

A new species of *Trichoglottis* (Orchidaceae) from eastern Kalimantan, Indonesia

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Abstract

Trichoglottis najibii Yudistira & Mustaqim is described here as a species new to science based on a specimen collected from eastern Kalimantan, Indonesian Borneo. The most unique characteristics of this species are the the labellum's lateral lobes adnate to the column and the 8–9 mm long cylindrical and slightly curving spur. A detailed description, distribution, habitat and ecology, notes, illustrations, and photographs are provided for the new species.

Introduction

Trichoglottis Blume is a genus of orchids with around 85 species, characterized by climbing or pendulous stem, oblong or elliptic leaves, inflorescence usually with 1 to many flowers, rarely more, flowers with the immobile labellum, with some part adnate to the column or column foot, at the junction with the column with a raised tongue, stelia often with hairs at the apex, and four pollinia (Seidenfaden et al. 1992; Pridgeon et al. 2014). Recently, three new species from this genus were described (Schuiteman 1998, Naive & Martyr 2018, Bandara et al. 2022).

A specimen of this genus not matching any known species was collected from the lowland forest in the eastern part of Borneo; an island with 34 *Trichoglottis* species known so far (POWO 2022). A thorough review of the literature and digital portal (Seidenfaden et al. 1992, Comber 1990, 2001, Schuiteman 1998, Wood 2000, Pelsner et al. 2011–onwards, Kocyan & Schuiteman 2014, Naive & Martyr 2018, Bandara et al. 2022) as well as type specimens in various databases, i.e. JSTOR Global Plants (<https://plants.jstor.org>), showed that the recently collected specimen belongs to a species new to science and is described in this paper.

Taxonomic Treatment

Trichoglottis najibii Yudistira & Mustaqim, *sp. nov.*

Type: INDONESIA, Kalimantan Timur, Berau Regency, Tabalar, Semurut, 70 m a.s.l., *M. Najib 001*, 25 July 2022 (holo: WAN).

Epiphytic herbs. *Roots* terete, 50–100 mm long, 1–2.5 mm wide, covered with silver velamen, burgundy near the apex. *Stem* pendent, 45–65 cm long, 4–5 mm diam., covered with leaf sheath, sheath slightly rugose; internodes 20–30 mm long. *Leaves* many, distichous, linear, 140–170 mm long, 5–8 mm wide, coriaceous, tapering into pointed apex, margin entire, glabrous. *Inflorescence* of 2–5-flowered arranged in clusters, from nodes. *Flowers* open widely, c. 30 mm across in diam, lasting about a week, resupinate, purple to crimson. *Pedicel* and *ovary* slightly angular, c. 20 mm long, c. 1 mm diam., white with magenta ribs, pink to white. *Median sepal* purple with darker veins, free, elliptic, upper part slightly hooded, c. 13 mm long, 3–5.5 mm wide, apex rounded, margins entire, glabrous. *Lateral sepals* entirely purple with darker veins, obliquely ovate, c. 14 mm long, 8 mm wide, apex acute, margins entire, glabrous. *Petals* free, entirely purple with darker veins, spatulate, c. 12 mm long, 6 mm wide, slightly smaller than sepals, margin entire, apex rounded, glabrous. *Labellum* trilobed, narrowly elliptic (not flattened), c. 4.5 mm long; *lateral lobes* with an oblique base, raised apically into a long, truncate lobes, margin entire, adnate to column to near apex, front margin c. 1.5 mm tall; *midlobe* narrowly lanceolate, c. 9 mm long, 1 mm wide, upper surface pubescent with short white hairs, apex acute, sub-acuminate, white to pink; *spur* pure white, slightly curving, cylindrical, narrowing towards the apex, 8–9 mm long, with two longitudinal purple band at the base, glabrous. *Column* oblong, 9–10 mm long, 2–3.5 mm wide, truncate; *stigma* obpentagonal, steldia broadly triangular, glabrous; *column foot* short, 1.5 mm long. *Anther cap* obcordate, c. 2 mm long, 2 mm wide, brown. *Pollinia* waxy, subglobose to ovoid, entire, c. 1 mm long, 1 mm wide, solid, red-burgundy, stipe rudimentary, viscidium distinct; *rostellum* bifid, c. 1.5 mm long, 1 mm wide, with a median tooth, the two main teeth sometimes strongly reflexed and fitting into two cavities on viscidium. *Capsule* green with burgundy dots, ellipsoid, triangular in cross section, 60–75 mm long, 4–10 mm wide, slightly warty, with 3 prominent longitudinal ridges. Figures 1, 2.

