

**21. SILENE** Linnaeus, Sp. Pl. 1: 416. 1753.

蝇子草属 *ying zi cao shu*

Zhou Lihua (周丽华), Wu Zhengyi (吴征镒 Wu Cheng-yih); Magnus Lidén, Bengt Oxelman  
*Cucubalus* Linnaeus; *Elisanthe* (Fenzl) Reichenbach; *Gastrolychnis* (Fenzl) Reichenbach; *Melandrium* Röhlings;  
*Otites* Adanson; *Physolychnis* (Bentham) Ruprecht; *Pleconax* Adanson; *Viscago* Zinn.

Herbs annual, biennial, or perennial, rarely plants suffrutescent. Stems erect, ascending, or creeping. Leaves subulate, linear or lanceolate to ovate-lanceolate, or elliptic. Flowers bisexual or unisexual; male-sterile flowers frequent in otherwise hermaphroditic plants. Male-sterile flowers often have markedly shorter androgynophores and petal limbs than hermaphroditic flowers. Inflorescence a monochasium, dichasium, thyrse or flower solitary. Calyx tubular, funnel-shaped, campanulate, or ovoid, usually 10-veined, with 5 teeth with ciliate membranous margin; the form of this margin usually varies between teeth in a single calyx. Petals 5, each with a sometimes auriculate claw; limb entire, bifid, 4-fid, or lacinate, variously colored; coronal scales present. Androgynophore ± conspicuous. Stamens 10. Ovary usually with 3 or 5 basal septa; ovules numerous; styles 3 or 5. The protrusion of stamens and styles from calyx mouth are correlated in perfect flowers. Fruit usually a capsule dehiscent with 6 or 10, rarely 5, teeth. Seeds reniform, minute, ± tuberculate, sometimes with abaxial spinose processes or a marginal wing.

About 600 species: mainly in N temperate regions, but also in Africa and South America; 110 species (67 endemic) in China.

Two species are cultivated in China for their attractive flowers, including *Silene pendula* Linnaeus and *S. gallica* Linnaeus.

The phylogenetic relationships within *Silene* are currently under investigation, clearly showing deficiencies in recent subgeneric classifications. Therefore, we refrain from using any formal ranks between genus and species. However, 59 of the 110 species of *Silene* in China can be attributed to one of three informal groups that approximately correspond to *Silene* sect. *Cucubaloideae* Edgeworth & J. D. Hooker, *S. sect. Odontopetalae* Schischkin ex Chowdhuri, and *S. sect. Physolychnis* (Bentham) Bocquet. As circumscribed here, the “*Cucubaloideae*” group is probably monophyletic (characterized by ± creeping habit and fleshy, fasciculate root tubers). However, the character used (carpel number) to distinguish the “*Odontopetalae*” and “*Physolychnis*” groups almost certainly results in a paraphyletic “*Odontopetalae*” group. Moreover, it is probable that the transformation between three and five carpels has occurred more than once in these groups. Nevertheless, we believe that keying out these informal groups separately will aid in identifying species in China.

Much taxonomic research is still needed at the species level, and we have tried to highlight the most obvious, serious problems. We found it impossible to infer the identity of the taxon pertaining to *Melandrium chailaricum* A. I. Baranov & Skvortsov (Quart. J. Taiwan Mus. 19: 158. 1966).

**Key 1 (main key, species nos. 1–51)**

- 1a. Calyx with 30 veins ..... 48. *S. conoidea*
- 1b. Calyx with 10, rarely 20 veins.
  - 2a. Calyx with 20 veins, at least at base.
    - 3a. Flowers female; plants green, pubescent ..... 46. *S. latifolia*
    - 3b. Flowers bisexual; plants glaucous, glabrous ..... 32. *S. vulgaris*
  - 2b. Calyx with 10 veins.
    - 4a. Fruit a black pseudoberry, irregularly dehiscent ..... 33. *S. baccifera*
    - 4b. Fruit a capsule dehiscent by teeth.
      - 5a. Styles 5.
        - 6a. Flowers unisexual (plants dioecious) ..... 46. *S. latifolia*
        - 6b. Flowers bisexual or plants gynomonoeious.
          - 7a. Calyx funnel-shaped in flower; flowers in ± regular terminal dichasia ..... 1. *S. linnaeana*
          - 7b. Calyx tubular or campanulate in flower; inflorescence an irregular thyrse composed of unequal cymules, or flower solitary ..... *Key 2*
  - 5b. Styles 3.
    - 8a. Petals (including limb) together forming a short tube exerted beyond calyx by 1–3 mm ... 49. *S. tubulosa*
    - 8b. Petal limbs not forming a tube.
      - 9a. Leaves petiolate throughout, usually ± cordate.
        - 10a. Cyme capitate ..... 38. *S. capitata*
        - 10b. Cymes not capitate.
          - 11a. Leaves ovate to lanceolate; petal limbs bifid ..... 39. *S. seoulensis*
          - 11b. Leaves broadly ovate or suborbicular; petal limbs 4-lobed ..... 40. *S. qiyunshanensis*
      - 9b. At least distal leaves not petiolate, not cordate.
        - 12a. Seeds with a rim of long protuberances or winged abaxially; flowers 1 to few.
          - 13a. Seeds with an entire marginal wing.
            - 14a. Plants perennial ..... *Key 3*
            - 14b. Plants annual ..... 45. *S. nana*
          - 13b. Seeds with a rim of spinulose protuberances.

- 15a. Flowers in an irregular thyrses, or solitary; petaline claws auriculate ..... *Key 3*  
 15b. Flowers in terminal lax, regular dichasia; petaline claws not auriculate.  
 16a. Leaves lanceolate ..... 41. *S. salicifolia*  
 16b. Leaves linear.  
 17a. Calyx narrowly tubular ..... 44. *S. tubiformis*  
 17b. Calyx campanulate.  
 18a. Leaves 2–3.5 cm; flowers solitary; petals white ..... 42. *S. morrisonmontana*  
 18b. Leaves 5–8 cm; usually more than one flower in each cyme; petals pale red ..... 43. *S. hupehensis*
- 12b. Seeds without long marginal protuberances or wings.  
 19a. Flowers in terminal dichasia or monochasia, or solitary.  
 20a. Plants annual or biennial ..... 47. *S. noctiflora*  
 20b. Plants perennial.  
 21a. Cushion- or mat-forming herbs, usually less than 10 cm tall; leaves small, 1–3 mm wide; flower solitary.  
 22a. Leaves glabrous except for marginal cilia ..... 50. *S. davidii*  
 22b. Plants hairy throughout ..... 51. *S. gracilentia*  
 21b. Plants taller, not forming cushions; leaves broader; 1- to many flowered.  
 23a. Roots fleshy, fasciculate; inflorescence a many-flowered dichasium ..... *Key 4*  
 23b. Roots not as above; inflorescence 1–3-flowered.  
 24a. Androgynophore pubescent.  
 25a. Calyx 2–2.5 cm; androgynophore 8–10 mm ..... 35. *S. incurvifolia*  
 25b. Calyx 1–1.8 cm; androgynophore 3–6 mm ..... 34. *S. subcretacea*  
 24b. Androgynophore glabrous.  
 26a. Basal rosettelike clusters of sterile shoots absent; calyx ca. 2 cm or more ..... 36. *S. moorcroftiana*  
 26b. Basal rosettelike clusters of sterile shoots present; calyx less than 2 cm ..... 37. *S. karaczukuri*
- 19b. Inflorescence a regular or irregular thyrses composed of dichasial or 1-flowered cymules.  
 27a. Flowers unisexual (plants dioecious); calyx less than 6 mm; plants biennial.  
 28a. Calyx 4–6 mm; petals greenish ..... 29. *S. otites*  
 28b. Calyx 2–3.5 mm; petals white.  
 29a. Calyx hairy; petaline claws and filaments hairy ..... 30. *S. borysthenica*  
 29b. Calyx glabrous; petaline claws and filaments glabrous ..... 31. *S. wolgensis*
- 27b. Flowers bisexual; calyx usually longer than 6 mm; plants annual, biennial, or perennial.  
 30a. Plants annual or biennial.  
 31a. Calyx tubular in flower; cymules 1-flowered.  
 32a. Petals 4-lobed ..... 24. *S. quadriloba*  
 32b. Petals with numerous lobes ..... 25. *S. suaveolens*  
 31b. Calyx ovoid-campanulate; cymules many flowered.  
 33a. Stamens and styles exserted ..... 15. *S. koreana*  
 33b. Stamens and styles included.  
 34a. Androgynophore glabrous; stalks of cymules very short ..... 26. *S. firma*  
 34b. Androgynophore hairy; at least proximal cymules with prominent stalks, ca. as long as or longer than pedicels.  
 35a. Calyx densely glandular hairy ..... 28. *S. orientalmongolica*  
 35b. Calyx not glandular hairy ..... 27. *S. aprica*
- 30b. Plants perennial.  
 36a. Cymules very unequal; basal rosette of large broad leaves usually present ..... *Key 3*  
 36b. Cymules  $\pm$  equal, forming a  $\pm$  symmetric thyrses; basal rosette of large broad leaves usually absent.  
 37a. Cymules densely clustered; thyrses appearing capitate ..... 6. *S. pseudofortunei*  
 37b. Cymules clearly separated; thyrses appearing paniculate or racemose.  
 38a. Cymules long stalked, thyrses appearing paniculate; petals usually pink.  
 39a. Calyx shorter than 1.2 cm ..... *Key 4*  
 39b. Calyx at least 1.2 cm.  
 40a. Petal limbs bifid, lobes entire or erose.  
 41a. Calyx less than 1.8 cm; leaves oblanceolate ..... 2. *S. esquamata*  
 41b. Calyx more than 2.5 cm; leaves linear or linear-lanceolate.  
 42a. Petal lobes entire ..... 3. *S. dawoensis*  
 42b. Petal lobes erose ..... 4. *S. incisa*

- 40b. Petal limbs bifid, lobes multifid or laciniate ..... 5. *S. fortunei*
- 38b. Cymules shortly stalked, thyse appearing racemose at least distally; petals white or yellowish white.
- 43a. Basal leaves caespitose, not withered at anthesis; cauline leaves few, without axillary sterile short shoots.
- 44a. At least some cymules with more than 1 flower ..... 20. *S. jensiseensis*
- 44b. Cymules very rarely with more than 1 flower.
- 45a. Petal auricles ciliate ..... 21. *S. graminifolia*
- 45b. Petal auricles not ciliate.
- 46a. Plants 10–20 cm tall, villous; leaves 3–6 cm; calyx 1.5–1.7 cm, hairy at veins ..... 23. *S. dumetosa*
- 46b. Plants 20–50 cm, glabrous; leaves 6–18 cm; calyx less than 1.2 cm (1.5–1.8 cm in var. *rubescens*), usually glabrous at veins ..... 22. *S. gracilicaulis*
- 43b. Basal leaves withered at anthesis; cauline leaves many, with axillary sterile short shoots.
- 47a. Petals entire.
- 48a. Leaves ovate-lanceolate, 15–30 mm wide ..... 16. *S. kungessana*
- 48b. Leaves lanceolate or linear, 1.5–10 mm wide.
- 49a. Leaves linear, 1–3 cm × 1.5–3 mm ..... 19. *S. holopetala*
- 49b. Leaves oblanceolate or lanceolate, 3–8 cm × more than 4 mm.
- 50a. Stems multibranching; calyx 8–12 mm; petals yellowish white .. 17. *S. komarovii*
- 50b. Stems usually not branching; calyx 6–9 mm; petals pinkish abaxially 18. *S. pseudotenuis*
- 47b. Petals lobed.
- 51a. Plants glabrous; petals 4-lobed ..... 12. *S. odoratissima*
- 51b. Plants pubescent; petals 2-lobed.
- 52a. Cymules alternate.
- 53a. Leaves linear or subulate, nearly spiniform at maturity.
- 54a. Calyx 1.2–1.5 cm ..... 7. *S. altaica*
- 54b. Calyx 2–2.5 cm ..... 8. *S. alexandrae*
- 53b. Leaves linear, never spiniform.
- 55a. Calyx shortly pubescent ..... 34. *S. subcretacea*
- 55b. Calyx glabrous.
- 56a. Calyx 1–1.2 cm; androgynophore ca. 3 mm ..... 9. *S. tianschanica*
- 56b. Calyx 1.4–1.7 cm; androgynophore ca. 5 mm ..... 10. *S. ningxiaensis*
- 52b. Cymules opposite.
- 57a. Calyx tubular or club-shaped; androgynophore longer than 3 mm .. 11. *S. repens*
- 57b. Calyx ovoid or campanulate; androgynophore not longer than 2 mm.
- 58a. Calyx broadly campanulate, 4–6 mm ..... 13. *S. macrostyla*
- 58b. Calyx ovoid-campanulate, 6–8 mm ..... 14. *S. foliosa*

**Key 2 (species nos. 52–80, “Physolychnis” group)**

- 1a. Calyx inflated, loose in fruit.
- 2a. Seeds ± tuberculate.
- 3a. Calyx with short reflexed eglandular hairs ..... 80. *S. multifurcata*
- 3b. Calyx with glandular hairs.
- 4a. Basal leaves persistent; cauline leaves smaller.
- 5a. Leaves 4–10 cm; calyx 1.5–2.2 cm; petals slightly exerted beyond calyx; coronal scales small, not obvious; seeds with prominent tubercles ..... 63. *S. bungei*
- 5b. Leaves 1–4 cm; calyx 1.3–1.7 cm; petals prominently exerted; coronal scales laciniate; seeds faintly tuberculate ..... 64. *S. rubricalyx*
- 4b. Basal leaves early withered; cauline leaves well developed.
- 6a. Inflorescence few flowered; stems whitish pubescent ..... 79. *S. cashmeriana*
- 6b. Inflorescence 7–30-flowered; stems green.
- 7a. Stem leaves ovate to lanceolate, in 4–8 pairs ..... 77. *S. indica*
- 7b. Stem leaves broadly ovate, in 2 pairs ..... 78. *S. tibetica*

- 2b. Seeds with wings (unknown in *S. zhoui*).
- 8a. Petals entire or bifid.
- 9a. Petals entire; calyx 1.3–1.5 cm ..... 55. *S. zhoui*
- 9b. Petals bifid; calyx 1.5–2 cm ..... 56. *S. nigrescens*
- 8b. Petals 4-lobed (lateral lobes often small).
- 10a. Leaves linear ..... 57. *S. chodatii*
- 10b. Leaves not linear.
- 11a. Pedicel 5–15 mm; plants 2–7-flowered ..... 61. *S. karekirii*
- 11b. Pedicel 10–50 mm; plants 1–3-flowered.
- 12a. Petal limb hairy ..... 60. *S. wardii*
- 12b. Petal limb glabrous.
- 13a. Calyx ca. 1.5 cm ..... 62. *S. puranensis*
- 13b. Calyx 2–2.7 cm.
- 14a. Stems ascending, creeping at base; petaline claws ciliate at base ..... 59. *S. atsaensis*
- 14b. Stems erect, caespitose; petaline claws not ciliate ..... 58. *S. namlaensis*
- 1b. Calyx appressed to capsule in fruit.
- 15a. Seeds large with broad marginal wings (unknown in *S. zhongbaensis*); plants 5–40 cm with persistent basal leaves.
- 16a. Flowers solitary, rarely 2 or 3; calyx 1.3–1.5 cm, veins not cohering at apex ..... 52. *S. gonosperma*
- 16b. Flowers (1–)3–8; calyx to 1.3 cm, veins cohering at calyx teeth.
- 17a. Pedicel 2–8 mm ..... 54. *S. zhongbaensis*
- 17b. Pedicel 10–50 mm ..... 53. *S. himalayensis*
- 15b. Seeds minutely tuberculate (unknown in *S. muliensis*); plants 20–80 cm; basal leaves usually withered at anthesis.
- 18a. Leaves grasslike, linear; calyx 6–7 mm ..... 74. *S. caespitella*
- 18b. Leaves broader; calyx usually longer.
- 19a. Petals prominently exerted beyond calyx (4 mm or more).
- 20a. Fruiting calyx ca. 2 × as long as broad ..... 76. *S. huguetiae*
- 20b. Fruiting calyx 1–1.5 × as long as broad.
- 21a. Androgynophore 2–3 mm ..... 73. *S. muliensis*
- 21b. Androgynophore shorter.
- 22a. Calyx 12–15 mm ..... 70. *S. yetii*
- 22b. Calyx 7–11 mm.
- 23a. Seeds ca. 1.5 mm; inflorescence 1–4-flowered ..... 72. *S. alaschanica*
- 23b. Seeds ca. 1 mm; inflorescence 5–10-flowered ..... 71. *S. herbilegorum*
- 19b. Petals not exerted or exerted less than 4 mm.
- 24a. Glandular hairs present.
- 25a. Calyx 1–1.2 cm ..... 69. *S. chungtienensis*
- 25b. Calyx ca. 1.5 cm ..... 66. *S. nangqenensis*
- 24b. Glandular hairs absent.
- 26a. Calyx 10–15 mm.
- 27a. Calyx with retrorse hairs; androgynophore to 1 mm ..... 65. *S. songarica*
- 27b. Calyx with spreading hairs; androgynophore 1.5–2 mm ..... 68. *S. kialensis*
- 26b. Calyx 6–10 mm.
- 28a. Plants 30–60 cm; basal leaves lanceolate, 5–10 cm; cymules 3–7-flowered; corolla limb broader than long, shallowly bifid or irregularly 4-fid ..... 67. *S. nepalensis*
- 28b. Plants 20–25 cm; basal leaves elliptic, ca. 3 cm; cymules 1–3-flowered; corolla limb narrow, deeply bifid ..... 75. *S. sveae*

**Key 3 (species nos. 81–90, “Odontopetalae” group)**

- 1a. Calyx subcylindric, closed in fruit.
- 2a. Corolla limbs slightly emarginate or shallowly bifid, margin erose above ..... 87. *S. delavayi*
- 2b. Corolla limbs deeply 4-lobed, lobes entire or bifid, margin not erose.
- 3a. Petal claw auricles inconspicuous; petal lobes subequal ..... 90. *S. lineariloba*

- 3b. Petal claw auricles prominent, orbicular, with erose margin; petal lobes unequal.
  - 4a. Petal claws prominently exerted; limb ca. 10 mm ..... 88. *S. longicornuta*
  - 4b. Petal claws not or slightly exerted; limb ca. 5 mm ..... 89. *S. oblanceolata*
- 1b. Calyx campanulate, loose in fruit.
  - 5a. Corolla limbs bifid, seeds not winged.
    - 6a. Androgynophore 1–2 mm; seeds striate ..... 81. *S. lamarum*
    - 6b. Androgynophore 2–3 mm; seeds minutely tuberculate ..... 82. *S. pubicalycina*
  - 5b. Corolla limbs 4-lobed; seeds winged.
    - 7a. Basal leaves 3–4 cm wide ..... 83. *S. atrocastanea*
    - 7b. Basal leaves less than 2 cm wide.
      - 8a. Calyx 2–2.5 cm ..... 84. *S. stewartiana*
      - 8b. Calyx ca. 1.5 cm.
        - 9a. Corolla limb oblanceolate; auricles entire ..... 85. *S. scopulorum*
        - 9b. Corolla limb obovate; auricles with erose margin ..... 86. *S. melanantha*

**Key 4 (species nos. 91–110, “Cucubaloideae” group)**

- 1a. Calyx 8 mm or less; androgynophore to 1 mm ..... 109. *S. phoenicodonta*
- 1b. Calyx and androgynophore longer.
  - 2a. Leaves linear or linear-lanceolate; middle leaves less than 5 mm wide.
    - 3a. Calyx campanulate.
      - 4a. Petal limb rounded, very slightly emarginate ..... 106. *S. principis*
      - 4b. Petal limb deeply 4-lobed ..... 107. *S. bilingua*
    - 3b. Calyx cylindrical to tubular-clavate.
      - 5a. Calyx eglandular ..... 99. *S. grandiflora*
      - 5b. Calyx glandular hairy.
        - 6a. Calyx 12–15 mm; androgynophore ca. 3 mm ..... 104. *S. batangensis*
        - 6b. Calyx and androgynophore longer ..... 105. *S. napuligera*
  - 2b. Leaves ovate, lanceolate, or elliptic; middle leaves at least 5 mm wide.
    - 7a. Calyx teeth and bracts blackish pointed ..... 110. *S. otodonta*
    - 7b. Calyx teeth and bracts not blackish pointed.
      - 8a. Calyx eglandular.
        - 9a. Androgynophore 5–8 mm.
          - 10a. Leaves lanceolate, 30–60 × 4–15 mm; calyx ca. 2 cm ..... 99. *S. grandiflora*
          - 10b. Leaves elliptic, 20–40 × 7–15 mm; calyx 1.5–1.8 cm ..... 100. *S. cardiopetala*
        - 9b. Androgynophore 2–4 mm.
          - 11a. Leaves ovate, usually with five parallel veins ..... 92. *S. platyphylla*
          - 11b. Leaves lanceolate, 1–3-veined.
            - 12a. Leaves narrowly lanceolate, 1-veined; flowers pink ..... 93. *S. yunnanensis*
            - 12b. Leaves broadly lanceolate to ovate, 1–3-veined; flowers pale pink or white ..... 91. *S. tatarinowii*
    - 8b. Calyx glandular hairy.
      - 13a. Leaves cuneate at base, usually with 1 prominent vein.
        - 14a. Androgynophore ca. 5 mm ..... 102. *S. monbeigii*
        - 14b. Androgynophore 1–2 mm.
          - 15a. Calyx tubular to funnel-shaped ..... 103. *S. rosiflora*
          - 15b. Calyx campanulate.
            - 16a. Calyx 13–15 mm; pedicels subequaling or longer than calyx ..... 101. *S. lichiangensis*
            - 16b. Calyx 8–13 mm; pedicels shorter than or subequaling calyx ..... 108. *S. viscidula*
  - 13b. Leaves rounded to subcordate at base, often with 3–5 parallel veins.
    - 17a. Calyx tubular, 13–17 mm.
      - 18a. Petal limb to 6 mm, lobes 1–1.5 mm wide ..... 94. *S. adenocalyx*
      - 18b. Petal limb to 10 mm, lobes to 3 mm wide ..... 95. *S. trachyphylla*
    - 17b. Calyx campanulate, 8–12 mm.
      - 19a. Leaves undulate ..... 98. *S. lhassana*
      - 19b. Leaves not undulate.
        - 20a. Petal limbs 2-lobed ..... 97. *S. khasiana*
        - 20b. Petal limbs 4-lobed ..... 96. *S. asclepiadea*

**1. *Silene linnaeana*** Voroschilov in A. K. Skvortsov, Florist. 林奈蝇子草 lin nai ying zi cao  
 Issl. V. Razn. Raionakh SSSR, 167. 1985.

*Lychnis sibirica* Linnaeus, Sp. Pl. 1: 437. 1753, not *Silene sibirica* (Linnaeus) Persoon (1805, based on *Cucubalus sibiricus* Linnaeus); ?*L. yunnanensis* E. G. Baker; *Melandrium sibiricum* (Linnaeus) A. Braun. Herbs perennial, 15–20 cm tall, pubescent with a mixture of glandular and eglandular hairs. Rootstock sturdy. Stems caespitose, erect, apically branched. Basal leaves oblanceolate to oblong; cauline leaves lanceolate, 1.5–2.5 cm × 3–6 mm. Dichasium several flowered, lax. Pedicel 4–30 mm; bracts leaflike. Calyx funnel-shaped, 5–7 × 2.5–3 mm, sparsely glandular hairy, veins obscure, teeth very obtuse, margin membranous. Petals white, to 1.3 cm; claw cuneate, shorter than sepals or slightly longer, without auricles; limb broadly obovate, bifid for 1/4–1/3 its length; lobes entire, sometimes with a lateral tooth on each side; coronal scales rounded. Stamens slightly exerted. Styles 5. Androgynophore ca. 1 mm.

*Pinus* forests, sandy steppes, rocky foothill grasslands. Nei Mongol [Mongolia, Russia (Far East, Siberia)].

*Lychnis yunnanensis* was described from material allegedly collected in Yunnan and received from Max Leichtlin. The plant evidently belongs in the *Silene linnaeana* group, but differs from *S. linnaeana sensu stricto* in having broader flowers with larger petals that sometimes have prominent lateral teeth, and in having a much denser indumentum. The other Siberian taxa also always lack the lateral teeth, which might indicate that *L. yunnanensis* is something different. Indeed, Wu Zhengyi (editor's note) believes that it is distinct because of the wide geographic disjunction and morphological differences. However, until more records of this plant are made from the Yunnan area, the record is best regarded as doubtful. *Lychnis yunnanensis* is sometimes erroneously placed in the synonymy of *S. huguetiae*.

The *Lychnis sibirica* group has recently been demonstrated to belong to *Silene* by molecular and morphological studies (Oxelman et al., Nordic J. Bot. 20: 513–518. 2001).

**2. *Silene esquamata*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 11: 223. 1920.

无鳞蝇子草 wu lin ying zi cao

Herbs perennial, 30–60 cm tall. Roots robust, lignified. Stems erect, multibranched from base, sparsely pubescent with short retrorse hairs at base, apically viscid. Basal leaves spatulate-oblanceolate, early withered. Cauline leaves with short sterile axillary branches, broadly oblanceolate, 2–7 cm × 5–11(–15) mm, abaxially antrorse-scrabrid or with short hairs at veins and margin, adaxially not hairy, coarse, midvein sunken, base attenuate into short petiole or cuneate, apex acute to acuminate. Flowers erect, in a lax ± regular thyrse; cymules long stalked, opposite, 1–3-flowered. Pedicel 1.5–4 cm, slender, viscid; bracts linear to linear-lanceolate, 3–8 mm, herbaceous, ciliate. Calyx tubular, clavate in fruit, 1.2–1.7 cm × 2–3 mm, subglabrous, sometimes with sparse short hairs at veins, veins green or violet; calyx teeth ca. 1 mm, ciliate. Androgynophore 5–8 mm, glabrous. Petal claws included or slightly exerted beyond calyx, narrowly cuneate, glabrous, auricles not obvious; limbs pale red, obovate, 8–11 mm, deeply bifid, lobes oblong; coronal

scales very small. Stamens and styles long exerted; filaments glabrous. Styles 3. Capsule ca. 1 cm. Seeds dark brown, globose-reniform, ca. 1 mm. Fl. Jul–Aug, fr. Sep.

• Mountain stony grasslands, scrub; (1800–)2700–3300(–4000) m. Sichuan, Yunnan.

**3. *Silene dawoensis*** Limpricht in Pax, Repert. Spec. Nov. Regni Veg. Beih. 12: 363. 1922.

道孚蝇子草 dao fu ying zi cao

*Silene longiuscula* C. Y. Wu & C. L. Tang.

Herbs perennial, 30–80 cm tall. Roots robust, conical, lignified. Stems erect or ascending, multibranched from woody base, glabrous or sparsely hairy, apically viscid. Basal leaves withered at anthesis. Cauline leaves with short sterile axillary branches, linear or linear-lanceolate, (1.5–)3–5(–6) cm × 2–5 mm, base cuneate or attenuate, glabrous, midvein prominent. Flowers erect, in a lax, few-flowered thyrse; cymules with peduncles subequaling pedicels, opposite or alternate, often 1-flowered. Pedicel 2–4 cm, slender, glabrous, viscid; bracts linear, 5–10 mm, ciliate. Calyx tubular, clavate in fruit, 2.5–3.5 cm × ca. 3 mm, glabrous, veins green or violet; calyx teeth ca. 1.5 mm.

Androgynophore 1.5–2 cm, glabrous. Petal claws slightly exerted beyond calyx, narrowly lanceolate, 1–1.5 cm, glabrous, not auriculate, limbs pale red, obcordate or obovate, 1–1.4 cm, divided to about halfway, lobes narrowly ovate; coronal scales very small. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule 1–1.5 cm. Seeds dark brown, reniform, slightly flat, ca. 1.2 mm. Fl. Jul–Aug, fr. Aug–Sep.

• Grasslands, cliffs; 1400–3100 m. W Sichuan, NW Yunnan.

The type specimen of *Silene longiuscula* deviates from *S. dawoensis* in its glandular hairy calyx.

