

华西南翠雀属 5 新种

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摘要 描述了自华西南发现的毛茛科翠雀属 5 新种: 拟毛翠雀花、朗县翠雀花、灰花翠雀花、五花翠雀花和细距翠雀花, 并给出其等与近缘种的区别特征。

关键词 毛茛科; 翠雀属; 新种; 华西南

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Five new species of the genus *Delphinium* (Ranunculaceae) from Southwest China

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Abstract Five species of the genus *Delphinium* (Ranunculaceae), *D. trichophoroides*, *D. langxianense*, *D. tephrranthum*, *D. quinqueflorum* and *D. lagarocentum*, are described as new from Southwest China. The diagnostic differences between them and their allies are given.

Key words Ranunculaceae; *Delphinium*; new species; Southwest China

中国科学院植物研究所陈又生博士近年来在西藏、云南、四川和青海等省、区进行植物区系考察, 采集到大量毛茛科植物标本, 本文作者在鉴定其中部分标本的过程中发现以下 5 个新种。

拟毛翠雀花 图 1

Delphinium trichophoroides W. T. Wang, sp. nov. Fig. 1

(Sect. *Aconitoides* W. T. Wang)

Species nova haec est arcte affinis *D. trichophoro* Franch., quod foliis basalibus et caulinis tripartitis, inflorescentiis racemosis, bracteolis apice acutis, staminodio in limbum et unguem haud conspicue differentiali facile differt.

Perennial herbs, ca. 65 cm tall. Leaves 3, all basal, long petiolate; blades papery, pentagonal, 3.5–7.5 × 6–12 cm, at base deeply cordate, 3-sect, central segment broadly rhombic, 3-fid, secondary lobes 2–3-lobulate and few-dentate, lateral

segments larger, flabellate, unequally 2–3-parted; surfaces adaxially and abaxially appressed-puberulous; petioles 12–16.5 cm long, base not delated. Scape ca. 1 cm long, 8 mm across. Panicle terminal, consisting of 3 racemes; terminal raceme elongate, ca. 45 cm long, densely 25-flowered, lateral racemes shorter, 26–32 cm long, 5–8-flowered; bracts oblong-ovate or lanceolate, 1.5–3.6 cm long, abaxially densely puberulous; raceme peduncles with rachis and pedicels densely spreading-puberulous, with hairs 0.1–0.2 mm long; pedicels 0.6–2.5 cm long, at apex 2-bracteolate; bracteoles narrow-ovate or ovate, 0.9–1.4 cm long, apex caudate. Flower erect: Sepals blue-white, adaxially glabrous, abaxially densely puberulous, with hairs 0.2–0.4 mm long; upper sepal narrow-ovate, 2–2.2 × 0.7–1 cm, spur pendulous, conic-subulate, 1.6–1.9 cm long, base 3–6 mm across; lateral and lower sepals oblong-ovate, 1.4–1.7 × 0.6–0.8 cm. Petals 2,

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图1 拟毛翠雀花 A. 植株全形; B. 退化雄蕊; C. 雄蕊; D. 雌蕊群
Fig. 1 *D. trichophoroides* A. Habit; B. Staminode; C. Stamen; D. Gynoecium (from holotype)

black, glabrous, apex 2-lobulate. Staminodes 2, black, glabrous; limbs obliquely ovate, ca. 7×4 mm, apex 2-lobulate; claws 9 mm long. Stamens numerous, glabrous; filaments linear, at apex filiform, 6–7.5 mm long; anthers oblong, 2–2.5 mm long.

Carpels 3; ovaries 5.5 mm long, densely puberulous; styles 0.8–1 mm long, glabrous.

