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越南苦苣苔科植物四新记录种

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摘要:报道了4个苦苣苔科(Gesneriaceae)植物在越南的分布新记录,其中1种为半蒴苣苔属(*Hemiboea*)的红苞半蒴苣苔(*H. rubribracteata*),2种为报春苣苔属(*Primulina* Hance)的文采报春苣苔(*P. wentsaii*)和疏花报春苣苔(*P. laxiflora*),还有1种为吊石苣苔属(*Lysionotus*)的桂黔吊石苣苔(*L. aeschynanthoides*)。文中列出了每个种的标本引证和地理分布情况。

关键词:红苞半蒴苣苔; 桂黔吊石苣苔; 疏花报春苣苔; 文采报春苣苔; 新记录; 越南

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Four newly recorded Gesneraceous species from Vietnam

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Abstract: One species of *Hemiboea*, *H. rubribracteata*, two species of *Primulina*, *P. wentsaii* and *P. laxiflora*, and one species of *Lysionotus*, *L. aeschynanthoides*, are reported for the first time from Vietnam. The citation of specimens and their distribution is given in the present paper.

Key words: *Hemiboea rubribracteata*; *Lysionotus aeschynanthoides*; *Primulina laxiflora*; *Primulina wentsaii*; new records; Vietnam

The genus, *Hemiboea* C. B. Clarke, belongs to Gesneriaceae subfamily Cyrtandroideae tribe Didymocarpeae. Its relative Chinese endemic genus, *Metabriggsia* W. T. Wang (1983a), was merged with *Hemiboea* (Weber *et al.*, 2011). In addition, after two new species, *H. purpurea* Yan Liu & W. B. Xu (Xu *et al.*, 2010) and *H. angustifolia* F. Wen & Y. G. Wei (Wen *et al.*, 2011), and one variety, *H. follicularis* C. B. Clarke var. *retrofl-*

exa Yan Liu & Y. S. Huang (Huang *et al.*, 2011) were published, this genus comprises at least 28 species and six varieties. This genus mainly distributes in S and SW China and N Vietnam (Wang *et al.*, 1990; Wang *et al.*, 1998; Li & Wang, 2004; Wei *et al.*, 2010). There are about 28 species of former *Chirita* Buch.-Ham. ex D. Don were recorded. However, a major revision of the once monotypic, *Primulina* Hance (1883), was released in

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2011. Those species in former section *Gibbosaccus* of *Chirita* Buch.-Ham. ex D. Don., *Chiritopsis* W. T. Wang and two species of *Wentsaiboea* D. Fang & D. H. Qin were revised to be members of *Primulina* (Wang *et al.*, 2011; Weber *et al.*, 2011). Thus, some new records of original *Chirita* sect. *Gibbosaccus* should be reported as *Primulina* species. Lastly, the genus *Lysionotus* D. Don., consists of about 27 species, and is ranging from N India, N Nepal, N Thailand, N Vietnam and S China to S Japan (Li & Wang, 2004; Nong *et al.*, 2010). Before our report, only five species of this genus were reported in Vietnam.

During our extensive expedition to Vietnam in the past two years, we collected some specimens of Gesneriaceae species as new records from Vietnam, which are not be mentioned in botanical or correlative monograph of Vietnam (Ho *et al.*, 2000; Nguyen *et al.*, 2000).

1. *Hemiboea rubribracteata* Z. Y. Li & Yan Liu in Acta Phytotax. Sin. 42(6): 537, fig. 1. 2004. (Fig. 1)

Specimens examined: Vietnam: Tuyen Quang Prov., Na Hang Distr., Na Hang Nature Reserve, approximately 22°20'42"N, 105°25'20"E, ca. 320 m. 17. Jun. 2012, Do Van Truong & Wen Fang, VMN_CN241 (VMN, IBK).

Ecology: Grows in the crevices on a limestone hill, under tropical evergreen broadleaf forest and bushes. 320 m a.s.l.

Conservation and existence status: This species can only be found in a sunny limestone hill in Na Hang Nature Reserve. However, the suitable habitat is being seriously invaded by a invasion plant, *Zebrina pendula* Schnizl. We considered that the population of *Hemiboea rubribracteata* is in a recession.

Distribution: SW Guangxi, CHINA, New to Vietnam.

Discussion: Firstly, this species was discovered from Jingxi County, Guangxi, China, and considered as an endemic one to Guangxi. This area abuts the border with N Vietnam. Thus, it is no wonder that the new record was discovered and confirmed. It also hints there is a direct intimate connection between the flora of SW China and N Vietnam.

