CAMELLIA THUONGIANA - A NEW YELLOW CAMELLIA SPECIES FROM VIETNAM

Luong Van Dung[a*], Le Anna[b], Nguyen Thi Hanh[a], Nguyen Thi Lieu[a]

[a]The Faculty of Biology, Dalat University, Lamdong, Vietnam
[b]Kim Hoa Tra Company, Lamdong, Vietnam

Article history
Received: August 03rd, 2016 | Received in revised form: August 26th, 2016
Accepted: August 29th, 2016

Abstract

Camellia thuongiana Luong, Anna Le & Lau (Theaceae), a new yellow Camellia species from Doanket commune, Dahuoai district, Lamdong province, is described and illustrated. Based on morphological data we affirm that this new species belong to section Chrysantha.

Keywords: Camellia; Lamdong; New species; Theaceae; Vietnam.

1. INTRODUCTION

The yellow camellias are the species of *Camellia* L. genus (Theaceae). There are about 40 yellow *Camellia* species in Vietnam. In Lamdong, the yellow species are: *Camellia capitata* Orel, Curry & Luu; *Camellia dalatensis* V. D. Luong, Tran & Hakoda; *Camellia dilinhensis* Ninh & V. D. Luong; *Camellia dormoyana* (Pierre ex Laness) Sealy; *Camellia inusitata* Orel, Curry & Luu; *Camellia luteopallida* Luong, T. Q. T. Nguyen & Luu; *Camellia ninhii* Luong & Le and *Camellia vidalii* Rosmann (Le & Luong, 2016). During a field trip in Doanket commune, Dahuoai district, Lamdong province in January 2016, we obtained some yellow *Camellia* samples. After analyzing and comparing morphological characteristics with closely species, we assert that this is a new species, named as *Camellia thuongiana* Luong, Anna Le & Lau.

2. MATERIAL AND METHODS

Wild individuals of this species were found in Doanket commune, Dahuoai district, Lamdong province, Southern Vietnam in January 2016. Specimens were deposited in the Herbarium of Dalat University (DLU) with N^0: DL.160107,

∗Corresponding author: Email: dunglv@dlu.edu.vn

DL.160108, DL.160109. Using comparative morphology method, we have classified the species in the genus *Camellia* in general and yellow *Camellia* species in particular.

3. RESULTS

3.1. Characteristics of *Camellia thuongiana* Luong, Anna Le & Lau, sp. nov.

Figures 1 and 2 show the characteristics of *Camellia thuongiana* Luong, Anna Le & Lau, sp. nov. as follows: Small tree, 3-5 m. high, evergreen; young branches dark dull red, hairy and soon becoming glabrous. Leaves stalked; blades elliptic to oblong elliptic, 9-17 cm. long and 4-6.5 cm. wide, apex acuminate to long caudate, base broadly cuneate or nearly rounded, margin shallowly serrulate; mature leaves coriaceous, shiny on both sides, venation prominent below, lateral vein 12-13 pairs; petioles 8-11 mm. long, glabrous. Flowers 4.5-5 cm. in diameter, solitary or 2-3(4) at the ends of branches or axils of leaves. Pedicel 8-10 mm. long, glabrous; bracteoles 3-4, deltate to elliptic, 2-4.5 mm. long, 2-4 mm. wide, glabrous on both sides, margin ciliolate, bracteoles caducous. Sepals 5, semiorbicular to suborbicular, 6-10 mm. long, 7-11 mm. wide, glabrous on both sides, sepals persistent. Petals 11-13, bright yellow, suborbicular to elliptic or obovate; 4-5 outer petals, suborbicular to elliptic, 1.4-1.9 cm. long, 1.3-1.5 cm. wide, glabrous on both sides; 7-8 inner petals, elliptic or obovate, 1.9-2.2 cm. long, 1.3-1.4 cm. wide, united with outermost filaments at the base, glabrous on both sides. Androecium 290-340 stamens, in 6-7 circles; filaments 1.3-1.4 cm. long, glabrous, outer filament whorl basally connate for 4-5 mm. Gynoecium 3 loculi, ovary ovoid, pubescent, 4-4.5 mm. high, 4-5 mm. wide; styles 3, free to ½ from the base, 8-9 mm. long, glabrous. Capsule not seen.

Blooming season: Winter to spring.

This species was found in evergreen broadleaved forest or mixed wood-bamboo forest of Dahuoai district (Lamdong province), at altitudes of 500-800m.

