

**A NEW VARIETY OF
NEPENTHES REINDWARDTIANA MIQUEL
FROM KALIMANTAN, BORNEO**

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A detailed description of *Nepenthes reindwardtiana* Miquel is provided, and its distribution is reviewed. One new variety, *N. reindwardtiana* var. *samarindaiensis* Adam & Wilcock, from Kalimantan in Borneo is described.

INTRODUCTION

Nepenthes reindwardtiana is found in Borneo and Sumatra. There are reports that the species is found in the Malay Peninsula (Macfarlane, 1908; Danser, 1928; Holttum, 1940; Kurata, 1976; Shivas, 1984; Som, 1988; Phillipps & Lamb, 1988). Macfarlane (1908) reported the occurrence of the species in the Malay Peninsula based on Wallich's specimens no. 2244 and a specimen collected by Hullet which is deposited in SING. The microfiche of Wallich's specimen no. 2244 in E consists of two different species, *N. gracilis* Korthals and *N. albomarginata* Lobb ex Lindley. Hullet's specimen in SING collected in 1893 has an ambiguous label, particularly with reference to the locality where it was collected, written as "Luiggi in Pahang". According to Danser (1928) this specimen was collected from Lingga in Pahang.

We believe that Hullet's specimen was collected from Mt Dai in Lingga, off the east coast of Sumatra. Van Steenis (1950) mentioned that Hullet went on an orchid trip for Ridley to Mt Dai in Lingga in 1893, which agrees with the label on the specimen. The occurrence of the species in the Malay Peninsula reported by Macfarlane (1908) and Danser (1928) has been erroneously followed or adopted by other authors in later years. Holttum (1940) mentioned the doubtful occurrence of the species in the Malay Peninsula, and he did not see any specimen of the species in SING. Likewise, Shivas (1984) and Som (1988) failed to locate any specimens of the species from the Malay Peninsula, Green (1967) reported the absence of the species from the island of Singapore, although according to her it has been reported there in the past. Danser (1928) mentioned with uncertainty the occurrence of *N. reindwardtiana* in Celebes.

Nepenthes reindwardtiana Miquel, Pl. Jungh. 168 (1852); Miquel, Flora Ned. Ind. 1(1): 1075 (1858); Hook. f. in Trans. Linn. Soc. Lond. 22: 422 (1859); Miquel, Ill. fl. Archip. Ind. 4 & 8, t.IV (1870); Beck, Wiener Illustrierte Gartenzeitung 189 (1895);

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Macfarlane in Engler, *Pflanzenr.* 4(3), Heft 36: 50 (1908); Danser in *Bull. Jard. Bot. Buitenzorg* 9(3), LIVR 3-4: 363-366 (1928); Kurata, *Sabah National Parks Publication* 2: 65-68, t.22 (1976).

Type: Sumatra, Batak regions, Pager - utang, alt. 2000ft, September, 1840-1841, *Junghuhn* s.n. (HART 000274) (syntype, n.v.); Batak region, Simur - wasos, alt. 4500ft, 1840-1842, *Junghuhn* s.n. (HART 000273) (syntype, n.v.).

