper floral leaves reduced, ± equal to cymes, margin entire; bracteoles linear, ca. 1 mm, densely gray tomentulose. Calyx campanulate, to 3 mm, densely gray tomentulose outside; teeth subequal, triangular, ca. 1/3 as long as calyx, apex acute. Corolla whitish purplish, whitish rose, or purplish, ca. 7 mm, pilose; tube ca. 3 mm, straight. Stamens included. Style included. Nutlets unknown. Fl. Sep.

• Thickets; 1900–3000 m. Sichuan, Yunnan.

38. *Isodon hirtellus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 234. 1985.

细毛香茶菜 xi mao xiang cha cai

Plectranthus hirtellus Handel-Mazzetti, Acta Horti Gothob. 13: 370. 1939; *Rabdosia hirtella* (Handel-Mazzetti) H. Hara.

Shrubs or subshrubs 1–1.5 m. Stems erect, much branched; branches yellow brownish, glabrous; branchlets densely spreading hirtellous. Petiole to 1 cm; leaf blade ovate to broadly ovate, 1–3 × 0.7–2.5 cm, papery, adaxially densely hirtellous, abaxially densely gray tomentulose or hirtellous, glandular, sometimes glabrescent, base truncate to broadly cuneate-attenuate, margin crenulate-serrulate above base, apex acute to obtuse. Panicles narrow, terminal or axillary, 7–15 cm, densely gray hirtellous; cymes sessile or short pedunculate, 3–5-flowered; floral leaves subcircular, 4–15 mm wide, gradually reduced, upper floral leaves bractlike; bracteoles linear, ca. 1 mm. Calyx campanulate, ca. 3 mm, densely hirtellous, subequally 5-toothed to slightly 2-lipped; teeth triangular, ca. 1/2 as long as calyx, apex acute; fruiting calyx tubular-campanulate, ca. 4 mm, conspicuously veined. Corolla whitish purplish or bluish purple, to 5 mm, densely pilose, tube ca. 2.5 mm; upper lip ca. 1.5 mm, lower lip ca. 2.5 mm. Stamens included. Style slightly exerted. Nutlets unknown. Fl. Jun-Oct.

• Sunny slopes; 800–1300 m. Sichuan, Yunnan.

39. *Isodon rubescens* (Hemsley) H. Hara, J. Jap. Bot. 60: 236. 1985.

碎米槿 sui mi ya

Plectranthus rubescens Hemsley, J. Linn. Soc., Bot. 26: 273. 1890; *Isodon henryi* (Hemsley) Kudô var. *dichromophyllus* (Diels) Kudô; *I. ricinispermus* (Pampanini) Kudô; *P. dichromophyllus* Diels; *P. ricinispermus* Pampanini; *Rabdosia dichromophylla* (Diels) H. Hara; *R. ricinisperma* (Pampanini) H. Hara; *R. rubescens* (Hemsley) H. Hara.

Shrubs (30–)50–100(–120) cm. Stems numerous, erect, brownish gray, glabrous, much branched apically; branchlets reddish, densely tomentose. Petiole 1–3.5 cm; leaf blade ovate

to rhombic-ovate, 2–6 × 1.3–3 cm, membranous to papery, adaxially sparsely pilose, glandular, or subglabrous, abaxially densely gray tomentulose to subglabrous, base broadly cuneate, margin coarsely crenate-serrate, apex acute to acuminate; lateral veins 3- or 4-paired, reddish. Panicles terminal, narrow, 6–15 cm, densely pubescent; cymes pedunculate, 3–5(–7)-flowered; floral leaves gradually reduced toward apex, mostly shorter than cymes, margin remotely serrate or subentire; bracteoles subulate-linear to linear, to 1.5 mm, pubescent. Calyx campanulate, 2.5–3 mm, densely gray pubescent, glandular, conspicuously reddish, 10-veined, slightly 2-lipped; teeth ovate-triangular, ca. 1/2 as long as calyx; fruiting calyx dilated, 4–5 mm, tubular-campanulate, slightly curved. Corolla 7(–12) mm, sometimes ca. 5 mm in pistillate flowers, pubescent, glandular, tube 3.5–5 mm. Stamens exerted. Style exerted. Nutlets brownish, triquetrous, ovoid, ca. 1.3 mm, glabrous. Fl. Jul-Oct, fr. Aug-Nov.

• Thickets, forests, stony slopes, dry areas; 100–2800 m. Anhui, Gansu, Guangxi, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Shanxi, Sichuan, Zhejiang.

40. *Isodon loxothyrsus* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 235. 1985.

弯锥香茶菜 wan zhui xiang cha cai

Plectranthus loxothyrsus Handel-Mazzetti, Acta Horti Gothob. 13: 372. 1939; *Rabdosia loxothyrsa* (Handel-Mazzetti) H. Hara.

Shrubs 1–1.6 m tall, much branched. Branches glabrescent, branchlets gray tomentulose. Petiole 1–2.5 cm, sometimes narrowly winged; leaf blade ovate-lanceolate, 3.5–6(–10) × 1.5–2.5(–4) cm, papery, adaxially rugulose, gray tomentulose on veins, abaxially ± tomentulose or pubescent, base cuneate to rounded-cuneate and abruptly attenuate, margin crenate-dentate above base, apex acuminate, lateral veins 3-paired. Panicles narrow, terminal and axillary, 3–15 cm, gray tomentulose; cymes 5–7-flowered; bracts ovate-lanceolate, 5–10 mm, margin entire. Calyx campanulate, 2–2.5 mm, densely gray tomentulose, slightly 2-lipped; teeth ovate-triangular, slightly shorter than calyx tube, apex obtuse to acute; fruiting calyx tubular-campanulate, 4–5 mm, slightly incurved. Corolla pink, yellowish, to white, 6–10 mm, pilose, glandular, tube 3–5 mm. Stamens included or slightly exerted. Style very exerted. Nutlets brown, ovoid, ca. 1 mm, glabrous. Fl. Jul-Oct, fr. Aug-Nov.

• Thickets, forests, grassy hills, streamsides; 1400–3300 m. Sichuan, Xizang, Yunnan.

41. *Isodon xerophilus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 237. 1985.

旱生香茶菜 han sheng xiang cha cai

Rabdosia xerophila C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 787. 1977.

Shrubs ca. 1 m. Stems much branched; branches wandlike, gray-brown, glabrescent; branchlets dull yellow, ± purplish, densely antrorse dull yellow velutinous. Petiole 1–3 mm, purplish; leaf blade ovate-oblong, 1–2.5 × 0.5–1.5 cm, papery, adaxially rugulose and pubescent, abaxially gray, purplish along veins, very densely velvety-pubescent, base rounded, margin crenulate above base, apex acute, lateral veins ca. 4-paired. Panicles narrow, 3.5–10 cm, terminal and

axillary, antrorse hairy; cymes pedunculate, 3–5-flowered; floral leaves shorter than cymes, ovate, margin serrulate, apex acuminate. Pedicel 3–4 mm. Calyx campanulate, ca. 3 mm, densely pubescent, slightly 2-lipped; teeth subequal, broadly triangular, ca. 1/3 as long as calyx, lower 2 slightly larger, apex acute; fruiting calyx ca. 4 mm, tubular-campanulate, horizontal or slightly upwardly curved, purplish. Corolla to 8 mm, pubescent, tube ca. 3 mm, upper lip ca. 3 mm, lower lip ca. 5 mm. Stamens included or slightly exerted. Style included. Nutlets yellowish brown, ovoid, ca. 1 mm, glabrous. Fl. Oct-Nov, fr. Nov-Dec.

• Sunny slopes; 1000–1300 m. Yunnan (Shiping Xian).

42. *Isodon rugosiformis* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 236. 1985.

类皱叶香茶菜 lei zhou ye xiang cha cai

Plectranthus rugosiformis Handel-Mazzetti, Kaiserl. Akad. Wiss. Wien. Math.-Naturwiss. Kl., Anz. 62: 237. 1925; *Rabdosia rugosiformis* (Handel-Mazzetti) H. Hara.

Subshrubs 0.8–1.2 m. Stems wandlike, much branched; branches ± glabrescent; branchlets yellowish brown, densely gray tomentulose. Petiole 3–15 mm; leaf blade rhombic to triangular-ovate, 1.5–4 × 1–2.5 cm, thin papery, glandular, adaxially dark green, densely gray puberulent mainly on veins, abaxially densely gray tomentulose, base broadly cuneate to truncate, margin crenate, apex acute to short caudate-acuminate; lateral veins ca. 4-paired. Panicles spikelike, terminal, densely gray tomentulose; cymes contiguous, pedunculate, sometimes compact, 3–5-flowered; floral leaves ovate-lanceolate, 0.5–1.5 cm, margin subentire. Pedicel 2–3 mm. Calyx campanulate, to ca. 3 mm, gray tomentulose outside, slightly 2-lipped; teeth ovate-triangular, subequal, ca. 1/2 long as calyx, lower 2 slightly longer; fruiting calyx slightly dilated. Corolla purple or purplish blue, ca. 7 mm, puberulent, upper lip ca. 2 mm, lower lip ca. 4 mm. Stamens (at least upper) slightly exerted. Style exerted. Nutlets brown, triquetrous, ellipsoid, ca. 1.3 mm, glabrous. Fl. and fr. Sep-Oct.