Typus: Doanket commune, Dahuoai district, Lamdong province, Southern Vietnam, *Lau Quoc Thuong, Luong Van Dung, DL.160107* (Holotype, DLU; Isotype, DLU); *DL.160108* (Paratype, DLU).

Etymology: The specific epithet of this species honors Mr. Lau Quoc Thuong, who first discovered samples of this species.

3.2. The key of yellow Camellia species in Lamdong

1a. Leaves more than 35 cm. long
2a. Ovary 4-5 loculi
3a. Leaves pubescent..... 1. *Camellia dalatensis*
3b. Leaves glabrous ..... 2. *Camellia vidalii*
2b. Ovary 3 loculi ..... 3. *Camellia capitata*
1b. Leaves less than 35 cm. long
4a. Ovary 5 loculi..... 4. *Camellia dormoyana*
4b. Ovary 3 loculi
5a. Ovary glabrous..... 5. *Camellia luteopallida*
5b. Ovary pubescent
6a. Young branches flat..... 6. *Camellia inusitata*
6b. Young branches rounded
7a. Leaves pubescent..... 7. *Camellia ninhii*
7b. Leaves glabrous
8a. Ovary cylinder; styles pubescent ..... 8. *Camellia dilinhensis*
8b. Ovary ovoid; styles glabrous ..... 9. *Camellia thuongiana*

After examining the specimens and comparing with the *Camellia* species in Vietnam and Lamdong, we conclude that the specimens collected from Doanket commune are similar to *Camellia dilinhensis* (Tran & Luong, 2013) and *Camellia ninhii* (Luong & Le, 2016) in certain characters. The main similar and differences between the new species with *Camellia dilinhensis* and *Camellia ninhii* are summarized in Table 1.

Camellia thuongiana resemble especially *Camellia ninhii* of sect. *Chrysantha* Chang (Chang & Bartholomew, 1984) and *Camellia dilinhensis* of sect. *Obvoidae* Tran et Luong (Tran & Luong, 2013) by having the following characteristics: oblong elliptic or elliptic leaves; flower yellow, solitary or a pair at the ends of branches, sepals 5, persistent, petals 8-12, filaments glabrous; ovary 3 loculi, pubescent; style 3, free.

Table1. Morphological comparison between *C.dilinhensis, C.ninhii* with *C.thuongiana*

Characters	*C.dilinhensis*	*C.ninhii*	*C.thuongiana*
Leaf blade shape	Oblong elliptic or elliptic, glabrous	Elliptic to oblong elliptic, pubescent below	Elliptic to oblong elliptic, glabrous
Leaf size	16-24.5 cm. long, 5.5-9.5 cm. wide	14-20 cm. long, 5-7 cm. wide	9-17 cm. long, 4-6.5 cm. wide
Leaf apex	Acuminate	Acuminate to nearly caudate	Acuminate to long caudate
Leaf base	Cuneate	Broadly cuneate or nearly rounded	Broadly cuneate or nearly rounded
Petiole	1-1.9 cm. long, glabrous	4-7 mm. long, hirsute	8-11 mm. long, glabrous
Flowers	1-3 in each group in axillary	Solitary or a pair at the ends of branches	Solitary or 2-3(4) at the ends of branches or axils of leaves
Flower diameter	3.5-3.7 cm.	3-3.5 cm.	4.5-5 cm.
Pedicel	5-7 mm. long, glabrous	2-3 mm. long, glabrous	8-10 mm. long, glabrous
Bracteoles	2-3		3-4
Sepal number	5	6-7	5
Sepal size	4-8 mm. long, 8-11 mm. wide	2-7 mm. long, 3-9 mm. wide	6-10 mm. long, 7-11 mm. wide
Sepal hairiness	Glabrous	Finely puberulous inside	Glabrous
Petal number	8-9	9-11	11-13
Petal shape	Nearly rounded to elliptic	Nearly rounded to elliptic	Suborbicular to elliptic or obovate
Petal size	1.5-1.7 cm. long, 1.2-1.4 cm. wide	0.5-1.9 cm. long, 0.9-1.3 cm. wide	1.4-2.2 cm. long, 1.3-1.5 cm. wide
Pepal hairiness	Glabrous	Finely puberulous inside	Glabrous
Stamens	350 stamens, 4-5 circles	200-300 stamens, 5-6 circles	290-340 stamens, 6-7 circles
Filaments	5-9 mm. long, glabrous	4-10 mm. long, glabrous	1.3-1.4 cm. long, glabrous
Ovary	Cylinder, 3 loculi, pubescent	Ovoid, 3 loculi, pubescent	Ovoid, 3 loculi, pubescent
Style	Styles 3, free to the base; 5 mm. long, pubescent	Styles 3, free to the base, 8-9 mm. long, glabrous	Styles 3, free to ½ from the base, 8-9 mm. long, glabrous

