



Lasianthus sondangii (Rubiaceae, *Lasianthus* section *Nudiflorae*), a new species with a unique spiciform inflorescence from Central Vietnam

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ABSTRACT: *Lasianthus sondangii*, a new species from *Lasianthus* section *Nudiflorae*, is described from Khanh Hoa Province, Central Vietnam. It can be distinguished from other *Lasianthus* species in Vietnam and surrounding countries by having narrowly triangular stipules, spiciform inflorescences with two or three reduced cyme secondary axes, purple flowers, and clavate calyx lobes with revolute margins. A detailed description of the new species, color plates, distribution, habitat and preliminary conservation assessment are provided.

KEY WORDS: Indochina, Khanh Hoa, Lasiantheae, plant conservation, plant diversity, sect. *Nudiflorae*.

INTRODUCTION

Lasianthus Jack (Rubiaceae, tribe Lasiantheae), established in 1823, is a large genus comprising about 292 accepted species, mainly distributed in tropical and subtropical regions, with its highest diversity in tropical Asia (Zhu, 2002, 2012; Dang and Naiki, 2023; POWO, 2025). In Vietnam, 74 species and four subspecies have been documented. Recently, two new species (*Lasianthus trongii* V.S.Dang, T.A.Le & Tagane and *L. hoabinhensis* V.S.Dang, T.S.Hoang & Naiki) and one new record (*L. laoticus* Tagane, Soulad. & Tanaka) were reported, raising the total to 77 species and four subspecies—approximately one-fourth of the global diversity of the genus (Dang and Naiki, 2023; Dang *et al.*, 2025).

During the botanical survey in Chieu Lau Son Mountain, Khanh Hoa Province, from June to August 2025, an unidentified *Lasianthus* species was collected. After a thorough examination of its morphological characters using relevant taxonomic literature related to *Lasianthus* for Vietnam and surrounding countries (Pitard, 1924; Pham, 2000; Zhu, 2002; Zhu and Taylor, 2011; Zhu *et al.*, 2012; Naiki *et al.* 2015, Napiroon *et al.*, 2020, Dang and Naiki, 2023, Tagane *et al.*, 2023; Dang *et al.*, 2025), and studying herbarium materials at VNM, including digitized specimen images of K, LE, MO, P, and types on the JSTOR Global Plants website, we confirmed that it represents a new species to science, which is described here as *L. sondangii* Bao, Vuong & V.C.Nguyen.

MATERIALS AND METHODS

Herbarium materials of the new species were collected from Chieu Lau Son Mountain, Ninh Sim Commune, Ninh Hoa Town, Khanh Hoa Province. All photographs were taken using a Canon 750D mounted with a Canon EF-S 60 mm f/2.8 Macro USM lens, and the detailed parts were observed under a stereo microscope (Olympus SZ2-ILST, Japan) at the Faculty of Biology, Ho Chi Minh University of Education. Morphological descriptions follow Beentje (2010). The distribution of the studied taxa in Vietnam is described according to the official administrative divisions outlined in the Vietnam Administrative Atlas (2015). The preliminary conservation assessment was conducted based on the guidelines of the IUCN Standards and Petitions Committee (2024).

TAXONOMIC TREATMENT

Lasianthus sondangii Bao, Vuong & V.C.Nguyen, *sp. nov.* **Figs. 1-4**

Type: VIETNAM. Chieu Lau Son Mt., Ninh Sim Commune, Ninh Hoa Town, Khanh Hoa Province, 500 m elevation, 3rd August 2025, *Q.B. Nguyen, B.V. Truong & V.C. Nguyen, QB137* (holotype: VNM00075019! (Fig. S1), isotypes: VNM00075020!, VNM00075021!)

