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Syzygium ngheanense (Myrtaceae: Myrtoideae), a new species of *Syzygium* from Central Vietnam

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Abstract

Syzygium ngheanense (Myrtaceae), a new species from Nghe An Province, in Central Vietnam is described and illustrated. The species is most similar to *S. vestitum, S. scarbum* and *S. levinei* but differs from the three latter in having glabrous bracts and bracteoles, sparsely scabrid flower buds and hypanthia, larger sepals and petals, longer stamens and styles. Information on phenology, ecology and distribution is provided, together with a preliminary conservation status assessment and taxonomic notes for the new species and a key to distinguish it from three hairy *Syzygium* species in Indochina.

Key words: Endemic species, Eudicots, Indochina, Myrtales, Syzygieae, taxonomy, Truong Son range

Introduction

Syzygium Gaertner (1788: 166) is the species-richest genus in the myrtle family (Myrtaceae) with more than 1200 species of trees or shrubs currently recognized (Govaerts *et al*. 2018). It is widely distributed in tropical and subtropic regions of the old world, from Africa to South and South-East Asia, southeastern Australia, New Zealand and the Pacific Islands, with the centre of species richness and the highest levels of endemism are reported as being in Southeast Asia (Parnell *et al*. 2007, Ahmad *et al*. 2016, Govaerts *et al*. 2018). Morphologically, *Syzygium* is distinguished from other Myrtaceae genera by its sympodial branch system, simple, opposite, gland-dotted (punctulate or pustulate) and exstipulate leaves with intramarginal veins, usually paniculate inflorescences (sometimes reduced to a raceme, cyme or congested flower cluster), obconic, funnel-shaped or sometimes clavate hypanthium, many stamens and 1–2 seeded fruit (Parnell & Chantaranothai 2002, Chen & Craven 2007, Ashton 2011, Soh & Parnell 2015). The currently accepted infrageneric classification of *Syzygium*, based on both molecular and morphological data, is that of Craven & Biffin (2010). This scheme recognizes six subgenera for the genus, namely: subg. *Syzygium,* subg. *Acmena* (DC. (1828: 262)) Craven & Biffin (2010: 96), subg. *Sequestratum* Craven & Biffin (2010:97), subg. *Perikion* Craven & Biffin (2010: 97), subg. *Anetholea* (Peter G.Wilson (2000: 434) Craven &Biffin (2010: 97) and subg. *Wesa* Craven & Biffin (2010: 98). Moreover, these authors delineated six sections within subg. *Acmena*: sect. *Acmena* (DC.) Craven & Biffin (2010: 96), sect. *Piliocalyx* (Brongn. & Gris (1865: 185)) Craven & Biffin (2010:97), sect. *Agaricoides* Craven & Biffin (2010: 97), sect. *Waterhousea* (B.Hyland (1983: 138)) Craven & Biffin ((2010: 97), sect. *Glenum* Craven & Biffin (2010: 97), sect. *Monimioides* Craven & Biffin (2010: 97), and sect. *Gustavioides* Craven & Biffin (2010: 97). A recent revision of *Syzygium* in Indochina (Soh & Parnell 2015) recognized 49 species for Vietnam, including

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3 endemics: *S. chantaranothaianum* W.K.Soh & J.Parn. (2012: 2), *S. cucphuongense* W.K.Soh & J.Parn. (2012: 3), *S. tonkinense* (Gagnep. (1918: 334)) Merr. & L.M.Perry (1938: 105))). Subsequently, Tagane *et al*. (2018) described three new species of *Syzygium* from central Vietnam, namely, *S. honbaense* Tagane, V.S.Dang & Yahara (2018: 251), *S. phamhoangii* Tagane, V.S.Dang & Yahara (2018: 252) and *S. yersinii* Tagane, V.S.Dang & Yahara (2018: 255).

