



Original Article

## *Piper Ribesioides* Wall., a Newly Recorded Species for the Flora of Vietnam

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**Abstract:** We here reported a newly recorded *Piper* species for the flora of Vietnam, namely *Piper ribesioides* Wall. (Piperaceae). This species is most morphologically similar to *P. politifolium* C.DC. by sharing glabrous plants and fruits with a stipe, but it differs from the latter having a monoecious habit (vs. dioecious), stamens 4 (vs. 2), and a cordate leaf base with equal or subequal lobes (vs. oblique with unequal lobes). Descriptions, illustrations, information on ecology, and taxonomic notes of the species is provided.

Keywords: New record, *Piper*, Vietnam

### 1. Introduction

*Piper* Linnaeus is the largest genus of the family Piperaceae and also is one of the most diverse lineages among basal angiosperms [1]. It comprises over 1000 species and distributes mainly in the tropics [2]. Distinctive characteristics of the genus can easily be recognized on gross morphological characters such as the flowers usually are minute, unisexual and densely set on the fleshy rachis, the perianths are absent, and consist only of the male and

female reproductive parts, which are subtended by one to three floral bracts and the stamens vary in number, the anther is distinguished by two or four thecae, with longitudinal or transverse dehiscence, fruits of the majority of *Piper* are drupes. However, the species are difficult to identify. The fruits and infructescence are of high importance for species identification. Several species in *Piper* have great economic and cultural importance, used for foods, medicines, stimulants, antiseptics and antioxidants in Thai culture [3]. Within Indo-

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Chinese floristic region, China is considered as the most diversity centers of the genus *Piper*, with more than 60 species found in the country, of which a half is endemic [4-6], followed by Thailand with 46 species and two varieties [7], and Vietnam with more than 40 species recorded [8]. During our recent field investigation on essential-oil plant resource in the Central Highland of Vietnam, we collected several unidentified specimens of *Piper*, after consulting the related taxonomic literature dealing with the flora of Vietnam [9] and neighbouring regions [3-7, 10, 11] we confirmed that these specimens were identified as *Piper ribesioides* Wall. which have not yet previously been reported in Vietnam [3-5, 7-9]. Reporting them as a new record in this paper provides useful data for compiling the Flora of Vietnam and for further studies on its economic use.

## 2. Materials and Methods

This study is based on field collections and herbarium specimens. Voucher specimens are deposited in VNMN and HN. Additional material has been examined and consulted from the following herbaria: AAU, BK, BKF, BM, BO, K, KGU, L, P, SING and TCD (herbarium code according to Thiers [12]). Identification of taxa is based on the appropriate literature [3-5, 11] and consultation of type specimens.

All vegetative and reproductive parts were measured in a dry state under a stereo

3–6(–10) cm long, each flower consisting of three bracts, bracts ovate, 1-1.2 mm long. Drupe globose, 0.3–0.5 cm in diameter, arranged loosely with pedicel 4-5 mm long.

**Type:** MYANMAR. Chappedong, *N.Wallich 6637* (lectotype: K001124357!; isolectotypes: BM000949830!, G00438866, K000061828!, K000794386!, designated by Suwanphakdee et al. [11].

microscope. The morphological terminology of species description is in accordance with the description given by Chaveerach et al. [3] and Suwanphakdee et al. [7, 11].

### Taxonomic treatment:

*Piper ribesioides* Wall., Pl. As. Rar. 1: 79, t 9. 1830 (Figure 1)

Synonyms: *Cubeba sumatrana* Miq. (Miquel 1840: 43); *Piper sumatranum* (Miq.) C. DC. (Candolle 1869: 343). Type: MALAYSIA. Penang, *Wallich 6646B* (lectotype K-W! [K001124405]; isolectotype BM! [BM000949828], designated by Suwanphakdee et al. (2018)).

Climber, stout, monoecious. Stem stout, glabrous. Petiole 2–5 cm long, glabrous. Leaf blade thickness, vary in shape and size. Leaf blade on epiphytic branches deltoid to broadly ovate, 6–18 cm long, 5–9 cm wide, glabrous on both leaf surfaces, apex acute or tapering; base deeply cordate with equal or subequal lobes, venation prominent; leaf blade on free branches elliptic or elliptic-ovate, 5–15 cm long, 4–7 cm wide, glabrous on both leaf surfaces; apex acute; bases lightly cordate with equal or subequal lobes, basal veins 2–3 pairs, others arising 2–3 cm apart from base, nearly opposite. Male spike pendulous, 1–2 spikes, leaf-opposed, (3–)5–8 cm long, 0.1–0.2 cm in diam.; peduncle 0.6–0.8 cm long, glabrous; stamens 4; bract peltate. Female spike

**Iconography citation:** Chaveerach et al. [3], figure 25 & Suwanphakdee et al. [7], figures 7C, 10C-E, 11.

**Ecology and phenology:** This species grows in moist places or along stream sides, alt. 400–700 m. Flowering and fruiting on year round.