**4. *Silene incisa*** C. L. Tang, Acta Bot. Yunnan. 2: 428. 1980.

齿瓣蝇子草 chi ban ying zi cao

Herbs perennial, 30–60 cm tall. Roots robust, lignified. Stems sparsely caespitose, suberect, slender, glabrous, apically viscid. Basal leaves oblanceolate, withered at anthesis, 5–8 cm × 5–10(–12) mm, both surfaces glabrous, slightly coarse, margin sometimes ciliate, midvein prominent, base attenuate into long petiole. Cauline leaves with short sterile axillary branches, gradually smaller than basal leaves. Flowers 2(–2.5) cm in diam., erect, in a lax, few-flowered thyrse; cymules with peduncles shorter than or subequaling pedicels, opposite, 1–3-flowered. Pedicel 1–2.5(–3) cm, slender, glabrous or sparsely and shortly hairy, viscid; bracts linear or linear-lanceolate, ciliate. Calyx tubular, ca. 30 × 3 mm, glabrous, clavate in fruit, longitudinal veins green or violet, teeth 1–2 mm. Androgynophore ca. 2 cm, glabrous. Petal claws cuneate-oblanceolate, glabrous, auricles not obvious, limbs exerted beyond calyx, pale red, triangular-oblanceolate, 1–1.5 cm, divided to about halfway, lobes band-shaped, uneven; coronal scales papillate. Stamens and styles exerted;

filaments glabrous. Styles 3. Capsule globose-ovoid, 1–1.2 cm, shorter than calyx, rarely subequaling calyx. Seeds reddish brown, globose-reniform, ca. 1.5 mm. Fl. Jul–Sep, fr. Sep–Oct.

- Mountain stony grasslands; 1700–1800 m. Sichuan.

It is difficult to find consistent and non-overlapping differences between this species and *Silene dawoensis*. The petal lobes of the type specimen of *S. incisa* are slightly crumpled or undulate along the margin, but otherwise similar to those of *S. dawoensis*, and hardly incised.

**5. *Silene fortunei*** Visiani, *Linnaea* 24: 181. 1851.

鹤草 he cao

*Silene argyi* H. Léveillé; *S. fissipetala* Turczaninow; *S. kiiruninsularis* Masamune.

Herbs perennial, 50–80(–100) cm tall. Roots robust, lignified. Stems caespitose, erect, multibranched, shortly villous or subglabrous, viscid. Basal leaves oblanceolate or lanceolate, withered at anthesis, 3–8 cm × 7–12(–15) mm, both surfaces glabrous or villous when young, margin ciliate, midvein prominent, base attenuate into short petiole. Cauline leaves with short sterile axillary branches, gradually smaller than basal leaves. Flowers 2(–2.5) cm in diam., erect, in a lax, few-flowered thyrses; cymules with peduncles shorter than or subequaling pedicels, opposite, 1–3-flowered. Pedicel 3–12(–15) mm, slender; bracts linear, 5–10 mm, ciliate. Calyx narrowly tubular, (2.2–)2.5–3 cm × ca. 3 mm, glabrous, inflated above and clavate in fruit, longitudinal veins green or violet; teeth 1.5–2 mm. Androgynophore 1–1.5(–1.7) mm in fruit, glabrous. Petal claws slightly exerted beyond calyx, oblanceolate, 1–1.5 cm, glabrous; limbs exerted, pale red, cuneate-obovate, ca. 1.5 cm, deeply bifid to middle or more; lobes lacinate; coronal scales ligulate, small. Stamens and styles slightly exerted; filaments glabrous. Styles 3. Capsule 1.2–1.5 cm × ca. 4 mm, shorter than or equaling calyx. Seeds dark brown, orbicular-reniform, slightly flattened, ca. 1 mm. Fl. Jun–Aug, fr. Jul–Sep.  $2n = 30^*$ .

- Scrub, plateaus, low mountain scrub grasslands. Anhui, Fujian, Gansu, Hebei, Jiangxi, S Shaanxi, Shandong, Shanxi, Sichuan, Taiwan.

The present authors have not seen type material of *Silene fissipetala* or *S. kiiruninsularis*.

This species is used medicinally.

**6. *Silene pseudofortunei*** Y. W. Tsui & C. L. Tang, *Acta Bot. Yunnan.* 2: 429. 1980.

团伞蝇子草 tuan san ying zi cao

Herbs perennial, 25–50 cm tall. Roots robust, lignified. Stems sparsely caespitose, erect, branched, glabrous or sparsely short villous. Basal leaves withered at anthesis. Cauline leaves with short sterile axillary branches, oblanceolate, 2–6 cm × 5–13 mm, both surfaces glabrous to slightly pubescent, margin shortly ciliate, midvein prominent, base attenuate into short petiole, apex acute. Flowers erect, in a densely capitate, few-

flowered thyrses. Pedicel 5–18 mm, slender, subglabrous; bracts linear, 2–3 mm, glabrous to sparsely ciliate. Calyx narrowly tubular, 1.5–2 cm × ca. 2 mm, glabrous or sparsely short hairy, clavate in fruit, longitudinal veins violet or green; calyx teeth ca. 1.5 mm.

Androgynophore 1–1.2 cm, glabrous. Petal claws narrowly oblanceolate, glabrous, auricles not obvious; limbs exerted beyond calyx, violet, bifid to middle or more; lobes rounded, subentire or 2- or 3-lacinate toothed. Stamens exerted; filaments glabrous. Styles exerted. Styles 3. Capsule 8–10 mm. Seeds grayish brown, triangular-reniform, ca. 1 mm, with angular pit on one side. Fl. Jun–Jul, fr. Jul–Aug.

- Mountain grasslands, stony scrub; 600–1300 m. S Shanxi, E Sichuan.

**7. *Silene altaica*** Persoon, *Syn. Pl.* 1: 497. 1805.

阿尔泰蝇子草 a er tai ying zi cao

*Cucubalus fruticosus* Pallas; *Physolychnis altaica* (Persoon) Ruprecht; *S. fruticulosa* (Pallas) Schischkin ex Krylov (1931), not Siebold ex Otth (1824), nor M. Bieberstein (1825).

Herbs suffruticose, 15–50 cm tall. Roots robust. Stems caespitose, erect, basally lignified, not branched or only branched at base, basally slightly coarse, shortly pubescent, apically viscid. Leaves with short, sterile axillary branches, linear or subulate, 1.5–3 cm × 0.5–1 mm, hard, margin coarse, ciliate at base, apex acute, triangular in cross section at maturity, pungent. Flowers erect, in a racemiform thyrses with usually alternate, 1-flowered cymules. Pedicel 1–1.5 cm, glabrous, viscid; bracts ovate, margin membranous, ciliate, apex acuminate. Calyx tubular, clavate in fruit, 1.2–1.5 cm, subglabrous, longitudinal veins green or violet; calyx teeth ca. 1 mm. Androgynophore 4–6 mm, shortly hairy. Petal claws slightly exerted beyond calyx, narrowly oblanceolate, without auricles; limbs white, bifid to 1/2; lobes linear, apex obtuse; coronal scales minute. Stamens and styles included or slightly exerted; filaments glabrous. Styles 3. Capsule 8–10 mm. Seeds brown, triangular-reniform, ca. 1.5 mm. Fl. Jun–Jul, fr. Jul–Aug.

Stony mountains, desert grasslands; 1400–1900 m. N Xinjiang [Kazakhstan, Russia].

The type of *Silene altaica* has not been seen by the present authors.

**8. *Silene alexandrae*** B. Keller, *Trav. Soc. Naturalistes Kazan.* 44(5):71. 1912.

斋桑蝇子草 zhai sang ying zi cao

*Silene altaica* Persoon var. *grandiflora* C. A. Meyer; *S. altaica* var. *hystrix* Trautvetter.

Herbs suffruticose, 25–45 cm tall. Stems caespitose, erect, basally lignified, simple or branched, basally sometimes hirtellous, apically viscid. Leaves with short, sterile axillary branches, linear, spiniform, 3–8 cm × 2–3 mm, pungent, basal margin ciliate, midvein prominent.

Flowers erect, in a racemiform thyrses, with usually alternate, 1-flowered cymules. Pedicel shorter to slightly longer than calyx, glabrous, usually viscid; bracts ovate, margin membranous, ciliate. Calyx tubular, clavate in fruit, 2–2.5 cm × 2.5–3 mm, shortly pubescent, longitudinal veins green or violet; calyx teeth ca. 1 mm. Androgynophore 8–10 mm, glabrous. Petals white, claws oblanceolate, glabrous, limbs bifid to 3/4 length of petals, lobes obovate; coronal scales minute. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule 1–1.5 cm. Seeds dark brown, triangular-ovoid. Fl. Jun–Jul, fr. Aug.

N Xinjiang [Kazakhstan].

The type of *Silene alexandrae* has not been seen by the present authors.

**9. *Silene tianschanica*** Schischkin, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 8: 56. 1940.

天山蝇子草 *tian shan ying zi cao*

Herbs suffruticose, 30–40 cm tall. Roots robust, multi-crowned. Stems densely clustered, erect, basally lignified, solitary or sparsely branched, basally pubescent, apically glabrous. Leaves with short, sterile axillary branches, linear, 3–5 cm × 1–2 mm, both surfaces glabrous, sparsely ciliate at base, base attenuate, slightly clasping, apex acute. Flowers erect, in a racemiform thyrses, with alternate, 1-flowered cymules, slightly nutant at early stage. Pedicel 4–15 mm, slender, glabrous; bracts ovate-lanceolate, 3–3.5 mm, margin membranous, shortly ciliate. Calyx tubular, clavate in fruit, 10–12 × ca. 3 mm, glabrous, slightly inflated above in fruit, longitudinal veins green or violet; calyx teeth broadly triangular-ovate, short, ciliate, apex obtuse. Androgynophore 2–3 mm, glabrous. Petal claws narrowly cuneate, without cilia and auricles; limbs slightly exerted beyond calyx, white, bifid to base, lobes narrowly obovate; coronal scales minute. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule ovoid, ca. 9 × 5 mm. Seeds triangular-reniform, ca. 1.2 mm. Fl. Jun–Jul, fr. Jul–Aug.

Stony mountains; 1100–2100 m. N Xinjiang [Kazakhstan].

The type has not been seen by the present authors.

**10. *Silene ningxiaensis*** C. L. Tang, Acta Bot. Yunnan. 2: 431. 1980.

宁夏蝇子草 *ning xia ying zi cao*

Herbs perennial, 20–45 cm tall. Roots robust, slightly lignified. Stems sparsely caespitose, rarely solitary, erect, slender, basally lignified, simple or branched at base, glabrous or with short robust hairs at base. Basal leaves clustered, linear, 3–5(–8) cm × 1–2.5 mm, glabrous, basally ciliate at margin, base attenuate, apex acuminate; cauline leaves few, small. Flowers erect, in a racemiform thyrses, with alternate, 1-flowered cymules. Bracts ovate-lanceolate, margin ciliate in lower part. Calyx tubular, 1.5–1.7 cm × ca. 2.5 mm, glabrous, slightly clavate in fruit, longitudinal veins

sometimes violet; calyx teeth triangular-lanceolate. Androgynophore 5–6 mm, glabrous. Petal claws slightly exerted beyond calyx, narrowly oblanceolate, glabrous, auricle not obvious, limbs white, bifid to 2/3 of petal; lobes linear, apex obtuse; coronal scales minute. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule ovoid, 8–10 mm, shorter than calyx. Seeds grayish brown, triangular-reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug.  $2n = 24^*$ .

• Mountains; 1700–2400 m. Gansu, Nei Mongol, Ningxia.

**11. *Silene repens*** Patrin in Persoon, Syn. Pl. 1: 500. 1805.

蔓茎蝇子草 *wan jing ying zi cao*

*Silene pachyrrhiza* Franchet; *S. repens* var. *angustifolia* Turczaninow ex Regel f. *sinensis* F. N. Williams; *S. repens* var. *latifolia* Turczaninow; *S. repens* var. *sinensis* (F. N. Williams) C. L. Tang; *S. repens* var. *vulgaris* Turczaninow; *S. repens* var. *xilingensis* Y. Z. Zhao.

Herbs perennial, 15–50 cm tall, shortly pubescent or glabrous throughout. Rhizome slender, branched. Stems solitary or sparsely caespitose, ascending, basally usually lignified, simple or sometimes branched. Leaves with short, sterile axillary branches, linear-lanceolate, lanceolate, oblanceolate, or orbicular-lanceolate, (1.5–)2–7 cm × (1–)3–10(–12) mm, sparsely pubescent, ciliate at margin, midvein prominent, base cuneate. Flowers in a racemiform thyrses; cymules usually 3–7-flowered, usually opposite, distal cymules often capitate. Pedicel 1–8 mm; bracts lanceolate. Calyx often violet-tinged, tubular to clavate, 1–1.5 cm × 3–4.5 mm, pubescent. Androgynophore 4–6(–8) mm, shortly pubescent. Petal claws oblanceolate, without auricles; limbs not exerted beyond calyx, white, rarely yellowish white, obovate, usually 5–7 mm, bifid to middle or less. Stamens and styles slightly exerted; filaments glabrous. Styles 3. Capsule ovoid, 6–8 mm, shorter than calyx. Seeds black-brown, reniform, ca. 1 mm. Fl. Jun–Aug, fr. Jul–Sep.  $2n = 24, 48$ .

Forests, grasslands, stream edges, stony mountain grasslands, dry steppes, sand dunes, grasslands, mountain summit steppes; 1500–3500 m. NW Gansu, Hebei, Jilin, Nei Mongol, N Shaanxi, Sichuan, Xizang [Japan, Korea, Mongolia, Russia; NW North America].

This taxon is very variable and in urgent need of taxonomic revision on a global scale.

**12. *Silene odoratissima*** Bunge in Ledebour, Fl. Altaic. 2: 148. 1830.

香蝇子草 *xiang ying zi cao*

*Silene radians* Karelin & Kirilov.

Herbs somewhat suffruticose, greenish white, 30–60 cm tall, glabrous throughout. Stems caespitose, erect, multibranched throughout. Basal leaves withered at anthesis; cauline leaves narrowly oblanceolate, 3–7 cm × 2–5(–9) mm, ciliate at margin, base attenuate, slightly clasping, apex acuminate or acute. Flowers in a racemiform thyrses; cymules with peduncles subequaling or longer than pedicels, opposite, usually



1-flowered. Pedicel 1–2 cm, viscid; bracts lanceolate, herbaceous, margin membranous, ciliate. Calyx tubular, clavate in fruit, 1.2–1.5 cm, glabrous; calyx teeth 1–2 mm. Androgynophore ca. 5 mm, sparsely villous. Petal claws oblanceolate, auricles not obvious; limbs exerted beyond calyx, white, 4-lobed; lobes linear, apex obtuse; coronal scales minute. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule ovoid, 8–10 mm, shorter than or subequaling calyx. Seeds brown, reniform, ca. 1.5 mm, pitted. Fl. Jun–Jul, fr. Jul–Aug. Sand dunes, grasslands. Xinjiang [Kazakhstan, Russia].

**13. *Silene macrostyla*** Maximowicz, Prim. Fl. Amur. 54. 1859.

长柱蝇子草 chang zhu ying zi cao

*Silene foliosa* Maximowicz var. *macrostyla* (Maximowicz) Rohrbach; *S. tatarica* Persoon var. *macrostyla* (Maximowicz) Regel.

Herbs perennial, 50–90 cm tall. Roots robust, lignified, multicrowned. Stems solitary or clustered, erect, simple or sparsely branched above, basally retrorsely pubescent, apically glabrescent. Basal leaves withered at anthesis; cauline leaves with prominent, sterile axillary branches, narrowly lanceolate, 4–9 cm × 5–13 mm, both surfaces glabrous, margin ciliate, midvein prominent, base cuneate, apex acuminate. Flowers in a thyrse; cymules 1- to several flowered. Pedicel 4–8 mm, slender, glabrous; bracts lanceolate-linear, margin membranous, ciliate. Calyx sometimes pale violet, broadly campanulate, 4–6 mm, glabrous. Androgynophore 1–1.5 mm, shortly hairy. Petal claws glabrous, auricles not obvious; limbs white, bifid to 1/3 to 1/2 of petals; lobes obtuse; coronal scales minute. Stamens and styles conspicuously exerted; filaments glabrous. Styles 3. Capsule ovoid, 5.5–6.5 mm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Sep.

Gravelly grasslands, dry steppes, forests. Heilongjiang, Jilin, Liaoning [Korea, Russia].

**14. *Silene foliosa*** Maximowicz, Prim. Fl. Amur. 53. 1859.

石缝蝇子草 shi feng ying zi cao

?*Silene foliosa* var. *mongolica* Maximowicz; ?*S. maximowicziana* Kozhevnikov (1995), not Rohrbach (1869–1870); *S. tatarica* Persoon var. *foliosa* (Maximowicz) Regel.

Herbs perennial, 25–40 cm tall. Roots robust, lignified, multicrowned. Stems clustered, erect, slender, basally retrorsely hairy. Basal leaves withered at anthesis; cauline leaves with prominent, sterile axillary branches, linear-oblanceolate or lanceolate-linear, 2–4 cm × 3–6 mm, shortly villous at midvein, margin shortly ciliate, base attenuate, apex acuminate. Flowers in a thyrse; cymules 1- to several flowered. Pedicel 4–6 mm, slender, viscid; bracts lanceolate-linear, basal margin

membranous, ciliate. Calyx ovoid-campanulate, 6–8 mm. Androgynophore 2–2.5 mm, sparsely hairy. Petal claws oblanceolate, glabrous; limbs white, deeply bifid to middle or more; lobes linear, apex obtuse; coronal scales minute. Stamens and styles conspicuously exerted; filaments glabrous. Styles 3. Capsule globose-ovoid, 5–7 × 2.5–3 mm. Seeds grayish brown, reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug.

Forests, mountain grasslands, gravelly stone fissures; 1300–2000 m. Gansu, Heilongjiang, S Nei Mongol, Ningxia, Shanxi, N Shaanxi [Japan, Korea, Russia].

The concept of *Silene foliosa* and *S. macrostyla*, sensu Maximowicz, is difficult to understand, and it is possible that the variation between these two taxa is more or less continuous. More detailed studies, including typifications, are needed.

**15. *Silene koreana*** Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 18: 440. 1901.

朝鲜蝇子草 chao xian ying zi cao

Herbs annual or biennial, 30–70 cm tall. Principal roots slender. Stems solitary or sparsely clustered, erect, sparsely branched above, basally shortly pubescent, apically viscid. Basal leaves withered at early anthesis; cauline leaves with short, sterile axillary branches, lanceolate or linear-lanceolate, 2–4(–6) cm × 2–8(–15) mm, abaxially pubescent at midvein, ciliate, midvein prominent. Flowers in a racemiform thyrse; cymules 1-flowered, opposite; peduncles very short. Pedicel 5–20 mm, slender, subglabrous, viscid; bracts linear-lanceolate, ciliate. Calyx tubular to narrowly campanulate, 8–9 mm, ca. 2.5 mm in diam., glabrous. Androgynophore 1.5–2 mm, pubescent. Petal claws narrowly oblanceolate, ciliate at base, auricles not obvious; limbs not exerted beyond calyx, white, shallowly bifid; coronal scales minute. Stamens and styles prominently exerted; filaments glabrous. Styles 3. Capsule globose, 7–8.5 mm, shorter than calyx. Seeds dark brown, globose-reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Sep.

Forests. Heilongjiang, Jilin [Japan, Korea, Russia].

**16. *Silene kungessana*** B. Fedtschenko, Allg. Bot. Z. Syst. 14: 2. 1908.

巩乃斯蝇子草 gong nai si ying zi cao

Herbs perennial, 80–100 cm tall, glabrous throughout. Stems sparsely caespitose, erect. Leaves ovate-lanceolate, 7–12 × 1.5–3 cm, base attenuate into long petiole. Flowers in a slender, racemiform thyrse. Pedicel 6–10 mm; bracts lanceolate, small. Calyx tubular, 6–8 × 2–3 mm, glabrous. Androgynophore 1–2 mm. Petal limbs white, margin entire or emarginate at apex. Capsule ovoid, ca. 7 mm. Styles 3. Seeds triangular-reniform, tuberculate.

• Xinjiang.

No specimens have been seen by the present authors.

**17. *Silene komarovii*** Schischkin in Komarov, Fl. URSS 6: 678. 1936.

轮伞蝇子草 lun san ying zi cao

*Silene viscidula* Komarov, Trudy Imp. S.-Peterburgsk. Obsch. Estestvoisp., Vyp. 3, Otd. Bot. 26: 129. 1896, not Franchet (1886).

Herbs perennial, 50–70 cm tall. Stems sparsely caespitose, erect, branched, basally shortly pubescent, apically viscid. Basal leaves spatulate or lanceolate, 6–8 cm × 5–10 mm, both surfaces hairy, shortly ciliate, marcescent, base attenuate into long petiole; cauline leaves with short, sterile axillary branches, lanceolate or linear-lanceolate. Flowers in a slender, racemiform thyrse. Pedicel 5–10 mm, sparsely pubescent; bracts lanceolate, submembranous, sparsely villous, apex acute. Calyx tubular-clavate, 8–12 × 2–3 mm, glabrous or sparsely villous, inflated in fruit. Androgynophore 2–3 mm in fruit, glabrous. Petal claws narrowly oblanceolate, glabrous, without obvious auricles; limb pale yellowish white, narrowly obovate, margin entire or slightly emarginate; coronal scales minute. Stamens and styles exerted. Styles 3. Capsule ovoid, 7–9 mm. Seeds reniform, ca. 1 mm. Fl. Jun, fr. Jul–Aug.

Dry steppes; 500–1100 m. Xinjiang [Kazakhstan, Kyrgyzstan, Tajikistan].

**18. *Silene pseudotenuis*** Schischkin, Bot. Mater. Gerb. Glavn. Bot. Sada SSSR 6(3): 6. 1926.

昭苏蝇子草 zhao su ying zi cao

Herbs perennial, 20–50 cm tall. Roots robust, lignified, crowned. Stems sparsely caespitose, erect, not or sparsely branched, basally pubescent, rarely subglabrous, apically viscid. Basal leaves spatulate to oblanceolate, (2–)4–9 cm × 4–10 mm, both surfaces glabrous, ciliate, midvein conspicuous, base attenuate into long petiole, apex acute or obtuse; cauline leaves 1–4 pairs, linear-lanceolate, smaller than basal leaves, without short, axillary sterile branches. Flowers in a racemiform thyrse; cymules several flowered, opposite, appearing verticillate. Pedicel 5–13 mm, glabrous; bracts ovate-lanceolate, margin membranous, ciliate. Calyx sometimes violet, clavate, 6–7 mm, glabrous. Androgynophore 2–3 mm, pubescent. Petal claws elliptic-oblanceolate, ciliate basally, without auricles; limbs yellowish white, elliptic, margin entire or emarginate. Coronal scales minute. Stamens and styles prominently exerted; filaments glabrous. Styles 3. Capsule ovoid, ca. 6 mm. Seeds reniform. Fl. Jun–Jul.

Gravelly steppes, sandy steppes; 1900–3200 m. N Xinjiang [Kazakhstan, Kyrgyzstan].

**19. *Silene holopetala*** Bunge in Ledebour, Fl. Altaic. 2: 142. 1830.

全缘蝇子草 quan yuan ying zi cao

Herbs perennial, 30–80 cm tall, suffrutescent at base. Roots robust, lignified. Stems caespitose, erect,

multibranching; branchlets opposite, sparsely villous. Leaves with short, axillary branches, lanceolate to linear, 1–3 cm × 1.5–3 mm, pubescent, base attenuate, apex acute. Flowers in a racemiform thyrse; cymules opposite, several flowered, appearing verticillate. Pedicel 2–6(–10) mm, viscid; bracts ovate-lanceolate, small, margin membranous, ciliate. Calyx tubular-clavate, 6–9 × 2.5 mm, glabrous, slightly inflated above in fruit. Androgynophore ca. 2 mm, glabrous. Petal claws oblanceolate, glabrous, auricles absent or obsolete; limbs white, pale red below, narrowly obovate, margin entire; coronal scales minute. Stamens and styles slightly exerted; filaments glabrous. Styles 3. Capsule ovoid, 5–8 mm. Seeds reniform, tuberculate. Fl. Jun–Jul, fr. Aug–Sep.

Stony mountains; ca. 400 m. NW Xinjiang [Kazakhstan].

The above four species all belong to *Silene* sect. *Holopetalae* Chowdhuri, with many taxa described from the region of the former Soviet Union. A revision on a global scale is needed to understand properly the variation of the Chinese plants.

**20. *Silene jennisensis*** Willdenow, Enum. Pl. 1: 473. 1809.

山蚂蚱草 shan ma zha cao

*Silene dasyphylla* Turczaninow; ?*S. graminifolia* var. *parviflora* Ledebour; ?*S. jennisensis* Poiret; ?*S. jennisensis* Stephan ex Bunge; ?*S. jennisensis* var. *parviflora* Turczaninow; ?*S. jennisensis* var. *setifolia* Turczaninow; ?*S. jennisensis* var. *oliganthella* (Nakai ex Kitagawa) Y. C. Chu; ?*S. jennisensis* f. *parviflora* (Turczaninow) Schischkin; ?*S. jennisensis* f. *setifolia* (Turczaninow) Schischkin; ?*S. jennisensis* var. *vegetior* Popov; ?*S. oliganthella* Nakai ex Kitagawa; ?*S. pauciflora* (F. N. Williams) Nakai; ?*S. tenuis* Willdenow var. *jennisensis* Rohrbach; ?*S. tenuis* var. *pauciflora* F. N. Williams.

Herbs perennial, 20–50 cm tall. Roots robust, lignified. Stems caespitose, erect or suberect, simple, glabrous, usually with many axillary sterile shoots at base. Basal leaves numerous, narrowly oblanceolate or lanceolate-linear, 5–13 cm × 2–7 mm, midvein prominent, base attenuate into long petiole, margin ciliate at base; cauline leaves few, small, clasping at base. Flowers in a racemiform thyrse; cymules opposite, proximal ones usually with more than one flower, distal ones with a solitary flower; peduncles very short. Pedicel 4–18 mm, glabrous; bracts ovate or lanceolate, base slightly connate, margin membranous, ciliate, apex acuminate. Calyx narrowly campanulate, slightly inflated in fruit, 8–10(–12) mm, glabrous, longitudinal veins green or violet. Androgynophore ca. 2 mm, shortly hairy. Petal claws narrowly oblanceolate, glabrous, without obvious auricles; limbs white or pale greenish, bifid to middle; lobes linear, apex obtuse; coronal scales small. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule ovoid, 6–7 mm. Seeds grayish brown, reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Sep.  $2n = 24$ .

Forest margins, forested grasslands, shifting alpine screes, steppes, sandy steppes, mountain grasslands, gravelly grasslands, dune

margins; 200–1000 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shanxi [Korea, Mongolia, Russia].

No type material has been seen by the present authors. Such material is necessary for a complete understanding of this very difficult group (*Silene jennisseensis* and the following two species), which has numerous forms and varieties described from the region of the former Soviet Union. The treatment here is to a large extent in agreement with Fl. URSS and herbarium determinations in BM, K, E, and P (but see note under *S. graminifolia*).

**21. *Silene graminifolia*** Oth in de Candolle, Prodr. 1: 368. 1824.

禾叶蝇子草 he ye ying zi cao

*Silene jennisseensis* Willdenow var. *viscifera* Y. C. Chu; ?*S. pubistyla* L. H. Zhou; *S. stylosa* Bunge; ?*S. tenuis* Willdenow.

Herbs perennial, 15–50 cm. Roots robust, multicrowned. Stems caespitose, erect, slender, simple, glabrous or pubescent at base, apically viscid. Basal leaves numerous, linear-oblongate, thin, 2–8(–10) cm × 2–4.5 mm, ciliate, base attenuate into short petiole, apex acute; cauline leaves 2 or 3 pairs, sessile, ciliate, base slightly connate, clasping. Flowers in a racemiform thyrse; cymules opposite, with a solitary flower; peduncles very short. Pedicel shorter than or nearly as long as calyx, slender, glabrous; bracts ovate-lanceolate, margin membranous, ciliate. Calyx narrowly campanulate, 7–10 × 2–3 mm, glabrous. Androgynophore 2–3 mm, glabrous. Petal claws narrowly oblanceolate, long ciliate, limbs exerted beyond calyx, white, deeply bifid to middle; lobes linear, apex obtuse; coronal scales minute. Stamens and styles exerted. Styles 3. Capsule ovoid, 7–8 mm. Seeds dark brown, reniform, ca. 1 mm. Fl. Jun–Jul, fr. Aug.

