



Original Article

Conamomum Pierreanum (Gagnep.) Skornick. & A. D. Poulsen  
(Zingiberaceae), a New Record for the Flora of Vietnam

Luu Dam Ngoc Anh<sup>1</sup>, Bui Van Huong<sup>1</sup>, Do Van Truong<sup>1</sup>, Luu Dam Cu<sup>1</sup>, Do Van Hai<sup>1</sup>,  
Nguyen Quang Hung<sup>1</sup>, Trinh Xuan Thanh<sup>1</sup>, Nguyen Trung Thanh<sup>2,\*</sup>

<sup>1</sup>Vietnam Academy of Science and Technology, 18 Hoang Quoc Viet, Cau Giay, Hanoi, Vietnam

<sup>2</sup>VNU University of Science, 334 Nguyen Trai, Thanh Xuan, Hanoi, Vietnam

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**Abstract:** *Conamomum pierreanum* (Gagnep.) Skornick. & A. D. Poulsen, (Zingiberaceae), a previously known species from Thailand and Cambodia, is here reported, as a new record for Vietnam. It is similar to *C. rubidum* and *C. odorum* but differs in having a present stilt root; a shorter petiole, 2-3 cm; a larger leaf blade, oblong, 30-50 × 5-8 cm, glabrous; a globose to ovoid inflorescence, arising near the base of rhizome; tomentose outer surface of bract; a 3-toothed bracteole, outer surface hairy; and a smaller filament, yellowish and glabrous. The detailed morphological description, distribution and ecology information, conservation status and a colour plate of this species are given.

**Keywords:** *Conamomum Pierreanum*, New record, Vietnam, Zingiberaceae.

## 1. Introduction

The genus *Conamomum* Ridl. belonging to Alpinieae (Zingiberaceae) comprises ca. 10 species and distributes mainly in primary evergreen lowland and montane forests from Indochina to the Malay Peninsula, Singapore, Borneo, and Sumatra [1, 2]. Of these, two species (*Conamomum rubidium* and *C. odorum*) were reported for the flora of Vietnam [1, 3, 4].

During the recent field investigation of essential oil plant diversity in the Ta Dung National Park, Dak Glong district, Dak Nong province, two specimens of a *Conamomum* species were collected. Detailed studies revealed that they did not match with any of the *Conamomum* species so far reported from Vietnam. After examining and consulting all known *Conamomum* species, we found that the morphological characters of these specimens are

\*Corresponding author.

Email address: [thanhtsh@gmail.com](mailto:thanhtsh@gmail.com)

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completely identical to those of *C. pierreanum* (Gagnep.) Skornick. & A. D. Poulsen, which was previously recorded only from Thailand and Cambodia [2, 3, 5]. Therefore, *Conamomum pierreanum* is here reported as new record for the flora of Vietnam.

## 2. Materials and Methods

Two voucher specimens were collected at Ta Dung National Park, Dak Glong district, Dak Nong province, Central Highland Vietnam in May 2019. These specimens were thoroughly processed following standard protocol and deposited in the Herbarium of Vietnam National Museum of Nature (VNMN) and Institute of Ecology and Biological Resources, Vietnam Academy of Science and Technology (HN).

We followed the morphological comparison method for this study. Relevant literature was consulted [1, 3, 5, 6]. Terminology for the morphological description follows Beentje [7].

## 3. Taxonomic Treatment

*Conamomum pierreanum* (Gagnep) Skornick. & A. D. Poulsen, Taxon 67(1): 20. 2018 (Figures 1 & 2).

Clump-forming herb, 1.5-2 m tall with 10-18 leaves per pseudo stem; rhizome 0.8-1.0 cm diameter; stilt roots present, 0.6-1.0 cm diameter, dark brown, 10-20 cm long, hairy; interval between pseudo stems 4.0-6.0 cm scales hairy, broadly triangular, 0.8-1.2 × 1.4-1.6 cm, coriaceous, outer surface tomentose, apex broadly acute. Pseudo stem 1.8-2.1 cm diameter, slightly swollen at base, gradually becoming smaller towards the apex, striate, glabrous, outer