Stem scrambling or climbing up to 6m. *Upper stem* sharply triangular, 2-7mm thick; internodes 1.5-10.5cm. *Leaves* sessile; lamina lanceolate, 6.5-18 x 1.7-4.8cm; apex acute; base decurrent; pennate nerves distinct, irregularly reticulate and running obliquely towards the margin, longitudinal nerves (0-)2-3(-4) on each side and originating from the lower $\frac{2}{3}$ of the midrib at different levels; tendrils 1.5-31cm long; pitcherless tendrils shorter than the lamina; tendrils bearing pitchers longer than the lamina. *Lower stem* triangular. *Leaves* sessile; lamina linear lanceolate or oblanceolate, 5-17 x 1-4.8cm; apex acute; base attenuate, decurrent; longitudinal nerves and pennate nerves as the upper leaves; tendrils 3.5-11cm long. *Upper pitcher* tubulose above, ventricose or infundibulate below, 7-24.5cm high, anteriorly with 2 prominent ribs; mouth ovate, 3.2-6 x 2.5-5.2cm, oblique; peristome cylindrical, 1mm thick; peristome ribs and teeth obscured; inner pitcher cavity glandular in the lower ventricose or infundibulate part, glandless and waxy with 2 spots in the upper tubulose part; lid orbiculate-elliptic, base slightly cordate, 1.5-5.7 x 1-5.2cm, glandular crest absent, densely glandular below; spur simple, 1.5-4mm long. *Lower pitcher* like the upper pitcher, tubulose above ventricose below, 7-14cm high, with 2 prominent ribs 0.7-2.3cm apart; mouth ovate, oblique, 1-2.7 x 1-4.8cm; lid 1.5-5.1cm x 1.6-5.6cm; spur 2-7cm long. *Male inflorescence* racemose, 23-56cm long; peduncle 5-15cm long; rhachis 13-36cm long with 81-215 flowers; pedicels 3-34mm long, bractless, 2-flowered or partly 1-flowered above; sepals 4, elliptic, 3-5 x 2-3.5mm, glandular above; staminal column 2-7mm long, anthers 1-2.5mm thick. *Female inflorescence* 24-30cm long; peduncle 13-15cm long; rhachis 11-15cm long; pedicels 6-24mm long, commonly 2-flowered, bractless; sepals 4, elliptic, 4-5 x 1.5-2mm; ovary 25-40 x 1.5-2.5mm. *Infructescence* 24.5-40cm long; rhachis 12-24.5cm long; pedicels 5-20mm long, bractless, commonly 2-fruited; sepals 4, oblong-elliptic, 2.5-3.5 x 1-1.5mm; fruits capsular, dehiscent, 50-48 x 2-5mm; seeds filiform, 14-30mm long, nucleus transversely wrinkled.

Distribution: Borneo, Sumatra, Moluccas (?). Altitudinal Range: 0-1200m.

Specimens examined.

SARAWAK: Lawas Kayangaran Forest Reserve, alt. 0m, *Anderson* 78 (SAR); Bario, path to Pa' Ukut, alt. 1020m, 1 vii 1963, *Anderson* S20230 (L, SAR); Ulu Tiau, Hose Mts, 1000m, 27 iii 1964, *Asah* S21201 (L, SAR); Nanga Pengiran, Balleh, alt. 140m, 17 iii 1964, *Ashton* S121103 (SAR); Pelagus Rapid, 9 vii 1962, *Burt & Woods* B2564 (SAR); Bako National Park, Tg. Paku Cliff, 24 iv 1959, *Carrick & Enoch* JC169 (SAR); Bako National Park, Telok Asam, alt. 0m, 28 iv 1959, *Carrick & Enoch* JC308 (SAR); Upper Rejang River, alt. low, 6 vii 1929, *J. & M.S. Clemens* 21529 (L); Bako National Park, Telok Asam, alt. 0m, 21 v 1956, *Purseglove* P5063 (K, SAR); Sg. Bena, Kapit, alt. 30m, 28 xii 1962, *Smythies* S17162 (K, SAR); Bako National Park, south side of Teluk Asam, alt. 0m, 21 iii 1963, *Smythies* S15328

(SAR); Baram, Mt Dulit, alt. c.1300m, 19 ix 1932, *Synge* 528 (L); Bako National Park, alt. 15m, 17 viii 1969, *Tan* S28830 (SAR).

