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毛茛科五新种

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摘要: 描述了毛茛科五新种: (1) 托里乌头, 与阿尔泰乌头近缘, 区别为其茎和叶无毛, 总状花序极密集, 雄蕊花丝多有 1 或 2 小齿。 (2) 门源翠雀花, 与大通翠雀花近缘, 区别为其茎极短, 花序总状, 退化雄蕊瓣片不分裂。 (3) 云台山铁线莲, 与裂叶铁线莲近缘, 区别为其叶为二回羽状复叶, 花较小, 雄蕊花丝呈黑色, 无脉。 (4) 黑丝铁线莲, 与前种云台铁线莲在亲缘关系上极为相近, 区别为其小叶较小, 多呈狭卵形或披针形, 聚伞花序也较小, 通常只具 3 花。 (5) 五台山毛茛, 与砾地毛茛相似, 区别为其基生叶被柔毛, 花瓣蜜槽具鳞片, 心皮具短而粗的花柱和小柱头。

关键词: 毛茛科, 乌头属, 翠雀花属, 铁线莲属, 毛茛属, 新种, 中国

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Five new species of Ranunculaceae from China

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Abstract: Five species belonging to four genera, *Aconitum*, *Delphinium*, *Clematis* and *Ranunculus* respectively (Ranunculaceae) are described as new from China: (1) *Aconitum tuoliense*, being described from Xinjiang Uygur Autonomous Region and related to *A. smirnovii* Steinb., and differing in its glabrous stem and leaves, very dense raceme, and mostly 1-2-denticulate filaments of stamens. (2) *Delphinium menyuanense*, being described from Qinghai Province and related to *D. pylzowii* Maxim., and differing in its very short stem, racemose inflorescence, and undivided limbs of staminodia. (3) *Clematis yuntaishanica*, being described from Henan Province, and related to *C. parviloba* Garden. & Champ., and differing in its bipinnate leaves, smaller flowers, and black, nerveless filaments of stamens. (4) *Clematis melanonema*, being described also from Henan Province and closely related to the above new species, *C. yuntaishanica*, and differing in its smaller, narrowly ovate or lanceolate leaflets, and smaller, usually 3-flowered cymes. (5) *Ranunculus wutaishanicus*, being described from Shanxi Province and similar to *R. glareosus* Hand.-Mazz., and differing in its pubescent basal leaves, nectary pit of petal with a scale, and carpel with a short and thick style and a minute stigma.

Key words: Ranunculaceae, *Aconitum*, *Delphinium*, *Clematis*, *Ranunculus*, new species, China

最近,我鉴定了一批采自我国的毛茛科植物标本,从中发现了乌头属、翠雀花属和毛茛属各一新种,以及铁线莲属二新种,现在本文中发表。

托里乌头 图 1: A-E

Aconitum tuoliense W. T. Wang, sp. nov. Fig. 1: A-E. (subgen. *Aconitum* sect. *Aconitum* ser. *Ambigua*



图 1 A-E. 托里乌头 A. 下部茎生叶的叶片; B. 花瓣; C. 总状花序; D. 雄蕊; E. 雌蕊群。F-K. 门源翠雀花 F. 开花茎; G. 退化雄蕊; H. 雄蕊; I. 雌蕊群; J. 蓇葖; K. 种子。

Fig. 1 A-E. *Aconitum tuoliense* A. Blade of lower cauline leaf; B. Petal; C. Raceme; D. Stamens; E. Gynoecium. (from holotype) F-K. *Delphinium menyuanense* F. Flowering stem; G. Staminode; H. Stamen; I. Gynoecium; J. Follicle; K. Seed. (from holotype)

Steinb.)

Species nova haec est affinis *A. smirnovii* Steinb., a

quo caule et foliis glabris, racemo ob pedicellos breviores plerumque 0.5 - 1 cm longos floribus densissimis

praedito, staminum filamentis plerumque 1-2-denticulatis differt. In *A. smirnovii*, caules superne sparse pubescentes, folia supra ad nervos appresso-pubescentia, flores in racemo haud densissimi, pedicelli 0.7–2 cm longi, et staminum filamenta omnia integra sunt.