四川(Sichuan):理塘县, 君坝乡(Litang Xian, Junba Xiang), alt. 4400 m, 灌丛草甸(bush-meadow), 花蓝白色(fls. blue-white) 2009-08-22, 陈

友生(Y. S. Chen)9546(**holotype**, PE)。

本种与毛翠雀花(*Delphinium trichophorum* Franch.)相近缘,与后者的区别:本种的叶均基生,掌状3全裂,花序圆锥状,由3个总状花序组成,小苞片顶端有尾状尖头,退化雄蕊分化成明显的瓣片和爪。在毛翠雀花,叶基生并茎生,掌状3深裂,花序总状,小苞片顶端急尖,无尾状尖头,退化雄蕊的瓣片和爪的分化不明显^[2]。

作者发现的翠雀属短距翠雀花组(Sect. *Aconitoides*)^[1-2]是翠雀属的原始群,其特征是叶分裂程度较小,掌状浅裂至深裂,不少种的萼距比萼片短,呈圆锥状钻形,退化雄蕊无毛,瓣片和爪的分化不明显。此组原知有7种(西昌翠雀花 *D. xichangense* W. T. Wang, 短距翠雀花 *D. forrestii* Diels, 光叶翠雀花 *D. leiophylla* (W. T. Wang) W. T. Wang, 毛翠雀花 *D. trichophorum* Franch., 狭序翠雀花 *D. wrightii* Chen, 长苞翠雀花 *D. longibracteolatum* W. T. Wang 和尖距翠雀花 *D. oxycentrum* W. T. Wang)。本种主要分布于四川西部、云南西北和西藏东部,只一种,毛翠雀花由西藏东部和四川西部向北达青海东部和甘肃中部^[3-4]。本种的发现使本组增至8种。本种的萼距比萼片稍短,显示出本种的原始系统地位,但叶掌状全裂,以及退化雄蕊的瓣片和爪的分化明显,却又说明本种比其他7种更为进化。

朗县翠雀花 图2:A-D

Delphinium langxianense W. T. Wang, sp. nov. Fig. 2: A-D

(Sect. *Elatopsis* Huth subsect. *Brevicalcarata* Huth)

Species nova haec est affinis *D. vestito* Wall. ex Royle, quod caulibus retrorse strigulosis et patule hispidis, foliis majoribus usque ad 5 cm longis 8.2 cm latis, sepalis caerulescenti-purpurellis, calcari sepalino tubuloso-conico 1.1-1.3 cm longo, staminodiorum limbis ventro centroque luteo-barbatis, carpellorum ovarii pubescentibus recedit.

Perennial herbs. Stems 15-45 cm tall, above base ca. 3.2 mm across, with petioles and raceme rachis spreading-puberulous, simple. Basal leaves ca. 4, and cauline leaves 1-3, long petiolate; blades subcoriaceous, reniform, 1-2 × 1.5-3.6 cm, at base cordate, 3-lobed not to or to the middle,

central primary lobe broadly obtrapeziform, 3-lobed or 3-rounded-dentate, lateral primary lobes larger, flabellate, unequally 2-lobed, margin rounded-dentate, on both surfaces appressed-pubescent; petioles 1.2-8.5 cm long. Racemes terminal, 14-24 cm long, 7-8-flowered; basal bract foliaceous, other bracts linear, 1.2-2 cm long; pedicels 3.5-12 cm long, spreading-puberulous, at apex 2-bracteolate; bracteoles narrow-triangular or narrow-ovate, 6-7 mm long. Flower ca. 3.5 cm long: Sepals adaxially glabrous, abaxially densely sericeous, venose; upper sepal broad-ovate, 1.6-2 × 0.9-1.5 cm, spur subulate, 1.6-1.8 cm long, straight or slightly decurved, base 3.2-4.5 mm across; lateral sepals broad-obovate, 1.6-1.8 × 0.8-1.2 cm; lower sepals similar to lateral sepals, slightly smaller. Petals 2, black, glabrous, apex 2-lobulate. Staminodes 2, black; limbs ca. 10 mm long, 2-fid, adaxially sparsely yellowish-villous; claws 9 mm long, glabrous. Stamens numerous, glabrous; filaments lanceolate-linear, above filiform, 7.5-8.5 mm long; anthers oblong, 1.8-2 mm long. Carpels 3, glabrous; ovaries 5 mm long; styles 2 mm long.

