# A New Variety of *Hemiboea* (Gesneriaceae) from Limestone Areas in Guangxi, China

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ABSTRACT: *Hemiboea follicularis* C. B. Clarke var. *retroflexa* Yan Liu & Y. S. Huang, a new variety of Gesneriaceae from limestone areas in Guangxi, China, is described and illustrated. The new variety is similar to *Hemiboea follicularis* C. B. Clarke var. *follicularis*, but differs in the stem quadrangular, the corolla yellow green, with purple stria or macula, inside with half-ring of hairs, labels retroflexed.

KEY WORDS: Guangxi; *Hemiboea follicularis* var. *retroflexa*; limestone flora; new variety.

## INTRODUCTION

In the course of floristic investigation in limestone areas of Guangxi, China, we discovered a rare plant of *Hemiboea* (Gesneriaceae). After comparing with all described species of *Hemiboea* (Li, 1983, 1987; Wang et al., 1990; Wei et al., 1995; Weitzman et al., 1997; Wang et al., 1998; Li and Liu, 2004; Li and Wang, 2004; Xu et al., 2010), we found it is different from all the known species of *Hemiboea* except *Hemiboea follicularis*, but compared with *Hemiboea follicularis*, it also differs in the stem quadrangular, the corolla yellow green, with purple stria or macula, inside with half-ring of hairs, labels retroflexed. So we confirmed it is a new variety and described as below.

## TAXONOMIC TREATMENTS

***Hemiboea follicularis*** C. B. Clarke var. ***retroflexa*** Yan Liu & Y. S. Huang, *var. nov.* Figs. 1 & 2 A-D

*H. folliculari* C. B. Clarke *var. folliculari similis, a qua differt caule quadrangulo, corolla luteo-viridi, purpuleo-striata vel maculata, intus pilis semiannualis ornata, labellis reflexis.*

Type: China, Guangxi: Guilin, Yanshan, Guilin Botanical Garden, introduced from Huanjiang County by Yan Liu, alt. 170 m, 26 July 2007, *W. B. Xu 07066* (holotype IBK).

Herbs perennial. Stems 20-40 cm in height, quadrangular, glabrous, simple or branched, with 4-8 nodes. Leaves opposite, with leaf blade elliptic or ovate lanceolate, 3-15 × 1.5-9 cm; base cuneate, usually asymmetric; margin nearly entire or weakly sinuous; apex acuminate or acute; adaxial blade green, glabrous; abaxial blade green-white, veins with sparsely pubescence; lateral veins 5-8 on each side of midrib; petiole 1-8 cm long. Cymes 5-10 or more flowers, axillary or pseudoterminal, peduncle 3-5 cm long, glabrous. Involucre 1.5-2.5 cm in diam., globular; apex white, membranous, glabrous, bowl-shaped when opened. Calyx 1-1.5 cm long, 5-lobed from above middle, white, glabrous. Corolla yellow green, with purple stria or macula, 1.2-1.8 cm long, outside glabrous, corolla tube 1-1.5 cm long, inside densely short glandular-hairy and puberulent, with half-turn of hairs adnate to 4-6 mm above the corolla base, adaxial lip 2-3 mm long, 2-lobed, lobe hemicycle, retroflexed, abaxial lip 2.5-3.5 mm long, 3-lobed, lobe oval, retroflexed. Stamen 2; filaments linear, 1-1.5 mm long, adnate to 4-6 mm above the corolla base; anthers elliptic, 2 mm long, connate completely at the venter; staminodes 2, ca. 1.5 mm long; apex capitate. Disc annular, ca. 1.2 mm high. Pistil 6-8 mm long; ovary linear, glabrous; stigma capitellate; apex densely spheroidal murication. Capsule unknown.

Ecology: On shaded rocky limestone slopes in broadleaved forests, ca. 200-300 m elevation.

Phenology: Flowering June to July.

Etymology: The specific epithet is derived from the shape of corolla lobes whose adaxial and abaxial lip retroflexed.

IUCN Red List Category: The species are only found from Longzhou and Huanjiang County, Guangxi, China at now. Current information shows that the population size of this new species is fewer than 250 mature individuals. We therefore assess *Hemiboea follicularis*



