

***Wrightia nuichuaensis* (Apocynaceae), a new species from southern Vietnam**

SHUICHIRO TAGANE^{1,5*}, VAN-SON DANG^{2,6}, BA VUONG TRUONG^{2,7}, QUOC BAO NGUYEN^{2,3,8}, QUOC TRONG PHAM^{2,9}, TRAN VY NGUYEN^{2,10}, TAKENORI YAMAMOTO^{1,11}, DEUANTA KONGXAISAVATH^{4,12} & PHETLASI SOULADETH^{4,13}

¹Kagoshima University Museum, Kagoshima University, 1-21-30, Korimoto, Kagoshima, 890-0065, Japan

²Institute of Tropical Biology, Vietnam Academy of Science and Technology, 85 Tran Quoc Toan Street, District 3, Ho Chi Minh City, Vietnam

³Graduate University of Science and Technology, Vietnam Academy of Science and Technology, 18 Hoang Quoc Viet, Cau Giay, Ha Noi, Vietnam

⁴Faculty of Forest Science, National University of Laos, Dongdok Campus, Xaythany District, Vientiane Capital, Laos

⁵  stagane29@gmail.com;  <https://orcid.org/0000-0002-1974-7329>

⁶  dvsonitb@gmail.com;  <https://orcid.org/0000-0001-8681-4141>

⁷  bavuong2019@yahoo.com;  <https://orcid.org/0000-0003-3452-8455>

⁸  quocbao.nguyen98@gmail.com;  <https://orcid.org/0000-0001-8172-8578>

⁹  phamquoctrong117@gmail.com;  <https://orcid.org/0009-0004-6879-7535>

¹⁰  vychim@gmail.com;  <https://orcid.org/0000-0002-9560-2850>

¹¹  t.yamamoto0624@gmail.com;  <https://orcid.org/0000-0002-5487-6652>

¹²  deuntar66789@gmail.com;  <https://orcid.org/0009-0000-4559-0647>

¹³  p.souladeth@nuol.edu.la;  <https://orcid.org/0000-0001-8563-1773>

*Author for correspondence

Wrightia Brown (1810: 467, Apocynaceae: Apocynoideae-Wrightieae), with about 34 species, are shrubs or small trees characterized by terminal cymose inflorescence, calyx lobes usually with colleters, sinistrorse corolla lobes in bud, absence of disc, anthers adnate to the style head, usually with corona, and fruits of solitary or paired follicles (Ngan 1965, Middleton 2005, 2014). The species are distributed in East Africa and South to Southeast Asia, extending to Australia (Ngan 1965, POWO 2024). In Vietnam, nine species are known to date (Pitard 1933, Hô 2003, Middleton 2014, Hazell *et al.* 2023).

During our field surveys in Nui Chua National Park, Ninh Thuan Province, South Central Vietnam in 2023, we encountered an unknown species of *Wrightia* in a lowland evergreen forest. After a careful examination of the literature of the genus in Vietnam and surrounding countries (Pitard 1933, Hô 2003, Middleton 2005, 2014, Hazell *et al.* 2023) and herbarium specimens including digitized images from FOF, FU, KAG, P and VNM, we concluded that it was an undescribed species, and we here describe it as new to science, *W. nuichuaensis*.

Taxonomy

Wrightia nuichuaensis Tagane & V.S.Dang, *sp. nov.* (Fig. 1)

TYPE:—VIETNAM. Ninh Thuan Province. Nui Chua National Park, 11.78252°N, 109.18305°E, 39 m elev., 22 Dec 2023, fl., *S. Tagane et al.* N358 (holotype VNM00070330!; isotypes FOF0009029!, KAG186357!, KYO).

The new species is characterized by its shrubby habit up to 3 m tall, glabrous plant body except ciliolate calyx lobes and papillose corolla, 4–7 pairs of secondary veins, orange-reddish corolla, stamens inserted at 0.6–0.7 of corolla tube length from the base and only upper part (0.6–0.9 mm long, 1/3–1/4 of the total length) of anthers exerted from tube, and simple antepetalous corona lobes shorter than 1 mm, by which combination it is clearly distinguished from the previously known species in the genus.

