

## 国产悬钩子属绢毛亚组新资料

张书东

(中国科学院昆明植物研究所, 昆明 650201)

摘要: 报道了采自西藏墨脱县悬钩子属绢毛亚组 *Rubus* subsect. *Lineati* (Focke) Yü et Lu 两个中国新纪录种, 即酒红悬钩子 *R. calophyllus* Clarke. 和炫丽悬钩子 *R. splendidissimus* Hara.

关键词: 酒红悬钩子; 炫丽悬钩子; 新纪录种; 悬钩子属绢毛亚组; 墨脱县; 中国

中图分类号: Q949.751.8

文献标识码: A

文章编号: 2095-0837(2012)03-0301-04

### Notes on *Rubus* subsect. *Lineati* from China

ZHANG Shu-Dong

(Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650201, China)

Abstract: Two species of *Rubus* subsect. *Lineati* (Focke) Yü et Lu, viz. *R. calophyllus* Clarke. and *R. splendidissimus* Hara, were found for the first time in China. Both were collected from Motuo County in Xizang (Tibet). A key to *R.* subsect. *Lineati* distributed in China is given.

Key words: *Rubus calophyllus*; *Rubus splendidissimus*; New record; *Rubus* subsect. *Lineati*; Motuo County; China

In July and August of 2010, during an expedition to southern Xizang (Tibet) for the Flora of Pan-Himalayas Project, several specimens of Rosaceae were collected from Motuo County. Among them two species were with different morphological features from other species in the genus *Rubus* L. The specimens were checked in the herbaria PE and KUN, and again in the Flora of Eastern Himalaya<sup>[1]</sup>, Vascular Plants of the Hengduan Mountains<sup>[2]</sup>, Flora of China<sup>[3]</sup>, and Flora Xizangica<sup>[4]</sup>, and it was concluded they belonged to *R.* subsect. *Lineati* (Focke) Yü et Lu and represented new distributions in China. Considering the reported *R. lineatus* Reinw. (Fig. 1: F, G), there are three species of *R.* subsect. *Lineati* distributed in China.

#### 1 *Rubus calophyllus* C. B. Clarke (酒红悬钩子) (Fig. 1: A, B, C)

*Rubus calophyllus* C. B. Clarke in Journ. Linn. Soc. 25: 19. 1889

Shrubs with upright, arching stems to 3 m, with red-brown barks and scattered, minute, curved prickles. Branches whitish tomentose. Leaves elliptic or ovate, 13–21 × 5–10 cm, densely silvery-gray or yellowish gray appressed-sericeous beneath, with prominent parallel veins, usually 20–25 pairs, with sparse small recurved prickles along the midrib, base rounded, margins coarsely serrate with finely pointed teeth, apex acuminate to caudate; petioles 5–8 mm, sparse whitish tomentose; stipules persistent, adnate to

Received data: 2011-08-26 Accepted: 2012-05-18.

Foundation items: This research was supported by the Research Fund for CAS Large-scale Scientific Facility (2009-LSF-GBOWS-01).

Biography: ZHANG Shu-Dong (1979–), Male, Ph. D., Research interests: Phylogenetics and evolution of Rosales (E-mail: sdchang@mail.kib.ac.cn).

base of petiole ,brownish ,linear-lanceolate ,12 – 15 mm ,membranous ,entire. Flowers crowded in dense rounded 2 – 7-flowered axillary panicles , rachises and pedicels whitish tomentose; bracts lanceolate ,abaxially rarely white pilose. Pedicels 5 – 12 mm. Calyces abaxially rarely white pilose; sepals triangular ,10 – 12 mm ,apex acuminate to caudate , dense white villose adaxially , rarely white pilose abaxially ,gradually deciduous. Petals claret-red ,obovate ,c. 10 × 8 mm. Stamens numerous ,claret-red; Pistils ca. 40 or more ,as longer as stamens. Aggregate fruit orange or red and tasteless.

