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Cover: Illuminating the cruelty of Pangolin trade in India for the purpose of black magic, for the sanctity of protection. Using an animal's shell, ripping its armor against the world to protect oneself. When does one become the evil they are trying to ward off? — Acrylic on wood. © Maya Santhanakrishnan.



Phalaenopsis wilsonii: a new addition to the orchid flora of Manipur, India

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Abstract: *Phalaenopsis* is a well-known Orchidaceae genus with significant ornamental value. There are eight *Phalaenopsis* species already reported in Manipur (India), with inclusion of *Phalaenopsis wilsonii* Rolfe as a new addition for the state, the species richness rises to nine. The species was found blooming during an orchid survey at Mao, Senapati District of Manipur. Description of the plant with detailed coloured images and distribution is presented.

Keywords: Biodiversity, conservation, Epiphytic, identification, Mao, morphology, new distribution report, northeastern India, Orchidaceae, taxonomy.

The genus *Phalaenopsis* Blume is represented by 80 accepted species globally (POWO 2024) of which 18 species are known from India (Gogoi et al. 2012b; Rao & Kumar 2018; BSI ENVIS 2020; Gogoi & Rinya 2020). In Manipur, eight species of *Phalaenopsis* have previously been documented, viz., *P. cornucervi* (Breda) Blume & Rchb.f., *P. fasciata* Rchb.f., *P. marriottiana* (Rchb.f.) Kocyan & Schuit., *P. mannii* Rchb.f., *P. parishii* Rchb.f., *P. pulcherrima* (Lindl.) J.J.Sm., *P. taenialis* (Lindl.) Christenson & Pradhan and *P. yingjiangensis* (Z.H.Tsi) Kocyan & Schuit. (ENVIS Hub Manipur 2015; Rao & Kumar 2018). This communication reports the addition of *Phalaenopsis wilsonii* Rolfe as a new record to the flora of Manipur. These species has been reported earlier from China, Myanmar, Nagaland of India, Tibet, and Vietnam (Tsai 2011; Kamba & Deb 2021; POWO

2024).

Field surveys were carried out in Chakumei Village, Mao, Senapati District, as one of the sites chosen for an orchid collection programme for conservation purposes. The GARMIN eTrex 20X GPS device was used to pinpoint the location (Image 1). The flower was in bloom, making it easier to confirm the specimen's identity through consultation with the protologue and other relevant literature (Christenson 2001; Kamba & Deb 2021; Chen & Wood 2009). Identification was substantiated with the type specimen available at K and Natural History Museum's data portal. One living specimen was brought to the Institute of Bioresources and Sustainable Development (IBSD) net-house for cultivation. Since a single living specimen was found, herbarium preparation will be performed following further propagation. The descriptions of the plant are presented along with a photographic illustration in Image 2 and prepared here in details.

Taxonomic treatment

Phalaenopsis wilsonii Rolfe, Bull. Misc. Inform. Kew
1909: 65 (1909)

Polychilos wilsonii (Rolfe) Shim, Malayan Nat. J. 36: 27 (1982); *Kingidium wilsonii* (Rolfe) O. Gruss & Roellke, Orchidee (Hamburg) 47: 149 (1996).

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Type: China. Western China, Cliffs at 1,200 m. alt., without precise location, 07-1902, Ernest Henry Wilson 4576 (Holotype: K [K000891370 digital image!]; Isotype: BM [BM000534956 digital image!]).

Phalaenopsis minor F.Y. Liu, Acta Bot. Yunnan. 10: 119 (1988).

Type: Yunnan. Malipo, 1,500 m. alt., on tree, 04.iv.1981, S. Q. Bao 81001 (Typus KUN).

Phalaenopsis chuxiongensis F.Y. Liu, Acta Bot. Yunnan. 18: 411 (1996).

Type: Yunnan. Chuxiong, 1,990 m. alt., on the tree, 01.iv.1992, F. Y. Liu (Holotype KUN). *Doritis wilsonii* (Rolfe) T. Yukawa & K. Kita, Acta Phytotax. Geobot. 56 (2): 157 (2005).

Phalaenopsis wilsonii f. *azurea* Z.J. Liu & Z.Z. Ru, Orchidee (Hamburg) 57: 318 (2006).