surface finely reticulate; ligule ovate, 0.8-1.0 cm long, coriaceous, glabrous, swollen at the base of the petiole, apex bifid; petiole canaliculate, 2-3 cm long, glabrous; blade oblong, 30-50 × 5-8 cm, glabrous, upper surface dark green, lower surface lighter-colored, base long attenuate, apex long caudate. Inflorescences globose to ovoid, 5-6 × 4-5 cm, arising near the base of the rhizome, 2-3 inflorescences per pseudo stem; peduncle cylindrical, 6.5-9 cm long, hairy; scales broadly triangular at base 1-1.4 × 1.5-2.1 cm, narrowly triangular above, 3-4.5 × 1.5-2 cm, striate, tomentose with soft hairs, apex acute, ciliate at the margin; bracts broadly ovate to boat-shaped, 2.5-4 × 1.5-2 cm, dark brown, hard, thick, subtending a single flower, outer surface striate, tomentose, apex cucullate with pointed spur; bracteole tubular, 3-toothed, 1.6-2 × 0.6-0.8 cm, reddish, outer surface hairy, tube 0.8-1.1 cm long. Calyx tubular, 3-toothed, 1.8-2.5 × 0.4-0.5 cm, glabrous, apex acute. Corolla tubular, corolla tube 1.8-2 × 0.5-0.6 cm, glabrous, corolla lobes glabrous, reddish, with darker red, narrow stripes; lateral lobes oblong, 1.8-2.1 × 1.3-1.5 cm; dorsal corolla lobe oblong, 2.2-2.5 × 1.8-2 cm; labellum bowl-shaped, 2-2.5 × 1-1.5 cm, yellow with red lines radiating to margin, margin turned forward, apex markedly trilobed, the central lobe emarginate and turned backward, glabrous; lateral staminodes bifid, apices pointed, reddish. Filament flat, 1-1.2 × c. 0.2 cm, glabrous, yellowish; anther yellowish-white, 0.6-0.7 × c. 0.3 cm; anther crest yellowish, trilobed, lateral lobes oblong, pointed and turned forward, central lobe triangular. Stigma cup-shaped, yellowish, glabrous; Style hairy; Epigynous glands 1 pair, glabrous, c. 0.2 cm long, yellow; ovary 0.2-0.4 cm diameter, brown, glabrous. Fruits not seen.

Table 1. Morphological comparison of *Conamomum pierreanum* with *C. rubidium* and *C. odorum*

Characters	<i>C. pierreanum</i>	<i>C. rubidium</i> <sup>(1)</sup>	<i>C. odorum</i> <sup>(2)</sup>
Stil roots	Present	Absent	Present
Petiole	2-3 cm	5-9 cm	2-4 cm
Leaf-blade	Oblong, 30-50 × 5-8 cm, glabrous	Oblong-linear, c.30-45 × 4.5-7 cm, margin hairy	Narrowly elliptic, 25-30 × 3-3.5 cm, glabrous, margin entire
Inflorescence	Globose to ovoid, arising near base of rhizome	Obovoid, arising from the base	Ovoid, erectly arising from creeping rhizome
Scale	Broadly triangular at base and narrowly triangular above	Ovate-triangular	Triangular
Bract	Outer surface tomentose	Tomentose at base and margin ciliate	Hairy abaxially and ciliate at margin
Bracteole	3-toothed, outer surface hairy	2-toothed, hairy at base	2-toothed, teeth with ciliate hairs
Calyx	Glabrous	Glabrous	Pubescent
Corolla lobes	Reddish	Reddish	Cream
Labellum	Bowl-shaped	Reniform	Obovate
Lateral staminodes	Bifid	Triangular-linear	Minute and linear
Filament	1-1.2 × 0.2 cm, glabrous, yellowish	c.0.7-0.8 × 0.2 cm, glandular-hairy, white	1.3 × 0.25 cm, yellow, sometimes with red tinge at base
Epigynous glands	1 pair, glabrous, c.0.2cm long, yellow	1 pair, 0.4 long, white	2 pair, c. 0.2 × 0.1 cm, yellow
Stigma	Yellowish, glabrous	Cream white, ciliate	Yellow, ostiole ciliate
Ovary	0.2-0.4 cm diameter, brown, glabrous	c.0.6 × 0.4 cm, glabrous	c.0.4 × 0.33 cm, cream, hairy

<sup>(1)</sup>From the description in Lamxay *et al.* (2012); <sup>(2)</sup>From the description in Luu *et al.* (2019).

