

44. LEPTODERMIS Wallich in Roxburgh, Fl. Ind. 2: 191. 1824.

野丁香属 *ye ding xiang shu*

Chen Tao (陈涛)

Shrubs, sometimes low or reduced, unarmed, usually with short shoots. Raphides present. Leaves opposite, apparently without domatia; stipules persistent, interpetiolar, triangular, often aristate to spinescent. Inflorescences terminal on main stems and/or axillary short shoots (and then appearing axillary), capitate to congested-fasciculate or -cymose and several flowered or sometimes reduced to 1 flower, bracteate with bracts often fused in pairs. Flowers sessile to shortly pedicellate, bisexual, distylous. Calyx limb (4 or)5(or 6)-lobed. Corolla white to pink or purple, funnelform, inside glabrous to pubescent; lobes (4 or)5(or 6), valvate or valvate-induplicate in bud. Stamens (4 or)5(or 6), inserted in corolla throat, exerted or included; filaments short; anthers dorsifixed. Ovary 5-celled, ovules 1 in each cell, basal, erect, anatropous; stigmas (2 or)3–5(or 6), linear, exerted or included. Fruit capsular, ellipsoid to ovoid, opening through an apical operculum then splitting longitudinally into 5 valves, cartilaginous to woody, calyx limb persistent; aril reticulate, free or adherent to seed; seeds few, medium-sized, ellipsoid, straight, with thin testa; cotyledons rounded; radicle short, inferior.

About 40 species: Himalaya to Japan; 34 species (30 endemic) in China.

- 1a. Aril free from testa (fruit of *L. brevisepala* and *L. dielsiana* not seen).
 - 2a. Bracteoles free.
 - 3a. Stipules compressed triangular, shortly acuminate; bracteole longer than calyx 5. *L. dielsiana*
 - 3b. Stipules long triangular, acuminate; bracteole shorter than calyx or subequal in length 26. *L. scissa*
 - 2b. Bracteoles connate.
 - 4a. Bracteoles connate from base to middle.
 - 5a. Bracteoles longer than calyces or nearly as long as calyces.
 - 6a. Flowers mostly terminal on branches or laterally arranged; calyx lobes lanceolate-subulate, acuminate or shortly acuminate, glabrous; corolla funnelform, lobes not incurved at apex; stamens inserted in corolla tube throat 8. *L. glomerata*
 - 6b. Flowers 3 terminal on branches; calyx lobes short or long triangular or subovate, very acute, ciliate; corolla narrowly funnelform, lobes incurved at apex; stamens inserted below corolla tube throat.
 - 7a. Calyx lobes short or long triangular 14. *L. limprichtii*
 - 7b. Calyx lobes subovate 21. *L. pumila*
 - 5b. Bracteoles shorter than calyces.
 - 8a. Leaves thickly papery, glabrous; stipules subtriangular; calyx lobes not ciliate 2. *L. brevisepala*
 - 8b. Leaves papery, pilose; stipules broadly triangular, glandular on margins; calyx lobes ciliate.
 - 9a. Stipules with stiff acicular apiculus, sometimes with stipitate glands on margins; corolla lobes triangular-oblate, apex obtuse; stamens inserted in corolla tube throat 29. *L. velutiniflora*
 - 9b. Stipules with acicular apiculus, with 2 glandular teeth; corolla lobes ovate-triangular, apex reflexed; stamens inserted below corolla tube throat 20. *L. potaninii*
 - 4b. Bracteoles 1/2–2/3 connate.
 - 10a. Bracteoles equal or subequal in length to calyces; corolla lobes inflexed at apex.
 - 11a. Flowers with pedicels, 3–9 mm 28. *L. umbellata*
 - 11b. Flowers sessile or subsessile.
 - 12a. Corolla small, 11–14 mm; free portion of bracteole triangular 16. *L. oblonga*
 - 12b. Corolla large, to ca. 16 mm; free portion of bracteole broadly triangular 9. *L. gracilis*
 - 10b. Bracteoles longer than calyces; corolla lobes not inflexed at apex.
 - 13a. Stigmas 3-lobed, filiform.
 - 14a. Leaves thickly papery; bracteoles sparsely ciliate; calyx lobes shortly acuminate; corolla purplish red, lobes 4 or 5, ovate-lanceolate; stamens inserted above corolla tube throat 17. *L. ordosica*
 - 14b. Leaves leathery; bracteoles pilose; calyx lobes obtuse; corolla white, lobes 5, sublanceolate; stamens inserted below corolla tube throat 24. *L. scabrida*
 - 13b. Stigmas 5-lobed, linear.
 - 15a. Leaves papery, 3–10 cm, petioles ca. 24 mm; calyx lobes triangular-ovate; corolla lobes with 3 obtuse teeth, incurved 12. *L. kumaonensis*
 - 15b. Leaves subleathery or leathery, to 4 cm, petioles 4–7 mm; calyx lobes broadly oblong to suborbicular; corolla lobes obtuse.

- 16a. Leaves ovate to broadly lanceolate, whitish or pale yellow abaxially when dry, veinlets indistinct abaxially 4. *L. coriaceifolia*
- 16b. Leaves ovate, ovate-oblong, elliptic, or suborbicular, pale green or iron-gray abaxially when dry, veinlets conspicuous abaxially.
 - 17a. Flowers 3–7 fascicled, terminal or in axils of upper 3–6 pairs of leaves, subsessile or pedicels 0.3–2.6 mm 30. *L. vestita*
 - 17b. Flowers (1–)3–5 fascicled, terminal on ultimate branches of inflorescence, forming a thyrse, pedicels to 8 mm 33. *L. yangshuoensis*
- Ib. Aril adherent to testa.
 - 18a. Bracteoles separated, scaly 1. *L. beichuanensis*
 - 18b. Bracteoles connate.
 - 19a. Bracteoles nearly as long as corolla.
 - 20a. Stigmas 2-lobed 13. *L. lanata*
 - 20b. Stigmas 5-lobed.
 - 21a. Bracteoles tomentose.
 - 22a. Bracteoles slightly longer than calyces; calyx lobes ovate, acuminate 10. *L. handeliana*
 - 22b. Bracteoles shorter than calyces; calyx lobes ovate-oblong, slightly obtuse 27. *L. tomentella*
 - 21b. Bracteoles pubescent or ciliate on upper portion.
 - 23a. Leaves 1–4 × ca. 2 cm, petioles to 1 cm; bracteoles subulate-acuminate at apex 23. *L. rehderiana*
 - 23b. Leaves 4–9 × 1.25–2 mm, petioles very short or subsessile; bracteoles rounded at apex, apiculate 25. *L. schneideri*
 - 19b. Bracteoles obviously longer or shorter than calyces.
 - 24a. Bracteoles obviously longer than calyces.
 - 25a. Stigmas usually 3-lobed 32. *L. xizangensis*
 - 25b. Stigmas usually 5-lobed.
 - 26a. Leaves glabrous on both surfaces.
 - 27a. Stipules triangular, glabrous; flowers subsessile; calyx lobes densely fimbriate-ciliate; corolla pallid purple, narrowly funnellform, lobes lanceolate; stamens inserted above corolla tube throat 3. *L. buxifolia*
 - 27b. Stipules ovate-triangular, covered with soft hairs; flowers with pedicel 3–5(–8) mm; calyx lobes shortly ciliate; corolla purplish blue, funnellform, lobes broadly ovate; stamens inserted below corolla tube throat 6. *L. diffusa*
 - 26b. Leaves hairy on both surfaces, at least ciliate along margins.
 - 28a. Stipules compressed triangular or triangular, acuminate, apiculus rarely with 1 or 2 lateral glandular teeth; calyx lobes acuminate 10. *L. handeliana*
 - 28b. Stipules broadly triangular, cuspidate-apiculate; calyx lobes obtuse to truncate 19. *L. pilosa*
 - 24b. Bracteoles obviously shorter than calyces.
 - 29a. Stigmas more than 3-lobed.
 - 30a. Corolla lobes subovate, apex inflexed and beaked 11. *L. hirsutiflora*
 - 30b. Corolla lobes ovoid-lanceolate, apex mucronate or slightly obtuse.
 - 31a. Leaves slightly thick; bracteoles abruptly acuminate at apex; calyx lobes triangular-lanceolate; corolla lobes acute, margins revolute 18. *L. parvifolia*
 - 31b. Leaves papery, margins obviously recurved; bracteoles abruptly acute; calyx lobes oblong-ovate; corolla lobes slightly obtuse 22. *L. purdomii*
 - 29b. Stigmas 2- or 3-lobed.
 - 32a. Corolla broadly funnellform; stamens inserted below corolla tube throat.
 - 33a. Stipules apiculate at apex, sparsely pilose at base; bracteole lobes triangular; corolla white, pallid pink, or purple, lobes apically inflexed and beaked 15. *L. ludlowii*
 - 33b. Stipules lacerate at apex, with glandular hairs along margins; bracteole lobes lanceolate or ensiform-lanceolate; corolla purple, lobes shallowly 3-parted at apex, margins wavy 34. *L. yui*
 - 32b. Corolla funnellform; stamens inserted in corolla tube throat.
 - 34a. Stipules with fimbriate collaters along margins; corolla pallid blue or purplish or purplish red; stigmas 2-lobed 7. *L. Forrestii*
 - 34b. Stipules usually glandular along margins; corolla white or pallid red, stigmas 3-lobed 31. *L. wilsonii*

北川野丁香 bei chuan ye ding xiang

Shrubs, ca. 2 m tall; branches slender, terete, gray or grayish brown, with 2 bands of soft hairs. Petiole 1–3 mm; leaf blade papery, olive-green when dry, narrowly lanceolate or oblong-lanceolate, sometimes subovate or elliptic, 0.8–3.5 × 0.3–1 cm, slightly scabrous adaxially, midrib strigose abaxially, base cuneate, apex acuminate or acute; midrib and lateral veins slightly prominent on both surfaces, lateral veins 3 or 4 pairs; stipules small, subtriangular, ca. 1 mm, stiffly apiculate, usually caducous. Flowers 1–3 terminal, sessile; bracteoles scaly, shorter than 1 mm, stiffly apiculate. Calyx tube ca. 1.8 mm; lobes broadly triangular, width longer than length, ca. 0.6 mm, sometimes margins denticulate. Immature fruit subobovate, ca. 3 mm; seed aril adherent to testa.

- About 1400 m. NC Sichuan (Beichuan).

2. *Leptodermis brevisepala* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 21. 1999.

