

***Habenaria mandersii* (Orchidaceae) Newly Recorded from Thailand with Notes on the *H. hosseusii* Group**

H. KURZWEIL

The Herbarium, Singapore Botanic Gardens
1 Cluny Road, Singapore 259569

Abstract

The occurrence of *Habenaria mandersii* Collett & Hemsl. in Thailand is newly reported. The species was previously only known in Myanmar and the former French Indochina (Cambodia, Laos, Vietnam). It is very similar to *H. hosseusii* Schltr. and it is here suspected that it has frequently been mistaken for this species in the past. Short notes on the taxonomy of the *H. hosseusii*-*mandersii*-*dentirostrata* Tang & F.T.Wang group are also given.

Although the orchid flora of Thailand is reasonably well known compared with some adjacent countries (see for examples, Kamemoto & Sagarik, 1975; Seidenfaden, 1977, 1986, 1988; Nantiya Vaddhanaphuti, 2005) new distribution records continue to be made, and particularly during the current preparation of the Orchidaceae volume of the Flora of Thailand the orchid flora of the country is being re-examined. Several specimens of *H. mandersii* Collett & Hemsl. were recently found in herbaria in Thailand and Singapore which is reported here. The species is known to occur in adjacent countries but has not been recorded in Thailand before.

Habenaria mandersii Collett & Hemsl.

J. Linn. Soc., Bot. 28 (1890) 133; Seidenf., Dansk Bot. Ark. 31 (1977) 126; Seidenf., Opera Bot. 114 (1992) 67. – *Kraenzlinorchis mandersii* (Collett & Hemsl.) Szlach., Orchidee (Hamburg) 55 (2004) 58. – **Typus:** Burma, Shan State, *Manders* s.n. (K; not seen). **Figs. 1–2, Table 1.**

Terrestrial **herbs**, entirely glabrous, except sometimes for the bract margins, 300-550 mm tall. Basal sheaths 2-3, tubular, enveloping the stem base; uppermost with an acute blade to 25 × 14 mm. **Leaves** 5, scattered in the lower stem portion, lanceolate-elliptic, acute or subacute, mucronate, 70-120 × 12-23 mm, margins papillose. Sterile bracts



Figure 1. *Habenaria mandersii* (Pumicong 386).

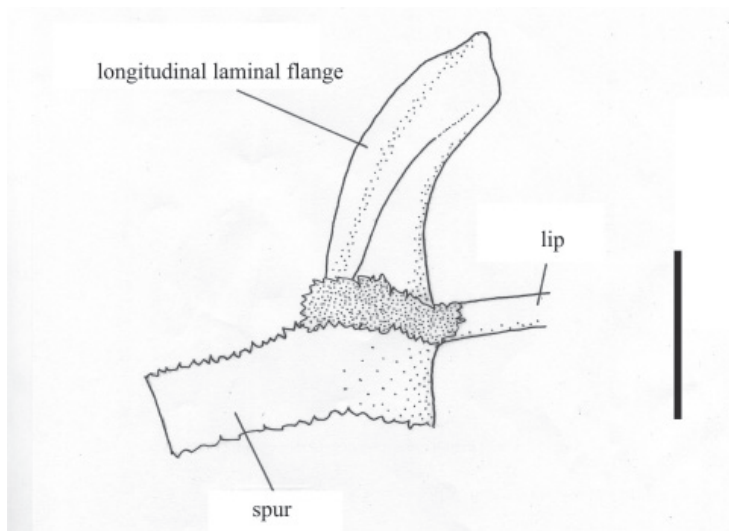


Figure 2. Tongue in front of the spur mouth of *Habenaria mandersii*. All perianth lobes and the gynostemium removed; spur broken off. Bar =1 mm (from Pumicong 386).

Table 1. Distribution of various floral characters in the *Habenaria hosseusii* group (all measurements in millimetres).