Diagnosis: The new species is distinct from other *Lasianthus* species in Vietnam and Indo-China by its

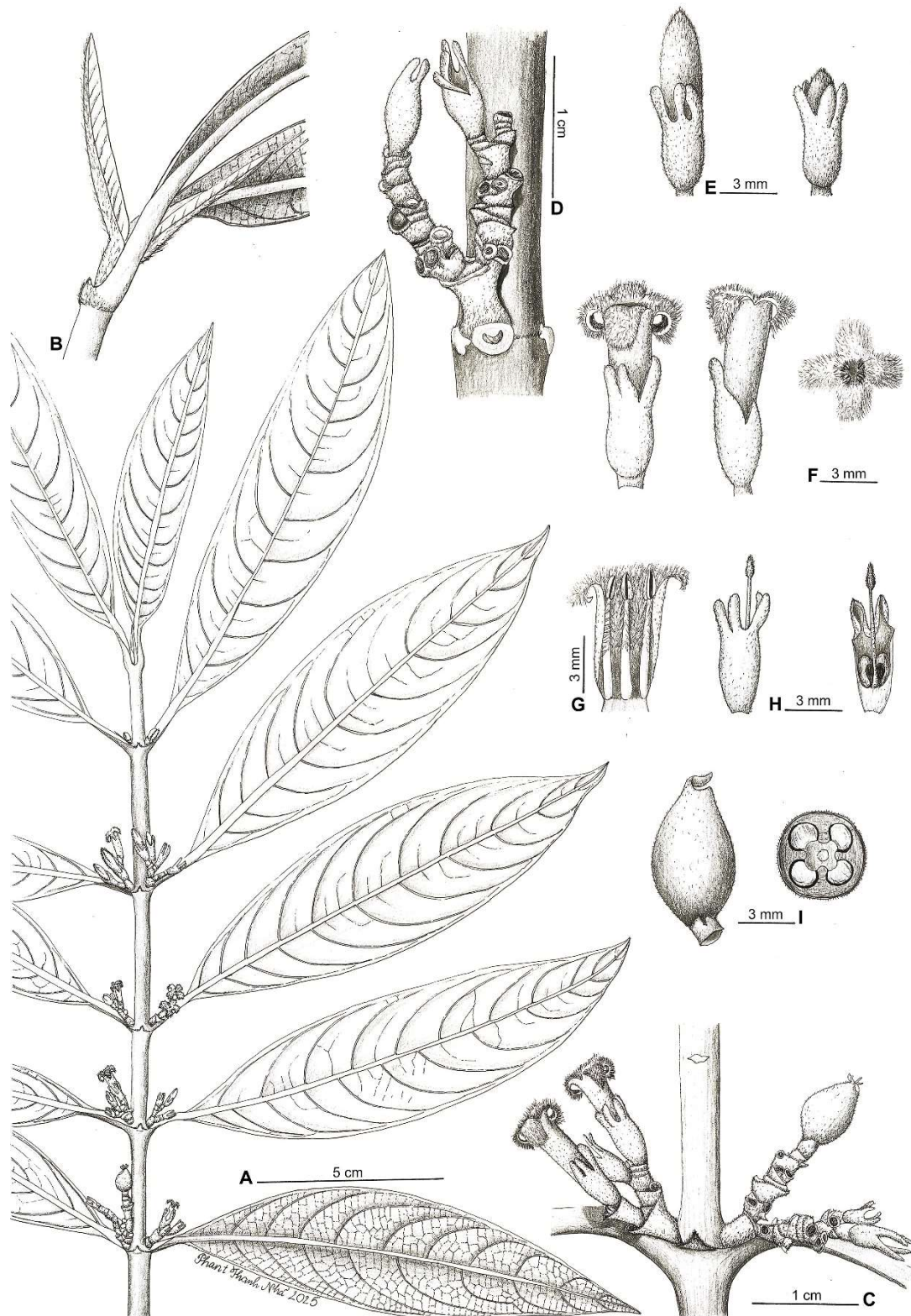


Fig. 1. *Lasianthus sondangii*. **A.** A flowering and fruiting branch. **B.** Apical shoot showing young leaves and stipule. **C.** Inflorescence and infructescence. **D.** Infructescence (side view) **E.** Flowers buds (mature (left) and immature (right)). **F.** Open flower in different views (side view (left) and top view (right)). **G.** Corolla artificially cut open, showing hairs at the throat and stamens. **H.** Flower with the corolla removed to show the ovary, calyx, style, and stigma (left) and longitudinal section that shows the calyx lobes, and the ovule (right). **I.** Mature fruit (left) and the cross section of fruit shows pyrenes and albumen of seeds (right). Drawn by Phan Thi Thanh Nha from type QB137.