• Thickets on hilly slopes, valleys, rocky areas; 1900–2500 m. Yunnan.

43. *Isodon flexicaulis* (C. Y. Wu & H. W. Li.) H. Hara, J. Jap. Bot. 60: 234. 1985.

柔茎香茶菜 rou jing xiang cha cai

Rabdosia flexicaulis C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 587. 1977.

Shrubs to 1 m. Stems slender, ascending, yellowish brown, densely glandular, pubescent and pilose, much branched, branches and branchlets flexuous. Leaves opposite; petiole slender, 1.5–3 cm; leaf blade triangular-ovate, 2–4 × 1.3–2.8 cm, ± membranous, adaxially sparsely pilose, yellowish glandular, abaxially sparingly glandular, pilose on veins, base broadly truncate to ± truncate, margin dentate, apex acute, lateral veins 4-paired. Panicles terminal, ca. 10 cm, densely pubescent; cymes pedunculate, 3–5-flowered, glandular; floral leaves and bracts acute, margin crenate or subentire. Calyx campanulate, ca. 3 mm, pubescent, glandular, slightly 2-lipped; teeth ovate-triangular, ca. 1.5 mm, lower 2 slightly longer, apex acute, ciliate; fruiting calyx tubular-

campanulate, dilated to 7 mm, upwardly curved. Corolla white or pink, to 1.1 cm, sparsely pubescent, glandular, tube ca. 5 mm, upper lip ca. 4 mm, lower lip ca. 6 mm. Stamens included. Style included. Nutlets triquetrous, ellipsoid, ca. 2 mm, yellowish, with yellowish white marks. Fl. and fr. Sep.

- Thickets, valleys; 2100–2400 m. Sichuan, Yunnan.

44. *Isodon glutinosus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 234. 1985.

胶粘香茶菜 jiao zhan xiang cha cai

Rabdosia glutinosa C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 788. 1977.

Shrubs 0.7–1.5 m. Stems and branches gray, subglabrous; branchlets purplish, densely puberulent, glandular. Petiole 2.5–14 mm; leaf blade truncate-ovate to subcircular, 0.7–2 × 0.6–2.1 cm, papery, glandular puberulent, base rounded, margin crenate-serrate, apex obtuse to acute. Racemes terminal on upper branchlets, forming a complex panicle, puberulent, glandular; cymes lax, many flowered; floral leaves subsessile, gradually reduced upward, margin entire. Pedicel 3–5 mm. Calyx campanulate, ca. 3 × 3.5 mm, densely glandular puberulent, glandular, slightly 2-lipped; teeth subequal, ovate, ca. 1/2 as long as calyx; fruiting calyx dilated to ca. 5 mm. Corolla purplish, ca. 7 mm, tube ca. as long as calyx, upper and lower lips ca. 4 mm. Stamens included. Style much exerted. Nutlets unknown.

- Grassy slopes; 2000–2300 m. Sichuan, Yunnan.

45. *Isodon medilungensis* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

麦地龙香茶菜 mai di long xiang cha cai

Rabdosia medilungensis C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 587. 1977.

Shrubs ca. 60 cm, much branched. Branches brown, glabrescent; branchlets slender, densely gray puberulent. Petiole 3–10 mm; leaf blade ovate to subrhomboid-ovate, 1–3 × 0.6–1.4 cm, papery, adaxially rugulose, base broadly cuneate, margin crenate-serrate or entire, apex acute, puberulent, glandular, lateral veins 4- or 5-paired. Cymes axillary, 3–5-flowered, densely puberulent; peduncle ca. 2 mm; floral leaves reduced toward apex, subsessile, margin subentire. Pedicel 1–2 mm. Calyx campanulate, ca. 4 mm, densely puberulent on teeth; teeth subequal, lanceolate, to ca. 2.5 mm, apex spiny acute, densely white pilose inside. Corolla white, ca. 6 mm, pilose, tube 2.5 mm. Stamens included. Style slightly exerted. Nutlets unknown. Fl. Jun-Jul.

- Thickets; 2000 m. Sichuan (Muli Xian).

46. *Isodon pharicus* (Prain) Murata, Acta Phytotax. Geobot. 16: 15. 1955.

川藏香茶菜 chuan zang xiang cha cai

Plectranthus pharicus Prain, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 59: 297. 1891; *Rabdosia pseudoirrorata* C. Y. Wu; *R. pseudoirrorata* var. *centellaefolia* C. Y. Wu; *R. sinuolata* C. Y. Wu & H. W. Li.

Shrubs tufted, much branched, 30–50 cm. Branchlets brownish gray, appressed puberulent. Leaves opposite; petiole 1–4 mm; leaf blade oblong-lanceolate, ovate, to broadly ovate, 0.7–2.5 × 0.6–2.2 cm, papery, densely appressed puberulent, glandular, base cuneate-attenuate, margin 4–6-toothed, apex

obtuse, lateral veins 3- or 4-paired. Racemes poorly defined; cymes 3–7-flowered, appressed puberulent; peduncle 3–15 mm; upper floral leaves gradually reduced. Pedicel 2–3 mm. Calyx campanulate, ca. 3 × 3.2 mm, puberulent, glandular, limb slightly shorter than calyx tube, slightly 2-lipped; teeth ovate, lower 2 slightly longer, apex mucronate. Corolla purplish, ca. 9 mm, puberulent outside, middle pubescent inside, tube ca. 4 mm, upper lip ca. 3 mm, lower lip to 5 mm. Stamens included. Style included or slightly exerted. Nutlets gray, ovoid-oblong, ca. 1.6 × 1.1 mm. Fl. and fr. Jul-Sep.

- Thickets, rocky dry open slopes, forest margins; 2300–4300(–5400) m. Sichuan, Xizang.

47. *Isodon mucronatus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

突尖香茶菜 tu jian xiang cha cai

Rabdosia mucronata C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 588. 1977.

Shrubs or perennial herbs, ca. 1 m tall. Stems erect, much branched; branches gray-brown, glabrescent; branchlets yellowish, densely glandular pubescent. Petiole 0.5–1.5 cm, densely glandular pubescent; leaf blade ovate to circular-ovate, 3–5.5 × 2.5–3.5 cm, papery, adaxially densely hirtellous, abaxially scattered yellowish glandular, hirtellous on veins, base broadly cuneate to shallowly cordate, margin crenate-serrate, apex acute; lateral veins 4-paired, yellowish white abaxially. Panicles narrow, terminal, 6–12 cm; cymes pedunculate, 5–7-flowered, densely glandular pubescent; floral leaves gradually reduced toward apex. Calyx campanulate, ca. 4 mm, glandular pubescent, slightly 2-lipped; teeth triangular, ca. 1.5 mm, apex mucronate. Corolla tube ca. 3.5 mm, upper lip ca. 3 mm, lower lip ca. 4.5 mm. Stamens included. Style slightly exerted. Nutlets brown, triquetrous, ellipsoid, ca. 2 mm, glabrous. Fl. and fr. Sep-Oct.

- Sunny, grassy slopes; 2100 m. Sichuan (Muli Xian).

48. *Isodon silvaticus* (C. Y. Wu & H. W. Li) H. W. Li, J. Arnold Arbor. 69: 358. 1988.

林生香茶菜 lin sheng xiang cha cai

Rabdosia silvatica C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 588. 1977.

Subshrubs. Stems erect, yellow-brown, densely gray pubescent. Leaves opposite; petiole 5–10 mm; leaf blade ovate, 3–5 × 1–3 cm, papery, adaxially sparsely hirtellous, abaxially yellowish glandular, sparsely pubescent on veins, base broadly cuneate to rounded, margin coarsely crenate-serrate, apex acuminate, lateral veins 4-paired. Panicles terminal and axillary, 5–9 cm, densely pubescent; cymes pedunculate, 3-flowered; floral leaves ovate, margin crenate, serrate, or subentire. Pedicel ca. 2 mm. Calyx campanulate, ca. 4 × 3 mm, densely pubescent, glandular, slightly 2-lipped; teeth ca. 2 mm, ovate-triangular, apex acute; fruiting calyx tubular-campanulate, dilated to 6.5 mm, slightly curved. Corolla ca. 7 mm, pubescent, tube ca. 3.5 mm, upper lip ca. 2.5 mm, lower lip ca. 3.5 mm. Stamens included. Style exerted. Nutlets yellow-brown, triquetrous, oblong, ca. 1.8 mm, glabrous. Fl. and fr. Aug-Sep.

- Forests; 4000 m. Xizang.

49. *Isodon pleiophyllus* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 121. 1929.

