

Thismia clavigera (Thismiaceae), a new record for Thailand

SAHUT CHANTANAORRAPINT¹ & AMONRAT CHANTANAORRAPINT²

ABSTRACT. *Thismia clavigera* (Becc.) F.Muell., a species newly recorded for Thailand, is described and illustrated. A key to the species of *Thismia* in Thailand is provided.

KEY WORDS: new record, Thailand, *Thismia clavigera*, Thismiaceae.

INTRODUCTION

The family Burmanniaceae consists of two different tribes, Burmannieae and Thismieae, according to several authors (e.g. APG II, 2003; Jonker, 1938; Maas-van de Kamer, 1998; Govaerts et al., 2007). However, in some classifications Thismieae are considered as a separate family, the Thismiaceae (e.g. APG, 1998; Larsen, 1987; Merckx, 2008). According to the World Checklist of Dioscoreales (Govaerts et al., 2007) seven genera are recognized in the Thismieae (Thismiaceae): *Afrothismia* Schltr., *Geomitra* Becc., *Haplothismia* Airy Shaw, *Oxygyne* Schltr., *Scaphiophora* Schltr., *Thismia* Griff. and *Tiputinia* P.E.Berry & C.L.Woodw. Of these, *Geomitra* was reduced to synonymy under *Thismia* by Mueller (1891), and this status was accepted by Stone (1980), Maas-van de Kamer (1998) and Merckx (2008). In the monograph of Jonker (1938), *Geomitra* was regarded as closely related to *Thismia* sect. *Sarcosiphon* (Blume) Jonker, which has coralliform roots, small outer perianth lobes and inner lobes which are connate to form an erect mitre with three holes. They are different only in the character of the mitre, which in *Geomitra* has three appendages on the top, but absent in *Thismia* sect. *Sarcosiphon*. The distinctive character seems to be rather of specific level than of generic level. Hence, *Geomitra* should be regarded as synonymous with *Thismia* following Mueller (1891), Stone (1980), Maas-van de Kamer (1998) and the latest phylogenetic systematic research in Merckx (2008).

The account of the Thismiaceae for the Flora of Thailand has already been published (Larsen, 1987), including two species of *Thismia* Griff. In addition, *Thismia alba* Holttum ex Jonker was recently reported from Ton Nga Chang Waterfall, Songkhla (Chantanaorrapint & Sridith, 2007) and *T. angustimitra* Chantanaorr. has been described from Phu Wua, Nong Khai (Chantanaorrapint, 2008). During a field trip to Tarutao Island, Satun Province, in May 2008, *T. clavigera* (Becc.) F.Muell. was discovered as a new record for Thailand. *Thismia clavigera* had been previously collected from Borneo, Sumatra, and Langkawi (Beccari, 1977; Jonker, 1938, 1948; Stone, 1980). The description and illustration below are based on the Thai specimens cited below.

¹ PSU-Herbarium, Centre for Biodiversity of Peninsular Thailand (CBiPT), 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.

