Camellia quangcuongii (Theaceae), a New Species from Vietnam

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A new species of Camellia (Theaceae), C. quangcuongii from Vietnam, is described and illustrated. A key to Vietnamese species of Camellia sect. Theopsis is also provided. Camellia quangcuongii is similar to C. forrestii and C. tsaii, but differ from them in having glabrous branchlets, cylindrical ovary and asymmetrically ovoid capsule curved to one side.

Key words: Camellia, Khanh Hoa Province, new species, Theaceae, Vietnam.

Camellia is the most species rich genus in the Theaceae and is distributed in eastern and southeastern Asia. During the 1920s there were 40 species recognized in Camellia (Melchior 1925). A further 100 species were recorded in the 1950s (Sealy 1958). Recently, the number of species in the genus has been estimated from 119 to 280 (Gao et al. 2005), due to different classification systems (Sealy 1958, Chang and Bartholomew 1984, Gao et al. 2005, Ming and Bartholomew 2007). About 80% of these species are found in China and others are found in Vietnam, Laos PDR, Cambodia, Thailand, Philippines, Japan and Indonesia (Sealy 1958, Chang and Bartholomew 1984, Gao et al. 2005, Ming and Bartholomew 2007).


As a result of the co-operative agreement on biodiversity research between Dalat University and Silviculture Research Institute – Vietnamese Academy of Forest Sciences, a new species, Camellia quangcuongii L. V. Dung, Son & Nhan is described here. The new species was collected in Hon Giao Mountain, Son Thai Commune, Khanh Vinh District, Khanh Hoa Province, Vietnam at 802 m alt.

Several morphological features allow us to place the new species in Camellia sect. Theopsis such as: petals 5, white, basally connate to outer stamens; stamens in 2 whorls and capsule 1-loculed with 1-seeded.

There are four most recent classification systems of the genus Camellia frequently referred to in the Camellia literature: Sealy (1958), Chang and Bartholomew (1984), Gao et al. (2005), Ming and Bartholomew (2007). In this paper, a new species from Vietnam is described and its taxonomic position assessed.
in the light of the treatment of Ming and Bartholomew (2007) because this is the latest system of *Camellia* and is more frequently used by taxonomists.

Ming and Bartholomew (2007) divided *Camellia* into two subgenera (*Camellia* and *Thea*) and 14 sections. In particular, *Camellia* subgenus includes six sections: *Heterogea*, *Tuberculatae*, *Stereocarpus*, *Camellia*, *Calpandria* and *Paracamellia* and subgenus *Thea* has eight sections: *Archecamellia*, *Corallinae*, *Piquetia*, *Thea*, *Longipedicellatae*, *Cylindricae*, *Theopsis* and *Eriandra*.

General characteristics of the morphology of the species in the section *Theopsis*: Leaf blade often small to medium, thinly leathery. Flowers axillary, solitary or paired, small. Bracteoles (2)3–5(8), persistent. Sepals 5, basally ± connate. Petals 5, white, basally connate and adnate with androecium. Stamens in 2 whorls, glabrous; outer filament whorl basal 2/3 usually connate into a tube. Ovary usually 3-loculed. Capsule 1(–4)-loculed, usually 1-seeded, rarely more, splitting into 3 valves.

*Camellia quangcuongii* L. V. Dung, Son & Nhan, sp. nov. [Fig. 1]

*Camellia quangcuongii* is similar to *C. forrestii* (Diels) Cohen-Stuart and *C. tsaii* Hu, but different from these species by having glabrous branchlets, cylindrical ovary and asymmetrically ovoid capsule curved to one side.

**Type**: VIETNAM. Khanh Hoa Province, Son Thai commune, Hon Giao Mountain; elevation 802 m above sea level, 16 October 2014, Luong Dung DL141002 (DLU [Dalat University, Vietnam]–holotype; SRI [Silviculture Research Institute, Vietnamese Academy of Forest Sciences]–isotype).