The population of Guangxi, China is located in a large-scale limestone gorge, and all plants grow in the

bottom of this gorge with high humidity and shade density. But the population of N Vietnam grows in the crevices of the hillside of limestone hill with stronger sunlight, poor soil and low humidity. Some small differences can be observed between two different populations from China and Vietnam, for example color of involucre (vivid fuchsia or pale purplish-red), color of corolla (white or yellowish-white), height of plants (0.4—1.5 m or higher), etc. The difference of habitat conditions result those.

Based on the botanical diagnosis when it was published, this species is similar to *Hemiboea cavaleriei* Lévl. (Li & Liu, 2004), but easily distinguished by those characters showed in Table 1. The table 1 accordingly shows another similar species, *H. angustifolia* F. Wen & Y. G. Wei (Wen *et al.*, 2011).

2. *Primulina laxiflora* (W. T. Wang) Y. Z. Wang in J. Syst. Evol. 49: 61. 2011 ≡ *Chirita laxiflora* W. T. Wang in Bull. Bot. Res., Harbin 4(1): 21. 1984. (Fig. 2 A-D)

Specimens examined: Vietnam: Ha Giang Prov., Bac Me Distr., Bac Me Nature Reserve, approximately 22°22'18" N, 105°27'48" E, ca. 145.6 m. 16. Jun. 2012, Do Van Truong & Wen Fang, VMN_CN229 (VMN, IBK).

Ecology: Grows at the entrance of a limestone cave and crevices of limestone rock near waterfall. 145.6 m a.s.l.

Distribution: NW Guangxi, China, New to Vietnam.

Conservation and existence status: The waterfall and cave are used by local people to swim and enjoy the cool. Thus local people's activities might have affected the normal reproduction of this population.

Discussion: The type locality, Linyun County, is located in NW Guangxi. It is separated from Vietnam by some counties of Guangxi and Yunnan. However, we successively discovered some distribution points in different Counties of Guangxi and Yunnan near border of China and Vietnam. The newest collected record in China was in Gaozhou and Huazhou of Guangdong by a plant enthusiast. It also hints the close connection between flora of S China and N Vietnam. Unquestionable, more and more distribution localities will be found in the future in two countries.