Mountain grasslands; 1600–4200 m. Nei Mongol, Xinjiang, ?Xizang [Kazakhstan, Mongolia, Russia].

Schischkin (in Komarov, Fl. URSS 6: 626. 1936) stated that the type of *Silene tenuis*, a name very often applied to plants in this group, “does not correspond to the Siberian plant [*S. graminifolia* Oth] and belongs to some other species.” It is imperative that the identity of *S. tenuis* be settled.

**22. *Silene gracilicaulis*** C. L. Tang, Acta Bot. Yunnan. 2: 434. 1980.

细蝇子草 xi ying zi cao

*Silene gracilicaulis* C. L. Tang var. *longipedicellata* C. L. Tang; *S. gracilicaulis* var. *rubescens* (Franchet) C. L. Tang; *S. sericata* C. L. Tang; *S. tenuis* Willdenow f. *rubescens* Franchet; *S. tenuis* Willdenow var. *denudata* Y. W. Tsui & L. H. Zhou; *S. tenuis* Willdenow var. *rubescens* (Franchet) Diels.

Herbs perennial, (15–)20–50 cm. Roots robust, slightly lignified. Stems sparsely, rarely densely, caespitose, erect or ascending, simple, rarely 1- or 2-branched below, glabrous, rarely shortly pubescent. Basal leaves numerous, linear-oblongate, 6–18 cm × 2–5 mm, both surfaces glabrous, ciliate basally, base attenuate into petiole, apex acuminate at apex; cauline leaves linear-lanceolate, smaller than basal leaves, ciliate, base half clasping. Flowers in a racemiform thyrse; cymules

opposite, 1-flowered (rarely more); peduncles very short. Pedicel nearly as long as calyx, glabrous; bracts ovate-lanceolate, 4–12 mm, ciliate, base connate, apex acuminate. Calyx narrowly campanulate, 8–15(–18) × 4 mm, glabrous, longitudinal veins violet, connate at apex; calyx teeth triangular-ovate, margin membranous, white, shortly ciliate, apex obtuse. Androgynophore ca. 2 mm, shortly hairy. Petal claws oblanceolate, glabrous, auricles triangular; limbs exerted beyond calyx, white, violet or pink below, bifid to middle or below, lobes narrowly rounded; coronal scales orbicular, small. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule globose-ovoid, 6–8 mm. Seeds orbicular-reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Sep.

• Gravelly grasslands, mountains; 3000–4000 m. Nei Mongol, Qinghai, Sichuan, Xizang, Yunnan.

*Silene gracilicaulis* var. *rubescens*, from Yunnan, is distinct from the typical variety in having larger flowers with pink petals. Considering the subtle differences between other species recognized in this group, it may well deserve specific status.

*Silene sericata* was distinguished on its ciliate calyx teeth, which in fact is a common character for all taxa in this group (as well as most of the genus *Silene*).

*Silene pterosperma* Maximowicz (Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 67. 1889) was placed in this group in FRPS, but we believe it more likely that this taxon is related to *S. salicifolia* (see note under that species) or *S. hupehensis*.

**23. *Silene dumetosa*** C. L. Tang, Acta Bot. Yunnan. 4: 154. 1982.

灌丛蝇子草 guan cong ying zi cao

Herbs perennial, 10–20 cm. Roots robust, multicrowned. Stems caespitose, suberect, simple, white pubescent; sterile stems numerous. Basal leaves numerous, spatulate to oblanceolate, 3–6 cm × 3–7 mm, both surfaces glabrous, ciliate, midvein obvious, base attenuate into short petiole, apex acute; cauline leaves 2 or 3 pairs, narrowly oblanceolate, pubescent. Flowers in a racemiform thyrse; cymules opposite, 1-flowered, often 3; peduncles very short. Pedicel 1–2.5 cm, slender, villous and sparsely glandular hairy; bracts lanceolate, pubescent. Calyx campanulate or broadly campanulate, 1.5–1.7 cm × 6–8 mm; longitudinal veins usually violet, pubescent. Androgynophore 3–4 mm, shortly hairy. Petal claws oblanceolate, glabrous, auricles orbicular; limbs exerted beyond calyx, violet, bifid to middle; lobes slightly curved, apex obtuse; coronal scales lanceolate. Stamens and styles included, ca. 1 cm; filaments glabrous. Styles 3(or 4). Fl. Aug–Sep.

• Scrub; ca. 4000 m. NW Yunnan.

The type has not been seen by the present authors. Judging from the original description, *Silene dumetosa* is possibly closely related to, or a synonym of, *S. stewartiana*, and does not belong to the *S. gracilicaulis* group.

**24. *Silene quadriloba*** Turczaninow ex Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 15: 167. 1842.

四裂蝇子草 si lie ying zi cao

*Melandrium quadrilobum* (Turczaninow ex Karelin & Kirilov) Schischkin; *M. viscosum* (Linnaeus) Celakovsky f. *quadrilobum* Krylov; *Silene viscosa* (Linnaeus) Persoon var. *quadriloba* Trautvetter.

Herbs biennial, 20–70 cm tall, densely short glandular hairy throughout. Stems sparsely caespitose or solitary, robust, erect, simple. Basal and proximal cauline leaves spatulate or spatulate-oblongate, 3–5 × ca. 1 cm, midvein prominent, base attenuate into petiole, apex obtuse or acute; distal leaves sessile, lanceolate, apex acuminate. Flowers in a racemiform thyrses; cymule shortly stalked, 1–3(–7)-flowered. Pedicel 3–5 mm; bracts ovate-lanceolate, herbaceous. Calyx tubular-clavate, 1.7–2 cm × ca. 4 mm, densely glandular hairy; calyx teeth triangular-ovate, 1.5–2 mm.

Androgynophore 2–3 mm, pubescent. Petals ca. 2 cm, claws cuneate, ciliate at base, auriculate at apex; limbs exerted beyond calyx, white, deeply 4-lobed; medial lobes ovate, margin entire; lateral lobes linear-lanceolate, small; coronal scales absent. Stamens and styles prominently exerted; filaments ciliate at base. Styles 3. Capsule globose-ovoid, 1–1.2 cm, lobe teeth excurved. Seeds dark brown, triangular-reniform, ca. 1.2 mm, slightly flat on one side, striate, minutely tuberculate. Fl. May–Jul, fr. Jul–Aug.

Grasslands, cultivated fields; 600–1900 m. Xinjiang [Kazakhstan, Mongolia, Russia].

**25. *Silene suaveolens*** Turczaninow ex Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 15: 168. 1842.

细裂蝇子草 xi lie ying zi cao

*Melandrium griffithii* (Boissier) Rohrbach; *M. suaveolens* (Turczaninow ex Karelin & Kirilov) Schischkin; *M. viscosum* (Linnaeus) Celakovsky f. *suaveolens* Krylov; *Silene griffithii* Boissier; *S. viscosa* (Linnaeus) Persoon f. *multifida* Krylov.

Herbs biennial, rarely perennial, 30–80 cm tall, densely pubescent and viscid throughout. Stems sparsely caespitose, erect, simple. Basal leaves oblanceolate, base attenuate into long petiole, withered at anthesis; cauline leaves sessile, lanceolate, 3–8 cm × 3–30 mm, apex acuminate. Flowers in a racemiform thyrses. Pedicel 3–5 mm; bracts lanceolate, small. Calyx tubular-club-shaped, 1.4–2 cm × ca. 3 mm, densely pubescent, viscid, longitudinal veins not prominent; calyx teeth triangular, short, margin membranous, ciliate, apex obtuse. Androgynophore 2–3 mm, pubescent. Petals exerted beyond calyx, 1.5–2 cm; claws narrowly cuneate, ciliate, auricles not prominent; limbs white, multilobed, lobes linear; coronal scales absent. Stamens prominently exerted, to 2.5 cm; filaments ciliate. Styles exerted. Capsule globose-ovoid, 1–1.2 cm, shorter than calyx. Seeds reniform, ca. 1 mm. Fl. Jun–Jul, fr. Jul–Aug.

Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan].

This species is very closely related to *Silene quadriloba*, differing mainly in the multilobed petals.

**26. *Silene firma*** Siebold & Zuccarini, Abh. Math.-Phys. Cl. Konigl. Bayer. Akad. Wiss. 4(2): 166. 1843.

疏毛女娄菜 shu mao nu lou cai

*Melandrium apricum* (Turczaninow) Rohrbach var. *firmum* (Siebold & Zuccarini) Rohrbach; ?*M. apricum* var. *firmum* f. *pubescens* Makino; *M. firmum* (Siebold & Zuccarini) Rohrbach; ?*M. firmum* f. *pubescens* (Makino) Makino; ?*M. firmum* var. *pubescens* (Makino) Y. Z. Zhao; *Silene aprica* Turczaninow var. *firma* (Siebold & Zuccarini) F. N. Williams; *S. epilosa* W. W. Smith; ?*S. firma* f. *pubescens* (Makino) Ohwi & Ohashi; ?*S. firma* var. *pubescens* (Makino) S. Y. He.

Herbs annual or biennial, 50–100 cm tall, usually glabrous throughout, sometimes only shortly hairy at base. Stems erect, sometimes dark violet basally, robust, simple or sparsely branched. Leaves elliptic-lanceolate to ovate-oblongate or obovate-oblongate, 4–10(–16) × 0.8–2.5(–5) cm, base attenuate, apex acute. Flowers in an irregular thyrses. At least distal cymules without a stalk, proximal cymules rarely stalked. Pedicel erect, 5–18(–30) mm, usually glabrous; bracts narrowly lanceolate. Calyx ovoid-campanulate, 7–9 mm, glabrous, enlarged to 1–1.2 cm in fruit, veins green. Androgynophore very short or obsolete, glabrous. Petals included, white; claws oblanceolate, glabrous, auriculate; limbs ovate, bifid. Coronal scales small. Stamens and styles included. Styles 3. Capsule ovoid, 8–11 mm, shorter or longer than calyx. Seeds gray-brown, globose-reniform, ca. 1 mm, tuberculate. Fl. Jun–Jul, fr. Jul–Aug.  $2n = 48$ .

Mountain grasslands, scrub; 300–2500 m. Throughout China [Japan, Korea, Russia].

**27. *Silene aprica*** Turczaninow ex Fischer & C. A. Meyer, Ind. Sem. Hort. Petrop. 38. 1835.

女娄菜 nu lou cai

*Hedona ischnopetala* F. N. Williams; *Melandrium apricum* (Turczaninow ex Fischer & C. A. Meyer) Rohrbach; *M. apricum* subsp. *oldhamianum* (Miquel) Kitagawa; *M. apricum* var. *oldhamianum* (Miquel) Y. C. Chu; *M. oldhamianum* (Miquel) Rohrbach; *Silene aprica* var. *oldhamiana* (Miquel) C. Y. Wu; *S. melandriiformis* Maximowicz; *S. morii* Hayata; *S. mu-shaensis* Hayata; *S. oldhamiana* Miquel; *S. taquetii* H. Léveillé.

Herbs annual or biennial, 30–70 cm tall, densely gray pubescent throughout. Principal roots robust, slightly lignified. Stems erect, simple or branched. Basal leaves oblanceolate or narrowly spatulate, 4–7 cm × 4–8 mm, midvein prominent, base attenuate into long petiole, apex acute; cauline leaves oblanceolate to lanceolate or linear-lanceolate, smaller than basal leaves. Cymules stalked. Pedicel erect, 5–20(–40) mm; bracts lanceolate,

herbaceous, ciliate, apex acuminate. Calyx ovoid-campanulate, 6–8 mm, to 1.2 cm in fruit, nearly herbaceous, densely pubescent; longitudinal veins green, cohering at apex; calyx teeth triangular-lanceolate, margin membranous, ciliate. Androgynophore very short or obsolete, pubescent. Petal claws ciliate below; limbs white or pink, oblanceolate, 1–5 mm, subequaling or slightly longer than calyx, bifid; coronal scales ligulate. Stamens and styles included; filaments ciliate at base. Styles 3, shortly hairy at base. Capsule ovoid, 8–9 mm, subequaling or slightly longer than calyx. Seeds gray-brown, globose-reniform, 0.6–0.7 mm, thickened, minutely tuberculate. Fl. May–Jul, fr. Jun–Aug. Plateaus, downs, mountains. Throughout China [Japan, Korea, Mongolia, Russia].

*Silene oldhamiana*, described from Ningbo, Zhejiang, has pink petal limbs 4–5 mm long, and may deserve status as an independent taxon. Wu Zhengyi (editor's note) regards it as a maritime variety of the widespread *S. aprica*. *Silene morii*, from Taiwan, was segregated on subtle differences in calyx teeth morphology.

**28. *Silene orientalismongolica*** Kozhevnikov, *Novosti Sist. Vyssh. Rast.* 21: 68. 1984.

内蒙古女娄菜 *nei meng gu nu lou cai*

*Melandrium orientalismongolicum* (Kozhevnikov) Y. Z. Zhao.

Herbs annual or biennial, 10–40 cm tall, densely pubescent throughout. Principal roots robust, lignified. Stems erect, solitary or multibranching at base. Basal leaves petiolate, distal leaves sessile; leaf blade oblanceolate or lanceolate, 2–5 cm × 2–5 mm, midvein raised abaxially, both surfaces densely pubescent, base attenuate into petiole or sessile, apex acute. Cymes terminal, conical; bracts lanceolate, herbaceous, ciliate, apex acuminate. Pedicels erect, unequal in length, 5–20 mm, pubescent. Calyx elliptic or ovoid-campanulate, 6–8 mm, ovoid in fruit, ca. 1 cm, glandular hairy; longitudinal veins 10, green, cohering at apex; calyx teeth triangular-lanceolate, margin membranous, ciliate. Androgynophore very short. Petals white or pale red; limbs obovate, shallowly bifid at apex; claws narrowly cuneate; coronal scales ligulate. Stamens included; filaments hairy at base. Styles 3, short, shortly hairy at base. Capsule ovoid, ca. 8 mm, shorter than calyx, 6-toothed. Seeds gray-brown, reniform, ca. 0.6 mm, tuberculate. Fl. Jun–Jul, fr. Jul–Aug.

• Steppes, sterile areas. Nei Mongol [?Russia].

**29. *Silene otites*** (Linnaeus) Wibel, *Prim. Fl. Werth.* 241. 1799.

黄雪轮 *huang xue lun*

*Cucubalus otites* Linnaeus, *Sp. Pl.* 1: 415. 1753; *Silene pseudo-otites* Besser ex Reichenbach.

Herbs biennial, 20–40 cm tall, villous throughout. Roots robust. Stem solitary, erect, simple or sparsely branched. Basal leaves spatulate, 4–6 cm × 5–12 mm, base attenuate into long petiole, apex obtuse or

mucronulate; cauline leaves linear-oblanceolate, small, narrow. Flowers unisexual (plants dioecious), in a racemiform thyrses with many-flowered cymules. Pedicel 4–10 mm, slender, glabrous. Calyx campanulate, 4–6 mm, glabrous. Androgynophore obsolete. Petal claws glabrous; limbs greenish, linear-oblanceolate, small, margin entire; coronal scales absent. Stamens and styles slightly exerted. Styles 3. Capsule ovoid or subglobose, 3.5–5(–6) mm, slightly longer than calyx. Seeds reniform, small. Fl. Jun–Jul, fr. Aug.  $2n = 24$ .

N Xinjiang [Europe].

**30. *Silene borysthenica*** (Gruner) Walters, *Repert. Spec. Nov. Regni Veg.* 69: 47. 1964.

小花蝇子草 *xiao hua ying zi cao*

*Silene otites* (Linnaeus) Wibel var. *borysthenica* Gruner, *Bull. Soc. Imp. Naturalistes Moscou* 41(2): 126. 1868; *Otites borysthenica* (Gruner) Klokov; *O. parviflora* (Ehrhart) Grossheim; *S. parviflora* (Ehrhart) Persoon.

Herbs biennial, 30–60 cm, pubescent throughout. Roots robust. Stem solitary, erect, simple or sparsely branched. Basal leaves spatulate, 2–6 cm × 2–5(–10) mm, base attenuate into long petiole, apex acute; cauline leaves sessile, small. Flowers unisexual (plants dioecious), in a racemiform thyrses with many-flowered cymules. Pedicel 2–5 mm, pubescent. Calyx campanulate, 1.5–2.5 mm, pubescent, longitudinal veins greenish. Androgynophore obsolete. Petals white, ca. 1.5 × as long as calyx; claws linear-oblanceolate, ciliate; limbs narrowly orbicular, margin entire; coronal scales absent. Stamens and styles exerted; filaments shortly hairy. Styles 3. Capsule subglobose, ca. 3 mm in diam. Seeds reniform, ca. 0.6 mm. Fl. Jun–Jul, fr. Aug.  $2n = 24$ .

River beaches, grasslands. N Xinjiang [C Asia, Europe].

**31. *Silene wolgensis*** (Hornemann) Otth in de Candolle, *Prodr.* 1: 370. 1824.

伏尔加蝇子草 *fu er jia ying zi cao*

*Viscago wolgensis* Hornemann, *Suppl. Hort. Bot. Hafn.* 48. 1819; *Silene otites* (Linnaeus) Wibel var. *wolgensis* (Hornemann) Rohrbach.

Herbs biennial, 40–80 cm tall. Roots robust, lignified. Stems solitary, sparsely branched, erect, basally hirtellous, apically glabrous, sometimes viscid. Basal and proximal cauline leaves spatulate, 8–10 cm × 5–10 mm, both surfaces pubescent, ciliate at margin, midvein prominent, base attenuate into long petiole, apex acute; distal leaves linear-lanceolate. Flowers unisexual (plants dioecious), in a racemiform thyrses with many-flowered cymules. Pedicel ca. 1.5 × as long as calyx, rarely shorter, slender, glabrous; bracts triangular-lanceolate, membranous. Calyx campanulate, 3–3.5 mm, glabrous, longitudinal veins inconspicuous. Androgynophore very short or absent. Petals white, ± linear, ca. 5 mm, claws glabrous, limbs entire. Coronal

scales absent. Stamens slightly exerted; filaments glabrous. Capsule ellipsoid, 4–6 mm, slightly longer than calyx. Seeds dark brown, reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Sep.  $2n = 24$ .

Dry steppes, stony mountain grasslands; 1100–1400 m. Xinjiang [C Asia, Europe].

Male and female plants of species nos. 29–31 may differ considerably, both in vegetative and floral parts. An understanding of this variation is desirable in order to attain a useful taxonomy of this group.

**32. *Silene vulgaris*** (Moench) Garcke, Fl. Nord-Mittel-Deutschl., ed. 9, 46. 1869.

白玉草 *bai yu cao*

*Behen vulgaris* Moench, Meth. Pl. 709. 1794; *Cucubalus behen* Linnaeus (1753), not *Silene behen* Linnaeus (1753); *C. latifolius* Miller; *C. venosus* Gilibert; *S. cucubalus* Wibel; *S. inflata* Smith; *S. inflata* var. *vulgaris* Turczaninow; *S. venosa* (Gilibert) Ascherson; ?*S. wallichiana* Klotzsch.

Herbs perennial, grayish green, 40–100 cm tall, glabrous throughout. Roots slightly robust, lignified. Stems sparsely caespitose, erect, usually gray, apically branched. Leaves lanceolate to ovate, 4–10 × 1–3(–4.5) cm, proximal cauline leaves with prominent midvein, base attenuate, apex acuminate or acute; distal leaves cuneate, slightly clasping. Flowers usually in many-flowered dichasia, sometimes in thyrsoid inflorescences; flowers sometimes spreading or slightly nutant. Pedicel shorter than or subequaling calyx; bracts ovate-lanceolate, herbaceous. Calyx usually violet-tinged, broadly ovoid, inflated, 1.3–1.6 cm × 5–7 mm, submembranous, with 20 anastomosing veins; calyx teeth broadly triangular, short, ciliate. Androgynophore ca. 2 mm, glabrous. Petals 1.5–1.8 cm; claws cuneate-ob lanceolate, glabrous, auricles ovoid; limbs exerted beyond calyx, white, obovate, deeply bifid to base of limb, lobes narrowly obovate; coronal scales small. Stamens and styles prominently exerted; filaments glabrous; anthers violet. Styles 3. Capsule subglobose, ca. 8 mm in diam., shorter than calyx. Seeds globose-reniform, ca. 1.5 mm. Fl. Jun–Aug, fr. Aug–Sep.  $2n = 24, 48$ .

Meadows, scrub; 200–2700 m. Heilongjiang, Nei Mongol, Xinjiang, Xizang [India, Mongolia, Nepal; N Africa, SW Asia, Europe].

**33. *Silene baccifera*** (Linnaeus) Roth, Tent. Fl. Germ. 2(1): 491. 1789.

狗筋蔓 *gou jin wan*

*Cucubalus baccifer* Linnaeus, Sp. Pl. 1: 414. 1753; *C. baccifer* var. *angustifolius* L. H. Zhou; *C. baccifer* var. *cavaleriei* H. Léveillé; *C. baccifer* var. *japonicus* Miquel.

Herbs perennial. Roots white, long fusiform, cross section yellow. Stems and branches spreading, 50–150 cm. Petiole 3–5 mm; leaf blade ovate, ovate-lanceolate, or

narrowly elliptic, 1.5–5(–13) × 0.8–2(–4) cm, papery, both surfaces hairy at veins, base attenuate, margin entire, ciliate, apex acuminate. Flower slightly nutant. Pedicel hairy. Calyx broadly campanulate, 9–11 mm; calyx teeth ovate-triangular, nearly as long as tube, ciliolate, revolute in fruit. Androgynophore ca. 1.5 mm. Petals oblanceolate, ca. 15 × 2.5 mm; claw long, narrow; limb 2-fid. Stamens and styles included. Fruit black, globose, 6–8 mm, fleshy, irregularly dehiscent. Seeds black, ca. 1.5 mm. Fl. Jun–Aug, fr. Jul–Oct.  $2n = 24$ .

Forest margins, scrub, grasslands. Anhui, Fujian, Gansu, Guangxi, Guizhou, Hebei, Henan, Hubei, Jiangsu, Liaoning, Nei Mongol, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Xinjiang, Xizang, Yunnan, Zhejiang [Bhutan, Japan, Kashmir, Kazakhstan, Korea, Nepal, Russia, Sikkim; Europe].

Wu Zhengyi (editor's note) prefers to treat this species as a distinct, monotypic genus (*Cucubalus*), on account of its fleshy, baccate, irregularly dehiscent fruit, which is unique in the Caryophyllaceae. *Silene baccifera* is used medicinally.

**34. *Silene subcretacea*** F. N. Williams, J. Linn. Soc., Bot. 38: 404. 1909.

藏蝇子草 *zang ying zi cao*

?*Silene waltonii* F. N. Williams.

Herbs suffruticose, (15–)20–45 cm tall. Stems clustered, erect, basally lignified, dichotomously branched, densely shortly pubescent. Leaves with short, sterile axillary branches, linear, 8–12 × 1–2 mm, both surfaces densely pubescent, apex acute. Flowers bisexual, spreading in bud, erect in flower, usually with two 1-flowered cymules per stem. Pedicel pubescent, 2–5 mm; bracts linear-lanceolate, 2–8 mm, herbaceous, pubescent. Calyx campanulate, clavate in fruit, 1–1.5(–1.8) cm × ca. 3.5 mm, densely pubescent, veins dark violet; calyx teeth 2–3 mm. Androgynophore 3–5(–6) mm, pubescent. Petal claws narrow, glabrous, upper part forming triangular, erose auricles; limbs reddish, deeply bifid to 1/2 or more, sometimes erose at apex; coronal scales ca. 2 mm, margin erose. Stamens and styles included or slightly exerted; filaments glabrous. Styles 3. Capsule ovoid, 8–12 mm. Seeds triangular-reniform, ca. 1.2 mm. Fl. Jul–Aug, fr. Aug–Sep.

• Alpine meadows, gravelly mountain grasslands; (3000–)3800–4700 m. Xizang.

**35. *Silene incurvifolia*** Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 14: 391. 1841.

镰叶蝇子草 *lian ye ying zi cao*

Herbs perennial, 10–25 cm tall, densely and shortly pubescent throughout. Stems densely clustered, basally lignified, erect or ascending, simple, with sterile short branches at base. Basal leaves narrowly oblanceolate, 2–5 cm × 1–3(–5) mm; cauline leaves 3–8 pairs, linear-lanceolate, 1–2.5 cm × 1–2 mm, incurved falcately, proximally with sterile axillary shoots. Flowers 1–3, upright. Pedicel 2–4 mm, pubescent; bracts linear, slightly longer than pedicel, herbaceous. Calyx tubular-clavate, 2–2.5 cm × ca. 2.5 mm, glandular hairy. Androgynophore pubescent, 8–10 mm. Petal claws broad at apex; limbs obovate, deeply bifid, lobes

dentate. Filaments glabrous. Capsule ovoid or ovoid-conical, 1–1.2 cm. Seeds reniform, with small auricular pit, ca. 1.5 mm. Fl. Jun–Jul.

Scrub on river beaches; ca. 2600 m. SE Xinjiang [Kazakhstan, Kyrgyzstan, Russia].

**36. *Silene moorcroftiana*** Wallich ex Bentham in Royle, Ill. Bot. Himal. Mts. 79. 1839.

冈底斯山蝇子草 gang di si shan ying zi cao

*Silene gyirongensis* L. H. Zhou; *S. persica* Boissier subsp. *moorcroftiana* (Wallich ex Bentham) Chowdhuri.

Herbs perennial, 15–25 cm, shortly glandular hairy.

Stems caespitose, basally slightly lignified, erect,

simple. Leaves linear, narrowly lanceolate, or

oblanceolate, 1.5–2.5 cm × 2–5 mm, both surfaces glandular hairy, midvein prominent, often curved.

Flowers 1–3. Pedicel 1–2.5 cm. Calyx narrowly tubular-clavate, submembranous, 2–2.3 cm × ca. 3.5 mm, slightly umbilicate at base, with 10 longitudinal violet veins, densely glandular hairy; calyx teeth ca. 2 mm. Androgynophore ca. 1 cm, glabrous. Petal claws narrowly cuneate, ca. 1 cm, auricles triangular; limbs not exerted, pale red or white. Filaments glabrous.

Styles slightly exerted. Capsule ovoid, 7–9 mm, shorter than calyx. Seeds reniform. Fl. Jul, fr. Aug. Gravelly grasslands, fissures in cliffs; 3900–5000 m. W Xizang [Afghanistan, India, Kashmir, Nepal, Pakistan].

**37. *Silene karaczukuri*** B. Fedtschenko, Trudy Imp. S.-Peterburgsk. Bot. Sada 28: 469. 1909.

喀拉蝇子草 ka la ying zi cao

Herbs perennial, 10–20 cm tall. Stems densely clustered,

basally slightly lignified, erect, simple, shortly

glandular hairy, with rosettelike clusters of sterile

shoots basally. Basal leaves linear-oblanceolate or

linear, 5–20(–40) × 0.5–1.5(–3) mm, both surfaces

glabrous, margin ciliate, midvein inconspicuous; cau-

line leaves usually 3(–6) pairs, sessile, linear-lanceolate,

smaller than basal leaves, sparsely shortly hairy, base

half clasping. Flowers 1 or 2 per stem. Pedicel 5–10

mm, glandular hairy; bracts lanceolate, 3–10 mm,

herbaceous. Calyx tubular-clavate, 1.5–2 cm × ca. 5

mm, shortly glandular pubescent, longitudinally 10-

veined, green or violet; calyx teeth triangular-ovate, ca.

1 mm, glandular hairy, margin membranous, apex

obtuse. Androgynophore ca. 8 mm, glabrous. Petals

with claws narrowly elliptic-linear, glabrous, auriculate;

limbs exerted beyond calyx, pale red, bifid to 1/2;

coronal scales band-shaped, short. Filaments glabrous.

Capsule not seen. Fl. Jul–Aug.