短萼野丁香 duan e ye ding xiang

Shrubs, ca. 40 cm tall; branchlets terete, erect and long, ferruginous, pubescent or puberulent. Leaves sparsely arranged or 4 fascicled at tips of branchlets; petiole 1–2 mm or sometimes leaves subsessile; blade thickly papery, nearly black adaxially and dark brown abaxially when dry, ovate or lanceolate, 6–10 × 3–5 mm, both surfaces glabrous, margins slightly revolute, apex shortly acuminate or subacute, rarely obtuse; lateral veins 3 or 4 pairs, together with midrib conspicuously prominent abaxially; stipules subtriangular, ca. 1.6 mm, subglabrous, with a long stiff apiculus. Cymes almost sessile, terminal on short branches, sometimes axillary, 5–7-flowered. Flowers subsessile or shortly pedicellate; bracteoles transparent, connate below middle portion, subequal to calyx tube in length, subglabrous or puberulent, with a stiff acicular apiculus. Calyx tube black when dry, 1.4–1.7 mm; lobes 5, ovate-orbicular or ovate-triangular, length subequal to width, ca. 0.4 mm, not ciliate, obtuse or subacute. Corolla white, funnelform, 8–10 mm, puberulent outside, densely white villous inside; lobes 5, suborbicular, margins wavy or erose. Stamens 5, inserted below throat of corolla tube; anthers linear, included. Style exserted; stigmas usually 3-lobed, involute.

- About 1800 m. Sichuan (Huili).

3. *Leptodermis buxifolia* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 20. 1999.

黄杨叶野丁香 huang yang ye ye ding xiang

Leptodermis buxifolia f. *strigosa* H. S. Lo.

Shrubs, 0.5–2 m tall; branches terete, slightly stout, black or dark gray, glabrous, branches slightly elongate or abbreviated. Leaves sparse or fascicled in axils of short branches; petiole short or nearly absent; blade thickly leathery, ovate, lanceolate, elliptic, or oblong, 5–8(–12) × 2–5(–8) mm, both surfaces glabrous, shiny, margins recurved, apex obtuse or rounded, sometimes subacute; midrib raised abaxially, lateral veins inconspicuous; stipules triangular, ca. 1.2 mm, glabrous. Cymes terminal or axillary, usually 3-flowered, sometimes in

narrow thyrses. Flowers subsessile; bracteoles transparent, ca. 2 mm, ca. 3/4 connate, lobes short, with prominent tip, glabrous. Calyx small; tube ca. 1 mm; lobes oval, 0.4–0.5 mm, densely fimbriate-ciliate. Corolla light purple, narrowly funnelform, 9–10(–14) mm; tube slender, pulverulent pubescent outside, pilose inside, often pendulous; lobes 5, lanceolate, ca. 2 mm. Stamens 5, inserted above corolla tube throat; anthers filiform, exserted. Style ca. 1/2 as long as corolla; stigmas (2 or)5-lobed, lobes filiform, included. Fruit 4–4.5 mm; seed aril reticulate, adherent to testa. Fl. Jul–Aug, fr. Aug–Sep.

- Thickets, dry mountain slopes; 1100–2100 m. Gansu, SW Shaanxi, Sichuan.

4. *Leptodermis coriaceifolia* Tao Chen, sp. nov.

革叶野丁香 ge ye ye ding xiang

Type: China. Yunnan: Xichou Xian (西畴县) [“Si-chourhsien”], Fadou (法斗) [“Faa-doo”], 1500 m, in open thickets on rock hill, 26 Sep 1947, K. M. Feng 12065 (holotype, A; isotypes, IBSC, KUN).

Haec species *Leptodermidi vestitae Hemsley similis, sed ab ea folii lamina ovata vel late lanceolata crassa in sicco coriacea ac abaxialiter albida vel pallide lutea, venis lateralibus abaxialiter indistinctis vel parum prominentibus, venulis adaxialiter plerumque distinctis abaxialiter indistinctis, pedunculo hirsuto vel glabrescente, pedicellis dense hirsutis, bracteolis crassiusculis plerumque non hyalinis margine prope apicem conspicue ciliato, corolla extus sparsim minuteque hirsuta trichomatibus sparsis longioribus prope alabastris apicem atque stylo 3- usque 5-lobato differt.*

Shrubs to 1.2(–3) m tall. Stems dark brown, glabrescent, lenticellate; branches many, young branches pale yellow when dry, with 2 bands of sparse hairs decurrent from stipules; bark gray, fissured and peeling off when old. Leaves decussate; petiole short, to 0.7 mm, sparsely hairy to glabrous; blade dark green adaxially, whitish or pale yellow abaxially when dry, ovate to broadly lanceolate, 1–6 × 0.5–2.5 cm, thick, leathery when dry, glabrous on both surfaces or sparsely hairy along midvein, base attenuate, cuneate, margins sparsely hairy, apex acuminate to acute; midvein impressed adaxially, prominent abaxially, lateral veins distinct adaxially, indistinct or slightly prominent abaxially, with 4–8 veins per side, veinlets usually distinct adaxially, indistinct abaxially; stipules rigid, broadly triangular, ca. 1 mm, hairy abaxially, cuspidate, mucronate at apex. Inflorescences terminal on new shoots with all upper nodes bearing 2–4 lateral shoots with axillary and terminal clusters of cymules 3–9-flowered, forming a narrow thyrses with an elongate central axis and short lateral branches; peduncle hairy or glabrescent; bracts of cymules ligulate or leaflike, 1–4.5 mm or longer, with a midvein slightly prominent abaxially, margins hairy, apex acuminate to acute. Flowers heterostylous, subsessile or shortly pedicellate; pedicel densely hairy; bracteole pairs rigid, slightly thick, usually not transparent, obovate, ca. 3 mm, longer than or subequal to calyx at anthesis, connate for ca. 3/4 length, few veined, minutely short and sparsely hairy abaxially, margins conspicuously ciliate near apex, apex acute to obtuse, shortly mucronulate. Calyx tube absent; lobes 5,

ovate, ca. 1 mm, margins long ciliate, apex acute. Corolla purplish white; tube narrowly funnelform, ca. 10 mm, outside sparsely minutely hairy, with sparse longer hairs near apex of flower buds, inside villous above middle of tube; lobes 5, ovate-oblong, ca. 3 mm, veined, lower part with thinner margins, upper part triangular, apex shortly acuminate, hooked. Long-styled flower: stamens inserted at throat ca. 1.5 mm from sinus, filaments attached to lower 1/3 of anthers, free part shorter than lower portion of anthers, anthers ca. 1.5 mm, introrse; style ca. 12 mm, glabrous, 3(–5)-lobed, lobes ca. 1 mm, papillose. Capsule ca. 6 mm; seeds with reticulate aril free from testa. Fl. Sep–Oct, fr. Nov–Dec.

Open thickets on limestone hills; 300–1700 m. Guangxi, Yunnan [Vietnam].

5. *Leptodermis dielsiana* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. 18: 151. 1922.

丽江野丁香 li jiang ye ding xiang

Small shrubs, 8–50 cm tall, with rootlike flagella; young branches not lignified, red, puberulent, old branches glabrescent, with gray bark, short branches 3–10 mm, sometimes longer, with 2 or 3 pairs of leaves. Leaves sparsely arranged on long branches, crowded on lateral short branches, smaller on lower part of both short and long branches; petiole 2–6 mm, pubescent; blade sometimes suborbicular, 6–15 × 4–12 mm, on upper part of branches ovate or oblong, 10–30 × 5–15 mm, covered with conical hairs except pubescent on midrib adaxially, glabrous or sparsely hairy on nerves abaxially, base attenuate to petiole, apex acute or slightly obtuse, apiculate; lateral veins 3–5 pairs, confluent in arcs; stipules membranous, ca. 1.5 mm, with 2 dominate veins parallel to margins and confluent at apex, stipules on upper part, especially on inflorescences, compressed triangular, shortly acuminate, with 2 glandular teeth near apex, 2 others slightly apart, stipules on lower part usually without glandular teeth, ciliate at base, very shortly puberulent. Flowers 1–3 terminal on very short branches, sometimes 1 or 2 flowers axillary in axils of upper leaf pair; pedicels covered with papillose scabrid hairs; bracteoles 2, free, sessile, transparent, ovate-oblong or oblong, 2.5–3.5 mm, longer than calyx, puberulent, ciliate on upper part, with veins percurrent, apiculate. Calyx lobes 5(or 6), submembranous, oblong, veined, ciliate, apiculate or slightly obtuse. Corolla large, 15–17 mm; tube funnelform, shortly papillose near base outside, villous, glabrous at base inside; lobes 3–4 × shorter than corolla tube, ovate-orbicular, 4–5 mm, glabrous outside, villous inside, not reflexed, margins wavy. Stamens inserted in corolla tube throat; filaments attached to middle of anthers, slightly longer than base of anthers; anthers linear, included or semi-exserted. Style 5-lobed, glabrous, lobes relatively long, with long papilla, included or exerted. Fl. May.

• NW Yunnan (Dali, Lijiang, Yongning).

6. *Leptodermis diffusa* Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 13: 373. 1894.

文水野丁香 wen shui ye ding xiang

Shrubs, 1–1.5 m tall; branchlets often diffuse, together

with peduncles and pedicels puberulent, terete. Petiole to 4 mm; leaf blade silver-gray or grayish yellow adaxially when dry, pale abaxially, ovate-lanceolate to elliptic, 18–40 × 8–15 mm, both surfaces glabrous, base attenuate or cuneate, apex acute or obtuse; midrib prominent below, lateral veins 4 pairs, slightly conspicuous; stipules ovate-triangular, ca. 1.5 mm, with soft hairs. Flowers terminal and in axils of upper leaves, subumbellate, usually many in a terminal, large, much-flowered panicle; pedicels usually 3–5(–8) mm; bracts purplish blue, turning brown on margins, longer than calyces, 3–3.5 mm, glabrous or hairy, membranous, connate to above middle, free portion very shortly bilabiate, labellum short, apiculate. Flowers dimorphic, heterostylous. Calyx lobes orbicular, shortly ciliate. Corolla purplish blue, funnelform, 16–18 mm, puberulent outside, sparsely pubescent inside; lobes more than 3 × shorter than tubes, broadly ovate, ca. 3.5 × 3.2 mm, abruptly acute, spreading. Anthers ca. 2.5 mm, slightly exerted in short-styled flowers; filaments as long as anthers, inserted in upper portion of calyx tube. Style exerted in long-styled flowers, filiform, glabrous; stigmas 5-lobed, linear. Immature capsule broader and longer than bracts. Fl. Aug, fr. Sep–Oct.

