

## A NEW SPECIES OF *ADINANDRA* JACK. (THEACEAE) FROM VIETNAM

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**Từ khóa:** *Adinandra*,  
*Theaceae*, loài mới,  
Hòn Giao

**Key words:** *Adinandra*,  
*Theaceae*, new species,  
Hon Giao.

**Loài Súm mới *Adinandra hongiaoensis* H.T. Son & L.V. Dung (họ Chè, Theaceae) phát hiện ở Vườn Quốc gia Bidoup - Núi Bà, thành phố Đà Lạt**

Một loài Súm mới được đặt tên *Adinandra hongiaoensis* H.T. Son & L.V. Dung (họ Chè, Theaceae) phát hiện ở Vườn Quốc gia Bidoup - Núi Bà, thành phố Đà Lạt, tỉnh Lâm Đồng, Việt Nam đã được mô tả và minh họa trong bài báo này. Về mặt hình thái học, loài này khá giống với loài *A. poilanei* nhưng khác lá **35 - 45 × 8 - 12cm, dạng da là cơ bản, cuống ngắn, cánh hoa nhiều lông ở mặt phía ngoài.**

*Adinandra hongiaoensis* H.T. Son & L.V. Dung (Theaceae), a new species from Hon Giao Peak, Bidoup Nui Ba National Park, Lam Dong province, is described and illustrated. It is similar to *A. poilanei*, but differs in its leaf blade **35 - 45 × 8 - 12cm, base cordate, pedicel short, petal pubescent on back side.**

## I. INTRODUCTION

The genus *Adinandra* Jack. was proposed by William Jack in 1822, with two species *A. dumosa* and *A. sylvestris* (Calarence E.K., 1947). It currently comprises ca. 107 species (<http://www.theplantlist.org/browse/A/Pentaptylaccaceae/Adinandra/>), which is mainly distributed in Bangladesh, Cambodia, China, India, Indonesia, South Japan, Laos, Malaysia, Myanmar, New Guinea, Philippines, Sri Lanka, Thailand, China and tropical African (Min, Bruce, 2007). This genus can be characterized by its sepals 5, persistent, imbricate; petals 5, imbricate; stamens 15 - 60, in 1 - 5 whorls; filaments connate or distinct, adnate to base of sepals; anthers filiform trichomes, connective projected into an apiculum; ovary (2 or) 3-5 loculed; ovules 20 - 100 per locule; style 1, simple or apically 3-5 lobed; fruit many - seeded, with a persistent style Min, Bruce, 2007.

According to present studies, it has 11 species in Vietnam, such as: *A. annamensis* Gagn., *A. dongnaiensis* Gagn., *A. caudata* Gagn., *A. glischochroma* Hand - Maz. var. *Hirta* (Gagn.) Kob., *A. hainanensis* Hay., *A. integerrima* T. And., *A. microcarpa* Gagn., *A. millettii* (H. & A.) Benth. & Hook. f. ex Hance., *A. megaphylla* Hu.; *A. poilanei* Gagn., and *A. rubropunctata* (Merr. & Chun.) (Ho, P.H., 1999) Nguyen Tien Ban (eds), 2003), in which the species *A. megaphylla* Hu was listed in the Vietnam Red Book 2007 (Ministry of Science and Technology, Institute of Science and Technology of Vietnam, 2007).

In the period of the year 2006, 2007 and 2008, during botanical expeditions in Hon Giao peak, Bidoup - Nui Ba National Park (NP), Lam Dong province, some vegetative specimens of *Adiandra* were collected at the

altitude 1600m a.s.l., which probably represented undescribed species, but because they were incomplete, lacking flower and fruit. We were unable to be sure. In October of 2009, we were able to visit again the area and found flowering and fruiting of *Adiandra* which matches the specimens mentioned above. Examination of specimens and research of concerning literatures (Gagnepain 1939, Humbert 1941; Min, Bruce, 2007) shows that the form and structure of leaves, flower and wood anatomy in the collected specimens are basically similar to *Adinandra poilanei* Gagn. in certain characters, but differed in other characters. The differences are summarized in Table 1. We concluded that the reported specimens represent a new species of *Adinandra*.