Medium to large evergreen shrub, 8–10 m high, 18–20 cm diameter, with upright habit, bark brown-gray, usually sprouting from base; branches glabrous. Petiole slightly curved, rounded in cross section, same colour as the leaf, glabrous, 4–4.5(–5) mm long, 2.5–2.5(–3) mm wide; leaf blades narrowly, oblong, oblong-elliptic or ovate-lanceolate, 6–10 cm long, 3–3.5 cm wide, coriaceous or thick coriaceous; base acute to cuneate, margins regularly serrate; adaxial surface dark green, glabrous, abaxial surface pale villous; midrib sunken on adaxially surface and raised on abaxial surface; secondary veins pinnate, 6–10 pairs. Flowers axillary, solitary, 4–5 cm in diameter; pedicel, 5–8 mm long, glabrous, light green to yellowish green, with 6–7 small bracteole, covering pedicel, bracteoles scaly, 2.5–3(–3.5) mm long, 1.5–2 mm wide, pubescent. Sepals 5, suborbicular to orbicular, 1–1.2 cm long, 0.3–0.5 cm wide, glabrous, shiny, pale green with margin yellowish green. Petals 5, white, obovate, oblong, narrowly oblong or broadly lanceolate, 1.5–2(–2.5) cm long, 1.2–1.7 cm wide, basally connate to outer stamens. Stamens in 2 whorls, glabrous, 1–1.2 cm long; outer filament whorl basally irregularly connate for 4 mm into a cup, inner filaments sparsely; anthers yellow, 1.5–2 mm. Ovary cylindrical, 2.5–3 mm long, 1.5–2 mm wide, glabrous, 3-loculed; style 8–9 mm long, white, glabrous, split into 3-lobed base. Capsule curved to one side, asymmetrically ovoid, 5–6 cm long, 3.5–4 cm wide, 1-loculed with 1 seeded, pericarp thin, curved to one side. Seed ellipsoidal, glabrous, 3–3.5 cm long, 2.5–3 cm wide.

Note: There is difference between two species *Camellia quangcuongii* L. V. Dung, Son & Nhan and *C. cuongiana* Orel & Curry. *Camellia quangcuongii* belongs to sect. *Theopsis* meanwhile *C. cuongiana* is located in sect. *Lamdongia*.

**Etymology**: The specific epithet of this species honors Mr. Truong Quang Cuong, the staff of the Bidoup-Nui Ba National Park, who has much contributed to bio-diversity research and conservation in Bidoup-Nui Ba.

**Distribution and ecology**: *Camellia quangcuongii* is only found from the type locality which is situated on the slope of Hon
Giao Mountain. The new species was discovered in evergreen broadleaf forest. It grows with species of Magnoliaceae, Anacardiaceae, Rubiaceae, Fabaceae, and Sapotaceae.

IUCN Red List category: The Area of Occupancy (AOO) for *C. quangcuongii* is estimated to be less than 1 km². Despite a further search of the area around the type locality, only eight additional mature trees were found. The total known population of the species is fewer than 50 individuals, and it would be qualified as Critically Endangered (CR) under criterion D (IUCN, 2011).

Phenology: *Camellia quangcuongii* flowers from October to December and fruits and set seeds from May to June in the following year.

**Key to the Vietnamese species of *Camellia sect. Theopsis***

1a. Filaments villous

2a. Branchlets pubescent when young, capsules globose ........................................... *Camellia tsingpiensis* Hu

2b. Branchlets glabrous when young, capsules ellipsoid to subglobose .................................. *Camellia elongata* (Rehder & E. H. Wilson) Rehder

1b. Filaments glabrous

3a. Branchlets pubescent when young, capsules symmetrically ovoid

4a. Branchlets thick pubescent when young, brown .......... *Camellia forrestii* (Diels) Cohen-Stuart

4b. Branchlets thin pubescent when young, white .......... *Camellia tsaiii* Hu

3b. Branchlets glabrous when young, capsules ovate, asymmetrically ovoid ........................................... *Camellia quangcuongii* L. V. Dung, Son & Nhan

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**References**


L. V. Dung*, H. T. Son*, T. Ninh*, P. H. Nhan*: ベトナム産の1新種 Camellia quangcuongii（ツバキ科）

ベトナムからツバキ属（ツバキ科）の1新種、Camellia quangcuongii L. V. Dung, Son & Nhanを記載し、図示した。併せて、ツバキ属 Theopsis 節の検索表を付した。C. quangcuongii は白花をつけるグループで、C. forrestii (Diels) Cohen-Stuart と C. tsaii Hu に似るが、小枝が無毛で、子房が円柱状、蒴果は一方向に屈曲して非対称の卵形になる点で異なっている。

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