

Habenaria drepanodes (Orchidaceae), an overlooked orchid species from the Solomon Islands

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A new species from Solomon Islands, *Habenaria drepanodes* Renz *ex* Kolan., S. Nowak & Szlach. is described and illustrated. The name was proposed by Jany Renz, but it was never published by him. The taxonomic affinities of the new taxon are discussed.

Subtribe Habenariinae (Bentham 1881) is one of the most diverse taxa within Orchidaceae. While the nominal genus of the subtribe, *Habenaria*, was described in 1805, the generic type was selected 87 years later by Kränzlin (1892). Due to an unclear taxonomic circumscription of the genus, numerous terrestrial orchids from tropical and temperate regions were placed in it, such as species of *Platanthera*, *Coeloglossum*, *Piperia*; and some *Gymnadenia* and *Dactylorhiza* species too. The last world-wide revision of *Habenaria s. lato* was done by Kränzlin (1897–1901) and a revised concept of Habenariinae was published by Dressler (1981: 186–192), who included in Habenariinae 1100 species representing 21 genera.

Bateman *et al.* (2003) suggested that *Habenaria* is polyphyletic and needs to be divided into many monophyletic genera. Numerous smaller taxa were delimited based on floral and gynostemium characters (e.g. Szlachetko & Kras 2003, 2006, Szlachetko *et al.* 2003), however there is still no consensus on the generic limits of *Habenaria s. lato*. Batista *et al.* (2013) indicated that Neotropical *Habenaria* is monophyletic and closely related to some African congeners, but

more recent studies (Jin *et al.* 2014) revealed that the taxonomy of *Habenaria* and its relatives is even more complicated than previously thought.

In the region of New Guinea and the Solomon Islands, *Habenaria s. lato* is represented by 24 species (Lewis & Cribb 1991, Schuiteman & de Vogel 2005). Most of them are endemic to the islands and only one species, *H. rumphii*, is widespread in the Malesian region and occurs also in northern Australia. *Habenaria elongata*, *H. ochroleuca*, and *H. triplonema* have also been recorded in Australia. *Habenaria khasiana* which is most common in Southeast Asia was reported from one locality in New Guinea by Renz (1987). Within New Guinea and the Solomon Islands, most of the Habenariinae representatives occur in lower montane rain forest, growing in leaf litter at the altitudes up to 2100 m a.s.l. (Renz 1987, Schuiteman & de Vogel 2005). Several species are characteristic for lowland savanna grassland or woody grassland. The highest altitude (3200–3260 m a.s.l.) is reported for *H. lamii*, which grows in montane grassland.

During our studies on Habenariinae, we came across a specimen marked by Jany Renz as the

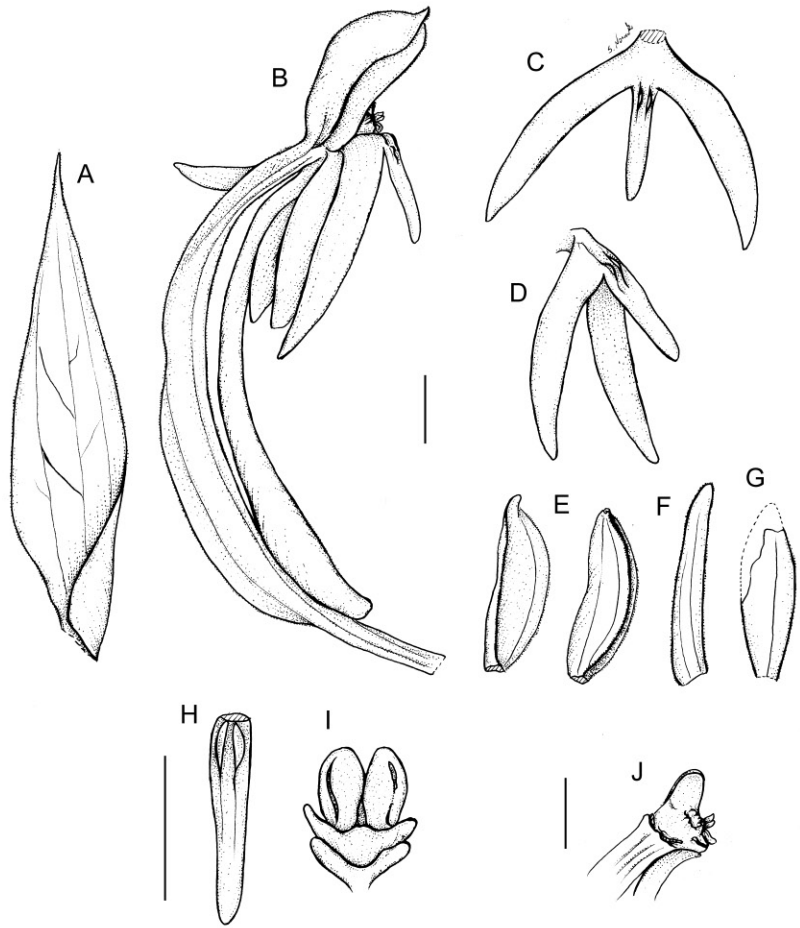


Fig. 1. *Habenaria drepanodes* (redrawn by S. Nowak from J. Renz's drawing based on holotype). — **A:** Floral bract. — **B:** Flower. — **C:** Lip, front view. — **D:** Lip, side view. — **E:** Dorsal sepal, various views. — **F:** Petal. — **G:** Lateral sepal. — **H:** Lip mid-lobe. — **I:** Gynostemium, front view. — **J:** Gynostemium, side view. Scale bars = 3 mm.