When this species was published (Wang, 1984),

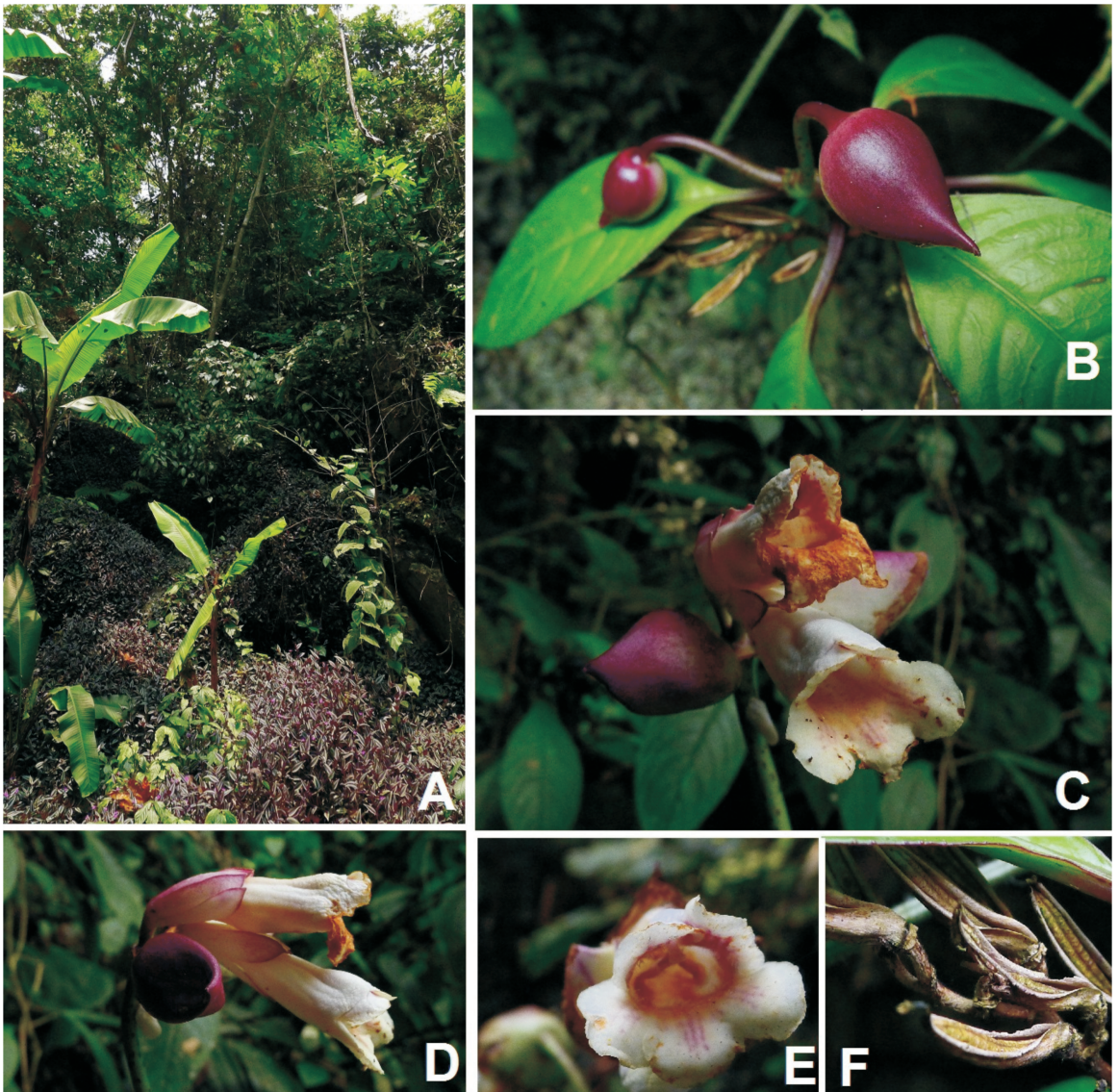


Fig. 1 *Hemiboea rubribracteata* Z.Y.Li & Yan Liu A. Habitat, showing the invasion plant, *Zebrina pendula* Schnizl; B. Purplish-red involucre; C. Frontal view of cyme; D. Side view of corolla and cyme; E. Frontal view of corolla; F. Capsule.

Wang (1984) considered it resembled *Chirita swinglei* (Merr.) W.T.Wang (now *Primulina swinglei* (Merr.) Mich.Möller & A.Weber), but easily distinguished by its smaller leaf blades, more flowers on one cyme, smaller flower, corolla nearly tubular. Furthermore, when this species grows in dark limestone caves, they look similar to *Chirita tenuifolia* W. T. Wang (now *Primulina tenuifolia* (W.T.Wang) Y.Z.Wang) (Weber *et al.*, 2011). Table 2 summarizes the morphological differences between *P.laxiflora* and two similar species.

3. *Primulina wentsaii* (D.Fang & L.Zeng) Y.Z.

Wang in J.Syst.Evol.49:62.2011≡*Chirita wentsaii* D. Fang & L.Zeng in Acta Phytotax.Sin.31(5):466.1993. (Fig.2 E-H)

Specimens examined: Vietnam: Lang Son Prov., Trang Dinh Distr., Tri Phuong Commune, approximately 22°39'29" N, 106°0'10" E, ca.424.1 m.16.Jun. 2012, Do Van Truong & Wen Fang, VMN_CN 173 (VMN, IBK).

Ecology: Grows in the crevices of sunny vertical cliffs on a limestone hill. There are almost no accompanying plants near those individuals. 424.16—460 m a.s.l.