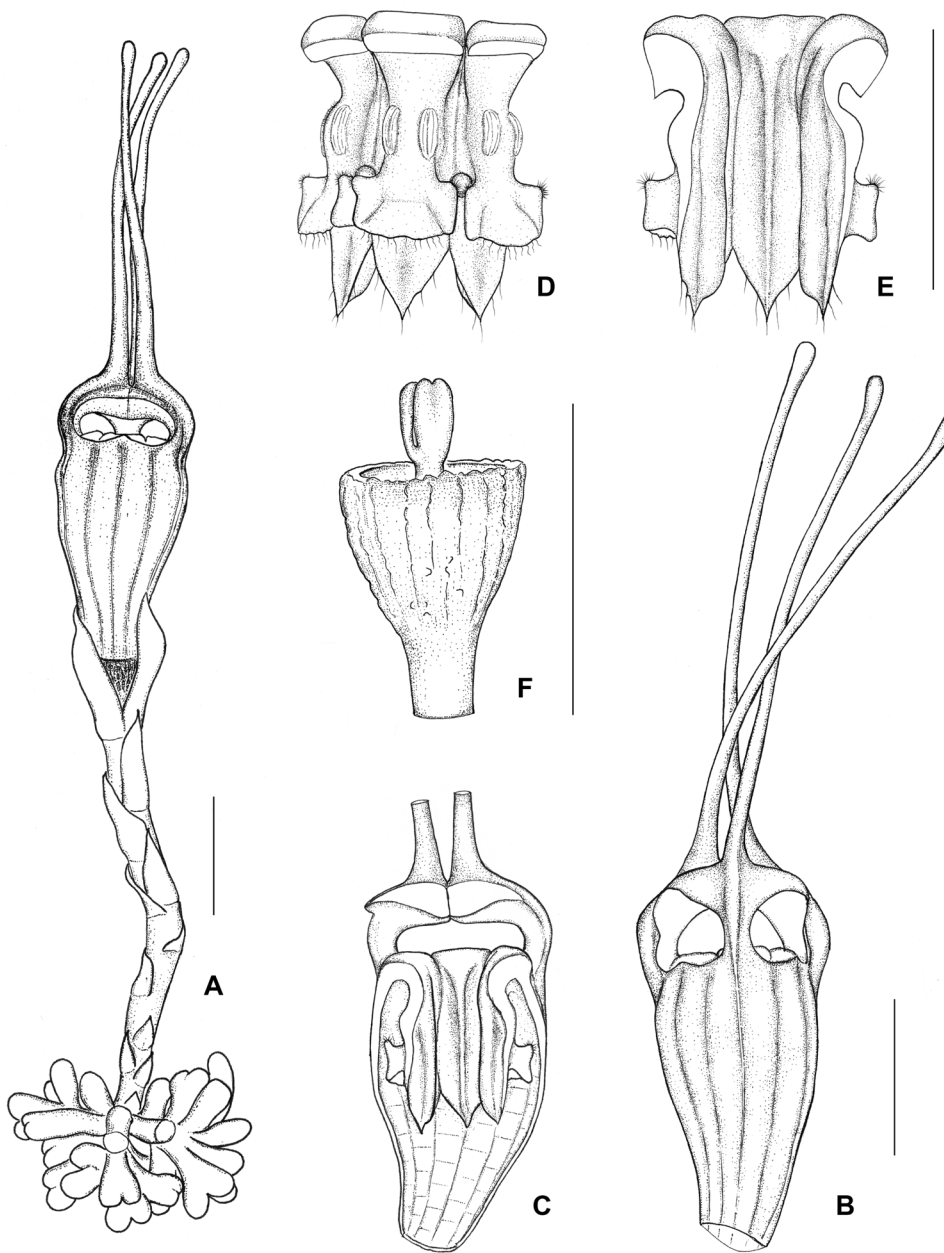


Figure 1. *Thismia clavigera* (Becc.) F.Muell.: A. plant habit with mature flower; B. perianth; C. longitudinal section of perianth; D. outer (abaxial) view of three pendulous stamens; E. inner (adaxial) view of three pendulous stamens, F. ovary. Scale bars = 1 cm. Drawn by S. Chantanaorrapint.

DESCRIPTION

Thismia clavigera (Becc.) F.Muell., Pap. & Proc. Roy. Soc. Tasmania 1890: 235. 1891; Blumea 26: 420. fig. 1. 1980.— *Geomitra clavigera* Becc., Malesia 1: 251. 1877; Monogr. Burmann.: 255. 1938; Fl. Males. I, 4: 25. 1948.— *Sarcosiphon clavigerus* (Becc.) Schltr., Notizbl. Bot. Gart. Berlin-Dahlem 8: 39. 1921. Type: Malaysia, Sarawak, Mt. Gadin near Lundu, Beccari 2642 (holotype FI). Figs. 1–2.

Terrestrial, achlorophyllous, mycoheterotrophic herb. *Roots* short dichotomously branched, forming coralliform, hairy, brownish-white apices. *Stems* erect, simple, to 15 cm tall including 1–2(–3) flowers. *Leaves* scale-like, appressed, 3–8 mm long, triangular-ovate to lanceolate, translucent, apex acute or acuminate. *Involucral bracts* 3, white, ca 1.2 cm long, ovate-lanceolate, apex acute to acuminate, slightly hooked. *Flowers* to 6 cm long (including appendages); perianth tube urceolate, 1.5–1.9 by 0.6–1.2 cm, narrowed just above the ovary, widest in the upper third, bright pink-red, translucent, with 12 longitudinal ribs, transverse bars inside present; outer tepals 3, white, minute, ca 1 mm long, broadly triangular; inner tepals 3, thick, cuneate, broadly fused apically by their epidermis to form a mitriform hood above the mouth of the perianth-tube with three lateral apertures, aperture 6.5–8.5 mm in diam., top of mitre with three slender claviform appendages 1.9–3.2 cm long, all yellow-orange; stamens 6, pendulous from the thickened margin of the perianth tube; filaments short, ribbon-shaped, free, yellowish; connective broad with a quadrangular wing, apex acute, hairy, indigo blue, translucent, connate to form a tube around the style; each with two shallow thecae in adaxial view; theca oblong, ca 2 mm long; nectariferous gland present towards apex on the line of fusion between each connective; styles short, ca 1 mm long; stigmas ca 2.5 mm long, elliptic-oblong, papillae, 3-lobed, lobes slightly folded, apex truncate; ovary inferior, ca 5 mm long, cup-shaped, blackish. *Fruit* not seen.

Thailand.— PENINSULAR: Satun [Tarutao Island, 6°37'23"N 99°38'10.6"E, 3 May 2008, *Chantanaorrapint* 2022 (PSU)]

Distribution.— Malaysia (Sarawak, Langawi), Indonesia (Sumatra).