SABAH: Sandakan, Mt Walker, 30 v 1972, *Aban* SAN 75936 (K, SAN); Lamag Ulu Sg. Lokan, 6 xi 1979, *Aban & Petrus* SAN 90659 (K, SAN, SAR); Sg. Meliau, Telupid, 14 vi 1976, *Cockburn & Richards* SAN 82498 (K, SAN); Mt Tribulation, alt. 840m, 18 viii 1976 *Cockburn* SAN 84962 (SAN); Mt Tribulation, alt. 600m, 16 viii 1976 *Cockburn* SAN 84882 (K, SAN); Mt Mabuak, alt. 600–720m, 20 x 1975, *Cockburn* SAN 82534 (K, SAN); Bukit Tangkunan, alt. 150m, 19 vii 1980, *Dewol* SAN 92403 (K, SAN); Karamuak, Bt. Tinker, alt. 240m, 10 vi 1983, *Dewol* SAN 96682 (SAN, SAR); Mamut, alt. 1100m, 23 ii 1987, (UKMS); *Jumaat* 1090, 1191 UKMS; Mamut, alt. 1100m, 21–22 viii 1987, *Jumaat* 1173, 1177, 1178, 1185 (UKMS); Mamut, alt. 1200m, 21 i 1988 *Jumaat* 2429 (UKMS); Mile 20, K. Kinabalu–Tambunan, 31 i 1988 *Jumaat* 2433 (UKMS); Mt Wakid, alt. 960m, 31 i 1988 *Jumaat* 2434 (UKMS); Mt Silam, alt. 520–650m, 6 ii 1988, *Jumaat* 2468 (UKMS); Telupid, Kpg. Bauto-Gambaran, alt. 150m, 9 ii 1988, *Jumaat* 2478 (UKMS); Mamut, alt. 1400m, 10 ii 1988, *Jumaat* 2481 (UKMS); Foot of Mt Tawai, alt. c.100m, 22 x 1968, *Kokawa & Hotta* (L); Sandakan, 14 i 1950, *Kadir* A2754 (L); Ulu Long Pasia, alt. 1290–1320m, mid x 1985, *Lamb* AL FB 25/83 (K); Mile 113 Telupid-Ranau Rd, alt. 240m, 15 viii 1979, *Leopold* SAN89205 (K, SAN, SAR); Tawau, Summit Mt Lucia, Tawau River Forest Reserve, alt. 1160m, 29 ix 1960, *Meijer* SAN 22698 (K, SAN); Berhala Island, alt. 480m, 2 viii 1959, *Meijer* SAN19299 (SAN).

KALIMANTAN: Berouw, top of the Mt Ilas Mapulu, alt. 240m, 23 ix 1957, *Kostermans* 14042 (L); South Borneo, Sampit Region Kuala Kuanjan, 28 vii 1953, *Kostermans* 7992 (L).

Nepenthes reindwardtiana, described by Miquel in 1852, was based on the specimens collected by Junghuhn from Sumatra. It is very closely related to *N. gracilis* Korthals by the sessile leaves, decurrent lamina base, and triangular stem. It differs from *N. gracilis* by the presence of 2 round non-pruinose spots [the term used by Danser (1928)] on the backside of the waxy non-glandular surface of the pitcher; pedicels commonly 2-flowered.

A few specimens from Kalimantan, named below as var. *samarindaiensis*, possess non-decurrent leaves and bear a superficial resemblance to *N. tobaica* Danser, a species also described from Sumatra. A comparison of the diagnostic characters of the two species was given by Danser (1928) as in Table 1.

Table 1. Diagnostic characters of *N. reindwardtiana* and *N. tobaica*, as given by Danser (1928).

	<i>N. reindwardtiana</i>	<i>N. tobaica</i>
Leaf base	decurrent	non-decurrent
Upper pitcher	always without wings	often with wings
Lower pitcher	mostly without wings	always with wings
Peristome	often indistinctly ribbed	often distinctly ribbed
Longitudinal nerves	c.3	4–7
Lower pedicels	12–25mm	3–10m
Pruinose spots	present or absent	absent

Apart from the non-decurrent lamina base, the Kalimantan specimens fall within the range of *N. reindwardtiana* in all other characters of Table 1.