多叶香茶菜 duo ye xiang cha cai

Shrubs 1–1.5 m. Stems erect, much branched; branches gray-brown, glabrescent; branchlets brownish, densely glandular pubescent. Leaves opposite; petiole 1–3 mm; leaf blade ovate to subcircular, 1.5–4.5 × 1.5–3 cm, sparsely minutely glandular pubescent, yellowish glandular, base broadly cuneate to rounded, margin serrate, apex acute or obtuse to rounded and mucronate, lateral veins 4- or 5-paired. Panicles terminal, ca. 10 cm, densely glandular pubescent; cymes long pedunculate, 3–7(–11)-flowered; floral leaves and bracts subcircular, margin entire or remotely serrate, apex apiculate. Calyx broadly campanulate, ca. 4–5 × to 4 mm, purplish, glandular pubescent, 2-lipped; teeth narrowly triangular to ovate-triangular, ca. 1.5–2.5 mm, lower 2 slightly longer, apex acute; fruiting calyx tubular-campanulate, curved, dilated to 6 mm. Corolla 8–10 mm, bluish, blue-purple, or dark blue, limb slightly pubescent outside, tube ca. 4 mm, upper lip ca. 2.5 mm, lower lip ca. 4 mm. Stamens included. Style included. Nutlets brownish, triquetrous, ellipsoid, ca. 1.2 mm, glabrous. Fl. Jun–Aug, fr. Sep.

- Thickets, forests; 2800–3500 m. Yunnan.

- 1a. Calyx ca. 4 mm; teeth ovate-triangular, less than 2 mm; corolla ca. 8 mm 49a. var. *pleiophyllus*
1b. Calyx to 5 mm; teeth narrowly triangular, ca. 2.5 mm; corolla to 10 mm 49b. var. *dolichodens*

49a. *Isodon pleiophyllus* var. *pleiophyllus*

多叶香茶菜 duo ye xiang cha cai

Plectranthus pleiophyllus Diels, Notes Roy. Bot. Gard. Edinburgh 5: 228. 1912; *Rabdosia pleiophylla* (Diels) C. Y. Wu & H. W. Li.

Calyx ca. 4 mm, teeth ovate-triangular, less than 2 mm. Corolla ca. 8 mm.

- Thickets on slopes, pine forests; 2800–3500 m. Yunnan.

49b. *Isodon pleiophyllus* var. *dolichodens* (C. Y. Wu & H. W. Li) H. W. Li, J. Arnold Arbor. 69: 360. 1988.

长齿变种 chang chi bian zhong

Rabdosia pleiophylla (Diels) H. Hara var. *dolichodens* C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 790. 1977.

Calyx to 5 mm, teeth narrowly triangular, ca. 2.5 mm. Corolla to 1 cm.

- Thickets on limestone mountains; 2900–3200 m. Yunnan (Lijiang Xian).

50. *Isodon interruptus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 234. 1985.

间断香茶菜 jian duan xiang cha cai

Rabdosia interrupta C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 775. 1977; *Isodon kunningensis* (C. Y. Wu & H. W. Li) H. Hara; *R. kunningensis* C. Y. Wu & H. W. Li.

Shrubs erect, ca. 1.3 m. Branchlets brown, densely retrorse whitish pilose. Leaves opposite; petiole 2–10 mm; leaf blade ovate-oblong, broadly obovate, to subcircular, (2.5–)5.5–7.5 × (1.2–)4.5–5 cm, papery, adaxially sparsely

puberulent, glandular, abaxially white pilose along veins, base cuneate to broadly cuneate, margin irregularly coarsely crenate, apex acute to emarginate and mucronate; lateral veins 2- or 3(–5)-paired, sometimes radiate ca. 1/3 from base. Panicles spikelike, (4–)10–30 cm, interrupted, densely pilose; cymes pedunculate, 4–16-flowered; floral leaves gradually reduced toward apex, ovate to ovate-lanceolate, usually longer than cymes, margin entire. Pedicel 2–3 mm. Calyx tubular-campanulate, ca. 2.5 × less than 2 mm, densely pubescent; teeth subequal, ovate-lanceolate, divided to below middle. Corolla yellowish white, ca. 5 mm, puberulent outside, upper lip erect, lower lip to 3 mm. Stamens included. Style included. Nutlets unknown. Fl. Aug–Sep.

- Streamsides in alder forests; 2200 m. Yunnan.

51. *Isodon barbeyanus* (H. Lévêillé) H. W. Li, J. Arnold Arbor. 69: 362. 1988.

线齿香茶菜 xian chi xiang cha cai

Leucas barbeyana H. Lévêillé, Repert. Spec. Nov. Regni Veg. 9: 247. 1911; *Plectranthus drogotschiensis* Handel-Mazzetti; *Rabdosia drogotschiensis* (Handel-Mazzetti) H. Hara.

Subshrubs to 1.5 m. Stems erect, much branched, branches brown; branchlets slender, ± densely gray stellate tomentulose. Petiole 5–14 mm; leaf blade rhombic to triangular-ovate, 1.5–3(–6) × 1–2.5(–4.5) cm, papery, adaxially corrugate, sparsely pilose, abaxially ± densely gray stellate tomentulose, base subtruncate to broadly cuneate or rarely attenuate, margin crenate to dentate, apex acute to subobtusate, lateral veins 3- or 4-paired. Panicles terminal or axillary, 4–18 cm, interrupted toward base; cymes pedunculate, 3–5(–7)-flowered; floral leaves subsessile, longer than cymes basally, broadly ovate-triangular, margin crenate; upper floral leaves ca. as long as cymes, ± lanceolate, margin entire. Pedicel 2–3.5 mm. Calyx campanulate, ca. 3 mm, densely gray tomentulose; teeth narrowly lanceolate, ca. 1/2 as long as calyx, apex filiform-acuminate; fruiting calyx broadly campanulate, dilated to 5 mm, subglabrous. Corolla purplish, 5–6 mm, densely pilose, sparsely glandular, tube ca. 3 mm. Stamens and style included or slightly exserted. Nutlets yellow-brown, ovoid, ca. 1.5 mm, glabrous. Fl. Jul–Sep, fr. Sep–Oct.

- Thickets on sunny slopes; 2500–3200 m. Sichuan.

52. *Isodon scoparius* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 236. 1985.

帚状香茶菜 zhou zhuang xiang cha cai

Rabdosia scoparia C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 777. 1977.

Shrubs 40–100 cm. Branches slender, erect, gray-brown; branchlets reddish brown, densely glandular pubescent. Leaves subsessile, subcircular to ovate-oblong, 1.2–1.8 × 0.6–1.8 cm, ± leathery, glabrous, sparingly yellowish glandular, strongly netted, base rounded, margin serrate, apex obtuse to acute. Cymes on upper half of branchlets, 3–5-flowered, pedunculate, glandular pubescent; floral leaves ovate, margin entire, slightly longer than cymes, gradually reduced toward apex. Pedicel 1.5–3 mm. Calyx broadly campanulate, ca. 3.5 × 5 mm, densely glandular pubescent, slightly 2-lipped; teeth linear-lanceolate, 2.5–3 mm, lower 2 slightly longer; fruiting calyx slightly dilated. Corolla purplish, ca. 8 mm, sparsely pubescent outside, tube ca. 3 mm, upper lip ca. 3 mm,

lower lip ca. 5 mm. Stamens exerted. Style exerted. Nutlets unknown. Fl. Jul-Aug.

• Pine forests on limestone mountains; 2300–2900 m. Yunnan (Zhongdian Xian).

53. *Isodon muliensis* (W. Smith) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 122. 1929.

木里香茶菜 mu li xiang cha cai

Plectranthus muliensis W. Smith, Notes Roy. Bot. Gard. Edinburgh 12: 218. 1920; *Rabdosia brachythyrsa* C. Y. Wu & H. W. Li; *R. chionantha* C. Y. Wu; *R. muliensis* (W. Smith) H. Hara.

Shrubs 1.5–3 m, much branched. Branches sub-cylindric, brown, sparsely gray, pubescent; branchlets dark brown, densely gray pubescent. Petiole 1–5.5 cm; leaf blade ovate to ovate-lanceolate, 5–11 × 2–6 cm, papery, adaxially rugulose, glabrous, gray pubescent on veins, abaxially sparsely yellowish glandular, gray tomentulose especially on veins, base broadly cuneate, abruptly attenuate, margin crenate-dentate, apex ± acuminate, lateral veins 5-paired. Panicles spikelike, terminal and axillary, 2.5–7 cm, densely gray pubescent; cymes (3–)6–8(–11)-flowered; floral leaves bractlike, very conspicuous, lower ones larger, obovate, apex mucronate; upper floral leaves narrower, acuminate, ca. 1 cm. Calyx campanulate, 2–2.5 mm, densely pilose; teeth ovate-triangular, ca. 1/2 as long as calyx, white ciliate, apex acute; fruiting calyx campanulate-tubular, dilated to 4.5 mm, slightly curved. Corolla yellow-white tinged red, or white bluish, to 8 mm, sparsely pubescent, tube slightly longer than to as long as limb. Stamens included. Style included. Nutlets unknown. Fl. Aug-Sep, fr. Oct.

