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WANG WT, YANG ZZ. Three new species of *Delphinium* L. (Ranunculaceae) from Xinjiang [J]. *Guihaia*, 2021, 41(3): 327–333.



新疆翠雀花属三新种

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摘要: 该文描述了在新疆维吾尔自治区发现的毛茛科翠雀花属三新种, 包括隶属于密花翠雀花组高翠雀花亚组的二新种, 即布尔津翠雀花 (*Delphinium buerjinense* W. T. Wang & Z. Z. Yang) 和尼勒克翠雀花 (*D. nilekeense* W. T. Wang & Z. Z. Yang), 以及隶属于翠雀花组须花翠雀花亚组的一新种, 即哈巴河翠雀花 (*D. habaheense* W. T. Wang & Z. Z. Yang); 此外, 还分别描述了此三新种与近缘种的区别特征。

关键词: 毛茛科, 翠雀花属, 新种, 新疆

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Three new species of *Delphinium* L. (Ranunculaceae) from Xinjiang

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Abstract: Three species of the genus *Delphinium* L. (Ranunculaceae), *D. buerjinense* W. T. Wang & Z. Z. Yang and *D. nilekeense* W. T. Wang & Z. Z. Yang, belonging to Sect. *Elatopsis* Subsect. *Elata*, and *D. habaheense* W. T. Wang & Z. Z. Yang, belonging to Sect. *Delphinastrum* Subsect. *Pogonantha*, are described as new from Xinjiang Uygur Autonomous Region. The diagnostic differences between the three species and their allies are given respectively.

Key words: Ranunculaceae, *Delphinium*, new species, Xinjiang

布尔津翠雀花 图 1

Delphinium buerjinense W. T. Wang & Z.

Z. Yang, sp. nov. Fig. 1

(Sect. *Elatopsis* Huth Subsect. *Elata* W. T.

Wang)

Ob racemos floribus 10–20 densissimis praeditos

species nova haec est similis *Delphinium gongliuensi*

W. T. Wang & Z. Z. Yang, a quo caulibus puberulis, foliorum laminis prope basin 3-partitis, racemis simplicibus, bracteolis anguste linearibus apice haud apiculatis, carpellis glabris praeclare differt. In *D. gongliuensi*, caules hirtelli, foliorum laminae leviter ultra medium 3-partitae, racemi compositi, bracteolae lineares apice longe apiculatae, et carpellorum ovaria