During recent floristic surveys in the North Central coastal region of Vietnam, several specimens (including flowers and fruits) of an unusual *Syzygium* were discovered and collected in the western mountain areas of Nghe An Province by one of us (N.Đ.Đỗ) in 2020–2022. Following a study of living material (flowers and fruits) and herbarium specimens of the Nghe An entity, and examination of types and protologues of all presumed closely related species in Vietnam and neighbouring countries (e.g. Gagnepain 1921, Merrill & Perry 1938, Parnell & Chantaranothai 2002, Chen & Craven 2007, Soh & Parnell 2011, 2015, Tagane *et al.* 2018), it was established that these specimens represent an undescribed species. This species has somewhat scabrid young twigs, leaves and inflorescences and as such appears related to *S. vestitum* Merr. & L.M.Perry (1938: 110)*, S. scabrum* and *S. levinei* (Merr. (1934: 39)) Merr. (1938: 110). However, as shown in Table 1 the new species differs significantly in vegetative, floral and fruit structures from the afore-mentioned three species, and it is therefore described and illustrated here as *S. ngheanense*.

TABLE 1. Morphological comparison between the four hairy species of *Syzygium* in Indochina.

Characters	***S. ngheanense***	***S. vestitum*** **(**Merrill & Perry 1938, Soh & Parnell 2015)	***S. scabrum*** **(**Tagane *et al*. 2018)	***S. levinei*** **(**Merrill & Perry 1938, Soh & Parnell 2015)
Twigs	brownish hairs and scabrid	brownish hairs and scabrid	densely brown hairs and scabrid	**glabrous**
Indumentum on leaf	**scabrid on midrib on abaxial surface**	**scabrid on midrib and lateral nerves on abaxial surface**	**scabrid on both surfaces, denser on midrib and lateral nerves**	**glabrous**
Lateral nerves	(16–)21–27 pairs	**10–16** pairs	(16–)21–26(–30) pairs	20–25 pairs
Petiole	**densely scabrid**	**densely scabrid**	**densely scabrid**	**glabrous**
Flower bud and hypanthium	**light green with purplish-red tinge, sparsely scabrid**	**whitish, densely scabrid**	**green, densely scabrid**	**white, densely scabrid**
Bract and bracteole	**glabrous**	scabrid	densely scabrid	scabrid
Sepal	**glabrous**	hairy	hairy	hairy
Sepal (size)	**1.1–1.8 × 3.4–3.8 mm**	**ca. 1 × 2.5 mm**	**ca. 1.1 mm**	**1.5 × 0.5 mm**
Petal (size)	**ca. 3.5–4.8 mm**	**ca. 2.5 × 2.5 mm**	**ca. 2.8–3.5 mm**	**ca. 2.5–3 mm**
Stamen (length)	**15–17 mm**	ca. 1.5 mm	to 12 mm	c. 5 mm
Style (length)	**17–18 mm**	4–5 mm	8–15.5 mm	6–6.5 mm
Ovules per locule	8–10	ca. 7	5–10	**16–18**
Fruit	subglobose, glabrous, 1.7–3.2 × 1.8–3 cm, **rugose and foveolate**	subglobose, glabrous, ca. 2 × 1.5–2 cm, rugose to smooth	subglobose, **hairy near calyx ring,** ca. 2.2 cm (in diam.), smooth	**ovoid**, glabrous, **ca. 0.8 × 0.7 cm,** smooth

Material and methods

Descriptions and measurements of morphological characters of the new species were based on living flowering and fruiting plants, spirit material preserved in 70% ethanol and herbarium specimens collected in the field. Dried herbarium specimens including types of related *Syzygium* species were examined from HN and VNM (acronyms follow Thiers 2023+) or some virtual specimen databases (A, BM, E, K, L, NY, P and JSTOR Global Plant (https://plants.jstor.org/)). The terminology used in the description follows that of Beentje (2016). The species' Extent of Occurrence (EOO) and Area of Occupancy (AOO) were calculated using GeoCAT (Bachman *et al*. 2011). The preliminary conservation status was assessed following the Red List Categories and Criteria (IUCN Standards and Petitions Subcommittee 2023).