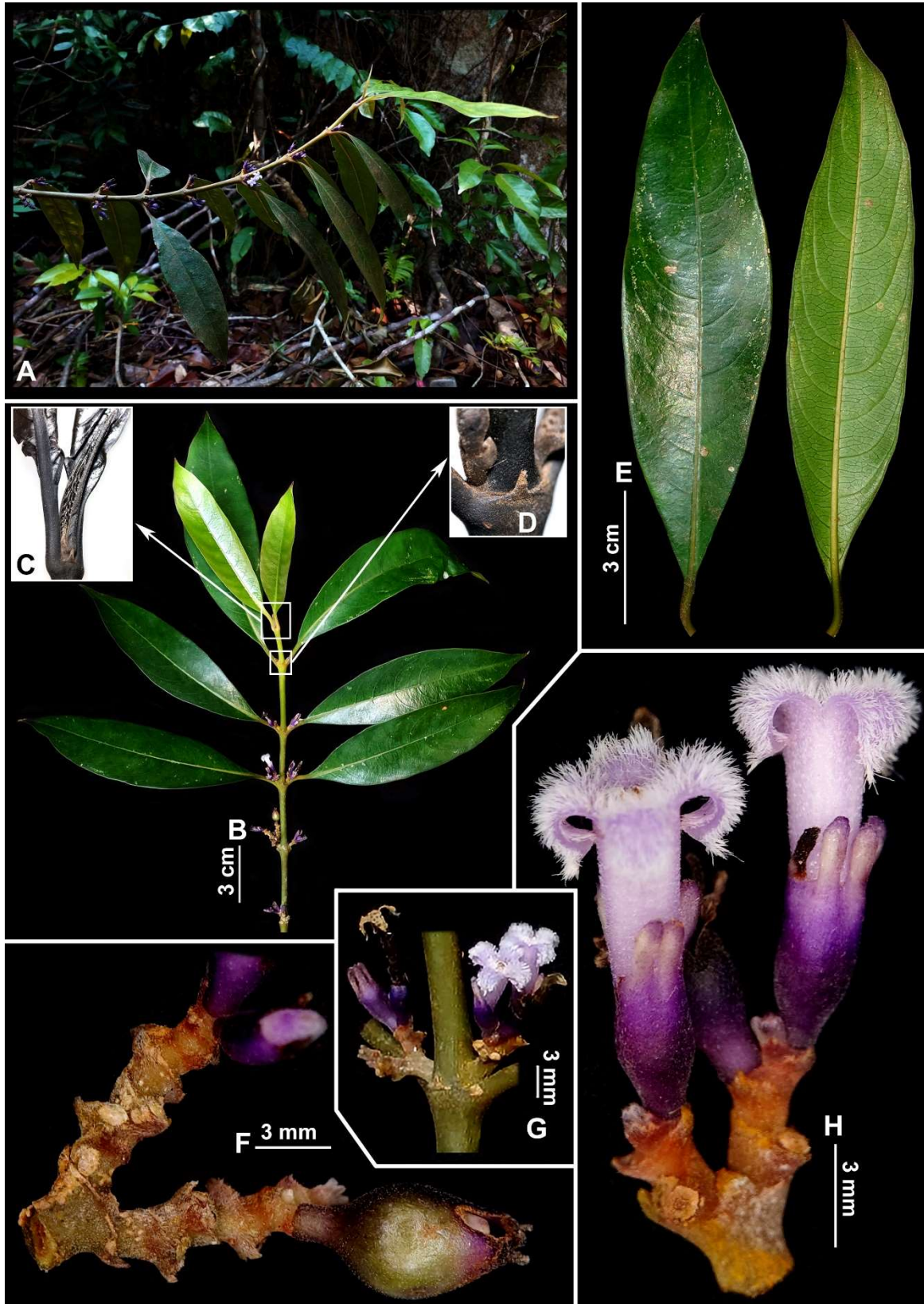


Fig. 2. *Lasianthus sondangii* Bao, Vuong & V.C.Nguyen. A. Habit and habitat. B. A flowering and fruiting branch. C. Apical shoot showing young leaves and stipule. D. Stipule. E. Leaves (adaxial surface (left) and abaxial surface (right)). F. Infructescence. G. Inflorescences. H. Inflorescence bearing open flowers. (A, B, E–H by Nguyen Van Canh; C, D by Nguyen Quoc Bao from type QB137).

