

NOTES ON THAI *HEDYOTIS* (RUBIACEAE)

J. F. Maxwell¹

ABSTRACT

Two species of *Hedyotis* from Ubon Ratchatani Province are discussed, viz. *Hedyotis bahaii* Maxw., *sp. nov.* and *Hedyotis ternata* (Pierre ex Pit.) Maxw., *comb. nov.*, a new record for Thailand

Key words: new record, Thailand, *Hedyotis bahaii*, *Hedyotis ternata*

Hedyotis bahaii Maxw., *sp. nov.*

Herba a setis patentibus capitiformis in caule et inflorescentiae vel nodis quoque receptaculi parte superiore, foliis angustis marginibus revolutis distinguendum.

Herba annua, gracilis, glabra, 13–20 cm alta; caule erecto, quadrangulati; folia linearia, margina revoluta, 4–7.5 x c. 0.5 mm, sessilia; stipulae triangulatae, ovatae, apice acuto, c. 1.25 mm longae; inflorescentiae terminales, laxe cymosae, 1.75–3.75 mm longae; flores 4-meri, c. 5 mm longa; receptaculum c. 0.5 mm longum, calycis segmenta lanceolata, acuta, c. 1.5 mm longa; corollae hypocrateriformes, pallidae purpureae; tubus c. 2 mm longus; lobi c. 2.25 mm longi, 1.4 mm lati; nodi caulis et cymae et receptaculi lobis extra ad basin dense pilis capitatis 0.5 mm longis instructi. Capsula acuta, calycis lobis duplo longiora, loculicide dehiscentia; semina nigrescentia, c. 0.25 mm diam.

Type: Greijmans 40; holotype CMU, isotypes BKF, L.

Paratypes: Thailand: Greijmans 166 (16 September 2001), same location as Type; CMU, BKF, L, CAS, MO, A. Laos: Greijmans 218; Champasak Province, Sanna Somboun District, along road no 13, 35 km north of Pakse, bordering Phu Xieng Thong National Biodiversity and Conservation Area, Ban Nakaam; 210 m, 26 CMU, L, National University of Laos (Dongdok)

Location.—Bahai village, Ubon Ratchatani Gene Conservation Station, Huay Yang Subdistrict, Khong Chiam District, Ubon Ratchatani Province; between km 12-13 along highway 2112 (Khong Chiam-Kemrat); 9 November 2000.

Habitat.—open, seasonally xeric, degraded deciduous dipterocarp forest with a canopy to 25 m high; level area, 120 m elevation, sandstone bedrock; soil thin, light grey sand with large, flat outcrops, seasonally inundated and swamp-like (Fig. 1).

Distinguishing features of the species.—The spreading, capitate-like (colleters) setae on the stem and inflorescence/infructescence nodes as well as on the upper part of the ovary; and narrow, linear, sessile leaves with revolute margins are diagnostic.

¹CMU Herbarium, Biology Department, Faculty of Science, Chiang Mai University, Chiang Mai 50200, Thailand
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Etymology.—"ba" is the local name for this kind of open, degraded, fire-damaged, seasonal deciduous dipterocarp forest; "hai"= ceramic jars in which fish are mixed with salt to produce a fermented fish paste. Vernacular: Kloteding (Dutch).

Slender annual, delicate, ground herb, 13–20 cm tall, glabrous in all parts except on the stem and inflorescence nodes as well as the upper part of the receptacles which are densely covered with spreading, capitiiform setae 0.5–1.5 mm long; stipules thin, adpressed, ovate, acute, *c.* 1.25 mm long, margins mostly with 1 or 2 capitate-like setae; leaves opposite, well-spaced; blades linear, tip acute, margins revolute when dry, 4–7.5 x 0.5 mm (when dry), sessile; inflorescence terminal, cymose, lax, 1.75–3.75 cm long; axes slender, pedicels 4–6 mm long; flowers numerous, 4-merous, *c.* 5 mm long; receptacles *c.* 0.5 mm long, calyx lobes lanceolate, acute, erect, with scattered raphids, total length *c.* 1.5 mm; corolla hypocrateriform (salveriform), light purple; tube 2 mm long; lobes elliptic, acute, *c.* 2.25 x 1.5 mm; stamens inserted at the base of and alternating with the corolla lobes, included in the corolla; anthers *c.* 0.75 mm long, filaments *c.* 1.5 mm long; stigmas puberulous, *c.* 1.75 mm long, branching from the corolla throat; style *c.* 2 mm long; capsules acute, half as long as the calyx lobes, loculicidally dehiscent; seeds orbicular, slightly compressed, finely rugose, black, *c.* 0.25 mm diameter.