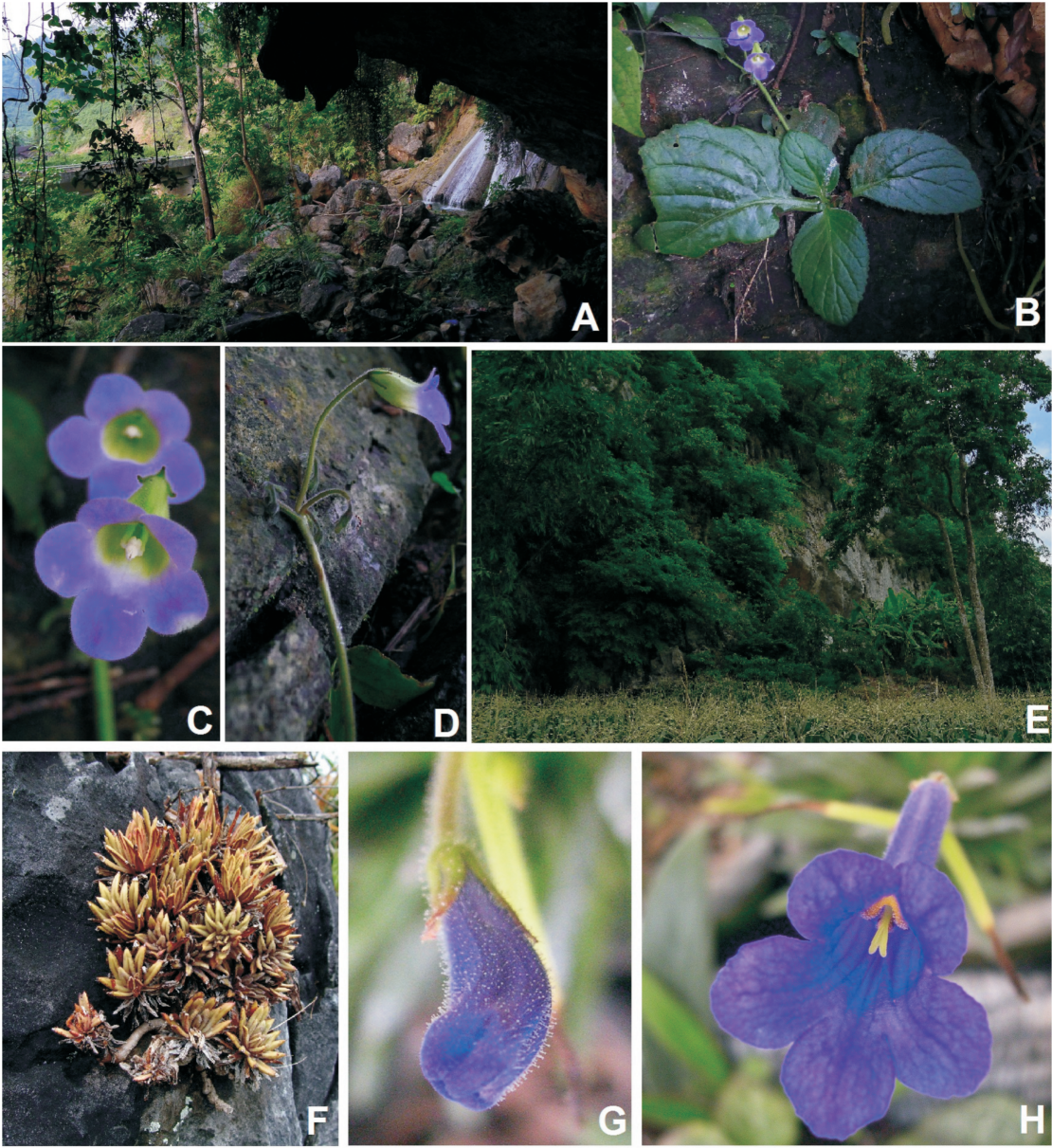


Fig. 2 *Primulina laxiflora* (W.T.Wang) Y.Z.Wang (A-D) A. Habitat; B. Habit; C. Frontal view of corolla; D. Side view of cyme. *P.wentsaii* (D.Fang & L.Zeng) Y.Z.Wang(E-H) E. Habitat; F. Habit; G. Bud; H. Frontal view of corolla.

Distribution: SW Guangxi,China,New to Vietnam.

Conservation and existence status: Clustered and huge individuals grow on the vertical limestone cliffs from three to twenty or higher meters above ground. Thus growth and reproduction of this population should not be affected by artificial interference.

Discussion: This species was published in 1993 (Fang *et al.*). Before our new record of this species in Vietnam,it can only be known in one locality in Longzhou County,Guangxi. It was assessed as Critically En-

dangered(CR A1a + C2a(ii))based on red list categories (IUCN,2001;Wei *et al.*,2010). The new locality is very close to the border of two countries,but the distance between new and old localities is about 50 kilometers. New localities of *Primulina wentsaii* might be discovered in the future in this contiguous area. This species looks like *P.ophiopogoides*(D.Fang & W.T.Wang) Y.Z.Wang and *P.spinulosa* (D.Fang & W.T.Wang) Y.Z.Wang without flowers,however it is so easily differed on basis of some characters as the Table 3 below show.