This species is distinct from the other species in *R.* subsect. *Lineati* in its simple ,elliptic or ovate leaves ,which may be 21 cm long and have 20 – 25 pairs of parallel veins. The claret-colored petals are also unusual , perhaps unique in the genus.

Distribution: Bhutan ,China ,NE India.

China: Xizang ( 西藏 ) , Motuo ( 墨脱 ) , Zhamo Road 62 – 72 km ( 扎墨公路 62 ~ 72 km ) , forest margins , thickets , 3000 m , July 30 2010 , Jin Xiaohua , Zhang Shudong , Li Zhongyang , Wu Baocheng , Mu Xianyun , Li Jing , Jin Weitao STET1633 ( PE , KUN ) .

## 2 *Rubus splendidissimus* H. Hara ( 炫丽悬钩子 ) ( Fig. 1: D , E )

*Rubus splendidissimus* H. Hara in J. Jap. Bot. 40: 327. 1965 — *R. andersoni* Hook. f. in Fl. Brit. India 2: 333. 1878 , non Lefèv. 1877

Scrambling shrubs much branched , free of prickles. Branchlets brownish to brown , terete , white pubescent , with sparse , purplish red bristles or glandular hairs. Leaves palmately compound , 3-foliate , rarely 5-foliate; petioles 2 – 5 cm , leaflets sessile or subsessile , petiolules purplish red bristly , pubescent; stipules caducous ,

free , lanceolate , c. 1.5 cm , often broad , membranous , abaxially sparse pubescent , with intermixed glandular hairs , not divided; blades of leaflets obovate-elliptic , lateral leaflets oblique , 6 – 10 × 2.5 – 5 cm , terminal leaflet much larger than lateral ones , abaxially densely silvery-gray or yellowish gray appressed-sericeous , with purplish red bristles along prominent midrib , adaxially veins impressed , pubescent , pinnately veined with 15 – 25 pairs of parallel lateral veins , midvein and lateral veins prominent abaxially , base cuneate , margin sharply serrate to doubly serrate with finely pointed teeth , apex acuminate to caudate. Inflorescences terminal and in axils of apical leaves , cymose panicles , flowers several to 10 or more; rachises and pedicels white pubescent , with glandular bristles; bracts lanceolate , smaller than stipules , abaxially sericeous. Pedicels 4 – 10 mm. Calyces abaxially densely silvery-gray or yellowish gray sericeous , intermixed purplish red glandular bristles; sepals lanceolate to triangular , 12 – 17 × 3 – 5 mm , margin entire , apex acuminate to caudate. Petals white , elliptic , smaller than sepals. Stamens numerous , white. Pistils longer than stamens. Aggregate fruit not seen.

This species is very similar in foliage to broad-leaved states of *R. lineatus* , but distinguished by the purplish red bristles or glandular hairs , the long caudate-acuminate sepals intermixed with purplish red glandular bristles , and flowers in broad panicles with long pedicels.

Distribution: 2400 – 3000 m; Bhutan , China , NE India , Nepal.

China: Xizang ( 西藏 ) , Motuo ( 墨脱 ) , Zhamo Road 62 – 72 km ( 扎墨公路 62 ~ 72 km ) , forest margins , thickets , 3000 m , July 30 2010 , Jin Xiaohua , Zhang Shudong , Li Zhongyang , Wu Baocheng , Mu Xianyun , Li Jing , Jin Weitao STET1632 ( PE , KUN ) .

Lu and David<sup>[3]</sup> have stated that *R. calophyllus* may be distributed in Xizang; however, as they did not see the voucher specimen (F. K. Ward 6321) they were unsure if this species occurred in China. In Bhutan and NE India, *R. calophyllus* inhabits the margins of wet *Tsuga*, *Abies* and cool broad-leaved forest. Xizang is very close to these two countries, therefore, the similar habitats in this area are most likely occupied by this species. In this investigation, one population of *R. calophyllus* was found in Motou County. This collection further confirmed that this species is a native plant of China.