***Hedyotis ternata* (Pierre ex Pit.) Maxw., *comb. nov.*; New Thai Record**

Oldenlandia ternata Pierre ex Pit., Fl. Indo-Chine 3: 1 (1922) 122–123.

FUKUOKA's (1970) revision of *Hedyotis* for Thailand does not have any mention of this species. CRAIB (1932) notes that *Oldenlandia ternata* Pierre ex Pit. was found, according to PITARD (1922), by Thorel at Kemarat which was previously in Ubon Rachatani Province, Thailand and is now in Amnat Charoen Province, along the Mekong River. It is also known from the southern part of Champasak Province, Laos; Stung Treng and Komponh Chenang Provinces, Cambodia; and in Dong Nai Province, north of and close to Saigon in Viet Nam. All of the collections noted from Cambodia and Laos are from the Mekong River area. CRAIB (1932) indicated that this species, according to his generic concepts of *Hedyotis* and *Oldenlandia*, would be included in the former. He did not make a recombination since he, apparently, did not examine any relevant material. *Oldenlandia* and *Hedyotis* were formerly separated on the fine and often conflicting details of the fruiting calyx, mode of dehiscence, and seed morphology. Various authors have either maintained the two genera or united them under *Hedyotis*. FUKUOKA (1970) combined *Oldenlandia* with *Hedyotis* following BACKER & BAKHUIZEN V.D. BRINK in the *Flora of Java* (1965) who were the first to do so in regional floras for Asia.

PITARD (1922) provides a long and detailed description for this species which is based on unpublished notes by Pierre. It is a slender, annual, erect, glabrous herb with light green, quadrangular stems. The leaves are in whorls of three (ternate), sessile, with linear, light green blades with revolute margins, mostly 15–18 x 1 mm (when dry). The terminal cymes have many 4-merous, regular flowers *c.* 5 mm long. The inflorescence axes and calyx range from white-light greenish to green, corollas white-lilac outside and white inside, anthers purple, and the stigmas are white to purple. Greijmans 23 (9 November 2000) and 103 (31 July 2001) were both collected in the same place *c.* 2 km SW of Bahai



Figure 1. Habitat of *Hedyotis bahaii* Maxw. with *Utricularia bifida* L. var. *bifida* (yellow corollas), *Utricularia delphinooides* Thor. ex Pell. (blue corollas) (Lentibulariaceae), *Eriocaulon quinquadrangulare* L. (Eriocaulaceae), growing on thin soil with sandstone outcrops. Martin Greijmans, 9 November 2000.



Figure 2. Habitat of *Hedyotis ternatus* (Pierre ex Pit.) Maxw. with relatively deep sandy soil in a seasonally burned area. Associated species include *Dillenia hookeri* Pierre (Dilleniaceae; foreground), *Catunaregam spatulifolia* Tirv. (Rubiaceae; middle), and very degraded mixed evergreen + deciduous, seasonal, hardwood forest (background). Martin Greijmans, 31 July 2001.

village, Khong Chiam District, Ubon Ratchatani Province—the only material of this very interesting and distinct species that I have examined. It is locally known as “dtong hang” (ตองหาง) and is common. The habitat is similar to that of *Hedyotis bahaii* Maxw., but with sandy soil at least 30 cm deep (Fig. 2). Specimens are in CMU, BKF, and L.

Both species of *Hedyotis* discussed here are similar in having a slender basic habit; linear, sessile leaves with revolute margins, and cymose inflorescences with numerous flowers *c.* 5 mm long. The collecting area should be thoroughly sampled throughout the year since it may have more unusual or rare plants growing there.

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