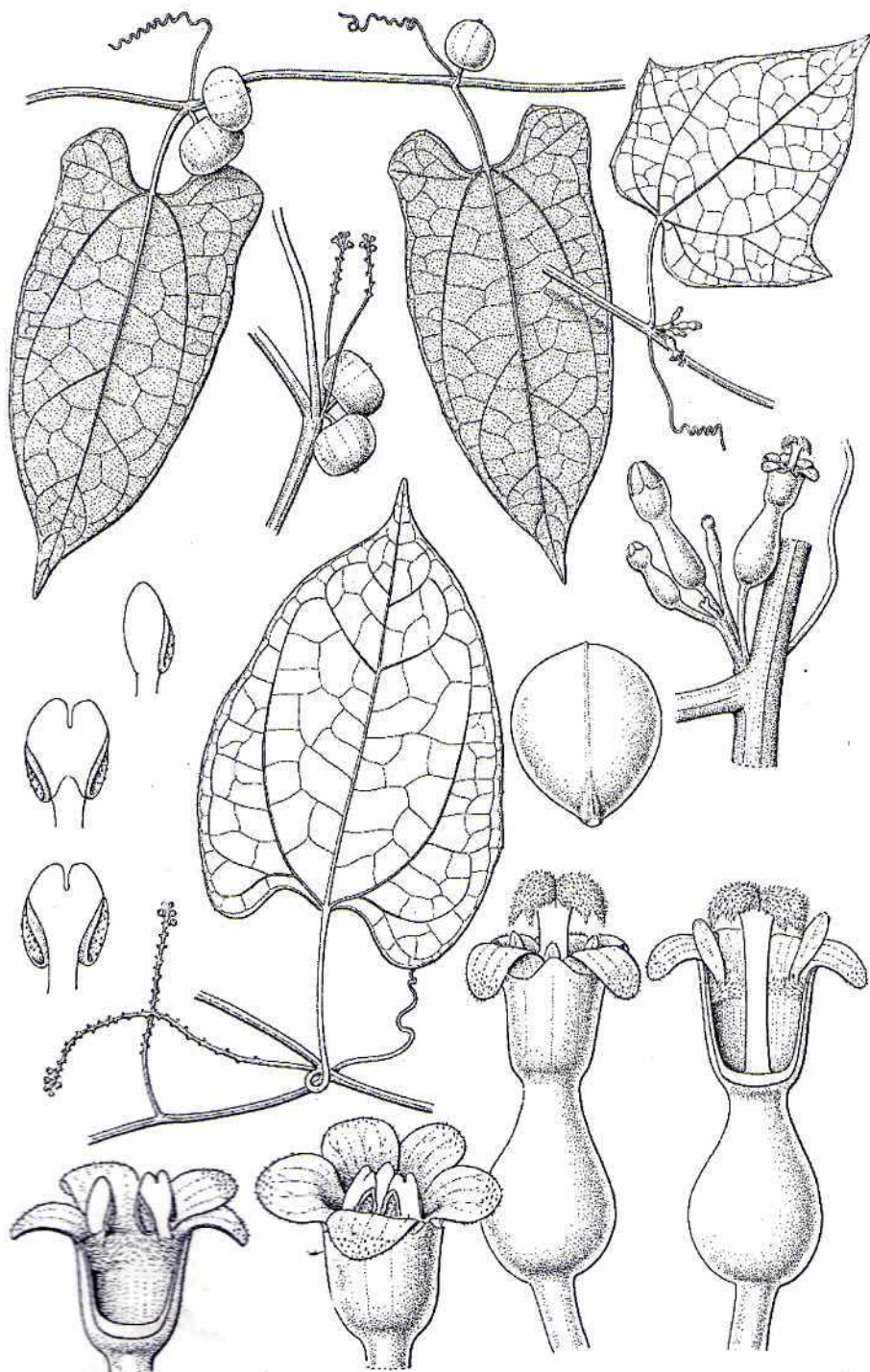




A JOURNAL ON TAXONOMIC BOTANY,  
PLANT SOCIOLOGY AND ECOLOGY



# REINWARDTIA

12(2)