Alpine meadows, stony valleys; 4000–4300 m. SW Xinjiang [Tajikistan].

**38. *Silene capitata*** Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 18: 440. 1901.

头序蝇子草 tou xu ying zi cao

Herbs perennial, underground organs probably similar to those of *S. qiyunshanensis*. Stems diffuse, 20–40 cm, much branched, densely villous with curved hairs. Leaves petiolate, broadly ovate or cordate-ovate, ca. 2 ×

1–1.5 cm, both surfaces villous with curved hairs, base rounded or shallowly cordate, apex acute, mucronulate.

Inflorescence capitata; bracts herbaceous, lowermost pair forming an involucre, distal ones lanceolate,

small. Pedicel 2–4 mm, pubescent. Calyx campanulate, ca. 8 mm, densely villous, sparsely glandular hairy,

inflated after anthesis. Androgynophore ca. 1

mm, ?glabrous. Petals 1–1.2 cm; claws oblanceolate,

glabrous, auricles not prominent; limbs pale red or

violet, obovate, deeply bifid to middle or more, lobes

entire; coronal scales papillose. Stamens and styles

prominently exerted. Capsule ovoid, ca. 5 mm, shorter

than calyx. Seeds reniform. Fl. Jun–Jul, fr. Aug.

Jilin (Yalu Jiang) [Korea].

Together *Silene capitata*, *S. seoulensis*, and *S. qiyunshanensis* form a very peculiar and distinct assemblage, unique in the genus for their petiolate, cordate leaves.

**39. *Silene seoulensis*** Nakai, J. Coll. Sci. Imp. Univ. Tokyo 26(1): 77. 1909.

汉城蝇子草 han cheng ying zi cao

Herbs perennial, pubescent throughout. Stems

caespitose, ascending, 40–60 cm tall, slender, sparsely

branched. Leaves broadly ovate to narrowly lanceolate,

3–6 × 0.5–3 cm, both surfaces sparsely villous or at

veins only, margin ciliate-scabrid, base subsessile or

rapidly attenuate into short petiole, apex acute.

Inflorescence a lax, many-flowered dichasium. Bracts

lanceolate. Calyx campanulate, ca. 5 mm, glabrous or

densely hairy, open at apex in fruit, longitudinal veins

dark green; calyx teeth triangular-ovate, ca. 1 mm.

Androgynophore obsolete to 1 mm, glabrous. Petal

claws included in calyx, oblanceolate, glabrous,

exauriculate; limbs exerted, white, bifid to middle.

Stamens slightly exerted; filaments glabrous. Styles

exserted. Capsule ovoid, ca. 5 mm, shorter or slightly

longer than calyx. Seeds few, large, subglobose. Fl.

Jul–Aug, fr. Sep–Oct.

Heilongjiang, Jilin, Liaoning [Korea].

1a. Calyx glabrous ..... 39a. var. *seoulensis*

1b. Calyx densely hairy ..... 39b. var. *angustata*

**39a. *Silene seoulensis* var. *seoulensis***

汉城蝇子草(原变种) han cheng ying zi cao (yuan bian zhong)

*Melandrium seoulense* (Nakai) Nakai.

Leaves ovate or ovate-lanceolate, 3–6 × 2–3 cm. Calyx glabrous.

Heilongjiang, Jilin, Liaoning [Korea].

**39b. *Silene seoulensis* var. *angustata*** C. L. Tang, Acta Phytotax. Sin. 24: 391. 1986.

狭叶汉城蝇子草 xia ye han cheng ying zi cao

Leaves narrowly lanceolate, 3–4 cm × 5–10 mm. Calyx densely pubescent.

• SE Liaoning.

**40. *Silene qiyunshanensis*** X. H. Guo & X. L. Liu, Acta Bot. Yunnan. 13: 24. 1991.

齐云山蝇子草 *qi yun shan ying zi cao*

Herbs perennial, pubescent throughout. Stems caespitose, diffuse, slender, arising from a thick irregular rootstock, leafless at very base (probably underground), but forming a leaf rosette and branched at ground level. Leaves subcordate to broadly ovate, proximal ones long petiolate (to 4 cm), petioles of distal leaves gradually shorter; cauline leaves broadly ovate or suborbicular, (0.5–)1.5–2(–3.5) × (0.5–)1–2(–2.5) cm, both surfaces villous, glabrescent, margin ciliate, apex acute or mucronulate. Dichasial cymes lax, rachis, pedicels, and calyx densely pubescent; bracts ovate, small, herbaceous. Pedicel 0.7–2 cm. Calyx campanulate, 4–5 mm, 10-veined; calyx teeth ovate-obtuse, 1.5–2 mm, densely villous. Petals oblanceolate, 7–9 mm, claws slightly exerted beyond calyx; limbs white or pale pink, 4(or 6)-lobed, lobes oblong; coronal scales small, scarious. Androgynophore 0.5–1 mm. Stamens 10, included; filaments inflated at base, glabrous. Styles 3. Capsule ovoid, ca. 2.5 mm, shorter than calyx. Seeds violet-brown, orbicular to reniform, ca. 0.7 mm in diam., minutely tuberculate. Fl. Jun–Jul, fr. Aug–Sep.

• Gravel on mountains; ca. 400 m. Anhui (Xiuning Xian).

**41. *Silene salicifolia*** C. L. Tang, Acta Bot. Yunnan. 2: 439. 1980.

柳叶蝇子草 *liu ye ying zi cao*

Herbs perennial. Stems caespitose, ascending, 20–30 cm, sparsely branched, glabrous. Leaves lanceolate, 5–7 × 0.6–1.2 cm, both surfaces glabrous, margin ciliate with multicellular hairs, midvein prominent, base cuneate, apex acuminate. Dichasial cymes few flowered. Pedicel 1.5–3 cm, slender, ± viscid; bracts linear-lanceolate, nearly membranous, 5–10 mm, margin ciliate. Calyx campanulate, 1–1.4 cm × ca. 4.5 mm, glabrous; longitudinal veins violet, cohering at apex; calyx teeth triangular, 3–5 mm, apex acute. Androgynophore ca. 4 mm, pubescent. Petals ca. 2 cm; claws slightly exerted beyond calyx, ca. 1.2 cm, glabrous; auricles orbicular, obscurely laciniate; limbs pale red or lilac, broadly obovate, ca. 7 mm, bifid deeply to middle, sometimes with one small lobe on each lateral side; coronal scales nearly flabellate, ca. 1.5 × 2 mm. Stamens and styles included; filaments glabrous. Styles 3. Capsule ovoid, 8–10 mm, shorter than calyx. Seeds yellow-brown, reniform, ca. 1.2 mm, minutely tuberculate, with prominent, spinose protuberances abaxially. Fl. Aug, fr. Sep–Oct.

• Stony forest substrates; 2100–2300 m. Sichuan.

This species and the following three are clearly closely related. Tang (Acta Bot. Yunnan. 2: 439. 1980) likened *S. salicifolia* to *S.*

*pterosperma* Maximowicz (Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 67. 1889). We have not seen type material of *S. pterosperma*, but it is likely that that name applies to either *S. hupehensis* or *S. salicifolia*.

**42. *Silene morrisonmontana*** (Hayata) Ohwi & H. Ohashi, J. Jap. Bot. 49: 345. 1974.

玉山蝇子草 *yu shan ying zi cao*

Herbs perennial, 10–15 cm tall. Stems caespitose, nearly prostrate, slender, simple, pubescent or glabrous. Leaves linear, 2–3.5 cm × 1.5–2.5 mm, margin ciliate, midvein prominent, margin obscurely dentate at base, apex acuminate. Flower solitary, terminal, slightly nutant. Pedicel 6–8 mm, densely pubescent; bracts lanceolate, 1–1.4 cm × ca. 2 mm, glandular. Calyx campanulate, ca. 15 × 5–7 mm, hairy at veins; calyx teeth narrowly triangular, 3–4 mm, margin ciliate, apex acute. Androgynophore 2–3 mm, pubescent. Petals 1.5–2 cm; claws saccate-oblanceolate, eciliate; auricles orbicular, sometimes obscurely laciniate; limbs exerted beyond calyx, white, obovate, 4–6 mm, shallowly furcately bifid; lobes narrowly elliptic or ovate, sometimes with one obscure obtuse tooth on each lateral side; coronal scales flabellate, ca. 1 mm, laciniate at apex. Stamens included; filaments glabrous. Styles 3, slightly exerted. Capsule narrowly ovoid, 8–10 mm. Seeds reniform, with a marginal rim of spinose processes. Fl. Jun–Jul, fr. Sep–Oct.

• Stony and gravelly fissures, crevices; 3100–3400 m. Taiwan.

1a. Plant hairy ..... 42a. var. *morrisonmontana*

1b. Plant glabrous ..... 42b. var. *glabella*

**42a. *Silene morrisonmontana* var. *morrisonmontana***

玉山蝇子草(原变种) *yu shan ying zi cao* (yuan bian zhong)

*Melandrium morrisonmontanum* Hayata, Icon. Pl. Formosan. 3: 36. 1936; *M. transalpinum* Hayata; *M. vesiculiforme* Hayata.

Plants pubescent.

• Stony and gravelly fissures, crevices; 3100–3400 m. Taiwan.

**42b. *Silene morrisonmontana* var. *glabella*** (Ohwi) Ohwi & H. Ohashi, J. Jap. Bot. 49: 345. 1974.

秃玉山蝇子草 *tu yu shan ying zi cao*

*Melandrium glabellum* Ohwi, Repert. Spec. Nov. Regni Veg. 36: 47. 1934; *M. morrisonmontanum* Hayata var. *glabellum* (Ohwi) Ohwi.

Plants glabrous.

• N Taiwan.

**43. *Silene hupehensis*** C. L. Tang, Acta Bot. Yunnan. 2: 438. 1980.



湖北蝇子草 hu bei ying zi cao

Herbs perennial, 10–30 cm tall, glabrous throughout. Stems caespitose, erect or ascending, simple, usually with clustered sterile shoots at base. Basal leaves few, small. Cymes often 2–5-flowered, rarely numerous or solitary flowered. Pedicel 2–5 cm, slender; bracts linear-lanceolate, ciliate. Flowers erect, 1.5–2 cm in diam. Calyx campanulate, 1.2–1.5 cm × 3.5–7 mm, glabrous, rarely densely pubescent, base rounded; longitudinal veins violet, inconspicuous, cohering at apex; calyx teeth triangular-ovate, 2–4 mm, margin membranous, shortly ciliate, apex rounded or obtuse. Androgynophore 3–4 mm, villous. Petals pale red, 1.5–2 cm; claws inserted or slightly exerted beyond calyx, oblanceolate, 8–10 mm, eciliate, auricles inconspicuous; limbs obovate or broadly ovate, 7–9 mm, shallowly bifid, rarely deeply lobed to middle; lobes nearly orbicular, slightly waved or obscurely lacinate, sometimes with 1 small linear lobe or obtuse tooth on each lateral side; coronal scales subreniform or lanceolate, 1–3 mm, margin often irregularly dentate. Stamens slightly exerted; filaments glabrous. Styles slightly exerted. Capsule ovoid, 6–8 mm. Seeds dark brown, globose-reniform, ca. 1.5 mm, with a marginal rim of spinose processes. Fl. Jul, fr. Aug.

• Rock crevices in forests and mountains, mountain grasslands; 1200–2700 m. Gansu, Henan, Hubei, Shaanxi, Sichuan.

1a. Calyx glabrous ..... 43a. var. *hupehensis*

1b. Calyx densely pubescent ..... 43b. var. *pubescens*

**43a. *Silene hupehensis* var. *hupehensis***

湖北蝇子草(原变种) hu bei ying zi cao (yuan bian zhong)

*Silene linearifolia* Pampanini, Nuovo Giorn. Bot. Ital., n.s., 22: 284. 1915, not Otth (1824).

Calyx glabrous.

• Rock crevices in forests, mountain grasslands; 1200–2700 m. Gansu, Henan, Hubei, Shaanxi, Sichuan.

**43b. *Silene hupehensis* var. *pubescens*** C. L. Tang, Acta Bot. Yunnan. 2: 438. 1980.

毛湖北蝇子草 mao hu bei ying zi cao

Calyx densely pubescent.

• Rock crevices in mountains; 1600–2600 m. Shaanxi.

**44. *Silene tubiformis*** C. L. Tang, Acta Phytotax. Sin. 24: 387. 1986.

剑门蝇子草 jian men ying zi cao

Herbs perennial, 15–20 cm tall. Stems caespitose, sub-erect, slender, simple. Basal leaves linear, 5–7 cm × 1–1.5(–2) mm, ciliate near basal margin, both surfaces glabrous, midvein prominent, apex acuminate; cauline leaves few, linear. Flowers 1–3, erect, ca. 2 cm in diam. Pedicel 1.5–2 cm, slender, glabrous; bracts linear or linear-lanceolate, 1–2 cm. Calyx usually green-violet or violet, narrowly cylindrical, 2–2.5 cm × 2.5–3 mm, glabrous, umbilicate at base, apically slightly inflated at late maturity, longitudinal veins inconspicuous,

cohering at apex; calyx teeth triangular-lanceolate, 3–7 mm, apex acuminate. Androgynophore 8–12 mm, glabrous. Petals 2–2.5 cm; claws exerted 2–3 mm beyond calyx, oblanceolate, glabrous, exauriculate; limbs obovate, 6–8 mm, sometimes shallowly bifid; coronal scales lanceolate, ca. 1 mm, margin entire or obscurely toothed. Stamens and styles slightly exerted; filaments glabrous. Styles 3. Capsule narrowly ellipsoid, ca. 1 cm, shorter than or subequalling calyx. Seeds reddish brown, reniform, ca. 1.2 mm. Seeds with a marginal rim of spinose processes. Fl. Jun, fr. Jul.

• Stony scrub grasslands; 700–1000 m. N Sichuan.

**45. *Silene nana*** Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 15: 169. 1842.

矮蝇子草 ai ying zi cao

Herbs annual, 3–15 cm, glabrous. Stems erect, simple or much branched at base. Leaves sessile, lanceolate-linear or lanceolate, 2–3.5 cm × 2–6 mm, margin ciliate with curved hairs, base cuneate, apex acute or obtuse. Dichasial cymes (1-to) few flowered. Pedicel subequalling to 3 × as long as calyx, usually curved at late anthesis; bracts lanceolate. Calyx greenish, ovoid-campanulate, ca. 10 × 3.5 mm, umbilicate at base; calyx teeth triangular-lanceolate, ca. 1/4 as long as calyx, margin narrowly membranous, shortly ciliate, apex acute. Androgynophore 1–2 mm, glabrous. Petals slightly exerted beyond calyx, white, ca. 1.1 cm; claws narrowly oblanceolate, glabrous, auricles triangular; limbs subovate, ca. 2.5 mm, margin entire; coronal scales narrowly ovoid, ca. 1/2 as long as limbs, margin entire, rarely lacinate. Stamens and styles slightly exerted; filaments glabrous. Capsule ovoid, ca. 8 mm, shorter than calyx. Seeds orbicular-reniform, flat, ca. 2 mm in diam., abaxially grooved with undulate wings. Fl. Apr–May, fr. Jun.

Sand dunes, sandy steppes. N Xinjiang [Kazakhstan, Pakistan; SW Asia].

**46. *Silene latifolia*** Poir. Voy. Barbarie 2: 165. 1789.

叉枝蝇子草 cha zhi ying zi cao

Herbs annual or biennial, rarely perennial, dioecious, 40–80 cm tall. Stems erect, branched, basally villous, apically glandular villous. Proximal cauline leaves elliptic, base attenuate into short petiole; distal leaves sessile, orbicular-lanceolate or lanceolate, 6–8 × 1–2.7 cm, densely pubescent, 3-veined, apex acuminate. Flowers unisexual, forming dichasial cymes. Pedicel usually less than 1 cm, glandular villous; bracts ovate-lanceolate, villous. Calyx pubescent, glandular hairy; calyx teeth triangular, margin glandular villous, apex acuminate; male flower calyx tubular-campanulate, 1.3–1.5 cm, longitudinally 10-veined; female flower calyx tubular-ovoid, inflated at middle in fruit, contracted at apex, 1.5–2 cm, longitudinally 20-veined. Androgynophore very short. Petals white, claws exerted beyond calyx, glabrous, cuneate, auricles inconspicuous; limbs obovate, deeply bifid; coronal scales small or inconspicuous. Stamens included.

Female flower styles 5. Capsule ovoid, 1.5–1.7 cm, 10-toothed. Seeds gray-brown, reniform, 1–1.3 mm. Fl. Jun–Jul, fr. Jul–Aug.  $2n = 24$ .

Grasslands, scrub grasslands; 1100–1500 m. Liaoning (introduced), Xinjiang (native) [C and SW Asia, Europe].

- 1a. Fruiting calyx strongly inflated; capsule teeth spreading or recurved ..... 46a. subsp. *latifolia*  
1b. Fruiting calyx slightly inflated; capsule teeth erect ..... 46b. subsp. *alba*

**46a. *Silene latifolia* subsp. *latifolia***

叉枝蝇子草(原亚种) cha zhi ying zi cao (yuan ya zhong)

*Lychnis divaricata* Reichenbach; *Melandrium boissieri* Schischkin; *Silene alba* (Miller) E. H. L. Krause subsp. *divaricata* (Reichenbach) Walters; *S. pratensis* subsp. *divaricata* (Reichenbach) McNeill & C. Prantice.

Fruiting calyx strongly inflated; capsule teeth spreading or recurved. Seeds with flat surfaces.

Grasslands, scrub grasslands; 1100–1500 m. Xinjiang [SW Asia, S Europe].

**46b. *Silene latifolia* subsp. *alba*** (Miller) Greuter & Burdet, Willdenowia 12: 189. 1982.

白花蝇子草 bai hua ying zi cao

*Lychnis alba* Miller, Gard. Dict., ed. 8, *Lychnis* no. 4. 1768; *L. pratensis* Rafinesque; *Melandrium album* (Miller) Garcke; *Silene alba* (Miller) E. H. L. Krause; *S. pratensis* (Rafinesque) Grenier & Godron.

Fruiting calyx slightly inflated, teeth short; capsule teeth erect. Seeds with concave surfaces.

Liaoning (introduced) [native to C Asia and Europe].

**47. *Silene noctiflora*** Linnaeus, Sp. Pl. 1: 419. 1753.

夜花蝇子草 ye hua ying zi cao

*Elisanthe noctiflora* (Linnaeus) Ruprecht; *Melandrium noctiflorum* (Linnaeus) Fries.

Herbs annual, 30–50(–90) cm tall, densely shortly pubescent. Primary root slightly lignified. Stems erect, simple or sparsely branched, apically glandular hairy. Basal leaves long elliptic-obovate, 5–11 × 2–4 cm, both surfaces villous, midvein and lateral veins prominent, base attenuate into short petiole, half clasping, apex acute; distal leaves sessile, narrowly elliptic or lanceolate. Dichasial cymes few flowered, glandular hairy; flowers bisexual, ca. 1.5 cm in diam. Pedicel erect, shorter than calyx; bracts lanceolate, glandular hairy. Calyx tubular, 2–2.5(–3) cm × ca. 5 mm, glandular hairy, inflated and ellipsoid at late anthesis, slightly constricted at apex; longitudinal veins 10, violet, reticulate; calyx teeth narrowly lanceolate, 8–10 mm. Androgynophore ca. 2 mm. Petals ca. 2.5 cm; claws slightly exerted beyond calyx, narrowly oblanceolate, glabrous, auricles triangular; limbs pale pink, yellowish below, obovate, ca. 6 mm, deeply bifid to 1/2 to 2/3 of limbs; lobes entire or slightly erose, inrolled at daylight; coronal scales ovoid, small, 2–4-toothed. Stamens

included; filaments glabrous. Styles 3, slightly exerted. Capsule ovoid, 1.5–1.8 cm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm. Fl. Jun–Jul, fr. Jul–Aug.  $2n = 24$ .

Grasslands; 1300–1800 m. Xinjiang (N of Tian Shan) [Kazakhstan, Russia; SW Asia, Europe].

**48. *Silene conoidea*** Linnaeus, Sp. Pl. 1: 418. 1753.

麦瓶草 mai ping cao

Herbs annual, 25–60 cm tall, shortly glandular hairy. Principal roots slightly lignified. Stems solitary, erect, simple. Basal leaves oblong to linear-lanceolate, cauline leaves linear or lanceolate, 5–8 cm × 5–10 mm, pubescent, margin ciliate. Dichasial cymes few to many flowered; flowers erect, ca. 2 cm in diam. Calyx green, conical, 2–3 cm × 3–4.5 mm, umbilicate at base, inflated in fruit, to 3.5 cm, lower part broadly ovoid, 6.5–10 mm in diam., upper part attenuate; longitudinal veins 30, shortly glandular hairy; calyx teeth narrowly lanceolate, ca. 1/3 as long as to longer than calyx, margin narrowly membranous below, ciliate.

Androgynophore to 1 mm, subglabrous. Petals 2.5–3.5 cm; claws included in calyx, narrowly lanceolate, 2–2.5 cm, glabrous, auricles triangular; limbs pink, obovate, ca. 8 mm, margin entire or slightly emarginate, sometimes slightly erose; coronal scales white, narrowly lanceolate, 2–2.5 mm. Stamens and styles included or slightly exerted; filaments sparsely shortly hairy. Styles 3. Capsule pyriform, ca. 15 × 6–8 mm. Seeds dark brown, reniform, ca. 1.5 mm. Fl. May–Jun, fr. Jun–Jul.  $2n = 20$ .

Xinjiang, Xizang [Africa, Asia, Europe].

This species is used medicinally.

**49. *Silene tubulosa*** Oxelman & Lidén in Oxelman et al., Novon 11: 323. 2001.

管花蝇子草 guan hua ying zi cao

Herbs perennial. Rootstock short and sturdy, with a few robust roots, crowned by a few small, sterile leaf rosettes. Stems few, caespitose, erect to ascending, 15–25 cm, with a rather dense mixture of long, glandular hairs and some shorter, reflexed, eglandular hairs. Basal leaves long petiolate with leaf blade decurrent on petiole; petiole 1–4 cm; leaf blade suborbicular to narrowly ovate, 2–5 × 1–4 cm, abaxially glaucous and hairy, especially at veins and margin, adaxially subglabrous, apex obtuse to subacute. Distal leaves shortly petiolate; leaf blade lanceolate to elliptic, 1–2 cm × 5–10 mm, apex acute. Inflorescence a lax, irregular, unequally branched, 1–10-flowered thyrse; cymes long stalked, 2–4 cm, 1(or 3)-flowered; bracts lanceolate, small, herbaceous. Pedicel 5–15 mm. Calyx pale green with indistinct veins, campanulate at first, soon becoming ± inflated and subglobose, sparsely to densely pubescent; teeth obtuse to subacute at apex. Androgynophore ca. 2 mm, densely woolly. Petals greenish white, ± straight and erect, together forming a short tube exerted beyond calyx by 1–3 mm, each petal oblong, narrowed toward hairy base, 9–10 mm, ca. 1.5 mm wide at apex, without distinct lamina, claw, or

coronal scales; apex truncate, ± irregularly notched or sometimes bifid. Stamens and styles long exerted beyond petal tube by up to 5 mm. Filaments white; anthers dark brown. Styles 3, greenish white. Seeds unknown.

• Granite boulders in deep shade of *Betula* forests, grassy cliff ledges, steep hillsides; 3600–4100 m. Xizang.

*Silene tubulosa* is not similar to any other species of *Silene*. The name alludes to the petals that together form a small tube protruding from the calyx.

**50. *Silene davidii*** (Franchet) Oxelman & Lidén in Oxelman et al., Novon 11: 322. 2001.

垫状蝇子草 dian zhuang ying zi cao

*Lychnis davidii* Franchet, Nouv. Arch. Mus. Paris, sér.

2, 8: 204. 1885; *Hedona davidii* (Franchet) F. N.

Williams; *Melandrium caespitosum* F. N. Williams;

*Silene caespitosa* Bureau & Franchet (1891), not

Salisbury (1796, nom. illeg., included *S. acaulis* Linnaeus), nor *S. caespitosa* Steven (1812); *S. kant-*

*zeensis* C. L. Tang.

Herbs perennial, 4–8 cm tall. Roots brown, cylindrical, slightly robust, multibranching, multicrowned. Stems densely clustered, very short, simple. Basal leaves oblanceolate-linear, 1–2.5 cm × 2–3 mm, glabrous, coarsely and shortly ciliate, base attenuate, apex acuminate or acute; cauline leaves 1 or 2 pairs or absent, homomorphic with basal leaves. Flower solitary, erect, 1.5–2 cm in diam. Pedicel shorter than leaves, densely pubescent. Calyx dark violet, narrowly campanulate or cylindrical-campanulate, 1.3–1.8 cm × 3–5 mm, base truncate, violet glandular hairy, longitudinal veins violet; calyx teeth triangular-ovate, margin membranous, ciliate, apex obtuse. Androgynophore ca. 1 mm, glabrous. Petals lilac or pale red, ca. 2 cm; claws narrowly cuneate, glabrous, auricles ovoid; limbs exerted beyond calyx, obovate, bifid deeply to middle; lobes narrowly orbicular, margin entire, sometimes laterally obscurely 1-toothed; coronal scales obovoid, margin entire or lacinate. Stamens included; filaments glabrous. Styles included. Capsule cylindrical or conical, ca. 15 × 3.5 mm, slightly longer than calyx. Seeds dark brown, globose-reniform, slightly flattened, ca. 1 mm, subsmooth, keeled. Fl. Jul–Aug, fr. Sep–Oct.

• Alpine meadows; (3500–)4100–4700 m. SE Qinghai, W Sichuan, Xizang, NW Yunnan.

**51. *Silene gracilenta*** H. Chuang in C. Y. Wu et al., Fl. Yunnan. 6: 836. 1995.

纤细蝇子草 qian xi ying zi cao

Herbs perennial, 5–10 cm tall, violet septate hairy throughout. Roots multicrowned. Basal leaves caespitose, linear, (2–) 3–5 cm × 1–1.5 mm, both surfaces white villous; cauline leaves usually 1–3 pairs, smaller, shorter than basal leaves. Flower solitary. Pedicel 1.5–4.5 mm. Calyx campanulate, 1–1.3 cm × 5–7 mm, violet glandular hairy; calyx teeth broadly triangular, ca. 3 mm, ciliate, apex obtuse or acute.

Androgynophore short, glabrous. Petals pale red, claws narrowly obovate-cuneate, glabrous; limbs exerted beyond calyx, narrowly obovate, bifid deeply to middle, lobes somewhat band-shaped; coronal scales small, lacinate. Stamens not or slightly exerted; filaments glabrous. Styles 3, 1.5–2 mm. Capsule ovoid. Seeds dark brown, reniform, flattened, ca. 1 mm, keeled. Fl. Aug.

• Stone cliffs; 3700–3800 m. NW Yunnan.

Species nos. 52–80 belong to an informal group roughly equivalent to *Silene* sect. *Physolychnis* (Benth) Bocquet. A major difficulty in dealing with the plants in this group is the rather different appearance of the flowers at early anthesis compared with those at the fruiting stage. In some species the calyx swells considerably, and its pigmentation is dependent on exposure and individual variation. The arbitrary division between the “*Physolychnis*” group and the following “*Odontopetalae*” group (species nos. 81–90) is based solely on the number of styles, which poorly reflects natural relationships.

The species of the “*Physolychnis*” group can be described as follows. Herbs perennial. Stems usually simple, erect to ascending. Basal leaves usually caespitose. Inflorescence a thyrse with very unequal branches, or flower solitary. Flowers hermaphroditic, usually nutant. Calyx often inflated, with 10 veins. Androgynophore short. Petals violet, red, or greenish white; claws with auricles; limbs included or exerted beyond calyx, slightly emarginate, 2- or 4-lobed; coronal scales obvious. Styles 5. Capsule (5 or) 10-toothed. Seeds abaxially either tuberculate, or with a broad wing, or (in *Silene bungei*) with long spinose papillae. The group is widespread in Asia, Europe, and North and South America.

**52. *Silene gonosperma*** (Ruprecht) Bocquet, Candollea 22(1): 7. 1967.

隐瓣蝇子草 yin ban ying zi cao

*Physolychnis gonosperma* Ruprecht, Mém. Acad. Sci. Saint-Petersbourg, sér. 7, 14(4): 41. 1869; *Lychnis pumila* Royle ex Benth; *Melandrium pumilum* (Benth) Walpers.