Herb. Roots unknown. Stem ca. 50 cm tall, near base ca. 6 mm in diam., glabrous, simple, ca. 5-leaved. Lower cauline leaves long, upper cauline leaves shortly petiolate, glabrous; blades papery, pentagonal in outline, 5–8.5 × 10 cm, at base subtruncate, 3-sect, central segment rhombic, 2.5–4 cm broad, 3-fid, secondary lobes with 3 or 2 lanceolate-linear or linear lobules, lateral segments obliquely flabellate, unequally 2-parted, secondary lobes one or two times dissected; petioles 4–12.5 cm long. Raceme terminal, ca. 15 cm long, very densely 15-flowered; bracts sessile, basal bract foliaceous, with narrowly linear lobes, other bracts smaller, 3-sect or undivided, linear, ciliate; rachis with pedicels puberulous; pedicels mostly 5–10 mm long, only the lowermost pedicel 14 mm long, near apex 2-bracteolate; bracteoles linear, 4–5 × 0.5 mm, densely ciliate. Flower: Sepals 5, deeply blue, abaxially puberulous; upper sepal obliquely navicular-galeate, ca. 2 cm high, from base to apex of rostrum 1.8–2.2 cm long, above the middle broadest, at frontal side rostrate (rostrum ca. 2.5 mm long), adaxially glabrous; lateral sepals orbicular-obovate, 1.4–1.6 × 1–1.2 cm, adaxially above sparsely pubescent; lower sepals obliquely elliptic, 1.2–1.4 × 0.4–0.5 cm, adaxially sparsely pubescent. Petals 2, glabrous; claws ca. 1.9 cm long; spurs incurved, ca. 3 mm long; lips 4 mm long, at apex slightly dilated and emarginate. Stamens ca. 28, glabrous; filaments below broadly linear or linear, above filiform, mostly near the middle 1-2-denticulate, a few of them with entire margins; anthers with upper parts of filaments dark-blue, subquadrate, 1–1.2 × 0.8–1 mm. Carpels 3; ovaries dark-blue, ca. 5 mm long, abaxially sparsely pubescent; styles subulate, 1–1.2 mm long, glabrous.

新疆 (Xinjiang): 托里县, 库普乡, 塔斯提林场 (Tuoli Xian, Kupu Xiang, Tasiti tree farm), alt. 1 810 m, 石砾草坡 (on gravelly grassy slope), 2014-08-16, 陈又生, 袁慷 (Y. S. Chen & Q. Yuan) 141579 (**holo-type**, PE)。

本种在亲缘关系上与阿尔泰乌头 (*Aconitum smirnovii* Steinb.) 相接近, 与后者的区别在于本种的茎和叶无毛, 花梗较短, 长 0.5~1 cm, 因此总状花序的花极为密集, 雄蕊花丝多具 1 或 2 小齿。在阿尔泰乌头, 茎上部疏被柔毛, 叶上面脉上被柔毛, 花梗较长 (0.7~2 cm), 总状花序的花不极密集, 雄蕊所有花丝的边缘均全缘, 无小齿 (Li & Kadota, 2001)。

门源翠雀花 图 1: F-K

Delphinium menyuanense W. T. Wang, sp. nov.

Fig. 1: F-K. (sect. *Elatopsis* Huth)

Species nova haec est affinis *D. pylzowii* Maxim., a quo caule multo brevior 5 cm longo, inflorescentia racemosa, staminodiorum limbis indivisis, carpellis 4 gynoeceum formantibus facile differt. In *D. pylzowii*, caules 20–55 cm alti, inflorescentiae corymbosae, staminodiorum limbi 2-lobati, et carpella 5 vel 3 gynoeceum formantia sunt.

Perennial herb. Stem ca. 5 cm long, 2 mm in diam., retrorsely puberulous, ca. 2-leaved. Basal leaves unknown. Cauline leaves alternate, long petiolate; blades papery, cordate-pentagonal, ca. 1.5 × 2.5 cm, adaxially and abaxially sparsely pubescent, glabrescent, 3-sect, central segment broadly rhombic, ca. 1 cm broad, 3-parted, with lobes lanceolate-linear and entire, lateral segments obliquely broad-rhombic, unequally 2-parted, with upper secondary lobe smaller, broadly linear and 1-lobulate, and lower secondary lobe larger and unequally 2-parted once again, and with 1-lobulate tertiary lobes; petioles 3–4 cm long, subglabrous. Raceme terminal, ca. 15 cm long, 10 cm broad, 3-flowered; lowest bract leaf-like; rachis with pedicels retrorsely puberulous (hairs 0.2–0.4 mm long) and subspreading-pubescent (hairs 0.5–0.8 mm long); pedicels 6.6–11 cm long, below or above the middle 2-bracteolate; bracteoles lanceolate-linear or linear, 0.6–1.8 × 0.1–0.2 cm, sparsely puberulous or ciliate. Sepals 5, dark-blue, adaxially glabrous; upper sepal broadly ovate, ca. 1.9 × 1.3 cm, at apex obtuse, abaxially appressed-pubescent, spur subulate, 2–2.2 cm long, at base ca. 3 mm in diam., sparsely pubescent; lateral sepals obovate, ca. 1.9 × 1.2 cm, abaxially along midrib pubescent; lower sepals obliquely long elliptic, 2–2.2 × 0.7–1 cm, abaxially along midrib pubescent. Petals 2, glabrous, apex obtuse. Stamens 2; limbs