However, *Camellia thuongiana* is distinct in having 3-4 bracteoles (*C. dilinhensis* have 2-3 bracteoles, *C.ninhii* have 6-7 bracteoles and sepals); sepals and petals glabrous (*C. ninhii* finely puberulous inside); ovary ovoid (*C. dilinhensis* cylinder); style 3, free to ½ from the base, glabrous (*C. dilinhensis* styles 3, free to the base, pubescent). *Camellia thuongiana* also has some similar characteristics with other species of section *Chrysantha*, and possesses typical characteristics of *Camellia* sect. *Chrysantha* Chang (Chang & Bartholomew, 1984), such as flower have pedicel, sepals 5-7, petals more than 5, yelow, androecium glabrous, gynoecium 3 with styles 3, free, glabrous (*Camellia crassiphylla*, *Camellia euphlebia*, *Camellia hulungensis* (Tran, 2002, 2003). For all reasons, it would be properly to classify this species into *Camellia* section *Chrysantha* Chang.

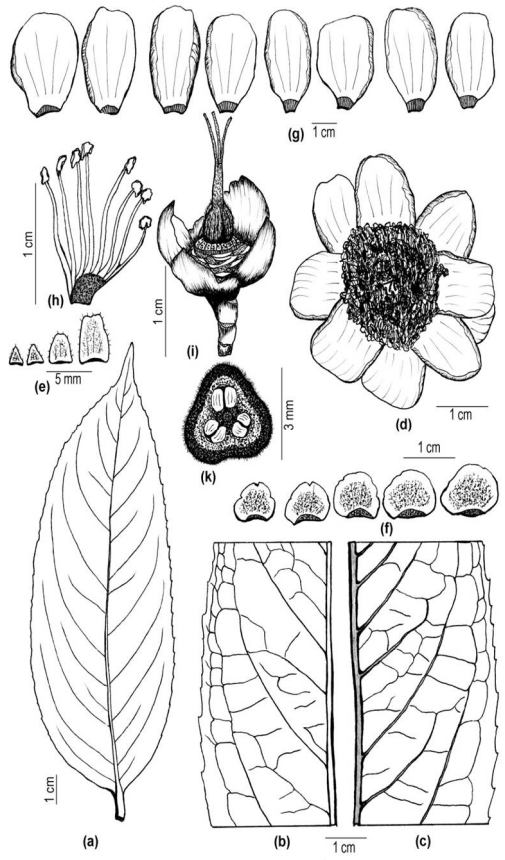
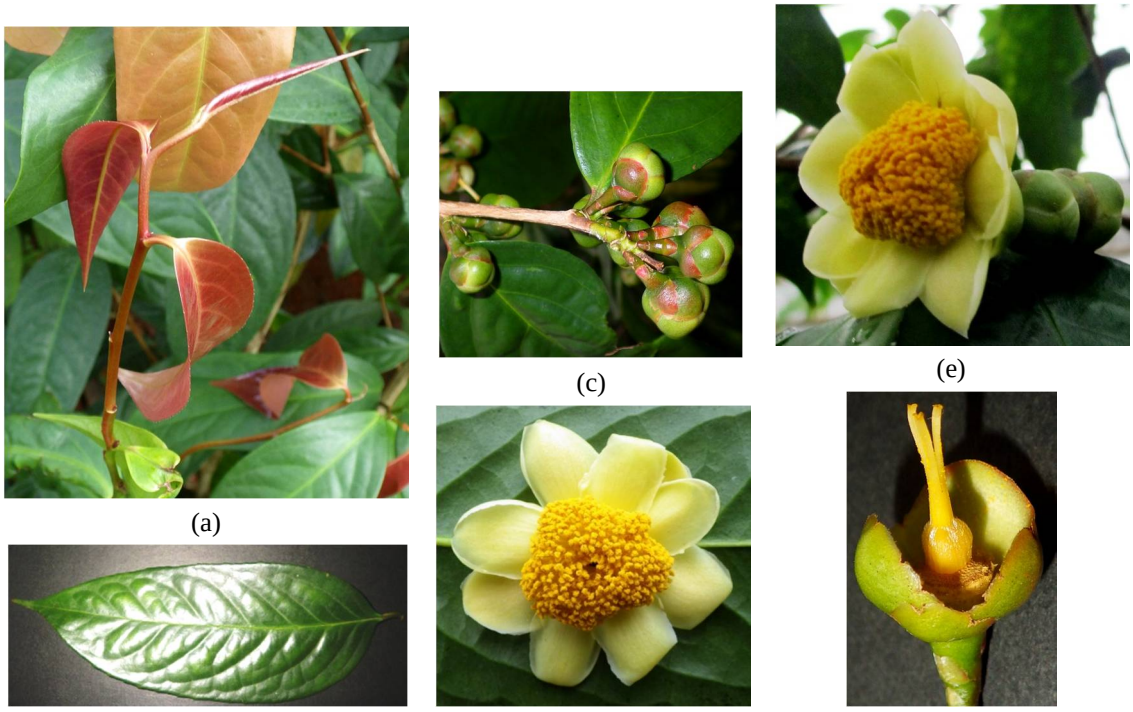


