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A new species record of *Sciaphila* (Triuridaceae) for Thailand

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ABSTRACT. *Sciaphila tenella* Blume, a myco-heterotrophic plant, is newly recorded for Thailand. A description and illustrations are provided.

KEY WORDS: achlorophyllous, myco-heterotrophic, *Sciaphila tenella*, Thailand, Triuridaceae

INTRODUCTION

The genus *Sciaphila* Blume (including *Andruris* Schltr.) comprises 37 species (Govaerts et al., 2012) and is the largest genus of the family Triuridaceae, mainly distributed in tropical Asia and America with a few species in subtropical and temperate regions (Maas van de Kamer & Weustenfeld, 1998). The highest species diversity of the genus is in South-East Asia including the Malay Peninsula, Sumatra, Java and Borneo (Meerendonk, 1984; Mass & Rübsamen, 1986). Taxa of this genus are characterized by being small and delicate, achlorophyllous herbs, monoecious, with erect stems and scale-like leaves; inflorescences are terminal, with bisexual or unisexual flowers; male flowers possess 2–6 stamens usually concentrated in the apical part of the inflorescence; female and bisexual flowers have 10−80 ovaries mostly concentrated in the basal part of the inflorescence.

Most *Sciaphila* species are small in size with highly reduced vegetative morphology and are not easily discerned in the field. Five species were previously known in Thailand (Larsen, 1972; Triboun & Larsen, 1999; Maneenoon & Sirirugsa, 2002; Chantanaorrapint & Thaithong, 2004): *S. arfakiana* Becc., *S. maculata* Miers, *S. nana* Blume, *S. secundiflora* Thwaites ex Benth. and *S. thaidanica* K. Larsen, although Govaerts et al. (2012) record just two. More new records of species are expected in the unexplored areas, especially in the lower peninsular part of the country.

During the botanical surveys in the peninsular of Thailand, *Sciaphila tenella* Blume was discovered which is a new record for Thailand. The description and illustration below are based on the Thai specimens cited alone.

DESCRIPTION

Key to the species of *Sciaphila* in Thailand (modified from Chantanaorrapint and Thaithong 2004).

1. Flowers bisexual together with male flowers. Apex of perianth lobes long-bearded
   2. Male and bisexual flowers with 3 stamens — **1. S. maculata**
   2. Male and bisexual flowers with 6 stamens — **2. S. tenella**
1. Flowers unisexual. Apex of perianth lobes not as above
   3. Male perianth lobes with a claviform appendage at the apex. Style awl-shaped, smooth
      4. All perianth lobes with a claviform appendage — **3. S. arfakiana**
      4. Only the 3 smaller perianth lobes with a claviform appendage; the 3 larger without appendages — **4. S. nana**
   3. Male perianth lobes without a claviform appendage at the apex. Style clavate, papillose
      5. Stems ca. 5 cm tall, branched from the base. Inflorescences 1–1.5 cm long. Flowers 4–5 mm in diam. Male flowers with 6 perianth segments — **5. S. thaidanica**
      5. Stems ca. 15 cm tall, first branching ca. 4.5 cm from the base. Inflorescences 5 cm long. Flowers 8–10 mm in diam. Male flowers with 4–8 perianth segments — **6. S. secundiflora**

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Sciaphila tenella Blume, Bijdr. Fl. Ned. Ind. 10: 515. 1825; Meerendonk, Fl. Males. Ser. I. 10: 117. 1984; Weeras. in Dassan. & Clayton (eds.), Revised Handb. Fl. Ceylon 14: 287. 2000; H.Ohashi et al., J. Jap. Bot. 83: 32. 2008; Y.H.Guo & Cheek in Z.Y. Wu et al. (eds.), Fl. China 23: 125. 2010.— Type: Indonesia, Java, *Unknown s.n.* (**L**, digital image L0050321!). Figs. 1–2.

Monoecious, myco-heterotrophic, achlorophyllous herbs, reddish purple. *Stem* delicate, erect, to 15 cm tall, simple or 1–2-branched, glabrous. *Leaves* scale-like, entire, appressed to stem, ovate to lanceolate, acute to acuminate, 1–3 by 0.7–2 mm. *Inflorescence* terminal, racemose, erect, of 12 to 25 flowers with basal bisexual flowers and male ones in apical part; pedicels 3–6 mm; bracts lanceolate, 2–4 mm long. *Bisexual flowers* ca. 2–3 mm in diameter; perianth with 6 unequal lobes alternating larger and smaller lobes; larger lobes 1.1–2.0 by 0.3–0.7 mm; smaller lobes 0.8–1.6 by 0.3–0.6 mm; all lobes completely reflexed when opened; apex of lobes acute, bearded; stamens 6, easily broken off, filaments short, anthers 2–3 locules; ovaries 10–25(30), obovate, the upper half tuberculate; style short, lateral; stigma papillate. *Male flowers* 1.5–2 mm in diameter; similar to the bisexual ones, but smaller and ovaries not well developed or reduced. *Fruits* aggregate, suborbicular; fruitlets dehiscent, ovoid, 0.9–1.2 mm in diameter.

Thailand.— PENINSULAR: Trang: [Chao Pa waterfall, 17 Jan 2012, *S. Chantanaorrapint*, J. Inuthai *& C. Promma 801* (**BCU**, **BKF**, **PSU**, spirit); Satun [Tarutao Island, 6°37’26’’N 99°38’27.1’’E, 24 May 2008, *S. Chantanaorrapint 2029* (**PSU**, spirit)].