• Thickets on hilly slopes, thicket margins, forests, streamsides; 2300–3300 m. Sichuan (Muli Xian).

54. *Isodon setschwanensis* (Handel-Mazzetti) H. Hara, J. Jap. Bot. 60: 236. 1985.

四川香茶菜 si chuan xiang cha cai

Plectranthus setschwanensis Handel-Mazzetti, Symb. Sin. 7: 939. 1936; *Rabdosia setschwanensis* (Handel-Mazzetti) H. Hara; *R. setschwanensis* var. *zungshengensis* C. Y. Wu & H. W. Li; *R. taliensis* C. Y. Wu.

Shrubs 1–1.5 m. Branches slender, upright, gray; branchlets reddish brown, pubescent. Leaves opposite, narrowly rhombic-ovate, lanceolate, obovate, or ovate, 2.5–10 × 1–3.5 cm, papery, adaxially sparsely puberulent, glandular, abaxially greenish brown, yellowish glandular, base cuneate to attenuate, margin serrate or subcrenate-dentate, apex acute to short acuminate, lateral veins 3- or 4-paired. Panicles terminal, 1.5–13 cm, racemose, minutely appressed puberulent; cymes slightly crowded, 3–5(–11)-flowered; peduncle 2–5(–9) mm; floral leaves subsessile, lanceolate, lower ones ovate, margin entire, apex long acuminate, equal to or longer than cymes. Pedicel 2–5 mm. Calyx campanulate, 3–3.5 × 3.5–4 mm, sparsely glandular, appressed pilose; teeth narrowly lanceolate, subequal, ca. 1/2 as long as calyx, apex subulate; fruiting calyx dilated to 6 mm, pendulous, slightly curved. Corolla white with purple spots, 8–9 mm, pilose, sparsely glandular, tube ca. 5 mm. Stamens and style nearly included. Nutlets dark brown, ovoid, ca. 1.5 mm, smooth. Fl. Sep, fr. Oct.

• Forests, hills; 2100–3500 m. Sichuan, Yunnan.

55. *Isodon angustifolius* (Dunn) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 137. 1929.

狭叶香茶菜 xia ye xiang cha cai

Herbs perennial, 85–100 cm or more. Stems tufted, puberulent or glabrescent. Leaves opposite; petiole 1–3 mm, puberulent; leaf blade linear-oblong to lanceolate or oblanceolate, 2.2–9.5 × 1–2.4 cm, papery, base narrowly cuneate, margin serrate to subentire, apex acute to obtuse. Panicles terminal or axillary, spreading, to 20(–34) × ca. 10 cm, glandular puberulent; cymes 3–15(–23)-flowered; peduncle 0.4–2.5(–4.8) cm; lower floral leaves ovate-lanceolate to lanceolate, upper ones linear-lanceolate to linear. Calyx campanulate, ca. 4 × 3.5 mm, dull yellow hirtellous, sparsely yellow glandular; teeth ca. 2 mm; fruiting calyx tubular-campanulate, dilated to ca. 7 mm, slightly 2-lipped. Corolla blue, ca. 1.1 cm; upper lip as long as lower, ca. 4.5 mm. Stamens included. Style included. Nutlets purplish brown, compressed to subglobose, ca. 1.8 mm in diam. Fl. Sep-Oct, fr. Oct-Nov.

• Slopes, forests; 1200–3300 m. Yunnan.

1a. Stem puberulent; leaves subglabrous or puberulent especially on midrib, sparsely yellow glandular; calyx teeth lanceolate-triangular

..... 55a. var. *angustifolius*

1b. Stem glabrescent, purplish; leaves elliptic to oblong, glabrous, abaxially densely yellow glandular; calyx teeth ovate-triangular

..... 55b. var. *glabrescens*

55a. *Isodon angustifolius* var. *angustifolius*

狭叶香茶菜 xia ye xiang cha cai

Plectranthus angustifolius Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 154. 1913; *Rabdosia angustifolia* (Dunn) H. Hara; *R. stenodonta* C. Y. Wu & H. W. Li.

Stems puberulent. Leaves puberulent especially on midvein or subglabrous, sparsely yellow glandular.

• Grassy slopes, pine forests; 1200–2600 m. Yunnan.

55b. *Isodon angustifolius* var. *glabrescens* (C. Y. Wu & H. W. Li) H. W. Li, J. Arnold Arbor. 69: 366. 1988.

无毛变种 wu mao bian zhong

Rabdosia angustifolia (Dunn) H. Hara var. *glabrescens* C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 780. 1977.

Stems purplish, glabrescent. Leaves elliptic to oblong, glabrous with dense yellow glands abaxially. Calyx teeth ovate-triangular.

• Sparse pine forests, grassy slopes; 2800–3300 m. Yunnan.

56. *Isodon coetsa* (Buchanan-Hamilton ex D. Don) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 131. 1929.

细锥香茶菜 xi zhui xiang cha cai

Plants perennial herbs or subshrubs. Stems erect, 0.5–2 m tall, much branched. Stem leaves opposite; petiole 1–5.5 cm; leaf blade ovate, 3–9 × 1.5–6 cm, glandular, densely minutely hispid on veins, base broadly cuneate, margin crenate, apex acuminate, lateral veins 3-paired. Panicles 5–15 cm, narrow, terminal or axillary, pubescent; cymes pedunculate, 3–5-flowered; lower floral leaves sessile, ovate,

upper floral leaves bractlike, ovate-lanceolate, shorter than pedicels. Pedicel 1–3 mm. Calyx campanulate, ca. 1.5□×□1.5 mm, pubescent outside, glandular, slightly 2-lipped; teeth ovate-triangular, ca. 1/3 as long as calyx, apex acute; fruiting calyx tubular-campanulate, dilated to ca. 4 mm, slightly curved, netted at apex. Corolla purple to purple-blue, ca. 6 mm, pubescent, tube ca. 2.5 mm, upper lip ca. 2.5 mm; lower lip broadly ovate, ca. 3.5 mm. Stamens included. Style included or slightly exerted. Nutlets brown, obovoid, ca. 1 mm wide, glabrous. Fl. and fr. Oct-Feb.

Slopes, streamsides, riverbanks, forest margins, thickets, forests; 600–2800 m. Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Xizang, Yunnan [Bangladesh, India, Laos, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

- 1a. Stem retrorse pubescent to subglabrous; leaves sparsely strigose to subglabrous, midrib and veins densely minutely hispid 56a. var. *coetsa*
1b. Stem densely puberulent; leaves densely pilose adaxially, floccose-pilose abaxially 56b. var. *cavaleriei*

56a. *Isodon coetsa* var. *coetsa*

细锥香茶菜 xi zhui xiang cha cai

Plectranthus coetsa Buchanan-Hamilton ex D. Don, Prodr. Fl. Nepal. 117. 1825; *Ocimum coetsa* (Buchanan-Hamilton ex D. Don) Sprengel; *P. leptobotrys* Diels; *P. maddenii* Bentham ex J. D. Hooker; *P. menthoides* Bentham; *P. polystachys* Sun ex C. H. Hu; *Rabdosia anisochila* C. Y. Wu; *R. coetsa* (Buchanan-Hamilton ex D. Don) H. Hara; *R. coetsoides* C. Y. Wu; *R. megathyrsoides* H. W. Li; *R. pluriflora* C. Y. Wu & H. W. Li; *R. polystachys* (Sun ex C. H. Hu) C. Y. Wu & H. W. Li; *R. polystachys* var. *phylloides* C. Y. Wu.

Stems retrorse pubescent or subglabrous. Leaves densely hispidulous along midvein and veins otherwise sparsely strigose or subglabrous.

Grassy slopes, streamsides, riverbanks, forest margins, thickets, pine forests, evergreen broad-leaved forests; 600–2800 m. Guangdong, Guangxi, Guizhou, Hunan, Sichuan, Xizang, Yunnan [Bangladesh, India (Sikkim), Laos, Myanmar, Nepal, Sri Lanka, Thailand, Vietnam].

56b. *Isodon coetsa* var. *cavaleriei* (H. Léveillé) H. W. Li, J. Arnold Arbor. 69: 371. 1988.

多毛变种 duo mao bian zhong

Plectranthus cavaleriei H. Léveillé, Repert. Spec. Nov. Regni Veg. 9: 247. 1911; *Isodon cavaleriei* (H. Léveillé) Kudô; *P. coetsa* Buchanan-Hamilton ex D. Don var. *cavaleriei* (H. Léveillé) McKean; *P. macreei* Bentham; *P. mairei* H. Léveillé; *Rabdosia coetsa* (Buchanan-Hamilton ex D. Don) H. Hara var. *cavaleriei* (H. Léveillé) C. Y. Wu & H. W. Li.

Stems densely puberulent. Leaves densely-pilose adaxially, floccose-pilose abaxially.

Grassy slopes, streamsides, forest margins, forests, thickets; 1600–2300 m. Yunnan [India, Sri Lanka].