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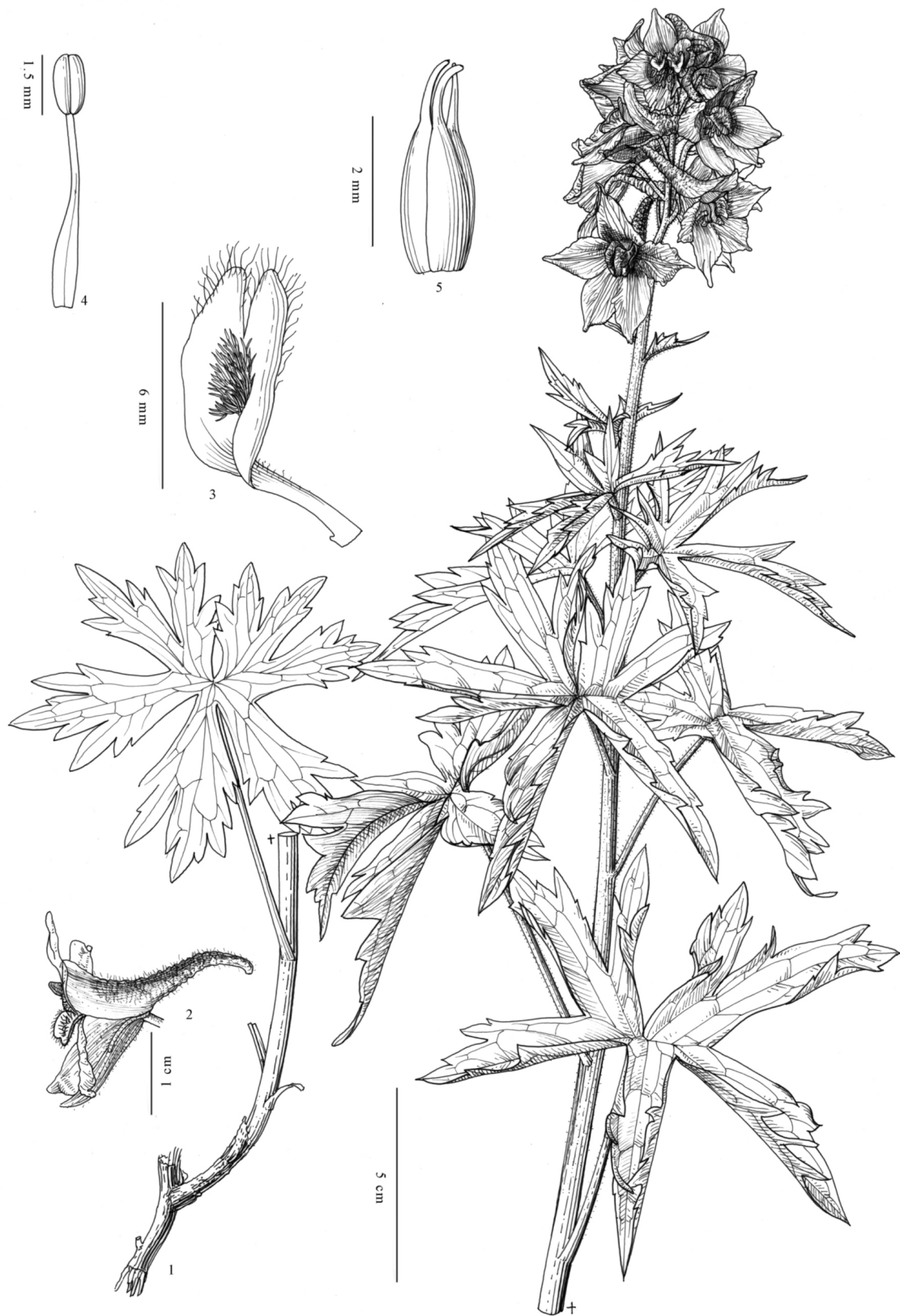


图 1 布尔津翠雀花 1. 开花植株; 2. 花; 3. 退化雄蕊; 4. 雄蕊; 5. 雌蕊群。(据 holotype; 孙英宝绘图)

Fig. 1 *Delphinium buerjinense* W. T. Wang & Z. Z. Yang 1. Flowering plant; 2. Flower; 3. Staminode; 4. Stamen; 5. Gynoecium. (From holotype; drawn by Y. B. Sun)

puberula sunt.

Perennial herbs, 29–40 cm tall. Stems simple, puberulous, above base 4–5 mm across. Basal leaves 1–2; blades papery, pentagonal, 3 × 4.5–6 cm, at base deeply cordate, 3-parted to near base, central primary lobe obovate-rhombic, 3-lobed, with secondary lobes 1–2-lobulate, lateral primary lobes flabellate, unequally 3-parted, on both surfaces sparsely puberulous and mixed with glandular hairs; petioles 5–6 cm long. Cauline leaves similar to basal leaves, but larger, 4–6 × 9–10 cm, with central lobes rhombic or narrowly rhombic, and with petioles 2–7 cm long. Raceme terminal, 4–8 cm long, very densely 10–20-flowered; bracts linear, ca. 1 cm long; pedicels 0.3–1 cm long, with rachis and bracteoles densely puberulous and mixed with glandular hairs, above with narrow-linear bracteoles 5–7 mm long. Flower: Sepals blue-purple, adaxially glabrous, abaxially puberulous and mixed with short glandular hairs, limb of upper sepal narrow-ovate, 14 × 6 mm, spur subulate, 14–15 mm long, lateral sepals long elliptic, 15 × 6 mm, lower sepals obliquely obovate, 13 × 8 mm. Petals 2, black, glabrous. Staminodes 2, black; limbs oblong-elliptic, 6 × 3.5 mm, 2-lobed, on the middle densely barbate; claws 6 mm long. Stamens numerous, glabrous; filaments 6 mm long, below narrow-triangular, above filiform; anthers 1.5 × 0.8 mm. Carpels 3, glabrous; ovaries 2 × 0.8 mm, with inconspicuous netted nerves; styles 1.1–1.5 mm long.

