

Taxonomic updates on *Parsonsia* (Apocynaceae) from Vietnam: a new record and lectotypification

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Abstract: *Parsonsia goniostemon* Hand.-Mazz., previously known only from China, is newly recorded for the flora of Vietnam based on specimens collected from Kim Hy Nature Reserve in Thai Nguyen Province. This species is morphologically allied to *P. alboflavescens* (Dennst.) Mabb. but can be distinguished by its shorter petioles and stamens inserted at the corolla throat. A detailed description, photographic illustrations, and comparisons with the morphologically allied species are provided. Notes on its habitat, ecology, distribution, and provisional conservation status in Vietnam are also included. In addition, a lectotype is designated for the name *P. goniostemon* to stabilize its nomenclature.

Keywords: Gentianales, Kim Hy, Plant diversity, Taxonomy, Thai Nguyen

Introduction

The genus *Parsonsia* R.Br. (Apocynaceae) comprises approximately 89 accepted species and is distributed across tropical and subtropical regions of Asia to the southwestern Pacific (POWO, 2026). Members of the genus are characterized by several diagnostic features, including woody lianas with white latex; opposite leaves; salverform corollas with short tubes and right-overlapping lobes; narrowly sagittate, exerted anthers; and thick, often linear follicles (Li *et al.*, 1995; Tran, 2007; Middleton, 2014). In Vietnam, the genus was previously represented by a single species, *P. alboflavescens* (Dennst.) Mabb. (Pham, 2003; Tran, 2005, 2007).

During a botanical survey conducted in 2021 in the Kim Hy Nature Reserve, Bac Kan (now administratively part of Thai Nguyen Province), northern Vietnam, a specimen referable to *Parsonia* was collected and assigned the field number VAST09-706. To determine its taxonomic identity, relevant taxonomic literature (Li *et al.*, 1995; Pham, 2003; Tran, 2005, 2007; Middleton, 2014) was consulted, and digitized herbarium specimens from A, HN, IBK, IBSC, NY, PE, and W, were also examined. Based on detailed morphological comparisons, the specimen was confidently identified as *Parsonsia goniostemon* Hand.-Mazz., establishing it as a new record for the flora of Vietnam.

Materials and Methods

Field surveys and specimen collections were conducted during October 2021 to May 2022. Specimens were collected following standard botanical collection procedures and were subsequently pressed, dried, and deposited at the HN Herbarium, Institute of Biology, Vietnam Academy of Science and Technology (Acronym follow Thiers, 2026). Morphological assessments were based on both vegetative and reproductive characters, which were carefully observed, measured, and documented following standard taxonomic procedures (de Vogel, 1987). Comparative analyses were conducted with authenticated herbarium specimens

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(housed at GXMG, GXMI, HITBC, IBK, IBSC, KUN, PE) and descriptions available in relevant taxonomic literature (Li *et al.*, 1995; Pham, 2003; Tran, 2005, 2007; Middleton, 2014). The specimen VAST09-706 was compared in detail with the type specimen and protologue of *Parsonsia goniostemon* Hand.-Mazz. to confirm its identity. An identification key was constructed to distinguish the species of *Parsonsia* currently recognized in Vietnam. Conservation status was assessed following the IUCN Red List Categories and Criteria (IUCN, 2024) based on the data gathered during field surveys and from herbarium specimens. Lectotypification was done through critical examination of relevant literature, and digitized specimens housed in major herbaria and in accordance with the International Code of Nomenclature for algae, fungi and plants (Turland *et al.*, 2025).

Taxonomic Treatment

Parsonsia goniostemon Hand.-Mazz., Sunyatsenia 2: 165. 1934; Li *et al.*, Fl. China 16: 172. 1995. *Lectotype* (designated here): CHINA, **Guangxi**, Lonjin, Lingyun, rocky areas, 05.08.1928, R.C. Ching 6699 (A [A00068131 digital image!]; isolecto NY [NY00318254, NY00318255 digital images!], PE [PE00992690, PE00992696 digital images!], IBSC [IBSC0005570, IBSC0005571 digital images!], W [W0195939, W0195940 digital images!]). *Residual syntypes*: CHINA, Guangxi, Lonjin, Lingyun, exposed cliffs, 800 m, fl. & fr., 05.08.1928, R.C. Ching 6701 (IBK [IBK00191430 digital image!], PE [PE00992693, PE00992694 digital images!]). **Figs. 1–3**