Diagnosis: This species is unique among *Trichoglottis* in having the upper side of labellum lateral lobes adnate to the column for almost their entire length and cylindrical, slightly curving spur 8–9 mm long.

Distribution: Endemic to East Kalimantan: known only from the type location.

Habitat and Ecology: Lowland mixed forest, hilly area north of Sangkulirang Mangkalihat range, at elevation c. 70 m a.s.l.

Phenology: Flowering from June to August.

Etymology: This new species is named after Muhammad Najib, an orchid enthusiast from East Kalimantan, Indonesia who collected the only known specimen.

Notes: The flower of *Trichoglottis najibii* is similar in color to *T. latisejala* Ames, a species endemic from the Philippines (Ames 1909; Pelsner et al. 2011 onwards). However, in *T. najibii* flowers are larger (c. 22 mm vs 9–10 mm long) with the colouration of the upper half intense purple vs lighter purple, and the lower half pure white with longer spur (8–9 mm vs 3.5 mm long). In addition, the lower side of lateral sepals of *T. latisejala* form basal lobes.

In Borneo, the linear leaf lamina of this species is very similar to the Sarawak endemic *T. borneensis* (J.J. Wood) Kocyan & Schuit., and in the vegetative stage, it seems plants from both species cannot be differentiated. However, *T. borneensis* can be easily recognized by its pale lemon-yellow flowers, labellum creamy white hairs, and saccate spur with villous interior walls.

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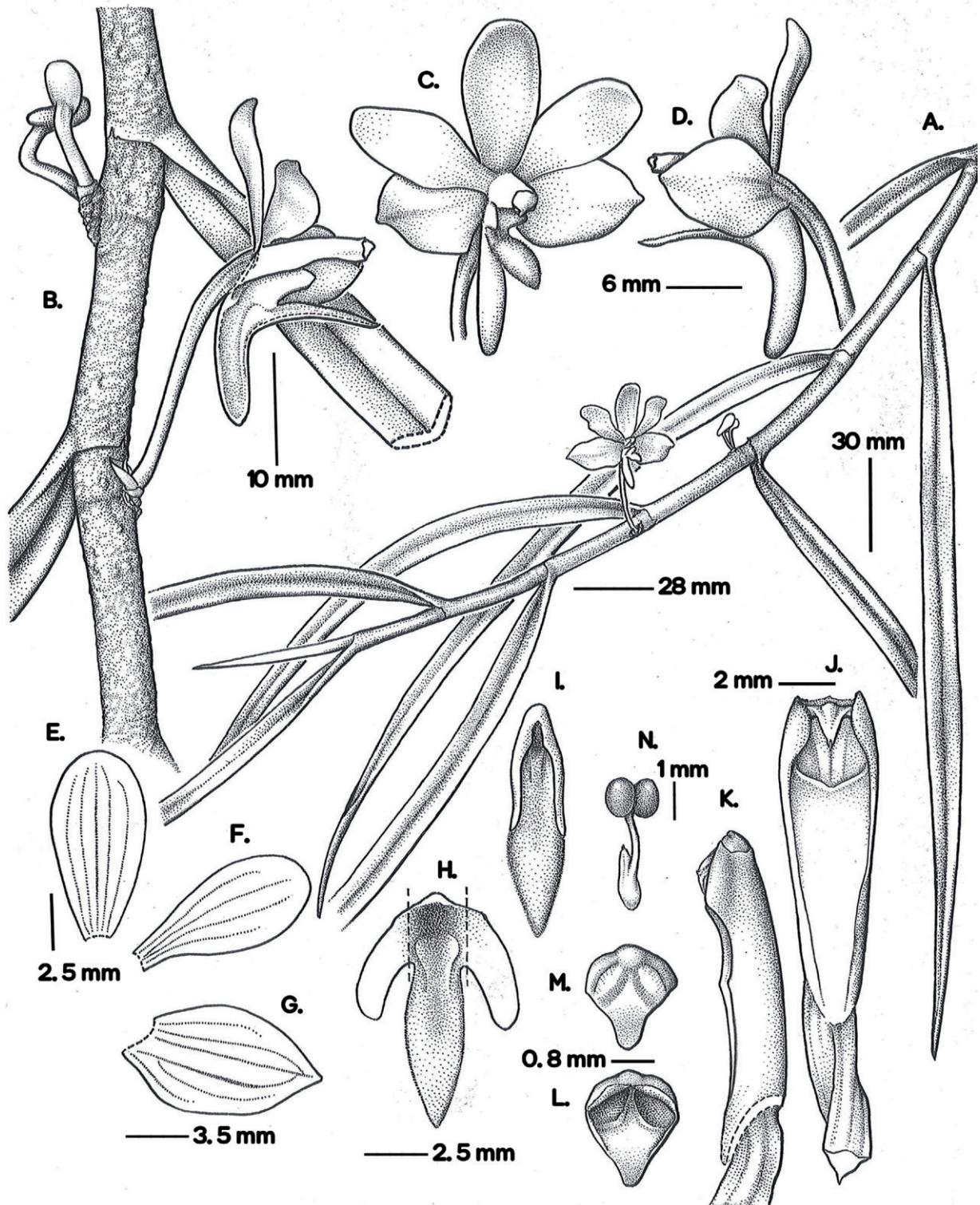