新疆 (Xinjiang): 布尔津县, 喀纳斯湖 (Buerjin County, Kanas Lake), alt. 1 820 m, 山坡草地, 萼片蓝紫色, 有腺毛 (in grassy place on slope, sepals blue-purple, with glandular hairs), 2020–07–06, 杨宗宗 (Yang Zongzong) 3191 (**holotype**, PE; isotype, Yang's Herbarium); 同地 (same locality), alt. 1 820 m, 山坡草地, 萼片近紫色 (in grassy place on slope, sepals subpurple), 2020–07–06, 杨宗宗 3190 (paratype, Yang's Herbarium)。

此种的总状花序有 10~20 朵极为密集的花, 因此与也具此特征的巩留翠雀花 (*Delphinium gongliuense* W. T. Wang & Z. Z. Yang) 相似, 与后者的区别在于此种的茎被短柔毛, 叶片 3 深裂达近基部, 总状花序简单, 小苞片狭条形, 顶端不具细尖头, 心皮无毛。在巩留翠雀花, 茎被微硬毛, 叶片 3 深裂稍超过中部, 总状花序复杂, 小苞片条形, 顶端具长细尖头, 心皮子房被短柔毛 (王文采和杨宗宗, 2020)。

尼勒克翠雀花 图 2

Delphinium nilekeense W. T. Wang & Z. Z. Yang, sp. nov. Fig. 2

(Sect. *Elatopsis* Huth Subsect. *Elata* W. T. Wang)

Ob foliorum laminarum forma, staminodii limbum nigrum subquadratum 4 mm longum apice 2-lobulatum species nova haec est affinis *Delphinium iliense* Huth, a quo caulibus dense hispidis, racemis compositis, pedicellis dense puberulis, sepalis persistentibus, carpellorum ovariiis dense puberulis, seminibus dense transversaliter anguste lamellatis distinguitur. In *D. iliense*, caules sparse hispidi, racemi simplices, pedicelli glabri, carpellorum ovaria subglabra, semina tantum ad angulos anguste alata sunt.

Perennial herbs, 90–108 cm tall. Stems simple, above base 6–10 mm across, densely spreading-hispid. Basal leaves 1–2, long petiolate; blades papery, pentagonal, ca. 9 × 15 cm, 3-parted to 2 cm above base, central primary lobe rhombic, 4.5 cm broad, secondary lobes with few triangular lobules and acute teeth, lateral primary lobes obliquely flabellate, ca. 9 cm broad, unequally 2-cleft; surfaces adaxially and abaxially appressed-puberulous and mixed with glandular hairs; petioles 15–24 cm long. Lower cauline leaves similar to basal ones, and upper cauline leaves smaller and shortly petiolate. Compound raceme terminal, 24–38 cm long, terminal raceme 14–20 cm long, 14–28-flowered, lateral racemes 3–4, 7–10 cm long, densely 6–10-flowered; lower bracts similar to upper cauline leaves, upper bracts smaller, 3-sect, with entire narrow-lanceolate

