

Begonia pteridiformis (Begoniaceae), a new species from Thailand

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ABSTRACT. *Begonia pteridiformis* Phutthai, a new species from Peninsular Thailand belonging to the section *Parvibegonia*, is described and illustrated.

KEY WORDS: *Begonia*, new species, Thailand.

INTRODUCTION

The genus *Begonia* L. (Begoniaceae) is one of the largest angiosperm genera, containing around 1,500 species. It is found in both the Neotropical and Paleotropical regions, with 521 species recorded from Southeast Asia (Hughes, 2008). The first treatment of *Begonia* in Thailand by Craib (1931) reported 45 species, of which 22 were first described by Craib himself. Hughes (2008) reported 49 species from Thailand, of which 26 were endemic to the country. Later, Phutthai et al. (2009), based on extensive field surveys, added another 5 new species records to the total. The genus is distributed widely throughout Thailand and the present study is a contribution towards a taxonomic account of the genus for the country.

Begonia species in Thailand belong to 10 sections of the genus, i.e. *Begonia* sect. *Diplocinium* (Lindl.) A.DC. (14 spp.), *Begonia* sect. *Parvibegonia* A.DC. (10 spp.), *Begonia* sect. *Platycentrum* (Klotzsch) A.DC. (6 spp.), *Begonia* sect. *Reichenheimia* (Klotzsch) A.DC. (5 spp.), *Begonia* sect. *Sphenanthera* (Hassk.) Warb. (5 spp.), *Begonia* sect. *Alicida* C.B. Clarke (1 sp.), *Begonia* sect. *Heeringia* Irmscher (1 sp.), *Begonia* sect. *Monophyllon* A.DC. (1 sp.), *Begonia* sect. *Petermannia* (Klotzsch) A.DC. (1 sp.), *Begonia* sect. *Tetraphila* A.DC. (1 sp.) and another 4 species

that are unplaced to section (Doorenbos et al., 1998; Hughes, 2008).

During field surveys of natural populations of *Begonia* in Peninsular Thailand from June 2007 – December 2009, a new species of *Begonia* in section *Parvibegonia* was discovered. This section of *Begonia* contains 22 species, distributed from the Himalayas to Indo-China and Malaysia (Doorenbos et al., 1998).

The new *Begonia* species clings to wet limestone cliffs/wet rock crevices in deeply shaded areas, and is probably endemic to the limestone ranges in the provinces of Surat Thani, Phangnga and Krabi, Peninsular Thailand.

DESCRIPTION

***Begonia pteridiformis* Phutthai, sp. nov.**, Sect. *Parvibegonia*. *Begonia pteridiformis* ab omnibus speciebus sectionis *Parvibegoniae* plantae in 8–30 foliis, antheris cordatiformi differt. Type: Thailand, Phangnga, Nam Tok Manora Forest Park, 8°30'40"N 98°32'28"E, 31 July 2008, Phutthai 123 (holotype BKF; isotypes PSU, E). Figs. 1–2.

Perennial monoecious herb, 12–25 cm tall, whole plant covered with glandular hairs. Stems succulent, glossy, suberect with 2–5 branches, dark