Lianas, to 13 m long, latex white. Stems slender, pubescent, lenticellate. Leaves usually opposite, glabrous; petioles 5–10 mm long; leaf blade narrowly elliptic or lanceolate, 3–10 × 1–3 cm, upper surface dark green, lower surface pale green, base cuneate to narrowly rounded; lateral veins 5–11 pairs. Cymes terminal or axillary, c. 7 × c. 7 cm; peduncle 2–3.5 cm long, pubescent; pedicel 4–10 mm long, pubescent. Calyx c. 1.5 mm long, broader at base, outside pubescent. Corolla salverform, greenish, 5–6 mm in diam.,

pubescent outside; tube short, c. 4 × c. 2 mm, hairy inside distally, throat with many long hairs; lobes 5, broadly ovate to suborbicular, pale green, 2–3 × 2–2.5 mm, reflexed, overlapping to the right. Stamens inserted at corolla throat; filaments c. 2 mm long; anthers narrowly sagittate, c. 3 × c. 1 mm, exserted, glutinous, connivent into a subcylindric cone, adherent to the middle of the pistil head, cells with an empty tail; disc cupular. Pistil obscurely 2-lobed; style long; pistil head ovoid, c. 2 × c. 1 mm; ovules numerous in each carpel. Follicles narrowly fusiform, c. 12 cm long, connate, glabrous. Seeds with coma c. 4 cm long.

Flowering & fruiting: Flowering occurs from May to October (this study; Li *et al.*, 1995); fruiting from August to December (Li *et al.*, 1995).

Habitat & ecology: In Vietnam, *Parsonsia goniostemon* occurs in evergreen broad-leaved forest on limestone mountains at c. 735 m elevation. It grows as a woody climber on karst outcrops and rocky slopes in humid, shaded habitats beneath a closed canopy. Associated vegetation includes species of *Pothos* (Araceae), Ferns, and other woody climbers. In China, the species has also been reported from limestone habitats.

Distribution: China, Vietnam (Thai Nguyen Province, Kim Hy Nature Reserve).

Specimens examined: CHINA, **Guangdong**, 04.12.1958, Deng Liang 8838 (PE [PE00992695 digital image!]); **Guangxi**, 30.05.1928, *s.coll.* 91936 (IBK [IBK00096273 digital image!]); *Ibid.*, 15.05.1957, Huang Zhi 43291 (IBSC [IBSC0478604 digital image!], IBK [IBK00096282 digital image!], KUN [KUN239663 digital image!]); *Ibid.*, 11.08.1957, Chen Shaoqing 13604 (IBSC [IBSC0478605 digital image!], IBK [IBK00096283 digital image!], HITBC [HITBC098323 digital image!]); *Ibid.*, 23.05.1987, South China Team 1017 (IBSC [IBSC0478602 digital image!]); *Ibid.*, 29.05.2009, Xu Weibin 09621 (IBK [IBK00222705 digital image!]); *Ibid.*, 28.09.2010, H. Yusong & W. Lei LYJX0793 (IBK [IBK00224589 digital image!], GXMG [GXMG0097981 digital image!]); *Ibid.*,



Fig. 1. Lectotype of *Parsonsia goniostemon* Hand.-Mazz. (A [A00068131]) (Reproduced with permission from The Herbarium of the Arnold Arboretum of Harvard University).



Fig. 2. *Parsonsia goniostemon* Hand.-Mazz.: a & b. Flowering twigs; c. Twig showing abaxial view of leaves; d. Inflorescences (Photos Tran Duc Binh).