Taxonomic treatment

Syzygium ngheanense N.S.Lý, N.Đ.Đỗ & T.H.Lê ***sp. nov.,*** (Fig. 1 & 2)

Diagnosis:—Most similar to *S. vestitum, S. scabrum* and *S. levinei* but differs by its light green with purplish-red tinge and sparsely scabrid flower buds and hypanthia (vs green and densely scabrid in *S. scabrum*, white and densely scabrid in *S. levinei* and *S. vestitum*), glabrous bracts, bracteoles and sepals, larger sepals and petals, longer stamens and styles, fruit with surface rugose and foveolate (Table 1).

Type:—VIETNAM. Nghe An Province: Que Phong District, Hanh Dich Commune, Pu Hoat Nature Reserve, 30 July 2021, 19°24'43"N, 104°49'28"E, elev. 757 m, *Đỗ Ngọc Đài, Lê Thị Hương, Nguyễn Thành Chung, DH 2021003* (holotype: VNM!, isotype: P).

Medium evergreen tree to 12 m tall with a straight bole, ca. 15 cm in diameter at DBH; branches spreading from upper trunk; no buttresses. *Outer bark* grey-white, smooth in young trees, irregularly fissured to longitudinally flaky in old trees; *inner bark* pale cream; *wood* cream-coloured; *new flush of leaves and petioles* light green, erect, sometimes spreading. ***Twigs*** terete, 2.5–3 mm in diam., covered with coarsely brownish hairs and scabrid, internode 1.4–6 cm long. ***Leaves*** simple, opposite, somewhat elliptic to ovate-elliptic, (3.6–)8–14.5 × (2.8–)3.5–5.2 cm, chartaceous to subcoriaceous, apex acuminate, acumen to 1.8 cm long, base rounded or subcordate, margin entire, slightly recurved, adaxially dark green (brown when dried), smooth and shiny, glabrous, abaxially dull greenish (dark brown when dried), with densely gland dots (black when dried), glabrous except coarsely white scabrid on midrib; *midrib* sunken adaxially, prominent abaxially; *lateral nerves* (16–)21–27 pairs, 3–7.3(–9.5) mm apart, sunken adaxially, prominent abaxially, glabrous, *inter-lateral nerves* more or less distinct, prominent abaxially, *intramarginal nerve* 1, 1.5–2.5 mm from margin, prominent abaxially; *petiole* thick and robust, canaliculate, (2–)3–5 mm long, 1.6–2 mm in diam., light green (dark brown when dried), densely scabrid as in twig. ***Inflorescence*** mostly terminal, sometimes axillary on leafy twig, paniculate-cyme, 3.5–9 cm long*; peduncle* 1.5–3 cm long, pale green to brownish-green, densely white hairs and scabrid, apex of terminal branches with 3 flowers. ***Flower buds*** obovoid, 5–6 mm long, 4–4.5 mm in diam., light green with purplish-red tinge at apex, sparsely scabrid. ***Hypanthium*** funnel-shaped, 6–7 mm long, 5–6 mm wide at apex, light green with purplish-red tinge (green after anthesis), sparsely scabrid; *pseudostipe* 1.5–1.8 × ca. 0.6 mm*; bracts* and *bracteoles* narrowly ovate, 1.5–3 mm long, ca. 0.5 mm wide at base, glabrous on both surfaces, apex acute, soon caducous. ***Sepals*** persistent, 4 or 5, free, triangular ovate, 3.4–3.8 × 1.1–1.8 mm, purplish-red (green after anthesis), finely gland dots, glabrous, apex rounded, margins entire. ***Petals*** 4 or 5, free, suborbicular, slightly concave, 3.6–4.8 × 3.2–4 mm, membranous, with 62–105 gland dots, white, glabrous, base truncate, apex rounded, soon caducous. ***Stamens*** numerous (ca. 162), white, glabrous; outer stamens 15–17 mm long, inner stamens 6–12 mm long; *filaments* cylindric, narrowed, with scattered gland dots; *anthers* oblong-ovate, 0.4–0.5 mm long, cream; *anther sacs* parallel, connective gland inconspicuous. ***Style*** 17–18 mm long, white, with scattered gland dots, glabrous. ***Ovary*** 2-locular, 8–10 ovules per locule, irregularly radiating. ***Mature fruits*** berry, somewhat globose, 1.7–3.2 × 1.8–3 cm, glabrous, surface rugose and foveolate; *calyx ring* 5–6 mm in diam., rim ca. 1.5–2 mm high. ***Seed*** 1, somewhat globose, 1.7–2 cm high, 1.6–2 cm in diam., dark brown, glabrous, intercotyledonary intrusion absent.