Character	<i>H. hosseusii</i>	<i>H. mandersii</i>	<i>H. dentirostrata</i>
Ovary length	21–26(–30)	17–22	?
Median sepal	8.5–12(–14) × 4–5(–6)	7.5–10.5 × 4–5.5	9.7–11.3 × ca. 5.5
Lateral sepals	8.2–12.5(–14) × 3–4 (–5.5)	8–11 × 3–4.6	11–11.3 × 4.5–5.5
Petals	8.5–12.2(–14) × 1.5–1.7 (–2.5)	8–11.5 × 1.5–2	11–12.5 × 2.6–2.8
Lip	10–17(–24) × 1–2(–3.5)	11–16.5 × 2.5–3	18–19.3 × 2.6–3
Lateral outgrowths of the tongue in front of the spur entrance	teeth	obscure rounded or absent	teeth
Longitudinal flange in the middle of the tongue	short	stretching over much of the length	short
Apex of tongue	obtuse or mucronate	entire or slightly emarginate	retuse or bilobulate
Spur length	50–100	(28–)30–38(–47)	50–60

9–10, lanceolate, acuminate, 22–60 × 3–8 mm, sometimes papillose on the surfaces, denticulate or papillose on the margins; apically grading into the floral bracts. **Inflorescence** lax to semi-dense, 10- to 20-flowered; rachis 80–100 mm long; bracts lanceolate, acuminate, 20–25 × 3–6 mm, elongate-papillose to glandular-hairy on the margins. **Flowers** white. Sepals oblong-elliptic, subacute or obtuse, 3-veined; median sepal erect, 7.5–10.5 × 4–5.5 mm; lateral sepals spreading, oblique, 8–11 × 3–4.6 mm, basally united with the petals and the lip. Petals oblong or oblong-elliptic, obtuse or subacute, 1- or 3-veined, 8–11.5 × 1.5–2 mm. Lip entire, oblong-spathulate, obtuse, widest in the upper part, margins involute, 11–16.5 × 2.5–3 mm, with a 1.5–3 mm long suberect tongue in front of the spur entrance, tongue often with obscure rounded bulges on the sides, the longitudinal flange in the middle of this tongue (facing the spur mouth) stretching over much of its length, tongue apex entire or slightly emarginate; spur cylindrical, (28–)30–38(–47) mm long, slightly clavate, apex obtuse. Gynostemium 3–4 mm long, anther with a subacute terminal connective process, anther canals 3–5 mm long, curved or geniculately angled upwards, auricles conspicuous and ca 1 mm in diameter, stigmatic processes 4–5 mm long, bent upwards. Ovary (including pedicel) 17–22 mm long, papillose, curved, with a narrow neck.

Specimens examined: NORTHERN: Chiang Mai Province, Omkoi, Thung Jum Roen, 29 Aug 2006, *Pumicong 386* (QBG, SING); EASTERN: Ubon Ratchathani Province, Po Sai District, Ban Sang Kung, 7 Sep 1997, *Somran Suddee 801* (BKF, spirit collection); SOUTH EASTERN: Prachin Buri Province, 1 Oct 1988, *Obchant Thaithong 504* (BCU, dry and spirit collection); Prachin Buri Province, 30 Oct 1977, *Amorn Ubolcholakhate* s.n. (BCU, spirit collection, material largely disintegrated); WITHOUT LOCALITY (bought at a market in Bangkok): 25 Oct 1989, *Obchant Thaithong 772* (BCU, spirit collection).

Illustrations: Seidenfaden (1977, p. 128): fig. 80a–c [flower and floral details]; Seidenfaden (1992, p. 65): fig. 34a–e [plant, flower and floral details].

Habitat and flowering time: The few available detailed collector's notes indicate that the plants are found in dry deciduous dipterocarp forest. A small colony in Chiang Mai Province (collection *Pumicong 386*), growing in a wet area in a grassy clearing in heavily grazed dipterocarp forest, was visited by the author of this paper. A dense clump of about ten plants was seen, with a further few individuals scattered around in the area. Generally, specimens of *Habenaria mandersii* have been collected at altitudes ranging from 280 to 1025 m. Flowering occurs between August and October.

Distribution: Myanmar, Thailand, Laos, Cambodia and Vietnam.

Notes: *Habenaria mandersii* is very similar to the Thai endemic *H. hosseusii* Schltr. The most obvious differences of the latter are the much longer lip spurs (50–100 mm; as opposed to 28–47 mm in *H. mandersii*) and details of the tongue in front of the spur mouth (lateral teeth, obtuse or mucronate apex, short laminal flange; as opposed to merely obscure rounded lateral bulges or no lateral outgrowths at all, entire or slightly emarginate apex, long laminal flange in *H. mandersii*) (see also Table 1). In view of the striking similarity it is here suggested that *H. mandersii* has in the past frequently been mistaken for *H. hosseusii* in the field.