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*A JOURNAL ON TAXONOMIC BOTANY,  
PLANT SOCIOLOGY AND ECOLOGY*

Vol. 12(2): 129-204.22 November 2004

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Editors

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## A NEW SPECIES OF NEPENTHES (NEPENTHACEAE) FROM SUMATRA

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### ABSTRACT

AKHRIADI, PITRA, HERNAWATI & TAMIN, RUSJDI. 2004. A new species of *Nepenthes* (*Nepenthaceae*) from Sumatra. *Reinwardtia* 12 (2): 141 – 144. — A New Species of *Nepenthes rigidifolia* is described.

Keywords: *Nepenthes*, *Nepenthaceae*, Sumatra

### ABSTRAK

AKHRIADI, PITRA, HERNAWATI & TAMIN, RUSJDI. 2004. Jenis baru *Nepenthes* (*Nepenthaceae*) dari Sumatra. *Reinwardtia* 12 (2): 141 – 144. — Telah dipertelakan satu jenis baru *Nepenthes rigidifolia*.

Kata kunci: *Nepenthes*, *Nepenthaceae*, Sumatera

### INTRODUCTION

Sumatra is the second island after Borneo that has the highest diversity of *Nepenthes*. Clarke (2001) found 29 species of *Nepenthes* in Sumatra Island that had been distributed on lowland until montane forest. Eight of them occurred in upper montane forest only and nine others occurred in both of upper and lower montane habitats.

This study found 24 species of *Nepenthes* in Sumatra, 12 natural hybrids, three doubtful species and a new species (Team, 2004). The study areas was Sumatra Island, excluded Nanggroe Aceh Darussalam Province that's caused regional conflict over there.

***Nepenthes rigidifolia*** Akhriadi, Hernawati & Tamin, *spec. nov.* – Fig.1.

Folia sessilia crassa rigide coriacea laminis ovatis ad spatulato-oblongis 17.8–20.2 cm longis 5.6–7.8 cm latis venis longitudinalibus 3 vel 4, cirrho subapicali 0.3–0.9 cm infra apicem inserto, ascidium superius ovoidissimum 20.7–21.1 cm altum 7.2–9.4 cm latum, peristome expanso 2.2–4.4 cm lato, ambobus lateris 4-lobatis antice incisura, collifero, operculo ovato, calcare trifido, intus pubescenti, inflorescentiae pedunculus rami pedicelli bracteoli tepali filamenta pubescentes, pedunculus c. 4.2 cm longus, ramis 0.4–0.5 cm longis, pedicelli 0.5–0.6 cm longis bifloris. — Typus: Sumatra Utara, Kab. Karo, around Sidikalang areas, 1000–1500 m, Dec 11, 2003, *Nepenthes Team* (Hernawati, P. Akhriadi & I. Petra), NP 354 ('ANDA'-Holo, BO-Iso).

Stem of the rosette and lower part: rosette 30 cm length, cylindrical, 0.8 cm in diam., internodes 0.5 cm long. Stem of the middle part: similar to those of the rosette and the lower part, but erect 100–150 cm length, 1–1.3 in diam., internodes 1.2–2.1 cm long. Stem of the upper part: similar to those of the rosette and the middle parts, but climbing 100–200 cm, 0.6–1.1 cm in diam., internodes 3.2–5.1 cm long, sometimes having a spine-like on node above. Leaves of the rosette and the lower pitcher: thick and stiff coriaceous, sessile, ovate or spatulate-oblong, 8.5–10 cm long, 3.5–4 cm broad; gradually attenuate towards the base, clasping and decurrent the stem for 2/3 its diameter; midrib flattened above and raised beneath; longitudinal veins 2 each sides of the midrib, distinct above and indistinct beneath; pinnate veins distinct above and indistinct beneath; apex obtuse-rounded; margin entire; tendril insertion sub-apical and having a wide 0.3–0.4 cm from the apex, 11.5–13 cm long. Leaves of the middle part: similar to those of the rosette and the middle part, but spatulate-oblong, 19.1–20.8 cm long, 7–7.6 cm broad; longitudinal veins 4 each sides of the midrib; tendril have wide 0.5–0.9 cm from the apex, having a loop-like, 23.6–27.2 cm long. Leaves of the upper part: similar to those of the rosette and the middle parts, but 17.8–20.2 cm long, 5.6–7.8 cm broad, clasps the stem for 1/2–2/3 its diameter; midrib sunken or flattened above; longitudinal veins 3–4 each sides of the

