

Gastrodia albidoides (Orchidaceae), a new species record for Thailand

SAHUT CHANTANAORRAPINT¹*, AMONRAT CHANTANAORRAPINT² & SOMRAN SUDDEE³

ABSTRACT

Gastrodia albidoides, a rare orchid species previously known only from Yunnan, China, was newly discovered in lowland evergreen forest in peninsular Thailand. A description and photographs are provided.

KEYWORDS: distribution, mycoheterotrophic orchid, peninsular Thailand, rare species.

Published online: 23 November 2017

INTRODUCTION

With more than 90 currently accepted species, *Gastrodia* R.Br. is considered to be the largest genus of mycoheterotrophic orchids (Hsu *et al.*, 2016; Suetsugu, 2016, 2017). The genus is widely distributed throughout the temperate and tropical regions of Asia, Oceania, and Africa. The members of the genus are characterized by mycoheterotrophic habit, a perianth tube formed by united sepals and petals, basally positioned stigma and two pollinia (Pridgeon *et al.*, 2005).

In Thailand, six species have been recorded (Seidenfaden, 1978; Suddee, 2005, 2014; Suddee & Harwood, 2009). During fieldwork carried out to study the orchid flora of Thailand, an interesting collection of the genus *Gastrodia* was discovered in the southern part of the country. Based on relevant literature, it was identified as *G. albidoides* Y.H.Tan & T.C.Hsu, which is a new record for the country. The description and photographs below are based on the recent collection in Thailand.

DESCRIPTION

Gastrodia albidoides Y.H.Tan & T.C.Hsu, Phytotaxa 66: 38. 2012. (Tan *et al.*, 2012). Type: China, Yunnan, Mengla, Xishuangbanna National Nature

Reserve, in tropical rainforest, 700–800 m, 12 May 2012, *Tan 6809* (holotype **HITBC**). Fig. 1.

Terrestrial, mycoheterotrophic, achlorophyllous herbs. *Roots* few, filiform, arising from neck at the top of rhizome, 3–10 cm long, ca 0.5–1 mm diam. *Rhizome* horizontal, fleshy tuberous, irregularly cylindrical to fusiform, gradually narrowed to apex, 25–55 mm long, 4–7 mm diam., grayish brown, finely irregularly verrucose, scaly. *Flowering shoot* erect, to 8.5 cm tall, creamy white to pale brown, ca 3 mm in diam. at base, unbranched. *Inflorescence* glabrous; whitish to pale brown, peduncle 1–8-noded; sheath membranous, ovate to broadly ovate, 3–5 mm long, 2–3 mm wide; rachis often less than 5 mm long, 1–3-flowered; floral bracts ovate-triangular to ovate-oblong, apex pointed, pale brown, 2.5–4.5 mm long, 1.5–2.5 mm wide, glabrous, persistent. *Flowers* whitish to creamy white, obliquely tubular, 9–11 mm long, 5–7 mm diam., not opening widely, fleshy; pedicel and ovary 3–7 mm long, 1.5–3.5 mm diam. *Sepals* connate, forming a tube at base, free at apex; dorsal sepal fused with the lateral once about $\frac{1}{3}$ their length; lateral sepals fused to $\frac{1}{2}$ their length, fused for approximately $\frac{2}{3}$ their length; free portion 3-lobed, verrucose, acute, hooded, margins subentire; free lobe of dorsal sepal broadly ovate, 1.5–2 mm long, 3–3.5 mm wide at base; free lobes of lateral

¹ Department of Biology, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90112, Thailand.

² Faculty of Natural Resources, Prince of Songkla University, Hat Yai, Songkhla 90112, Thailand.

³ Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation, Chatuchak, Bangkok 10900, Thailand.

* Corresponding author: sahut.c@psu.ac.th

sepals ovate, ca 1.5 mm long, 2 mm wide at base. *Petals* attached on the sinus between dorsal and lateral sepals, triangular-ovate, 0.8–1 mm long, 0.6–0.8 mm wide. *Labellum* free, white with tinged yellow at base, narrowly ovate or rhombic-ovate, 3.5–4.5 mm long, 2–2.5 mm wide; apex acute, apical margin irregularly denticulate; base with 2 small subglobose calli, callus ca 1 mm diam.; disc thickened and distinctly 2-ridged in the middle. *Column* white, straight, 4–5 mm long; with a pair of triangular stelidia at apex, stelidia ca 1.2 mm long; base with short foot; lateral winged towards apex; rostellum well developed; stigma located near base; anther cap hemispherical, 0.6–0.7 mm diam.; pollinia 2. *Capsule* ellipsoid, 1.5–2 cm long, 0.5–0.8 cm diam.; pedicel elongating to 8–15 cm long in fruit. *Seeds* fusiform, 1.5–2.1 mm long.

Thailand.—PENINSULAR: Phatthalung [Khao Banthat Wildlife Sanctuary, Khao Sam Phu Mt, ca

650 m altitude, 30 June 2016, *Chantanaorrapint 2910* (BKF, spirit).

Distribution.— China (Yunnan, type).

Ecology.— In Thailand, *Gastrodia albidoides* was found growing on humus under shade of lower evergreen forest, ca 650 m altitude. During the field survey, only two populations were discovered, which were ca 2 km apart; fewer than 10 individuals were observed at each locality. Flowering and fruiting recorded in June.