Shrub, up to 3 m tall, with white latex. Young twigs yellowish brown to reddish brown, glabrous, old branches dark grayish brown with pale round lenticels. Leaves opposite; blades elliptic, elliptic-oblong, or elliptic-obovate, 4.3–10.8 × 2.1–5.5 cm, dark yellow-green adaxially, dull brownish yellow abaxially, glabrous on both surfaces, apex acuminate, acumen ca. 0.9 cm long, margin entire, recurved, base cuneate, midrib sunken adaxially, prominent abaxially, secondary veins 4–7 pairs, sunken adaxially, prominent abaxially, tertiary veins reticulate, visible adaxially; petioles 3–7 mm long, glabrous, sunken adaxially, rounded abaxially. Inflorescence cymose, terminal, 3–13-flowered, up to 2.7 cm long, peduncle 2.2–4 mm long,

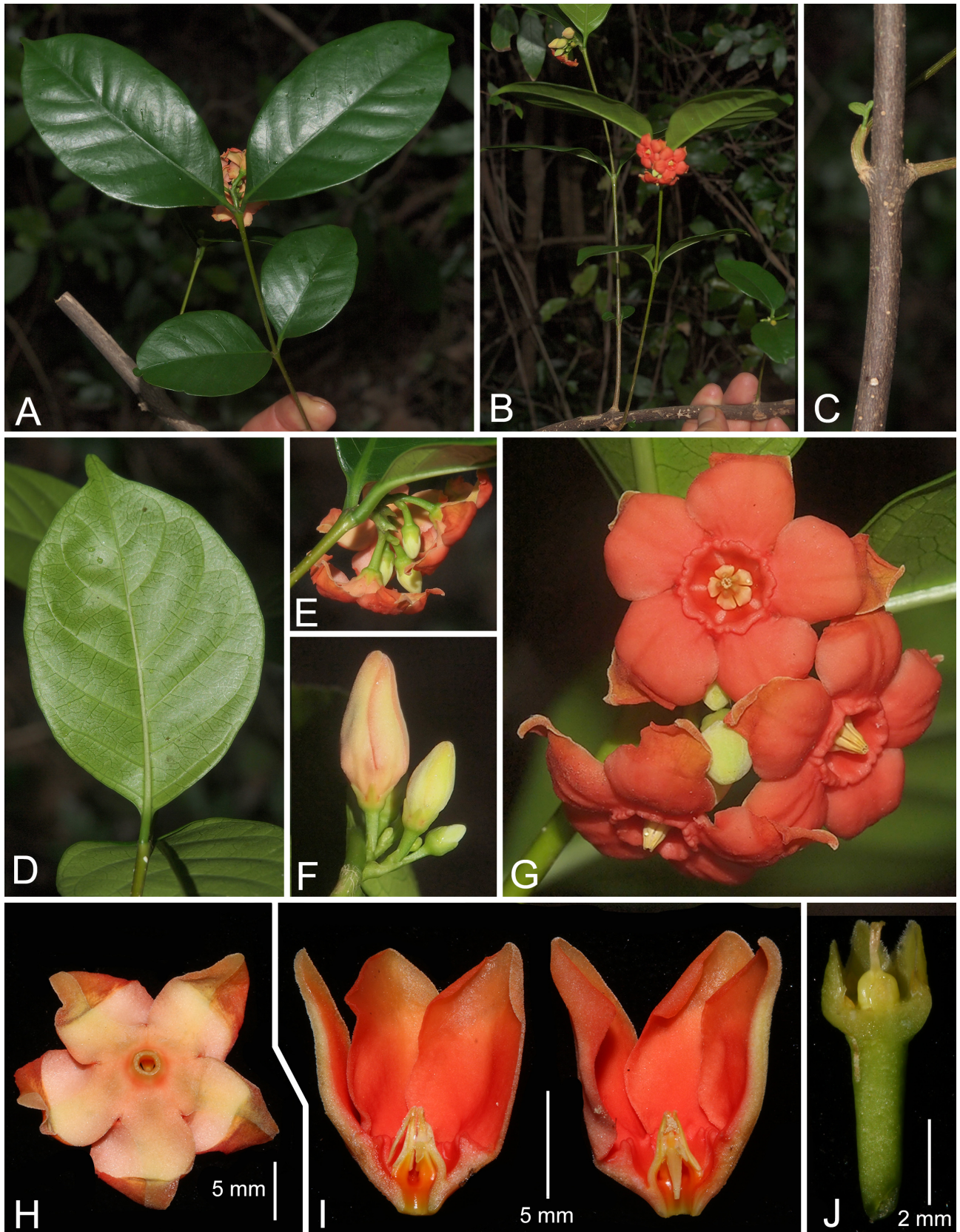


FIGURE 1. *Wrightia nuichuaensis*. A & B. Flowering branches. C. Twig. D. Abaxial leaf surface. E. Inflorescence, side view. F. flower buds. G. Flowers. H. corolla, back view. I. longitudinally dissected flower. J. pedicel, calyx and pistil (two calyx lobes removed). Photos of Tagane *et al.* N358 when it was alive, taken by S. Tagane (A–G) and B.V. Truong (H–J).