• Rocks at streamsides; 600–1300 m. S Gansu (Wenxian), S Sichuan.

7. *Leptodermis forrestii* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 274. 1912.

高山野丁香 gao shan ye ding xiang

Shrubs, 0.6–1.2 m tall, much branched; old branches gray or slightly reddish, bark peeling off, young branches slender, with 2 opposite shallow longitudinal channels, densely covered with short soft hairs. Leaves petiolate or sometimes subsessile; petiole shorter than 2 mm; blade membranous-papery, ± black or sometimes brownish when dry, ovate or lanceolate, rarely oblong or broadly ovate, 1–3 × 0.6–1.5 cm, dispersedly strigose adaxially, glabrous or with crinkled long soft hairs on midrib and lateral veins abaxially, rarely entirely hairy, base usually sharply contracted, attenuate into short stalk, apex acute to subacuminate; lateral veins 4–6 pairs, slender, obvious abaxially; stipules triangular or compressed triangular, 2–2.5 mm, pubescent outside, margins with fimbriate collaters, with 2 nerves arching upward and joining at apiculate apex. Flowers usually solitary, terminal, sessile, dimorphic, heterostylous; short-styled flowers: bracts 2, small, ca. 1.5 mm, usually connate, awned apiculate. Calyx black when dry, shiny; lobes 5, narrowly and long triangular, 3.8–4 mm, slightly thick, glabrous or sparsely ciliate on upper portion, equal to calyx in length or slightly shorter. Corolla light blue or slightly reddish, funnelform, 20–22 mm, glabrous outside, white villous inside; limb broad, spreading; lobes 5, induplicate, elliptic, ca. 6 mm, with an incrassate area in center, lateral areas thin, soft, equal to incrassate area in length, with branched venation, margins with erose teeth, apex ?apiculate. Stamens 5, inserted in throat of corolla tube; filaments ca. 1.5 mm; anthers linear, ca. 2.7 mm, apex slightly exerted from tube. Style ca. 10 mm; stigmas 2-lobed, lobes linear, ca. 2.7 mm. Capsules ca. 5 mm; seeds black; aril reticulate, adherent to testa.

• Forests; 3200–3400 m. Sichuan, SE Xizang (Bomi, Nyingchi),

NW Yunnan (Lijiang).

8. *Leptodermis glomerata* Hutchinson in Sargent, Pl. Wilson. 3: 406. 1916.

聚花野丁香 ju hua ye ding xiang

Small shrubs, up to 60 cm or slightly taller; stems branched at base, branches erect, slender, usually purplish red, with hairs in 2 opposite bands, internode 3–4 cm or longer. Leaves opposite; petiole 1–2 mm or longer; blade thinly papery, lanceolate or ovate-lanceolate, sometimes ovate, 1–5 × 0.6–2 cm, glabrous or scabrid at margins adaxially, subglabrous abaxially, reticulately veined, base very pointed, apex acute or acuminate; lateral veins 4–6 pairs, arched, prominent abaxially; stipules broad at base, long cuspidate upward, 2.5–4 mm, sparsely hairy near base or subglabrous outside. Flowers congested at tips of branches, sessile or conspicuously petiolate for lateral flowers, dimorphic, heterostylous; long-styled flowers with bracteoles membranous, opposite, connate at base, 2.5 mm or slightly shorter, glabrous, abruptly subulate-acuminate. Calyx turning black when dry; tube 2–2.2 mm, glabrous; lobes 5, lanceolate-subulate, ca. 2 mm, stiff, glabrous, usually not ciliate, acuminate or acute. Corolla tube slightly curved, ca. 1 cm, dilated upward, pubescent outside, sparsely pubescent on throat; lobes 5, ovate, ca. 3.5 × 2.5 mm, obtuse and apiculate. Stamens 5, inserted in throat of corolla tube; filaments ca. 2.8 mm; anthers ca. 3 mm, slightly exerted. Style glabrous, 10–11 mm; stigmas 5-lobed, lobes ca. 1 mm; short-styled flowers: style ca. 5 mm, stigmas 3–5-lobed, lobes linear, 2.5–5 mm. Capsule narrowly ellipsoidal, persistent calyx lobes ca. 9 mm, 5-ridged, pale brown, glabrous, 5-valved when mature, with 5 utricle-like pyrenes; seeds linear, embedded in reticulate aril; aril free from testa.

- Sparse forests, hill slopes; 1800–2500 m. Yunnan.

9. *Leptodermis gracilis* C. E. C. Fischer, Bull. Misc. Inform. Kew 1940: 293. 1941.

柔枝野丁香 rou zhi ye ding xiang

Shrubs, 1.5–2 m tall; branches slender, usually nodding, grayish white, pubescent. Leaves opposite; petiole 2–6 mm; blade papery, silver-gray adaxially, slightly pallid abaxially, elliptic to lanceolate, 1.4–3.5 × 5–13 mm, adaxially glabrous except sometimes hispid on midrib and margin, abaxially usually hairy on midrib and lateral veins, margins hispidulous ciliate, base cuneate, ± decurrent, apex acute; stipules interpetiolar, broad at base, long cuspidate upward, ca. 3 mm, puberulent, ciliate. Cymes terminal and axillary on upper portion of branchlets; peduncle ca. 3.5 mm; flowers 3 fascicled, sessile; bracts narrowly elliptic-lanceolate, ca. 4 mm, ciliate, acute; bracteoles 2, connate into a sheath ca. 2.5 mm, free portion broadly ovate, 1–1.5 mm, 3-nerved, apiculate. Calyx tube turbinate, 5-ridged, 1.2–1.5 mm; lobes 5, oblong, ca. 1.2 mm, ciliate, rounded or subtruncate. Corolla white or purple, narrowly funnellform; tube slender, ca. 8 mm, pilose above base inside; lobes 5, gladiate, ca. 1.5 mm, subacute. Stamens 5, inserted in corolla tube throat; anthers sessile, linear, ca. 1.5 mm, included. Style slender; stigmas 3, filiform, 1–1.5 mm, papillose, slightly exerted. Cap-

sules linear-oblong, ca. 5 mm, dehiscent in 5 valves; seeds not seen.

- Thickets, hill slopes; 1000–2700 m. NC Sichuan, SE Xizang.

1a. Flowers smaller; corolla ca. 9.5 mm 9a. var. *gracilis*

1b. Flowers larger; corolla ca. 16 mm 9b. var. *longiflora*

9a. *Leptodermis gracilis* var. *gracilis*

柔枝野丁香(原变种) rou zhi ye ding xiang (yuan bian zhong)

Flowers smaller; corolla ca. 9.5 mm. Fl. Jul.

- Hill slopes; 1000–2400 m. SE Xizang (Bomi, Médog, Zayü).

9b. *Leptodermis gracilis* var. *longiflora* H. S. Lo, var. nov.

长花野丁香 chang hua ye ding xiang

Type: China. Sichuan: Barkam (Maerkang, 马尔康), Zhoukeji (卓克基), 2650 m, 30 Jul 1957, Z. Y. Zhang & H. F. Zhou 23393 (holotype, SZ; isotype, KUN).

Validating Latin diagnosis: that of “*Leptodermis gracilis* C. E. C. Fischer var. *longiflora* Lo” (H. S. Lo in W. C. Chen, Fl. Reipubl. Popularis Sin. 71(2): 338. 1999).

Flowers larger, corolla ca. 16 mm. Fl. Jul.

- Thickets; 2600–2700 m. NC Sichuan (Barkam).

This name was previously published by H. S. Lo (loc. cit.) but not validly so because no type was indicated (*Vienna Code*, Art. 37.1).

10. *Leptodermis handeliana* H. J. P. Winkler in Handel-Mazetti, Symb. Sin. 7: 1025. 1936.

川南野丁香 chuan nan ye ding xiang

Shrubs; young branches with 2 bands of short woolly hairs, old branches glabrescent, bark gray, longitudinally lacerate. Leaves sparsely arranged on branches 3–10 cm, with sparse and long internodes, very rarely crowded on short branches; blade slightly thick, broadly ovate, elliptic, or broadly elliptic, 7–18 × 4–11 mm, adaxially tomentose on midrib, abaxially with scattered bristles on lateral veins, very shortly setiform ciliate on margins, base abruptly contracted and attenuate into petiole, apex acute or abruptly shortly acuminate; lateral veins 4–6 pairs, ascending; stipules membranous-leathery, triangular on lower part, compressed triangular on upper part, acuminate, apiculus seldom with 1 or 2 lateral glandular teeth, 1–2 mm, 2 veins joining at tip, dorsal surface densely tomentulose, ventral surface densely covered with glandular appendages. Flowers 5–7 terminal on branches, subsessile, highest node with 1 or 3 flowers in axils of leaves, next node with 1 or 2 lateral branches terminated dichotomously with flowers; bracts especially of flowers in center somewhat leaflike, 4–5 mm, slightly longer than calyx, with midrib and reticulate veins, tomentose, connate below middle part, acuminate. Calyx ca. 3 mm; lobes 5, ovate, ciliate, acuminate. Young corolla hispidulous outside. Stigmas 5-lobed. Fl. Jun.

- S Sichuan (Yanyuan).

11. *Leptodermis hirsutiflora* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 19. 1999.

拉萨野丁香 *la sa ye ding xiang*

Shrubs; branchlets terete, long branches with conspicuous internodes, short branches usually ca. 1 cm, young branches shortly pilose, glabrescent when old. Leaves sessile or petiole ca. 0.5 mm; blade oblong or elliptic, sometimes lanceolate or ovate, 7–9 mm on long branches, 2–3 mm on short branches, glabrous on both surfaces, base attenuate, apex obtuse or slightly rounded; lateral veins inconspicuous; stipules broadly triangular, ca. 1 mm, apiculate. Flowers sessile, terminal or axillary on branchlets, usually densely flowered; bracteoles 2, membranous, obovate, ca. 3.5 mm, connate below middle portion or one side free, with brown veins, densely hirsute outside, apex apiculate. Long-styled flower: calyx tube obovate, ca. 2 mm, glabrous, lobes 5, narrowly triangular-lanceolate, ca. 2 mm, densely hirsute; corolla blue, narrowly funnelform, densely hirsute outside, tube 8–9 mm, villous inside, base ca. 2.5 mm in diam., lobes 5, subovate, ca. 2.5 mm, apex incurved, with a beak ca. 0.5 mm; stamens 5, inserted at base of throat, filaments very short or absent, anthers linear, ca. 3 mm, nearly included; style 11–12 mm, stigmas 4- or 5-lobed, lobes linear, exerted. Short-styled flowers similar to long-styled flowers; calyx tube ca. 2 mm, lobes ca. 1.4 mm, acute; corolla tube very shortly pilose outside; stamens inserted above corolla tube throat, filaments ca. 0.8 mm, anthers exerted; style ca. 5.5 mm, stigmas 3- or 4-lobed, included. Fruit ca. 5 mm, with persistent calyx lobes 2.5–3 mm, hirsute; seeds ca. 4 mm; aril reticulate, adherent to testa. Fl. Jul.

