

青海十字花科新植物*

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NEW PLANTS OF CRUCIFERAE FROM QINGHAI, CHINA

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关键词 十字花科; 高原芥属; 虬果芥属; 蔊菜属

在研究唐古特植物区系和编写青海植物志过程中, 笔者对青海地区十字花科植物进行了研究和整理, 发现了3个新种, 报道如下。

1 羽裂高原芥 新种 图1

Christolea pinnatifida R. F. Huang, sp. nov.

Species nova affinis *Ch. karakorumensi* Y. H. Wu et Z. X. An, sed a qua differt foliis oblongo-spathulatis vel elliptico-spathulatis, laminae foliorum (7)9~11-pinnatilobatis, flore majore, sepalis 8~8.5 mm longis, petalis 12~13 mm longis, ovario mamillis fulvidis obsitis.

Herba nana, perennis, 3~4 cm alta, omnino albo-villosa. Folia omnia basalia, oblongo-spathulata vel elliptico-spathulata, carnosula; lamina oblonga vel elliptica, 8~12 mm longa, 5~6 mm lata, (7)9~11-pinnatilobata, basi in petiolum longum sensim angustata, utrinque dense albo-villosa et pilis 2-furcatis paucis tecta; petioli 12~18 mm longi. Flores in foliorum rosula fasciculati, pedicellis 8~14 mm longis; sepala ochracea, duo exteriora anguste oblonga, duo interiora lanceolata, 8~8.5 mm longa, c. 2 mm lata, apice obtusa, margine flavo-membranacea; petala late obovato-spathulata, superne smaragdina vel cyaneo-purpurea, inferne et pro parte media flava, 12~13 mm longa, 4~5 mm lata, apice truncata, basi in unguem 8~9 mm longum angustata; stamina 6, filamentis linearibus compressis, versus basin leviter dilatatis, longioribus 7~8 mm longis, brevioribus 5~6 mm longis, antheris linearibus oblongis c. 1.5 mm longis; glandulae nectariferae laterales fuscae, binatim connexae, semiglobosae; ovarium anguste oblongum, glandulis mamillatis fulvidis obsitum; stigma bilobum. Siliquae maturae ignotae. Florescentia Junio~Julio.

Qinghai (青海): Maqen (玛沁), Anyemaqen Mt. (阿尼玛卿山), alt. 4800 m, ad glaram alpinam, 1981-06-25, R. F. Huang (黄荣福), CG-81-154 (typus, HNWP).

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多年生矮小草本,高3~4 cm,全株密被白色长柔毛。叶基生,长圆状匙形或椭圆状匙形,稍肉质,叶片长圆形或椭圆形,长8~12 mm,宽5~6 mm,(7)9~11羽状浅裂,基部



图1 羽裂高原芥 1. 植株; 2. 花; 3~4. 叶; 5~6. 萼片; 7~8. 花瓣; 9. 雄蕊群和雌蕊; 10. 雄蕊; 11. 雌蕊。(阎翠兰绘)
Fig.1 *Christolea pinnatifida* R. F. Huang 1. plant; 2. flower; 3~4. leaf; 5~6. sepal; 7~8. petal; 9. stamens and pistil; 10. stamen; 11. pistil.

渐窄成长柄,两面密被白色长柔毛或少数2叉毛,叶柄长12~18 mm。花多数,簇生于叶丛,花梗长8~14 mm;萼片淡黄褐色,外轮2片狭长圆形,内轮2片披针形,长8~8.5 mm,宽约2 mm,顶钝,有淡黄色膜质边缘;花瓣宽倒卵形,上部绿色或蓝紫色,中部和下部淡黄色,长12~13 mm,宽4~5 mm,顶端截形,基部渐狭成8~9 mm长爪;雄蕊6,花丝线形,压扁,基部稍加宽,长花丝长7~8 mm,短花丝长5~6 mm,花药长1.5 mm;侧蜜腺黑褐色,半球形,成对连合;子房狭椭圆形,有黄褐色乳突状腺点,柱头浅2裂。角果未见。花期6~7月。

本种与喀喇昆仑高原芥 *Ch. karakorumensis* Y. H. Wu et Z. X. An 相似,但本种叶长圆状匙形或椭圆状匙形,叶片(7)9~11羽状浅裂,花较大,萼片长8~8.5 mm,花瓣长12~13 mm,子房具乳突状腺点而易于区别。

2 垫状蚓果芥 新种 图2

Neotorularia conferta R. F. Huang, sp. nov.