*Rubus calophyllus* and *R. splendidissimus* occurred on the forest margins or thickets along the Zhamo Road between 67 and 72 km, and were disturbed by the people frequently. The genus of *Rubus* is ecologically important but can be an invasive weed during early forest succession. Therefore, most species of this genus are usually discovered at the edge of forests or disturbed thickets with good sunlight. In fact, another four species of this genus, *R. subinopertus* T. T. Yu & L. T. Lu, *R. lineatus* Reinw., *R. paniculatus* Smith and *R. macilentus* Cambessèdes var. *angulatus*

Franchet were found living with these two species at this location. In this investigation, less than one hundred individuals of each new recorded species were found. It is likely that more populations and individuals will be discovered with deeper field surveys performed in this area.

These two new reported species from China belong to *R.* subsect. *Lineati*, a small group of species distributed in eastern Asia. This group contains five species including one of proposed hybrid origin. The members of this subsection can be easily recognized by simple or palmate leaves, leaflets abaxially densely silvery-gray or yellowish gray appressed-sericeous and with numerous parallel veins from a straight midrib. The most familiar and widespread species of the group is *R. lineatus*, distributed in Bhutan, NE India, Indonesia, Malaysia, Myanmar, Nepal, Sikkim, N Vietnam and China. *Rubus lineatus* is the third species of this group distributed in China. According to morphological diversity, three varieties of this species from China can be recognized. The newly recorded species can be distinguished from other *R.* subsect. *Lineati* taxa of China by the key below.

#### Key to the taxa of *Rubus* subsect. *Lineati* from China

1. Leaves simple, petioles short, stipules persistent, adnate to base of petiole; petals claret-red, calyces abaxially sparse pilose, gradually deciduous ..... *Rubus calophyllus*
1. Leaves palmate, petioles long, stipules caducous, free; petals white, calyces abaxially sericeous
  2. Plants without glands; leaflets pinnately veined with (20 –) 30 – 50 pairs of lateral veins; sepals ovate-triangular to ovate-lanceolate, abaxially sericeous ..... *R. lineatus*
  3. Pedicels and abaxial surfaces of calyces with deciduous sericeous hairs ..... var. *glabrescens*
  3. Pedicels and abaxial surfaces of calyces with dense, persistent sericeous hairs
    4. Blades of leaflets oblong or lanceolate to oblanceolate ..... var. *lineatus*
    4. Blades of leaflets narrowly lanceolate ..... var. *angustifolius*
  2. Plants with glands; leaflets pinnately veined with 15 – 25 pairs of lateral veins; sepals lanceolate to triangular, abaxially sericeous, intermixed purplish red glandular bristles ..... *R. splendidissimus*



A – C. *Rubus calophyllus*: A. Open flower showing sepals ,petals ,stamens ,and pistils; B. Leaves; C. Inflorescences and leaves showing hairs of calyces and leaves. D ,E. *R. splendidissimus*: D. Branches; E. Open flower showing sepals ,petals ,stamens and pistils. F ,G. *R. lineatus*: F. Leaves; G. Open flower showing sepals ,petals ,stamens and pistils.

Fig. 1 The species of *Rubus* subsect. *Lineati* in China

#### References:

- [ 1 ] Hara H ,Ohashi H. Rosaceae. The Flora of Eastern Himalaya [M]// Hara H ,ed. Tokyo: University of Tokyo Press ,1971 ,2: 49–61.
- [ 2 ] Lu L T. *Rubus* L. Vascular plants of the Hengduan Mountains [M]// Wang W C , ed. Beijing: Science Press ,1994 ,1: 817–838.
- [ 3 ] Lu L T ,David B. *Rubus* Linnaeus. Flora of China [M]// Wu Z Y ,Raven P H ,eds. Beijing: Science Press and St. Louis: Missouri Botanical Garden Press ,2003 ,9: 195–285.
- [ 4 ] Yu T T ,Lu L T ,Ku T C. Rosaceae. Flora Xizangica [M]// Wu C Y ,ed. Beijing: Science Press ,1985 ,2: 539–701.

( 责任编辑: 王豫鄂)