- Thickets; 4000–4100 m. Xizang.

- 1a. Calyx lobes glabrous except ciliate on margins; corolla pubescent 11a. var. *ciliata*
- 1b. Calyx lobes densely hirsute; corolla densely hirsute outside, villous inside 11b. var. *hirsutiflora*

11a. *Leptodermis hirsutiflora* var. *ciliata* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 20. 1999.

光萼野丁香 *guang e ye ding xiang*

Calyx lobes glabrous except ciliate on margins; corolla pubescent.

- Thickets; ca. 4100 m. SE Xizang (Gyaca).

11b. *Leptodermis hirsutiflora* var. *hirsutiflora*

拉萨野丁香(原变种) *la sa ye ding xiang* (yuan bian zhong)

Calyx lobes densely hirsute; corolla densely hirsute outside, villous inside.

- Thickets on desolate mountains; ca. 4000 m. Xizang.

12. *Leptodermis kumaonensis* R. Parker, Indian Forester 48: 576. 1922.

吉隆野丁香 *ji long ye ding xiang*

Shrubs, 1–2 m tall, sometimes to 3 m tall; branchlets terete, usually purple, glandular pilose. Petiole 2–4 mm, somewhat pilose; leaf blade papery, dark gray adaxially and grayish brown or pale abaxially when dry, oblong-lanceolate or ovate-lanceolate,

late, 3–10 × 1–2.5 cm on long branches, usually shorter than 1.5 cm on short branches, strigose pilose adaxially, pilose on midrib and lateral veins abaxially, base broadly cuneate, margins entire, usually ciliate, apex subacuminate; lateral veins 6–9 pairs, ascending in an arch, midrib compressed abaxially, veinlets dark brown, inconspicuous adaxially, scrobiculate abaxially; stipules triangular, 4–4.5 mm on upper part of branchlets, shorter on lower part, pilose outside, abruptly contracted acuminate. Flowers 3–5 fascicled on ends of lateral short branches, sessile or subsessile; bracts 2, ca. 7 mm or slightly longer, ca. 2/3 connate, free portion cuspidate, ciliate, often pilose near midrib outside. Calyx tube 3.5–4 mm; lobes 5, triangular-ovate, ca. 1.5 mm, ciliate, acute or slightly obtuse. Corolla funnelform, 13–15 mm, pilose or subglabrous outside, white villous below throat inside; lobes 5, with sinus ca. 3 mm in depth, apex obtusely 3-dentate, central portion slightly thickened, ca. 2 mm wide, margins of both sides thin, 1–1.2 mm wide, inflexed in bud. Long-styled flowers: stamens 5, inserted below throat, filaments almost absent, anthers dorsifixed, linear, ca. 3 mm, included; style ca. 9 mm, stigmas 5- or 6-lobed, lobes linear, 4–5 mm, slightly exerted. Short-styled flowers: stamens with filaments ca. 1.5 mm, anthers slightly exerted; style ca. 4.5 mm, stigmas 5 or 6, linear, ca. 2 mm, extending to below throat. Capsule not seen, subcylindric, ca. 5.6 mm (according to record); seeds linear, covered in fibers; aril not adherent to testa.

- Thickets, forest margins; 2800–3000 m. S Xizang (Gyirong) [Bhutan, N India (Uttarakhand), Nepal].

Leptodermis parkeri Dunn (Bull. Misc. Inform. Kew 1920: 206. 1920), described from N India, was erroneously recorded from S Xizang (Gyirong) in FRPS (71(2): 139. 1999), based on the gathering *Qinghai-Xizang Expedition 6957*, which is in fact referable to *L. kumaonensis*.

13. *Leptodermis lanata* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 19. 1999.

绵毛野丁香 *mian mao ye ding xiang*

Shrubs, 0.5–1 m tall; branches stout, terete, purplish red, subglabrous, short branches densely covered with many persistent scaly stipules at base. Petiole ca. 1 mm or leaves subsessile; leaf blade thickly papery, elliptic or obovate, sometimes oblong, 5–10 × 2–4 mm, tomentulose adaxially, grayish white lanate abaxially, base cuneate, margins revolute, apex acute; lateral veins inconspicuous; stipules long triangular, 1.5–2 mm, acuminate. Flowers sessile, usually 3 fascicled at tips of branchlets or axillary near tips of short branches; bracteoles 2, scarious, lower portion connate, longer than calyx or subequal, tomentulose, apex cuspidate. Calyx tube ca. 2 mm, subglabrous; lobes 5, oblong-lanceolate, slightly shorter than calyx tube, puberulent and shortly ciliate, shortly acuminate. Corolla pallid red, funnelform, 12–14 mm, tomentulose outside; tube slender, decurved; lobes oblong-lanceolate or oblong-ovate, ca. 2 mm. Long-styled flowers: stamens 5, inserted below throat of corolla tube, anthers linear, included; style slightly exerted, stigmas 2-lobed, lobes filiform. Short-styled flowers similar to long styled; stamens inserted above throat of corolla tube, anthers slightly exerted. Fruit ca. 6 mm; seeds covered with reticulate aril adherent to testa. Fl. May.

• *Pinus* forests, roadsides; 2300–2500 m. NW Yunnan (Ninglang).

14. *Leptodermis limprichtii* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. Beih. 12: 490. 1922.

天全野丁香 tian quan ye ding xiang

Small shrubs; young branches not lignified, with 2 bands of soft hairs, old branches slender, glabrous, with gray bark. Leaves sparsely borne on young abbreviated branches, subsessile; blade oblong-lanceolate, 1–2.5 × 0.3–0.9 cm, adaxially with scattered hairs, tomentulose on midrib, abaxially glabrous, base attenuate, margins with dense bristles, apex acute, apiculate; lateral veins 3–5 pairs, inconspicuous, reticulate veins conspicuous; stipules triangular, subulate acuminate and with 2 glandular teeth near apex, another 2 glandular teeth remotely arranged or lacerate, central portion triangular, membranous-papery, villous, with transparent broad margins, not ciliate. Flowers usually 3 terminal on branchlets, subsessile, sometimes lateral flowers pedicellate, sometimes with a pair of flowers in axils of upper nodes; bracteoles thin, transparent, ovate-oblong, 2–2.5 mm, equal to calyx in length or slightly longer, 1/6–1/4 connate, shiny, 1-veined, not ciliate, long subulate-acuminate. Calyx lobes usually 5, sometimes 4, long or shortly triangular, ciliate, very apiculate. Corolla yellowish white, medium-sized; tube narrowly funnelform, 8–9 mm, slightly curved, hispidulous outside, villous around middle inside; lobes ovate, ca. 2 mm, central portion thick and broader than transparent, wavy margins, villous at base inside, apex incurved. Stamens in long-styled flowers inserted at middle of corolla tube; filaments very short; anthers ca. 2 mm. Style usually (4 or)5-lobed.

• Thickets or open fields on hill slopes; 1000–1500 m. C Sichuan (Tianquan).

15. *Leptodermis ludlowii* Springate, Edinburgh J. Bot. 53: 102. 1996.

管萼野丁香 guan e ye ding xiang

Leptodermis tubicalyx H. S. Lo.

Shrubs, 0.6–2(–3) m tall; branchlets slender, terete, with 2 bands of hairs decurrent from base of stipules. Petiole 0.2–0.8 cm, pilose adaxially; leaf blade membranous-papery or submembranous, turning black or iron-gray when dry, ovate to ovate-oblong or broadly lanceolate, usually 1–5 × 0.5–1.5(–2) cm, subglabrous to puberulent on both surfaces, base attenuate or slightly decurrent, margins ciliate, apex acute or acuminate; lateral veins slender, (3 or)4 or 5 pairs, inconspicuous adaxially, slightly prominent abaxially; stipules subtriangular or long triangular, 1.5–2(–4) mm, glandular-denticulate or lacinate, sparsely pubescent at base, cuspidate. Inflorescences terminating short new growths, small, with uppermost pair of nodes approximate, few cymules and 3–5(–12) flowers; bract pairs leaflike and petiolate, rarely ligulate on subsidiary 1-flowered cymules; stipules as those of vegetative growth or reduced, hyaline, and lacinate. Flowers sessile; bracteole pairs ca. 1.5 mm, ca. 1/3 connate at base, lobes triangular, obtuse or subacute, glabrous, usually ciliate, mucronulate, central pairs in a cymule often more elongate and cuspidate. Calyx glabrous; hypanthium

ca. 3.4 mm; tube black when dry, obovate or tubular, 1.1–1.4 mm above ovary; lobes 5, triangular, rarely orbicular, 0.7–0.8 mm, hairy or papillate in bud or around margins, rarely 6 lobes or 2 deeper clefts in tube. Corolla white, light pink, or purple, sometimes bicolored, black when dry, broadly funnelform, with white stiff hairs at apex in bud, exterior finely mammillate, more prominently so toward apex, very rarely with few short hairs decurrent from sinuses of lobes; tube 10–11.5 mm, with long fine hairs within; lobes 5, broadly ovate-triangular, 2–4 mm, margins thin, inflexed, ca. 1 mm wide, central portion ca. 2 mm wide, apex inflexed in a beak, with few short stout smooth hairs on inner surface. Stamens 5. Long-styled flowers: filaments ca. 0.3 mm, anthers 1.7–2 mm, attached near base or rarely inserted in middle of corolla tube, included; stigmas completely exerted. Short-styled flowers: filaments 1–1.7 mm, anthers 1.9–2.7 mm, inserted below middle of corolla tube, partly exerted; stigmas immediately below anthers. Stigmas 2–4-lobed, lobes linear, 2–2.5 mm, with hairs sometimes extending onto upper style. Capsule narrow, oblong, ca. 7 mm; seeds oblong; aril reticulate, adherent to testa. Fl. Jun–Sep.

Forests; ca. 2800 m. Xizang [Bhutan, NE India (Sikkim)].