图 2 A-E. 云台山铁线莲 A. 叶和腋生聚伞花序; B. 萼片, 内面观; C. 雄蕊; D. 心皮; E. 瘦果。F-I. 黑丝铁线莲 F. 叶和腋生聚伞花序; G. 萼片, 内面观; H. 雄蕊; I. 心皮。

Fig. 2 A-E. *Clematis yuntaishanica* A. Leaf and axillary cyme; B. Sepal (adaxial view); C. Stamen; D. Carpel; E. Achene. (from holotype) F-I. *Clematis melanonema* F. Leaf and axillary cyme; G. Sepal (adaxial view); H. Stamens; I. Carpel. (from holotype)

brownish, suborbicular, ca. $7 \times 7-8$ mm, margin slightly erose and sparsely ciliate, adaxially above base

densely yellow-barbate, longitudinally ca. 10-nerved; claws ca. 7 mm long, puberulous. Stamens ca. 22, gla-

brous; filaments lanceolate-oblong, linear, above filiform, ca. 7 mm long, 1-nerved; anthers dark-blue, ca. 1.2 mm long. Carpels 4; ovaries narrowly oblong, 6–7 mm long, densely puberulous; styles 2 mm long, glabrous; stigmas small, depressed-globose. Follicle oblong, ca. 12 × 3.5 mm, puberulous. Seeds black, long ellipsoid, ca. 1.8 mm long, glabrous, with a peripheral narrow wing 0.4–0.8 mm broad.

青海(**Qinghai**): 门源县, 近仙来寺 (Menyuan Xian, near Xianlai Temple). alt. circ. 2 600 m, 1958-07-30, 中国科学院植物研究所青海队 (Qinghai Exped. Inst. Bot. CAS) 634 (**holotype**, PE)。

本种与大通翠雀花 (*Delphinium pylzowii* Maxim.) 近缘, 与后者的区别在于本种的茎很短, 长约 5 cm, 花序总状, 退化雄蕊的瓣片不分裂, 雌蕊群由 4 枚心皮形成。在大通翠雀花, 茎高 20~55 cm, 花序伞房状, 退化雄蕊的瓣片 2 裂, 雌蕊群由 5 枚或 3 枚心皮形成 (Wang & Warnock, 2001)。

云台山铁线莲 图 2: A-E

Clematis yuntaishanica W. T. Wang, sp. nov. Fig. 2: A-E. (sect. *Clematis* subsect. *Clematis*)

Species nova haec est affinis *C. parvilobae* Gardn. & Champ., a qua foliis bipinnatis, foliolis interdum pauce denticulatis, flore minore ca. 1.8 cm in diam., sepalis ca. 0.9 cm longis, staminum filamentis in siccitate nigris subfiliformibus vel anguste linearibus nervis carentibus statim distat. In *C. parviloba*, folia biternata vel pinnata, foliola margine vulgo integra, flos major 3-4 cm in diam., sepalia 1.6-2 cm longa, et staminum filamenta in siccitate haud nigra linearia longitudinaliter 1-nervia sunt.