57. *Isodon phyllopodus* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 135. 1929.

叶柄香茶菜 ye bing xiang cha cai

Plectranthus phyllopodus Diels, Notes Roy. Bot. Gard. Edinburgh 5: 227. 1912; *P. chenmii* Sun ex C. H. Hu; *P. leucanthus* Diels; *Rabdosia phyllopada* (Diels) H. Hara.

Herbs perennial, 30–50 cm. Stems pubescent, leafless at base. Leaves triangular- to rhombic-ovate, 4–6 × 3–4 cm, thin papery, densely gray pilose, abaxially sparsely red glandular, base cuneate-decurrent, margin crenulate, apex obtuse, lateral veins 3-paired. Panicles terminal, lax, 5–20 cm, glandular puberulent; cymes pedunculate, 3–7-flowered; upper floral leaves bractlike, narrowly ovate to ovate-lanceolate, longer than peduncles, margin entire. Pedicel 2–3 mm. Calyx campanulate, ca. 4 mm, glandular pubescent, sparsely dark brown glandular, slightly 2-lipped; teeth ovate-triangular, lower 2 slightly longer, apex obtuse; fruiting calyx slightly dilated, conspicuously 2-lipped. Corolla white, with purple spots or bluish on upper lip, sparsely pubescent, red-brown glandular, tube ca. 4 mm, upper lip ca. 3 mm, lower lip ca. 3.5 mm. Stamens and style slightly exerted. Nutlets yellowish white, ovoid, ca. 1.3 × 0.8 mm. Fl. Jun-Sep, fr. Aug-Oct.

• Thickets, waste areas, forest margins; 2100–3000 m. Guizhou, Sichuan, Xizang, Yunnan.

58. *Isodon secundiflorus* (C. Y. Wu) H. Hara, J. Jap. Bot. 60: 236. 1985.

侧花香茶菜 ce hua xiang cha cai

Rabdosia secundiflora C. Y. Wu, Fl. Reipubl. Popularis Sin. 66: 589. 1977.

Shrubs. Stems erect, whitish glandular pubescent. Petiole 4.5–5.5 cm, densely glandular pubescent; leaf blade cordate, 6.5–10.5 × 5.5–8 cm, papery, adaxially pubescent, minutely white hispid on veins, abaxially pubescent, base cordate, margin crenate, apex acute; lateral veins 4-paired. Panicles terminal and axillary, to 25–30 cm, densely glandular pubescent; cymes secund, 3-flowered; lower floral leaves subsessile, circular-cordate, ca. 2 cm in diam., base cordate, margin obscurely crenate, apex mucronate; upper floral leaves circular, less than 4 mm. Pedicel 1–2 mm. Calyx campanulate, ca. 2 × 2 mm, glandular pubescent, slightly 2-lipped; teeth ovate-triangular, ca. 1 mm, lower 2 slightly longer; fruiting calyx tubular-campanulate, dilated to 5 mm. Corolla pink, ca. 6.5 mm, pubescent, upper lip ca. 2 mm, lower lip ca. 3 mm. Stamens included. Style included. Nutlets brown, triquetrous, oblong, ca. 1.2 mm, glabrous. Fl. and fr. Sep-Oct.

• Slopes; 2000–2300 m. Sichuan.

59. *Isodon sculponeatus* (Vaniot) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 132. 1929.

黄花香茶菜 huang hua xiang cha cai

Plectranthus sculponeatus Vaniot, Bull. Acad. Int. Géogr. Bot. 14: 167. 1904; *I. alborubrus* (C. Y. Wu) H. Hara; *Rabdosia alborubra* C. Y. Wu; *R. sculponeata* (Vaniot) H. Hara; *Stachys mairei* H. Léveillé.

Herbs erect, perennial. Stems tufted, 0.5–2 m, branched, sparsely spreading strigose, densely puberulent. Petiole 1.5–7(–11.5) cm; leaf blade ovate-cordate, 3.5–10.5(–19) × 3–9(–15) cm, thin papery, adaxially whitish floccose-pilose, abaxially spreading villous, sparsely yellow glandular, base cordate, margin crenate or dentate to entire, apex acute to acuminate, lateral veins 4- or 5-paired. Panicles terminal,

spreading, ca. 2–5 cm wide, strigose and puberulent; cymes pedunculate, 9–11-flowered; floral leaves sessile, similar to stem leaves, upper bractlike. Pedicel slender, to 5 mm. Calyx campanulate, ca. 3×2.5 mm, sparsely white strigose; teeth subequal, triangular-ovate, ca. 1/2 as long as calyx; fruiting calyx tubular-campanulate, base saccate-dilated, ± curved, ca. 5×3–3.5 mm, conspicuously 2-lipped. Corolla yellow, purple spotted on upper lip, rarely reddish, ca. 6 mm, puberulent, glandular, tube ca. 3 mm, upper and lower lips ca. 3 mm. Stamens included. Style included. Nutlets chestnut brown, triquetrous, ovoid, ca. 1.8×1.2 mm, obscurely rusty verruculose. Fl. Aug–Oct, fr. Oct–Nov.

Open grasslands, thickets, sparse forests; 500–2800 m. Guangxi, Guizhou, Shaanxi, Sichuan, Xizang, Yunnan [India (Sikkim), Nepal].

Used medicinally for dysentery.

60. *Isodon megathyrsus* (Diels) H. W. Li, J. Arnold Arbor. 69: 374. 1988.

大锥香茶菜 *da zhui xiang cha cai*

Herbs erect, perennial. Petiole 0.5–5 cm; leaf blade broadly ovate, 3.5–7.5 × 2–4.5 cm, papery, pilose, base abruptly attenuate, margin crenate-dentate, apex acute, lateral veins 4-paired. Panicles terminal, to 30×20 cm, densely glandular pubescent, pilose; cymes pedunculate, 5–11-flowered; floral leaves ovate. Calyx broadly campanulate, 2.5–3× to 4 mm, 2-lipped, densely glandular pubescent, veins and margin pilose; teeth ca. 1/2 as long as calyx, narrowly triangular, apex acuminate. Corolla, blue or bluish purple, to 9 mm, puberulent, glandular, tube ca. 5 mm, upper lip ca. 3 mm, lower lip ca. 4 mm. Stamens included. Style included. Nutlets yellow-brown, ovoid, ca. 1.2 mm, glabrous. Fl. Aug–Sep, fr. Oct.

• Forests; 2300–3500 m. Sichuan, Yunnan.

- 1a. Plants ± densely pilose, sometimes intermixed with glandular pubescent or puberulent hairs
..... 60a. var. *megathyrsus*
1b. Plants very densely gray or dull yellow strigose
..... 60b. var. *strigosissimus*

60a. *Isodon megathyrsus* var. *megathyrsus*

大锥香茶菜 *da zhui xiang cha cai*

Plectranthus megathyrsus Diels, Notes Roy. Bot. Gard. Edinburgh 5: 230. 1912; *Isodon forrestii* (Diels) Kudô var. *megathyrsus* (Diels) Kudô; *Rabdosia megathyrsa* (Diels) H. Hara.

Plants ± densely pilose, sometimes intermixed with glandular pubescent or puberulent hairs.

• Fir forests, pine-oak valley forests; 2300–3500 m. Sichuan, Yunnan.

60b. *Isodon megathyrsus* var. *strigosissimus* (C. Y. Wu & H. W. Li) H. W. Li, J. Arnold Arbor. 69: 375. 1988.

多毛变种 *duo mao bian zhong*

Rabdosia megathyrsa (Diels) H. Hara var. *strigosissima* C. Y. Wu & H. W. Li, Fl. Yunnan. 1: 799. 1977.

Plants very densely gray or dull yellow strigose.

• Forests. Yunnan (Weixi Xian).

61. *Isodon henryi* (Hemsley) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 123. 1929.

鄂西香茶菜 *e xi xiang cha cai*

Plectranthus henryi Hemsley, J. Linn. Soc., Bot. 26: 271. 1890; *Rabdosia henryi* (Hemsley) H. Hara.

Perennial herbs. Stems erect, (30–)50–100(–150) cm, base glabrescent, angles sparsely pubescent, much branched at apex, branches slender. Petiole to 4 cm; leaf blade rhombic-ovate to lanceolate, mid stem leaves ca. 6 × 4 cm, upper and lower stem leaves smaller, papery, adaxially densely strigillose, abaxially glabrous, sparsely strigillose on veins, abruptly contracted from middle of blades, margin crenate-serrate, apex acuminate, lateral veins 3- or 4-paired. Panicles terminal, narrow, 6–10(–15)×ca. 2.5 cm, glandular pubescent; cymes pedunculate, 3–5-flowered; floral leaves similar to stem leaves. Calyx broadly campanulate, ca. 3 mm, puberulent, purplish, 2-lipped; teeth subequal, ca. 1/2 as long as calyx, upper 3 slightly smaller; fruiting calyx ca. 6 mm, obviously veined, subglabrous, glandular, slightly curved. Corolla white or purplish with purple marks, ca. 7 mm, puberulent, glandular, tube ca. 3.5 mm, upper lip ca. 3 mm, lower lip ca. 3.5 mm. Stamens included. Style included. Nutlets brown, compressed, oblong, ca. 1.3 mm, glabrous, verruculose. Fl. Aug–Sep, fr. Sep–Oct.