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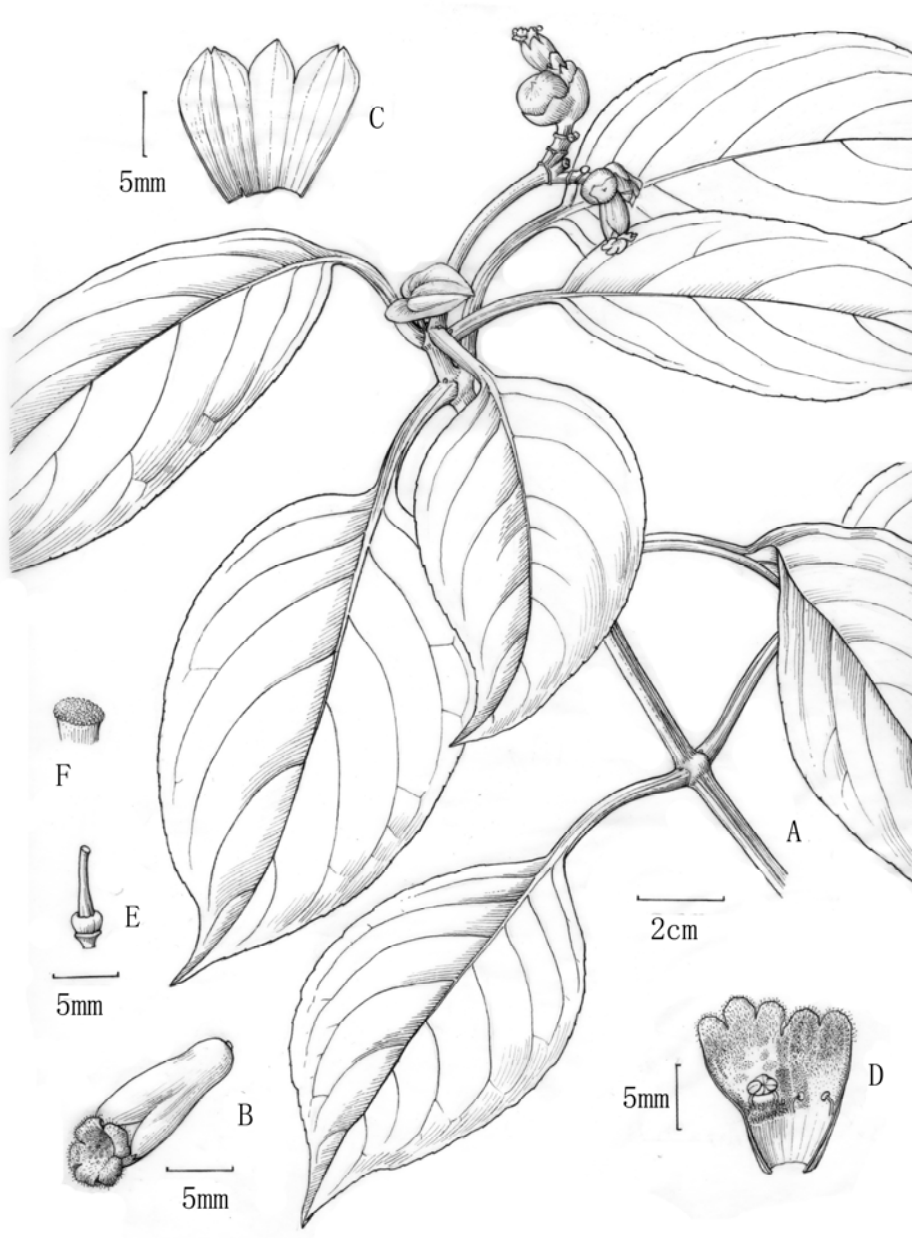



**Fig. 1. *Hemiboea follicularis* C. B. Clarke var. *retroflexa* Yan Liu & Y. S. Huang A: Habit. B: Flower. C: Calyx. D: Corolla opened, showing stamens and staminodes. E: Pistil. F: Stigma. Drawn by S. Q. He from *W. B. Xu 07066* (IBK).**

var. *retroflexa* as endangered degree (EN) using the IUCN categories and criteria (IUCN 2001).

Note: *Hemiboea follicularis* C. B. Clarke var. *retroflexa* Yan Liu & Y. S. Huang is closely relate to *Hemiboea follicularis* C. B. Clarke var. *follicularis* (Fig. 2 E & F), but differs in the stem quadrangular, the corolla yellow green, with purple stria or macula, inside with half-ring of hairs, labels retroflexed. A comparison of the salient characters of *Hemiboea follicularis* var. *retroflexa* and *H. follicularis* var. *follicularis* is shown in Table 1.

Additional specimens examined*:* CHINA. Guangxi: Longzhou County, Chunxiu natural reserve, on shaded rocky limestone slopes in broadleaved forests, rare, alt. 250 m, 23 July 2009, *R. H. Jiang et al. H09603* (IBK).