西藏(Xizang):朗县,金东乡,来义村(Lang Xian, Jindong Xiang, Laiyi Cun), alt. 4620 m, 杜鹃灌丛下(under *Rhododendron* bush), 2012-09-10, FIPH Expedition 12-1102 (**holotype** and isotype, PE)。

本种与浅裂翠雀花(*Delphinium vestitum* Wall. ex Royle)在亲缘关系上相近,与后者的区别:本种的茎被开展短柔毛,叶较小,长达2 cm,宽达3.6 cm,萼片,萼距较长,钻形,长1.6-1.8 cm,退化雄蕊的瓣片腹面疏被淡黄色长柔毛,不被髯毛,心皮无毛。在浅裂翠雀花,茎被反曲短糙伏毛和开展硬毛,叶较大,长达5 cm,宽达8.2 cm,萼片淡蓝紫色,萼距较短,筒状圆锥形,长1.1~1.3 cm,退化雄蕊瓣片腹面中央被黄色髯毛,心皮子房被柔毛^[2]。

在翠雀属的大多数种,退化雄蕊瓣片在腹面基部之上有一簇或密或疏的黄色或白色髯毛,这可能是适应昆虫传粉而形成的毛被产物。本种以及下面描述的灰花翠雀花和五花翠雀花的退化雄蕊的瓣片不具一簇黄色或白色髯毛,而是在腹面中央从下到上疏被长柔毛或柔毛,这种现象在翠雀属罕见。