Species nova affinis *N. parvae* (Z. X. An) Z. X. An et *N. humili* (C. A. Mey.) Hedge et J. Leonard, sed ab illa differt inflorescentiae aliquot floribus inferioribus bracteatis, habitu dense caespitoso, ab hac habitu dense caespitoso pusillo, caulibus basi dense ramosis follis vel petiolis emarcidis praeditis differt.

Herba perennis nana, dense caespitosa, 1~2 cm alta, pilis bifurcatis tecta. Caulis basi dense ramosus, reliquis petiolorum et foliorum emarcidorum praeditus; rami ramulique brevissimi, densi, pulvinos hemisphaericos formantes. Folia basalia linearia vel lineari-oblonga, 5~9 mm longa, 1~1.5 mm lata, margine integra vel 2~3-denticulata, basi sensim angustata, utrinque pilis bifurcatis curvatis tecta; folia caulina foliis basalibus paulo breviora, anguste oblonga vel anguste spathulata, margine subintegra vel 1~3-denticulata, repanda, utrinque pilis bifurcatis curvatis tecta. Racemus primo corymbosus, densus, fructificatione leviter elongatus, floribus aliquot inferioribus tantum bracteatis. Sepala oblonga, c. 2 mm longa, 1 mm lata, pilis bifurcatis dense tecta; petala alba, obovato-cuneiformia vel late cuneata, 2.5~3 mm longa, c. 1.5 mm lata, apice subtruncata vel retusa, basi in unguis angustata; antherae late ovatae; ovarium pilis bifurcatis dense tectum. Siliqua teretiuscula, submoniliformis, 4~8 mm longa, 0.7~1 mm lata, curvata, utriusque angustata, pilis bifurcatis et trifurcatis dense tecta, stylo persistente brevissimo, stigmate persistente bilobulato. Anthesis Junio~Julio, perodus fructificans Julio~Augusto.

Qinghai(青海): Hoh Xil(可可西里), Taiyanghu Prefecture(太阳湖地区), alt. 4900~5000 m, ad ripas glareosas, 1991-07-27, R. F. Huang K-313(typus, HNWP).

多年生矮小草本,密集丛生,高1~2(3) cm,被2叉毛。茎基部密集分枝,具枯萎的叶和叶柄残余,枝和小枝短缩、密集成垫状半球形。叶线形或线状长圆形,长5~9 mm,宽1~1.5 mm,全缘或有2~3小齿,基部渐窄,两面被弯曲的2叉毛;茎生叶稍短于基生叶,狭长圆形或狭匙形,近全缘或有1~3残波状小齿,两面被弯曲的2叉毛。总状花序初时伞房状,紧密,果期稍延展,花序下部数花具苞片;萼片长圆形,长2 mm,宽约1 mm,密被2叉毛;花瓣倒卵状楔形或宽楔形,长2.5~3 mm,宽1.5 mm,顶端截形或微凹,基部狭

窄成爪;花药宽卵形;子房被 2 叉毛。长角果略圆柱形,稍呈念珠状,长 4~8 mm,宽 0.7~1 mm,常弯曲,两端狭窄,密被 2 叉或 3 叉毛,具极短的花柱,柱头浅 2 裂。花期 6~7 月,果期 7~8 月。