midrib, distinct above and rather distinct beneath; apex obtuse-acute; tendril have a wide 0.4–0.6 cm from the apex, having a loop-like or not, 27.2–32.1 cm long. Rosette and lower pitchers: broad ovoid, 9.6–15 cm high, 4.4–6.4 cm wide, contracted 0.2–0.9 cm wide at the base; glandular zone extended  $\frac{1}{2}$  of the pitcher high from base, ovoid then broad ovoid at the upper; two wings 0.1–0.2 cm broad that extended down from the edge of the mouth to 1.5–2 cm the mouth below, with fringed hairs 0.3–0.5 cm wide; mouth oblique, elliptic-ovate, having neck, 3.8–6.7 long, 2.6–4.7 cm broad; peristome expanded outwards 0.6–2.1 cm broad besides, 2 lobes each sides, contracted in front to 0.7 cm broad then having a notched in front 1.1 cm long, innerside incurved, teeth 0.05–0.1 cm long; lid elliptic-ovate, 4–5.2 x 2.5–3.5 cm, base cordate, apex acute-obtuse, longitudinal veins 3 each sides; concentrated nectar gland on beneath surface at the lip middle, circular-slightly ovate,  $\leq 0.01$  cm in diam.; spur 0.3–1.2 cm long, insertion 0.2 cm sub-apical of the neck, trifid then insertion one 0.3 cm long sub-apical of the spur. Middle pitchers: all other parts similar to those of rosette and lower pitcher, but 17.1–20.4 cm high, 7.8–8.5 cm wide, glandular zone slightly infundibular and expanded broad ovoid at the middle then slightly ovoid at the upper; wings slightly reduced to ribs 0.1 cm broad without fringed hairs; peristome expanded outwards 2.1–2.9 cm broad besides, contracted in front to 1.9–2.4 cm broad then having a notched in front 2.4–2.8 cm long; teeth 0.05–0.1 cm long; lid ovate, 7.1–7.7 cm long, 4.5–5.2 cm broad with nectar gland  $\leq 0.01$  in diam.; spur 1.2–1.6 cm long, insertion one 0.2–0.3 cm long sub-apical of the neck. Upper pitchers: all other parts similar to those of middle pitchers, but 20.7–21.1 cm long, 7.2–9.4 cm broad; mouth expanded outwards 2.2–4.4 cm broad besides, 4 lobes each sides contracted in front to 0.9 cm broad then having a notched in front 3.9–4.7 cm long; lid 5.9–7.9 cm long, 3.9–5.6 cm broad, nectar gland beneath circular or slightly ovate  $\leq 0.01$  cm in diam.; spur 1–1.6 cm long, 2 branches that a branch with bifid, insertion one 0.3–0.4 cm long sub-apical of the neck. Male flowers: a raceme, rachis 3.9 cm long, peduncle 4.2 cm long; bractea 0.9 cm long, 0.4 cm broad at the middle; peduncle branch 0.4–0.5 cm long, pedicels 0.5–0.6 cm long, 2-flowered; bracteole filiform, 0.1–0.2 cm long near the base; tepal ovate-oblong, 0.4–0.5 cm long, 0.2–0.3 cm broad; filament 0.4 cm long, staminal column 0.1 cm in diam. Female flower: not found. Indumentum of the rosette and the middle part:

tendril pubescent near the pitcher base, buds of the pitcher densely pubescent, glandular zone of the pitcher pubescent and densely pubescent on the upper, wings with fringed hairs pubescent. Indumentum of the upper part: tendril densely pubescent near the pitcher base, buds of the pitcher tomentose, developing pitcher tomentose, lid glabrous or pubescent especially at developing pitcher. Peduncle slightly pubescent; peduncle branches, pedicels, bracteole, tepal, filament densely pubescens. Colour of Herbarium Specimen: Stem blackish, leaves above young brown and dark brown beneath, pitcher blackish brown with dark brownish blotches, lid blackish. Colour of living specimen: Stem green, leaves green, pitcher blackish brown with greenish white blotches, peristome blackish for rosette and dark reddish orange for upper, lid black with greenish blotches.

DISTRIBUTION. North Sumatra.

HABITAT. Terestrially in lower montane forest at about 1000–1500 m a.s.l.

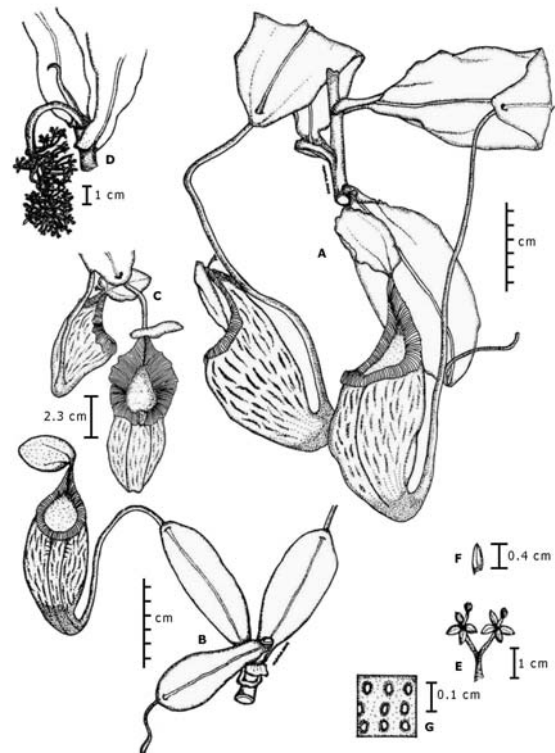


Figure 1. *Nepenthes rigidifolia* Akhriadi, Hernawati & Tamin (A) Habit and upper pitchers (B) Lower pitchers (C) Inflorescences (D) Male flower (E) Tepal (F) Nectar gland on the lid beneath (Nepenthes Team (Hernawati, P. Akhriadi & I. Petra) NP 354).

VERNACULAR NAMES: North Sumatra: Tahul-Tahul (Karo).

DERIVATION. The specific epithet *rigidifolia* refers to stiff coriaceous texture of this species leaves.

NOTES. The characters of this species looks very similar with *Nepenthes* spA that noted by Clarke (2001). This species had been found in Karo Region of North Sumatra. It's common terrestrial well on the ground. In observation, it's habitat on the rock in the lower montane forest. Their habitat is potentially to disappear caused by land clearing. We only found one single population and twenty-four mature plants. Tragically, the species have potentially to disappear.

In the Table 1. species that seem to be closely related to *Nepenthes rigidifolia* are compared. Characteristic clearly distinguishing *Nepenthes rigidifolia* from *Nepenthes bongso*, *Nepenthes ovata* and *Nepenthes spectabilis* was shown in Table 1.

Tabel 1. Comparison of characters between *N. rigidifolia* with *N. bongso*, *N. ovata* and *N. spectabilis*.