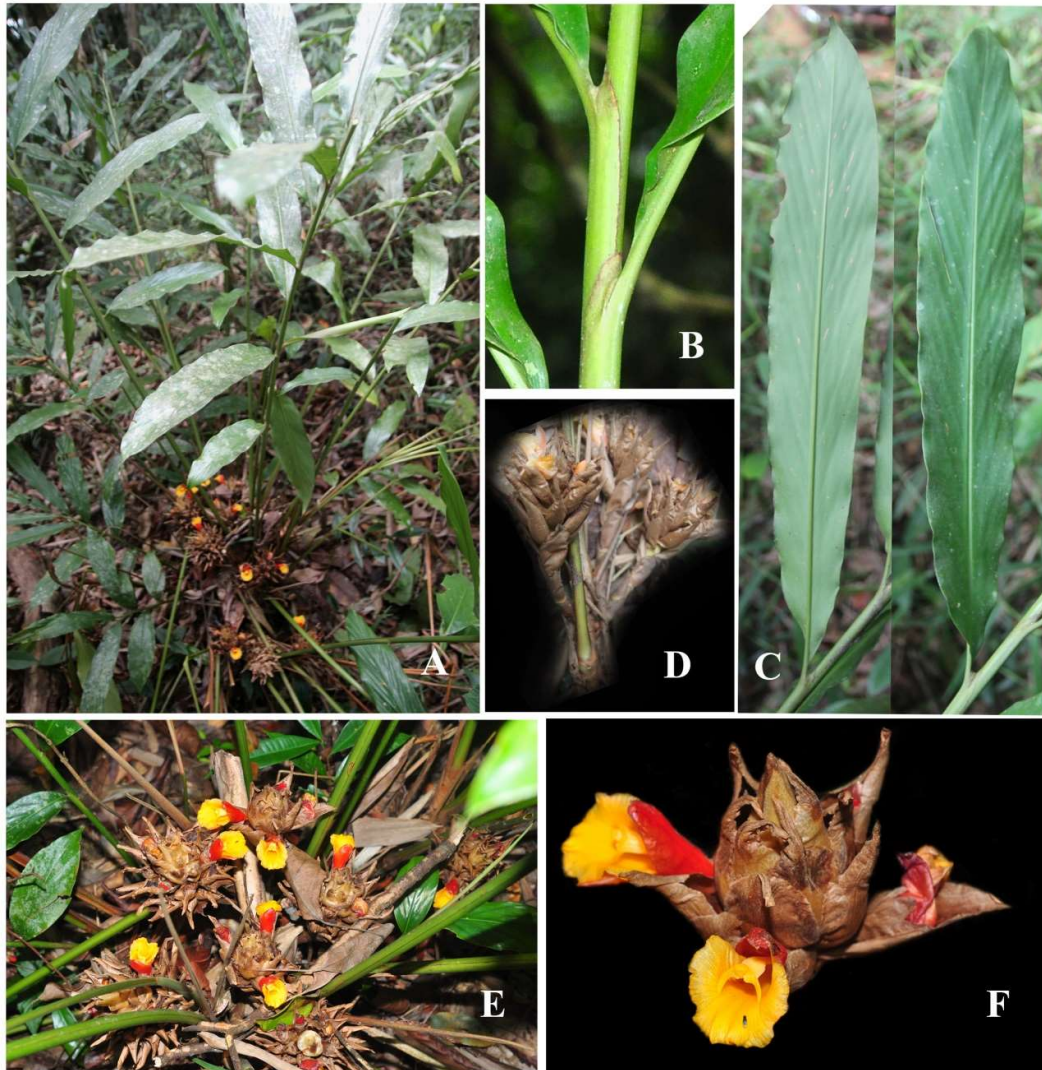


Figure 1. *Conamomum pierreanum*. A. Habit, B. Ligule, C. Abaxial and adaxial leaf surface, D. Rhizome and inflorescences. E. Basal part of plant showing inflorescence, F. Flowers. Photos taken by Do Van Truong and Nguyen Quang Hung.

Type: CAMBODIA, Samraong Tong, monts Schral, Pierre L. 591 (Lectotype P00599242 & P00599243, images!; Isolectotype P00599276, image!).

Vietnamese name: Sa nhân Pierre

Ecology and phenology: This species grow on lowland and montane evergreen forest over sandstone, at alt. 980 m. Flowering in May.

Distribution: THAILAND, CAMBODIA, new to VIETNAM (Dak Nong).

Conservation status: According to IUCN Red List (2019), *C. pierreanum* is categorized as Least Concern (LC). This species has a large extent of occurrence, and all the known occurrences are within protected areas, so the species is secure and not declining.

Additional specimens examined: VIETNAM. Dak Nong province: Dak Glong district, Ta Dung National Park, 19 May 2019, Luu Dam Ngoc Anh, Bui Van Huong, Do Van Truong, Luu Dam Cu, Nguyen Quang Hung, Do Van Hai, Trinh Xuan Thanh, Nguyen Trung Thanh TN17/C04-DN19 [fl.] (VNMN!); Do Van Hai, DVH s.n. [fl.] (HN!).

Notes: Morphological characters of *C. pierreanum* resemble *C. rubidium* (Lamxay & Lý) Škorničková & Poulsen and *C. odorum* Luu, H.D. Tran & G. Tran. However, this species differs from both these species by the combination of some morphological characters of the root, petiole, leaf blade, inflorescence, bract, bracteole, and filament as presented in Table 1.

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