16. *Leptodermis oblonga* Bunge, Enum. Pl. Chin. Bor. 34: 1833.

薄皮木 bao pi mu

Hamiltonia oblonga (Bunge) Franchet; *Leptodermis charetii* H. Léveillé; *L. huashanica* H. S. Lo; *L. oblonga* var. *leptophylla* H. J. P. Winkler.

Shrubs, 0.2–1 m tall or slightly taller; branches slender, gray to pale brown, puberulent, bark thin, usually peeling off when old. Petiole short, 1–3 mm; leaf blade papery or thinly leathery, lanceolate or oblong, sometimes elliptic or subovate, usually 0.7–2.5(–3) × 0.3–1(–1.7) cm, adaxially scabrid or irregularly wrinkled and sparsely strigose, abaxially subglabrous or pubescent or hispid along midrib, base attenuate or cuneate, margins revolute, apex acuminate, subacute, or obtuse; lateral veins ca. 3 pairs, inconspicuous on both surfaces; stipules broadly triangular, 1.5–2 mm, cuspidate with a stiff apiculus. Flowers sessile, usually 3 fascicled and terminal on branches, rarely axillary on upper part of branchlets; bracteoles hyaline, ovate, 3–4.5 mm, 1/2–2/3 connate, pilose outside, lobes subtriangular, with a stiff apiculus at apex, subequal to calyx in length. Calyx tube ca. 2.5 mm; lobes subovate, ca. (0.7–)1.3–1.5 mm, densely shortly ciliate, obtuse or shortly acuminate. Corolla purplish red, funnelform, (9–)11–14(–20) mm; tube slender, often curved, puberulent outside; lobes subovate, narrowly triangular, or lanceolate, 2–4 mm, apex incurved. Short-styled flowers: stamens slightly exerted, anthers linear; style included. Long-styled flowers: stamens included, anthers linear-oblong; style slightly exerted. Style with 4 or 5 linear lobes of stigma. Seed aril reticulate, free from testa. Fl. Jun–Aug, fr. Oct.

• Sunny hill slopes, roadsides, thickets. Gansu, Hebei, N Henan, Ningxia, Shaanxi, Shanxi, Sichuan [?Mongolia].

17. *Leptodermis ordosica* H. C. Fu & E. W. Ma, Fl. Intramontol. 5: 413. 1981.

内蒙野丁香 nei meng ye ding xiang

Small shrubs, much branched, 20–40 cm tall; branches slightly stout, often twisted, dark gray, with thin cracks; branchlets slender and straight, sometimes acicular, gray, puberulent. Petiole short or leaves sessile; leaf blade thickly papery, oblong to elliptic, sometimes broadly elliptic, 3–10 × 2–5 mm, both surfaces subglabrous, slightly shiny adaxially, base cuneate or acuminate, margins often slightly revolute, apex acute or slightly obtuse; midrib prominent abaxially, lateral veins very inconspicuous; stipules triangular-ovate or ovate-lanceolate, slightly longer than petioles, denticulate or entire, ciliate, apiculate. Flowers sessile, 1–3 fascicled on tips of branches or in axil near tips of branches; bracteoles 2, 1/2–2/3 connate, free part bilabiate, 3–4 mm, transparent, lobes sparsely ciliate, caudate-acuminate at apex. Calyx 2–2.5 mm; lobes 5, oblong-lanceolate, subequal to calyx tube in length or slightly shorter, ciliate, shortly acuminate. Corolla purplish red, fragrant, funnel-form, 11–14 mm, puberulent outside, villous inside; lobes 4 or 5, ovate-lanceolate, ca. 3 mm. Stamens 4 or 5, inserted above throat of corolla tube; anthers linear, slightly exerted. Style ca. 1/2 length of corolla tube; stigmas 3, filiform. Fruit 3–3.5 mm; seeds surrounded by reticulate aril free from testa. Fl. and fr. Jul–Aug.

- Rock crevices; ca. 1600 m. Nei Mongol.

18. *Leptodermis parvifolia* Hutchinson in Sargent, Pl. Wilson. 3: 404. 1916.

瓦山野丁香 wa shan ye ding xiang

Erect or procumbent shrubs, 0.5–1(–1.5) m tall; branchlets short or slightly long, gray or reddish when young, puberulent, soon glabrescent. Petiole short; leaf blade slightly thick, spatulate-ovate or oblanceolate, sometimes subovate or elliptic, 5–10 × 2–5 mm, base attenuate, apex obtuse or subacute; lateral veins ca. 3 pairs, usually inconspicuous; stipules subulate-acuminate, ca. 1 mm, shorter than calyx, glabrous, abruptly acuminate. Calyx tube with 10 ridges, 5 ridges extending to sinus, glabrous; lobes 5, triangular-lanceolate, ca. 1.25 mm, shortly ciliate, acute. Corolla tube ca. 1.2 cm, upper portion enlarged, puberulent outside, sparsely pubescent inside; lobes 5, ovate-lanceolate, ca. 2.5 mm, with revolute margins, acute. Anthers ca. 1.25 mm, slightly exerted. Style equal to corolla tube in length, glabrous, 5-lobed, lobes slender. Capsules 4–5 mm; seed aril reticulate, adherent to testa or free at one end. Fl. Aug–Sep.

- Thickets or forest margins on sunny mountain slopes; 1500–3000 m. Sichuan.

19. *Leptodermis pilosa* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 276. 1912.

川滇野丁香 chuan dian ye ding xiang

Shrubs, 0.7–2(–3) m tall; branches subterete, young branches tomentulose or pubescent, old branches glabrescent, with thin, lamellar, longitudinally fissured bark. Petiole 1–5 mm, ± hairy; leaf blade papery, occasionally thinly leathery, shape and size often variable, broadly ovate, ovate, oblong, elliptic, or lanceolate, 0.5–2.5 × ca. 1.5 cm, both surfaces sparsely to densely pilose or subglabrous, base cuneate or attenuate, margins usually ciliate, apex acute, obtuse, or sometimes rounded;

lateral veins 3–5 pairs, slightly prominent or inconspicuous abaxially; stipules broadly triangular, pilose or tomentose, cuspidate-apiculate, usually 1–2 mm. Cymes terminal or axillary near tips of branches, usually 3(–7)-flowered; flowers sessile or shortly pedicellate; bracteoles scarious, transparent, longer than calyx, ± hairy, 2/3–3/4 connate, free portion subulate-acuminate, apiculate, veined, ciliate. Calyx tube ca. 2 mm; lobes 5, 1–1.2 mm, ciliate, obtuse or subtruncate. Corolla funnel-form; tube 9–10(–13) mm, densely tomentulose outside, villous inside; lobes 5, broadly ovate, 2–2.5 mm, margins narrow and thin, inflexed, apex incurved. Stamens 5, inserted in corolla tube throat; filaments short; anthers linear, slightly exerted in short-styled flowers, included in long-styled flowers. Style usually with (3–)5 filiform stigmas, exerted in long-styled flowers, included in short-styled flowers. Fruit 4.5–5 mm; seed aril reticulate, adherent to testa. Fl. Jun, fr. Sep–Oct.

- Thickets; 600–3800 m. S Gansu, W Hubei, S Shaanxi, Sichuan, Xizang, Yunnan.

- 1a. Branches spiny 19a. var. *acanthoclada*
- 1b. Branches not spiny.
 - 2a. Cymes in spikelike compound inflorescences 19d. var. *spiciformis*
 - 2b. Cymes not in spikelike compound inflorescences.
 - 3a. Shrubs with branches tomentulose or pubescent when young, glabrescent when old 19c. var. *pilosa*
 - 3b. Shrubs sparsely pilose 19b. var. *glabrescens*

19a. *Leptodermis pilosa* var. *acanthoclada* H. S. Lo ex X. Y. Wen & Q. Lin, Acta Phytotax. Sin. 45: 410. 2007.

刺枝野丁香 ci zhi ye ding xiang

Shrubs dwarf, much branched; branches spiny.

- Thickets. W Sichuan (Xiangcheng, Xiaojin), Xizang.

19b. *Leptodermis pilosa* var. *glabrescens* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. 18: 160. 1922.

光叶野丁香 guang ye ye ding xiang

Leptodermis mairei H. Léveillé.

Shrubs sparsely pilose.

- S Sichuan (Dechang, Ningyuan, Xichang), Yunnan (Baiyanjing, Dongchuan, Lijiang).

19c. *Leptodermis pilosa* var. *pilosa*

川滇野丁香(原变种) chuan dian ye ding xiang (yuan bian zhong)

Leptodermis fusca H. J. P. Winkler; *L. microphylla* (H. J. P. Winkler) H. J. P. Winkler; *L. pilosa* var. *microphylla* H. J. P. Winkler.

Shrubs with branches tomentulose or pubescent when young, glabrescent when old.

- Thickets on roadsides or on sunny slopes; 600–3800 m. W

Hubei, S Shaanxi (Hanzhong, Hua Shan), Sichuan, SE Xizang, C and NW Yunnan (Kunming, Lijiang).

19d. *Leptodermis pilosa* var. *spicatiformis* H. S. Lo ex X. Y. Wen & Q. Lin, *Acta Phytotax. Sin.* 45: 411. 2007.

穗花野丁香 sui hua ye ding xiang

Leaves to 1.7 cm. Cymes often in spikelike compound inflorescences.

• Thickets on roadsides on mountain slopes; ca. 800 m. S Gansu (Huixian, Liangdang, Tianshui), SW Shaanxi (Baoji, Fengxian, Lüeyang).

20. *Leptodermis potaninii* Batalin, *Trudy Imp. S.-Peterburgsk. Bot. Sada* 14: [319]. 1898 [*“potanini”*].

野丁香 ye ding xiang

Shrubs, 0.5–2 m tall or taller; branches pale gray, young branches usually reddish, with 2 bands of soft hairs. Leaves sparsely arranged or slightly crowded; petiole short; blade thin, ovate or lanceolate, sometimes oblong or elliptic, both surfaces white pubescent, tomentose, subglabrous, or glabrous, base cuneate, margins entire, apex obtuse to subrounded, apiculate; lateral veins 3 or 4 pairs, prominent abaxially, reticulate veins conspicuous; stipules membranous, broadly triangular, acuminate, with acicular apiculus. Cymes terminal, sessile, 3-flowered, rarely reduced to 1 or 2 flowers, central flowers sessile, lateral ones pedicellate; pedicels red, with 2 bands of stiff or soft hairs; bracteoles 2, longer than calyx tube, ± connate, densely hispid or pilose outside, acute to aciculate. Calyx tube narrowly obconical, densely hispid or pilose on upper portion and calyx lobes; lobes 5 or 6, narrowly triangular, length 3 × size of width, ciliate, acute. Corolla funnelform, to 1.5 cm; tube ± pilose or subglabrous outside, densely hispid on upper portion and throat inside, limb spreading, 3 × shorter than corolla tube; lobes 5 or 6, with valvate aestivation, transparent, glabrous, margins membranous, apex rounded. Stamens 5 or 6, attached to upper portion of corolla tube, glabrous; filaments longer than anthers; anthers semi-exserted, linear-oblong. Pistils ca. 1/2 as long as corolla; ovary 3-celled; stigmas 3 or 4. Capsule 5-valvate from apex to base; valves crowned by persistent calyx lobes. Fl. May, fr. autumn and winter.