Phenology:—Flowering in June to August, fruiting in July to October.

Habitat and Ecology:—This new species grows along streams, in wet ground or on hill slopes in secondary evergreen broadleaved forests (Pu Huong NR) and mixed bamboo forests (Pu Hoat NR) at elevations of 300–800 m.

Distribution and IUCN Preliminary assessment:—So far know only from two nature reserve areas in the Nghe An Province, north-central Vietnam. Currently, a single population of about 30 scattered mature plants was observed in Pu Hoat NR while less than 15 individual mature plants are found in Pu Huong NR. The two localities are distanced about 50 km from each other. The extent of occurrence (EOO) and area of occupancy (AOO) were estimated to be 69.4 km^2 and 8 km^2, respectively. The known habitat of the new species is well-protected within Pu Hoat and Pu Huong NRs, no specific threats are known. Based on currently available data, we provisionally assessed this species with a status of Endangered (EN B1, B2ab (ii, iii), D) according to IUCN Red List Criteria (IUCN, 2023). Further survey work in areas adjacent to Nghe An Province is required to better-access the distribution and conservation status of this species.

Etymology:—The specific epithet "*ngheanense*" denotes the geographic location, the Nghe An Province of Vietnam, where the new species was discovered.

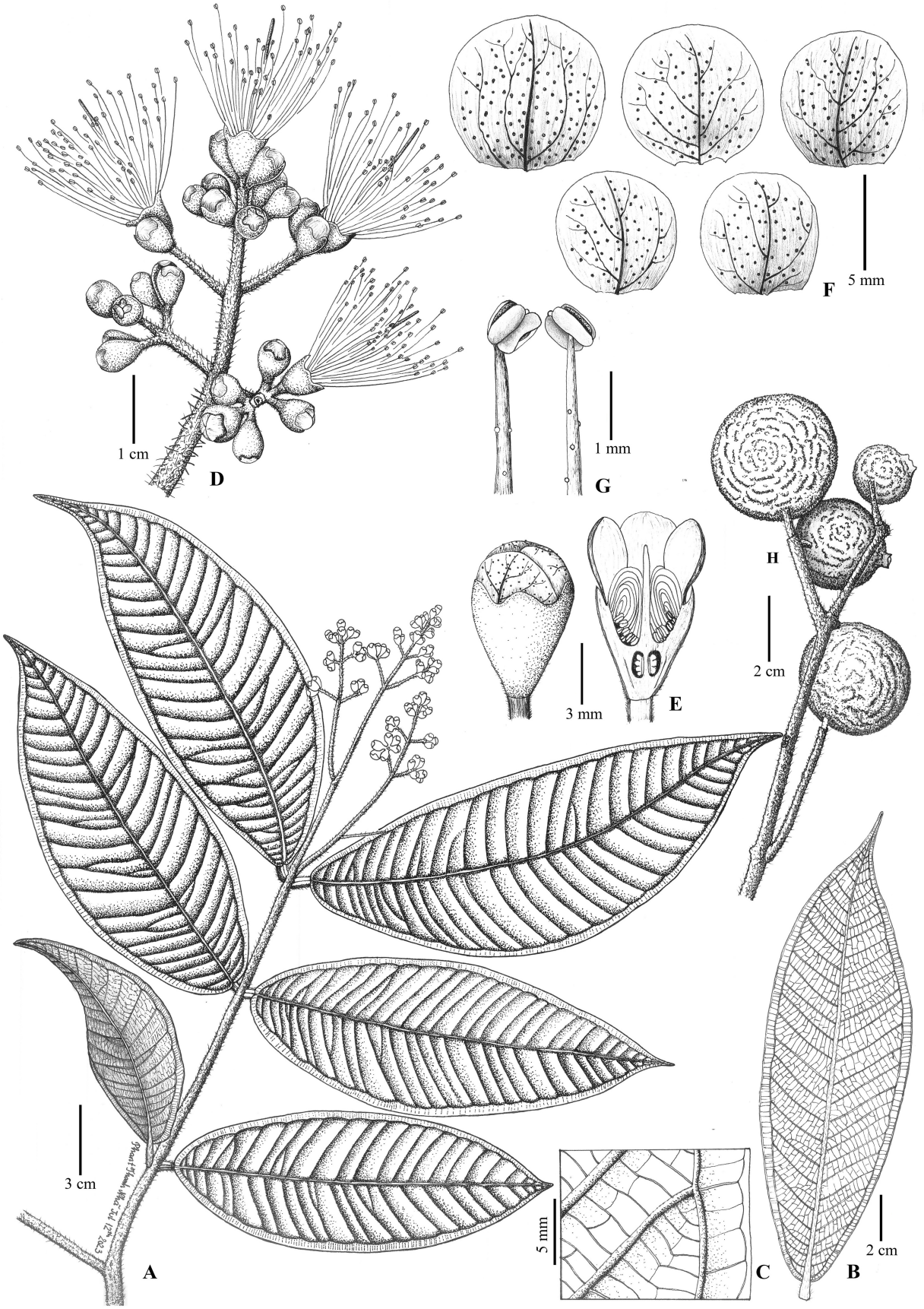

FIGURE 1. *Syzygium ngheanense*. A. Leafy twig with inflorescences. B. Leaf (abaxial view). C. Close-up of abaxial leaf. D. Inflorescence. E. Flower bud and its longitudinal section. F. Petals. G. Stamens. H. Infructescence with mature fruits. Drawn from type materials by Mrs. Phan Thị Thanh Nhã.