11.03.2014, *Lingyun team* 451027140311001 (GXMI [GXMI0141018, GXMI063942, GXMI063943, GXMI064609 digital image!]); *Ibid.*, 12.10.2014, *L. Huizhen, H. Hao & L. Jinhua* 451025141012020LY (GXMG [GXMG0104340, GXMG0104341, GXMG0104342 digital image!]);

Ibid., 19.08.2020, *Y. Ping, N. Shiyue & N. Suyu* BL1007 (IBK [IBK00428893 digital image!]); *Ibid.*, 21.08.2021, *X. Gao, L. Xitao, P. Xianming & X. Huan* ZYA01630 (PE [PE02379480, PE02379481 digital image!]). VIETNAM, **Thai Nguyen**, Kim Hy Nature Reserve, evergreen broad-leaved forest on

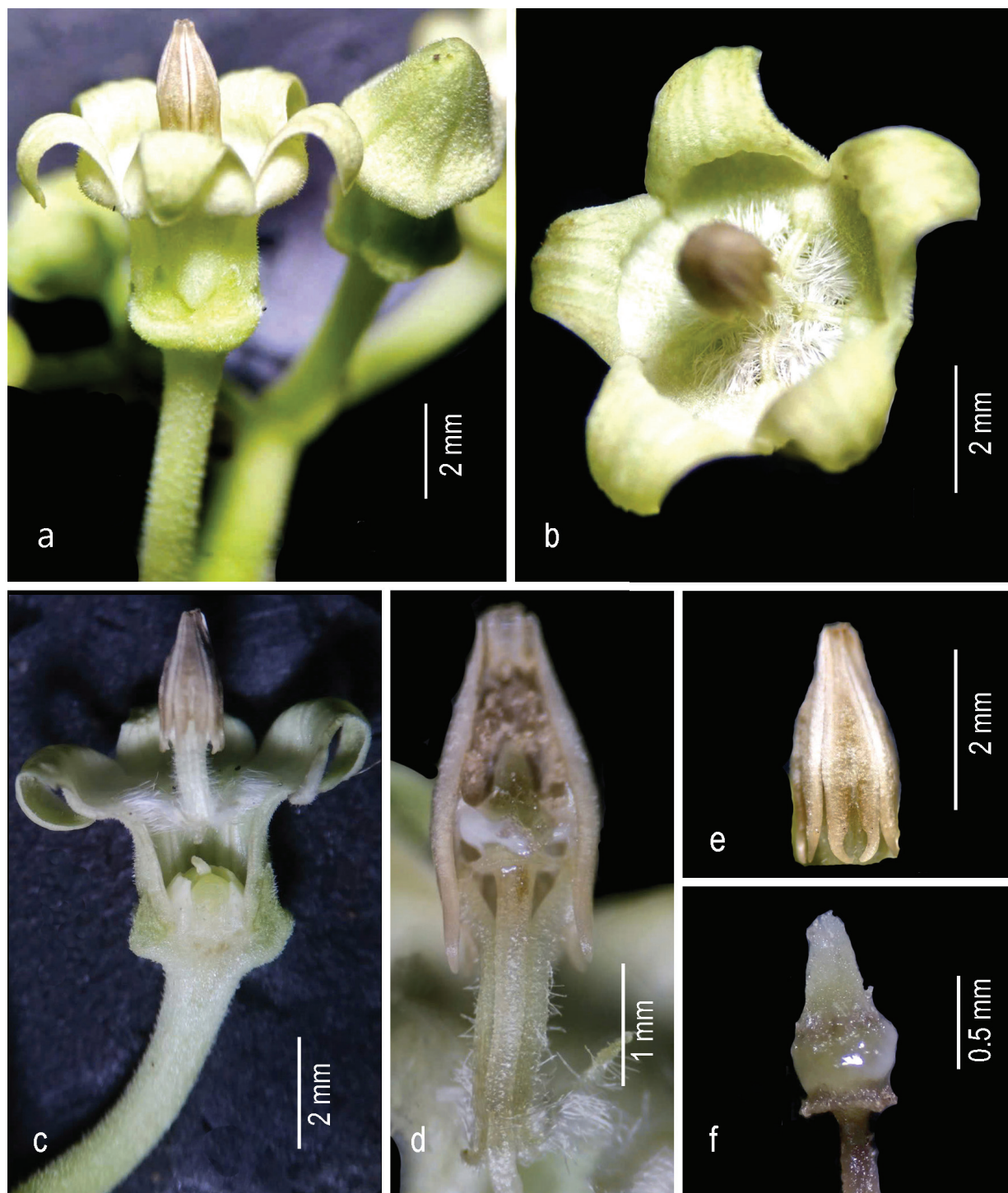


Fig. 3. *Parsonsia gonistemon* Hand.-Mazz.: **a.** A bud & opened flower; **b.** Flower—top view with long hairs covering the throat; **c.** Flower with corolla opened; **d.** Stamens with connivent anthers and stigmatic head; **e.** Anthers; **f.** Pistil (Photos Vu Anh Thuong).

limestone hill, 22°12'07.1"N, 105°59'36.1"E, 735 m, 08.10.2021, *Do Van Hai et al.* VAST09-706 (HN!).