Notes.— *Gastrodia albidoides* was first described by Tan *et al.* (2012) from Yunnan, China. This is a remarkable new record, not only because the species was considered to be endemic to Yunnan, but also because only one sample had previously been collected. Therefore, this is a significant discovery, being only the second record ever, and a new record for Thailand from the southernmost location for this species.

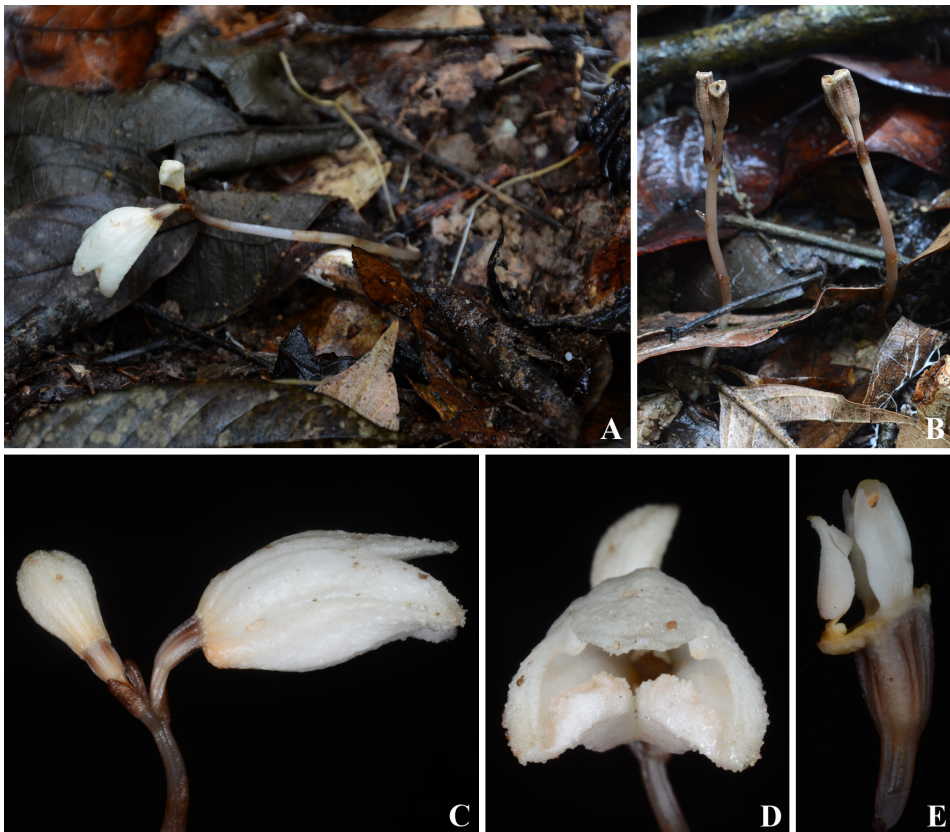


Figure 1. *Gastrodia albidoides* Y.H.Tan & T.C.Hsu: A–B. plant in natural habitat, A. plant with flowers, B. plant with immature fruits; C–D. flowers; E. column and labellum. Photographs by S. Chantanaorrapint.

ACKNOWLEDGEMENTS

The authors would like to thank P. Rojchanapawan, J. Sathaphorn, N. Putthisawong and O. Suwanmala, for field assistance, and an anonymous reviewer for useful suggestions. This work was supported by Prince of Songkla University annual government of expenditure under Plant Genetic Conservation Project under the Royal initiative of Her Royal Highness Princess Maha Chakri Sirindhorn year 2016 (no. SCI600107S).

REFERENCES

- Hsu, T.C., Fanerii, M., Yang, T.Y.A., Pitisopa, F. & Li, C.W. (2016). *Gastrodia isabelensis* and *G. solomonensis* (Gastrodieae, Epidendroideae, Orchidaceae): two new species representing a new generic record in the Solomon Islands. *Phytotaxa* 270: 137–145.
- Pridgeon, A.M., Cribb, P.J., Chase, M.W. & Rasmussen, F.N. (eds). (2005). *Genera Orchidacearum* 4, Epidendroideae (part one). Oxford University Press, Oxford.
- Seidenfaden, G. (1978). *Orchid Genera in Thailand* VI. Neottioideae Lindl. *Dansk Botanisk Arkiv* 32: 179–181.
- Suddee, S. (2005). A new *Gastrodia* from Thailand. *Harvard Papers in Botany* 9: 435–437.
- _____. (2014). *Gastrodia*. In: T. Santisuk & K. Larsen (eds), *Flora of Thailand* Vol. 12(2): 525–532. The Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation, Bangkok, Thailand.
- Suddee, S. & Harwood, B. (2009). *Gastrodia verrucosa* (Orchidaceae), a new, but not unexpected, record for Thailand. *Thai Forest Bulletin (Botany)* 37: 144–146.
- Suetsugu, K. (2016). *Gastrodia kuroshimensis* (Orchidaceae: Epidendroideae: Gastrodieae), a new mycoheterotrophic and complete cleistogamous plant from Japan. *Phytotaxa* 278: 265–272.
- _____. (2017). Two new species of *Gastrodia* (Gastrodieae, Epidendroideae, Orchidaceae) from Okinawa Island, Ryukyu Islands, Japan. *Phytotaxa* 302: 251–258.
- Tan, Y.H., Hsu, T.C., Pan, B., Li, J.W. & Liu, Q. (2012). *Gastrodia albidoides* (Orchidaceae: Epidendroideae), a new species from Yunnan, China. *Phytotaxa* 66: 38–42.