glabrous; bracts ovate-triangular, 0.9–2.2 mm long, glabrous on both surfaces. Flowers pendulous; pedicels 4–5 mm long (at anthesis), glabrous. Calyx lobes 5, green, ovate-triangular, 1.7–2.0 × ca. 1.2 mm, apex obtuse, margin ciliate, collectors in the sinuses inside, obovate-oblong, 0.7–0.8 × 0.3 mm, apex rounded, sometimes with an additional side lobe. Corolla rotate, orange-red, aestivation sinistrorse; tube ca. 2.8 mm long, widening at 1 mm, glabrous inside, densely papillose outside; lobes spreading, broadly ovate to ovate-elliptic, 8.0 × 6.1 mm, reflexed when fully opened, margin of apical part recurved, densely papillose on both surfaces, apex acute to rounded, ciliate. Corona of one whorl, antepetalous, simple; antepetalous corona basally adnate to corolla for ca. 3 mm long, lobes shorter than 1 mm, margin shallowly irregularly undulate. Stamens 5, attached in a ring to the style head, inserted at 0.6–0.7 of corolla tube length from base; filaments ca. 0.8 mm long, flattened, anthers narrowly triangular, ca. 2.7 mm long, glabrous, base sagittate. Gynoecium of two apocarpous ovaries united into a common style; ovary ovoid-ellipsoid, ca. 1.2 mm in diam., ca. 0.8 mm in diam., glabrous; style and style head ca. 0.7 mm long. Fruits and seeds not seen.

Distribution:—Vietnam (so far known only from the type locality).

Habitat:—Evergreen broad-leaved forest; on gray-brown soil, medium- to coarse-grained granite (not limestone area); 39 m elev.

Etymology:—Species epithet refers to the type locality of the new species.

Phenology:—Flowering in December.

Vernacular name:—Lồng mức Núi Chúa (Vietnamese).

Conservation status:—Data deficient (DD). Currently, *Wrightia nuichuaensis* is known only from a single location in the Nui Chua National Park. In our field excursion, we found one small population with fewer than 20 mature individuals, which satisfies the criteria of D of Critically Endangered (CR). However, considering the total land area of the national park is about 225 km² and large parts are covered with thick, evergreen broad-leaved forests, more populations could exist in the park and surrounding areas.

Notes:—Among nine species of *Wrightia* previously known from Vietnam (Middleton 2014, Hazell *et al.* 2023), *W. nuichuanensis* may resemble *W. annamensis* Eberhardt & Dubard (1913: 38) in having reddish corolla and upper part of anthers exerted from corolla tube. However, it is distinguished by its fewer secondary veins (4–7 pairs in *W. nuichuaensis* vs. 10–16 pairs in *W. annamensis*), smaller corolla lobes (8 × 6 mm vs. 10.5–15 × 4–5.5 mm), simple and shorter corona (corona lobes shorter than 1 mm vs. corona 2 whorls and lobes longer than 3.2 mm long), and apocarpous ovaries (vs. syncarpous).

In the Nui Chua National Park, 1,514 vascular plants belonging to 596 genera and 147 families have been recorded to date (Nui Chua National Park 2024). Among them, several species were described in recent years after 2000 based on the specimens collected from the national park, such as *Licuala longiflora* Henderson *et al.* (2008a: 150), *Calamus nuichuaensis* Henderson *et al.* (2008b: 196), *Pinanga nuichuensis* Henderson *et al.* (2010: 38), *Aristolochia nuichuaensis* T.V.Do & Luu in Do *et al.* (2019: 108), *Balanites vietnamica* Luu, T.T. Nguyen & T.Q.T.Nguyen in Nguyen *et al.* (2023: 57), *Lasianthus nuichuaensis* V.S.Dang & Naiki (2023: 108), and *Memecylon longipedunculatum* Tagane, V.S.Dang & Nuraliev in Tagane *et al.* (2025), indicating further efforts to write floristic inventories and subsequent taxonomic studies will be needed to accurately understand the overall flora of the area.

Acknowledgements

The authors are grateful to the managers and staff, especially Van Hung Nguyen and Vo Trong Tin Tran, of Nui Chua National Park for supporting our botanical inventory in the protected area. We thank the staff of FOF, FU, KAG, and VNM for providing access to herbarium specimens. This study was supported by the Nagao Natural Environmental Foundation.