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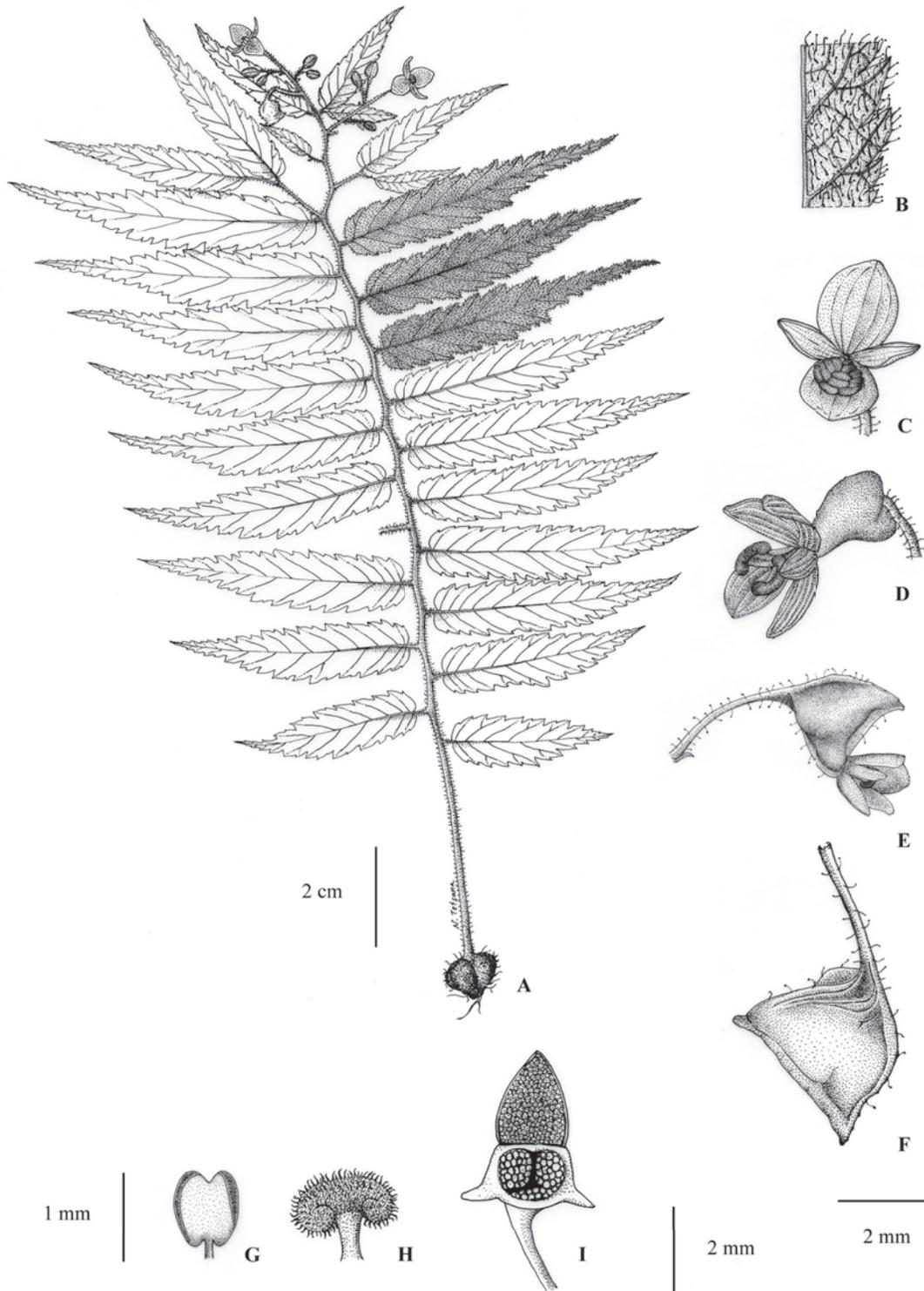


Figure 1. *Begonia pteridiformis* Phutthai: A. habit; B. glandular hair; C. staminate flower; D. pistillate flower; E. young fruit; F. capsule; G. anther; H. stigma; I. placentation in ovary.