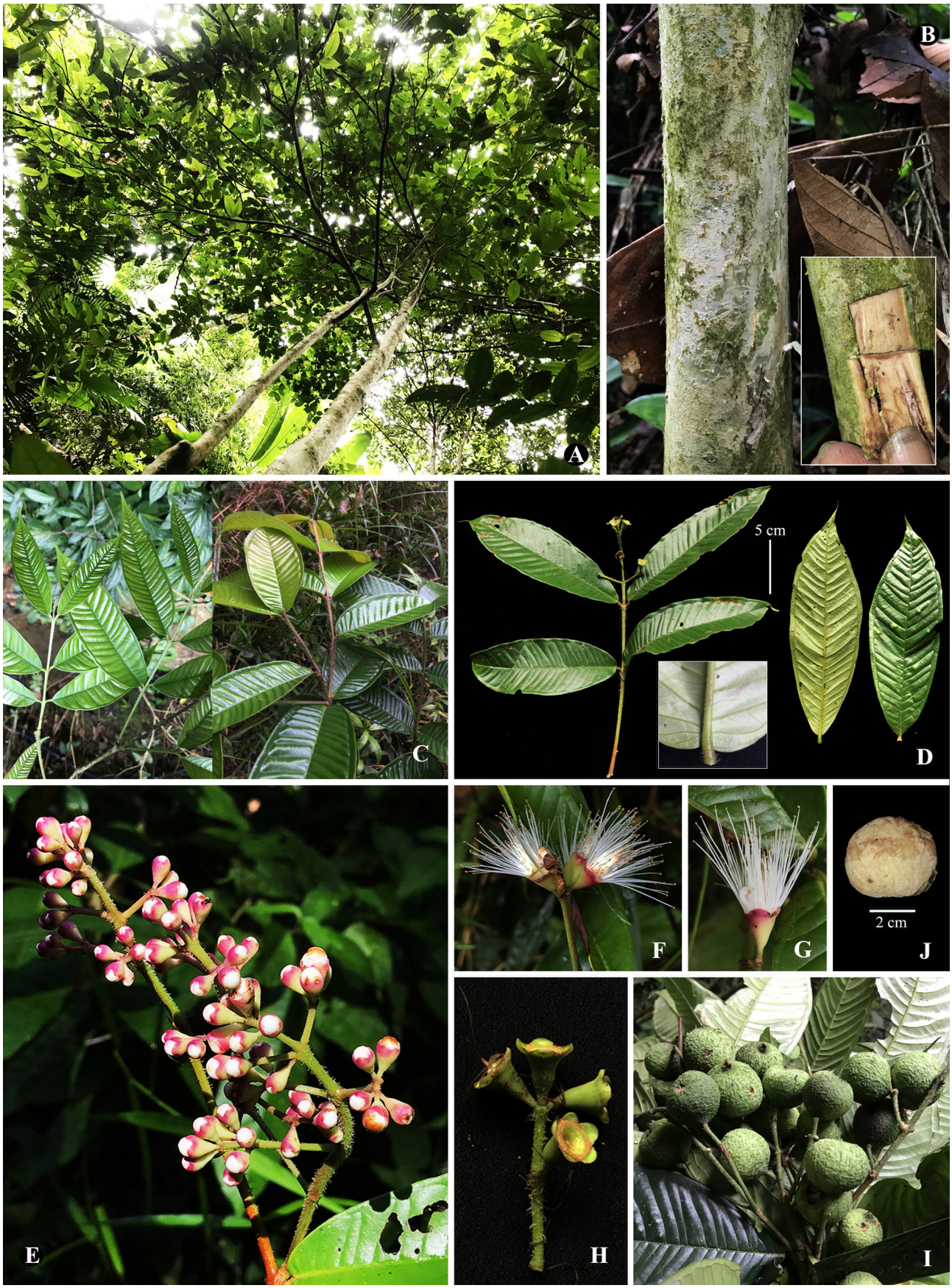

FIGURE 2. *Syzygium ngheanense*. **A**. Habit. **B**. Bole showing details of outer and inner barks (inset). **C**. Young twigs. **D**. Leafy twig with flowers after anthesis, close-up of abaxial leaf base (insit), and mature leaves. **E**. Inflorescences. **F**. Compound cyme with flowers at anthesis. **G**. Flower. **H**. Compound cyme with flowers after anthesis. **I**. Infructescences with mature fruits. **J**. Seed. Photos by N.-Đ. Đỗ, layout by N.-S. Lý.

Additional specimens examined (paratypes):—VIETNAM. Nghe An Province, Que Phong District, Hanh Dich Commune, Pu Hoat Nature Reserve, 05 September 2020, 19°24'02"N, 104°58'18"E, elev. 762 m, *Đỗ Ngọc Đài, Lê Thị Hương, Nguyễn Thành Chung, DH-2020016* (VNM!); Quy Chau District, Dien Lam Commune, Cuom Village, Pu Huong Nature Reserve, 17 January 2021, 19°23'54"N, 104°57'37", elev. 366 m, *Đỗ Ngọc Đài, Lê Thị Hương, DH-2021002* (H!); 29 October 2022, 19°42'43"N, 104°49'28"E, elev. 541 m, *Đỗ Ngọc Đài, Lê Thị Hương, Nguyễn Thành Chung, Trần Thị Thuý Nga, DH-2022028* (VNMN!).