Fig. 1. *Trichoglottis najibii* Yudistira & Mustaqim. A: plant. B: inflorescences. C: flower, frontal view. D: flower, lateral view. E: dorsal sepal. F: lateral sepal. G: petal. H: labellum flattened shaped on top view. I: labellum natural shaped top view. J: column, ventral view. K: column, lateral view. L: anther cap abaxial side. M: anther cap, adaxial side. N: pollinia. Illustrated by Yuanito Eliazar (Voucher: *M. Najib 001*).

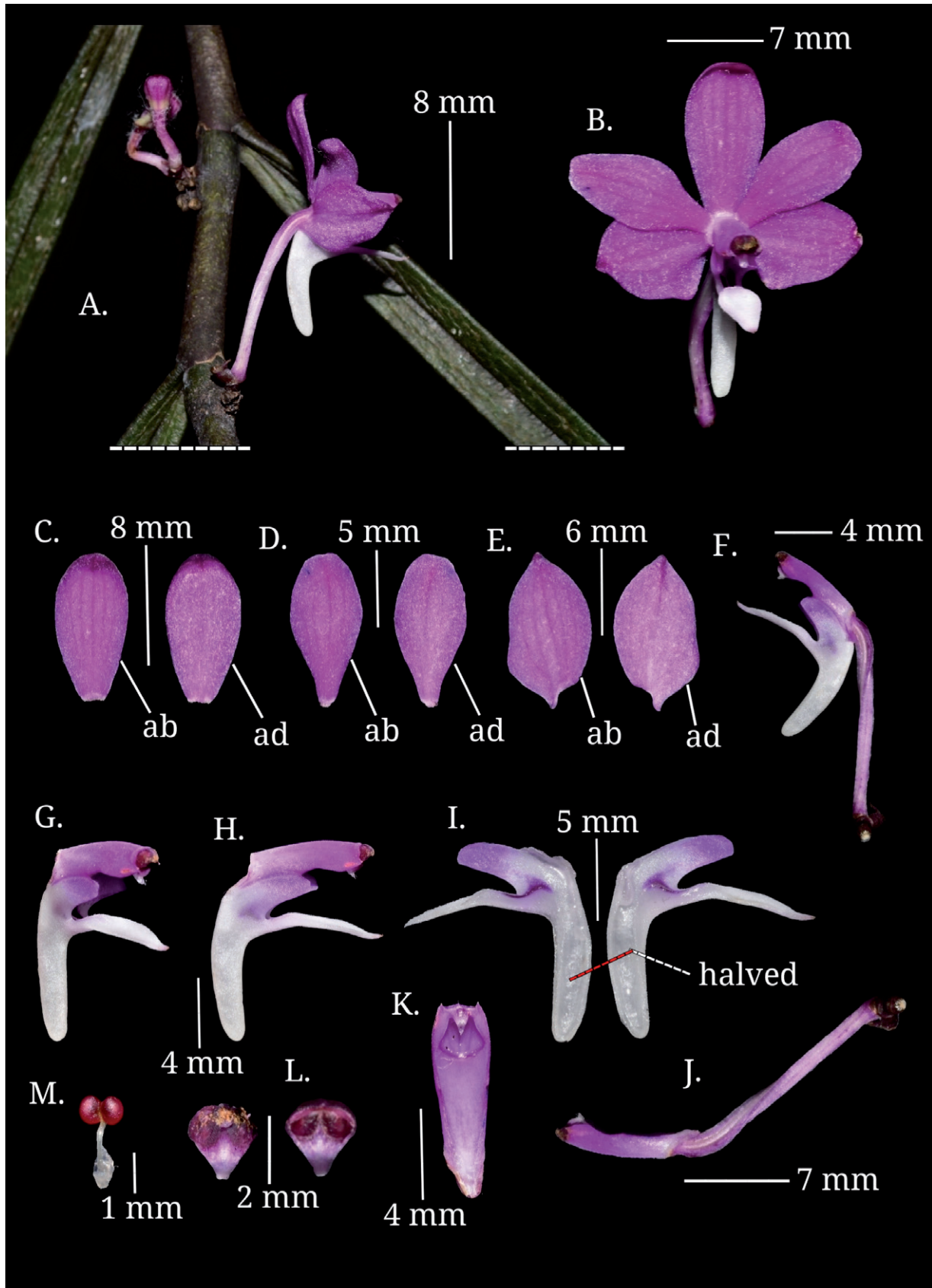


Fig. 2. *Trichoglottis najibii* Yudistira & Mustaqim. A: inflorescences. B: flower frontal view. C: median sepal abaxial and adaxial side. D: petals abaxial and adaxial side. E: lateral sepal abaxial and adaxial side. F: ovary, column, and labellum lateral view. G: column and labellum ventral view. H: column and labellum lateral view. I: labellum on halved. J: column and ovary. K: column abaxial side. L: anther cap adaxial and abaxial side. M: pollinia. Photographs by Yuda R. Yudistira (Voucher: *M. Najib* 001).

References

- Ames O (1909) Notes on Philippine orchids with descriptions of new species II. *Philippine Journal of Science* 4: 663–676.
- Bandara C, Atthanagoda AG, Bandara NL, Ranasinghe B, Kumar P (2022) *Trichoglottis longifolia* (Orchidaceae: Epidendroideae: Vandeeae: Aeridinae), a new species from Sri Lanka. *Phytotaxa* 567: 71–78. <https://doi.org/10.11646/phytotaxa.567.1.6>