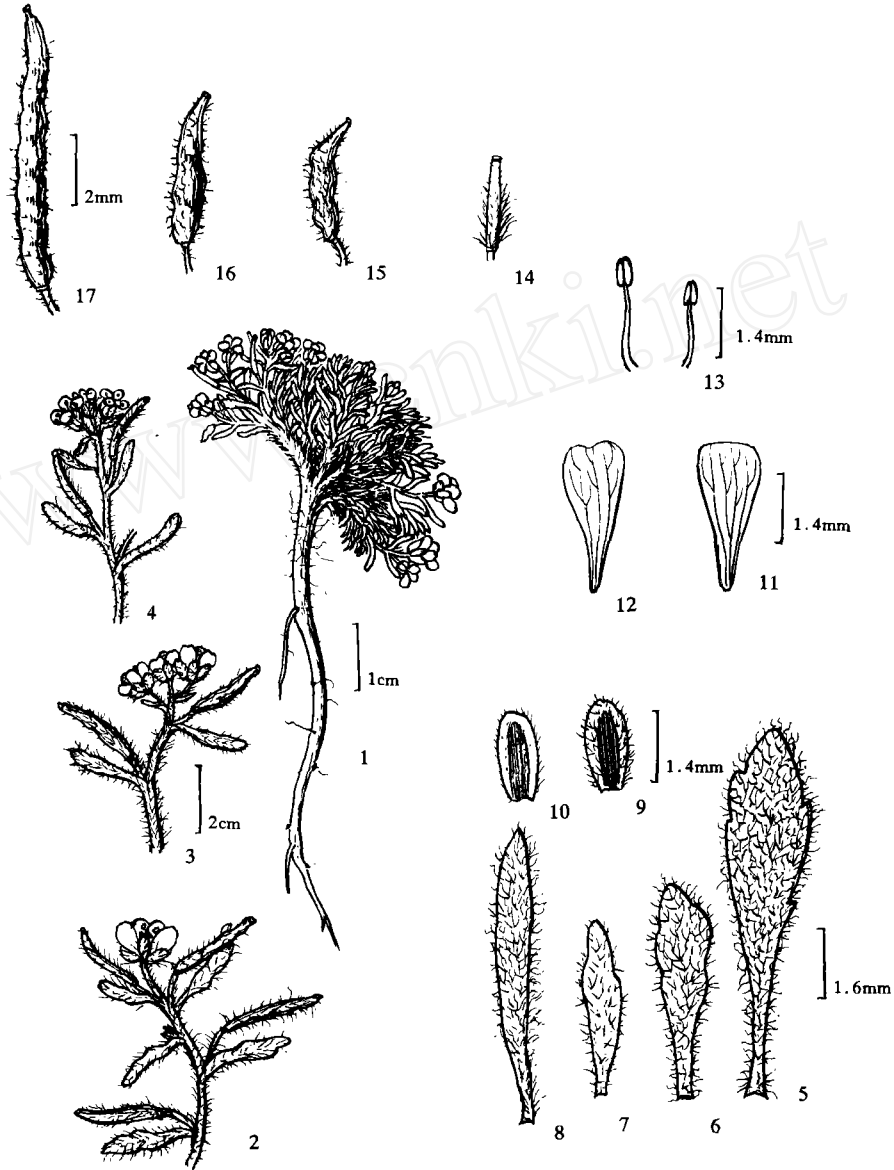


图 2 垫状蚓果芥 1. 植株; 2~4. 花枝; 5~7. 茎生叶; 8. 基生叶; 9~10. 萼片; 11~12. 花瓣; 13. 雄蕊; 14. 雌蕊; 15~17. 长角果。(阎翠兰绘)

Fig. 2 *Neotorunaria conferta* R. F. Huang 1. plant; 2~4. flowering branch; 5~7. cauline leaf; 8. basal leaf; 9~10. sepal; 11~12. petal; 13. stamen; 14. pistil; 15~17. silique.