Taxonomic notes:—Including the present study, the number of *Syzygium* species in Vietnam increases to 53. The new species should be placed in subg. *Syzygium* by its persistent and free sepals, free petals, parallel anther sacs, non-fibrous hypanthium, axile-median placentation with irregularly radiating ovules and seed without intercotyledonary intrusion (Craven & Biffin 2010). *Syzigium ngheanense* has somewhat elliptic leaves and scabrid-hairy inflorescences, funnel-shaped hypanthium and is thus morphologically similar to *S. vestitum* (from south western China (Yunnan Province), Laos (Vientiane) and Vietnam (North and Central regions)), *S. scabrum* (from Laos (Vientiane Province) and Thailand (Nakhon Phanom and Buengkan Provinces)), *S. levinei* (Cambodia, southern China (Guangdong, Guangxi and Hainan Provinces, and Hong Kong)) (Soh & Parnell 2015, Tagane *et al*. 2018). The major differences between *S. ngheanense* and the latter three are given in the above diagnosis. The somewhat scabrid twigs, leaves and inflorescences, and somewhat globose fruits in *S. ngheanense* most closely resemble those of *S. vestitum* and *S. scabrum*. However, the new species is distinguished from the latter two by its glabrous lateral nerves on abaxial surface of laminae and fruits with rugose and foveolate surface. The glabrous leaves and petioles and small ovoid fruits in *S. levinei* clearly distinguishes this species from the others. More detailed comparisons involving mainly morphological characters between the four hairy species of *Syzygium* in Indochina is presented in Table 1, and a key to their recognition follows.

Key to the hairy species of *Syzygium* in Indochina

1. Twigs and leaves scabrid hairs; ovules ≤ 10 per locule; fruits sub-globose 2
- Twigs and leaves glabrous; ovules 16–18 per locule; fruits ovoid ..... *S. levinei* (China, Cambodia, Vietnam)
2. Leaf blades glabrous; fruits somewhat rugose, glabrous..... 3
- Leaf blades densely scabrid on both surfaces; fruits smooth, hairy near calyx ring ..... *S. scarbum* (Thailand, Laos)
3. Lateral nerves 16–27 pairs, glabrous; bracts, bracteoles and sepals glabrous; stamens 15–17 mm long; styles 17–18 mm long..... ..... *S. ngheanense* (Vietnam)
- Lateral nerves 10–16 pairs, scabrid on abaxial surface of lamina; bracts, bracteoles and sepals scabrid; stamens c. 1.5 mm long; styles 4–5 mm long..... *S. vestitum* (China, Laos, Vietnam)

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References

Ahmad, B., Baider, C., Bernardini, B., Biffin, E., Brambach, F., Burslem, D., Byng, J.W., Christenhusz, M., Florens, F.B.V., Lucas, E., Ray, A., Ray, R., Smets, E., Snow, N., Strijk, J.S., Wilson, P.G. & *Syzygium* Working Group. (2016) *Syzygium* (Myrtaceae): Monographing a taxonomic giant via 22 coordinated regional revisions. *PeerJ Preprints* 4: e1930v1. https://doi.org/10.7287/peerj.preprints.1930v1

Ashton, P.S. (2011) Myrtaceae. *In*: Soepadmo, E., Saw, L.G., Chung, R.C.K. & Kiew, R. (Eds.) *Tree Flora of Sabah and Sarawak. Vol. 7*. Forest Research Institute Malaysia, Kepong, pp. 87–330. https://doi.org/10.26525/TFSS7002

Bachman, S., Moat, J., Hill, A.W., de la Torre, J. & Scott, B. (2011) Supporting red list threat assessments with GeoCAT: geospatial conservation assessment tool. *ZooKeys* 150 (150): 117–126. https://doi.org/10.3897/zookeys.150.2109

Beentje, H. (2016) *The Kew Plant Glossary, an illustrated dictionary of plant terms* (revised edition). Royal Botanic Gardens Kew, Kew,