Ecology.— In primary lowland forest on sandy soil covered by leaf litter over sandstone rock at ca 90 m altitude. Flowering in May.

Notes.— The distinctive characters of this species are: 1) the minute outer tepals, 2) the mitriform inner tepals with three slender claviform appendages, 3) the distal part of stamens acute with transparent hairs, and 4) coralliform underground part.

Five species of *Thismia* are known from Thailand. A revised key to the species is provided below.

KEY TO THE SPECIES OF *THISMIA* IN THAILAND

1. Inner perianth lobes free, spreading or erect
 2. Perianth lobes all equal in size, ± triangular, all 6 with long thread-like appendages **1. *T. alba***
 2. Outer 3 perianth lobes larger than inner 3, broadly ovate, only inner perianth lobes with long thread-like appendages **2. *T. javanica***
1. Inner perianth lobes connate at the apex to form a mitre

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|---|----------------------------------|
| 3. Top of the mitre with three slender claviform appendages, underground part coralliform | 3. <i>T. clavigera</i> |
| 3. Top of the mitre with three fovea, underground part vermiform | |
| 4. Mitre broader than perianth tube, annulus erect | 4. <i>T. mirabilis</i> |
| 4. Mitre narrower than perianth tube, annulus curved | 5. <i>T. angustimitra</i> |

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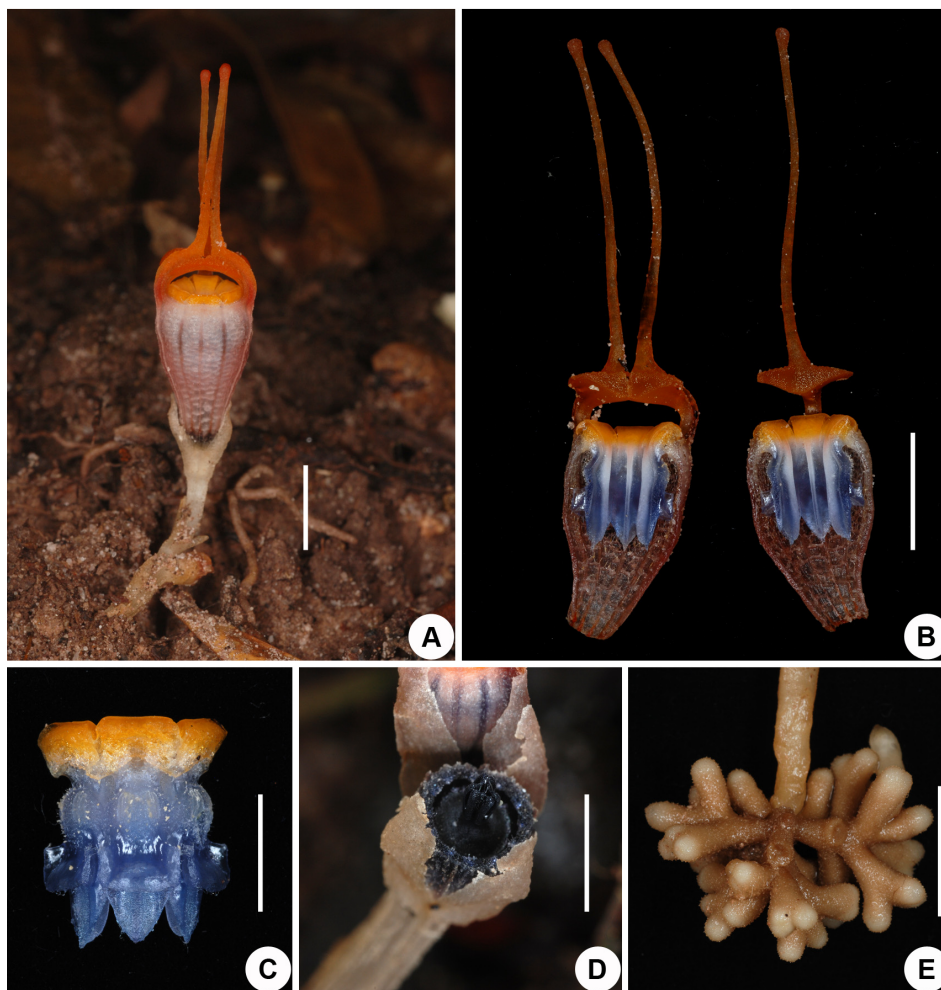


Figure 2. *Thismia clavigera* (Becc.) F.Muell.: A. habit; B. longitudinal section of perianth, C. inner (adaxial) view of three pendulous stamens; D. ovary showing stigma; E. underground part. Scale bars: A, B, E = 1 cm; C, D = 5 mm. Photographed by S. Chantanaorrapint.

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