Woody vine, more or less turning black when drying. Stems ca. 2 mm in diam., appressed-puberulous, longitudinally 4-6-angulate. Leaves opposite, bipinnate, 12-24 cm long; pinnae 3 pairs, opposite, slenderly stipitate; lower pinnae (2-) 3-foliolate, leaflets shortly petiolulate, central leaflet rhombic or ovate, 3.2-5.4 × 1.5-2.2 cm, at apex attenuate, at base broadly cuneate or rounded, at each side of margin 1-3-denticulate, adaxially sparsely puberulous, abaxially on nerves sparsely puberulous, lateral leaflets smaller, obliquely ovate, 1.5-2.5 cm long, on margin few-dentate or entire, each central pinna with 2 broadly

ovate leaflets unequal in size, the larger one 1-3-denticulate and unequally 2-lobed, and the smaller one 1-denticulate or entire, each upper pinna with 1 ovate entire leaflet, the terminal leaflet of leaf narrowly ovate and entire; petioles 4.4-5 cm long, with peduncles sparsely puberulous. Cymes axillary, 3-15 cm broad, 1 to 3 times branched, 3-18-flowered; peduncles 2.8-6 cm long; bracts 2, opposite, shortly petiolate, rarely sessile, ovate, elliptic or linear, 0.2-3.5 cm long, entire, rarely 1-lobulate; pedicels 0.6-2.8 cm long; glabrous. Flower ca. 1.8 cm in diam.: Sepals 4, white, spreading, long elliptic, ca. 9 × 3 mm, at apex truncate-emarginate, adaxially glabrous, abaxially sparsely appressed-puberulous, on margin white-velutinous. Stamens 30-70, glabrous; filaments black when drying, subfiliform or narrowly linear, 4.5-6 mm long, without nerve; anthers yellowish, broadly oblong, 1-1.2 mm long. Carpels 12-15; ovaries black when drying, ca. 0.4 long, densely pubescent; styles ca. 4 mm long, densely long white-villos, at apex slightly thickened and glabrous. Achenes deep-brown, compressed, suborbicular, ca. 2 mm in diam., with yellowish margins, puberulous; persistent styles plumose, ca. 12 mm long, with dense, spreading, long hairs, near apex glabrous.

河南(**Henan**): 修武县, 云台山, 万善寺 (Xiwu Xian, Yuntai Shan, Wanshan Temple), 路边草丛 (among grasses by road), 2009-08-17, 云台山采集队 (Yuntaishan Exped.) 1074 (fl., **holotype** and isotype, PE); 同地 (same locality), 山坡林下 (in forest on slope), 2008-09-21, 云台山采集队 0037 (fr., paratype, PE)。

本种与裂叶铁线莲 *Clematis parviloba* Gardn. & Champ. 在亲缘关系上相近, 区别特征为本种的叶为二回羽状复叶, 小叶有时具少数小齿, 花较小, 直径为 1.8 cm, 萼片长约 0.9 cm, 雄蕊花丝干燥时呈黑色, 近丝形或狭条形, 无脉。在裂叶铁线莲, 叶为二回三出复叶或羽状复叶, 小叶通常全缘, 雄蕊花丝干燥时不呈黑色, 条形, 具一条纵脉。(Wang, 2003)

黑丝铁线莲 图 2: F-I

Clematis melanonema W. T. Wang, sp. nov. Fig. 2: F-I. (sect. *Clematis* subsect. *Clematis*)

Ob folia bipinnata, flores parvos, staminum filamenta in siccitate nigra saepe subfiliformia nervis ca-

rentia species nova haec est arcte affinis apieciei novae insuper simul descriptae, *C. yuntaishanicae* W. T. Wang, a qua foliolis minoribus vulgo anguste ovatis vel lanceolatis 0.8–3.6 cm longis 0.4–1 cm latis vulgo integris raro pauce denticulatis, cymis minoribus vulgo semel raro bis ramosis 1.5–4 cm latis 3(–4)-floris facile distinguitur. In *C. yuntaishanica*, foliola majora vulgo ovata, late ovata vel rhombica usque ad 5.4 cm longa 2.2 cm lata margine vel pauce denticulata vel integra, cymae vulgo bis vel ter raro semel ramosae vulgo 10–15 cm latae et 10–18-florae sunt.