Herbs perennial, 6–20 cm. Roots robust, multicrowned. Stems sparsely caespitose or solitary, erect, simple, densely pubescent, apically glandular hairy. Basal leaves linear-oblanceolate, 3–6 cm × 4–8 mm, both surfaces pubescent, margin ciliate, base attenuate into petiole, apex obtuse or acute; cauline leaves 1–3 pairs, sessile, lanceolate, smaller. Flowers solitary, rarely 2 or 3, nutant. Pedicel 2–5 cm, densely glandular villous; bracts linear-lanceolate, sparsely ciliate. Calyx campanulate-globose, 1.3–1.5 cm × 7–10 mm, base rounded, villous and glandular hairy; longitudinal veins dark violet, not cohering at apex; calyx teeth triangular, margin membranous, apex obtuse. Androgynophore ca. 1 mm. Petals included or rarely slightly exerted beyond calyx, dark violet; claws cuneate, ciliate, with orbicular auricles; limbs emarginate or shallowly bifid; coronal scales inconspicuous. Stamens included; filaments glabrous. Styles included. Capsule ellipsoid-ovoid, 1–1.2 cm, 10-toothed. Seeds brown, orbicular,

flat, 1.5–2 mm in diam. including wing. Fl. Jun–Jul, fr. Aug.

Alpine meadows; (1600–)3000–4400 m. Gansu, Hebei, Qinghai, Shanxi, Xinjiang, Xizang [C Asia].

**53. *Silene himalayensis*** (Rohrbach) Majumdar, J. Indian Bot. Soc. 42: 648. 1964.

须弥蝇子草 *xu mi ying zi cao*

*Melandrium apetalum* (Linnaeus) Fenzl var. *himalayense* Rohrbach, Linnaea 36: 220. 1869; *Lychnis apetalum* Linnaeus var. *pallidum* Edgeworth & J. D. Hooker; *L. himalayensis* (Rohrbach) Edgeworth; *L. macrorhiza* Royle ex Benth; *M. apertum* Pax & K. Hoffmann; *M. himalayense* (Rohrbach) Y. Z. Zhao; *M. macrorhizum* (Royle ex Benth) Walpers; *M. gomolangmaense* Y. W. Tsui & P. Ke ex L. H. Zhou; *M. souliei* F. N. Williams; *Silene gonosperma* (Ruprecht) Bocquet subsp. *himalayensis* (Rohrbach) Bocquet; *S. madens* Majumdar.

Herbs perennial, 20–80 cm tall. Roots robust. Stems sparsely clustered or solitary, erect, slender, simple, pubescent, apically sparsely glandular hairy. Basal leaves narrowly oblanceolate, 4–10 cm × 4–10 mm, both surfaces pubescent to subglabrous, margin ciliate, base attenuate into petiole, apex acuminate, rarely acute; cauline leaves 3–6 pairs, oblanceolate or linear-lanceolate, base cuneate or attenuate. Flowers 3–7, slightly nutant. Pedicel 1–5 cm, slender, densely pubescent, sparsely glandular hairy; bracts linear-lanceolate, herbaceous, hairy. Calyx ovoid-campanulate, 1–1.2 cm, closed in fruit, densely pubescent, glandular hairy, veins violet, anastomosing and broadly confluent above; calyx teeth triangular, margin membranous, ciliate, apex obtuse. Androgynophore ca. 1 mm. Petals not or slightly exerted beyond calyx, dark red, ca. 1 cm; claws cuneate, glabrous, auricles not obvious; limbs shallowly bifid at apex; coronal scales small. Stamens included; filaments glabrous. Styles included. Capsule ovoid, 8–10 mm, shorter than calyx, 10-toothed. Seeds brown, orbicular, flat, ca. 1.5 mm in diam. including wing. Fl. Jun–Jul, fr. Jun–Aug.

Scrub, alpine meadows; 2000–5000 m. Hebei, Hubei, Shaanxi, Sichuan, Xizang, Yunnan [Afghanistan, Bhutan, Nepal, Pakistan, Sikkim].

This species is distinct from *Silene gonosperma* by its more floriferous inflorescence and smaller, more inflated calyx with peculiar venation.

**54. *Silene zhongbaensis*** (L. H. Zhou) C. Y. Wu & C. L. Tang, Flora Reipubl. Popularis Sin. 26: 314. 1996.

仲巴蝇子草 *zhong ba ying zi cao*

*Melandrium zhongbaense* L. H. Zhou in C. Y. Wu, Fl. Xizang. 1: 722. 1983.

Herbs perennial, 10–20 cm tall, densely pubescent or sparsely glandular hairy. Roots conical, slender. Stems clustered, simple. Basal leaves caespitose, oblanceolate,

3–5 cm × 3–6 mm, both surfaces shortly pubescent, base attenuate into long petiole, apex obtuse; cauline leaves 2 or 3 pairs, lanceolate, smaller than basal leaves, broadly cuneate at base, sessile. Flowers (1–)3–8. Bracts lanceolate, densely glandular hairy. Pedicel 2–8 mm, densely villous with pallid hairs. Calyx narrowly campanulate, 7–13 mm, densely glandular hairy; calyx teeth triangular, margin membranous, ciliate, apex obtuse; veins dark violet, robust, reticulate. Androgynophore ca. 1 mm. Petals violet, subequaling or slightly longer than calyx; claws cuneate, ciliate, auricles minute, limbs bifid; lobes truncate at apex, each with a lateral tooth; coronal scales ligulate. Stamens included. Capsule not seen. Fl. Jul–Aug.

• 4700–5200 m. SW Xizang (Zhongba Xian).

**55. *Silene zhoui*** C. Y. Wu in C. L. Tang, Fl. Reipubl. Popularis Sin. 26: 315. 1996.

耐国蝇子草 *nai guo ying zi cao*

*Melandrium integripetalum* L. H. Zhou in C. Y. Wu, Fl. Xizang. 1: 715. 1983, not *Silene integripetalum* Bory & Chaubard (1832).

Herbs perennial, 8–15 cm tall. Root crowns slender, multibranching. Stems clustered, densely glandular villous. Cauline leaves 4 or 5 pairs, oblanceolate, 1.5–4 cm × 5–8 mm, both surfaces densely glandular hairy, base cuneate, attenuate into petiole, apex obtuse or mucronulate. Flowers 1–4. Pedicel 1.5–10 mm, densely glandular hairy; bracts lanceolate, glandular hairy. Calyx campanulate, 1.3–1.5 cm, glandular hairy; longitudinal veins 10, violet, cohering at apex, densely glandular hairy; calyx teeth triangular, margin membranous, ciliate. Androgynophore short. Petals slightly exerted beyond calyx, ca. 1.5 cm; claws narrowly cuneate, glabrous; limbs pale violet, flat-orbicular, margin nearly entire; coronal scales square. Stamens included; filaments glabrous. Styles linear, ca. 5 mm. Capsule not seen. Fl. Aug.

• Grasslands; ca. 5000 m. S Xizang (Lhasa Shi).

This species differs from *Silene nigrescens* in its less divided petals and different habitat requirements.

**56. *Silene nigrescens*** (Edgeworth) Majumdar, J. Indian Bot. Soc. 42: 647. 1964.

变黑蝇子草 *bian hei ying zi cao*

Herbs perennial, 10–15 cm tall. Stems few to several from a creeping branched base, ascending, simple, glandular hairy. Basal leaves caespitose, pale green or dark green, linear or narrowly oblanceolate, 3–6 cm × 2–4(–10) mm, both surfaces sparsely hairy, ciliate at base, base attenuate into petiole, apex acute; cauline leaves usually 2–4, linear or narrowly oblanceolate. Flowers solitary, rarely 2 or 3, slightly nutant. Pedicel 8–20 mm, densely glandular villous; bracts lanceolate, herbaceous. Calyx globose, saccate, 1.8–2 × 1.2–1.6 cm,

membranous, slightly contracted at mouth, with prominent dark violet veins, densely glandular villous, loose in fruit; calyx teeth broadly triangular, ca. 5 × 6 mm, margin membranous, glandular ciliate.

Androgynophore 1.5–2 mm, woolly. Petals exerted 3–5 mm beyond calyx, blackish violet; claw obovate, ca. 10 × 5 mm, auriculate, ciliate at base; limbs broadly obovate, ca. 5 × 4–5 mm, shallowly bifid; lobes dentate with small round teeth; coronal scales truncate at apex, dentate with round teeth. Filaments ± hairy at base; anthers dark violet. Styles slightly exerted. Capsule subglobose, ca. 2 cm in diam., shorter than calyx, 5–10-toothed at apex. Seeds brown, triangular-reniform, flat, ca. 1.8 mm including wing. Fl. and fr. Jul–Sep.

Alpine meadows, gravelly grasslands, shifting screes; 3000–4500 m. SW Sichuan, S Xizang, NW Yunnan [Bhutan, Myanmar, Nepal, Sikkim].

1a. Leaves 2–4 mm wide, linear 56a. subsp. *nigrescens*

1b. Leaves 5–10 mm wide, narrowly lanceolate ..... 56b. subsp. *latifolia*

**56a. *Silene nigrescens* subsp. *nigrescens***

变黑蝇子草(原亚种) bian hei ying zi cao (yuan ya zhong)

*Lychnis nigrescens* Edgeworth in J. D. Hooker, Fl. Brit. India 1: 223. 1874; *Melandrium nigrescens* (Edgeworth) F. N. Williams.

Leaves linear, 2–4 mm wide.

Alpine meadows; 3800–4200 m. S Xizang (Yadong Xian) [Bhutan, Myanmar, Nepal, Sikkim].

**56b. *Silene nigrescens* subsp. *latifolia* Bocquet, Candollea 22(1): 16. 1967.**

宽叶变黑蝇子草 kuan ye bian hei ying zi cao

Leaves narrowly lanceolate, 5–10 mm wide. Fl. Jul–Aug, fr. Aug–Sep.

• Gravelly grasslands, shifting screes; 3000–4500 m. SW Sichuan, NW Yunnan.

**57. *Silene chodatii* Bocquet, Candollea 22(1): 18. 1967.**

球萼蝇子草 qiu e ying zi cao

Herbs perennial, 4–25 cm tall. Roots robust, multicrowned. Stems clustered, robust, ascending, simple, glandular villous, with leaf remnants at base. Basal leaves caespitose, narrowly linear or linear, 5–10 cm × 2–5 mm, both surfaces glabrous or glandular villous, base slightly clasping, apex acute; cauline leaves 2–6 pairs, homomorphic with but smaller than basal leaves. Flowers 1–3, slightly nutant, suberect in late anthesis. Pedicel 3–4 cm, glandular hairy. Calyx globose, inflated, 1.5–2.5 × 1.2–1.8 cm, umbilicate at base, open at apex; veins cohering at apex, dark brown- or dark violet glandular hairy; calyx teeth broadly triangular, margin glandular ciliate. Androgynophore 2–4 mm, violet woolly-hairy. Petals exerted 6–7 mm beyond calyx, dark violet; limbs 7–9 × 8–11 mm, deeply bifid; lobes with lobules unequal in size or dentate with weak round teeth, basal part 1-toothed on both sides; coronal scales nearly cuneate, ca. 2 mm, margin weakly dentate, apex truncate or obtuse.

Stamens slightly exerted; filaments long woolly-hairy at base. Styles slightly exerted. Capsule ovoid, 1.8–2 × ca. 1.3 cm, usually 5-toothed. Seeds dark brown, flat, 1.5–2 mm in diam. including wing. Fl. Aug–Sep.

• Cliffs, stone fissures; 2700–4300 m. SW Sichuan, NW Yunnan.

1a. Leaves 2–6 mm wide; calyx 1.8–2.5 cm

..... 57a. var. *chodatii*

1b. Leaves 1–2 mm wide; calyx 1.5–1.8 cm

..... 57b. var. *pygmaea*

**57a. *Silene chodatii* var. *chodatii***

球萼蝇子草(原变种) qiu e ying zi cao (yuan bian zhong)

Stems 10–25 cm tall. Leaves 5–10 cm × 2–6 mm, glabrous. Calyx 1.8–2.5 cm. Androgynophore ca. 2 mm.

• Stone fissures; 2700–3300 m. NW Yunnan (Lijiang Naxi Zu Zizhixian).

This variety is similar to *Silene stewartiana*, but has fewer flowers, a more rounded calyx, and 5 styles.

**57b. *Silene chodatii* var. *pygmaea* Bocquet, Candollea 22: 19. 1967.**

矮球萼蝇子草 ai qiu e ying zi cao

*Silene graminoides* C. Y. Wu & C. L. Tang.

Stems 4–10 cm tall. Leaves 3–5 cm × 0.8–2 mm, glandular villous. Calyx 1.5–1.8 cm. Androgynophore to 4 mm.

• Cliffs; 3700–4300 m. SW Sichuan (Muli Zang Zu Zizhixian), NW Yunnan (Dêqên Xian, Zhongdian Xian).

**58. *Silene namlaensis* (Marquand) Bocquet, Candollea 22: 19. 1967.**

墨脱蝇子草 mo tuo ying zi cao

*Lychnis namlaensis* Marquand, J. Linn. Soc., Bot. 48: 164. 1929; *Melandrium namlaense* (Marquand) Pax & K. Hoffmann.

Plants perennial, 15–40 cm tall, with violet multicellular glandular hairs throughout. Rootstock robust, lignified, brown, without stolons. Stems clustered, erect, simple, basally usually violet. Cauline leaves 2–6 pairs, narrowly orbicular or lanceolate, 3–7 cm × 5–12 mm, glandular villous, midvein prominent, base cuneate, apex acute. Flowers 1–3, slightly nutant, erect in late anthesis. Pedicel 3–5 cm, densely glandular villous; bracts lanceolate. Calyx cylindrical-campanulate, slightly inflated-saccate, 2.3–2.7 × 1–1.5 cm, densely violet glandular hairy, open at apex; longitudinal veins dark violet, hairy; calyx teeth broadly triangular, 4–6 mm, margin ciliate, apex acute. Androgynophore ca. 5 mm, villous. Petals exerted 3–6 mm beyond calyx, violet; claws cuneate, ca. 15 × 6 mm, with auricles, subglabrous at base; limbs square, shallowly 4–6-lobed, lobes rounded or laciniate; coronal scales broad, rounded to slightly erose. Stamens slightly exerted beyond corolla throat; filaments glabrous. Styles included. Capsule ovoid. Seeds probably winged. Fl. Aug–Sep.

• Alpine grasslands; 3600–4500 m. C and SE Xizang.

**59. *Silene atsaensis* (Marquand) Bocquet, Candollea 22: 20. 1967.**

阿扎蝇子草 a zha ying zi cao

*Lychnis atsaensis* Marquand, J. Linn. Soc., Bot. 48: 163. 1929; *Melandrium atsaense* (Marquand) Pax & K. Hoffmann.

Herbs creeping and branched at base, ascending with 10–20 cm tall flowering stems, densely glandular hairy throughout. Leaves oblanceolate, 3–5 × 1–1.5 cm, both surfaces and margin densely glandular villous, base attenuate, apex acute or obtuse. Flowers 1–3. Pedicel 1–4 cm. Calyx cylindrical-campanulate, membranous, saccate, 2–2.5 × 1–1.5 cm, densely violet glandular hairy; longitudinal veins violet or dark violet, cohering at apex, with violet glandular hairs; calyx teeth ovate-triangular, 3–4 mm, ciliate, apex obtuse.

Androgynophore 2–5 mm, hairy. Petals exerted 6–9 mm beyond calyx, white or lilac; claws usually violet, narrowly cuneate, ca. 1.8 cm, ca. 6 mm wide at apex, auriculate, ± hairy at base; limbs suborbicular, 6–8 mm, deeply 4-lobed to middle; median lobes broad, shallowly 2-lobed; lateral lobes linear; coronal scales nearly cupuliform with small round teeth at apex. Stamens slightly exerted; filaments glabrous, sometimes sparsely villous at base. Styles included. Capsule ovoid, 1.3–1.7 cm, 10-toothed. Seeds flat, with broad wings, yellowish brown, orbicular-reniform, ca. 1.8 × 1.5 mm. Fl. Aug, fr. Aug–Sep.

• Alpine grassland, shifting screens; 4200–4500 m. C and E Xizang.

**60. *Silene wardii*** (Marquand) Bocquet, Candollea 22: 20. 1967.

林芝蝇子草 lin zhi ying zi cao

*Lychnis wardii* Marquand, J. Linn. Soc., Bot. 48: 165. 1929; *Melandrium wardii* (Marquand) Pax & K. Hoffmann.

Stems violet, ascending from ± procumbent base, 10–15(–22) cm tall, sparsely clustered, usually simple, densely glandular hairy. Basal leaves withered at anthesis; cauline leaves usually 4 or 5 pairs, sessile, elliptic, 2–3(–4.5) × 1–1.5(–2) cm, both surfaces and margin glandular hairy, apex acute. Flowers solitary, rarely 2 or 3. Pedicel 1.5–2 cm, densely glandular hairy. Calyx ovoid-campanulate, 2–2.5 × 1–1.4 cm, umbilicate below, open at apex, densely violet glandular hairy at veins; calyx teeth violet, elliptic, 5–7 mm, margin glandular ciliate, apex obtuse.

Androgynophore 3–4 mm, long lanate-villous. Petals exerted 8–10 mm beyond calyx, pale violet; claws 1.7–1.8 cm; limbs glandular hairy, deeply bifid; lobes dentate or with small round teeth; coronal scales cuneate, truncate at apex, erose. Stamens ca. 1 cm; filaments woolly-hairy basally. Styles short. Capsule ovoid, 1.2–1.5 cm, 5-toothed. Seeds pale brown, orbicular-reniform, flat, ca. 2 mm, winged.

• Shifting screens, sandy gravelly deltas of glacier streams; ca. 4200 m. SE Xizang.

This species is unique in its group in its hairy petal limbs. The type sheet bears the field note “limb dark slaty blue, pink at margin, coronal scales crimson.”

**61. *Silene karekirii*** Bocquet, Candollea 22: 10. 1967.

污色蝇子草 wu se ying zi cao

*Lychnis sordida* Karelin & Kirilov, Bull. Soc. Imp. Naturalistes Moscou 15: 170. 1842, not *Silene sordida* Huber-Morath & Reese (1943); *Melandrium sordidum* (Karelin & Kirilov) Rohrbach; ?*M. verrucosoalatum* Y. Z. Zhao & P. Ma.

Herbs 30–45 cm tall. Rootstock conical, multicrowned. Stems several, rarely solitary, erect, basally nearly glabrous, apically densely glandular pubescent. Basal leaves and proximal cauline leaves oblanceolate, 5–12 cm × 5–11 mm, both surfaces sparsely hairy, margin glandular ciliate, midvein prominent, base attenuate into petiole, apex acuminate; cauline leaves 2–5 pairs, narrowly lanceolate, base attenuate into short petiole or sessile, apex acute. Flowers (1–)2–7, slightly nutant or erect. Pedicel 5–15 mm, slender, shortly glandular. Calyx narrowly campanulate, 1.7–2.3 cm × 8–10 mm, open at apex; longitudinal veins dark violet, robust, shortly glandular hairy. Androgynophore ca. 4 mm, shortly hairy. Petals dark violet; claws exerted beyond calyx by ca. 2 mm, cuneate, with obtuse auricles, glabrous (or nearly so) at base, limbs deeply bifid; lobes orbicular, with irregular round teeth at apex, narrowly 1-toothed on two sides; coronal scales small, margin crenulate. Styles 5, exerted. Capsule globose-ovoid, ca. 1.5 cm. Seeds flat. Fl. Jul.

Mountain grasslands; ca. 3000 m. W Xinjiang [Kazakhstan].

**62. *Silene puranensis*** (L. H. Zhou) C. Y. Wu & H. Chuang in C. L. Tang, Fl. Reipubl. Popularis Sin. 26: 321. 1996.

普兰蝇子草 pu lan ying zi cao

*Melandrium puranense* L. H. Zhou in C. Y. Wu, Fl. Xizang, 1: 718. 1983.

Herbs perennial, 10–30 cm tall. Roots multicrowned. Stems sparsely clustered, ascending from ± weak and creeping base, glandular hairy. Non-flowering leafy shoots present at base. Leaves oblanceolate, 4–7 cm × 6–15(–20) mm, both surfaces with short glandular hairs, margin glandular hairy, base attenuate into petiole, apex acute; cauline leaves usually 2 or 3 pairs, smaller than basal leaves, lanceolate, 2–3 cm, densely glandular hairy, base nearly sessile, slightly clasping. Flowers 1–3. Pedicels unequal, 1.5–7 cm, densely glandular hairy; bracts ovate-lanceolate, 5–10(–15) mm, herbaceous, glandular villous. Calyx greenish, campanulate, 1–1.5 cm × ca. 8 mm, membranous; veins dark violet glandular hairy, cohering at calyx teeth; calyx teeth broadly ovate-triangular, margin membranous, apex obtuse. Androgynophore ca. 1 mm, white woolly-hairy. Petals ca. 1.5 cm; claws narrowly oblanceolate, woolly-hairy at base, auricles not obvious; limbs exerted beyond calyx, orbicular, shallowly bifid; lobes obtuse, each with a narrow lateral tooth; coronal scales small. Stamens shorter than or nearly as long as petals. Styles 4 or 5. Capsule ellipsoid, ca. 1 cm, shorter than

or subequaling calyx, 10-toothed. Seeds suborbicular or irregularly shaped, flat, 1–1.2 mm wide, smooth, winged. Fl. Jul, fr. Aug.

• Shifting screes; ca. 5000 m. SW Xizang (Burang Xian).

**63. *Silene bungei*** Bocquet, *Candollea* 22: 15. 1967.

暗色蝇子草 *an se ying zi cao*

*Lychnis tristis* Bunge in Ledebour, Fl. Altaic. 2: 184. 1830, not *Silene tristis* Salisbury (1796, nom. illeg., included *S. undulata* Aiton); *Melandrium triste* Fenzl ex Ledebour.

Herbs perennial, (15–)25–40(–50) cm tall. Roots vertical, gray-brown, robust, lignified; root crowns multibranched, slightly lignified, with procumbent stems. Stems sparsely caespitose, erect, pale yellowish green, ± black at apex, simple, basally glabrous, apically hirtellous with intermixed black glandular hairs. Basal leaves oblanceolate or linear-oblanceolate, 4–10 cm × 6–10 mm, base attenuate into petiole, apex obtuse or acute; cauline leaves 1–4 pairs, narrowly elliptic, smaller than basal leaves, nearly sessile, slightly sheathed, both surfaces glabrous, ciliate, hairy at veins abaxially, midvein prominent; distal leaves narrowly lanceolate, sometimes withered, coarsely glandular hairy. Flowers solitary, sometimes 2 or 3, nutant, erect in late anthesis. Pedicel subequaling calyx, elongating in late anthesis, viscid, villous. Calyx globose-campanulate, saccate, 1.8–2.2 × 1.2–1.5 cm, membranous, sparsely robust glandular hairy, contracted at apex, opened in late anthesis; veins dark violet, with brown-violet glandular hairs, coherent at calyx teeth; calyx teeth triangular, margin ciliate, apex acute. Androgynophore 2–3 mm, villous. Petals exerted 1–3 mm beyond calyx, dark violet; claws 1.4–1.6 cm, cuneate, with narrow auricles, limbs emarginate or shallowly bifid; lobes entire or shallowly toothed, rarely 1-toothed obscurely at base of two sides; coronal scales small, cuneate, with minute teeth at apex. Stamens included. Styles 5. Capsule orbicular, 1.2–1.5 × 1–1.4 cm, 5-toothed. Seeds dark brown, reniform, ca. 1.4 mm, thick, flat, with prominent papillae abaxially. Fl. Jun–Jul.

Alpine grasslands, shifting screes; 4000–5300 m. Xinjiang [Kazakhstan, Kyrgyzstan, Mongolia, Russia].

**64. *Silene rubricalyx*** (Marquand) Bocquet, *Candollea* 22: 15. 1967.

红萼蝇子草 *hong e ying zi cao*

*Lychnis rubricalyx* Marquand, J. Linn. Soc., Bot. 48: 164. 1929; *Melandrium rubricalyx* (Marquand) Pax & K. Hoffmann.

Herbs perennial, 5–15(–20) cm, with procumbent stems, rooting at nodes. Stems sparsely caespitose, erect, simple, densely violet glandular hairy. Basal leaves ovate or narrowly oblanceolate, 2.5–5 cm × 7–13 mm, subglabrous to sparsely villous with long hairs, especially toward margin, apex acute or nearly so; cauline leaves 1 or 2 pairs, elliptic, smaller, 1–3 cm × 4–6 mm. Flowers 1–3, slightly nutant, erect after

anthesis. Pedicel 2.5–3 cm, glandular villous; bracts lanceolate, glandular hairy. Calyx campanulate or cylindrical-campanulate, membranous, saccate, 1.3–1.7 cm × 8–10 mm, densely glandular villous, umbilicate at base, open at apex, inflated in fruit, longitudinal veins brown or dark violet; calyx teeth broadly triangular, ca. 4 mm, weakly hairy, margin ciliate. Androgynophore ca. 3 mm, woolly-hairy. Petals exerted ca. 7 mm beyond calyx; claws pale red, exerted 2–3 mm beyond calyx, 1.3–1.4 cm × 5–6 mm, cuneate, with triangular-ovate auricles above, villous at base; limbs spreading, violet or dark violet, broadly ovate, ca. 5 mm, 4-lobed or deeply so, medial lobes with minute laciniae or round teeth; lateral lobes dentate or linear, smaller; coronal scales broadly cuneate, 1–1.5 mm, lacinate or dentate. Stamens slightly exerted beyond corolla throat; filaments villous at base. Styles not exerted. Capsule globose or ellipsoid, 7–10 × 6–8 mm, shorter than calyx, 5-toothed. Seeds brown, slightly flattened, ca. 1.5 mm, lustrous, abaxially faintly tuberculate. Fl. Aug–Sep, fr. Aug–Sep.

• Alpine meadows; 3400–3600 m. SW Sichuan, E Xizang.

**65. *Silene songarica*** (Fischer, C. A. Meyer & Avé-Lallemant) Bocquet, *Candollea* 22: 3. 1967.

准噶尔蝇子草 *zhun ga er ying zi cao*

*Melandrium songaricum* Fischer, C. A. Meyer & Avé-Lallemant, Index Sem. Hort. Petrop. Suppl. 9: 14. 1844; *Lychnis brachypetala* Fischer ex Hornemann; *L. mongolica* Maximowicz; ?*Melandrium auritipetalum* Y. Z. Zhao & P. Ma; *M. baicalense* Sukaczew ex Tolmatchew; *M. brachypetalum* (Fischer ex Hornemann) Fenzl; *M. irikutense* Kitagawa; *M. mongolicum* (Maximowicz) Grubov; *Silene duthiei* Majumdar. Herbs perennial, 15–60 cm tall, densely pubescent throughout. Principal root slender, slightly lignified. Stems caespitose, erect, simple. Basal leaves narrowly lanceolate, 3–9 cm × 3–10 mm, ciliate, base attenuate into petiole, apex acuminate; cauline leaves 3–5 pairs, sessile, linear-lanceolate. Inflorescence 2–6-flowered, rarely more; flowers nutant in early anthesis, soon becoming erect. Pedicel (2–)5–15 mm; bracts linear-lanceolate, herbaceous. Calyx narrowly campanulate, 1.2–1.5 cm × 5–7 mm, densely pubescent, sparsely glandular hairy; longitudinal veins dark green, not cohering at apex; calyx teeth triangular, margin membranous, white, ciliate, apex acute.

Androgynophore ca. 1 mm, shortly pubescent. Petals white or pale red, subequaling or longer than calyx, 1.1–1.3 cm; claws oblanceolate, auricles orbicular; limbs obovate, shallowly bifid, with or without a couple of lateral teeth; coronal scales small. Stamens included; filaments glabrous. Styles included. Capsule ellipsoid-ovoid, 1–1.2 cm, shorter than calyx. Seeds dark brown, reniform, 0.8–1 mm, tuberculate. Fl. Jun–Jul, fr. Jul–Aug.