Figure 1. *Camellia thuongiana* Luong, Anna Le & Lau

Note: (a) Leaf; (b) Part of upper surface of leaf; (c) Part of lower surface of leaf; (d) Flower; (e) Bracteoles (inner surface); (f) Sepals (inner surface); (g) Petals (inner surface); (h) Filaments; (i) Calyx and gynoecium; (k) Ovary (cross-section). (Drawn by Luong Van Dung)



(a) (b) (c) (d) (e) (f)

Figure 2. *Camellia thuongiana* Luong, Anna Le & Lau

Note: (a) Young twig; (b) Leaf; (c) Flower buds; (d,e) Flower; (f) Calyx and gynoecium

REFERENCES

Chang, H. T. & Bartholomew, B. (1984). *Camellias*. Portland: Timber Press.

Le, N. H. N. & Luong, V. D. (2016). *General information about the Yellow Camellia Species in Vietnam.* Proceedings of Dali International Camellia Congress, Dali, Yunnan, China.

Luong, V. D. & Le, N. H. N. (2016). *Camellia Ninhii - A new Yellow Camellia Species from Vietnam.* Proceedings of Dali International Camellia Congress, Dali, Yunnan, China.

Tran, N. (2002). *Biodiversity of Camellia genus of Viet Nam.* Proceedings of The first National Symposium on Yellow Camellia of Viet Nam, Tam Dao, Viet Nam.

Tran, N. (2003). Results of the study on yellow Camellias of Vietnam. *International Camellia Journal, 35*, 73-75.

Tran, N. & Luong, V. D. (2013). *Camellia dilinhensis* - A new Yellow Species from Vietnam. *International Camellia Journal, 45*, 87-89.

CAMELLIA THUONGIANA - MỘT LOÀI TRÀ MI HOA VÀNG MỚI CỦA VIỆT NAM

Lương Văn Dũng[a*], Lê Anna[b], Nguyễn Thị Hạnh[a], Nguyễn Thị Liễu[a]

[a] Khoa Sinh học, Trường Đại học Đà Lạt, Lâm Đồng, Việt Nam
[b]Công ty Kim Hoa Trà, Lâm Đồng, Việt Nam
[*]Tác giả liên hệ: Email: dunglv@dlu.edu.vn

Lịch sử bài báo
Nhận ngày 03 tháng 08 năm 2016| Chỉnh sửa ngày 26 tháng 08 năm 2016
Chấp nhận đăng ngày 29 tháng 08 năm 2016

Tóm tắt

Trà mi Thưởng (Camellia thuongiana Luong, Ann Le & Lau) thuộc họ Chè (Theaceae) đã được mô tả và vẽ hình, đây là một loài trà mi hoa vàng mới, phân bố ở xã Đoàn Kết, huyện Đạ Huoai, tỉnh Lâm Đồng. Trên cơ sở dữ liệu hình thái xác nhận loài mới thuộc sect. Chrysantha.

Từ khóa: Camellia; Lâm Đồng; Loài mới; Theaceae; Việt Nam.