• Valleys, hills, forest margins, streamsides; 300–2600 m. Gansu, Hebei, Henan, Hubei, Shaanxi, Shanxi, Sichuan.

62. *Isodon racemosus* (Hemsley) H. W. Li, J. Arnold Arbor. 69: 377. 1988.

总序香茶菜 *zong xu xiang cha cai*

Plectranthus racemosus Hemsley, J. Linn. Soc., Bot. 26: 273. 1890; *Amethystanthus racemosus* (Hemsley) Nakai; *Isodon excisus* (Maximowicz) Kudô var. *racemosus* (Hemsley) Kudô; *P. excisus* Maximowicz var. *racemosus* (Hemsley) Dunn; *Rabdosia racemosa* (Hemsley) H. Hara.

Herbs perennial. Stems erect, 60–100 cm, purplish red, slightly pubescent. Petiole 2–10 mm, puberulent; leaf blade rhombic-ovate, 3–11 × 1.2–4(–4.5) cm, papery or ± membranous, adaxially sparsely minutely hispid to glabrescent, sparsely puberulent on veins, abaxially glabrous, sparsely yellowish glandular, base cuneate-decurrent, margin coarsely dentate to serrate-dentate, apex acuminate; lateral veins 3-paired, slightly elevated. Racemes terminal and axillary, slender, 8–20 cm, pubescent. Flowers mostly in verticillasters, in 3-flowered cymes basally. Pedicel 2–3 mm. Calyx campanulate, to 2.5 mm, pubescent, glandular; teeth spinescent, upper 3 ovate-triangular, lower 2 slightly larger and narrowly triangular; fruiting calyx dilated to 7 mm, slightly curved. Corolla white or reddish, to 1 cm, sparsely puberulent, glandular, tube to 5.5 mm, upper lip to 3.5 mm, lower lip ca. 4.5 mm. Stamens and style slightly exerted. Nutlets yellowish brown, obovoid, ca. 1.5 mm, glabrous. Fl. Aug–Sep, fr. Sep–Oct.

• Grasslands, forests; 700–1500 m. Hubei, Sichuan.

63. *Isodon excisoides* (Sun ex C. H. Hu) H. Hara, J. Jap. Bot. 60: 234. 1985.

拟缺香茶菜 *ni que xiang cha cai*

Plectranthus excisoides Sun ex C. H. Hu, Acta Phytotax. Sin. 11: 53. 1966; *Rabdosia excisoides* (Sun ex C. H. Hu) C. Y. Wu & H. W. Li.

Herbs perennial. Stems numerous, erect, (30–)50–100 (–150) cm, puberulent. Leaves opposite; petiole 1–5 cm; leaf blade broadly elliptic to circular-ovate, (2.5–)5–7 × (2–)3.5–5.5 cm, papery, adaxially sparsely strigose-hispidulous, pubescent on veins, abaxially glabrous, sparsely puberulent on veins, base abruptly attenuate-decurrent, margin irregularly serrate-dentate, apex long acuminate, sometimes ± excised. Panicles terminal or axillary, 6–15 cm, densely pubescent; cymes pedunculate, 3–5-flowered; floral leaves subsessile; bracts linear. Pedicel 2–6 mm. Calyx campanulate, to 3.5 mm, puberulent; teeth spinescent, upper 3 triangular, lower 2 narrowly triangular; fruiting calyx dilated to 7 mm. Corolla white, reddish, or purplish to purple-blue, ca. 1 cm, sparsely puberulent, glandular, tube ca. 6 mm, upper lip ca. 3 mm, lower lip ca. 4 mm. Stamens included. Style included or slightly exerted. Nutlets brown, ± globose, ca. 1.5 mm in diam., glabrous. Fl. Jul-Sep, fr. Aug-Oct.

• Grasslands, waste areas, streamsides, sparse forests; 700–3000 m. Hubei, Sichuan, Yunnan.

64. *Isodon albopilosus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 233. 1985.

白柔毛香茶菜 bai rou mao xiang cha cai

Rabdosia albopilosa C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 590. 1977.

Herbs perennial. Stems erect, 60–100 cm, densely white pilose, branched at apex. Petiole 0.5–4 cm; leaf blade circular-ovate to triangular-ovate, 4.5–9 × 3–6 cm, papery, white pilose, adaxially densely pilose on veins, abaxially sparsely yellowish glandular, base broadly cuneate to subtruncate, margin dentate-serrate, apex acuminate, apical tooth lanceolate, lateral veins 4-paired. Panicles terminal, to 15 cm, densely white pilose, glandular; cymes pedunculate, 3-flowered; floral leaves sessile, bractlike, ovate to ovate-lanceolate, margin entire, ciliate; lower floral leaves foliaceous. Pedicel 5(–8) mm. Calyx broadly campanulate, ca. 3.5 mm, densely white pilose, glandular, 2-lipped; teeth ca. 1/2 as long as calyx. Corolla purplish or reddish, 8–9 mm, pilose, upper lip ca. 3 mm, lower lip nearly as long. Stamens included. Style included. Nutlets yellow-brown, ovoid, ca. 1.2 mm, glabrous. Fl. Jul-Sep, fr. Aug-Oct.

• Hills, forest margins, valleys; 2400–3200 m. Sichuan.

65. *Isodon grosseserratus* (Dunn) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 124. 1929.

粗齿香茶菜 cu chi xiang cha cai

Plectranthus grosseserratus Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 156. 1913; *Rabdosia grosseserrata* (Dunn) H. Hara.

Herbs perennial. Stems erect, 50–80 cm, much branched, branches and stem sparingly retrorse white puberulent. Petiole 2–10 mm; leaf blade broadly ovate, 5.5–12 × 3.5–6.5 cm, papery, adaxially minutely hispid, sparsely pilose on veins, abaxially sparsely golden glandular, sparsely pilose on veins, base abruptly attenuate-decurrent, margin coarsely serrate, apex acuminate, apical tooth lanceolate, lateral veins 3- or 4-paired. Panicles narrow, terminal and axillary, to 20 cm, pubescent; cymes widely spaced, pedunculate, 3-flowered; lower floral leaves sessile, margin remotely serrate or entire, longer than cymes; upper floral leaves bractlike, shorter than cymes. Pedicel ca. 5 mm. Calyx broadly campanulate, ca. 4

mm, pubescent, glandular, obviously 2-lipped; teeth acuminate, upper 3 triangular-lanceolate, lower 2 lanceolate; fruiting calyx to 8 mm. Corolla blue or pink, to 1 cm, sparsely pubescent, glandular, tube ca. 5 mm, upper lip ca. 4 mm, lower lip ca. 5 mm. Stamens included. Style included. Nutlets yellowish brown, ovoid, ca. 1.2 mm, glabrous. Fl. Jul-Oct, fr. Sep-Oct.

• Grassy slopes, forest margins, valleys; 1600–2600 m. Sichuan.

66. *Isodon rosthornii* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 135. 1929.

癭花香茶菜 ying hua xiang cha cai

Plectranthus rosthornii Diels, Bot. Jahrb. Syst. 29: 562. 1900; *Rabdosia rosthornii* (Diels) H. Hara.

Herbs perennial. Stems 60–120 cm, purplish, densely puberulent. Leaves opposite; petiole 0.5–5 cm; leaf blade broadly ovate to subcircular, 4–11 × 2.5–7 cm, ± membranous, adaxially sparsely fine setulose, sparsely glandular, veins densely puberulent, base abruptly decurrent, margin crenate-serrate, apex acuminate, veins 4- or 5-paired. Panicles narrow, terminal and axillary, 5–15 cm; cymes widely spaced, pedunculate, 3(–5)-flowered. Pedicel 2–5 mm. Calyx broadly campanulate, to 2.5 × 3 mm, scattered glandular, veins and margins sparsely pubescent, obviously 2-lipped to middle or below; upper lip teeth short triangular, lower lip teeth narrowly triangular; fruiting calyx dilated to 6 mm. Corolla purplish white to purple-blue, to 5.5 mm, sparsely puberulent, glandular, tube ca. 2 mm, upper lip ca. 2 mm, lower lip ca. 3.5 mm. Stamens and style included or slightly exerted. Nutlets yellowish brown, ovoid, ca. 1.3 mm, glabrous, glandular. Fl. Aug-Sep, fr. Sep-Oct.

• Open slopes; 500–2300 m. Guizhou, Sichuan, Yunnan.

67. *Isodon liangshanicus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

凉山香茶菜 liang shan xiang cha cai

Rabdosia liangshanica C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 590. 1977.