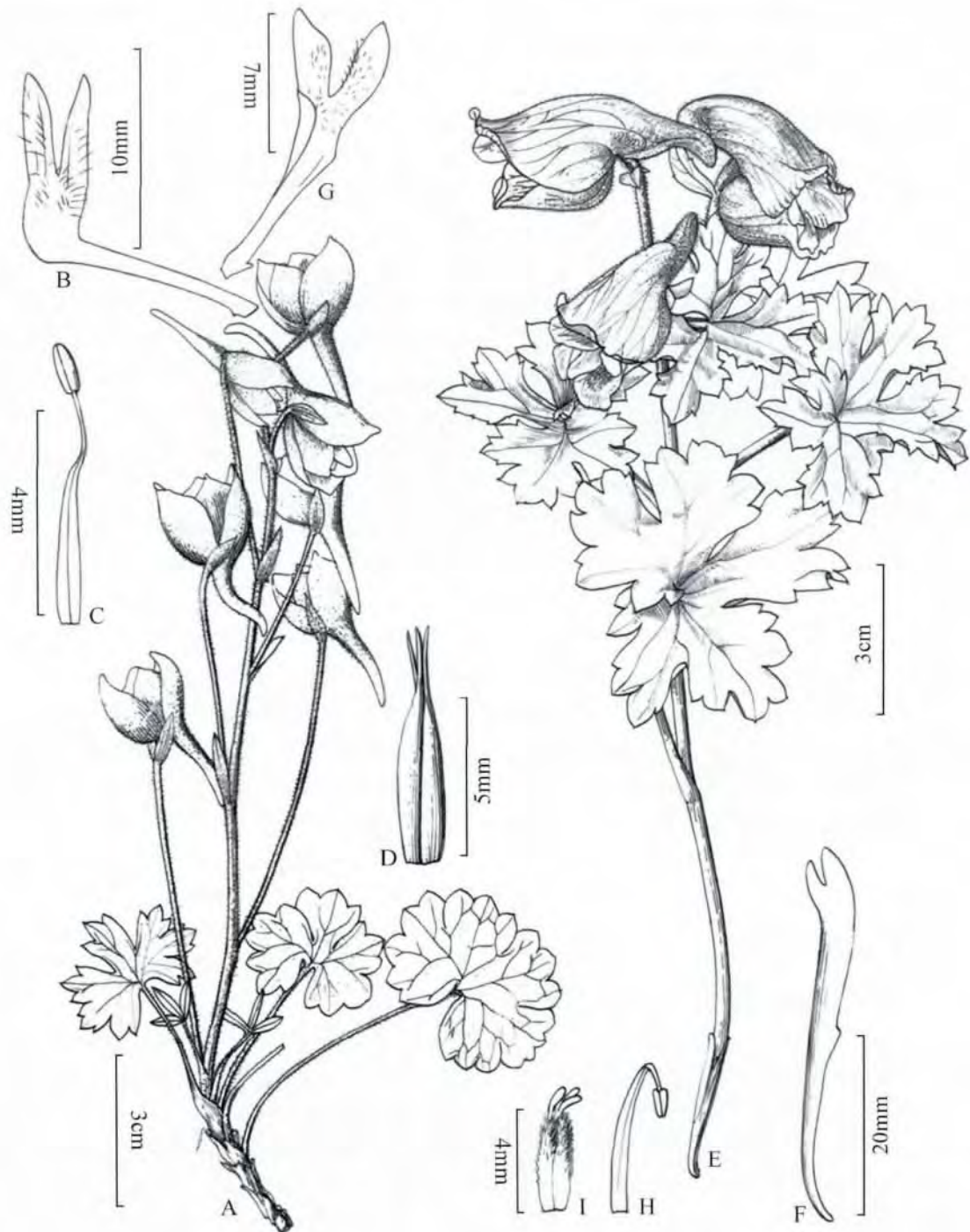


图 2 A~D. 朗县翠雀花: A. 植株全形; B. 退化雄蕊; C. 雄蕊; D. 雌蕊群 E~I. 灰花翠雀花: E. 植株全形; F. 花瓣; G. 退化雄蕊; H. 雄蕊; I. 雌蕊群

Fig. 2 A~D. *D. langxianense*: A. Habit; B. Staminode; C. Stamen; D. Gynoecium (A from isotype, B~D from holotype) E~I. *D. tephranthum*: E. Habit; F. Petal; G. Staminode; H. Stamen; I. Gynoecium (from holotype)

灰花翠雀花 图 2: E - I

Delphinium tephranthum W. T. Wang, sp. nov. Fig. 2: E - I

(Sect. *Elatopsis* Huth subsect. *Subumbellata* Huth)

Species nova haec est arcte affinis *D. chrysotri-cho* Finet & Gagnep., quod caulibus foliisque puberulis, sepalis purpureis, staminodiorum limbis ventre supra basin dense luteo-barbatis praeclare abhorret.

Small perennial herbs. Stems 8 - 16 cm tall, above base 1.5 - 2 mm across, glabrous, simple.

Basal leaf 1, at flowering time withered. Cauline leaves 2 - 3, long or slightly long petiolate, glabrous; blades subcoriaceous, reniform, 1.4 - 2.6 × 1.8 - 4.6 cm, at base cordate, 3-parted, central primary lobe cuneate-obovate, 0.9 - 1.6 cm broad, 3-lobed, lobules 2 - 3-denticulate, lateral primary lobes larger, flabellate, unequally 2-fid; petioles 2 - 11 cm long, at base slightly dilated. Corymbs terminal, 2 - 3-flowered; bracts foliaceous; pedicels 2.5 - 5 cm long, spreading-puberulous and glandular-puberulous, near apex 2-bracteolate; bracteoles narrow-elliptic or obovate-oblong, 7 - 9 × 2 mm. Flower ca. 3.8 cm long: Sepals grey, blue-nerved, adaxially glabrous, abaxially densely pubescent; upper sepal broad-ovate, ca. 2.2 × 1.8 cm, spur conic-subulate, 1.5 - 2 cm long, straight, base 6 - 8 mm across; lateral sepals oblong-obovate, 1.8 - 1.3 cm; lower sepals broad-elliptic, 2 × 1 cm. Petals 2, black, glabrous, at apex 2-lobed. Staminodes 2; limbs black, ca. 7 mm long, 2-lobed, adaxially along inner lobe margins and above base yellowish-villose; claws 10 mm long, glabrous. Stamens numerous, glabrous; filaments lanceolate-linear, ca. 7 mm long; anthers oblong, 1.2 - 2 mm long. Carpels 3; ovaries 4 mm long, densely puberulous; styles 0.8 - 1 mm long, glabrous.

西藏 (Xizang): 昌都县, 214 国道垭口之南 (Changdu Xian, in the south of the pass of high-way no. 214), alt 4 800 m, 灌丛草甸 (bush-meadow), 2010 - 08 - 08, 花灰色 (fls. grey), 康藏植物考察队 (Kham Expedition) 10 - 1528 (**holotype**, PE)。

本种在亲缘关系方面与黄毛翠雀花 (*Delphinium chrysotrichum* Finet & Gagnep.) 甚为相近, 与后者的区别: 本种的茎和叶均无毛, 萼片灰色, 退化雄蕊瓣片腹面沿裂片内缘和基部之上被淡黄色长柔毛, 不被黄色髯毛。在黄毛翠雀花, 茎和叶均被短柔毛, 萼片紫色, 退化雄蕊瓣片在基部之上密被一簇黄色髯毛^[2]。