164 pp.
Brongniart, A. & Gris, A. (1865) Observations sur les Myrtacées sarcocarpées de la Nouvelle-Calédonie et sur le nouveau genre *Piliocalyx*. *Bulletin de la Societé Botanique de France* 12: 174–187. https://doi.org/10.1080/00378941.1865.10825005
Craven, L.A. & Biffin, E. (2010) An infrageneric classification of *Syzygium* (Myrtaceae). *Blumea* 55 (1): 94–99. https://doi.org/10.3767/000651910X499303
Chen, J. & Craven, L.A. (2007) Myrtaceae. *In*: Wu, Z.Y., Raven, P.H. & Hong, D.Y. (Eds.) *Flora of China*. Vol. 13. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis, Missouri, pp. 321–359.
De Candolle, A.P. (1828) *Prodromus Systematis Naturalis Regni Vegetabilis.* Tom. I et II. Paris.
Gaertner, J. (1788) *De Fructibus et Seminibus Plantarum.* vol. 1. Academiae Carolinae, Stutgardiae, 577 pp. https://doi.org/10.5962/bhl.title.102753
Gagnepain, F. (1917–1918) *Eugenia* nouveaux d'Indo-Chine. *Notulae Systematicae* 3: 316–336.
Gagnepain, F. (1921) Myrtaceae. *In*: Lecomte, M.H. (Ed.) *Flora of Indo-China*. T. II. Part 6–7. Boulevard Saint-Germain, Paris, pp. 788–864.
Govaerts, R., Sobral, M., Ashton, P., Barrie, F., Holst, B.K., Landrum, L.L., Matsumoto, K., Mazine, F.F., Lighadha, E.N., Proenca, C., Soares-Silva, L.H., Wilson, P.G. & Lucas, E. (2018) *World Checklist of Myrtaceae.* Facilitated by the Royal Botanic Gardens, Kew. https://powo.science.kew.org/ (accessed: 20 August 2023).
Hyland, B.P.M. (1983) A revision of *Syzygium* and allied genera (Myrtaceae) in Australia. *Australian Journal of Botany* Supplementary Series 9: 1–164. https://doi.org/10.1071/BT8309001
IUCN Standards and Petitions Committee (2022) Guidelines for Using the IUCN Red List Categories and Criteria. Version 15.1. Prepared by the Standards and Petitions Committee. https://www.iucnredlist.org/documents/RedListGuidelines.pdf
Merrill, E.D. (1934) Unrecorded plants from Kwangtung province III. *Lingnan Science Journal* 13: 15–52.
Merrill, E.D. & Perry, L.M. (1938) On the Indo-Chinese species of *Syzygium* Gaertner. *Journal of Arnold Arboretum* 19: 99–116. https://doi.org/10.5962/p.185381
Parnell, J.A.N. & Chantaranothai, P. (2002) Myrtaceae. *In:* Larsen, K. & Santisuk, K. (Eds.) *Flora of Thailand,* vol. 7. The Forest Herbarium, Royal Forest Department, Bangkok, pp. 778–914.
Parnell, J.A.N., Craven, L. & Biffin, E. (2007) Matters of scale: Dealing with one of the largest genera of angiosperms. *In*: Hodkinson, T.R. & Parnell, J.A.N. (Eds.) *Reconstructing the Tree of Life: Taxonomy and Systematics of Species Rich Taxa, The Systematics Association Special Volume Series 72*. CRC Press, Boca Raton, London, pp. 251–273. https://doi.org/10.1201/9781420009538.ch16
Soh, W.-K. & Parnell, J. (2011) Three new species of *Syzygium* (Myrtaceae) from Indochina. *Kew Bulletin* 66: 557–564. https://doi.org/10.1007/s12225-011-9305-9
Soh, W.-K. & Parnell, J. (2015) A revision of *Syzygium* Gaertn. (Myrtaceae) in Indochina (Cambodia, Laos and Vietnam). *Adansonia Sér. 3*, 37 (2): 179–275. https://doi.org/10.5252/a2015n2a1
Tagane, S., Dang, V.-S., Souladeth, P., Nagamasu, H., Toyama, H., Naiki, A., Fuse, K., Tran, H., Yang, C.-J., Prajaksood, A. & Yahara, T. (2018) Five new species of *Syzygium* (Myrtaceae) from Indochina and Thailand. *Phytotaxa* 375 (4): 247–260. https://doi.org/10.11646/phytotaxa.375.4.1
Thiers, B. (2023) [continuously updated] Index herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. Available from: http://sweetgum.nybg.org/science/ih/ (accessed: 12 June 2023).
Wilson, P.G., O'Brien, M.M. & Quinn, C.J. (2000) *Anetholea* (Myrtaceae), a new genus for *Backhousia anisata*: a cryptic member of the *Acmena* alliance. *Australian Systematic Botany* 13: 429–435. https://doi.org/10.1071/BT8309001