Small woody vines. Stems ca. 1.2 mm in diam., sparsely appressed-puberulous, longitudinally 4-sulcate. Leaves opposite, bipinnate, 8–12.5 cm long; pinnae 2–3 pairs, opposite, slenderly stipitate; lower pinnae 2–3-foliolate, leaflets and terminal leaflet of leaf narrowly ovate, lanceolate or ovate, undivided, those of central pinnae obliquely broadly ovate and unequally 3-lobed, 0.8–3.6 × 0.4–1 (–1.6) cm, at apex attenuate, at base rounded or broadly cuneate, at margin entire or 1–2-denticulate, on both surfaces sparsely puberulous; petioles 3.5–5 cm long, with a few short hairs. Cymes axillary, 1.5–4 cm broad, 1, rarely 2 times branched, 3(–4)-flowered, near bracts with 2 small flower buds; peduncle 1.6–4.4 cm long, subglabrous; bracts sessile, narrowly lanceolate, ca. 1.5 mm long; pedicels 0.8–2.4 cm long, glabrous. Flower ca. 2 cm in diam.: Sepals 4, white, long elliptic, ca. 10 × 3.2 mm, at apex slightly acute, adaxially glabrous, abaxially sparsely appressed-puberulous, on margin white-velutinous. Stamens 35–40, glabrous; filaments black, narrowly linear, above subfiliform, 3.5–5.8 mm long, without nerve; anthers yellowish, oblong or broadly oblong, 1–1.5 mm long. Carpels ca. 14; ovaries ca. 0.5 mm long, densely pubescent; styles ca. 3.5 mm long, densely long white-villous, near apex slightly thickened and glabrous.

河南 (Henan): 修武县, 云台山, 小寨沟 (Xiwu Xian, Yuntai Shan, Xiaozhaigou), alt. 290 ~ 500 m, 路边石堆 (in rocky place by road), 2009-08-25, 云台山采集队 (Yuntaishan Exped) 1397 (**holotype**, PE).

本种与上面描述的新种云台山铁线莲 (*Clematis yuntaishanica* W. T. Wang) 同样具二回羽状复叶, 较

小的花和黑色无脉的雄蕊花丝, 说明此二种在亲缘关系上极为相近, 本种与云台山铁线莲的区别在于本种的小叶较小, 多呈狭卵形或披针形, 长 0.8~3.6 cm, 宽 0.4~1 cm, 通常全缘, 稀具少数小齿, 聚伞花序较小, 通常一回, 稀二回分枝, 宽 1.5~4 cm, 具 3 (~4) 花。

五台山毛茛 图 3

***Ranunculus wutaishanicus* W. T. Wang, sp. nov.**

Fig. 3. (subgen. *Ranunculus* sect. *Ranunculus* ser. *Songorici* Ovcz.)

Habitu species nova haec est similis *R. glareoso* Hand.-Mazz., a quo foliis basalibus semper 3-partitis utrinque appresso-pubescentibus, petalorum foveolis nectariferis squamis praeditis, carpellis stylis brevibus crassis et stigmatibus minutis praeditis praeclare recedit. In *R. glareoso*, folia basalia 3-partita vel 3-secta glabra, petalorum foveolae nectariferae squamis carentes, et carpella stylis plus minusve elongatis subulatis praedita et stigmatibus carentia sunt.

Perennial herbs. Stems 13–17 cm tall, near base ca. 1 mm in diam., below sparsely above densely appressed-pubescent, simple, 1–2-leaved. Basal leaves ca. 2, long petiolate; blades papery, pentagonal in outline, 0.9–1.5 × 1.2–2.2 cm, on both surfaces sparsely appressed-pubescent, at base deeply cordate, 3-parted, central primary lobe broadly rhombic or rhombic-obovate, near apex obtusely 3-lobulate or 3-dentate, lateral primary lobes obliquely flabellate, unequally 2-lobed, with upper secondary lobes slightly larger than lower secondary lobes; petioles 3.5–5 cm long, sparsely pubescent, near base in narrow sheath slightly widened. Lower cauline leaf similar to basal leaves, but smaller, shortly petiolate and with blade 3-sect; upper cauline leaf sessile, and its blade (2–) 3-sect, with narrowly oblanceolate lobes, which are 2-denticulate or entire. Flower solitary, terminal: Receptacle glabrous. Sepals 5, oblong-elliptic, 6–7 × 2.2–3.5 mm, at apex truncate-obtuse, adaxially glabrous, abaxially appressed-pubescent, after anthesis persistent. Petals 5, yellow, flabellate-obovate, 8 × 7–9.5 mm, glabrous, at apex rounded-truncate, at base inconspicuously clawed, nectary pit with a transversely rectangular scale ca. 0.5 mm long and 1 mm broad. Stamens ca. 60, glabrous; filaments