五花翠雀花 图 3:A - D

Delphinium quinqueflorum W. T. Wang, sp. nov. Fig. 3:A - D

(Sect. *Delphinastrum* DC. subsect. *Ceratophora* W. T. Wang)

Ob folia omnia basalia dissecta et glabra, staminodiorum limbos ventro sparse pubescentes haud luteo-barbatos species nova haec est affinis *D. sinoscaposo* W. T. Wang, quod flore solitario terminali, petalis apice emarginatis ciliatis, ovariis sparse sericeis ad suturas ventrales glabris facile distinguitur.

Perennial herbs. Leaves ca. 5, all basal, long petiolate, glabrous; blades papery, suborbicular or orbicular-pentagonal, 1.5 - 3.2 × 2.6 - 6.5 cm, at base deeply cordate, 3-sect, central segment broadly rhombic, 0.9 - 2.3 cm broad, 3-parted, secondary lobes 3-lobulate, ultimate lobules lanceolate-linear or linear, 1.2 - 2 mm broad, lateral segments larger, flabellate, unequally 2-parted nearly to base, secondary lobes 2 times dissected; petioles 6.5 - 10 cm long, base dilated. Scape ca. 13.5 cm tall, above base ca. 2 mm across, with raceme rachis and pedicels retrorsely appressed-puberulous (hairs 0.1 - 0.2 mm long and the hairs near base 0.5 mm long); raceme ca. 7.5 cm long, 5-flowered; basal bract ca. 3 mm long, its dark-blue vaginated petiole 3 mm long, other bracts sessile, dark-blue, linear-lanceolate, 6 - 7 × 1.2 mm, glabrous; pedicels 0.2 - 3.2 cm long, at apex 2-bracteolate; bracteoles dark-blue, linear, ca. 5 × 1.8 - 2 mm, glabrous. Flower 2.4 - 3.2 cm long: Sepals blue, adaxially glabrous, abaxially sparsely puberulous; upper sepal ovate, 1 - 1.1 × 0.6 - 0.8 cm, spur subulate 1.5 - 2.2 cm long, at base 3 - 4 mm across; lateral sepals oblong-ovate, 1 - 1.2 × 0.4 - 0.5 cm; lower sepals narrow-lanceolate, 1 - 1.2 × 0.4 cm. Petals 2, glabrous, apex slightly acute. Staminodes 2; limbs narrow-ovate, ca. 8 mm long, 2-lobed, adaxially sparsely pubescent, longitudinally 16-nerved; claws ca. 6 mm long, glabrous. Stamens numerous, glabrous; filaments lanceolate-linear, above filiform, 4.5 mm long; anthers oblong, ca. 1.2 mm long. Carpels 3; ovaries ca. 2.5 mm long, only on ventral sutures pilose; styles 1 - 1.5 mm long, glabrous.

云南 (Yunnan): 香格里拉, 尼西乡, 亚贡雪山 (Xianggelila, Nixi Xiang, Yagong Snow Mount), alt. 3 750 m, 林缘草坡 (at forest edge on grassy slope), 花蓝色 (fls. blue), 2010 - 03 - 31, 康藏植物考察队 (Kham Expedition) 10 - 3093 (**holotype**, PE)。