**Distribution:** THAILAND, MYANMAR, INDIA, SINGAPORE, and new to VIETNAM (Dak Nong).

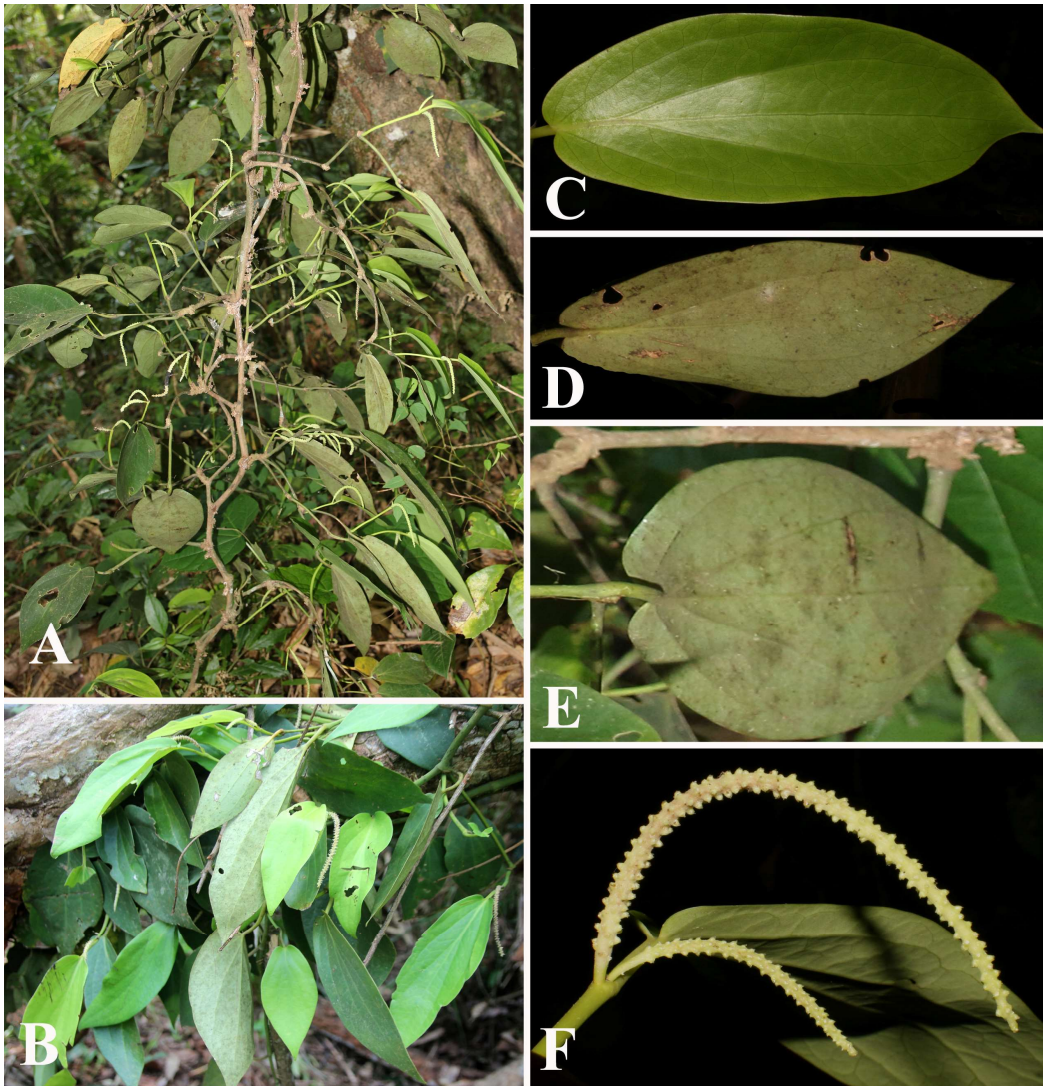


Figure 1. *Piper ribesioides*. A-B. Habit; C. Adaxial leaf surface on free branches; D. Abaxial leaf surface on free branches; E. Abaxial leaf surface on epiphytic branches; F. Close up of inflorescence.

All photos taken by Do Van Truong.

**Additional specimens examined:**

VIETNAM. Dak Nong: Dak Glong district, Ta Dung National Park, 20th May 2019, *Luu Dam et al. TN17/C04-ĐN09* (VNMN).

**Taxonomic notes:** This species is most morphologically similar to *P. politifolium*

C.DC., a species occurring in northern Thailand and Vietnam [3, 7, 9] by sharing glabrous plants and fruits with a stipe, but it differs from the latter by morphological characters of habit (monoecious vs. dioecious), stamens (4 vs. 2), and leaf base (cordate with equal or subequal lobes vs. oblique with unequal lobes).

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