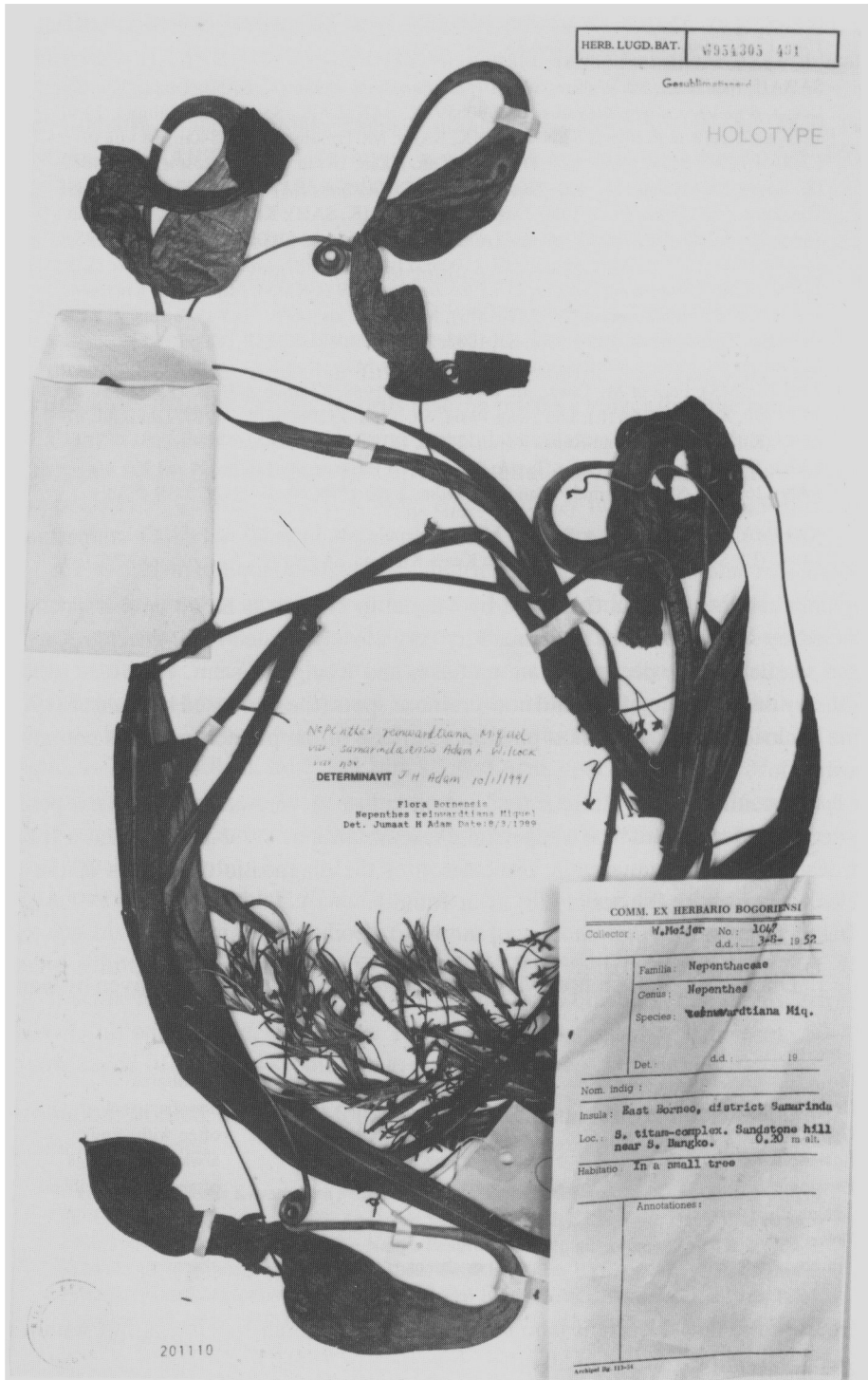


FIG. 1. *Nepenthes reinwardtiana* Miquel var. *samarindaiensis* Adam & Wilcock. Upper stem with pitchers and infructescence. (Meijer 1047, L.)

N. reindwardtiana Miquel var. ***samarindaiensis*** Adam & Wilcock, var. nov. **Fig. 1**
Type: East Borneo [Kalimantan], District Samarinda, S. Titan Complex, alt. 20m, 3 viii 1952, *Meijer* 1047 (holo. L, iso. K).

Differt a *Nepenthes reindwardtiana* Miquel var. *reindwardtiana* caule superiore cylindrico cum basi foliorum non-decurrente.

This variety differs from *N. reindwardtiana* Miquel var. *reindwardtiana* by its cylindrical (not triangular) upper stem and non-decurrent lamina base.

Specimens examined:

KALIMANTAN: West Kotei, alt. 0–20m, 21 vi 1925, *Endert* 1579 (K). District Samarinda: S Titan Complex near the coast along Sg. Bangko, 3 viii 1952, *Meijer* 1035 (L); Bangamassing, 1857–1858, *Motley* 616 (K, L).

The drawing of *N. reindwardtiana* in Miquel (1870) shows a specimen with non-decurrent leaves. Without information on the stem type it is not possible to determine whether the figured plant belongs to var. *samarindaiensis* or is closer to the type variety.

ACKNOWLEDGEMENTS.

We wish to thank Universiti Kebangsaan Malaysia, Department of Plant & Soil Science, University of Aberdeen, Sabah Parks for financing this project; various herbarium curators (BO, K, L, SING, SAN, SAR, UKMS, UKMB and E) for the use of the specimens; Mr T.E.V. Pearce of Classics Department, University of Aberdeen for the Latin diagnosis; Mr N. Little for the photograph; Mr Julaihi Haji Adam & En. Aliosman Mahdi for field assistance.

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