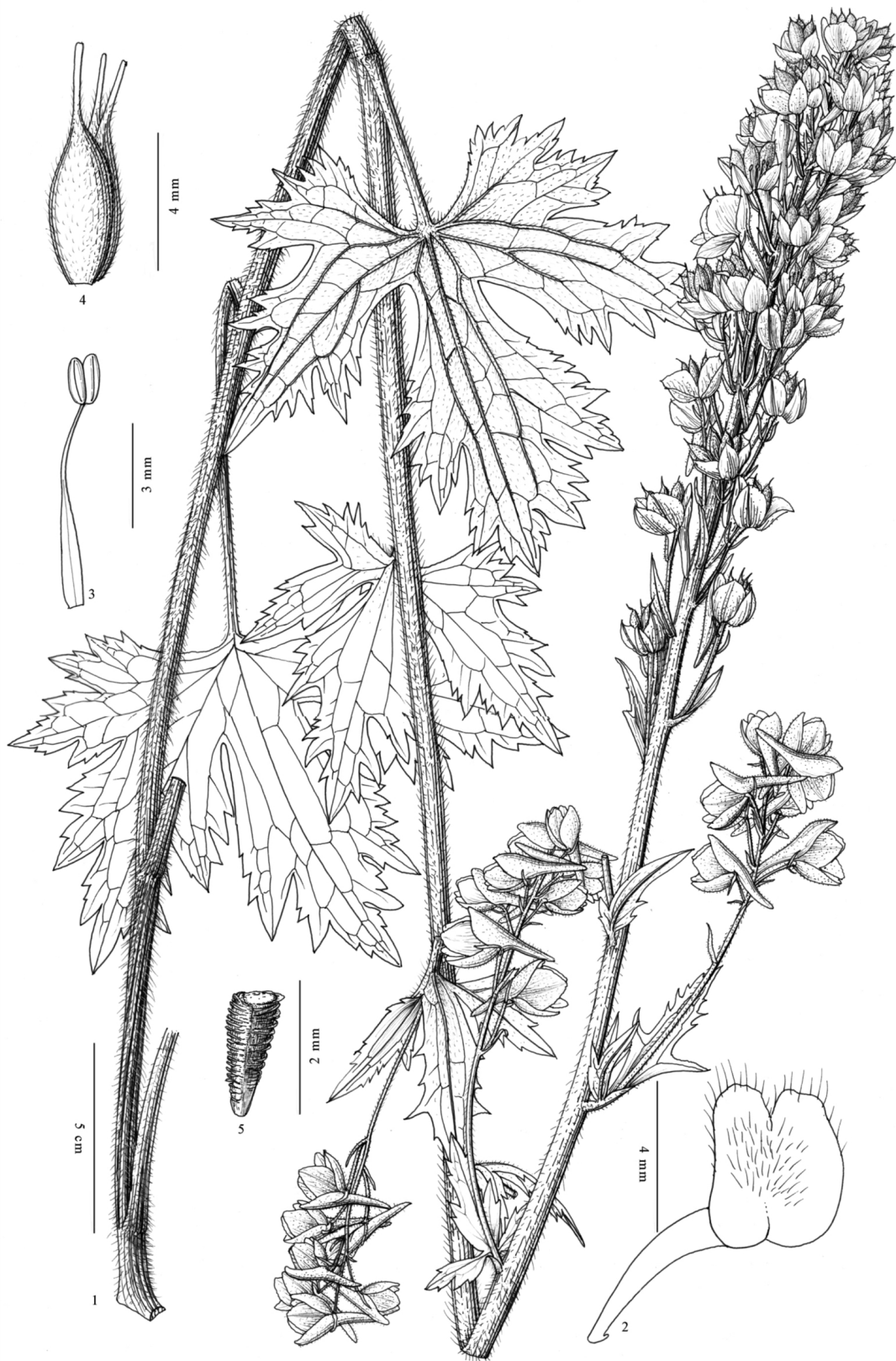


图2 尼勒克翠雀花 1. 开花植株; 2. 退化雄蕊; 3. 雄蕊; 4. 雌蕊群; 5. 种子。(据 holotype; 孙英宝绘图)
 Fig. 2 *Delphinium nilekeense* W. T. Wang & Z. Z. Yang 1. Flowering plant; 2. Staminode; 3. Stamen;
 4. Gynoecium; 5. Seed. (From holotype; drawn by Y. B. Sun)