Herbs perennial. Stems erect, 50–80 cm, yellowish brown, angles densely retrorse puberulent. Petiole 1–3 cm; leaf blade elliptic to oblong, 6–15 × 2.5–4.5 cm, thin papery, adaxially sparsely pilose, densely so on veins, abaxially sparsely yellowish glandular, sparsely pubescent on veins, base abruptly attenuate, margin crenate-serrate, apex acuminate, lateral veins 4- or 5-paired. Panicles terminal and axillary, 10–20 cm, densely gray puberulent; cymes pedunculate, 3–5-flowered; lower floral leaves sessile, upper bractlike, linear, to 5 mm. Calyx campanulate, to 4 mm, pubescent, 2-lipped to middle or below; upper teeth triangular-acuminate, lower teeth narrowly triangular; fruiting calyx dilated to ca. 6 mm. Corolla gray or reddish, to 1 cm, puberulent, tube ca. 5 mm, upper lip ca. 3 mm, lower lip ca. 5 mm. Stamens slightly exerted. Style exerted. Nutlets brown, ovoid, ca. 1.5 mm, glabrous. Fl. and fr. Aug.

• Sunny grassy slopes; 2500 m. Sichuan.

68. *Isodon macrocalyx* (Dunn) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 138. 1929.

大萼香茶菜 da e xiang cha cai

Plectranthus macrocalyx Dunn, Notes Roy. Bot. Gard. Edinburgh 8: 157. 1913; *Amethystanthus taiwanensis* Masamune; *Isodon bifidocalyx* (Dunn) H. Hara; *P. bifidocalyx* Dunn; *P. drosocarpus* Handel-Mazzetti; *Rabdosia bifidocalyx* (Dunn) H. Hara; *R. macrocalyx* (Dunn) H. Hara; *R. taiwanensis* (Masamune) H. Hara.

Herbs perennial. Stems numerous, erect, 40–100(–150) cm, appressed pubescent. Petiole (0.5–)2–3(–6.5) cm; leaf blade ovate, (5–)7–10(–15) × (2–)2.5–5(–8.5) cm, papery, subglabrous, appressed pubescent on veins, base attenuate-decurrent, margin crenate-serrate, apex long acuminate. Racemes terminal and axillary, narrow, 6–10(–15) × ca. 2.5 cm; cymes pedunculate, (1–)3–5-flowered, together forming a pointed panicle; floral leaves subsessile, ovate. Pedicel 2–4 mm. Calyx broadly campanulate, ca. 2.7 × to 3 mm, pubescent, 2-lipped; teeth triangular, lower 2 slightly larger, apex acute; fruiting calyx dilated to 6 mm, obviously 2-lipped. Corolla purplish to purple-red, ca. 8 mm, sparsely puberulent, glandular, tube ca. 4 mm, upper lip ca. 2 mm, lower lip ca. 4 mm. Stamens and style slightly exerted. Nutlets brown, ovoid, ca. 1.5 mm, glabrous. Fl. Jul–Aug, fr. Sep–Oct.

• Thickets and forests on slopes; 600–1700 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Taiwan, Zhejiang.

69. *Isodon scrophularioides* (Wallich ex Benth) Murata, Acta Phytotax. Geobot. 22: 21. 1966.

宽花香茶菜 kuan hua xiang cha cai

Plectranthus scrophularioides Wallich ex Benth, Pl. Asiat. Rar. 2: 16. 1830; *Isodon latiflorus* (C. Y. Wu & H. W. Li) H. Hara; *Rabdosia latiflora* C. Y. Wu & H. W. Li; *R. scrophularioides* (Wallich ex Benth) H. Hara.

Herbs perennial. Stems to 60 cm or more, erect, subglabrous, angles pilose, branched. Petiole (1–)3.5–10 cm; leaf blade circular-ovate to broadly ovate, (3.2–)5.5–14 × (2–)4–10 cm, thin papery, adaxially sparsely pilose, densely puberulent on veins, abaxially sparsely red glandular, sparsely pilose on veins, base shallowly cordate to ± cuneate, margin crenate to crenate-dentate, apex acute to short acuminate, lateral veins 4- or 5-paired. Panicles terminal and axillary, 8.5–20 × 5.5–6 cm, glandular puberulent; cymes pedunculate, 3–11-flowered; lower floral leaves subsessile, upper floral leaves bractlike, ovate, 1–3 mm. Pedicel 3–5(–7) mm. Calyx broadly campanulate, ca. 3.5 × to 5 mm, glandular pubescent, obviously 2-lipped; teeth broadly triangular, upper 3 ca. 1.5 mm, lower 2 ca. 1 mm, apex acute; fruiting calyx dilated to ca. 6.5 × 6 mm. Corolla whitish, pale yellow, or yellow, tip tinged reddish purple, ca. 9 mm; tube ca. 5 mm, subglabrous; upper lip ca. 1.5 mm, lower lip ca. 4 mm. Stamens and style long exerted. Nutlets yellow, ovoid, ca. 1.5 × 1.1 mm, glabrous. Fl. Jul–Oct, fr. Sep–Oct.

Damp grassy banks, shady woods, secondary shrubby growth, forest margins; 2000–3500 m. Yunnan [Bangladesh, Bhutan, India (Sikkim), Nepal].

70. *Isodon flabelliformis* (C. Y. Wu) H. Hara, J. Jap. Bot. 60: 234. 1985.

扇脉香茶菜 shan mai xiang cha cai

Rabdosia flabelliformis C. Y. Wu, Fl. Yunnan. 1: 801. 1977; *Isodon kangtingensis* (C. Y. Wu & H. W. Li) H. Hara; *R. kangtingensis* C. Y. Wu & H. W. Li.

Herbs perennial. Stems ca. 1 m, densely glandular puberulent. Leaves opposite; petiole 1.7–5.7 cm, glandular puberulent; leaf blade broadly ovate to ovate, 3.7–13 × 3–10.5 cm, thin papery, adaxially densely puberulent, pilose or densely pilose, abaxially puberulent, spreading pilose on veins, base ± shallowly cordate to cuneate, margin mucronate crenate or crenate-serrate, apex acute to acuminate, lateral veins 1–4-paired. Panicles terminal and axillary, 15–50 × 6–12 cm, glandular puberulent; cymes pedunculate, 7–15-flowered; lower floral leaves subsessile or sessile, upper bractlike, oblate to broadly ovate, 5–12 × 2.5–12 mm, apex acuminate. Pedicel 6–12 mm. Calyx campanulate, ca. 4.5 × 4 mm, purplish, densely minutely glandular pubescent, 2-lipped; teeth subequal, acuminate, 2/3–3/4 as long as calyx, upper 3 lanceolate-triangular, lower 2 narrowly triangular. Corolla blue, ca. 1.1 cm, tube 5–6 mm, upper lip as long as lower lip. Stamens exerted. Style exerted. Nutlets yellowish, ovoid-oblong, ca. 1.6 × 1 mm. Fl. and fr. Sep–Oct.

• Broad-leaved forests, rocky slopes, forest margins; 2600–3100 m. Sichuan, Yunnan.

71. *Isodon latifolius* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

宽叶香茶菜 kuan ye xiang cha cai

Rabdosia latifolia C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 591. 1977.

Herbs perennial. Stems erect, to 1 m, densely retrorse puberulent, purplish, nodes slightly thickened. Petiole 1.5–3 cm; leaf blade broadly ovate to oblate-ovate, thin papery, adaxially sparsely minutely hispid, densely pubescent on veins, abaxially sometimes purplish red, densely puberulent, sparsely yellowish glandular, base abruptly attenuate-decurrent, margin crenate-serrate, apex rounded to acuminate, apical tooth lanceolate, lateral veins 3- or 4-paired. Racemes terminal and axillary, in a panicles to 20 cm, densely glandular pubescent; cymes pedunculate, widely spaced, 1–3-flowered; lower floral leaves subsessile, small; bracts ovate to linear. Calyx broadly campanulate, to 4.5 × 4 mm, densely pubescent, glandular, conspicuously 2-lipped; teeth triangular, apex acute, upper teeth ca. 2 mm, narrow, lower ca. 2.5 mm; fruiting calyx dilated to 6 mm. Corolla reddish purple or white, ca. 7.5 mm, sparsely puberulent, glandular, tube ca. 4 mm, lower lip longer than upper. Stamens included. Style included. Nutlets yellowish brown, ovoid, ca. 1.2 mm, glabrous. Fl. and fr. Aug–Sep.

• Grasslands; 1400–2000 m. Sichuan (Chengkou Xian).

72. *Isodon weisiensis* (C. Y. Wu) H. Hara, J. Jap. Bot. 60: 237. 1985.

维西香茶菜 wei xi xiang cha cai

Rabdosia weisiensis C. Y. Wu, Fl. Yunnan. 1: 802. 1977.