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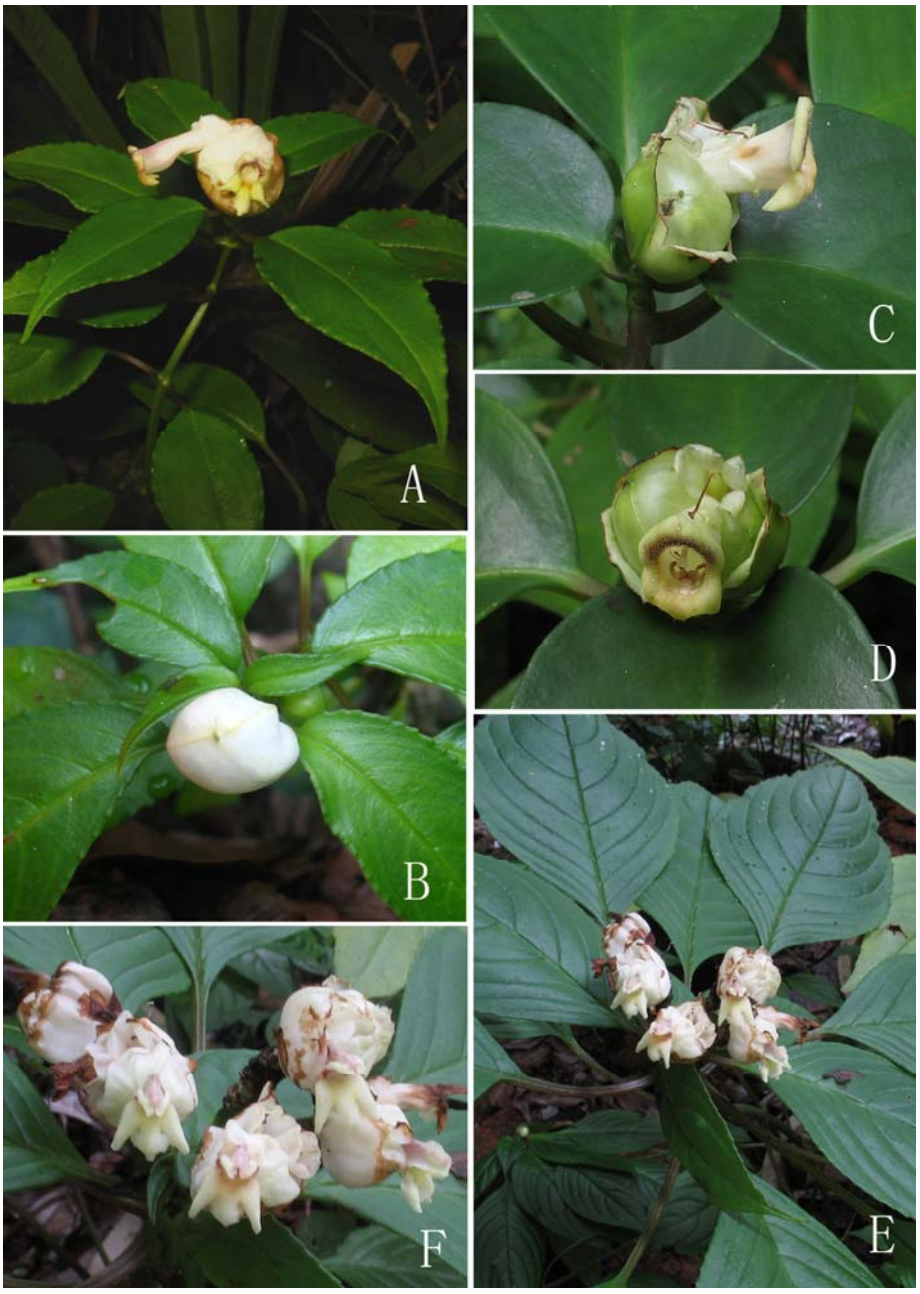



**Fig. 2. A-D: *Hemiboea follicularis* C. B. Clarke var. *retroflexa* Yan Liu & Y. S. Huang. A: Habit. B: Involucre. C: Lateral flower. D: Frontal flower. E, F: *Hemiboea follicularis* C. B. Clarke var. *follicularis.* E: Habit. F: Flower.**

**Table 1. Comparison of salient characters of *Hemiboea follicularis* var. *retroflexa* and *H. follicularis* var. *follicularis***

| | *Hemiboea follicularis* var. *retroflexa* | *H. follicularis* var. *follicularis* |
|---|---|---|
| Stem | quadrangular | rounded |
| Corolla | yellow green, with purple stria or macula, inside with half-ring of hairs | white, inside with a ring of hairs |
| Labels | retroflexed, abaxial lip oval | not retroflexed, abaxial lip half-rounded |
| Cymes | 5-10 or more flowers, axillary or pseudo terminal | 7-20 or more flowers, pseudoterminal |
| Anther | elliptic, 2 mm long | rounded, 1-2 mm long |



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natural reserve of Longzhou for field assistance. This study was supported by Knowledge Innovation Project of the Chinese Academy of Sciences, Grant No. KSCX2-YW-Z-0912 to Yan Liu (IBK), Fundamental Research Fund of Guangxi Institute of Botany (GZY 09004) to Wei-Bin Xu (IBK) and Scientific Funded Projects of Guangxi (GKZ0991226).

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# 中國廣西石灰岩地區半蒴苣苔屬（苦苣苔科, Gesneriaceae）一新變種

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摘要：描述了中國廣西石灰岩地區苦苣苔科（Gesneriaceae）一新變種 – 卷瓣半蒴苣苔（*Hemiboea follicularis* C. B. Clarke var. *retroflexa* Yan Liu & Y. S. Huang）。該變種與原變種－華南半蒴苣苔（*Hemiboea follicularis* C. B. Clarke var. *follicularis*）相近，不同在於莖四棱形，花冠黃綠色，具紫色條紋或斑點，花冠內部只具半圈毛環，唇瓣反卷，可以區別。

關鍵詞：廣西、卷瓣半蒴苣苔、石灰岩植物區系、新變種。



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