segments; pedicels 0.4–2.8 cm long, with rachis and bracteoles densely puberulous and mixed with yellow glandular hairs, above or near apex with linear bracteoles 4–6 mm long. Flower: Sepals blue-purple, persistent, adaxially glabrous, abaxially densely appressed-puberulous and mixed with glandular hairs, limb of upper sepal broad-ovate, ca. 11–12 × 8.5 mm, spur subulate, 11–12 mm long, lateral sepals orbicular-ovate, ca. 13 × 9 mm, lower sepals broad-elliptic, ca. 12 × 7.5 mm. Petals 2, black, glabrous. Staminodes 2; limbs black, subquadrate, ca. 4 × 3.5 mm, on apex 2-lobulate, on the middle densely barbate, on above margin long ciliate; claws whitish, ca. 5 mm long. Stamens numerous, glabrous; filaments 7 mm long, below narrow-triangular, above filiform; anthers ca. 1.2 × 1 mm. Carpels 3; ovaries ellipsoidal, 4 × 2 mm, densely puberulous; styles 2.5 mm long, glabrous. Follicles narrow-ovoid, ca. 11 × 4 mm, densely puberulous; persistent styles 3 mm long, glabrous. Seeds black, inconspicuously cuneate-tetrahedral, 2 mm long, densely transversely narrow-lamellate.

新疆 (Xinjiang): 尼勒克县, 独库公路, 乔尔玛 (Nileke County, Duku High-way, Qiaoerma), alt. 2 420 m, 山坡草地, 萼片蓝紫色, 宿存, 有黄色腺毛 (in grassy place on slope, sepals blue-purple, persistent, with yellow glandular hairs), 2019–08–07, 杨宗宗 (Yang Zongzong) 2531 (**holotype**, PE; isotype, Yang's Herbarium); 同地 (same locality), alt. 2 380 m, 山坡, 萼片蓝紫色, 混生腺毛 (on slope, sepals blue-purple, mixed with glandular hairs), 2019–08–07, 杨宗宗 2538 (paratype, Yang's Herbarium)。

此种的叶片五角形, 3 深裂, 退化雄蕊瓣片黑色, 近方形, 顶端 2 微裂, 因此与也具上述特征的伊犁翠雀花 (*Delphinium iliense* Huth) 在亲缘关系上相近; 与后者的区别在于此种的茎密被糙硬毛, 总状花序复杂, 花梗密被短柔毛, 萼片宿存, 心皮子房也密被短柔毛, 种子具横向密集的狭片。在伊犁翠雀花, 茎疏被糙硬毛, 总状花序简单, 花梗

无毛, 萼片脱落, 心皮子房近无毛, 种子只沿棱有狭翅 (王文采, 2019–2020)。

哈巴河翠雀花 图 3

Delphinium habaheense W. T. Wang & Z. Yang, sp. nov. Fig. 3

(Sect. *Delphinastrum* DC. Subsect. *Pogonantha* W. T. Wang)

Ob foliorum laminas 3-partitas, pedicellos pilis flavis glandulosis obtectos prope vel ad apicem 2-bracteolatos, bracteolas anguste lineares, petala et staminodia caerulea, gynoeceum ex carpellis tribus constans species nova haec est affinis *Delphinium umbroso* Hand.-Mazz., a quo racemis compositis, calcari sepalino limbo sepali superi levissime longiore, staminodiorum limbis apice 2-lobatis, carpellis glabris differt. In *D. umbroso*, racemi simplices, calcar sepalinum limbo sepali superi multo longius, staminodiorum limbi apice ad dimidium 2-fidi, carpellorum ovaria pilis brevibus praedita sunt.

Perennial herbs ca. 100 cm tall. Stems simple, below glabrous, above with very sparse short hairs. Basal leaf small; blade broad-ovate, ca. 2.5 × 2.8 cm, 3-parted; petiole 6 cm long. Lower cauline leaves long petiolate; blades papery, pentagonal, 6.5–7 × 11–13 cm, at base deeply cordate, 3-parted to 1 cm above base, central primary lobe broad-rhombic, ca. 4.4 cm broad, 3-lobed, secondary lobes with lobules narrow-ovate or linear-lanceolate and at apex mostly slightly obtuse, lateral primary lobes larger, flabellate, ca. 9 cm broad, unequally 3- or 2-parted, with upper secondary lobes similar to central primary lobe, other secondary lobes smaller, on both surfaces puberulous and mixed with glandular hairs; petioles ca. 13 cm long. Upper cauline leaves similar to lower ones, but smaller, and with lobules linear-lanceolate at apex long attenuate. Compound racemes terminal, 18–40 cm long, terminal racemes 12–17 cm long, densely 30–60-flowered, lateral racemes 2–4, ca. 5 cm long, 7–10-flowered; bracts similar to upper cauline leaves; pedicels 3–10 mm long, with