## II. MATERIAL AND METHODS

Living plants of this species were found in Hon Giao peak, Bidoup Nui Ba National Park, Lam Dong province, Southern Vietnam in September 2009. Voucher specimens were deposited in the Herbarium of Vietnamese Academy of Forest Science (VAFS) and the Herbarium of University of Dalat (DLU). Fresh flowers were examined under an Hund wetzler light microscope; line drawings and descriptions were made from fresh material. Presumably related species were used for critical comparison.

## III. RESULTS

### *Adinandra hongiaoensis* H.T. Son & L.V. Dung, *sp. nov.* - Fig. 1

Type. H.T. Son *HS09* (holo VAFS; iso DLU), Vietnam, Lam Dong province, Bidoup Nui Ba National Park, Hon Giao peak, elevation 1600m a.s.l., 49P 0251167; 1348377, 16 October 2009.

Etymology. The specific epithet refers to the locality, Hon Giao peak, Bidoup - Nui Ba National Park, Lam Dong Province, Vietnam.

Evergreen trees, to 10m tall. Young branches with dense gray hairs. Petiole very short, almost sessile, white at the base; leaves alternately arranged; leaf blade oblong or oblong - elliptic, 30 - 45 × 8 - 12cm, green above, light green below, gray - yellow hairy on the low surface, smooth on the above surface, midvein abaxially prominent with extended in the form of wings, lateral veins inconspicuous, base obtuse or cordate, apex acuminate, margins long cilia. Flowers axillary, solitary or paired; peduncle 0.5 - 0.7cm, dense white hairs; bracts 2, ovate, 0.8 - 1.0 × 0.7 - 0.8cm, dovate, 1.0 - 1.2 × 1.3 - 1.7cm, outside grayish brown sericeous, apex slightly acute to sub-rounded; outer sepals thick, margin reddish hairs; inner sepals membranous, margins entire. Petals white, oblong to oblong-elliptic, 2.2 - 2.5 × 1.6 - 1.7cm, apex obtuse, adaxial pubescent. Stamens 2 whorls, each whorl 20 - 24 stamens, 1.5 - 1.7cm long; filaments 0.3 - 0.4cm long, dense hairs, adnate

to base of sepals; anthers linear, 0.2 - 0.3cm. Ovary cone shaped, 5 locules and 18 - 45 ovules per locule; style 5 lobed, shallow, 0.4 - 0.6cm long. Fruit purplish black, globose, 2 - 2.2cm in diam, pubescent, 5 locules with many seeds per locule. Seeds brown - black, semicircular, kidney shaped, outer crease (not smooth).

Distribution and habitat - The species *Adinandra hongiaoensis* sp. nov. is endemic to Bidoup - Nui Ba National Park, in the Southern Highlands of Vietnam, at an elevation of 1600 - 2000m a.s.l. Associated species at the type locality include: *Fokienia hodginsii* Henry & Tomas (Cupressaceae), *Podocarpus imbricatus* Blume, *Podocarpus neriifolius* D.Don (Podocarpaceae), *Quercus macrocalyx* Hick. & Cam., *Quercus langbianensis* Hick. & Cam. (Fagaceae) and *Camellia* sp. (Theaceae).