Conservation status: In Vietnam, *Parsonsia goniostemon* has been recorded from a single population comprising fewer than 50 mature individuals so far. The species was observed growing on vertical cliffs of steep limestone slopes, a habitat that appears relatively undisturbed due to its remoteness and inaccessibility, thereby limiting direct anthropogenic threats. Previously considered endemic to China, the discovery of *P. goniostemon* in northern Vietnam represents a significant range extension and contributes important data to the biogeographic understanding of the species. This finding also underscores the floristic affinities between northern Vietnam and southern China, particularly in limestone ecosystems. Further botanical surveys in other limestone areas within Kim Hy Nature Reserve are recommended to assess the full extent of the species distribution and population dynamics. Based on currently available information, *P. goniostemon* is provisionally assessed as Data Deficient (DD) following the IUCN Red List Categories and Criteria (IUCN, 2024).

Taxonomic notes: *Parsonsia goniostemon* can be distinguished from the more widespread *P. alboflavescens* (Dennst.) Mabb. (Li *et al.*, 1995; Tran, 2007) by a combination of morphological characters, notably its shorter petiole (0.5–1 cm long) and stamens inserted at the corolla throat. *Parsonia alboflavescens* has a broad native distribution, ranging from tropical and subtropical Asia to northern Australia and is recorded from a wide range of regions including Bangladesh, Bismarck Archipelago, Borneo, Cambodia, southeastern China, Hainan, India, Jawa, Laos, Peninsular Malaysia, Maluku, Myanmar, Nansei-shoto, New Guinea, the Northern Territory (Australia), the Philippines, Solomon Islands, Sri Lanka, Sulawesi, Sumatra, Taiwan, Thailand, and Vietnam (Li *et al.*, 1995; Tran, 2007; POWO, 2026). In contrast,

P. goniostemon has a much more restricted distribution, previously known only from China and now newly recorded in Vietnam based on the present study.

Typification: While describing *Parsonsia goniostemon*, Handel-Mazzetti (1934) cited two gatherings collected by R.C. Ching (*R.C. Ching* 6699 and *R.C. Ching* 6701) from the rocky areas of Lingyun, Lonjin, Guangxi Province, China, on 5 August 1928. However, no holotype was designated in the protologue; therefore, all original material must be treated as syntypes under Article 9.6 of the ICN (Turland *et al.*, 2025). Through an extensive survey of relevant national and international herbaria, we located multiple sheets attributed to these two gatherings and consistent with the protologue. The sheets of the specimen *R.C. Ching* 6699 were found at A (A00068131), NY (NY00318254, NY00318255), PE (PE00992690, PE00992696), IBSC (IBSC0005570, IBSC0005571), and W (W0195939, W0195940). The sheets of the specimen *R.C. Ching* 6701 were located at IBK (IBK00191430) and PE (PE00992693, PE00992694). A review of the literature (Li *et al.*, 1995; Middleton, 2014) and examination of herbarium material confirmed that no lectotype had been previously designated for this name. Therefore, in accordance with Articles 9.3, 9.12, and 9.13 of the ICN (Turland *et al.*, 2025), we designate specimen A00068131(A) as the lectotype of *P. goniostemon* here (Fig. 1). This specimen is well preserved, includes both floral and fruiting material, and best matches the diagnostic features described in the protologue. The remaining specimens from the same gathering at NY, PE, IBSC, and W are designated here as isolectotypes.

Key to the species of *Parsonsia* in Vietnam

- 1a. Stamens inserted at the middle of the corolla tube; petioles 2–4 cm long *P. alboflavescens*
- 1b. Stamens inserted at corolla throat; petioles 0.5–1 cm long *P. goniostemon*

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