red at base, turning pale green near the top; tubers irregularly heart-shaped with numerous fibrous roots, ca 5–13 mm in diam. Leaves all in the same horizontal plane, alternate, 8–30 per plant, basifixed; petioles pale red, with an adaxial groove, 1.5–3 mm long, leaf blade membranaceous, subsymmetric, chartaceous when dry, adaxial surface with dense glandular hairs, light green, glossy, iridescent, abaxial surface with dense glandular hairs, pale greenish white with red hyaline line along margin; narrowly lanceolate, 2–8 by 0.5–1 cm, base subsymmetric, truncate or subcordate, margin dentate, apex caudate or more acuminate; midrib prominent beneath, hairy; lateral veins 7–8 per side. Stipules persistent, pale green, triangular or ovate-triangular with sparse minute glandular hairs, ca 1 by 1 mm, apex acuminate, margin entire. Inflorescences terminal or at least near the apex, dichasial cymes, bisexual, 1–3 branches, 0.5–2.5 cm long with 2–4 staminate flowers and 2 pistillate flowers per branch; staminate flowers opening first; bracts deciduous, membranous, ovate-triangular, oblong, ca 1–2 mm by 0.5–1 mm, apex acute, white, pale green, glossy, margin sparsely ciliate; peduncle ca 0.5–1 cm long; terete, pale green, glossy, hairy. Staminate flowers on 5–6 mm long pedicels, sparsely hairy; tepals 4, plain white; outer 2 ovate or obovate, ca 2 mm by 2–3 mm, apex acute, base cuneate, margin entire, glabrous on both sides; inner 2 oblanceolate, ca 2 mm by 1 mm, apex obtuse, base cuneate, margin entire, glabrous on both sides; androecium zygomorphic; shaped like a bunch of bananas, stamens 10–12, yellow, filaments ca 0.5 mm long, fused at the base, anthers cordate, dehiscent by longitudinal slits, ca 1 mm long. Pistillate flowers: pedicels white, sparsely hairy, ca 5–6 mm long; tepals 5, unequal; oblanceolate or obovate, plain white, ca 2–3 mm by 1–2 mm, apex rounded, base cuneate, margin entire, glabrous on both sides; styles 2, fused at base, yellow, stigmatic band kidney-shaped, papillose; ovary with 3 unequal wings, plain white, 2-locular with axile placentation; placentae bifid. Fruits: pendulous, creamy white, turning brown when dry, ca 15 mm by 10–12 mm; capsules oblong, ca 4 mm by 1.5–2 mm abaxial wing obliquely triangular, ca 3 mm long, lateral wings narrower, triangular, 1–2 mm long, ca 1/3 capsule length. Seeds numerous, brown, ellipsoid.

Thailand.— PENINSULAR: Surat Thani [Khao Sok National Park, 28 Aug. 1982, *Shimizu, Konta, Smitinand, Wongprasert & Sangkhachand* 2883 (A); Ban Thakhun District, Khlong Saeng Wildlife Sanctuary, 9°1.4'N, 98°44.5'E, 6 Sept. 2008, *Middleton, Triboun, Chamchumroon, Saengrit & Simma* 4303 (BKF, E)]; Phangnga [Nam Tok Manora Forest Park, 8°30'40"N 98°32'28"E, 31 July 2008, *Phutthai* 123 (BKF, E, PSU); Wat Tham Pha Phueng, 20 Nov. 2010, *Phutthai* 241 (BKF, PSU)]; Krabi [Limestone hill in Mueang district, 19 Nov. 2010, *Phutthai* 236 (BKF, PSU)].

Distribution.— Endemic to Peninsular Thailand.

Ecology.— On wet limestone in deeply shaded areas in dry evergreen forest, at altitudes from 30–100 m. Flowering May to November, fruiting November to January.

Notes. — The new species belongs to *Begonia* sect. *Parvibegonia* which has 23 species in SE Asia, including this new species. It is characteristic of the section in having a tuberous habit, 2 stigmas, 2-locular fruit with one enlarged wing, and bifid placentae. It differs from all of the other species in the section in having many leaves and in its unusual habit. It is the large number of leaves (8–30), their shape (narrowly lanceolate) and their arrangement on the stem that makes it look, at first glance, like a pinnate compound leaf of a common fern. This makes it instantly distinguishable from other *Begonia* species in Thailand. The specific epithet '*pteridiformis*' is derived from this characteristic leaf arrangement.