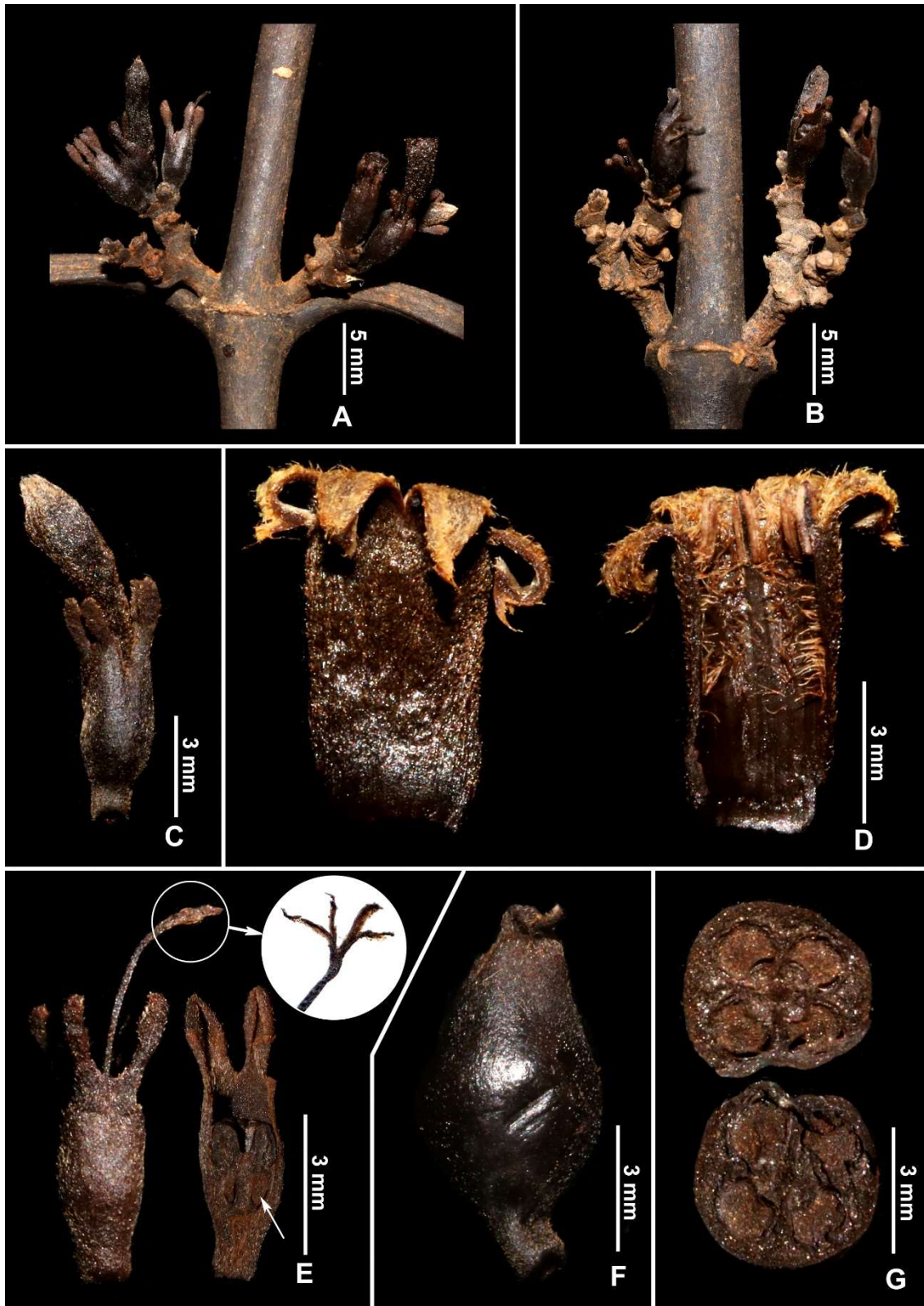


Fig. 3. *Lasianthus sondangii* Bao, Vuong & V.C.Nguyen. **A, B.** Inflorescences. **C.** Flower bud. **D.** The longitudinal cross-section of corolla (outer corolla surface (left) and inner corolla surface showing filaments and anthers (right)). **E.** Flower with the corolla removed to show the calyx, ovary, style and stigma (left), and longitudinal section that shows the calyx lobes, and the ovule (right). **F.** Mature fruit. **G.** The cross section of fruit shows pyrenes and the albumen of seeds. (All photos by Nguyen Quoc Bao from type QB137).