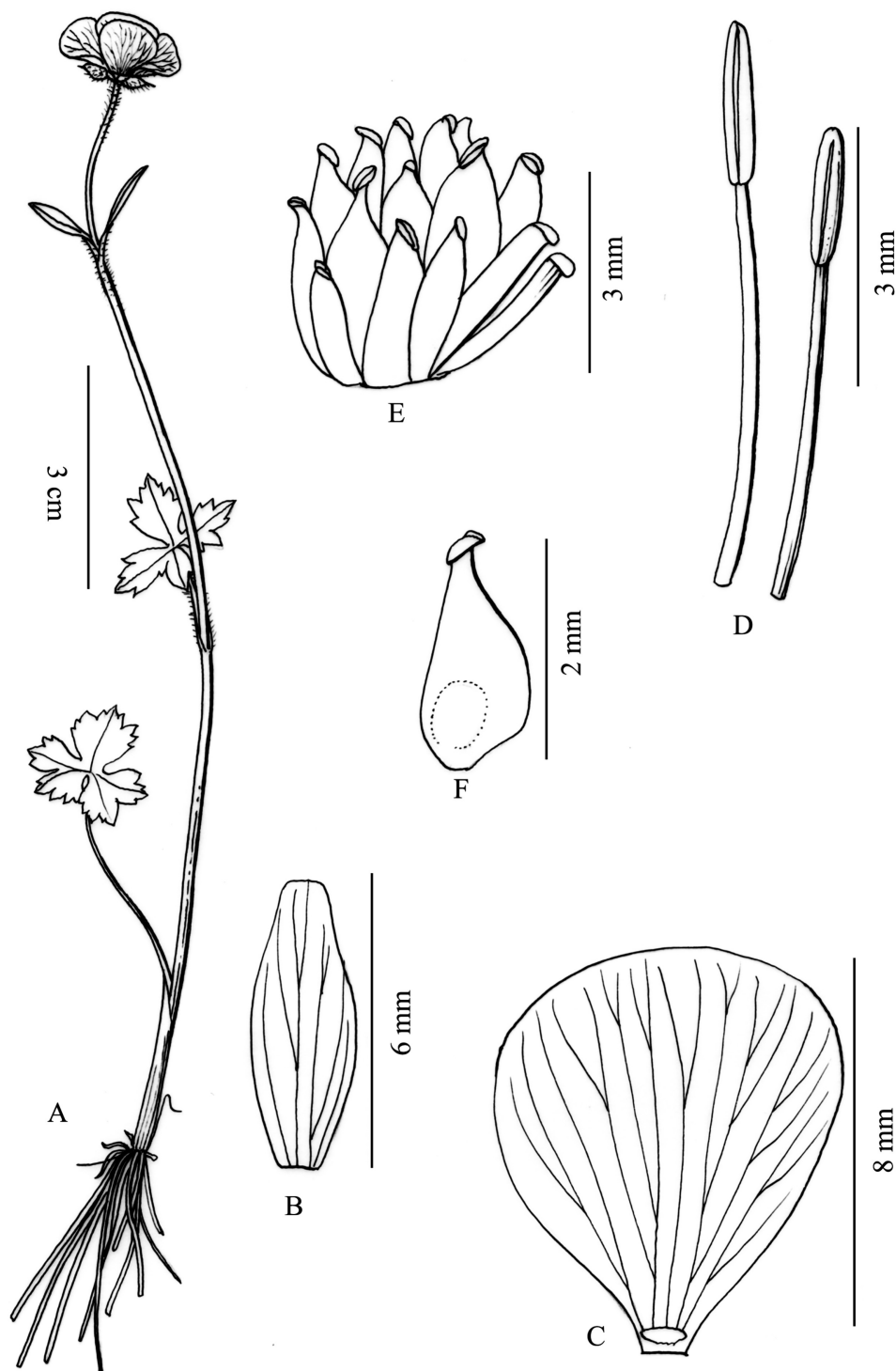


图 3 五台山毛茛 A. 植株全形; B. 萼片(内面观); C. 花瓣; D. 二雄蕊; E. 雌蕊群; F. 心皮。

Fig. 3 *Ranunculus wutaishanicus* A. Habit; B. Sepal (adaxial view); C. Petal; D. Two stamens; E. Gynoecium; F. Carpel. (from holotype)

narrowly linear, 2.5–3 mm long; anthers narrowly oblong, 1–1.2 mm long. Carpels ca. 22, 1.6–2 mm long, glabrous; ovaries elliptic, 1.4–1.6 mm long; styles short and thick, 0.1–0.6 mm long; stigmas narrowly

oblong, 0.2–0.25 mm long.

山西 (Shanxi): 五台山, 北台 (Wutai Shan, Beitai), alt. 3 046 m, 高山草地 (on alpine meadow), (下转第 155 页 Continue on page 155)