Notes on the *Habenaria hosseusii* group

The *Habenaria hosseusii* group comprises the three species *H. hosseusii*, *H. mandersii* and the little-known *H. dentirostrata* Tang & F.T.Wang. The species are very similar in many respects and are probably

closely related. All three share a similar vegetative habit with three to eight glabrous lanceolate-elliptic leaves scattered in the lower stem portion. The white flowers, borne in few-flowered lax to semi-dense inflorescences, are very characteristic. Pedicel and ovary measure 21-26(-30) mm in length in *H. hosseusii* and 17-22 mm in *H. mandersii* and usually have a narrow neck in both species; no data are available in *H. dentirostrata*. In all three species the sepals and petals are oblong or oblong-elliptic and measure 7.5-12(-14) mm in length. Unlike in the majority of *Habenaria* species the lip is unlobed in the *H. hosseusii* group. It is oblong-spathulate in shape with the widest part in the distal third, has involute margins and measures about 10-17(-24) mm in length. A very distinct feature is the presence of a 1.5-3 mm long suberect tongue in front of the spur entrance, and its detailed structure is used to differentiate between the three species (Seidenfaden, 1977). The tongue has mostly lateral outgrowth in its basal part which may take the shape of prominent teeth (*H. hosseusii*, *H. dentirostrata*) and are obscure rounded bulges or absent in *H. mandersii*. On the blade of this tongue (facing the spur mouth) there is a longitudinal flange which is very short in *H. hosseusii* and *H. dentirostrata* but occupies much of its length in *H. mandersii*. Apically, the tongue is entire or slightly emarginate in *H. mandersii*, obtuse or mucronate in *H. hosseusii* and clearly retuse or bilobulate in *H. dentirostrata*. Also the spur length differs among the three species, with (28-)30-38(-47) mm long spurs found in *H. mandersii* and longer spurs found in the other two species (ca 50-60 mm in *H. dentirostrata*, 50-100 mm in *H. hosseusii*). The structure of the 3-4 mm long gynostemium is rather uniform in the group, with its 3-6 mm long anther canals curved or geniculately angled upwards and its similarly upwards-bent 3-5 mm long stigmatic processes. The distribution of several of these characters is indicated in Table 1.

The examination of a large number of Thai specimens during the present study suggests that *Habenaria hosseusii* and *H. mandersii* appear to be distinct, the former characterised by long spurs and lateral teeth on the tongue, the latter by rather short spurs and the lack of such teeth. Hardly any material of *H. dentirostrata* was examined here as there is no definite Thai specimens (but see below), and according to illustrations this species is nearly identical with *H. hosseusii*. Although Seidenfaden (1977) considered it as distinct, a detailed future examination of its material from Laos and Myanmar may well show that it is conspecific with the latter.

All three species are distributed in the region stretching from Myanmar to Vietnam. *Habenaria hosseusii* is currently considered endemic in Thailand and is rather common in the northern and western parts of the country. Its occurrence has also been reported in Laos but the respective

specimens are now referred to *H. dentirostrata* (Seidenfaden, 1977: p. 130). *H. mandersii* is the most widespread species in the group, having been recorded from Myanmar, Thailand, Laos, Cambodia and Vietnam. *H. dentirostrata* is currently only known in Laos and Myanmar. A part of a plant referable to this species was found in the spirit collection at BCU (*Obchant Thaithong 768*). However, it was bought at the Sunday Market in Bangkok and it is therefore not known whether it originated from Thailand or was brought over the border from Laos or Myanmar.

Habenaria mandersii was listed by Grant in his account of the orchids of Burma (1895, p. 338). This is possibly a misidentification as the plant which he describes appears to share a critical character with *H. dentirostrata* (which was not known at the time). Grant's comments on the tongue in front of the spur mouth, "...large obtuse ligule with revolute sides, the convex face (towards the mouth) has 2 short conical spurs side by side...", apparently allude to its lateral teeth which are found in *H. dentirostrata* (and *H. hosseusii*) but are absent in *H. mandersii*. However, this is contrasted by the short spurs of only "1-2 inches" (25.4-50.8 mm) which are not known in *H. dentirostrata*.

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