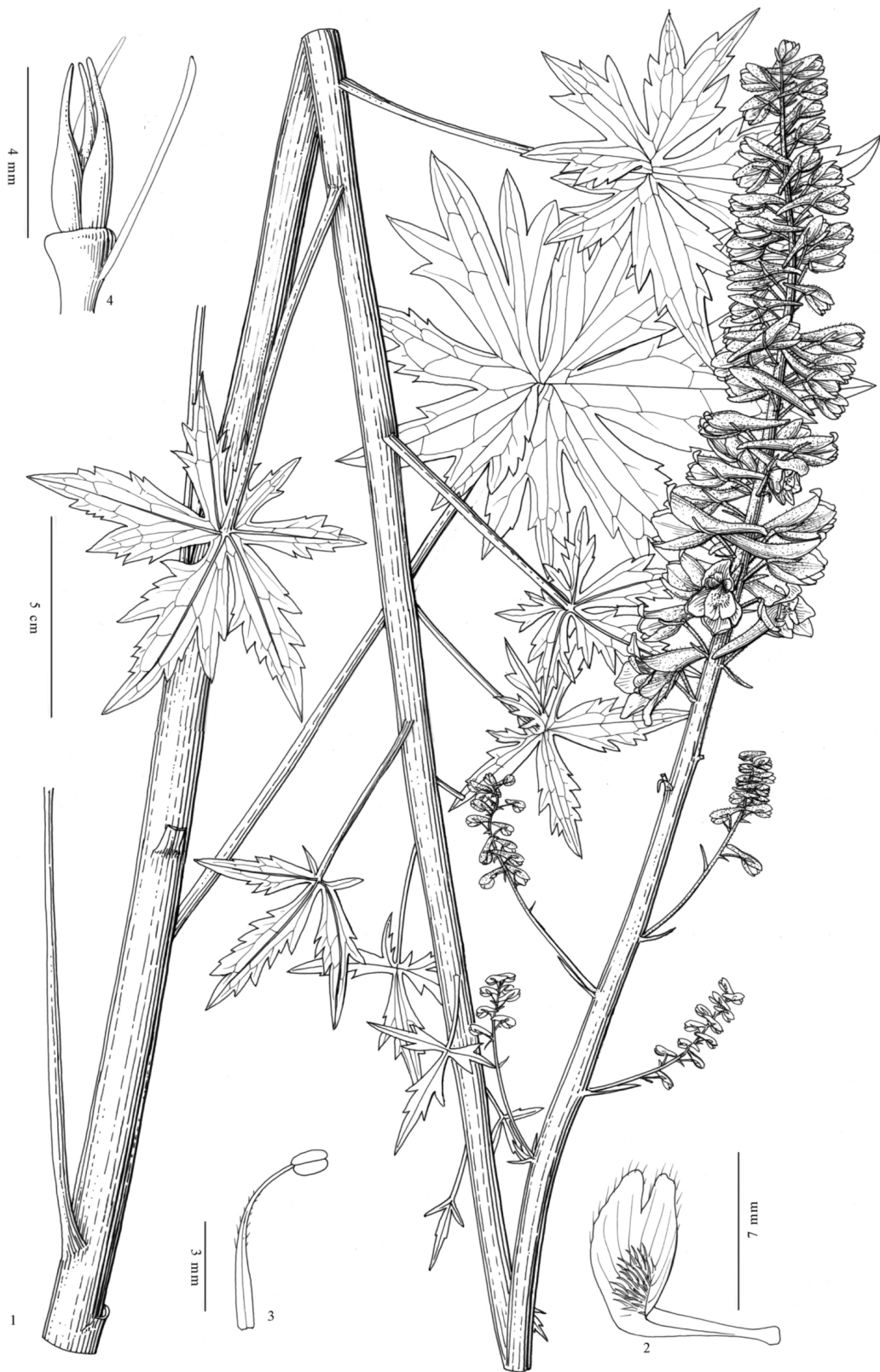


图 3 哈巴河翠雀花 1. 开花植株; 2. 退化雄蕊; 3. 雄蕊; 4. 小苞片和雌蕊群。(据 holotype; 孙英宝绘图)
 Fig. 3 *Delphinium habaheense* W. T. Wang & Z. Z. Yang 1. Flowering plant; 2. Staminode; 3. Stamen;
 4. Bracteoles and gynoecium. (From holotype; drawn by Y. B. Sun)