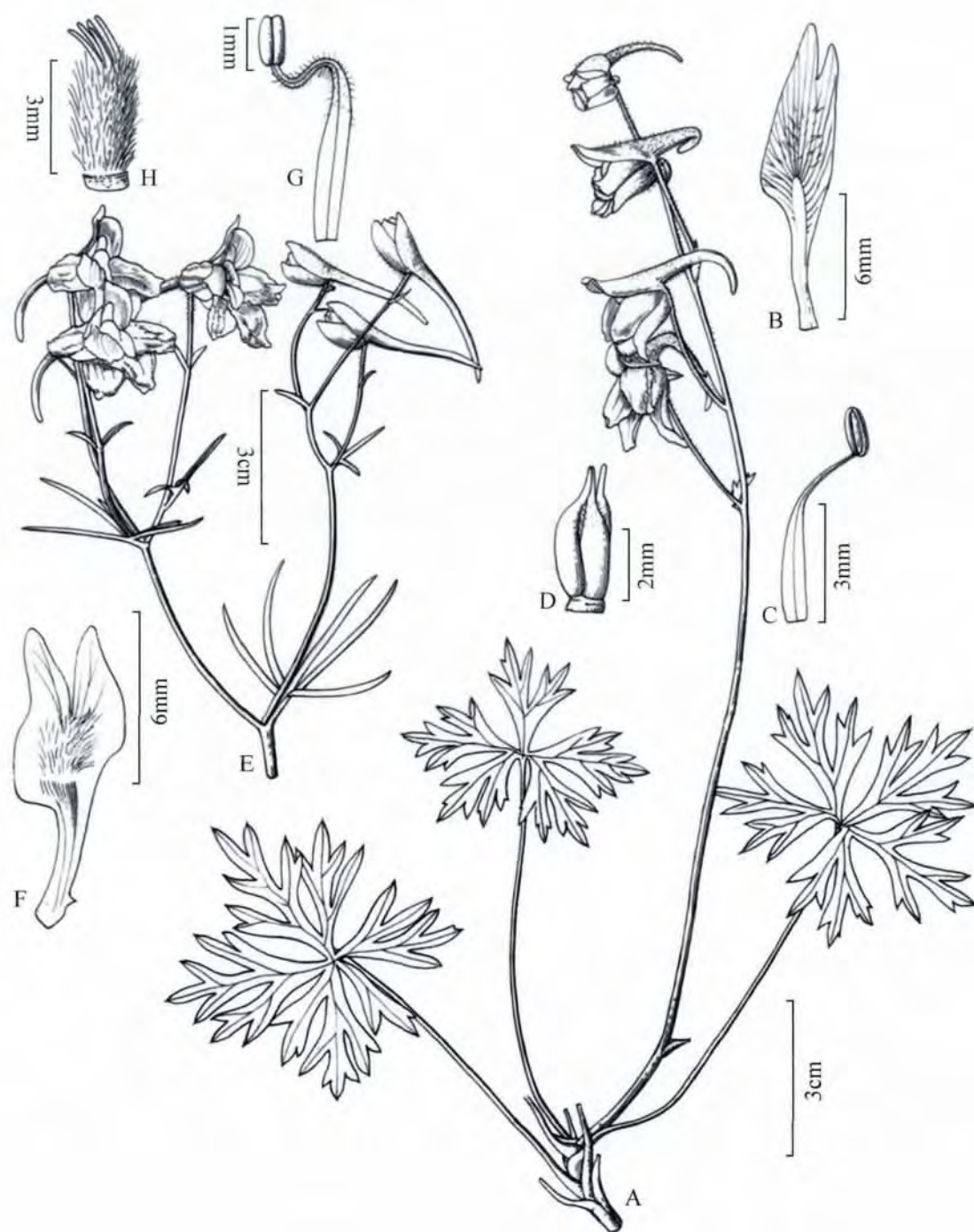


图3 A~D. 五花翠雀花:A. 植株全形;B. 退化雄蕊;C. 雄蕊;D. 雌蕊群 E~H. 细距翠雀花:E. 开花茎顶部;F. 退化雄蕊;G. 雄蕊;H. 雌蕊群

Fig. 3 A~D. *D. quinqueflorum*: A. Habit; B. Staminode; C. Stamen; D. Gynoecium (from holotype) E~H. *D. lagarocentrum*: E. Apical part of flowering stem; F. Staminode; G. Stamen; H. Gynoecium (from holotype)

本种的叶全部基生、细裂、无毛,退化雄蕊瓣片在腹面疏被柔毛,无黄色髯毛,因此与也具上述特征的花葶翠雀花(*Delphinium sinoscaposum* W. T. Wang)在亲缘关系上相近,与后者的区别在于本种的花约5朵组成总状花序,花瓣无毛,顶端微尖,