Characters	<i>N. rigidifolia</i>	<i>N. bongso</i>	<i>N. ovata</i>	<i>N. spectabilis</i>
<b>Leaves</b>				
Texture	Thick and Stiff Coriaceous	Coriaceous	Thin coriaceous	Thin coriaceous
Shape	Ovate or spatulate-oblong	Spathulate-lanceolate	Spathulate-lanceolate	Lanceolate
Insertion	Sub-apical	Sub-apical	Apical	Apical
Distance from the apex	0.3-0.6 cm	0.5 cm	No	No
<b>Lower Pitcher</b>				
Shape	Broad ovoid	Narrower ovoid	Ovoid	Ovoid
Size	10 x 6 cm	29 x 8 cm	17 x 7	13 x 5 cm
Mouth	2 lobes and have neck	4 lobes	4 lobes	No lobes
Spur	Trifid	Bifid	Unbranched	Unbranched
<b>Upper Pitcher</b>				
Shape	Broad ovoid	Infundibuliform	Infundibuliform	Long and narrower cylindrical
Flower	2-flowered	1-flowered	1-flowered	2-flowered
Pitcher	Pubescent	Pubescent	Glabrous or pubescent	Pubescent
Color of the Pitcher (lower part)	Blackish brown with greenish white blotches	Blackish or reddish	Greenish yellow or red	Blackish brown with greenish blotches

## SPECIMEN EXAMINED

*Nepenthes rigidifolia*: Nepenthes Team (Hernawati, P. Akhriadi & I. Petra), Sumatra Utara, Kab. Karo, around Sidikalang areas, 1000-1500 m a.s.l., Dec 11, 2003, NP 354 ('ANDA'-Holo, BO-Iso).

*Nepenthes bongso*: Nepenthes Team (Nurainas, Hernawati, P. Akhriadi, F. Atmaja, I. Salputra, B. Parsito B. & S. Kurniawan), NP 28, West Sumatra, Padang, a trip to Mt. Gadut, 1500 – 1800 m a.s.l., August 12, 2001 ('ANDA'); Nepenthes Team (Hernawati, P. Akhriadi, A. Ardianto, M. Ismail M. & E. Pranata), NP 78, West Sumatra, Solok, Talang Babungo area, 1300-1950 m a.s.l., October 21, 2001 ('ANDA'); M. Hotta, R. Tamin, H. Okada & Syamsuardi, 61, West Sumatra, Mt. Gadut, 1700 m a.s.l., 15/8/1984, 42 (BO, 'ANDA'); Bünnemeijer, 5521, West Sumatra, Gn. Talang, 7/1/1918, (BO).

*Nepenthes ovata*: Nepenthes Team (Hernawati, P. Akhriadi & I. Petra), NP 373, NP 377, Sumatra Utara, Kab. Toba Samosir, G. Pangulubao, 1500-2100 m a.s.l., Dec 16, 2003 ('ANDA').

*Nepenthes spectabilis*: Nepenthes Team (Hernawati, P. Akhriadi & I. Petra), NP 348, NP 349, Sumatra Utara, Kab. Karo, G. Sibajak, 1700-2000 m a.s.l., Dec 09, 2003 ('ANDA'); NP 351, G. Sinabung, 1900-2100 m a.s.l., Dec 10, 2003 ('ANDA'); NP 375, Kab. Toba Samosir, G. Pangulubao, 1500-2100 m a.s.l., Dec 16, 2003 ('ANDA'); J. A. Lorzing, 8297, Sumatra, G. Sibajak, 1800-1900 m a.s.l., 5/6/1920, 7308 (BO-Lectotype); 23/01/1921 (BO).

## ACKNOWLEDGEMENT

The authors would like to express their gratitude to BP Conservation Programme with the Expedition ID 1455 for financial support during their survey in Sumatra Island. They are grateful to Dr. Charles Clarke who suggested to conduct this study in the field. They wish to thank Dr. Irawati of Bogor Botanic Garden and Dr. E. A. Widjaja, Dr. Nanda Utami, Himmah Rustiami, MSc of Herbarium Bogoriense for their support and discussion about this study, also the keeper of Herbarium Bogoriense for using the specimen during the study. Thank to Dr. J.F. Veldkamp (L) provided the latin diagnosis, and also Deden Girmansyah for his help.

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ISSN 0034-365 X

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