holotype of a species named *Habenaria drepanodes*. However, that species has for some reason never been effectively published (Art. 29.1 and 30.1 ICN, McNeill *et al.* 2012). The morphological description is prepared based on examination of the material available in K and L, and the illustration of *H. drepanodes* is complemented with notes on its taxonomic affinities.

***Habenaria drepanodes* Renz ex Kolan., S. Nowak & Szlach., *sp. nova* (Figs. 1 and 2)**

TYPE: Solomon Islands. N.W. Guadalcanal, Mt. Mamulu, S.E. of Forestry Dept. plots. 20 July 1967 A. Nakisi BSIP8024 (holotype LAE; isotypes L, K, RENZ — photo and drawing).

ETYMOLOGY: Proposed by Renz, the specific epithet *drepanodes* (Latin) means falcate, sickle-shaped. It probably refers to the characteristic shape of the lateral lobes of the lip.

Plants about 90 cm tall. Leaves 3, basal, blade up to 20 × 5 cm, narrowly elliptic to ovate-elliptic, subacute, basally narrowing into canaliculated petiole clasping stem; petiole up to 9 cm long. Raceme about 50 cm long, laxly many-flowered. Flowers pale green. Floral bract 14–22 × 3–8 mm, usually subequalling ovary and pedicel in length, broadly lanceolate, ciliate along margins. Ovary with pedicel 11–28 mm long, 3-ribbed, ciliate along ribs. Dorsal sepal 8 × 4.5 mm, concave-cucullate, ovate-elliptic, obtuse, 3-veined, ciliate along margins and externally along 3 thickened ribs. Lateral sepals 8 × 3 mm, obliquely elliptic, obtuse, 1-veined, ciliate along margins. Petal 8 × 1.8 mm, oblong-lanceolate, rounded at apex, 2-veined, ciliate along margins. Lip fleshy, 3-lobed above basal 1.9 mm; middle lobe 4.5 × 1 mm, oblong-ligulate, obtuse, with two elevated plates at base;