Table 1 Morphological comparison of *Hemiboea rubribracteata*, *H.cavaleriei* and *H.agustifolia*

Differed characters	<i>H.rubribracteata</i>	<i>H.cavaleriei</i>	<i>H.agustifolia</i>
Stem	strong,10—13 mm in diam.,stuff	slim and soft, 5—7 mm in diam.	strong,5—7 mm in diam.
Involucre color	red	green or brownish green	whitish green or pale yellowish green
Calyx lobes	longer,8—15 mm longer	shorter,5—7 mm long	7.8—8.8 mm long,between two former
Corolla	white,outside glabrous, abaxial lip 3-lobed towards the middle	Pale yellow,outside sparely glandular pubescences, ab- axial 3-lobed	greyish-white or waxy-white, adaxial outside glandular-puberulent,abaxial outside extreme- ly short pubescent to nearly glabrous

Table 2 Morphological comparison of *P.laxiflora*, *P.swinglei* and *P.tenuifolia*

Differed characters	<i>P.laxiflora</i>	<i>P.swinglei</i>	<i>P.tenuifolia</i>
Leaf blade	6—9.6 cm long	13—17 cm long	2.2—5 cm long
Flowers on one cyme	7—12	1—6	1
Flower size	ca.1.7 cm long	2.8—4.2 cm long	ca.2.8 cm long
Corolla	nearly tubular	tubular	slender funnellform

Table 3 Morphological comparison of *P.wentsaii*, *P.ophiopogoides* and *P.spinulosa*

Differed characters	<i>P.wentsaii</i>	<i>P.ophiopogoides</i>	<i>P.spinulosa</i>
Flowers number on one cyme	2—3	5—7	ca.9 or more
Bracts	30—35 mm long	9—15 mm long	2—2.5 mm long
Calyx lobes	10—12 mm long	4—5 mm long	ca.1.5 mm long
Corolla	4.5—5 cm long;bluish-purple; outside sparsely glandular-pubescence	2.5—2.6 cm long;pale purple; outside without glandular-pubescence	ca.1.3 cm long;purple; upper-outside sparsely extremely pubescence
Corolla tube	campaniform,3—3.5 cm long	slim infundibuliform,ca.1.4 cm long	nearly tubular
Staminodes	3,lateral ones9 mm long	2,ca.5 mm long	2,ca.1.5 mm long
Pistil	ca.2.6 cm long	ca.1.5 cm long	ca.1.4 cm long

4. *Lysionotus aeschynanthoides* W. T. Wang in Guihaia 3(4): 265, pl.4, fig.7-9.1983 et Fl.Reip.Pop. Sin.69:536, tab.153;7-9.1990;W.T.Wang et al.In Z.Y. Wu et Raven,Fl.China 18:388.1998.

Specimens examined: **Vietnam:** Bac Kan Prov.,Na Ry Distr., Kim Hy Nature Reserve, approximately 22°11'24" N, 106°3'43" E, ca.457.1 m.10.Jun.2012, Do Van Truong & Wen Fang, VMN_CN83 (VMN, IBK).

Ecology: Grows on the trunks of evergreen broad-leaved trees or crevices of limestone rocks under ever-green broad-leaved trees and bushes.457.1 m a.s.l.

Distribution : Middle, SW Guangxi, SE Yunnan, SW Guizhou, China, New to Vietnam.

Conservationand existence status: The populations in or near Kim Hy Nature Reserve survive in good state. There are a lot of young plants reproduce by seeds (sexual reproduction) and rhizomes (asexual re-production). The individuals of populations grow and

renew very well.

Discussion: At first this species was considered as endemic one to China (SW Yunnan, Middle and SW Guangxi, and SW Guizhou). The new record of the species in Vietnam hints the close connection between flora of S and SW China and N Vietnam. So far, four species of *Lysionotus* D.Don were recorded, namely *L. pauciflorus* Maxim., *L. petelotii* Pell., *L. serratus* D. Don (Ho, 2000) and this new recorded species. This species belongs to Sect. *Lysionotus* ser. *HeteroPhylli* W.T.Wang, but easily distinguished other ones of this section by its anisopleural leaf blades, entire leaf blade margin, smaller flowers, yellow corolla, infundibuli-form-tubular corolla tube. Furthermore, the scientific name hints that the morphology of vegetable organ of this species is similar to *Aeschynanthus* Jack plants (Wang, 1983b).

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(上接第 391 页 Continue from page 391)