• Thickets on hill slopes or at streamsides, mountains; 800–2700 m. W Guizhou, W Hubei, S Shaanxi, W Sichuan, Yunnan.

- 1a. Leaves hairy.
 - 2a. Leaves white pubescent 20c. var. *potaninii*
 - 2b. Leaves tomentose or long hirsute 20d. var. *tomentosa*
- 1b. Leaves glabrous.
 - 3a. Leaves glaucous green 20b. var. *glauca*
 - 3b. Leaves brown when dry 20a. var. *angustifolia*

20a. *Leptodermis potaninii* var. *angustifolia* H. S. Lo, **var. nov.**

狭叶野丁香 xia ye ye ding xiang

Type: China. Yunnan: Luquan Xian (禄劝县), 5th District, Wumeng (乌蒙) town, “A-sha-hei,” 2000 m, 9 Jun 1952, *P. I.*

Mao 1185 (holotype, KUN; isotype, KUN).

Validating Latin diagnosis: that of “*Leptodermis potanini* [sic!] Batalin var. *angustifolia* Lo” (H. S. Lo in W. C. Chen, *Fl. Reipubl. Popularis Sin.* 71(2): 338. 1999).

Leaves narrowly lanceolate, brown when dry, both surfaces glabrous.

• Thickets at streamsides; ca. 2000 m. NC Yunnan (Luquan).

This name was previously published by H. S. Lo (loc. cit.) but not validly so because no type was indicated (*Vienna Code*, Art. 37.1).

20b. *Leptodermis potaninii* var. *glauca* (Diels) H. J. P. Winkler, *Repert. Spec. Nov. Regni Veg. Beih.* 12: 490. 1922.

粉绿野丁香 fen lü ye ding xiang

Leptodermis glauca Diels, *Notes Roy. Bot. Gard. Edinburgh* 5: 275. 1912; *L. esquirolii* H. Léveillé; *L. motsouensis* H. Léveillé.

Leaves glaucous green abaxially. Corolla and bracteoles glabrous.

• Mountains; 800–2700 m. SW Guizhou (Xingyi), SW Sichuan, Yunnan.

20c. *Leptodermis potaninii* var. *potaninii*

野丁香(原变种) ye ding xiang (yuan bian zhong)

Leptodermis nigricans H. J. P. Winkler.

Leaves white pubescent on both surfaces, though usually subglabrous and pale abaxially.

• Thickets on hill slopes; 800–2400 m. W Guizhou, W Hubei (Shennongjia, Xingshan), S Shaanxi (Pingli), W Sichuan (Kangding), Yunnan.

20d. *Leptodermis potaninii* var. *tomentosa* H. J. P. Winkler, *Repert. Spec. Nov. Regni Veg.* 18: 153. 1922.

绒毛野丁香 rong mao ye ding xiang

Leptodermis potaninii var. *rufa* H. Winkler; *L. tongchouanensis* H. Léveillé.

Branches, leaves, stipules, bracteoles, and flowers tomentose or long hirsute.

• Mountains; ca. 2600 m. SW Sichuan, C, NE, and NW Yunnan.

21. *Leptodermis pumila* H. S. Lo, *J. Trop. Subtrop. Bot.* 7(1): 18. 1999.

矮小野丁香 ai xiao ye ding xiang

Dwarf shrubs, 5–10 cm tall; taproots stout, lignose, brown; branches relatively short, pubescent, with many nodes. Leaves crowded on upper portion of short branches; petiole 1–2 mm; blade papery, elliptic or oblong, sometimes subobovate, 5–15 × 3–7 mm, pilose on midrib and lateral veins on both surfaces, base cuneate, apex acute; lateral veins 3 or 4 pairs, slightly prominent abaxially; stipules thick, triangular, 1.5–2 mm, densely pilose and ciliate. Flowers sessile, 3 fascicled at tips of short branches; bracteoles 2, connate below middle portion,

upper portion free, subtriangular, slightly shorter than or subequal to calyx in length, pilose. Calyx tube obconical, ca. 1.8 mm; lobes 5, subovate, ca. 1 mm, ciliolate, acute. Corolla pale red, funnellform; tube 1.1–1.2 cm, densely pilose outside, villous inside; lobes 5, ca. 3.5 mm, with thin and broad margins. Stamens 5, inserted below throat of corolla tube; filaments short; anthers linear, ca. 3 mm, slightly exerted. Style 7–8 mm; stigmas 3, filiform, ca. 2 mm. Fl. May.

- Grassy slopes; ca. 3000 m. NW Yunnan (Lijiang).

22. *Leptodermis purdomii* Hutchinson in Sargent, Pl. Wilson. 3: 405. 1916.

甘肃野丁香 gan su ye ding xiang

Shrubs, 1–2 m tall; branchlets slender, puberulent when young, soon glabrescent. Leaves fascicled, papery, linear-oblancoate, 0.5–1 × 1.5–3.5 mm, both surfaces glabrous, base attenuate, margin obviously recurved, apex obtuse; nerves inconspicuous; stipules ovate, ca. 1.5 mm. Flowers sessile or subsessile, fascicled on apex of branches; bracteoles 2, opposite, transparent, membranous, ovate, ca. 1.5 mm, shorter than calyx, connate at base, subglabrous (with white acicular lines?), with carina on dorsal surface, abruptly acute at apex. Calyx tube glabrous; lobes 5, oblong-ovate, ca. 1.5 × 0.75 mm, leathery, ciliate, triangular-acute. Corolla pink, narrowly funnellform, 8–10 mm; tube slender, slightly curved, throat slightly dilated, densely pilose outside, sparsely villous inside; lobes 5, ovate-lanceolate, ca. 2 mm, sparsely pilose, subobtuse. Stamens 5, inserted in corolla tube throat; anthers linear, ca. 2 mm, included in long-styled flowers, slightly exerted in short-styled flowers. Style slender, exerted in long-styled flowers, reaching middle of tube in short-styled flowers; stigmas 5-lobed, lobes linear. Capsules ca. 5 mm; seed aril reticulate, adherent to testa. Fl. Jul–Aug, fr. Sep–Oct.

- Mountain slopes; 800–1000 m. S Gansu, N Sichuan (Songpan).

23. *Leptodermis rehderiana* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. 18: 157. 1922.

白毛野丁香 bai mao ye ding xiang

Shrubs, 1–2 m tall, very much branched, white villous or pilose; branchlets slender. Petiole to 1 cm; leaf blade papery, brownish gray when dry, lanceolate-oblong or ovate-oblong, sometimes subovate, 1–4 × ca. 2 cm, base attenuate, apex acute or shortly acuminate, sometimes obtuse; lateral veins 2–5 pairs, slightly prominent abaxially; stipules stiff, ca. 2 mm, acicular-acuminate on lower portion, shortly acuminate on upper portion. Flowers terminal on foliate branches, 5–7 flowers arranged in a line; central flowers sessile, lateral ones conspicuously pedicellate, branchlets usually with 2 or 3 flowers axillary on upper 4 or 5 nodes, inflorescence-like on lower 1 or 2 nodes, with peduncle; bracteoles transparent, oblong, 2.5–3 mm, slightly longer than calyx, ca. 2/3 connate, upper portion very shortly pilose, other parts glabrous, veined, subulate-acuminate. Calyx 2.5–2.8 mm; lobes 5, very short, ciliate, with longitudinal veins. Corolla tube very narrowly funnellform, 12–13 mm, slightly curved, densely shortly tomentose outside; lobes 5, subovate, ca. 2 mm, central portion and narrow margins not differentiated conspicuously, apex incurved. Stamens of short-

styled flowers slightly exerted; filaments inserted at 1/4–1/3 of anthers, free portion very short. Stigmas 5-lobed. Capsules black, 6–7 mm; seed aril reticulate, adherent to testa. Fl. Sep, fr. Oct–Nov.

- Thickets, jungles; 1600–2400 m. NW Yunnan (Zhongdian).

24. *Leptodermis scabrida* J. D. Hooker, Fl. Brit. India 3: 199. 1881.

糙叶野丁香 cao ye ye ding xiang

Shrubs, 1–1.5 m tall; branches stout, brown or dark gray, short branches often with dense persistent scaly stipules, pilose. Petiole short or leaves subsessile; leaf blade oblong-lanceolate or oblong, sometimes narrowly lanceolate, 1–3(–4) × 4–10 mm, both surfaces strigose or only midrib and lateral veins hairy abaxially, base cuneate or decurrent, apex acute to acuminate; midrib prominent abaxially; lateral veins 3 or 4 pairs, inconspicuous; stipules subtriangular, pilose, with a long and excurved stiff apiculus. Flowers subsessile, 3–5 terminal or axillary near tips of branches; bracteoles transparent, 3–4 mm, pilose, ca. 2/3 connate, free portion triangular-ovate, with a stiff apiculus at apex. Calyx tube ca. 2 mm; lobes 0.5–0.7 mm, width greater than length or subequal, densely ciliate, obtuse. Corolla white, funnellform, 9–19 mm, pilose outside; lobes 5, sublanceolate, 2–2.5 mm. Short-styled flowers with stamens inserted below throat of corolla tube, anthers linear, included; style slightly exerted, stigmas 3-lobed, filiform, excurved. Capsule 5–6 mm; seed aril free from testa (according to literature). Fl. Jun.

Forests, hill slopes; 2400–2600 m. S Xizang (Nyalam, Zayü) [NE India (Assam)].

25. *Leptodermis schneideri* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. 18: 156. 1922.

纤枝野丁香 xian zhi ye ding xiang

Leptodermis schneideri var. *hutchinsonii* H. J. P. Winkler.