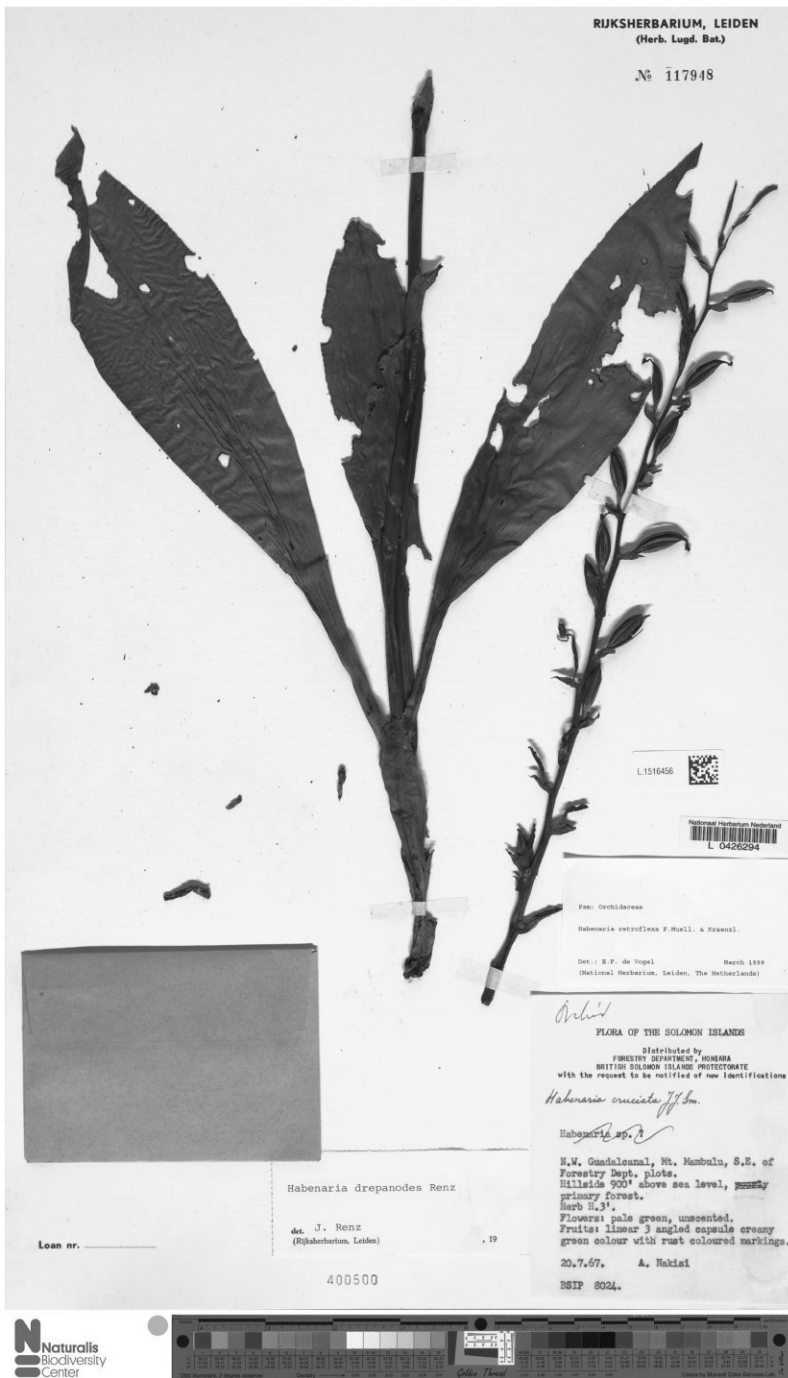


Fig. 2. Isotype of *Habenaria drepanodes*. Courtesy of the National Herbarium of the Netherlands, Naturalis Biodiversity Center (L).

lateral lobes 9×2 mm, falcate, oblong, subacute. Spur 23 mm long, filiform in basal third, swollen above. Gynostemium 3 mm long, short and massive. Anther erect, 2-chambered, chambers paral-

lel, elongated at base into short antherophores. Auriculae small. Stigma bilobed, both lobes forming stigmaphores 1.2 mm long. Rostellum 3-lobed, middle lobe concave, obscure, adnate to

ventral surface of connective, lateral lobes short, fused with antherophores. Fruit a 3-ribbed capsule, $20\text{--}22 \times 5\text{--}7$ mm, erect to subporrect.

DISTRIBUTION AND HABITAT: Known exclusively from the Solomon Islands, where it was found growing at an altitude of about 900 m a.s.l. in primary forest. Flowering occurs in July.

Habenaria drepanodes resembles *H. retroflexa*, but the two species may be easily distinguished based on the lip shape. In *H. drepanodes*, the middle lobe is half shorter than the lateral ones and it is ornamented with two elevated plates. In *H. retroflexa*, the lip lobes are nearly equal in length and there is no ornamentation on the middle lobe (Fig. 3). An additional difference between the species is the ratio between ovary and floral bract length. In *H. drepanodes*, the floral bracts are broadly lanceolate and nearly equal in length to the ovary and pedicel. In *H. retroflexa*, the floral bracts are broadly ovate, usually half of the length of the ovary with pedicel, or shorter; rarely the bracts in the basal part of the raceme are longer.

The habit of *H. bougainvillae*, *H. cruciata*, *H. rechingeri* and *H. torricellensis* is similar to *H. drepanodes*, but they may be identified by their floral characters. In *H. cruciata*, known from New Guinea, the lateral lobes of the lip are slightly shorter and narrower than the middle lobe, the spur is ciliate and the petal is broadened and auriculate at the base. In another species from New Guinea, *H. rechingeri*, the lip lobes are nearly equal in length and the lateral lobes are linear-ligulate, not falcate. *Habenaria torricellensis* is easily distinguished from the other taxa by the larger flowers, ciliate lip, nearly equally long lip lobes, and linear-ligulate rather than falcate lateral lobes. *Habenaria bougainvillae* from the Solomon Islands has the leaves distributed in the basal third of the plant. Its lip lobes are nearly equal in length and the lateral lobe are linear-ligulate.

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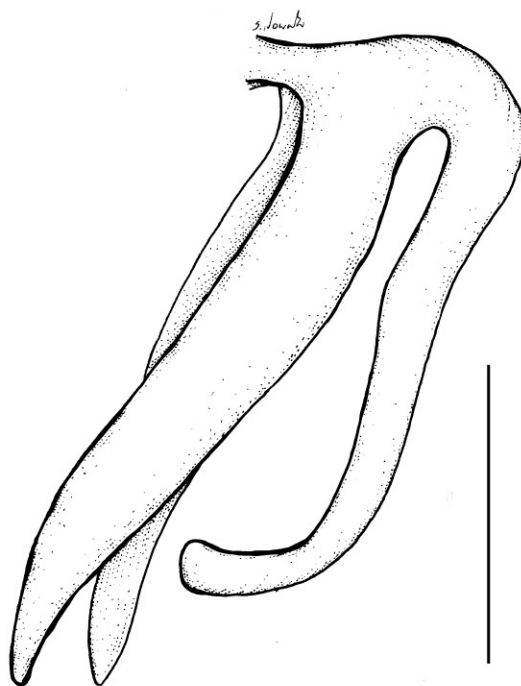


Fig. 3. *Habenaria retroflexa* (redrawn by S. Nowak from J. Renz's drawing based on Dennis 2002, K). — Lip. Scale bar = 3 mm.

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