Type: China. Sichuan. Wenchuan County, 1,800 m.

alt., 04.i.2004, Z. J. Liu 2838.

Epiphytic monopodial herb with fleshy dark green, well-developed roots, flattened and unbranched, the surface appears to be rough with warty structures. Fasciculate roots arise from the base of the stem in clusters. The base of the stem appears to be dark purplish-green. Stem is short, about 1 cm and the leaf arises from the apex of the stem and bears a single green leaf. Leaf oblong-elliptic with symmetric acute apex, 7.5 cm, near the base at the time of collection. Leaves are deciduous, leathery, and fleshy with parallel venation, surface of the leaf bears purplish pigmented spots, more intense vertically at midrib and towards the base of the leaf. Pigmentations were more prominent in younger leaves. Pedicellate raceme inflorescence with simple erect peduncle, 25 cm long, and short pedicels, 3 ± 0.5 cm. Ovate and triangular bract, which is 0.4 cm. Only one

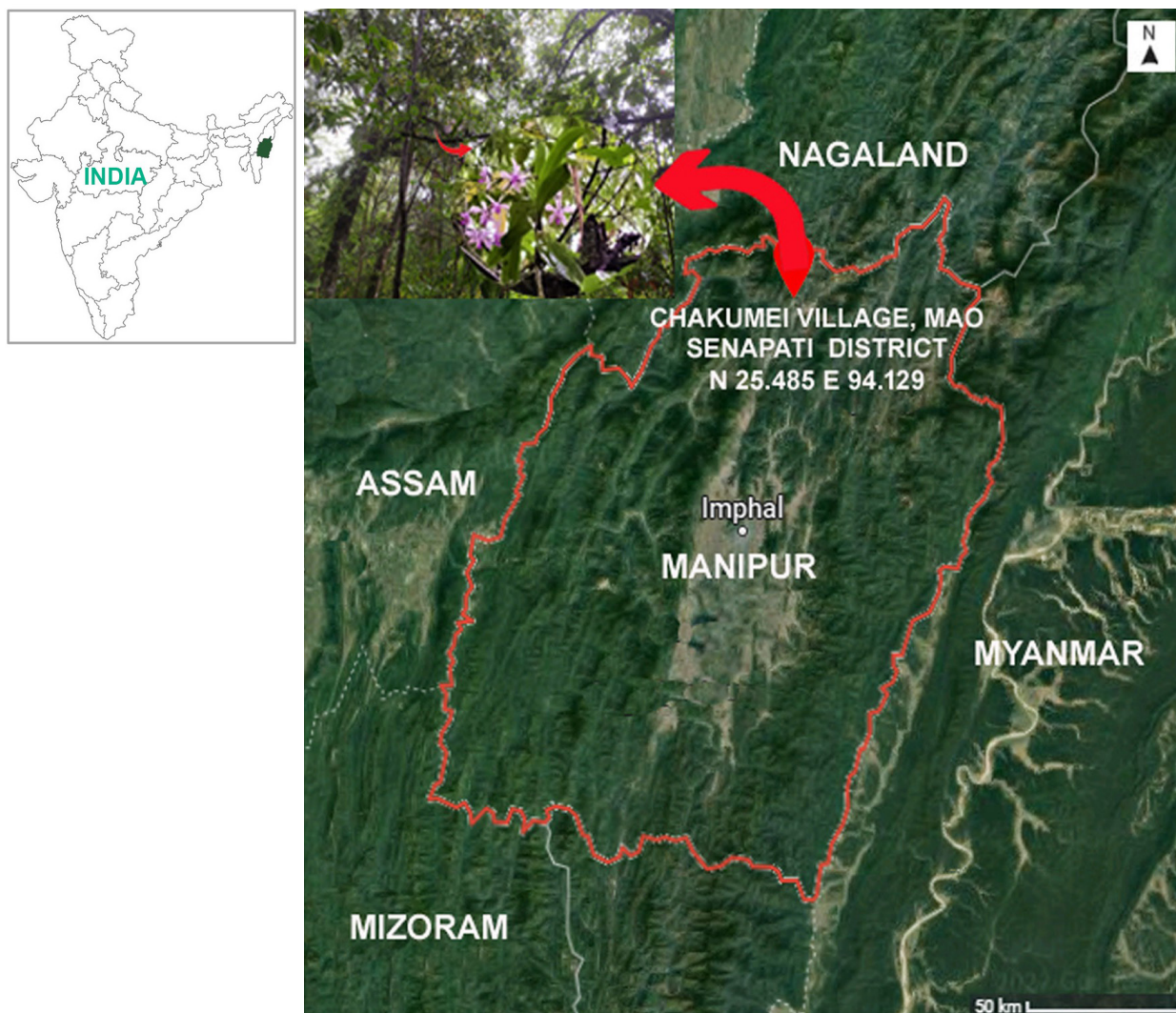


Image 1. Field survey site map and natural habitat of *Phalaenopsis wilsonii*.