rachis densely appressed-puberulous and mixed with dense yellow glandular hairs, near or on apex with narrow-linear bracteoles 4–8 mm long. Flower: Sepals blue-purple, adaxially glabrous, abaxially puberulous and mixed with dense short glandular hairs, limb of upper sepal broad-ovate, 10 – 13 × 10 mm, spur subulate, 11–14 mm long, lateral sepals obovate, 14 × 8 mm, lower sepals also obovate, 12 × 7 mm. Petals 2, yellowish, glabrous. Staminodes 2, blue (sometimes blue-white); limbs subelliptic, ca. 7 × 3.8 mm, at apex 2-lobed, above base densely barbate, on above margin ciliate; claws as long as limbs. Stamens numerous; filaments 6 mm long, with a few short hairs, below narrow-triangular, above filiform; anthers broad-oblong, 0.8 × 0.4 mm, glabrous. Carpels 3, glabrous; ovaries ovate-oblong, 2.5–0.8 mm; styles 1.2–1.4 mm long.

新疆 (Xinjiang): 哈巴河县, 哈龙沟 (Habahe County, Halonggou), alt. 1 530 m, 灌丛草地, 叶绿色, 有腺毛, 萼片蓝紫色, 密被腺毛 (on bush-meadow, leaves green, with glandular hairs, sepals blue-purple, with dense glandular hairs), 2020–06–09, 杨宗宗, 刘爱民 (Yang Zongzong & Liu Aimin) 2977 (**holotype**, PE); 同地 (same locality), alt. 1 530 m, 灌丛草地, 叶绿色, 有腺毛, 萼片蓝紫色, 密被腺毛, 2020–06–09, 杨宗宗, 刘爱民 2973 (Yang's Herbarium); 同地 (same locality), alt. 1 550 m, 山坡草地, 茎上部有白霜, 叶绿色, 有腺毛, 萼片蓝紫色, 有腺毛, 退化雄蕊蓝白色, 心皮近无毛 (in grassy place on slope, stem above glaucous, leaves green, with glandular hairs, sepals blue-purple, with glandular hairs, staminodes blue-white, carpels suglabrous), 2020–06–09, 杨宗宗, 刘爱民 2962–1, 2962–2 (Yang's Herbarium)。

此种叶片 3 深裂, 花梗被黄色腺毛, 近顶端或在顶端有 2 狭条形小苞片, 花瓣和退化雄蕊蓝色, 雌蕊群由 3 枚心皮组成, 因此与也具上述特征

的阴地翠雀花 (*Delphinium unbrosium* Hand.-Mazz.) 有相近的亲缘关系; 与后者的区别在于此种总状花序复杂, 萼距比上萼片瓣片稍长, 退化雄蕊瓣片顶端 2 浅裂, 心皮无毛。在阴地翠雀花, 总状花序简单, 萼距比上萼片瓣片长的多, 退化雄蕊瓣片顶端 2 裂达瓣片的一半, 心皮的子房被短毛 (王文采, 2019; 王文采, 2020)。

致谢 翠雀花属的上萼片由瓣片 (limb) 和距 (spur) 组成, 但在本文第一作者编写的我国翠雀花属分类学著作 (王文采, 1962, 1979, 2019–2020; Wang & Warnock, 2001) 中, 均将上萼片的瓣片误称为上萼片, 最近, 苏志云教授指出这一错误描述, 对他的指正, 在此谨表示深切的感谢; 深切感谢孙英宝先生为本文绘图, 并打印稿件。

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