Gravelly scrub grasslands, alpine meadows; 2000–4700 m. Jilin, Nei Mongol, Xinjiang [Kazakhstan, Mongolia, Russia].

**66. *Silene nangqenensis*** C. L. Tang, *Acta Bot. Yunnan.* 2: 433. 1980.

囊谦蝇子草 nang qian ying zi cao

*Melandrium glandulosum* (Maximowicz) F. N. Williams var. *hexapetalum* Y. W. Tsui & L. H. Zhou; ?*M. glandulosum* var. *longistylum* Y. W. Tsui & L. H. Zhou.

Herbs perennial, 15–30 cm tall, densely glandular hairy throughout. Roots spiniform or conical, slightly fleshy. Stems sparsely clustered or solitary, erect, simple. Basal leaves elliptic-oblongate, rarely saccate, 4–8 × 1–1.5 cm, midvein prominent, base cuneate or attenuate, apex acute, rarely rounded; cauline leaves often 1–3 pairs, smaller than basal leaves. Flowers few, slightly nutant, erect in late anthesis. Pedicel 1–5 cm, densely glandular hairy; bracts lanceolate, 5–10 mm, glandular hairy. Calyx broadly campanulate, slightly saccate, ca. 1.5 × 1 cm, rounded at base, open at apex; longitudinal veins slightly robust, dark violet, glandular hairy; calyx teeth broadly triangular-ovate, ca. 3 mm, margin membranous, white, shortly ciliate, apex acute. Androgynophore ca. 2 mm, glabrous. Petals slightly exerted beyond calyx; claws nearly cuneate, ciliate at base, auricles obtuse; limbs broadly obovate, deeply bifid; lobes narrowly elliptic, apex obtuse, emarginate or shallowly bifid, shortly 1-lobed or weakly toothed on two sides; coronal scales flabellate, laciniate. Stamens slightly exerted; filaments hairy. Styles included. Capsule ovoid, ca. 1.2 cm, 10-toothed. Seeds brown, globose-reniform, ca. 1 mm. Fl. Jul, fr. Aug.

• Alpine meadows; 4200–4600 m. S Qinghai, E Xizang.

**67. *Silene nepalensis*** Majumdar, J. Indian Bot. Soc. 42: 649. 1964.

尼泊尔蝇子草 ni po er ying zi cao

*Lychnis multicaulis* Wallich ex Benth; *Melandrium brachypetalum* (Hornemann) Fenzl var. *tibetanum* Rohrbach; *M. multicaule* (Wallich ex Benth) Walpers.

Herbs perennial, 10–50 cm tall. Roots robust, multicrowned. Stems caespitose, erect, simple, densely pubescent. Basal leaves linear-lanceolate, 3–14 cm × 3–7 mm, midvein prominent, glabrous or subglabrous, base attenuate into petiole, ± connate, apex acuminate; distal leaves sessile, homomorphic with basal leaves, ± connate at base, both surfaces and margin pubescent. Inflorescence an irregular elongate thyrsoid with (short-and) long stalked densely 3–7-flowered cymules; flowers nutant, erect in late anthesis. Pedicel 5–10 mm in fruit, densely pubescent; bracts linear, pubescent. Calyx cylindrical-campanulate in early anthesis, 7–9 × 3–4 mm, soon becoming broader as capsule swells, densely pubescent, round at base, open at apex; longitudinal veins dark violet or deep greenish brown, not raised, usually cohering at calyx teeth. Androgynophore to 1 mm, pubescent. Petals exerted 2–3 mm beyond calyx, violet; claws broadly cuneate, 6–8 mm, subglabrous at base, very broadly auriculate; limb 1.5–2 mm long and slightly broader, emarginate or bifid, lobes entire or usually with obscure lateral teeth;

coronal scales small, nearly round, obtuse or emarginate at apex. Stamens included; filaments subglabrous. Styles included. Capsule ovoid-ellipsoid, 8–10 mm. Seeds grayish brown, reniform, ca. 0.8 mm, tuberculate. Fl. Jul–Aug, fr. Aug.

Mountain grasslands; 2700–5100 m. Qinghai, Sichuan, Xizang, Yunnan [Bhutan, ?Kashmir, Nepal, ?Pakistan, Sikkim].

**68. *Silene kialensis*** (F. N. Williams) Lidén & Oxelman in Oxelman et al., Novon 11: 322. 2001.

甲拉蝇子草 jia la ying zi cao

*Melandrium kialense* F. N. Williams, J. Linn. Soc., Bot. 34: 432. 1899; *Lychnis kialensis* (F. N. Williams) H. Léveillé; *Silene nepalensis* Majumdar var. *kialensis* (F. N. Williams) C. L. Tang ex C. Y. Wu.

Herbs perennial, 30–60 cm tall. Stems few or solitary, erect, with sparse to dense, strict erect branches, pubescent, very rarely glabrous. Basal leaves (ob)lanceolate, 6–10 × 1–2 cm, base attenuate into short petiole, apex acute; cauline leaves lanceolate or narrowly oblanceolate. Inflorescence an irregular thyrsoid with long stalked, usually 3-flowered cymules; flowers slightly nutant. Pedicel usually shorter than calyx, rarely longer, densely pubescent, sometimes with a few glandular hairs. Calyx narrowly campanulate to ovoid, narrowed at base, 1–1.2 cm × 3–3.5 mm, soon becoming broader as capsule swells; veins slightly raised, pubescent. Androgynophore 1.5–2 mm, pubescent. Petals dark red, rarely white; claws usually conspicuously exerted beyond calyx (but cleistogamous forms occur), oblanceolate, 8–10 mm, hairy at base; auricles prominent, orbicular; limb 3–4 mm, deeply bifid to middle, sometimes with short lateral lobes. Stamens included or slightly exerted. Styles 5, included. Capsule ellipsoid, ca. 1 cm. Seeds gray, globose-reniform, ca. 1.2 mm, minutely tuberculate.

• Forest margins, grasslands; 1800–4000 m. Gansu, Qinghai, Sichuan, SE Xizang.

This species is very similar to, and possibly sometimes confused with, *Silene chungtienensis*, but has prominent petal claw auricles and very few or no glandular hairs.

*Melandrium kialense* was not treated by Bocquet (1969) in his revision of *Silene* sect. *Physolychnis*. The taxon is close to *S. songarica*, but differs in calyx size (10–12 mm, vs. 12–15 mm in *S. songarica*), 4-fid petal limbs with subequal lobes (vs. 2-fid, or 2-fid with small, lateral teeth), poorly developed petal claw auricles, and longer androgynophore (1.5–2 mm, vs. only to 1 mm). We also find a difference in calyx pubescence: *S. kialensis* has spreading, stiff hairs, whereas *S. gonosperma* has retrorse, shorter hairs.

**69. *Silene chungtienensis*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 11: 221. 1920.

中甸蝇子草 zhong dian ying zi cao

*Melandrium chungtienense* (W. W. Smith) Pax & Hoffmann; *Silene flavovirens* C. Y. Wu.

Herbs perennial, (15–)30–60 cm tall. Stems sparsely clustered or solitary, erect, simple or sparsely branched at base, pubescent. Basal leaves elliptic-lanceolate or narrowly oblanceolate, 6–10 × 0.8–3 cm, both surfaces



glabrous or pubescent, base attenuate into short petiole, apex acute; cauline leaves numerous, lanceolate or narrowly oblanceolate. Inflorescence a racemiform-conical irregular thyrsoid; cymules with short to long rachis, usually 3-flowered; flowers slightly nutant. Pedicel usually shorter than calyx, rarely longer, densely villous or sparsely glandular hairy; bracts linear-lanceolate, sparsely hairy. Calyx narrowly campanulate, narrowed at base, 1–1.2 cm × 3–3.5 mm, soon becoming broader as capsule swells; veins violet or green, slightly raised, pubescent; calyx teeth triangular, ca. 3 mm, margin membranous, ciliate, apex acute or obtuse. Androgynophore 1.5–2 mm, pubescent. Petals dark red, rarely white; claws oblanceolate, 8–10 mm, hairy at base; auricles not prominent (claw at apex not or only slightly broader than limb), with erose margin; limb 3–4 mm, shallowly to deeply (to middle) bifid, with lateral triangular small teeth or small lobes; coronal scales subflabellate, ca. 1 mm. Stamens included or slightly exerted. Styles 5, included. Capsule ellipsoid, ca. 1 cm. Seeds gray, globose-reniform, ca. 1.2 mm, minutely tuberculate. Fl. Jul–Aug, fr. Aug–Sep.

- Moist rocks; 2800–3600 m. NW Yunnan.

In the original description, Smith incorrectly indicated 3 (rather than 5) styles.

Photographs of the type material of *Silene flavovirens* (described from Luquan Xian, NC Yunnan) agree well with *S. chungtienensis*, except for their shorter stems. The petal color is variable in natural populations of *S. chungtienensis*, as well as among the types of *S. flavovirens*, and so that character cannot be used to distinguish them. *Silene flavovirens* was, however, described as having a glabrous androgynophore.

**70. *Silene yetii*** Bocquet, *Candollea* 22: 5. 1967.

腺毛蝇子草 xian mao ying zi cao

*Lychnis glandulosa* Maximowicz, *Fl. Tangut.* 83. 1889, not *Silene glandulosa* Hampe ex Walpers (1842), nor Bertoloni (1884); *Melandrium glandulosum* (Maximowicz) F. N. Williams.

Herbs perennial, 20–60 cm tall, densely glandular hairy throughout. Principal root vertical, robust, slightly lignified. Stems sparsely caespitose, rarely solitary, erect, robust, simple. Basal leaves oblanceolate or elliptic-lanceolate, 5–10(–13) × 1–2(–2.5) cm, both surfaces glandular hairy, midvein prominent, base attenuate into long petiole; cauline leaves oblanceolate or lanceolate, 3–5 cm × 5–15 mm, half clasping at base. Inflorescence racemiform, usually 3–5-flowered, rarely more; flowers slightly nutant, erect in late anthesis. Pedicel 5–50 mm; bracteoles linear-lanceolate, 5–7 mm, herbaceous. Calyx campanulate, 1.1–1.5 cm × 6–9 mm, densely glandular hairy, rounded at base, open at apex, slightly inflated in fruit; longitudinal veins dark brown or brown, coherent at calyx teeth, glandular hairy; calyx teeth ovate-triangular, margin membranous, white, ciliate, apex obtuse. Androgynophore 1–1.5 mm. Petals exerted 5–6 mm beyond sepals, violet or pale red; claws nearly cuneate, auricles orbicular, glabrous or

sparsely hairy; limbs nearly elliptic, ca. 3 mm, shallowly bifid; lobes narrowly elliptic; coronal scales round, small. Stamens included; filaments hairy. Styles included. Capsule ovoid, 1.2–1.4 cm × 9 mm, shorter than calyx. Seeds gray-brown, reniform, ca. 1 mm, tuberculate. Fl. Jul, fr. Aug.

- Gravelly grasslands, alpine grasslands; 2700–4800(–5000) m. Gansu, Qinghai, Sichuan, Xizang.

**71. *Silene herbilegorum*** (Bocquet) Lidén & Oxelman in Oxelman et al., *Novon* 11: 322. 2001.

多裂腺毛蝇子草 duo lie xian mao ying zi cao

*Silene yetii* Bocquet var. *herbilegorum* Bocquet, *Candollea* 22: 5. 1967.

Herbs perennial, densely glandular hairy throughout, with sterile basal rosettes and a few flowering stems. Stems sparsely caespitose, rarely solitary, erect, robust, 30–60 cm tall, simple, with very long internodes above. Rosette leaves obovate, 2–4 × 0.5–1.5 cm, both surfaces glandular hairy, base attenuate into distinct petiole; cauline leaves oblanceolate to lanceolate, 3–7 × 0.5–1 cm, becoming smaller upward, base half clasping. Inflorescence 5–10-flowered, racemiform with unequal branches that become very strict and erect and elongated in fruit; cymules 1–3-flowered; flowers nutant at first, becoming erect in late anthesis. Pedicel 4–10 mm, elongating in fruit to 1–3 cm; bracteoles linear-lanceolate, herbaceous, 5–7 mm. Calyx narrowly campanulate, 9–11 × 5–7 mm, densely glandular hairy, longitudinal veins dark brown or brown, glandular hairy. Androgynophore ca. 1 mm, pubescent. Petal claws slightly exerted, cuneate, auricles prominent; limbs dark red, 2–3 mm, shallowly 4-fid. Stamens included; filaments hairy at base. Styles included. Capsule ovoid, ca. 9 × 5 mm, equaling calyx. Seeds gray, ca. 1 mm, tuberculate.

- Alpine grasslands; 2700–4100 m. Sichuan, NW Yunnan.

This species is close to *Silene yetii*, but the inflorescence has 5–10 flowers (vs. 1–5 in *S. yetii*), the calyx is markedly smaller (9–10 mm, vs. 12–13 mm in *S. yetii*), and the petal limb is clearly 4-fid (vs. 2-fid in *S. yetii*).

**72. *Silene alaschanica*** (Maximowicz) Bocquet, *Candollea* 22: 15. 1967.

贺兰山蝇子草 he lan shan ying zi cao

*Lychnis alaschanica* Maximowicz, *Bull. Acad. Imp. Sci. Saint-Petersbourg*, sér. 3, 26: 427. 1880; *Melandrium alaschanicum* (Maximowicz) Y. Z. Zhao.

Herbs perennial, 20–30 cm tall, densely glandular villous throughout. Principal root conical, robust, slightly lignified, multicrowned. Stems sparsely caespitose, erect, simple. Basal leaves oblanceolate, 3–7(–10) cm × 7–16 mm, both surfaces and margin glandular hairy, midvein prominent, base attenuate into petiole, apex obtuse or acute; distal leaves lanceolate, smaller than basal leaves. Flowers 1–4. Pedicel 1.3–1.5 cm, slender, densely glandular hairy; bracts linear-lanceolate, 3–8 mm, herbaceous. Calyx narrowly

campanulate, 7–11 × 3–3.5 mm, open at apex, glandular hairy; longitudinal veins deep green or violet, shortly glandular villous, cohering at calyx teeth; calyx teeth triangular-ovate, ca. 4 mm, margin membranous, sparsely ciliate, apex obtuse or acute. Androgynophore ca. 1 mm. Petals exerted ca. 5 mm beyond calyx, lilac; claws prominently exerted, narrowly cuneate, with triangular auricles, long ciliate at base; limbs broadly obovate, ca. 4 mm, deeply bifid; lobes entire, linearly 1-lobed on two sides; coronal scales elliptic, lacinate. Stamens slightly exerted beyond corolla throat; filaments hairy at base. Styles exerted. Capsule ovoid, 8–9 mm, shorter than calyx, 10-toothed. Seeds dark brown, orbicular-reniform, ca. 1.5 mm, thick, minutely tuberculate. Fl. Jun–Jul, fr. Jul–Aug.

• Mountain scrub or grasslands; 2000–2700 m. Nei Mongol, Ningxia.  
**73. *Silene muliensis*** C. Y. Wu, Acta Bot. Yunnan. 4: 147. 1982.

木里蝇子草 mu li ying zi cao

Herbs perennial, 20–50 cm, densely pubescent throughout, erect, simple, apically glandular hairy. Basal leaves obovate-lanceolate, 5–7 × 1.3–1.8 cm, both surfaces villous, margin ciliate, 3-veined basally, midvein conspicuous, pubescent at veins, base attenuate into petiole, apex acute; distal leaves ovate-lanceolate, smaller, base nearly rounded, apex acuminate. Flowers in an irregular thyrsoid, most cymules shortly stalked, usually 3-flowered, densely glandular villous. Pedicel 5–10(–20) mm, slender, glandular hairy; bracts ovate-lanceolate, herbaceous. Calyx campanulate, ca. 15 × 6 mm; longitudinal veins violet, glandular hairy; calyx teeth ovate, 3–5 mm, margin membranous, ciliate, apex obtuse. Androgynophore 2–3 mm, shortly hairy. Petals lilac, 2–2.5 cm; claws slightly exerted beyond calyx, narrowly cuneate, ciliate at base, auricles broad; limbs nearly orbicular, 4–6 mm, deeply 4-lobed; medial lobes narrowly band-shaped, with 2 or 3 obscure teeth; lateral lobes nearly linear, small; coronal scales nearly square. Stamens included; filaments glabrous. Styles included. Capsule not seen. Fl. Aug.

• Grasslands at forest margins; 2800–4200 m. Sichuan (Muli Zang Zu Zizhixian).

**74. *Silene caespitella*** F. N. Williams, J. Linn. Soc., Bot. 38: 403. 1909.

丛生蝇子草 cong sheng ying zi cao

*Melandrium neocaespitosum* Y. W. Tsui ex L. H. Zhou; *M. xainzaense* L. H. Zhou; *Silene maheshwarii* Bocquet. Plants 13–40(–60) cm tall. Roots robust, vertical, lignified. Stems caespitose, erect, green, shortly retrorse pubescent throughout. Basal and proximal cauline leaves green on both surfaces, linear, 4–7(–10) cm × 2–5 mm, margin ciliate, midvein prominent, hairy only at veins or glabrous, base narrow, apex acute; distal leaves 3 or 4 pairs, sessile, linear, gradually reduced upward. Flowers up to 20, in an irregular thyrsoid with long- and shortly stalked, (1–)3–5-

flowered cymules, sharply nutant, becoming erect in late anthesis. Pedicel short. Calyx narrowly cylindrical-campanulate, soon becoming broader as capsule swells, 5–7 × 2.5–3 mm, rounded at base, open at apex, weakly hairy, veins dark green to blackish red; teeth triangular, ca. 2.5 mm, margin membranous, ciliate, apex acute. Androgynophore ca. 1 mm, sparsely villous. Petals exerted 1–2 mm beyond calyx, dark red, rarely greenish white; claws cuneate, ca. 6 mm, glabrous at base, conspicuously auriculate (2.5–3 mm wide at apex); auricles ciliate; limb 1–2 mm, shallowly bifid, usually with small lateral lobes; coronal scales small. Stamens included. Styles included. Capsule globose, ca. 8 mm, slightly longer than calyx. Seeds gray, globose-reniform, ca. 0.8 mm, minutely tuberculate. Fl. Jun–Jul, fr. Aug–Sep.

Alpine forests, alpine meadows; 2500–5100 m. SE Qinghai, SW and W Sichuan, S and SE Xizang [Bhutan, Kashmir].

This species is closely related to *Silene nepalensis*, from which it differs in its linear leaves and smaller flowers. *Silene caespitella* is a very homogeneous species throughout its range.

**75. *Silene sveae*** Lidén & Oxelman in Oxelman et al., Novon 11: 323. 2001.

德钦蝇子草 de qin ying zi cao

Herbs perennial, 20–25 cm. Stems caespitose, few, erect, simple, grayish pubescent with short retrorse hairs throughout. Basal leaves in a persistent rosette, ovate, ca. 3 × 1–1.5 cm, fleshy; cauline leaves 2–4 pairs, lanceolate, 1–2 cm. Cymules 1–3-flowered in a lax, few-flowered thyrsoid. Pedicel sharply deflexed and very short in early anthesis, becoming strict, erect, and 1–3 cm in fruit. Fruiting calyx grayish green, ca. 7 × 4 mm, cylindrical, base rounded; veins not anastomosing, dark green to dark violet; teeth triangular, shortly ciliate, apex acute. Petals slightly exerted; claw ca. 2 mm wide at apex with narrow, prominent forward-projecting auricles; limb narrow, deeply bifid with entire lobes. Androgynophore very short, sparsely hairy. Stamens and styles included. Capsule shortly cylindrical, subequaling fruiting calyx. Seeds gray, round, ca. 0.8 mm, minutely tuberculate. Fl. and fr. Sep.

• Gravelly river banks, ca. 3000 m. NW Yunnan (Dêqên Xian).

*Silene sveae* is easily distinguished from *S. caespitella* by its few broad basal leaves, from *S. nepalensis* by being smaller in all its parts, and from both species by its grayish, slightly fleshy habit, overwintering leaf rosette, few-flowered inflorescence, prominent, forward-projecting petal auricles, and narrow, deeply bifid petal limbs.

**76. *Silene huguetiae*** Bocquet, Candollea 22: 5. 1967.

狭果蝇子草 xia guo ying zi cao

Herbs perennial, 30–60(–90) cm tall. Root conical, slightly lignified. Stems solitary, sparsely clustered, erect, simple, sometimes basally branched, densely pubescent, intermixed with sparse glandular hairs. Basal leaves elliptic-lanceolate or oblanceolate, 5–10 cm × (5–)8–15(–20) mm, both surfaces sparsely glandular villous, margin glandular ciliate, base attenuate into long petiole, apex acute; distal leaves 1–3 pairs, lanceolate, smaller than basal leaves. Flowers

many, nutant, soon becoming erect. Cymules 1–3-flowered with strict erect peduncles of varying length. Pedicel 1–3 cm, slender, pubescent, intermixed with sparse glandular hairs; bracts lanceolate, villous. Calyx narrowly oblong, 8–12 × ca. 3 mm, slightly inflated in fruit, densely pubescent; longitudinal veins dark green or dark violet, glandular hairy, cohering at calyx teeth; calyx teeth triangular-lanceolate, 3–4 mm, margin membranous, ciliate, apex obtuse. Androgynophore very short, sparsely hairy. Petals exerted 4–6 mm beyond calyx, pale yellowish green or dark red; claw exerted, with narrow auricles, glabrous; limb 2–4 mm, shallowly bifid; lobes narrow, usually with small lateral teeth; coronal scales ligulate, entire or emarginate. Stamens included; filaments glabrous. Styles 5, included, very short. Capsule globose, 1–1.4 cm, often longer than calyx. Seeds gray-brown, globose-reniform, ca. 0.8 mm, thickened, tuberculate. Fl. Jul–Aug, fr. Aug–Sep.

• Forest margins, grasslands; 2300–4600 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan.

- 1a. Glandular hairs present, at least on calyx, leaves adaxially, and stem apically 76a. var. *huguettiae*  
1b. Glandular hairs absent ..... 76b. var. *pilosa*

**76a. *Silene huguettiae* var. *huguettiae***

狭果蝇子草(原变种) xia guo ying zi cao (yuan bian zhong)

Glandular hairs present.

• Forest margins, grasslands; 2400–4600 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan.

**76b. *Silene huguettiae* var. *pilosa*** C. Y. Wu & H. Chuang in C. Y. Wu et al., Fl. Yunnan. 6: 836. 1995.

无腺狭果蝇子草 wu xian xia guo ying zi cao

Stems, leaves, and calyx sparsely villous, eglandular.

• Forest margins, grasslands; 2300–3600 m. Qinghai, Sichuan, Xizang, Yunnan.

**77. *Silene indica*** Roxburgh ex Otth in de Candolle, Prodr. 1: 368. 1824.

印度蝇子草 yin du ying zi cao

Herbs perennial, 25–50 cm tall. Roots robust, root crown lignified, producing stoloniform stems. Stems caespitose, erect or ascending, gray-green, simple or branched, hairy, apically glandular hairy. Basal leaves withered early; cauline leaves 4–8 pairs, ovate or ovate-lanceolate, 2–4(–4.5) × 1–2 cm, hirtellous, glandular hairy, margin ciliate, base cuneate, half clasping, apex acute. Flowers 7–20(–30). Pedicel elongated. Flowers slightly nutant, erect in late anthesis. Calyx campanulate, slightly inflated, 1.1–1.8 cm × 6–12 mm, umbilicate at base, open at apex, glandular hairy; longitudinal veins dark violet or green, densely hirtellous-glandular hairy; calyx teeth broadly triangular, 3–4 mm, margin membranous, glandular ciliate, apex obtuse. Androgynophore 2–3 mm, weakly hairy. Petals exerted 3–4 mm beyond calyx, green or violet-brown; claws cuneate, 9–11 mm, narrowly

auriculate, glabrous or sparsely villous in early anthesis; limbs nearly orbicular, ca. 4 mm, bifid or deeply so, lobes entire or with obtuse laciniae; coronal scales round, scarious, with small round teeth at apex, 0.5–1 mm. Stamens exerted; filaments villous at base. Styles 4 or 5. Capsule ovoid, 1.1–1.2 cm × 7–8 mm, 8–10-toothed. Seeds triangular-reniform, ca. 1 mm, with auriculate pit on two sides, abaxially with prominent tubercles. Fl. Jul, fr. Aug.

Mountains, mountain scrub; 2300–3900 m. S Xizang [Bhutan, India, Kashmir, Nepal].

1a. Calyx 11–14 × 6–9 mm; androgynophore ca. 2 mm ..... 77a. var. *indica*

1b. Calyx 14–18 × 10–12 mm; androgynophore ca. 3 mm ..... 77b. var. *bhutanica*

**77a. *Silene indica* var. *indica***

印度蝇子草(原变种) yin du ying zi cao (yuan bian zhong)

*Lychnis indica* (Roxburgh ex Otth) Bentham; *L. nutans* Royle ex Bentham; *Melandrium indicum* (Roxburgh ex Otth) Walpers.

Plants relatively smaller. Calyx 1.1–1.4 cm × 6–9 mm. Androgynophore ca. 2 mm

Mountain scrub; 2300–2900 m. S Xizang [Bhutan, India, Kashmir, Nepal].

**77b. *Silene indica* var. *bhutanica*** (W. W. Smith) Bocquet, Candollea 22: 13. 1967.

不丹蝇子草 bu dan ying zi cao

*Lychnis bhutanica* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 10: 51. 1917; *Silene bhutanica* (W. W. Smith) Majumdar.

Plants tall, robust. Calyx 1.4–1.8 × 1–1.2 cm. Androgynophore ca. 3 mm.

Mountains; 2600–3900 m. S Xizang [Bhutan, India, Kashmir, Nepal].

**78. *Silene tibetica*** Lidén & Oxelman in Oxelman et al., Novon 11: 324. 2001.

西藏蝇子草 xi zang ying zi cao

Herbs perennial, probably with a densely branched rootstock crowned by dense remnants of dead leaves and cataphylls. Sterile rosette leaves with petiole 5–6 cm; leaf blade obovate, gradually narrowed into petiole, 3(–4) × 1.5–2 cm, apex subobtuse to acuminate. Stems erect or ascending, 10–15 cm. Cauline leaves in 2 pairs, sessile, broadly ovate, ca. 3.5 × 2.5 cm, apex acute. Inflorescence a dense thyrse consisting of a terminal dichasium and stalked (stalk ca. 2 cm) lateral dichasia, each dichasium 3–5-flowered; bracts gradually narrowed toward apex, 6–12 × 2–3 mm, herbaceous. Pedicel 3–4 mm, that of basal (first) flower to 1 cm. Lateral (later) flowers in dichasium apparently functionally male (an extremely rare condition in *Silene*). Calyx 1–1.2 cm × ca. 5 mm, expanding to 1–1.3 cm wide at late anthesis, divided to ca. 1/3 into

triangular teeth acute at apex. Androgynophore ca. 3 mm, densely woolly. Petal claws exerted beyond calyx by 1–2 mm, with orbicular auricles; limb oblong, ca. 3 mm, deeply bifid, usually with 2 pairs of lateral teeth; coronal scales short, dentate. Stamens exerted. Styles 5, included or exerted. Seeds (immature) with long, spiny papillae abaxially.

• About 3000 m. SW Xizang (Zanda Xian).

This species is not similar to any other Chinese species of *Silene*. A peculiar feature of the type specimen is that only the alar (apical or first) flower is bisexual, whereas the other (later) flowers appear to be functionally male. Although gynomonoeicy is a widespread phenomenon in *Silene*, andromonoeicy is not. *Silene tibetica* is possibly related to the *S. indica* group, which is in urgent need of revision. The regular nature of the inflorescence is deviating.