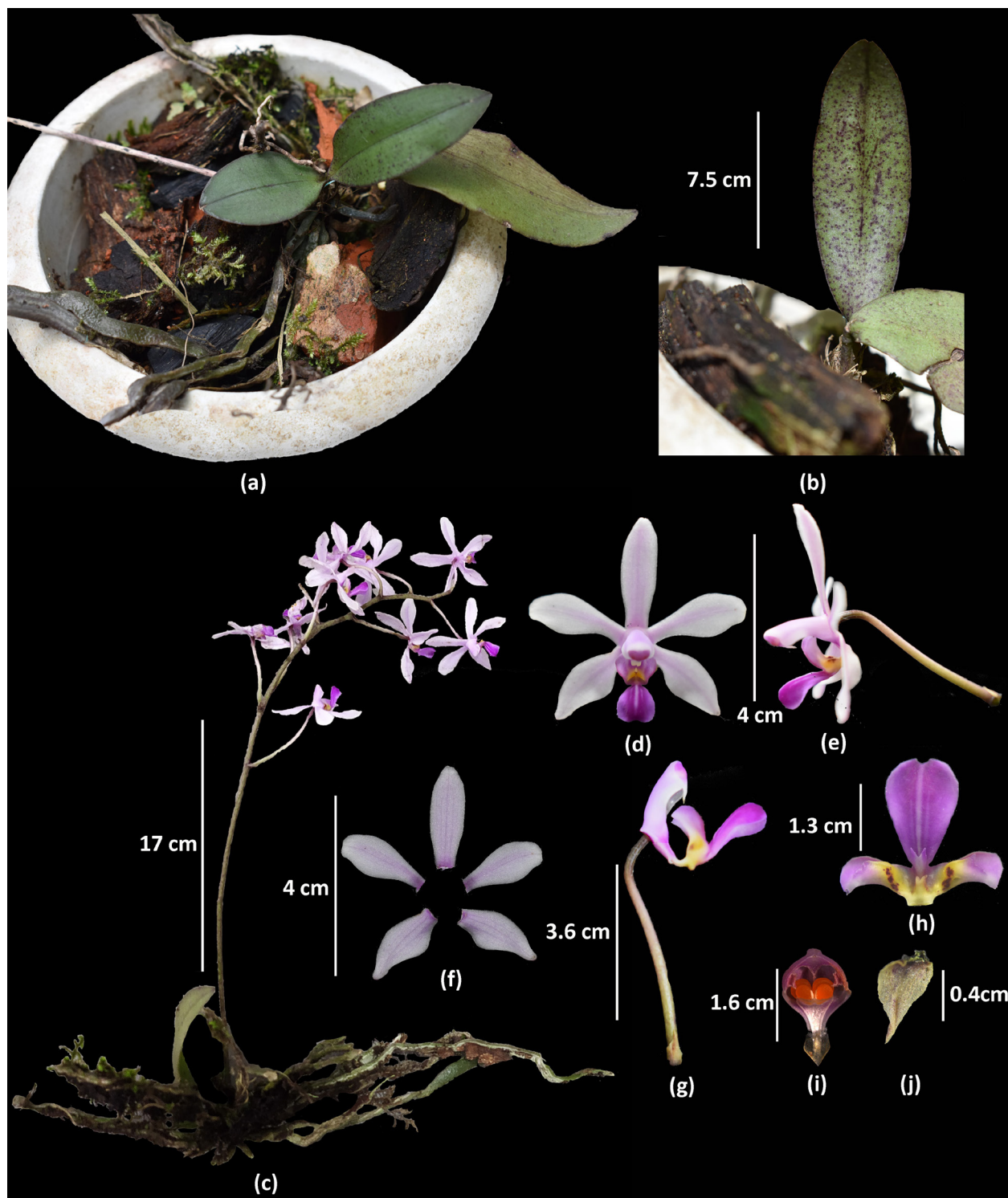


Image 2. Anatomized image of *Phalaenopsis wilsonii*: a—Collected sample grown in IBSD's nethouse | b—Young leaves with pigmentation | c—Plant with inflorescence | d—Ventral view of inflorescence | e— Lateral view of inflorescence | f—Petals and sepals | g—Pedicel with column and trilobed lip | h—Ventral view of trilobed lip—two lateral lobes and a midlobe | i—Pollinia with anther cap | j—Bracts. © T.N. Khamanba.

unbranched arching inflorescence axis present bearing eleven flowers, white-purple ombre linearly more intense in the middle, widely open, petals and sepals

are 0.3–0.5 cm spaced apart. Dorsal sepal narrowly oblong-elliptic, cuneate, acute, 1.7 cm x 0.5 cm; lateral sepals, obovate with acute apex, 1.6 cm x 0.5 cm; petals,

elongated obovate with obtuse apex, 1.5 cm x 0.6 cm; lip base with a claw, trilobed lip, 1.3 cm, purplish pink, mid lobe oblong-obovate, 0.9 cm x 0.5 cm, fleshy, notched at apex, posterior raised median, adaxially bearing raised bilateral keel and two erect lateral lobes, 0.6 cm, falcate with obtuse apex, yellowish at the base, relatively smaller than mid lobe. Column, purplish white, 0.6 cm x 0.4 cm, erect, extended pedicellate ovary. Pollinia, 0.4 cm x 0.2 cm, two asymmetric pairs, covered with a 0.3 cm wide, anther cap.

Flowering: April to June.

Fruiting: May to July.

Ecology and Habitat: Solitary specimen found in the mixed deciduous sub-tropical forest of Chakumei, Mao, Senapati district at asl 1,648 m. Epiphytic on a tree branch of *Quercus* spp., covered by moss and liverworts. No observation of lithophytic growth was made but, the occurrence was reported in China (Chen & Wood 2009).

Specimens examined: India, Manipur, Senapati, Mao, Chakumei, 25.458°N, 94.129°E, 1,648 m, 18.v.2022 (Image 1).