本种同小念珠芥 *N. parva* (Z. X. An) Z. X. An 或蚓果芥 *N. humilis* (C. A. Mey) Hedge et J. Leonard 相近。但是,与小念珠芥不同在于花序下部一些花有苞片,植株成密

集的垫状体;与虻果芥的区别在于植株矮小紧密簇生,茎基部密集分枝,被枯萎残存的叶或叶柄。

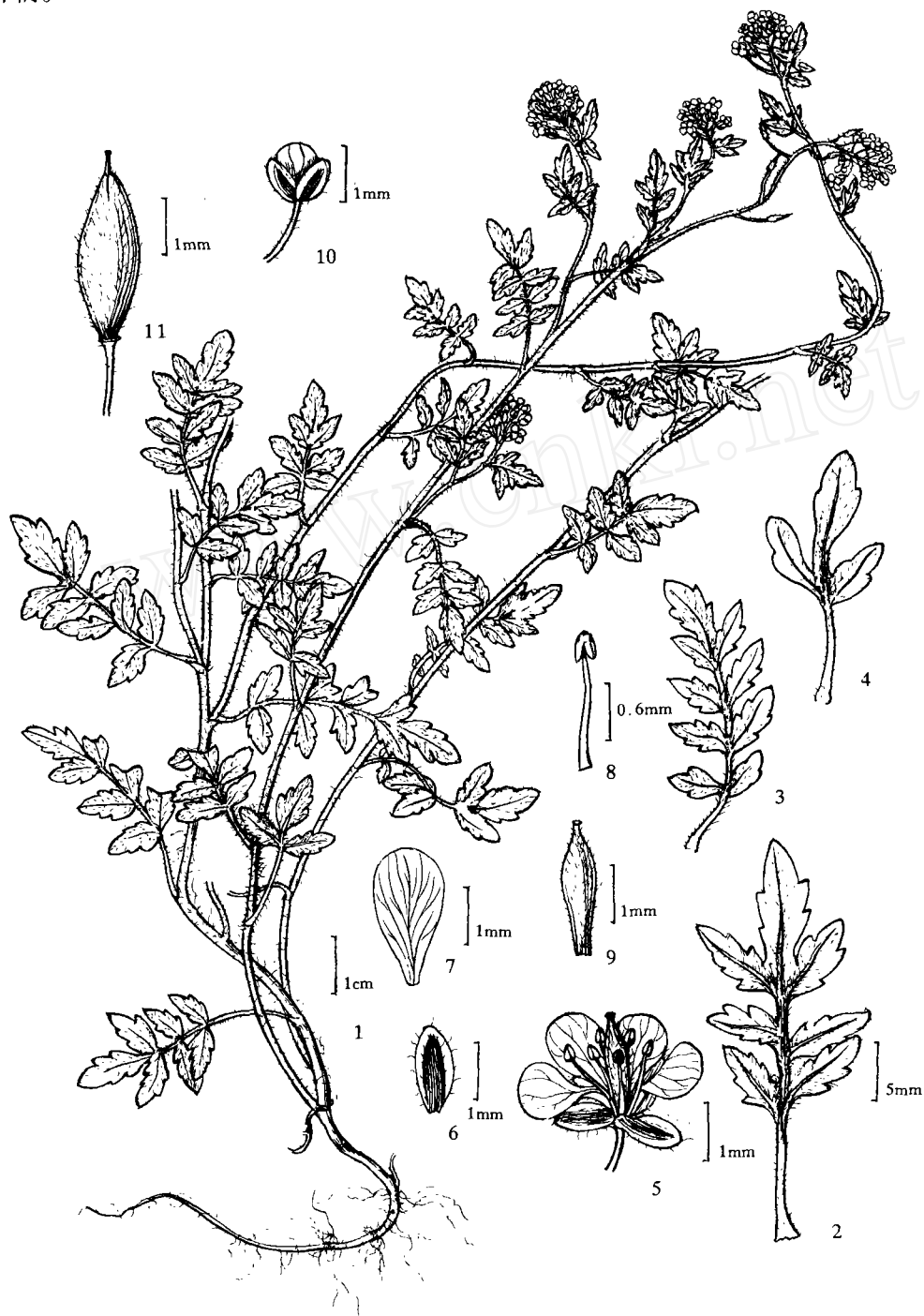


图3 柔毛蔊菜 1. 植株; 2~4. 叶; 5. 花; 6. 萼片; 7. 花瓣; 8. 雄蕊; 9. 雌蕊; 10. 花蕾; 11. 短角果。(阎翠兰绘)
Fig.3 *Rorippa villosa* R. F. Huang 1. plant; 2~4. leaf; 5. flower; 6. sepal; 7. petal; 8. stamen; 9. pistil; 10. flower bud; 11. silicle.

3 柔毛蔊菜 新种 图3

Rorippa villosa R. F. Huang, sp. nov.

Species nova affinis *R. islandicae* (Oed.) Bob., sed planta omnino albo-villosa, foliis (5) 7~9-pinnatisectis, sepalis villosis, petalis obovatis sepalis aequilongis vel eis paulo longioribus, siliculis pilosis differt. Herba annua vel biennis, 25~30 cm alta, omnino albo-villosa. Caulis ad basim longe ramosus, erectus, interdum dilute purpureus, villosus. Folia oblonga vel ovato-oblonga, 2~3 cm longa, 1.2~2 cm lata, pinnatisecta, utrinque villosa, laminis (5) 7~9-pinnatisectis; lobi laterales anguste obovata vel oblongo-elliptici, lobus terminalis obovatus, pluries basi cum lobis lateralibus conjunctivus, lobatis vel grosse serratis; petioli 1~2 cm longi, basi dilatati, villosi. Racemi axillares et terminales; flores