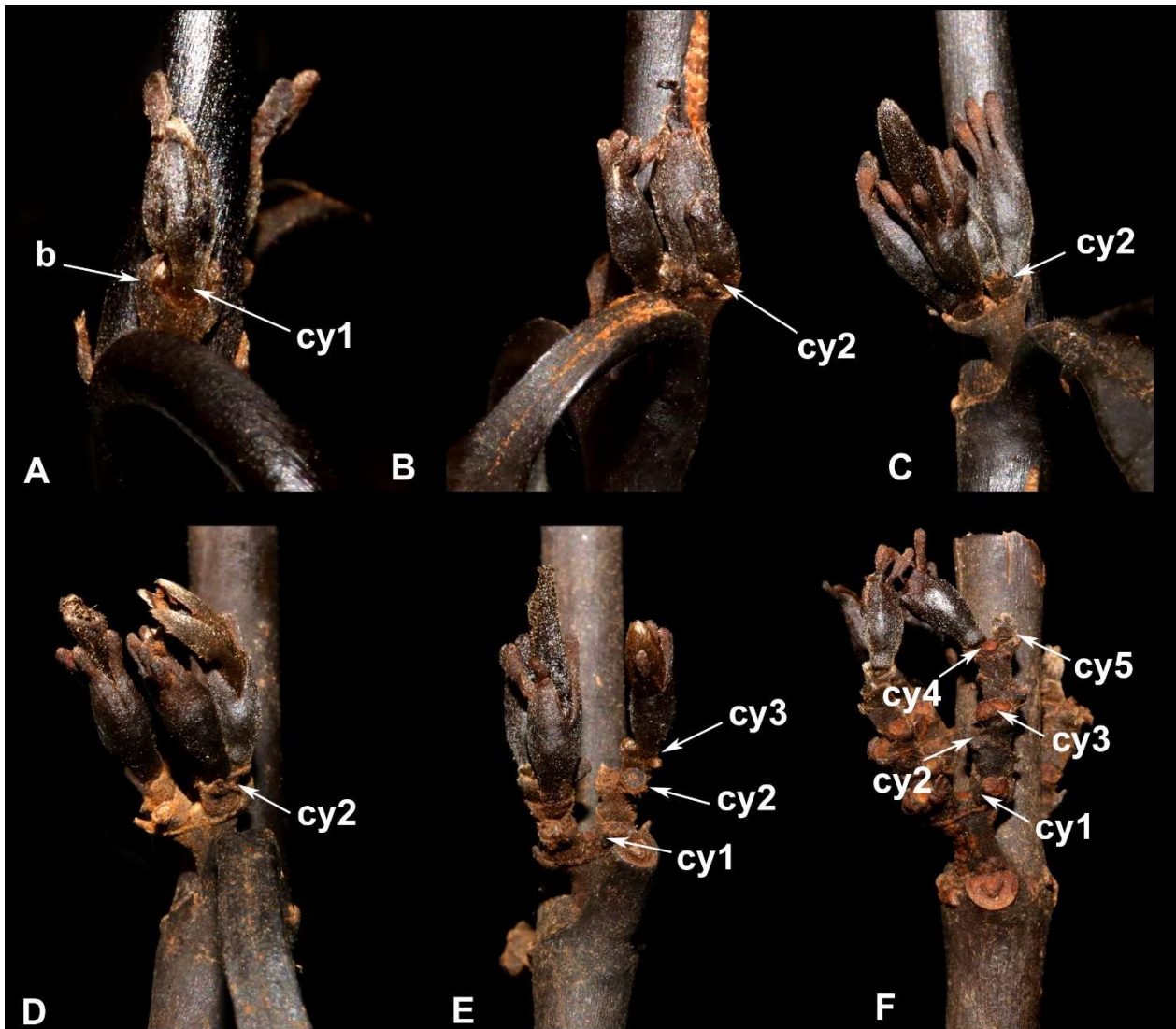


Fig. 4. Developmental stages of the inflorescence of *Lasianthus sondangii* (A–F). **b.** Bract. **cy1.** Cyme 1. **cy2.** Cyme 2. **cy3.** Cyme 3. **cy4.** Cyme 4. **cy5.** Cyme 5. All photos by Nguyen Quoc Bao from type QB137.

spiciform, sympodial, reduced-cymose inflorescence; purple flowers (including calyx), calyx lobes obovate with revolute margins.

The morphological characters of the new species are also similar to those of *Lasianthus konchurangensis* V.S.Dang, T.B.Tran & T.D.Ha, a species described in 2020 and endemic to Vietnam. However, *L. sondangii* clearly differs from *L. konchurangensis* in having smaller leaf blades (9–15 × 2–4 cm vs. 16–25 × 3–4.9 cm), smaller stipules (0.8–1 mm vs. 1.5–2 mm), the shape of the calyx lobes (clavate with revolute margins vs. orbicular with flat margins), shorter styles (4–6 mm long vs. 8.5–9.5 mm long), indumentum of the style (pubescent to puberulous vs. glabrous).

Shrubs to treelets 1–3 m tall; branches 2–3 mm in *diam.*, sparsely puberulous to glabrous; internodes 2–4 cm long. **Leaves** opposite; blades lanceolate-elliptic to

elliptic, 9–15 × 2–4 cm, subcoriaceous, glabrous on adaxial surfaces, sparsely puberulous to glabrous on abaxial surfaces, apex acuminate, base attenuate, margin entire, midrib flat adaxially, glabrous, prominent abaxially, densely tomentose in young leaves, sparsely puberulous to glabrous in mature leaves, secondary veins 8–10 pairs, ascending at an angle of 50–60° from the midrib, curved to the margin, flat adaxially, glabrous, prominent abaxially, densely tomentose in young leaves, puberulous to