Distribution.— Widely distributed in tropical and subtropical Asia: Sri Lanka, Peninsular Malaysia, Singapore, Sumatra, Java, Borneo, The Philippines, New Guinea, Pacific islands, China and Japan.

Ecology.— The Thai specimens were found growing amongst other mycoheterotrophic plants such as *Epirixanthes* sp., *Gymnosiphon aphyllus* Blume, *Sciaphila secundiflora* Thwaites ex Benth. and *Thismia alba* Holttum ex Jonker, in sandy soil covered by leaf litter over sandstone or limestone rocks, under shade in primary lowland evergreen forest, ca. 90 m altitude. Flowering in the rainy season.

Notes.— *Sciaphila tenella* is readily distinguished from all other species of *Sciaphila* by the presence of hairs at the apex of the perianth lobes and the 6 stemens with 2–3 locules. This species is most similar to *S. maculata* in having hairs at the apex of the perianth lobes, however the stamen number differs.

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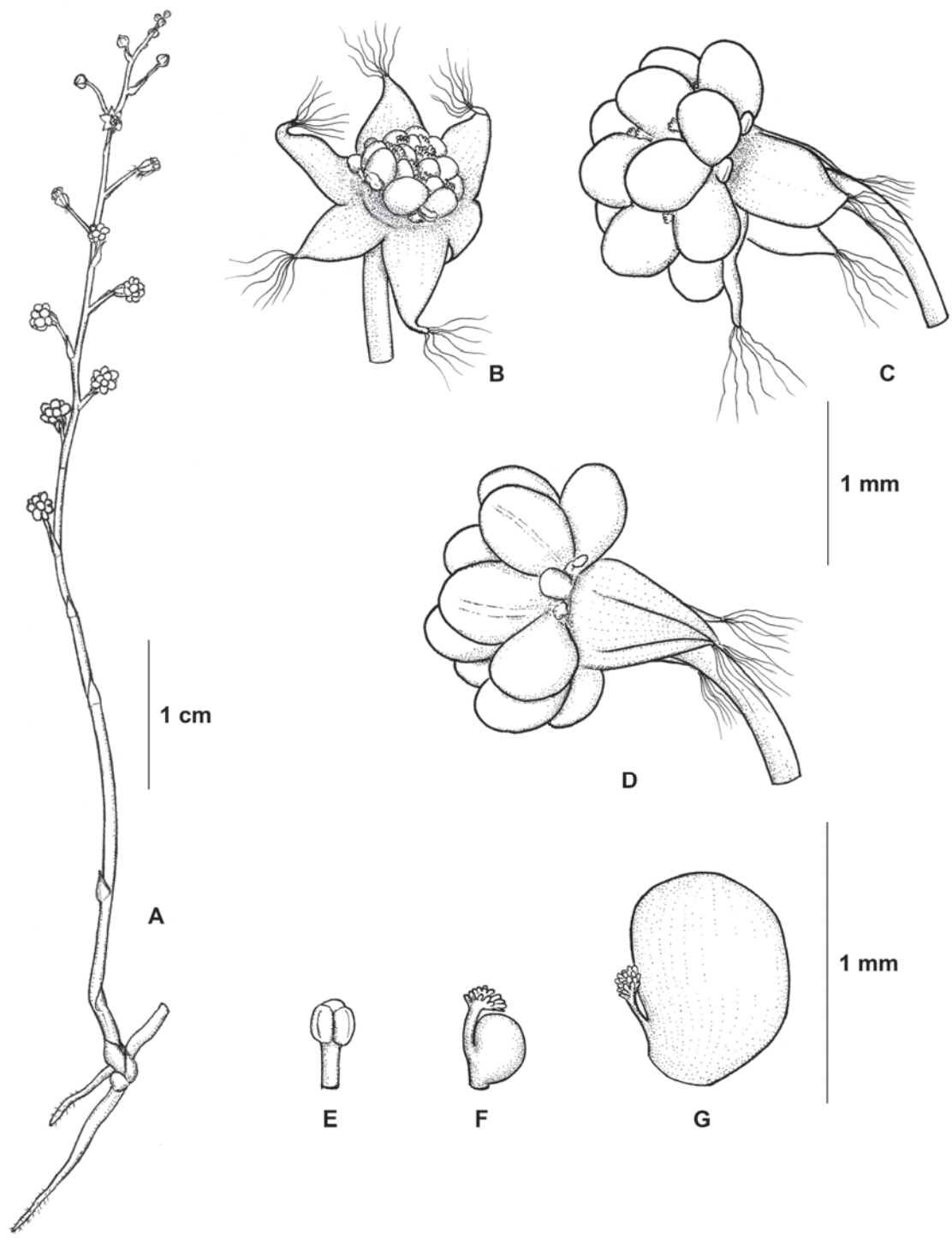

Figure 1. *Sciaphila tenella* Blume: A. Habit; B. Young bisexual flower; C.–D. Young fruits; E. Stamen; F. Carpel; G. Fruitlet. From *S. Chantanaorrapint 2029*. Drawn by S. Chantanaorrapint.

Figure 2. *Sciaphila tenella* Blume: A. Natural habitat; B. Upper part of inflorescence; C. Male flower with 6 stamens; D. Young fruits. Photographed by S. Chantanaorrapint.