- Beentje H (2016) *The Kew Plant Glossary: an illustrated dictionary of plant terms*. 2nd ed. (Royal Botanic Gardens, Kew)
- Comber J (1990) *Orchids of Java*. (Royal Botanic Gardens & Bentham Moxon Trust, Kew)
- Comber J (2001) *Orchids of Sumatra*. (Natural History Publications (Borneo), Kota Kinabalu)
- Kocyan A, Schuiteman A (2013) New combinations in Aeridinae (Orchidaceae). *Phytotaxa* 161: 61–85. <https://doi.org/10.11646/phytotaxa.161.1.3>
- Naïve MAK, Martyr MC (2018) *Trichoglottis corazoniae* (Orchidaceae: Vandeeae: Aeridinae), a new species from the Philippines. *Lankesteriana* 18: 81–84. <http://dx.doi.org/10.15517/lank.v18i2.33322>
- Pelser PB, Barcelona JF, Nickrent DL (eds) (2011 onwards) Co's Digital Flora of the Philippines. <http://www.philippineplants.org> (accessed 4 December 2022).
- Pridgeon AM, Cribb PJ, Chase MW, Rasmussen FN (2014) *Genera Orchidacearum. Vol. 6*. (Oxford University Press, Oxford)
- Schuiteman A (1998) New species of *Podochilus* and *Trichoglottis* (Orchidaceae) from Borneo. *Blumea* 43: 489–494. <https://repository.naturalis.nl/pub/525094/BLUM1998043002013.pdf>
- Seidenfaden G, Wood JJ, Holttum RE (1992) *The Orchids of Peninsular Malaysia and Singapore*. (Olsen & Olsen, Fredensborg)
- Wood JJ (2000) *Orchids of Borneo Volume 4: Revised classification and selection of species*. (The Sabah Society, Kota Kinabalu & Royal Botanic Gardens, Kew)

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