glabrous in mature leaves, tertiary veins parallel, faint adaxially, prominent abaxially; petioles 9–13 mm long, sparsely puberulent to glabrous. **Stipules** small, narrowly triangular, 0.8–1 mm long, densely tomentose. **Inflorescences** axillary, spiciform, sympodial with two or three reduced-cyme secondary axes; peduncles 3–6 mm long, puberulent. **Bracts** persistent, narrowly triangular to triangular, 1–2 mm long, apex

**Table 1.** Morphological comparison between *Lasianthus sondangii* and *Lasianthus konchurangensis**

| Characters | <i>L. sondangii</i> | <i>L. konchurangensis</i> |
|-----------------|--------------------------------------------------------------|-------------------------------------------------------------|
| Stem | 1–3 m tall | up to 4 m tall |
| Leaf blades | 9–15 × 2–4 cm | 16–25 × 3–4.9 cm |
| Secondary veins | 8–10 pairs, ascending at the angle of 50–60° from the midrib | 9–14 pairs, ascending at an angle of 50–70° from the midrib |
| Petioles | 9–13 mm | 12–20 mm |
| Stipules | 0.8–1 mm long, tomentose | 1.5–2 mm long, strigose |
| Inflorescences | spiciform | cymose |
| Bracts | 2–3 mm, puberulous | 1.5–3 mm, pubescent |
| Peduncles | 3–6 mm | 2–4 mm |
| Calyx lobes | 2–3 mm, clavate, margin revolute | 2–2.5 mm, orbicular, margin flat |
| Corolla tubes | 5–7 mm | 6.5–7 mm |
| Corolla lobes | 2–3 mm | 2–3 mm |
| Anthers | 1.5–2 mm | 1.5–2 mm |
| Stigma | 1–1.5 mm, densely villous | 0.5–0.7 mm, glabrous |
| Style | 4–6 mm, pubescent to puberulous | 8.5–9.5 mm, glabrous |
| Fruits | obovoid, 6–7 mm long, ca. 5 mm in <i>diam.</i> | ovoid or subglobose, 5–7 mm long, ca. 6 mm in <i>diam.</i> |