心皮的子房只在腹缝线上有疏毛,其他部分无毛。在花葶翠雀花,花单朵顶生,花瓣顶端微凹,被缘毛,心皮子房被绢状毛,在腹缝线上无毛^[2]。

西藏(Xizang):昌都县,214国道垭口之南(Changdu Xian, in the south of the pass of high-way

no. 214) ,alt 4 800 m ,灌丛草甸 (bush-meadow) , 2010 -08 -08 ,花灰色 (fls. grey) ,康藏植物考察队 (Kham Expedition) 10 -1528 (holotype PE)。

本种在亲缘关系方面与黄毛翠雀花 (*Delphinium chrysotrichum* Finet & Gagnep.) 甚为相近 ,与后者的区别:本种的茎和叶均无毛 ,萼片灰色 ,退化雄蕊瓣片腹面沿裂片内缘和基部之上被淡黄色长柔毛 ,不被黄色髯毛。在黄毛翠雀花 ,茎和叶均被短柔毛 ,萼片紫色 ,退化雄蕊瓣片在基部之上密被一簇黄色髯毛^[2]。

细距翠雀花 图 3:E - H

Delphinium lagarocentrum W. T. Wang ,sp. nov. Fig. 3:E - H

(Sect. *Delphinastrum* DC. subsect. *Grandiflora* W. T. Wang)

Species nova haec est affinis *D. caeruleo* Jacq. ex Camb. , quod foliis minus divisis , lobulis ultimatis linearibus , calcaris sepalino subulatis , staminodiorum limbis late obovatis vel suborbicularibus indivisis vel apice emarginatis distinguitur.

Perennial herbs. Stems 30 - 50 cm tall , above base ca. 1.8 mm across , below inconspicuously longitudinally 6-angulate and densely appressed-puberulous (hairs ca. 0.1 mm long) , above glabrous , branched. Basal leaf 1 , at flowering time withered. Cauline leaves ca. 4 , long or shortly petiolate ; blades subcoriaceous , depressed-orbicular or semi-orbicular in outline , 2.5 - 4.5 × 4 - 8 cm , 3-sect , segments 1 - 3 times dissected or central segment undivided , ultimate lobules narrowly linear , 0.8 - 3 × 0.05 - 0.15 cm , adaxially glabrous , abaxially with petioles and pedicels appressed-puberulous ; petioles 0.7 - 6 cm long. Corymbs terminal and axillary , 4 - 6 cm long , (1 - 2 -) 3 (- 5) -flowered ; bracts shortly petiolate , foliaceous ; pedicels 1.5 - 5.5 cm long , near the middle or above 2-bracteolate ; bracteoles linear , 4 - 5 mm long. Flower ca. 3.5 cm long : Sep-

als blue , adaxially glabrous , abaxially densely villous ; upper sepal ovate , 1.3 - 1.5 × 0.6 - 0.8 cm , spur thin-subulate , 2.1 - 2.4 cm long , slightly de-curved , base 2 mm across ; lateral sepals narrow-obovate , 1.2 - 1.6 × 0.6 cm ; lower sepals narrow-oblong , 1.1 - 1.5 × 0.5 cm. Petals 2 , glabrous , apex entire. Staminodes 2 ; limbs obliquely ovate , 6 mm long , 2-fid (lobes triangular) , above base densely yellow-barbate ; claws 4 mm long , glabrous. Stamens numerous ; filaments 4.5 - 5.5 mm long , linear , near apex filiform and villous ; anthers oblong , 0.8 - 1.2 mm long , glabrous. Carpels 5 ; ovaries 3 mm long , densely villous ; styles 1 mm long , glabrous.

西藏 (Xizang) : 昌都一类乌齐 214 国道 (high-way no. 214 between Changdu and Leiwuqi) , alt. 3 682 m , 山谷云杉林陡坡岩石上 (on rocky cliff in Picea forest in valley) 2010 -08 -04 , 康藏植物考察队 (Kham Expedition) 10 -1201 (holotype PE)。

本种与蓝翠雀花 *Delphinium caeruleum* Jacq. ex Camb. 相近缘 , 与后者的区别:本种的叶分裂程度较大 , 末回裂片狭条形 , 萼距细钻形 , 退化雄蕊瓣片斜卵形 2 裂达中部。在蓝翠雀花 , 叶的末回裂片条形 , 萼距较粗 , 钻形 , 退化雄蕊瓣片宽倒卵形或近圆形 , 不分裂或顶端微凹^[2]。

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