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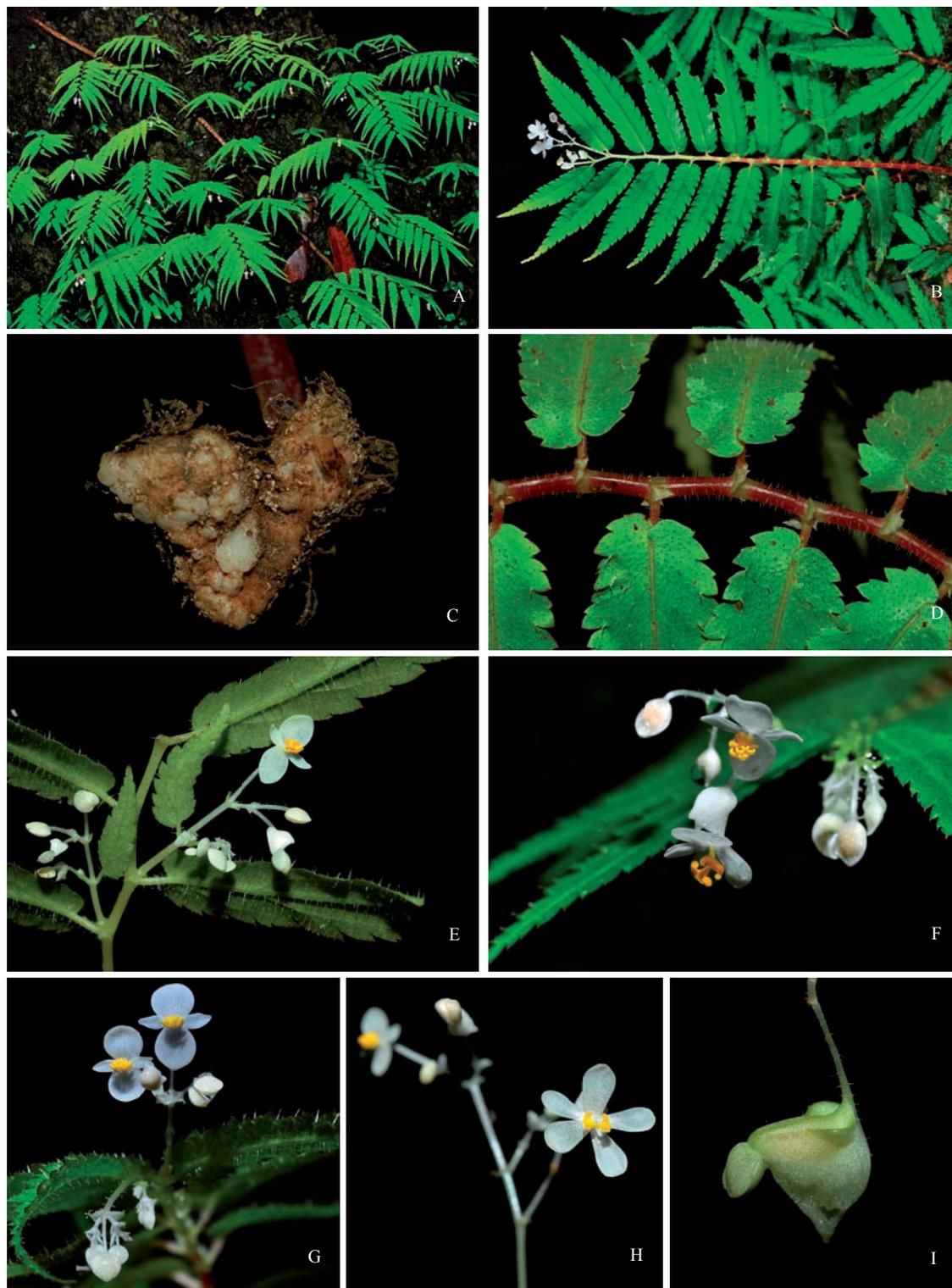


Figure 2. *Begonia pteridiformis* Phutthai.: A–B. Habitat and habit; C. tuber; D. stipules and leaves phyllotaxy ; E–F. inflorescence; G. staminate flowers; H. pistillate flower; I. capsule.

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