Shrubs, 0.2–1.3 m, branches slender; young branches tomentulose, soon glabrescent, old branches with gray longitudinally fissured bark. Leaves sparsely arranged on long branches, very crowded on very short branches in axils of long branches, appearing as if leaves whorled; petiole very short or leaves subsessile; blade oblong or ovate, 4–9 × 1.25–2 mm, glabrous on both surfaces, base attenuate, apex acute or slightly obtuse or apiculate; midrib impressed adaxially and prominent abaxially, lateral veins inconspicuous; stipules membranous-leathery, small, ca. 1 mm, pilose and ciliate, upper portion triangular, lower part acicular acuminate, with 2 callose nerves near margins extending to apex. Flowers terminal on lateral foliate branches, upper 2 or 3 nodes with 1–3 flowers axillary; peduncles present or almost absent; bracteoles transparent, oblong, ca. 2 mm, slightly longer than calyx, connate to or above middle portion, margins of upper portion hairy, apex rounded, apiculate. Calyx lobes 5, length slightly greater than width, ciliate, rounded. Corolla small; tube narrowly funnellform, ca. 5 mm, ± curved, covered with conical woolly hairs outside, densely covered with long hairs on throat inside, glabrous at base; lobes oblong, ca. 2 mm, covered with short papilla outside, villous at

base inside, with thin, soft, narrow margins, apex incurved. Stamens inserted in throat of corolla tube; long-styled flowers with filaments short, anthers included; short-styled flowers with filaments long, anther exerted. Stigmas 5-lobed, conspicuously exerted in long-styled flowers, extending below throat in short-styled flowers. Capsules ca. 4 mm; seed aril adherent to testa.

- Sichuan, Xizang, Yunnan.

26. *Leptodermis scissa* H. J. P. Winkler in Handel-Mazzetti, Symb. Sin. 7: 1024. 1936.

撕裂野丁香 *si lie ye ding xiang*

Shrubs, 20–50 cm tall, occasionally to 1.5 m tall; branchlets gray or brown, tomentulose. Leaves crowded on branchlets, blade papery, ± grayish when dry, oblong-ovate or broadly ovate, 5–8 × 2.5–4 mm on lower branches, 15–23 × 7–13 mm on upper branches, adaxially densely scabrid on midvein, slightly scabrid on lateral veins and margins, abaxially glabrous, base attenuate, apex apiculate; lateral veins 3 or 4 pairs, straight; stipules submembranous, tomentulose outside, with glandular appendages inside, long triangular on lower portion, shortly triangular on upper portion, glandular acuminate upward, sometimes with 1 or 2 glandular teeth, with 2 veins confluent at apex, uppermost stipules short and broad, abruptly acuminate, without veins. Flowers often 3 terminal on short branches, with short pedicels or longer at each side, or 1–3 flowers axillary in axils of leaves at nodes; bracteoles ovate, 2.8–3 mm, free almost to base, midrib nearly brownish, shortly hairy, other portions subglabrous, margins imbricate, ciliate, apex acuminate, with apiculus almost as long as calyx or shorter. Calyx 3–3.2 mm; lobes 5, triangular, usually ± scattered pilose, ciliate. Corolla tube funnellform, ca. 11 mm, slightly curved, glabrous or puberulent outside, long villous inside, glabrous near base; lobes ovate-orbicular, ca. 2 mm, glabrous outside. Stamens 5 in short-styled flowers, inserted in throat of corolla tube; anthers linear, ± semi-exserted, covered with glandular long soft hairs inside. Style 5-lobed, included, glabrous. Fruit ovoid, ca. 4 mm; seed aril conspicuously free from testa. Fl. Jul–Aug, fr. Oct.

- Thickets; 1500–2500 m. Sichuan, Yunnan.

27. *Leptodermis tomentella* H. J. P. Winkler, Repert. Spec. Nov. Regni Veg. 18: 159. 1922.

蒙自野丁香 *meng zi ye ding xiang*

Shrubs; stems, branches, and both surfaces of leaves tomentulose; branchlets stout, terete, upper branchlets short, lower branchlets longer, secondary branchlets very short. Petiole short and thick; leaf blade thickly papery, brownish when dry, ovate or elliptic, 5–19 × 2.5–10 mm, base broadly cuneate, apex acute, with a short stiff apiculus; lateral veins 2 or 3 (or 4) pairs, inconspicuous adaxially, slightly prominent abaxially; stipules triangular, 1–1.5 mm, with stiff acicular apiculus. Flowers 3–7 fascicled at tips of branchlets, subsessile; bracteoles ovate, ca. 3 mm, ca. 1/3 connate, tomentose, with acicular apiculus slightly shorter than calyx lobes. Calyx tubes black when dry; lobes pale brown, ovate-oblong, ca. 1.5 mm, ciliate, slightly obtuse. Corolla purple or white, funnellform, 1.2–1.3

cm, tomentose outside, throat villous; lobes with margins broad, soft and thin. Stamens 5, inserted in throat of corolla tube; filaments very short; anthers linear, ca. 2.5 mm. Style exerted; stigmas 5-lobed, lobes linear. Capsules ca. 5 mm; seed aril reticulate, adherent to testa. Fl. May–Jun, fr. Sep.

- Mountain slopes; 1500–2000 m. C and S Yunnan (Chengjiang, Mengzi).

28. *Leptodermis umbellata* Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 13: 374. 1894.

伞花野丁香 *san hua ye ding xiang*

Shrubs, to 2 m, much branched; young branches, peduncles, and pedicels covered with white stiff hairs. Leaves sparsely arranged; petiole usually 4–6 mm; blade papery, black adaxially and usually pale or brownish abaxially when dry, elliptic or oblong, sometimes obovate, 10–35 × 5–16 mm, both surfaces shortly hispid, base cuneate, attenuate, apex acute or shortly acuminate; lateral veins sparse, usually 2 or 3 pairs, inconspicuous; stipules broadly triangular, hispid. Flowers with pedicels straight, 3–9 mm, arranged in umbelliform groups, rarely 1–3 flowers axillary; peduncles to 1 cm or longer; bracteoles ca. 3 mm, subequal to calyx tube in length or slightly shorter, ca. 2/3 connate, upper portion bilabiate dehiscent, hispid. Calyx lobes suborbicular, width slightly greater than length, ciliate, apex slightly rounded or subtruncate. Corolla purple, narrowly funnellform, ca. 12 mm, densely hispid outside, slightly hairy inside; lobes 5, oblong, ca. 3 mm, with incurved abrupt apiculus. Long-styled flowers: stamens inserted above throat of corolla tube, filaments ca. 1.5 mm, anthers linear, ca. 2.5 mm, exerted. Short-styled flowers: stigmas 5-lobed, lobes linear, included. Capsule 4–5 mm; seed aril reticulate, free from testa or adnate with testa on ventral side. Fl. Sep–Oct.

- Hill slopes; 500–700 m. S Gansu (Bikou, Wenxian), N Sichuan (Qingchuan).

29. *Leptodermis velutiniflora* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 17. 1999.

毛花野丁香 *mao hua ye ding xiang*

Shrubs, 0.5–1 m tall; branchlets terete, slender and firm, densely pubescent. Petiole 3–6 mm, densely pilose; leaf blade papery or thinly papery, when dry turning black adaxially, pale brown abaxially, elliptic to oblong or ovate to lanceolate, 10–40 × 5–20 mm, scattered with sparse appressed pubescence adaxially, villous on midrib and lateral veins abaxially, base cuneate to broadly cuneate, apex acute or acuminate; lateral veins 4 or 5 pairs, slender, conspicuous abaxially; stipules ca. 1.5 mm, broadly triangular at base, sometimes with stipitate glands on margins, with a stiff acicular apiculus at apex. Short-styled flowers 2–5 fascicled on tips or axillary on upper portion of branchlets; pedicels usually 2–6 mm, sometimes up to 8 mm, pilose; bracteoles 2, small, ca. 1.2 mm, ca. 1/3 of lower portion connate, lobes triangular, ca. 7 mm, pubescent. Calyx tube ca. 2 mm, glabrous; lobes 5, triangular, ca. 0.4 mm, margins hirsute, apex acute. Corolla funnellform or broadly funnellform, ca. 0.4 mm, brown tomentose outside, white villous on throat inside, or glabrous on both sides; lobes 5, triangular-oblate, 3–3.5 × ca. 4 mm, margins thin and broad, apex obtuse. Stamens 5, inserted

in throat of corolla tube; filaments ca. 2 mm; anthers ca. 2.5 mm, exerted. Style extended to middle of corolla tube; stigmas 4-lobed, lobes 0.5–0.6 mm. Fl. May–Jun.

• Forests, forest margins; 2800–3100 m. Sichuan, SE Xizang, NW Yunnan.

1a. Leaves thinly papery; corolla glabrous 29a. var. *tenera*

1b. Leaves papery; corolla brown tomentose outside, white villous on throat inside 29b. var. *velutiniflora*

29a. *Leptodermis velutiniflora* var. *tenera* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 17. 1999.

薄叶野丁香 *bao ye ye ding xiang*

Leaves thinly papery. Corolla glabrous. Fl. May–Jun, fr. Aug.

• Forests, forest margins; 2800–3100 m. SW Sichuan (Muli, Yan-yuan), SE Xizang (Bomi, Mainling, Nyingchi), NW Yunnan (Binchuan, Weixi).

29b. *Leptodermis velutiniflora* var. *velutiniflora*

毛花野丁香(原变种) *mao hua ye ding xiang (yuan bian zhong)*

Leaves papery. Corolla brown tomentose outside, white villous on throat inside.

• Sichuan.

30. *Leptodermis vestita* Hemsley, J. Linn. Soc., Bot. 23: 390. 1888.

广东野丁香 *guang dong ye ding xiang*

Leptodermis ovata H. J. P. Winkler.