**79. *Silene cashmeriana*** (Royle ex Bentham) Majumdar, J. Indian Bot. Soc. 42: 649. 1964.

克什米尔蝇子草 ke shi mi er ying zi cao

*Lychnis cashmeriana* Royle ex Bentham in Royle, III. Bot. Himal. Mts. 80. 1834; *Melandrium cashmerianum* (Royle ex Bentham) Walpers; *M. dingriense* Y. W. Tsui & P. Ke ex L. H. Zhou; *M. nyalamense* L. H. Zhou. Herbs perennial, 50–70 cm tall. Stems erect, densely shortly whitish hairy. Basal leaves withering early; cauline leaves sessile, ovate or ovate-lanceolate, 5–7.5 cm × 6–15(–20) mm, both surfaces sparsely villous, ciliate at margin, base cuneate or nearly rounded, apex acute or acuminate. Cymes sparse, few flowered. Pedicel slender, glandular hairy; bracts lanceolate, herbaceous, glandular hairy. Calyx pale green, campanulate, 1–1.7 cm × 7–9 mm; longitudinal veins violet-blue or brown, prominent, cohering at calyx teeth; calyx teeth triangular-ovate, 3–5 mm, abaxially glandular hairy, margin membranous, ciliate, apex acute or acuminate. Androgynophore 2–3 mm, densely villous. Petals exerted 6–8 mm beyond calyx, yellowish green or ?pale green, 1.2–1.5 cm; claws saccate-oblancheolate, villous at base, auricles ovate; limbs broadly ovate, 5–8 mm, bifid; lobes entire or laciniate, with teeth or small lobes on each lateral side; coronal scales round, ca. 1.5 mm, slightly undulate at apex. Stamens included, ca. 1 cm; filaments glabrous. Styles (4 or)5, ca. 3 mm. Capsule not seen. Fl. Jul–Aug.

Grasslands, scrub; 3400–4100 m. S Xizang [Kashmir].

The type has not been seen by the present authors.

**80. *Silene multifurcata*** C. L. Tang, Acta Phytotax. Sin. 24: 391. 1986.

花脉蝇子草 hua mai ying zi cao

*Melandrium multifurcatum* (C. L. Tang) Kozhevnikov.

Herbs perennial, 30–40 cm tall, rhizomatous. Stems sparsely clustered, ascending, simple, sparsely villous. Leaves elliptic-lanceolate or oblanceolate, 5–8 cm × 8–12 mm, both surfaces glabrous, margin sparsely ciliate, 3-veined at base, midvein prominent, base cuneate,

apex acuminate. Cymes racemiform. Pedicel 2–3 cm, slender, densely pubescent; bracts lanceolate or linear-lanceolate, densely pubescent, margin ciliate. Calyx campanulate, 1.5–1.8 cm × 6–8 mm, densely villous, sparsely glandular hairy; longitudinal veins violet, veins usually reticulate. Calyx teeth triangular-ovate, 3–4 mm, margin membranous, ciliate. Androgynophore ca. 3 mm, villous. Petals violet, ca. 2 cm; claws pale yellowish green, cuneate, ca. 1.2 cm, glabrous at base, auricles orbicular; limbs exerted beyond calyx, deeply 4-lobed; medial lobes round, shallowly 2-lobed or laciniate; lateral lobes linear, small; coronal scales broad, nearly flabellate, ca. 2 mm, with small irregular teeth. Stamens slightly exerted, 1–1.3 cm; filaments glabrous. Styles (4 or)5, included or slightly exerted. Capsule ellipsoid, 1–1.2 cm, shorter than calyx, usually 5-toothed. Seeds brown, reniform, ca. 1 mm, with prominent tubercles. Fl. Aug, fr. Aug–Sep.

• Mountains; 2600–3200 m. S Xizang (Cona Xian).

Species nos. 81–90 belong to an informal group that approximates to *Silene* sect. *Odontopetalae* Schischkin ex Chowdhuri. The Chinese species fall neatly into two distinct subgroups corresponding to the first lead in the key: those with broad, inflated corollas, similar to the winged-seeded species of the “*Physolychnis*” group above, and those of the *S. delavayi* group.

*Silene dentipetala* H. Chuang (in C. Y. Wu et al., Fl. Yunnan. 6: 836. 1995) probably also belongs to the “*Odontopetalae*” group. It was described as differing from *S. gracilentia* in having more flowers, shorter and irregularly toothed petal limbs, and fimbriate seeds.

**81. *Silene lamarum*** C. Y. Wu, Acta Bot. Yunnan. 4: 153. 1982.

喇嘛蝇子草 la ma ying zi cao

Herbs perennial, 15–30 cm tall. Stems sparsely caespitose, ascending, simple, apically sparsely glandular hairy. Cauline leaves narrowly oblanceolate, 4–10 cm × 5–10 mm, both surfaces glabrous, shortly ciliate, base attenuate into long petiole, apex acuminate; cauline leaves usually 2–4 pairs, narrowly oblanceolate to lanceolate, slightly clasping at base. Cymes 2–4-flowered. Pedicel 1–4 cm, densely glandular hairy; bracts lanceolate, densely white villous. Calyx campanulate, 1.1–1.4 cm × 5–7 mm, base rounded, margin membranous, ciliate. Androgynophore 1–2 mm, glabrous. Petals lilac, 1.7–2 cm; claws oblanceolate, glabrous, auricles orbicular; limbs exerted beyond calyx, orbicular, deeply bifid to middle, lobes entire or weakly laciniate; coronal scales broad, toothed. Stamens included; filaments glabrous. Styles included. Capsule ellipsoid-ovoid, 1–1.2 cm, shorter than calyx. Seeds 2–2.5 mm, minutely striate, grooved abaxially. Fl. Jul–Aug, fr. Aug–Sep.

• Alpine grasslands, scrub; (2900–)3400–4000 m. Sichuan, NW Yunnan (Dêqên Xian, Zhongdian Xian).

This species is like a miniature *Silene stewartiana*, but its seeds are wingless.

**82. *Silene pubicalycina*** C. Y. Wu, Acta Bot. Yunnan. 4: 151. 1982.

毛萼蝇子草 mao e ying zi cao

Herbs perennial, 15–30 cm tall. Roots robust, with root crown. Stems sparsely clustered, ascending, simple, white villous, apically glandular hairy. Basal leaves saccate-oblongate, 5–10 cm × 5–12 mm, both surfaces and margin white villous, midvein prominent, base attenuate into long petiole, apex acute, rarely rounded, mucronulate; cauline leaves oblanceolate or lanceolate, small, 3–5 cm × 4–7 mm. Cymes few flowered. Pedicel 1–3 cm, villous, glandular hairy; bracts ovate-lanceolate, small, herbaceous, densely white villous. Calyx campanulate, 1.2–1.5 cm × 4–6 mm, densely villous; longitudinal veins obscure, lilac, cohering at apex; calyx teeth triangular-ovate, 3–4 mm, margin membranous, ciliate, apex rounded or obtuse. Androgynophore 2–3 mm, glabrous. Petals red, ca. 1.8 cm; claws oblanceolate, ca. 1.2 cm, glabrous, with auricles; limbs exerted beyond calyx, ovate, ca. 6 mm, deeply bifid to middle; lobes narrowly ovate, margin entire, slightly emarginate; coronal scales broad, ca. 1.5 mm, with few indented teeth. Stamens included; filaments glabrous. Styles included. Capsule ovoid, shorter than calyx. Seeds dark brown, reniform, minutely tuberculate. Fl. Jul–Aug, fr. Aug–Sep.

• Forests; ca. 3200 m. SW Sichuan, SE Xizang (Zayü Xian), NW Yunnan (Zhongdian Xian).

This species is very similar to *Silene lamarum*, but has a longer androgynophore and different seed morphology.

**83. *Silene atrocastanea*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 181. 1912.

栗色蝇子草 li se ying zi cao

*Melandrium atrocastaneum* (Diels) Handel-Mazzetti; *Silene cupiformis* C. L. Tang.

Herbs perennial, 15–30 cm. Roots brown, robust, conical, with root crowns. Stems solitary or sparsely clustered, erect or ascending, simple, densely villous. Basal leaves saccate-obovoid or elliptic-oblongate, 5–10(–15) × 2.5–4 cm, sparsely villous, margin ciliate, 3-veined, base attenuate into petiole, apex acute or acuminate; distal leaves sessile, ovate-lanceolate to lanceolate, small. Cymes 3–8-flowered; flowers subopposite, slightly nutant. Pedicel 1–1.5 cm, slender, densely villous; bracts lanceolate, herbaceous, villous. Calyx broadly campanulate, 1.8–2 cm, margin membranous, ciliate, apex acute or obtuse. Androgynophore ca. 5 mm, glabrous or early villous. Petals dark violet, ca. 1.8 cm; claws obovate-lanceolate, ca. 1 cm, ciliate at base, auricles orbicular; limbs exerted beyond calyx, broadly obovate, ca. 8 mm, deeply 4-lobed; lobes linear-lanceolate, subequal, apex acute; coronal scales nearly suborbicular, 1.5–2 mm, with few round teeth. Stamens included; filaments sparsely villous. Styles included. Seeds 2–2.5 mm, winged. Fl. Aug–Sep.

• Stony alpine grasslands; (3000–)3200–4000 m. NW Yunnan (Lijiang Naxi Zu Zizhixian).

**84. *Silene stewartiana*** Diels, Notes Roy. Bot. Gard. Edinburgh 5: 180. 1912.

大子蝇子草 da zi ying zi cao

Herbs perennial, 25–35 cm. Roots slightly spiniform, often multicrowned. Stems sparsely caespitose, ascending, apically slightly villous. Basal leaves narrowly oblanceolate, 7–12 × 0.7–1.5 cm, both surfaces and margin glabrous, midvein prominent, base attenuate into long petiole, apex acute; cauline leaves narrowly lanceolate, 6–8 cm × 5–10 mm, glabrous, base slightly clasping, apex acuminate. Cymes 2–5-flowered; flowers slightly nutant. Pedicel 1–3 cm, densely glandular hairy; bracts linear-lanceolate, 1–1.5 cm, glandular villous. Calyx campanulate, 2–2.5 cm × 7–10 mm, loose in fruit; longitudinal veins dark green, violet glandular hairy; calyx teeth triangular-ovate, 5–8 mm, margin membranous, apex obtuse. Androgynophore 3–4 mm, glabrous. Petals lilac, 2.3–2.5 cm; claws nearly cuneate, glabrous, auricles orbicular; limbs exerted beyond calyx, elliptic, ca. 10 × 4–5 mm, deeply 4-lobed; medial lobes narrowly elliptic, margin entire; lateral lobes spreading, linear, small; coronal scales oblong, 2- or 3-toothed. Stamens included; filaments glabrous. Styles included. Capsule ovoid, 1–1.4 cm, shorter than calyx. Seeds 2–2.5 mm, winged. Fl. Aug–Sep, fr. Oct.

• Alpine grasslands; 2800–3900 m. NW Yunnan (Lijiang Naxi Zu Zizhixian).

**85. *Silene scopulorum*** Franchet, Bull. Soc. Bot. France 33: 423. 1886.

岩生蝇子草 yan sheng ying zi cao

*Lychnis scopulorum* (Franchet) Diels; *Melandrium scopulorum* (Franchet) Handel-Mazzetti.

Herbs perennial, 20–25 cm tall. Roots cylindrical, multi-crowned. Stems sparsely caespitose, ascending, simple, shortly villous. Basal leaves oblanceolate, 4–7 cm × 5–10 mm, glabrous, margin ciliate, midvein prominent, base attenuate into long petiole, apex acute; cauline leaves lanceolate or ovate-lanceolate, small. Cymes few flowered; flowers slightly nutant. Pedicel 2–4 mm, villous with curved hairs; bracts ovate-elliptic, herbaceous, shortly villous. Calyx reddish, campanulate, 1.2–1.5 cm × ca. 6 mm, base rounded; longitudinal veins violet, cohering at apex, multicellular glandular hairy; calyx teeth nearly semirounded, margin membranous, ciliate, apex acute. Androgynophore ca. 1.5 mm, glabrous. Petals dark violet, 1.5–2 cm; claws oblanceolate, glabrous, with auricles; limbs exerted beyond calyx, broadly obovate, deeply 4-lobed; medial lobes narrowly elliptic, sometimes toothed or shallowly bifid; lateral lobes spreading, linear; coronal scales subsquarrose, lacinate. Stamens included; filaments glabrous. Styles included. Capsule ovoid, 8–10 mm, shorter than calyx. Seeds ca. 2.5 mm, winged. Fl. Aug–Sep, fr. Sep–Oct.

• Alpine grasslands; 3000–4000 m. NW Yunnan.

**86. *Silene melanantha*** Franchet, Bull. Soc. Bot. France 33: 423. 1886.

黑花蝇子草 *hei hua ying zi cao*

*Melandrium longipes* Handel-Mazzetti; *M. melananthum* (Franchet) Handel-Mazzetti; *Silene longipes* (Handel-Mazzetti) C. Y. Wu.

Herbs perennial, ca. 30 cm tall. Roots long conical. Stems sparsely caespitose, ascending, simple, apically pubescent. Basal leaves narrowly oblanceolate, 8–12 cm × 5–7 mm, glabrous, margin ciliate, midvein prominent, base attenuate into long petiole, apex acute; distal leaves lanceolate, small. Cymes few flowered; flowers slightly nutant. Pedicel 1–3 cm, glandular hairy; bracts small, herbaceous. Calyx violet, campanulate, 1.2–1.4 cm × 3.5–5 mm; longitudinal veins violet, cohering at apex, glandular hairy; calyx teeth triangular-ovate, mucronulate at apex. Androgynophore ca. 2 mm. Petals dark violet, 1.5–1.8 cm, exerted beyond ca. 1/3 × length of calyx, claws obovoid, glabrous, with orbicular auricles, margin erose; limbs broadly obovate, deeply 4-lobed; medial lobes broadly band-shaped, truncate at apex, sometimes toothed; lateral lobes spreading, linear; coronal scales subsquarrose, indented-toothed. Stamens included; filaments glabrous. Styles included. Capsule ovoid, 8–10 mm. Fl. Aug.

• Grasslands; 2800–3800(–4200) m. NW Yunnan.

This species is probably best regarded as conspecific with *Silene scopulorum*, because it is impossible to find sharp discontinuities in any of the characters used for separating them.

**87. *Silene delavayi*** Franchet, Bull. Soc. Bot. France 33: 424. 1886.

西南蝇子草 *xi nan ying zi cao*

*Lychnis delavayi* (Franchet) Diels; *Melandrium delavayi* (Franchet) Handel-Mazzetti.

Herbs perennial, 20–40(–60) cm tall. Roots conical. Stems sparsely caespitose, ascending, simple, apically densely glandular hairy. Basal leaves elliptic-lanceolate, 3–8(–12) × 1–1.7 (–2.5) cm, minutely pubescent, ciliate, midvein obvious, densely pubescent, base attenuate into long petiole, sometimes nearly cuneate, apex acute or obtuse; cauline leaves usually 2–4 pairs, violet, lanceolate, 1.5–3 cm. Cymes many flowered; flowers slightly nutant. Pedicel shorter than calyx, densely violet glandular hairy; bracts lanceolate, herbaceous. Calyx narrowly campanulate or cylindrical-campanulate, 1–1.5(–2) cm × 4–5 mm, densely violet glandular hairy, longitudinal veins violet; calyx teeth triangular-lanceolate, 4–6 mm. Androgynophore ca. 2 mm, glabrous. Petals red or dark violet, (1.5–)2–2.5(–3) cm; claws narrowly cuneate, glabrous, auricles triangular; limbs exerted beyond calyx, nearly orbicular, shallowly bifid or emarginate; lobes nearly ovate, erose at apex, sometimes lateral part of limb 1-toothed at base; coronal scales narrowly elliptic, apex erose. Stamens slightly exerted; filaments glabrous. Capsule globose-ovoid, ca. 1.5 cm, shorter than calyx. Seeds dark brown, reniform, 1.2–1.5 mm, minutely tuberculate, with long,

sharp tubercles toward abaxial side. Fl. Jul–Aug, fr. Sep–Oct.

• Mountain grasslands; below 3800 m. NW Yunnan.

This species is used medicinally.

**88. *Silene longicornuta*** C. Y. Wu & C. L. Tang, Acta Bot. Yunnan. 4: 149. 1982.

长角蝇子草 *chang jiao ying zi cao*

Herbs perennial, 7–15 cm tall. Roots robust. Stems solitary or sparsely clustered, erect, simple, rarely branched at base, densely villous and glandular hairy. Basal leaves oblanceolate, 5–12 × 1–2 cm, glabrous, margin long ciliate, midvein conspicuous, base attenuate into long petiole, apex acute or acuminate; cauline leaves 1 or 2 pairs, sessile, ovate-lanceolate, smaller than basal leaves. Cymes many flowered, rarely 2- or 3-flowered. Pedicel 1–2.5 cm, dense hairy with multicellular, violet glandular hairs; bracts ovate or ovate-lanceolate, 8–15 mm, herbaceous, densely glandular villous. Calyx narrowly campanulate, 1.2–1.7 cm × ca. 5 mm, densely violet glandular hairy, longitudinal veins violet; calyx teeth triangular-lanceolate, 3–4 mm, margin membranous, ciliate, apex acute. Androgynophore 1–2 mm, glabrous. Petals violet, to 2.5 cm; claws slightly exerted beyond calyx, white, cuneate-oblanceolate, 1–1.3 cm, glabrous, auricles orbicular, margin erose; limbs obovate, deeply 4-lobed to 2/3 of petals; medial lobes broadly band-shaped, sometimes emarginate at apex; lateral lobes linear, small; coronal scales lanceolate. Stamens included; filaments glabrous. Styles included. Capsule globose. Seeds reniform, ca. 1 mm. Fl. Sep–Oct.

• Stony fissures in mountains; ca. 2500 m. SW Sichuan, W Yunnan.

**89. *Silene oblanceolata*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 11: 227. 1920.

倒披针叶蝇子草 *dao pi zhen ye ying zi cao*

*Melandrium oblanceolatum* (W. W. Smith) Handel-Mazzetti.

Herbs perennial, 15–30 cm tall. Roots slightly robust. Stems solitary or sparsely clustered, erect or ascending, simple, densely hairy with violet, nodiferous glandular hairs, apically viscid. Basal leaves usually violet, oblanceolate, 5–15 × 1–2 cm, both surfaces slightly coarse, sometimes sparsely hairy, margin ciliate, midvein prominent, base attenuate into long petiole, apex acute or rarely obtuse; cauline leaves 2 or 3 pairs, sessile, ovate or ovate-lanceolate, margin ciliate, apex acuminate. Cymes many flowered; flowers slightly nutant. Pedicel 5–15 mm, densely violet glandular hairy; bracts ovate-lanceolate or lanceolate, glandular hairy. Calyx narrowly campanulate, 1–1.2 cm × 3–3.5 mm, densely violet glandular hairy, closed in fruit, longitudinal veins cohering at apex; calyx teeth triangular-lanceolate, ca. 4 mm, glandular hairy. Androgynophore very short, villous. Petals included, lilac or red, ca. 1 cm; claws saccate or oblanceolate, glabrous, auricle erose at margin; limbs nearly orbicular, deeply 4-lobed; median lobes orbicular, shallowly bifid

to middle of petals; lateral lobes linear-orbicular, small; coronal scales suborbicular to orbicular. Stamens included; filaments glabrous. Styles included. Capsule ellipsoid, ca. 1 cm, slightly longer than calyx. Seeds reniform, minutely tuberculate. Fl. Aug–Sep, fr. Oct.

• Stony substrate of forests; 2400–3600 m. SW Sichuan, N Yunnan.

**90. *Silene lineariloba*** C. Y. Wu, Acta Bot. Yunnan. 4: 148. 1982.

线瓣蝇子草 xian ban ying zi cao

Herbs perennial, 6–15 cm tall. Roots robust. Stems sparsely caespitose, erect, simple, densely glandular hairy. Basal leaves saccate-oblancheolate, 3–6 × 0.8–1.2 cm, both surfaces subglabrous, margin ciliate, midvein prominent, base attenuate into petiole, apex obtuse, rarely rounded; cauline leaves 1 or 2 pairs oblanceolate to lanceolate, small. Cymes multiflorous. Pedicel 5–15 mm, glandular villous; bracts ovate-lanceolate, ca. 1 cm, herbaceous, glandular villous. Calyx narrowly campanulate, 9–11 × 3–3.5 mm, densely glandular villous, longitudinal veins not prominent; calyx teeth triangular, ca. 2 mm, ciliate, apex obtuse.

Androgynophore 1–1.5 mm, pubescent. Petals pale red, 1.2–1.4 cm; claws oblanceolate, glabrous, exauriculate; limbs exerted beyond calyx, subsaccate, 3–5 mm, deeply 4-lobed to below middle of petal; lobes linear, nearly equal in size; lateral lobes spreading; coronal scales nearly flabellate, ca. 0.6 mm, margin entire or slightly emarginate. Stamens included; filaments glabrous. Styles exerted after anthesis. Capsule ovoid, ca. 8 mm, shorter than calyx. Fl. Sep–Oct.

• About 2900 m. NW Yunnan.

Species nos. 91–110 belong to an informal group that approximates to *Silene* sect. *Cucubaloideae* Edgeworth & J. D. Hooker. As circumscribed here, this is a distinct, probably monophyletic group characterized by more or less creeping habit and fleshy, fasciculate root tubers.

The species of the “*Cucubaloideae*” group can be described as follows. Herbs perennial, with clustered, tuberous roots. Stems diffuse, supine or ascending, branched. Inflorescence a dichasial cyme. Flowers bisexual, erect. Calyx tubular-clavate or campanulate, appressed to capsule in fruit, 10-veined, veins usually violet, usually coherent at calyx teeth. Androgynophore short. Petals red, rarely white, bifid, sometimes 1-toothed on each side; coronal scales present. Styles 3. The group is distributed in China, the Himalayas, and Indo-China.

**91. *Silene tatarinowii*** Regel, Bull. Soc. Imp. Naturalistes Moscou 34(2): 562. 1861.

石生蝇子草 shi sheng ying zi cao

*Melandrium tatarinowii* (Regel) Y. W. Tsui; *Silene potaninii* Maximowicz; *S. tatarinowii* f. *albiflora* (Franchet) Kitagawa; *S. tatarinowii* var. *albiflora* Franchet.

Herbs perennial, finely retrorse pubescent throughout. Roots yellowish, cylindrical or spiniform. Stems ascending or supine, branched, sometimes with adventitious roots at nodes. Leaves lanceolate or ovate-lanceolate, rarely ovate, 2–5 × 0.5–1.5(–2) cm, both

surfaces sparsely villous, margin shortly ciliate, 1- or usually 3-veined, base broadly cuneate or attenuate into petiole, apex acuminate. Dichasial cymes lax, broad. Pedicel 8–30(–50) mm, slender, pubescent; bracts lanceolate, herbaceous. Calyx tubular-clavate, 1.2–1.5 cm. 3–5 mm; longitudinal veins green, rarely violet, glabrous or sparsely pubescent; calyx teeth triangular, margin membranous, shortly ciliate, apex acute, rarely obtuse. Androgynophore ca. 4 mm, glabrous. Petals white, oblanceolate, claws not or slightly exerted beyond calyx, glabrous, exauriculate; limbs obovate, ca. 7 mm, shallowly bifid to 1/4 of limbs, each with 1 small linear lobe or slender tooth on two lateral lobes; coronal scales elliptic, margin entire. Stamens prominently exerted; filaments glabrous. Styles prominently exerted. Capsule ovoid or narrowly ovoid, 6–8 mm, shorter than calyx. Seeds gray-brown, reniform, ca. 1 mm. Fl. Jul–Aug, fr. Aug–Oct.

• Scrub, forested stony mountains, rock fissures; 800–2900 m. Gansu, Guizhou, Hebei, Henan, Hunan, Nei Mongol, Ningxia, Shanxi, Shaanxi, Sichuan.

**92. *Silene platyphylla*** Franchet, Bull. Soc. Bot. France 33: 419. 1886.

宽叶蝇子草 kuan ye ying zi cao

*Melandrium platyphyllum* (Franchet) Handel-Mazzetti; *M. praticola* (W. W. Smith) Pax & K. Hoffmann; *Silene platyphylla* f. *congesta* Franchet; *S. platyphylla* f. *involutrata* Franchet; *S. platyphylla* f. *paniculifera* Franchet; *S. platyphylla* var. *praticola* (W. W. Smith) C. Y. Wu; *S. praticola* W. W. Smith.

Herbs perennial. Roots cylindrical. Stems diffuse, 60–100 cm tall, much branched, pubescent. Leaves ovate, 6–8 × 3–5 cm, abaxially pubescent, margin ciliate, conspicuously 3- or 5-veined, base nearly rounded or shallowly ovate, apex acute. Lower internodes in dichasium long, subsequent short. Pedicel 6–30 mm, hirtellous. Bracts ovate, herbaceous, densely pubescent. Calyx tubular-clavate, ca. 1.5 cm, densely spinose hairy at veins; teeth triangular-lanceolate, margin membranous, ciliate, apex acute or acuminate. Androgynophore 1–2 mm. Petals white or pale red, ca. 2 cm; claws slightly exerted beyond calyx, oblanceolate, glabrous; limbs obovate, bifid to middle; lobes elliptic, with a linear lobe or narrow tooth on each side (shallowly 4-lobed in var. *praticola*). Stamens slightly exerted; filaments glabrous. Styles prominently exerted. Capsule ovoid, 8–10 mm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm, with lateral auricular pits. Fl. Jun–Aug, fr. Aug–Sep.

• Forest margins, scrub; 2400–2700(–3200) m. SW Sichuan, W Yunnan.

The primary dichasial branch is very long and subsequent ones short, especially so in f. *involutrata*. The species is not divided here, but Wu Zhengyi (editor’s note) prefers to maintain var. *praticola*.

**93. *Silene yunnanensis*** Franchet, Bull. Soc. Bot. France 33: 425. 1886.

云南蝇子草 yun nan ying zi cao

Herbs perennial. Roots clustered, long cylindrical. Stems diffuse, 20–80 cm, much branched, pubescent. Leaves sessile, gray-green abaxially, green or gray-green adaxially, lanceolate, 3–7 × 0.6–1.5 cm, base rounded to broadly cuneate, apex acuminate, pubescent with small tubercle-based hairs. Cymes few flowered, dense to rather lax; flowers erect, ca. 2 cm in diam. Pedicel 5–20 mm, densely pubescent; bracts lanceolate, herbaceous, villous. Calyx tubular-clavate, ca. 15 × 3.5 mm; longitudinal veins green or violet, densely spinose hairy, or ± evenly pubescent; calyx teeth triangular-lanceolate, margin membranous, ciliate, apex acuminate. Androgynophore 2–3 mm, glabrous. Petals pale red to white, 2–2.5 cm; claws slightly exerted, oblanceolate, glabrous; limbs broadly obovate, deeply bifid to middle; lobes obovate, with 1 small linear lobe on lateral side at base; coronal scales elliptic, margin entire. Stamens exerted; filaments glabrous. Styles exerted. Capsule narrowly ovoid, 1–1.2 cm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm, with long papillae abaxially. Fl. Jun–Jul, fr. Jul–Sep.  $2n = 24^*$ .

• Forests, fields; (2400–)2700–3400(–3900) m. NW Yunnan.

**94. *Silene adenocalyx*** F. N. Williams, J. Linn. Soc., Bot. 38: 403. 1909.

腺萼蝇子草 xian e ying zi cao

Herbs perennial. Stems supine, 25–40 cm, multibranched, densely short glandular hairy, sometimes glandular hairy apically. Leaves ovate-lanceolate to lanceolate, 1.5–3 cm × 5–12 mm, both surfaces densely pubescent, margin glandular hairy, 1- or 3-veined, base rounded, apex acuminate. Dichasial cymes 3–10-flowered, lax. Pedicel 1–2.5 cm, slender, glandular villous; bracts lanceolate, 8–10 mm, pubescent. Calyx tubular, 1.4–1.5 cm × 4–5 mm, truncate at base, slightly constricted above, glandular villous, longitudinal veins dark green; calyx teeth narrowly lanceolate, ca. 5 mm, shortly glandular hairy, margin shortly ciliate, apex acuminate. Androgynophore ca. 3 mm, glabrous. Petals white or pale red; claws cuneate-oblanceolate, ca. 1 cm, glabrous; auricles triangular, margin entire or slightly erose; limb narrow, ca. 5 mm, bifid to 1/2, lobes entire or lacinate. Stamens and styles prominently exerted. Capsule ca. 8 mm. Seeds not seen. Fl. Jul–Aug.

• Alpine scrub grasslands, shifting screens; 3200–4300 m. C and SE Xizang.