parvi, conferti. Sepala oblonga vel elliptica, c. 1.5 mm longa, 1 mm lata, supra medium purpurea, infra medium olivacea vel flavo-virentia, pilosa; petala flava, obovata, c. 2.2 mm longa, 1.5 mm lata, apice rotundata, basi in unguis breves fera 0.3 mm longos angustata; stamina 6, filamentis linearibus compressis, longioribus c. 1.2 mm longis, brevioribus c. 1 mm longis; ovarium anguste obovatum vel ellipticum. Siliculae anguste ellipticae vel longe ovatae, 2.5~3 mm longae, c. 1 mm latae, compressae, pilosae, stylis persistentibus c. 0.3 mm longis; pedicelli fructiferi siliculis longiores; semina brunneola, ovata, c. 0.7 mm longa. Floriscentia Junio~Julio, perious fructificans Julio~Augusto.

Qinghai(青海): Huzhu(互助), Heilonggou(黑龙沟), alt. 2300 m, in sylvis montium, 1986-07-10, Y. H. Wu(吴玉虎) 2751, 2787(typus, HNWP).

一或二年生草本,高25~30 cm,全株被白色柔毛。茎直立,近基部分枝。叶长圆形或卵状长圆形,长2~3 cm,宽1.2~2 cm,(5)7~9羽状全裂;侧裂片狭卵形或长圆状椭圆形,顶裂片倒卵形,基部常与侧裂片连合,具浅齿或粗锯齿;叶柄长1~2 cm,基部加宽。总状花序顶生和腋生。花小而密集;萼片长圆形或椭圆形,长1.5 mm,宽1 mm,被柔毛;花瓣淡黄色,倒卵形,长约2.2 mm,顶端圆形,基部狭缩成短爪;雄蕊6,长花丝长1.2 mm,短花丝长约1 mm。子房狭倒卵形或椭圆形。短角果狭椭圆形或长卵形,长2~3 mm,宽1 mm,扁,被细柔毛,果梗长于角果。种子淡褐色,卵形,长约0.7 mm。花期6~7月,果期7~8月。

本种与沼生蔊菜 *R. islandica* (Oed.) Borb. 比较相似。但本种叶(5)7~9羽状全裂,植株全体被白色柔毛,花瓣与萼片等长或稍长,萼片被毛,短角果被柔毛而不同。