*The morphological details are based on Ha *et al.* (2020).

rounded to obtuse, puberulous on the inner surface, margin ciliate. **Flowers** subsessile, 4-merous, bracteoles triangular, puberulent. **Calyx** campanulate to obconical, tube 2–3 mm long, purple *in vivo*, puberulous on both sides, lobes 4, 2–3 mm long, clavate, margin revolute, puberulous on both sides, apex obtuse. **Corolla** tubular, tube 5–7 mm long, pale purple, puberulous to tomentose outside, villous inside; lobes 4, narrow triangular to oblong-triangular, 2–3 mm long, apex acute, thickened, recurved, pubescent outside, villous inside. **Stamens** 4, inserted in the corolla tube; filaments short, basally connate to corolla; anthers oblong, 1.5–2 mm long. **Disk** smooth. **Ovary** obconical, ca. 2 mm long, puberulous, 4-locular; style 4–6 mm long, pubescent to puberulous; stigma 1–1.5 mm long, 4-lobed, densely villous, not flared. **Drupes** obovoid, 6–7 mm long, ca. 5 mm in *diam.*, sparsely puberulent, crowned by calyx lobes; pyrenes 4. **Seeds** ovoid, 3–4 mm long, blackish brown when dry.

Distribution, habitat and phenology: The new species is known so far only from Chieu Lau Son Mountain, Khanh Hoa Province, Central Vietnam. It occurs in evergreen secondary forests at 500 m elevation. Flowering and fruiting were observed from August to October.

Etymology: The species is named in honor of Assoc. Prof. Dr. Dang Van Son (curator of VNM herbarium, Institute of Life Sciences; supervisor of Truong Ba Vuong and Nguyen Quoc Bao) for his contributions to the study of *Lasianthus* and plant diversity in Vietnam.

Vernacular name (Vietnamese): Xú hương Đăng Văn Sơn

Preliminary conservation status: The species is currently known from a secondary evergreen forest within a single province (a total land area of approximately 1,197.77 km²), with an estimated population of approximately 50 mature individuals.

Seedlings and immature fruits were observed, indicating natural regeneration. The habitat is presently in good condition, with no evidence of logging or major anthropogenic disturbance. However, information on population trends, extent of occurrence, area of occupancy, and potential threats remains insufficient. Following the IUCN Red List Categories and Criteria (IUCN, 2024), the species is therefore preliminarily assessed as **Data Deficient (DD)**. Given the possibility of undiscovered populations near the township and adjacent areas, an extensive survey is essential in the future to accurately map the species' distribution and update its conservation assessment.

Taxonomic notes: *Lasianthus sondangii* belongs to *Lasianthus* section *Nudiflorae* in having inconspicuous bracts less than 3 mm long (Zhu *et al.*, 2012; Dang and Naiki, 2023). A morphological comparison between *Lasianthus sondangii* and *L. konchurangensis*, a closely related species, is presented in Table 1.

This species is unique among species in this section in its inflorescence structure. The inflorescence is spiciform, with all branching strongly reduced except for an apparent peduncle. Flowers are arranged unilaterally and alternately along a sympodial axis, resembling a monochasial cyme rather than a symmetrical branching pattern. As shown in Fig. 4, the inflorescence consists of a spiciform, sympodial, reduced-cymose structure, in which a rounded to obtuse bract subtends a subcapitate cluster of sessile flowers; further growth proceeds from one side beneath the flower cluster, giving rise to successive flower groups.

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Supplementary materials are available from the journal website