Shrubs, with a few ascending branches, to 0.6 m tall; young branches and leaves slightly to densely squarrose hirsute, glabrescent. Petiole stout, 0.4–0.7 cm, slightly to densely hairy, sometimes leaves sessile; leaf blade subleathery, iron-gray abaxially when dry, ovate, ovate-oblong, elliptic, or sometimes suborbicular, 1.5–4 × 1–2.2 cm, adaxially glabrous or ± hirsutulous on midrib, abaxially hirsutulous on midrib and lateral veins or glabrous, base attenuate or cuneate, margin slightly revolute, apex shortly acuminate, acute, or obtuse; lateral veins 4–7 pairs, together with veinlets adaxially inconspicuous, abaxially conspicuous; stipules broadly triangular, 0.8–1.5 mm, sometimes inconspicuous, apex apiculate. Flowers 3–7 fascicled, terminal or in axils of upper 3–6 pairs of leaves, subsessile or pedicel 0.3–2.6 mm; bracteoles rigid, hyaline, oblong, 2.5–3.5 mm, longer than calyx or subequal at anthesis, ca. 2/3 portion connate, veined, subulate-acuminate. Calyx tube 1.3–3.3 mm, glabrous or slightly hairy outside; lobes 5, ca. 0.5 mm, width greater than length, longitudinally veined, margins slightly imbricate, ciliate, apex subrounded. Corolla white, purple, or red, narrowly funnelform, ca. 1.5 cm, slightly curved, tomentose to sparsely pubescent; lobes 5, oblong, 1.4–1.8 mm, central portion thicker than narrow margins, apex incurved. Stamens 5. Short-styled flowers: stamens inserted above throat of corolla tube, filaments 1.3–3.2 mm, anthers 1.2–2 mm, slightly exerted; style 6.5–9.7 mm, stigma 0.3–1.8 mm, 3–6-lobed. Long-

styled flowers: stamens inserted at throat of corolla tube, filaments ca. 0.7 mm, anthers 1.6–2 mm, included; ovary 5-celled, ovule 1 per cell; style 11.2–15.3 mm, stigma 0.6–1.8 mm, 3–5-lobed, slightly exerted. Capsule obovoid, 5.2–7.6 mm; seeds narrowly ellipsoid to ellipsoid or narrowly obovoid to obovoid, 3.3–5.5 mm; aril reticulate, free from testa. Fl. Jun–Dec, fr. Aug–Jan.

• N Guangdong (Lianxian, Ruyuan), Guangxi.

31. *Leptodermis wilsonii* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 275. 1912.

大果野丁香 *da guo ye ding xiang*

Shrubs, usually 0.5–1 m tall; branches slightly stout, with brown or grayish white bark and 2 longitudinal grooves, grooves pilose. Petiole 2–4 mm or slightly longer; leaf blade papery, black or dark gray adaxially when dry, light brown abaxially, ovate or ovate-elliptic, sometimes lanceolate or oblong-lanceolate, 1–3.5(–3.9) × 0.5–1.8(–2) cm, glabrous on both surfaces except midrib and margins pilose adaxially, slightly smooth, base broadly cuneate, apex acute or obtuse; lateral veins 3 or 4 pairs, inconspicuous adaxially, not or slightly prominent abaxially; stipules long triangular, ca. 2 mm, with stiff apiculus, margins usually glandular. Flowers subsessile, usually 3 flowers terminal on branches, occasionally axillary near tips of branches; bracteoles 2, subscarios, lanceolate or ovate-triangular, 2–2.5 mm, usually slightly shorter than sinus of calyx limb, glabrous or pilose, acuminate. Calyx black when dry; tube ca. 2.5 mm; lobes narrowly triangular, ca. 1.8 mm, shortly ciliate, acuminate, slightly spreading. Corolla white or pallid red, fragrant, funnelform, smooth outside, glabrous; tube 12–14 mm, villous inside; lobes spreading, suborbicular, 4–6 mm in diam., central portion relatively thick, margins broad and thin, erose, apex callose acute. Stamens 5, inserted in throat of corolla tube in short-styled flowers; filaments ca. 3 mm; anthers linear, ca. 4 mm, slightly exerted. Style dark brown or black when dry, linear, 7–8 mm, glabrous. Seed aril reticulate, adherent to testa. Fl. Jun, fr. Oct–Nov.

• Jungles, thickets; 1800–3000 m. W Sichuan (Shimian), NW Yunnan (Dali, Heqing, Lijiang).

32. *Leptodermis xizangensis* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 16. 1999.

西藏野丁香 *xi zang ye ding xiang*

Shrubs, 50–80 cm tall; branches terete, slightly stout, purplish black, glabrous or pubescent, short branch usually ca. 1 cm, with dense nodes and short internodes. Leaves arranged on short branches; petiole short or leaves subsessile; blade thickly papery or slightly fleshy, black adaxially and pale brown abaxially when dry, ovate-elliptic to lanceolate-oblong, 0.7–1.2 × 4–6 mm, both surfaces glabrous except margin ciliate, base broadly cuneate, apex acute or obtuse; midrib conspicuous abaxially, lateral veins sparse, inconspicuous; stipules long triangular, 2–2.5 mm, cuspidate-caudate, sometimes both sides adnate to petiole. Flowers sessile, usually 3 flowers terminal on tips of short branches; bracteoles 2, scarious, transparent, ca. 4.5 mm, connate to middle portion, apex with an acicular apiculus. Calyx tube ca. 2.5 mm; lobes 5, triangular, ca. 0.6 mm,

densely ciliate, acute. Corolla purple, turning black when dry, broadly funnelform, ca. 1.6 mm, glabrous outside, throat expanded, ca. 5 mm in diam., sparsely villous or subglabrous inside; lobes 5, broadly ovate-suborbicular, ca. 4 mm, apex shallowly 3-lobed or cuspidate, apiculus obtuse. Stamens 5, inserted below corolla tube throat; filaments very short; anthers lanceolate-linear, ca. 2 mm. Style ca. 12 mm; stigmas 3-lobed, ca. 2 mm, linear.

- Thickets; ca. 3400 m. S Xizang (Gyirong).

33. *Leptodermis yangshuoensis* Tao Chen, sp. nov.

阳朔野丁香 yang shuo ye ding xiang

Type: China. Guangxi: Yangshuo Xian (阳朔县), Bilianfeng (碧莲峰), between rocks at roadsides or forest margins on limestone hilltop, ca. 300 m, 16 Sep 1999, T. Chen & Y. K. Li 990916001 (holotype, SZG; isotypes, A, MO).

Haec species *Leptodermidi vestitae Hemsley similis, sed ab ea inflorescentiis ad ramos hornotinos dispositis terminalibus vel raro in axillis foliorum superiorum, pedunculo elongato atque pedicello manifesto usque ad 8 mm longo differt.*

Paratype: China. Guangxi: Yangshuo Xian (阳朔县), Matang (马塘), Longtouzhai (龙头寨), 380 m, on limestone hill, 20 Oct 1963, Z. Z. Chen (陈照宙) 53104 (IBK – bar code 00100138).

Shrubs to 1 m high, with raphides distinctly present on leaves, stipules, bracts, bracteoles, calyx, and corolla. Current year's branches subquadrangular, glabrous, ?straw-yellow when dry; previous year's branches with grayish white bark peeling off; old branches dark brown. Leaves opposite and sometimes in clusters on lateral short branches; petiole to 12 mm, grooved adaxially; blade subleathery, slightly shiny when dry, adaxially dark green, abaxially pale green, ovate to ovate-oblong, to 50 × 25 mm, glabrous on both surfaces, base obtuse, slightly decurrent to petiole, margins entire, slightly ciliate near apex, apex acute or shortly acuminate; midrib impressed adaxially when dry, lateral veins 3–6 pairs, slender, arcuate ascending, confluent along leaf margin, adaxially depressed or slightly impressed, abaxially prominent, veinlets abaxially conspicuous; stipules broadly triangular, apiculate. Inflorescences thyrsoid, borne on current year's branches, terminal or rarely in axils of upper leaves; peduncle purplish brown, elongate, slightly angular when dry, slender or slightly stout; bracts leaflike to subulate. Flowers (1–)3–5 fascicled, terminal on ultimate branches of inflorescence; pedicels purplish brown, to 8 mm; bracteoles connate, membranous, ca. 3 mm, equal to or slightly longer than calyx, distinctly veined, with raphides; lobes 2, triangular, ca. 1.2 mm, slightly bilobed at apex. Calyx with hypanthium ca. 1.5 mm; tube ca. 0.3 mm; lobes 5, ovate-oblong, ca. 1.2 mm, white ciliate. Corolla white or pale purple, narrowly funnel-form, ca. 12 mm; tube narrow, 9–10 mm, densely hairy at throat, with hairs becoming sparse toward base; lobes 5, ovate-triangular, ca. 3 mm, reticulately veined. Stamens 5, inserted at throat; filaments very short; anthers ca. 1.5 mm. Ovary 5-celled, each cell with 1 ovule, basal; style slender; stigma 5-lobed, lobes linear, slender, revolute, adaxially hairy. Fruit a capsule, ovoid, ca. 4 mm, septically dehiscing into 5 valves, 5-seeded;

valves persistent, with persistent calyx lobes at apex; seeds black, ca. 2.5 mm; aril reticulate, free. Fl. Aug–Oct, fr. Oct–Nov.

- Limestone hills; 300–400 m. NE Guangxi (Yangshuo).

34. *Leptodermis yui* H. S. Lo, J. Trop. Subtrop. Bot. 7(1): 15. 1999.

德浚野丁香 de jun ye ding xiang

Shrubs, 0.5–1.5 m tall; branches and branchlets slender, old branches purplish red, glabrous, young branches with short, soft hairs in 2 bands. Leaves sparsely arranged; petiole 0.3–0.6 cm; blade membranous, adaxially dark brown and abaxially slightly pale when dry, broadly ovate to lanceolate, 1.5–4.5 × 0.7–2 cm, adaxially dispersedly strigose, abaxially glabrous or with sparse stiff hairs on midrib, base broadly cuneate or cuneate, margins fimbriate ciliate, apex obtuse or subacute, sometimes rounded; midrib very compressed abaxially, lateral veins slender, 4 or 5 pairs, conspicuous abaxially; stipules slightly short on upper part of branchlets, ca. 1 mm, apex lacerate, glandular, triangular on lower portion of branchlets, ca. 2 mm, margins with glandular hairs. Flowers 1–3 terminal, sessile; bracteoles 2, base connate (ca. 1 mm), free portion lanceolate or ensiform-lanceolate, ca. 2 mm, sparsely hispid, margins sometimes glandular. Calyx tube ca. 2 mm; lobes 5, narrowly triangular, longer than tube, hispid ciliate, acuminate. Corolla purple, broadly funnelform, apex with tufted long soft hairs; tube 9–10 mm, glabrous outside, covered with white long soft hairs inside; lobes 5, broad, oblate, ca. 5 mm wide, margin crisped, both surfaces villous, apex shallowly 3-lobed. Stamens 5, inserted below throat of corolla tube; filaments short; anthers oblong-linear, ca. 2 mm, included. Style slightly exerted, stigmas 2-lobed, lobes filiform.

- Forest margins; ca. 2500 m. SW Sichuan (Muli).