**95. *Silene trachyphylla*** Franchet, Bull. Soc. Bot. France 33: 417. 1886.

糙叶蝇子草 cao ye ying zi cao

Herbs perennial. Roots cylindrical, with robust root crowns. Stems supine or ascending, branched, densely glandular villous. Leaves narrowly lanceolate or lanceolate, 3–5 cm × 6–8(–12) mm, both surfaces

hirtellous, margin coarsely ciliate, midvein prominent, base attenuate, apex acuminate. Dichasial cymes large, many flowered. Pedicel nearly as long as to longer than calyx, densely glandular hairy; bracts lanceolate. Calyx tubular, 1.5–2 cm × ca. 3.5 mm, glandular hairy, umbilicate at base, longitudinal veins violet; calyx teeth triangular-ovate, ca. 2 mm, villous, margin membranous, ciliate, apex obtuse. Androgynophore ca. 3 mm, glabrous. Petals pale red, ca. 2.5 cm; claws slightly exerted beyond calyx, oblanceolate, glabrous, auricles not prominent; limbs obovate, 8–10 mm, shallowly bifid; lobes ovate, with 1 small dentate lobe on lateral side of limbs; coronal scales ovoid, sometimes lacinate. Stamens slightly exerted; filaments glabrous. Styles slightly exerted. Capsule ovoid-globose, 1–1.2 cm. Seeds reniform. Fl. Jul–Aug, fr. Aug–Oct.

• Scrub; 3100–3900 m. Qinghai, Sichuan, Xizang, Yunnan.

The type could not be found by the present authors. The taxon described above is similar to *Silene adenocalyx*, but has much larger and broader petals and fits reasonably well with the type description of *S. trachyphylla*.

**96. *Silene asclepiadea*** Franchet, Bull. Soc. Bot. France 33: 422. 1886.

掌脉蝇子草 zhang mai ying zi cao

*Lychnis adenantha* (Franchet) Diels; *Melandrium*

*adenanthum* (Franchet) Handel-Mazzetti; *M.*

*asclepiadeum* (Franchet) Handel-Mazzetti ex Pax & K. Hoffmann; *M. kermesinum* (W. W. Smith) Handel-Mazzetti; *M. viscidulum* (Franchet) F. N. Williams var. *szechuanensis* (F. N. Williams) Handel-Mazzetti; *Silene adenantha* Franchet; *S. asclepiadea* var. *glutinosa* Franchet; *S. kermesina* W. W. Smith; *S. lutea* Franchet; *S. szechuanensis* F. N. Williams.

Herbs perennial, basally crispate-puberulent to subglabrous, apically glandular hairy. Roots clustered, cylindrical, fleshy. Stems diffuse, to 1 m, much branched. Leaves sessile, broadly ovate or ovate-lanceolate, 4–7 × 2–4 cm, glabrous or sparsely hairy abaxially and at veins adaxially, conspicuously 3- or 5-veined. Dichasial cymes lax and broad; proximal pedicels to 5 cm, subsequent ones much shorter, densely glandular hairy; bracts ovate-lanceolate, herbaceous, glandular pubescent. Calyx campanulate, 8–12(–13) × ca. 4 mm, base rounded, slightly inflated in late maturity, densely violet glandular villous at veins; calyx teeth triangular-ovate, subobtuse and shortly ciliate. Androgynophore 1–2 mm, glabrous. Petals ca. 1.5 cm; claws cuneate, glabrous, erose above; limbs violet or pale pink, 4-lobed; medial lobes narrowly orbicular; lateral lobes linear, small; coronal scales subsquarrose, margin dentate or entire. Stamens and styles exerted; filaments glabrous. Styles 3. Capsule ovoid, ca. 1 cm, shorter than calyx. Seeds reniform, with auricular pit. Fl. Jul–Aug, fr. Aug–Oct.



- Scrub grasslands, forest edges; 1300–3900 m. Guizhou, Sichuan, Yunnan.

The type material of *Silene kermesina* is slightly heterogeneous; the specimen at BM has slightly larger and less hairy calyces, whereas the specimen at E fits well with our concept of *S. asclepiadea*.

**97. *Silene khasiana*** Rohrbach, *Linnaea* 36: 258. 1869.

卡西亚蝇子草 *ka xi ya ying zi cao*

Herbs perennial, glandular villous throughout. Stems sparsely caespitose, ascending, 50–80 cm, branched. Leaves ovate-lanceolate, 2.5–5 × 1–2.5 cm, conspicuously 3- or 5-veined, both surfaces glabrous or sparsely hairy, margin ciliate, base rounded, apex acuminate. Cymes few flowered, lax (smaller lateral inflorescences often 1-flowered). Pedicel 1–3 cm; bracts lanceolate, herbaceous. First branch in dichasium sometimes very long (to 15 cm). Calyx campanulate, 8–10 mm, glandular hairy; longitudinal veins dark green, cohering at apex; calyx teeth lanceolate, apex acute. Androgynophore ca. 2 mm, glabrous. Petals pale red, claws narrow, subequaling calyx, glabrous, limbs deeply bifid, lobes obtuse; coronal scales small. Filaments glabrous. Capsule ovoid, ca. 8 mm. Seeds reniform.

Xizang [India, ?Nepal].

**98. *Silene lhassana*** (F. N. Williams) Majumdar, *Bull. Bot. Surv. India* 15(1–2): 42. 1976.

拉萨蝇子草 *la sa ying zi cao*

*Melandrium lhassanum* F. N. Williams; *Silene nyingchiensis* L. H. Zhou.

Herbs perennial. Stems ascending to upright, usually violet, 30–60 cm, branched, pubescent, apically glandular hairy, with sterile leafy branches. Leaves ovate-lanceolate, 1.5–3.5 cm × 5–15 mm, both surfaces densely hairy, margin ciliate, 1- or 3-veined basally, margin undulate. Dichasial cymes densely glandular pubescent. Flowers erect, 1–1.3 cm in diam. Pedicel 5–15 mm; bracts lanceolate, 2–10 mm, herbaceous. Calyx campanulate, 1–1.2 cm × 3.5–5 mm, densely glandular hairy, truncate at base, slightly inflated in late maturity, longitudinal veins violet; calyx teeth triangular, ca. 2.5 mm. Androgynophore ca. 3.5 mm, glabrous. Petals violet, 1–1.5 cm; claws exerted beyond calyx, oblanceolate, glabrous, with broad auricles; limbs ca. 4.5 mm, bifid nearly to 1/2; lobes elliptic, margin entire. Stamens exerted; filaments glabrous. Styles ca. 8 mm, prominently exerted. Capsule ovoid, 6–8 mm, shorter than calyx. Seeds dark brown, triangular-reniform, ca. 1.2 mm. Fl. Jul–Aug, fr. Aug–Sep.

- Alpine scrub grasslands; 2900–4600 m. C and S Xizang.

**99. *Silene grandiflora*** Franchet, *Bull. Soc. Bot. France* 33: 427. 1886.

大花蝇子草 *da hua ying zi cao*

*Melandrium grandiflorum* (Franchet) Y. W. Tsui.

Herbs perennial. Stems diffuse, 40–50 cm, branched, pubescent. Leaves lanceolate or narrowly lanceolate, 3–6 cm × 4–15 mm, both surfaces slightly coarse, sparsely villous at veins, margin ciliate, midvein prominent, base

suborbicular or broadly cuneate, apex acuminate.

Dichasial cymes lax and broad; flowers erect, to 2.5 cm in diam. Pedicel 4–7 cm, slender, pubescent; bracts lanceolate, herbaceous, villous. Calyx pale green or red, tubular-clavate, ca. 20 × 4 mm, umbilicate at base, sparsely pubescent, veins not prominent; calyx teeth ovate-lanceolate, ca. 2.5 mm, margin membranous, apex obtuse. Androgynophore 5–8 mm, glabrous. Petals red, 2–2.5 cm; claws narrowly oblanceolate, glabrous, auriculate; limbs obcordate, shallowly bifid, lobes suborbicular; coronal scales orbicular. Stamens exerted; filaments glabrous. Styles exerted. Capsule ovoid-globose, shorter than calyx. Seeds reniform. Fl. Jul–Aug.

- Scrub grasslands; ca. 2000 m. Yunnan.

This species is similar to *Silene cardiopetala*, but has narrower leaves and stiffer hairs on the calyx.

*Silene grandiflora* var. *xerobatica* W. W. Smith (*Notes Roy. Bot. Gard. Edinburgh* 11: 224. 1920) has a creeping habit, more crowded, linear leaves, shorter internodes in the inflorescence, fewer flowers, and shorter pedicels. It is perhaps best regarded as a separate species.

*Silene grandiflora* is cultivated as an ornamental.

**100. *Silene cardiopetala*** Franchet, *Bull. Soc. Bot. France* 33: 419. 1886.

心瓣蝇子草 *xin ban ying zi cao*

*Melandrium cardiopetalum* (Franchet) Handel-Mazzetti.

Herbs perennial. Roots clustered, cylindrical or spiniform. Stems diffuse, supine, slender, 40–100 cm, branched, pubescent. Leaves elliptic, 2–3(–4) × 0.7–1.5(–1.7) cm, both surfaces subglabrous, abaxially sparsely villous at midvein, ciliate, midvein prominent, base attenuate, apex acute. Dichasial cymes lax and broad, with flowers ca. 2 cm in diam. Pedicel longer, rarely shorter, than calyx, densely villous; bracts linear-lanceolate, sparsely villous. Calyx tubular-clavate, 1.5–1.8 cm × ca. 3 mm, longitudinal veins obscure, villous or subglabrous; calyx teeth ovate-lanceolate, margin membranous, apex obtuse. Androgynophore 5–8 mm, glabrous. Petals pale red, 2–2.5 cm; claws cuneate, glabrous, with auricles; limbs obcordate, 6–7 mm in diam., slightly emarginate or shallowly bifid at apex; lobes broadly ovate, margin entire; coronal scales orbicular, margin entire. Stamens slightly exerted; filaments glabrous; anthers dark violet. Styles exerted. Capsule ovoid-globose, ca. 1 cm, shorter than calyx. Seeds reniform. Fl. Jul–Sep, fr. Aug–Oct.

- Scrub, forest margins; 700–3200 m. SW Sichuan, SE Xizang (Zayü Xian), NW Yunnan.

**101. *Silene lichiangensis*** W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 11: 225. 1920.

丽江蝇子草 *li jiang ying zi cao*

*Melandrium lichiangense* (W. W. Smith) Handel-Mazzetti.

Herbs perennial. Roots clustered, spiniform. Stems diffuse, supine, 20–40 cm, multibranched, basally eglandular pubescent, apically glandular hairy. Leaves elliptic or elliptic-oblongate, 3–6 × 1–2(–2.5) cm, subglabrous, midvein prominent, cuneate or gradually narrowed to base, apex acute. Dichasia 1–5(–7)-flowered. Pedicel 1.5–5 cm, densely violet glandular pubescent; bracts ovate or lanceolate, 3–15 mm, herbaceous, abaxially and margin violet glandular hairy. Calyx campanulate, 1.3–1.5 cm × ca. 5 mm, glandular hairy, veins violet, base truncate; calyx teeth triangular, ca. 3.5 mm. Androgynophore 1–2 mm, glabrous. Petals ca. 2 cm; claws oblanceolate, glabrous, with auricles; limbs pale red, obovate, deeply bifid to middle; lobes rounded, sometimes with 2 or 3 teeth. Stamens and styles included; filaments glabrous. Styles 3. Fl. Jul–Aug.

• Grasslands near forest margins; 2900–3600 m. NW Yunnan (Lijiang Naxi Zu Zizhixian).

**102. *Silene monbeigii*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 11: 226. 1920.

沧江蝇子草 *cang jiang ying zi cao*

*Silene cardiopetala* Franchet var. *deqenensis* C. Y. Wu; *S. zangdongensis* L. H. Zhou.

Herbs perennial. Roots clustered, cylindrical. Stems supine, 15–50 cm, slender, multibranched, retrorsely pubescent. Leaves narrowly elliptic or oblanceolate-elliptic, 5–15(–30) × 4–7 mm, thin, both surfaces pubescent, ciliate, midvein prominent, base attenuate into short petiole, sometimes with short, sterile axillary branches. Dichasial cymes several flowered; ca. 1.5 cm in diam. Pedicel 7–17 mm, with glandular and eglandular hairs; bracts lanceolate, herbaceous. Calyx narrowly cylindrical, ca. 15 × 2 mm, glandular hairy, clavate in fruit, longitudinal veins violet; calyx teeth lanceolate, apex acute. Androgynophore ca. 5 mm, glabrous. Petals ca. 1.5 cm; claws subequaling calyx, glabrous, narrowly cuneate; limbs pale red, obovate, ca. 6 mm, shallowly bifid, sometimes with 1 obscure thin tooth on lower part of lateral lobes; coronal scales ovoid or suborbicular, margin entire. Stamens slightly exerted; filaments glabrous. Styles exerted. Capsule ovoid-globose, 8–10 mm, shorter than calyx. Seeds dark brown, reniform, with lateral auricular pits. Fl. Jul–Aug, fr. Aug–Sep.

• Forest margins; 1900–3400 m. Sichuan, SE Xizang, Yunnan. This species is very similar to *Silene rosiflora*, but has a markedly longer calyx and androgynophore.

**103. *Silene rosiflora*** Kingdon-Ward ex W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 111. 1913.

粉花蝇子草 *fen hua ying zi cao*

*Silene salweenensis* W. W. Smith; ?*S. sinowatsonii* W. W. Smith.

Herbs perennial. Stems sparsely clustered, diffuse, ascending, 40–60 cm, multibranched, pubescent, apically glandular hairy. Leaves elliptic, sometimes nearly obovate, 2–4 × 1–2 cm, abaxially villous,

adaxially papillose or sparsely hairy, margin coarsely ciliate, midvein prominent, base cuneate, apex rounded or obtuse, mucronulate; distal leaves smaller. Dichasia 7–15-flowered, rachis densely glandular hairy. Pedicel 2–4 cm, glandular hairy; bracts lanceolate or linear. Calyx campanulate, 1.1–1.3 cm × ca. 3.5 mm, umbilicate at base; longitudinal veins violet, densely glandular hairy; calyx teeth suborbicular or obtusely triangular, ca. 1.5 mm, sparsely villous.

Androgynophore ca. 2 mm, glabrous. Petals pale red, ca. 2 cm; claws exerted ca. 5 mm beyond calyx, oblanceolate, glabrous, auricles inconspicuous; limbs nearly orbicular, ca. 5 mm, shallowly 4-lobed; medial lobes square or elliptic, entire, lateral lobes dentate; coronal scales narrowly elliptic, small, margin entire. Stamens included, ca. 1/2 as long as calyx; filaments glabrous. Styles prominently exerted. Capsule ovoid-ellipsoid, ca. 8 mm. Fl. Sep, fr. Oct.

• Grasslands of forest margins; 2800–3000 m. Sichuan, Yunnan. This species is similar to *Silene monbeigii*, but has a shorter calyx and androgynophore. *Silene sinowatsonii* has been reported to have the chromosome number  $2n = 24$ .

**104. *Silene batangensis*** Limpricht in Pax, Repert. Spec. Nov. Regni Veg. Beih. 12: 363. 1922.

巴塘蝇子草 *ba tang ying zi cao*

*Melandrium batangense* (Limpricht) Pax & K. Hoffmann.

Herbs perennial. Roots clustered, spiniform. Stems supine or ascending, 20–35 cm, multibranched, 25–35 cm, densely shortly glandular hairy, apically viscid. Leaves lanceolate-linear, 2–3 cm × 1.5 × 3.5(–5) mm, both surfaces pubescent, margin ciliate, midvein prominent, base cuneate, apex obtuse or acute. Dichasial cymes 3–7-flowered, densely glandular hairy; flowers erect, 1.6–2 cm in diam. Pedicel 1–1.8 cm, slender, glandular hairy; bracts lanceolate, herbaceous. Calyx tubular-clavate, 1.2–1.5 cm, densely pubescent, viscid, longitudinal veins violet; calyx teeth triangular-lanceolate, villous, margin membranous, apex obtuse. Androgynophore 2–3 mm, glabrous. Petals included in calyx, pale red; claws oblanceolate, glabrous, auricles inconspicuous; limbs obovate, 5–6 mm, shallowly bifid; filaments glabrous. Styles slightly exerted. Capsule ovoid, 6–8 mm, shorter than calyx. Seeds reniform, abaxially smooth. Fl. Jul–Aug, fr. Aug–Oct.

• Forest margins, coastal scrub grasslands; 2500–3500 m. W Sichuan, E Xizang.

The type has not been seen by the present authors.

**105. *Silene napuligera*** Franchet, Pl. Delavay. 82. 1889.

纺锤蝇子草 *fang chui ying zi cao*

*Melandrium napuligerum* (Franchet) Handel-Mazzetti; *M. rubicundum* Handel-Mazzetti; *Silene rubicunda* Franchet (1886), not A. Dietrich (1835); *S. rubicunda* var. *revoluta* Franchet.

Herbs perennial. Roots clustered, spiniform. Stems ascending, 20–50 cm, multibranched, pubescent, basally retrorsely pubescent, apically glandular hairy. Leaves often with short, sterile axillary branches; leaf blade lanceolate-linear, 1.5–6 cm × 1.5–4(–9) mm, both surfaces densely pubescent, margin ciliate, sometimes revolute, midvein prominent, base cuneate, apex acute. Dichasial cymes lax, densely glandular hairy, lateral dichasia sometimes present. Pedicel 5–20 mm, densely glandular hairy; bracts lanceolate-linear, glandular hairy. Calyx tubular, ca. 15 × 2.5 mm, densely to sparsely glandular hairy, veins violet; calyx teeth triangular, margin membranous, ciliate, apex acute. Androgynophore 3–5 mm, glabrous. Petals pale red, ca. 2 cm; claws slightly exerted beyond calyx, oblanceolate, glabrous, auricles obscure; limbs obovate, bifid, 1-toothed on each lateral side, lobes ovate; coronal scales orbicular, apex obtuse. Stamens exerted; filaments glabrous. Styles exerted. Capsule ovoid, ca. 1 cm, shorter than calyx. Seeds reniform, grossly tuberculate and slightly grooved abaxially. Fl. May–Jun, fr. Jun–Jul.

• Scrub grasslands; 1500–3600 m. Sichuan, Xizang, Yunnan. Three forms of *Silene napuligera* have been distinguished based on differences in leaf morphology. These correspond to *Silene rubicunda* Franchet (not A. Dietrich), with lanceolate leaves to 6 cm long; the type of *S. napuligera*, with linear-lanceolate leaves to 3 cm long; and *S. rubicunda* var. *revoluta*, with revolute, linear leaves. However, we do not find any characters consistently correlated with these entities, and we therefore treat them as conspecific.

*Silene habaensis* H. Chuang (in C. Y. Wu et al., Fl. Yunnan. 6: 837. 1995) is said to be similar to *S. bilingua*, but differs in having a tubular-clavate calyx and 2-lobed petals. We have seen only a scanty paratype (at KUN), which agrees with these characters. This specimen also differs in having 1- or 2-flowered inflorescences and very long pedicels; moreover, the leaves are reminiscent of plants that have been called *S. rubicunda* var. *revoluta*, but the calyx is about 20 mm.

**106. *Silene principis*** Oxelman & Lidén in Oxelman et al., Novon 11: 323. 2001.

宽瓣蝇子草 kuan ban ying zi cao

*Silene platypetala* Bureau & Franchet, J. Bot. (Morot) 5: 22. 1891, not Otth (1824); *Melandrium platypetalum* F. N. Williams.

Herbs perennial. Roots clustered, cylindric. Stems diffuse, supine, slender, 40–60 cm, multibranched, shortly retrorsely pubescent. Leaves linear or ligulate, 1–3(–4) cm × 1.5–3(–4) mm, abaxially pubescent at veins, adaxially coarse, margin ciliate, midvein prominent, base cuneate, apex acuminate. Dichasial cymes diffuse, few flowered; flowers erect, ca. 2 cm in diam. Pedicel 1–3 cm, pubescent; bracts lanceolate, herbaceous, densely pubescent. Calyx campanulate, 1–1.3 cm × ca. 3.5 mm, densely pubescent; calyx teeth triangular-ovate. Androgynophore 3–4 mm. Petals white, rarely pale pink; claws included or slightly exerted beyond calyx, oblanceolate, glabrous, broadly

triangular above; limbs obcordate, 6–8 × 5–6 mm; coronal scales narrowly elliptic, apex obtuse. Stamens slightly exerted; filaments glabrous; anthers dark violet. Styles slightly exerted beyond calyx. Capsule ovoid, ca. 8 mm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm. Fl. Jun–Aug, fr. Aug–Sep.

• Scrub grasslands; 1600–4000 m. W Sichuan.

*Wilson 3751a* (K) has smaller petal limbs and fasciculate leaves.

**107. *Silene bilingua*** W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 11: 220. 1920.

双舌蝇子草 shuang she ying zi cao

*Melandrium bilinguum* (W. W. Smith) Pax & K. Hoffmann.

Herbs perennial. Roots clustered, spiniform. Stems diffuse, supine, ca. 8 cm, slender, multibranched, basally sparsely pubescent, apically glandular hairy. Leaves linear, 2–3(–6) cm × 1–2(–3) mm, both surfaces subglabrous, margin ciliate, midvein prominent, apex acute. Dichasial cymes multiflowered. Pedicel 1–2.5 cm, glandular hairy; bracts narrowly lanceolate, 5–10 mm, glandular hairy. Calyx campanulate, (8–)10–12 × ca. 3 mm, densely glandular hairy, base rounded, longitudinal veins violet; calyx teeth triangular, apex obtuse. Androgynophore ca. 2 mm, glabrous. Petals pale red, ca. 1.5 cm; claws included in calyx, oblanceolate, glabrous, auricles spreading to flabellate, margin erose; limbs obovate, bifid; lobes ligulate, ca. 3.5 mm, 1-toothed on each lateral side; coronal scales subsquarrose, small, margin entire or emarginate. Stamens exerted beyond calyx; filaments glabrous. Styles exerted. Capsule ovoid, ca. 8(–10) mm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm. Fl. Jun–Aug, fr. Jul–Sep.

• Forests, alpine meadows; (2200–)3100–4100 m. Sichuan, Xizang, NW Yunnan.

**108. *Silene viscidula*** Franchet, Bull. Soc. Bot. France 33: 421. 1886.

粘萼蝇子草 nian e ying zi cao

*Melandrium lankongense* (Franchet) Handel-Mazzetti;

*M. viscidulum* (Franchet) F. N. Williams; *Silene asclepiadea* Franchet var. *dumicola* (W. W. Smith) C. L. Tang); *S. bodinieri* H. Léveillé; *S. dumicola* W. W. Smith; *S. lankongensis* Franchet; *S. mairei* H. Léveillé.

Herbs perennial, pubescent throughout. Roots clustered, dark brown, cylindric. Stems diffusely branched, to 80 cm, apically glandular hairy. Leaves elliptic, 3–6 cm, 1.5–2 × as long as broad, both surfaces slightly tuberculate-scabrid or shortly pubescent, margin shortly ciliate, midvein prominent, base cuneate or attenuate into short petiole, apex acute. Dichasia large, the first internodes very long (often 5–10 cm), distally dense, densely glandular villous; flowers erect, 1–1.2 cm in diam. Pedicel of first flower subequaling or longer than calyx, pedicels of other flowers usually shorter than calyx; bracts ovate-lanceolate, herbaceous. Calyx campanulate, (6–)8–10 mm, densely glandular villous, base rounded, longitudinal veins violet; calyx teeth

ovate-lanceolate, apex acute. Androgynophore 1–2 mm, glabrous, furrowed. Petals pale red, 1–2 cm, claws exserted 2–5 mm beyond calyx, oblanceolate, glabrous, auricles not prominent, limb bifid to ca. 1/2; lobes narrow, sometimes with 1 slender lateral tooth. Stamens and styles prominently exserted (2–3 mm); filaments glabrous. Capsule ovoid, 5–8 mm, shorter than calyx. Seeds dark brown to black, globose-reniform, ca. 1 mm. Fl. Jul–Aug, fr. Sep–Oct.

• Scrub grasslands; (1200–)1500–3200 m. Guizhou, Sichuan, SE Xizang, Yunnan.

*Silene viscidula* is a complex that could be split into about three species differing, for example, in indumentum, inflorescence structure, size of calyx and petals, and degree of exsertion of petals. One form has a thyrse (including the types of *Silene bodinieri*, *S. dumicola*, and *S. mairei*) and multicellular, often glandular hairs together with recurved, short, unicellular, eglandular hairs; another form has terminal dichasia and multicellular, often glandular hairs only. The latter form also has smaller flowers (calyx 7–8 mm) and less exserted petal claws (by 2–3 mm). This applies also to the type of *S. viscidula* at P. Another species in the vicinity of this complex is *S. phoenicodonta*, which is distinguished by its small flowers and fringed petal auricles.

The roots are used medicinally.

**109. *Silene phoenicodonta*** Franchet, Bull. Soc. Bot. France 33: 422. 1886.

红齿蝇子草 hong chi ying zi cao

Herbs perennial. Roots clustered, cylindrical, dark brown. Stems sparsely caespitose, ascending, 25–50 cm, branched, basally sparsely villous, apically sparsely hairy. Proximal cauline leaves greenish, ovate-elliptic or obovate-elliptic, 5–10 (–12) × 2–3 cm, glabrous or sparsely villous at veins, margin shortly pubescent, 3-veined, base attenuate into petiole, apex acute at apex; distal leaves sessile, often ovate, small. Dichasia diffuse, few flowered; flowers erect. Pedicel and rachis villous, sparsely glandular hairy; bracts ovate-lanceolate, villous. Calyx ovoid-campanulate, 6–8 mm, base rounded; longitudinal veins green or violet, sparsely hirtellous and glandular hairy, inflated after anthesis; calyx teeth violet, ovate, apex acute. Androgynophore ca. 1 mm, glabrous. Petals dark violet, 1–1.2 cm; claws included in calyx, subsaccate, glabrous, flabellately inflated above, lacinate; limbs obovate, deeply bifid to middle, lobes ovate or nearly band-shaped; coronal scales orbicular-linear, small. Stamens included or slightly exserted; filaments glabrous. Styles exserted. Capsule broadly ovoid, 7–10 mm, shorter than calyx. Seeds dark brown, reniform, ca. 1 mm, thickened. Fl. Jun–Jul, fr. Jul–Aug.

• Scrub, stream edges; 1600–2600 m. E and S Sichuan, NW Yunnan.

**110. *Silene otodonta*** Franchet, Bull. Soc. Bot. France 33: 426. 1886.

耳齿蝇子草 er chi ying zi cao

Herbs perennial, eglandular pubescent. Roots clustered, cylindrical. Stems diffuse, 30–70 cm, multibranched, shortly pubescent. Leaves with short, sterile axillary branches; leaf blade elliptic, 2–3 cm × 6–15 mm, both surfaces pubescent, ciliate, midvein prominent, base cuneate or attenuate into short petiole, apex acute. Inflorescence a thyrse, sometimes composed of two orders, cymules usually 5–7-flowered, dense. Pedicel 1–10 (–20) mm, pubescent; bracts linear-lanceolate, herbaceous, blackish pointed, pubescent. Flowers ca. 1.5 cm in diam. Calyx tubular or narrowly campanulate, 1.2–1.5 cm × ca. 3.5 mm, pubescent, base umbilicate; calyx teeth blackish violet, ovate-lanceolate, ca. 3.5 mm, apex acuminate. Androgynophore ca. 2.5 mm, glabrous. Petals ca. 1.8 cm; claws included in calyx, oblanceolate, glabrous, with broad auricles; limbs pale red or white, ca. 7 mm, bifid to middle; lobes linear, with 1 narrow lateral tooth; coronal scales lanceolate, 1.5–2 mm, apex acute. Stamens and styles exserted; filaments glabrous. Styles 3. Capsule subovoid, 8–10 mm. Seeds reniform. Fl. Aug–Sep.

• Forests; 2100–2500 m. Sichuan, Yunnan.

*Silene otodonta* is easily distinguished from all other species by numerous lateral dichasia, forming a complex paniculate thyrse, and its acuminate flower buds, appearing pointed because of the protruding, blackish violet calyx teeth.