Herbs perennial. Stems erect, glabrous, sparsely glandular, angles puberulent. Petiole 1–6 cm, narrowly winged; leaf blade broadly ovate to subcircular, 4.5–11.5 × 8 cm, herbaceous or ± membranous, adaxially sparsely strigose-hispidulous, densely puberulent on veins, abaxially sparsely puberulent, base abruptly attenuate-decurrent, margin coarsely or double serrate, apex acuminate, lateral veins 4- or 5-paired. Panicles narrow, terminal, to 15 cm, densely glandular pubescent; cymes pedunculate, widely spaced, 1–5-

flowered; lower floral leaves short petiolate, ovate, 1.5–2 cm, margin coarsely dentate. Calyx broadly campanulate, ca. 2× to 3 mm, pubescent, glandular, conspicuously 2-lipped to below middle, teeth acuminate; fruiting calyx dilated to 8×8 mm. Corolla white, ca. 7.5 mm, sparsely pilose, tube ca. 4 mm, upper lip ca. 2.5 mm, lower lip ca. 3.5 mm. Stamens included. Style included. Nutlets yellowish brown, ± globose, ca. 1.5 mm in diam., glabrous. Fl. Aug–Sep, fr. Sep–Oct.

- Valleys; 2600 m. Yunnan.

73. *Isodon gibbosus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 234. 1985.

囊花香茶菜 nang hua xiang cha cai

Rabdosia gibbosus C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 592. 1977.

Herbs perennial. Stems erect-ascending, ca. 40 cm, densely gray puberulent. Petiole 0.5–1.5 cm; leaf blade narrowly lanceolate to oblong, gradually smaller and margin entire upward, 3–7 × 0.8–2.2 cm, papery, adaxially sparsely minutely hispid, densely pubescent on veins, abaxially scattered yellowish glandular, sparsely minutely hispid on veins, base narrowly cuneate, margin crenate-serrate, apex acuminate, lateral veins ca. 4-paired. Cymes axillary, 0.8–2 cm, dichotomous, each branch 1- or 2(–4)-flowered; peduncle 1–3 mm, densely puberulent. Pedicel 1–3 mm, densely puberulent. Calyx campanulate, ca. 2.5× to 2.5 mm, veins and margins puberulent, conspicuously 2-lipped; upper teeth ovate, apex acute; lower teeth narrowly triangular; fruiting calyx broadly campanulate, slightly curved, dilated to 4.5 mm. Corolla to 8 mm, sparsely puberulent, glandular, tube conspicuously pouched on upper side near base, ca. 2 mm in diam., abruptly recurved above base, slightly constricted, throat ca. 1.2 mm wide, upper lip ca. 3.5 mm, lower lip ca. 4 mm. Stamens included. Style included. Nutlets brown, subglobose, ca. 1.5 mm in diam., glabrous.

- Hills. Guizhou, Sichuan.

74. *Isodon lungshengensis* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 235. 1985.

龙胜香茶菜 long sheng xiang cha cai

Rabdosia lungshengensis C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 592. 1977.

Herbs perennial. Stems erect-ascending, 20–50 cm, straw colored, very densely puberulent. Petiole 5–8 mm; leaf blade narrowly lanceolate to oblong, 5.5–7.5 × 1.5–2 cm, papery, adaxially sparsely minutely hispid, densely puberulent on veins, abaxially minutely yellowish glandular, sparsely minutely hispid on veins, base narrowly cuneate, margin coarsely serrate above middle, apex long acuminate, lateral veins 3- or 4-paired. Racemes terminal and axillary, densely pubescent, in panicles 2.5–10×2–5 cm; cymes pedunculate, 1–3-flowered; floral leaves narrowly lanceolate, 1–2 cm×3–4 mm, margin shallowly serrate to subentire. Calyx purplish green, campanulate, ca. 2 mm, pubescent, glandular, 2-lipped, teeth acute; fruiting calyx urceolate-campanulate, dilated to ca. 4 mm. Corolla purplish, ca. 7 mm, sparsely pubescent, tube ca. 3.5 mm, pouched on upper side near base, upper lip ca. 3 mm, lower lip ca. 3.5 mm. Stamens included. Style included. Nutlets yellowish brown, ovoid, ca. 1.3 mm, glabrous. Fl. and fr. Nov.

- Shady streamsides in sparse forests; 400–700 m. Guangxi (Longsheng Xian).

75. *Isodon melissoides* (Benth) H. Hara, J. Jap. Bot. 60: 235. 1985.

苞叶香茶菜 bao ye xiang cha cai

Plectranthus melissoides Benth, Labiat. Gen. Spec. 39. 1832; *Isodon melissiformis* (C. Y. Wu) H. Hara; *Rabdosia melissiformis* C. Y. Wu; *R. melissoides* (Benth) H. Hara.

Herbs perennial. Stems densely retrorse gray pubescent, papillate strigose. Petiole less than 5 mm; leaf blade ovate-triangular to broadly ovate-rhombic, 2–3 × 1–2.5 cm, reduced upward, papery, adaxially sparsely minutely hispid, abaxially glabrous, sparsely minutely hispid on veins, base broadly cuneate-decurrent, margin remotely coarse crenate to crenate-serrate, apex acute to short acuminate, lateral veins 3- or 4-paired. Cymes axillary, 3–5-flowered, pubescent; peduncle to 5 mm; bracteoles ovate-lanceolate, to 5 mm. Pedicel 1.5–2 mm. Calyx campanulate, pubescent, ca. 3 mm, 2-lipped to below middle, teeth ± acute, fruiting calyx dilated to 5 mm. Corolla nearly white, ca. 1 cm, sparsely pubescent; tube ca. 5 mm, abruptly pouched near base, declinate, slightly constricted at throat; upper lip ca. 3.5 mm, lower lip ca. 5 mm. Stamens included. Style included. Nutlets brown, ovoid, ca. 1.5 mm, glabrous. Fl. and fr. Aug–Sep.

- Hills; 1300–2000 m. Yunnan [Bangladesh, India].

76. *Isodon brevicealcaratus* (C. Y. Wu & H. W. Li) H. Hara, J. Jap. Bot. 60: 233. 1985.

短距香茶菜 duan ju xiang cha cai

Rabdosia brevicealcarata C. Y. Wu & H. W. Li, Fl. Reipubl. Popularis Sin. 66: 591. 1977.

Herbs perennial. Stems erect, ca. 90 cm, much branched, angles densely retrorse gray pubescent. Petiole of mid stem leaves to 4.5 cm; leaf blade ovate, ca. 4 × 2 cm, ± membranous, adaxially dark green, sparsely minutely hispid, minutely pubescent on veins, abaxially tinged purplish, sparsely minutely white hispid, base abruptly attenuate, margin crenate, apex short acuminate to acute. Panicles terminal, 6–8 cm, densely pubescent; cymes pedunculate, widely spaced, 1–3-flowered; upper floral leaves bractlike, much shorter than calyces. Pedicel ca. 3 mm. Calyx campanulate, ca. 3 mm, slightly pubescent, glandular, slightly 2-lipped; teeth less than 1/2 as long as calyx, ovate-triangular, acute, lower 2 slightly longer. Corolla purplish blue, to 1.1 cm, pilose outside, yellowish glandular; tube ca. 5 mm, base ca. 1 mm in diam., upper side with an exerted spur ca. 3 mm, throat ca. 1.5 mm wide, upper lip ca. 4 mm, lower lip to 6 mm. Stamens and style nearly included. Nutlets unknown. Fl. Oct.

- Sparse montane forests; 600 m. Guangdong (Lian Xian).

77. *Isodon adenanthus* (Diels) Kudô, Mem. Fac. Sci. Taihoku Imp. Univ. 2: 123. 1929.

腺花香茶菜 xian hua xiang cha cai

Plectranthus adenanthus Diels, Notes Roy. Bot. Gard. Edinburgh 5: 228. 1912; *P. wui* Sun ex C. H. Hu; *Rabdosia adenantha* (Diels) H. Hara.

Herbs perennial. Stems numerous, ascending, 15–40 cm, few branched, densely retrorse gray pubescent. Petiole of mid stem leaves 2–10 mm; leaf blades largest, rhombic-ovate to

ovate-lanceolate, (1.5–)2.5–3.5(–6.5) ×(1–)1.5–2.5 cm, thin papery, scattered and yellowish glandular, abaxially white pilose, densely white pubescent on veins, base broadly cuneate-decurrent, apex obtuse. Cymes pedunculate, 3–5-flowered, in terminal spikelike panicles 10–20 cm, densely pubescent; floral leaves mostly bractlike, lanceolate, ± entire. Calyx purple, broadly campanulate, 2–3 mm, scattered yellowish glandular, pilose on veins, 2-lipped; teeth ovate-lanceolate, 1–1.5 cm, apiculate at apex, lower 2 slightly larger; fruiting calyx projected, conspicuously 2-lipped, dilated to 4 mm. Corolla blue, purple, pink, or white, densely pubescent except for upper side near base, yellowish glandular, tube ca. 4 mm, upper lip ca. 4 mm, lower lip to 6 mm. Stamens included. Style included. Nutlets brown, ovoid, ca. 1.5 mm in diam. Fl. Jul-Aug, fr. Jul-Sep.

- Pine forests, grasslands; 1100–3400 m. Guizhou, Sichuan, Yunnan.

Used medicinally for dysentery and enterogastritis.