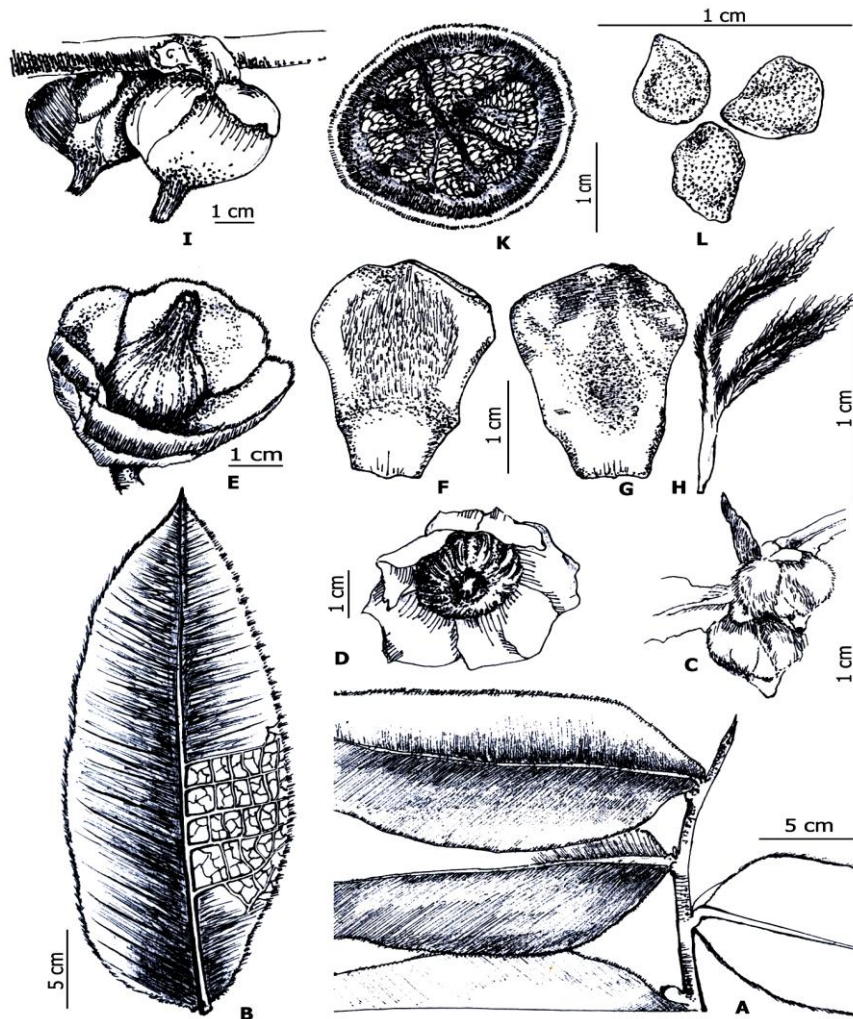
Similar species - *Adinandra hongiaoensis* H.T. Son & L.V. Dung, sp. nov. is similar to *Adinandra poilanei* Gagn. in general appearance, but it can be distinguished morphologically as summarized in Table 1.

**Table 1.** Morphological comparison between *Adinandra poilanei* Gagn. and *A. hongiaoensis*, a new taxon from Vietnam

Characters	<i>A. hongiaoensis</i>	<i>A. poilanei</i>
Leaf blade	35 - 45 × 8 - 12cm	16 - 25 × 5 - 7.5cm
Petioles	< 1cm long	1cm long
Base leaf blade	cordate	cuneate
Pedicels	< 1cm long	2 - 3cm long
Petals	pubescent on back side	glabrous on back side

Acknowledgements - The authors would like to thank the Management Board of Bidoup - Nui Ba National Park for their kind help in locating field surveys. We would like to thank Assoc.Prof. Dr. Nguyen Hoang Nghia

(VAFS) and Dr. Tran Van Tien (DLU) for critical reading earlier version of the manuscript. The authors are also grateful to Mrs. Luong Thi Minh Hoa for making illustration.



**Fig. 1.** *Adinandra hongiaoensis* H.T. Son & L.V. Dung, sp. nov. A : Leafy branch.  
 - B: Leaf blade. - C: Flower buds. - D: Flower. - E: Calyx & style. - F: Outer petal.  
 - G: Inner petal. - H: Stamens. - I: Fruits. - K: 5 locules with many seeds inside. - L: Seeds.

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