References

- Brown, R. (1810) *Prodromus Flora Novae Hollandiae et Insulae Van-Diemen, exhibens characteres plantarum quas annis 1802–1805 per oras utriusque insulae collegit et descripsit. Vol. 1.* Richardi Taylor et Socii, Londini, 590 pp.
<https://doi.org/10.5962/bhl.title.3678>
- Dang, V.S. & Naiki, A. (2023) A revision of the genus *Lasianthus* Jack (Rubiaceae) from Vietnam. *Phytotaxa* 581: 1–150.
<https://doi.org/10.11646/phytotaxa.581.1.1>
- Do, V.T., Hien, T.T., Luu, H.T. & Nguyen, T.T. (2019) *Aristolochia nuichuaensis* (subg. *Siphisia*, Aristolochiaceae), a new species, an updated key and a checklist to the species of *Siphisia* in Vietnam. *Annales Botanici Fennici* 56: 107–113.
<https://doi.org/10.5735/085.056.0116>

- Eberhardt, P.A. & Dubard, M.M. (1913) Sur trois essences forestières de la Chaîne Annamitique. *L'Agronomie coloniale: bulletin mensuel du Jardin colonial* 1 (2): 38–41.
- Hazell, E.C. (2023) *Wrightia vietnamensis* (Apocynaceae), a new species from Vietnam. *Kew Bulletin* 78: 619–623.
<https://doi.org/10.1007/s12225-023-10133-9>
- Henderson, A., Ban, N.K. & Dung, N.Q. (2008a) New species of *Licuala* (Palmae) from Vietnam. *Palms* 52: 141–154.
- Henderson, A., Ban, N.K. & Dung, N.Q. (2008b) New species of *Calamus* (Palmae) from Vietnam. *Palms* 52: 187–197.
- Henderson, A., Ban, N.K. & Thanh, B.V. (2010) New species of *Areca*, *Pinanga*, and *Licuala* (Arecaceae) from Vietnam. *Phytotaxa* 8: 34–40.
<https://doi.org/10.11646/phytotaxa.8.1.3>
- Hô, P.H. (2003) *An Illustrated Flora of Vietnam. Vol. 2.* published by author, Ho Chi Minh.
- Middleton, D.J. (2005) A revision of *Wrightia* (Apocynaceae: Apocynoideae) in Malesia. *Harvard Papers in Botany* 10: 161–182.
[https://doi.org/10.3100/1043-4534\(2005\)10\[161:AROWAA\]2.0.CO;2](https://doi.org/10.3100/1043-4534(2005)10[161:AROWAA]2.0.CO;2)
- Middleton, D.J. (2014) Apocynaceae, subfamilies Rauvolfioideae and Apocynoideae. *Flora of Cambodia Laos and Vietnam* 33: 1–276.
- Ngan, P.T. (1965) A revision of the genus *Wrightia* (Apocynaceae). *Annals of the Missouri Botanical Garden* 52: 114–175.
<https://doi.org/10.2307/2394866>
- Nguyen, T.Q.T., Nguyen, T.T., Tran, V.T. & Luu, H.T. (2023) *Balanites vietnamica* (Zygophyllaceae), a new species from Vietnam. *Academia Journal of Biology* 45: 55–63.
<https://doi.org/10.15625/2615-9023/17706>
- Núi Chua National Park (2024) Núi Chua National Park. Available from: <http://vqgnuichua.vn/> (accessed 18 May 2024)
- Pitard, J. (1933) *Wrightia*. In: Lecomte, H. (Eds.) *Flore générale de l'Indochine*. Vol. 3. Masson, Paris, pp. 1182–1195.
- POWO (2024) *Plants of the World Online*. Facilitated by the Royal Botanic Gardens, Kew. Available from: <http://www.plantsoftheworldonline.org/> (accessed 15 May 2024)
- Tagane, S., Dang, V.-S., Truong, B.V., Nguyen, Q.B., Pham, Q.T., Nguyen, T.V., Yamamoto, T., Kongxaisavanth, D., Yamazaki, K., Nuraliev, M.S., Fomichev, C.I. & Souladeth, P. (2025) *Memecylon longipedunculatum* (Melastomataceae), a new species from coastal areas of south central Vietnam. *Phytotaxa* 683 (1): 1–8.
<https://doi.org/10.11646/phytotaxa.683.1.1>