Distribution: Native to India, southcentral China, southeastern China, Hainan, Myanmar, Tibet, Vietnam (POWO 2024), and Nagaland (Kamba & Deb 2021).

CONCLUSIONS

Phalaenopsis wilsonii was previously thought to be distributed only in China, Myanmar, Tibet, and Vietnam, but it has now been discovered to be growing in the Indian states of Manipur and Nagaland (Kamba & Deb 2021; POWO 2024). *Phalaenopsis wilsonii* shows resemblance with *Phalaenopsis braceana* and *Phalaenopsis taenialis* but comparative assessment shows slight morphological differences. The length of the inflorescence stalk in *P. wilsonii* is longer, bearing a higher number of flowers (10–15) as compared to *P. braceana* (4–6) and *P. taenialis* (6–8). Flower size appears larger in *P. wilsonii* (4–5 cm) as compared to *P. braceana* (2.5 cm) and *P. taenialis* (2 cm). Prominent spur is present at the junction of the labellum midlobe and sidelobes in *P. braceana* and *P. taenialis* while spur is negligible to a small nipple-shaped structure in *P. wilsonii*. The labellum midlobe of *P. taenialis* is flat, convex in *P. braceana*, while in *P. wilsonii* labellum midlobe is obtuse with a central apical fleshy knob (Christenson 2001; Gogoi et al. 2012a; Imchen et al. 2015; Qin et al. 2024). This unique

moth-like orchid has high ornamental values and is an economical asset to the floriculture market. In terms of phytochemistry, the genus reports the presence of the alkaloid phalaenopsine (Teoh 2016) and pyrrolizidine (Anke et al. 2008), both of which play important roles in plant defence mechanisms. Teoh (2016) also described using the entire plant of *P. wilsonii* to treat headaches, common colds, and indigestions in children.

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