

## *Nepenthes pitopangii* (Nepenthaceae), a New Species from Central Sulawesi, Indonesia

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### Abstract

A new *Nepenthes* species, *N. pitopangii*, from Sulawesi Tengah, is described.

### Introduction

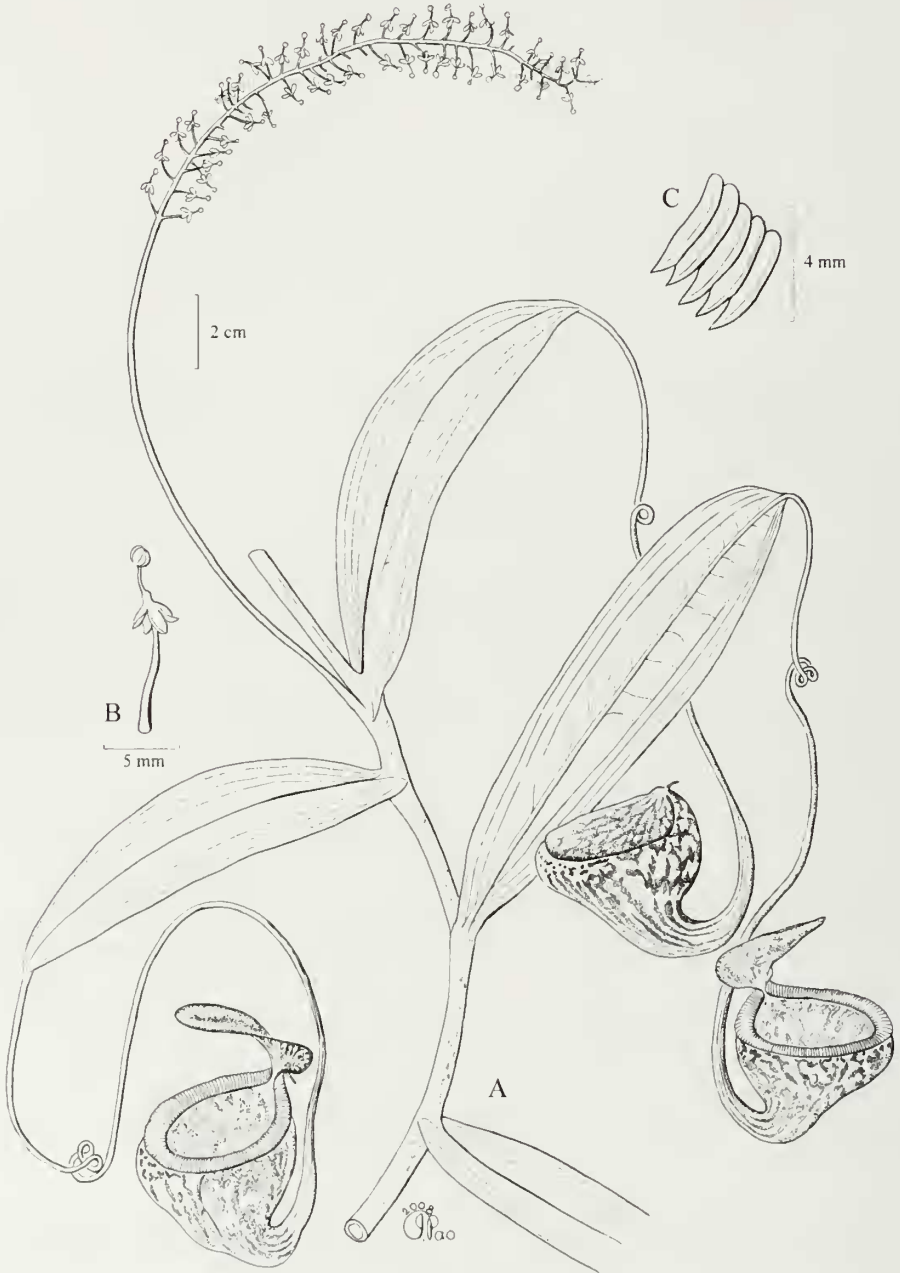
Cheek and Jebb (2001) recognised eight species of Nepenthaceae for Sulawesi, of which four species are endemic. These numbers are comparatively low compared to the neighboring island of Borneo, where there are more than 30 species, of which 70% are endemic. The lack of species richness in Nepenthaceae in Sulawesi is yet to be examined in detail, but may be due to a combination of biogeographical and ecological factors, or simply a lack of detailed botanical exploration of the island.

In 2006, photos by Jonathan Newman of an unidentified taxon of *Nepenthes* from Central Sulawesi, which were not readily assignable to any presently known species, first appeared on the internet (<http://www.cpkforum.com/forum/index.php?showtopic=17326&hl=>). Field visits to the site in 2007 (S. McPherson and G. Bourke) and in 2008 (C. Lee and S. McPherson), and examination of herbarium materials at Universitas Tadulako, Palu (CEB) indicated that this plant represents a new species of *Nepenthes*, which we describe below. The description that follows combines measurements taken from the herbarium specimens at Universitas Tadulako (which are sterile), with measurements of the inflorescence made from living material in the field.

*Nepenthes pitopangii* Chi.C. Lee, S. McPherson, G. Bourke & M. Mansur, *spec. nov.*

*Nepenthi glabratae similis sed ascidiorum superiorum infundibuliformium*

*alis reductis* differt – **Holotypus:** Lore Utara District, Poso Regency, Central Sulawesi, 30 May 2007, RP 2054 (CEB). **Fig. 1.**



**Fig. 1.** *Nepenthes pitopangii*. A. Climbing stem with upper pitcher and male inflorescence; B. Male flower; C. Peristome teeth. All from living specimens. (drawing by Joseph Pao).

Terrestrial **climber** to *ca* 2 m tall. Climbing **stems** cylindrical to slightly triangular in cross-section, particularly towards the developing shoot, 3-5 mm diam., internodes (4.1-) 6.4-9 cm long. **Leaves** of the climbing stems chartaceous, sessile, lanceolate, apex acute, (10.1)11.5-14.4 (15.6) cm long, (2)2.5-2.9 (3.4) cm wide; base clasping stem for about 2/3 its circumference; longitudinal veins 3-4 on each side of the midrib, pennate nerves inconspicuous; tendrils with a curl in the middle, 24-25 cm long. Rosette **pitchers** unknown. Upper pitchers wholly infundibuliform, 3.8-4.5 cm high, 3.3-3.7 cm wide, slightly contracted just below the mouth; pitcher mouth horizontal in front and slightly elevated towards the lid attachment; **peristome** cylindrical, 1-3 mm wide, with distinct ribs, *ca* 0.45 mm apart, each rib terminating in a blunt rounded tooth on the inner margin; interior of pitcher without waxy zone, glandless immediately below peristome (*ca* 4 mm), otherwise evenly covered with glands *ca* 200 per cm<sup>2</sup>, yellow in color above pitcher fluid, black in color where immersed; lid suborbicular, 2.9 by 2.8 cm, held horizontally over pitcher mouth, sides somewhat raised, lower surface without appendages, evenly distributed with small crater-like rimmed glands; spur simple, *ca* 1.5 mm long. Male **inflorescence** (measurements taken from living specimens) a raceme, 37 by 2.5 cm; peduncle 18 cm long, 0.3 cm diam. at base, pedicels 7-9 (-11) mm long, each bearing a single **flower**, bracts usually absent but occasionally towards base of inflorescence pedicels with small filiform bract, *ca* 0.5 mm long inserted at about half the length of the pedicel, tepals elliptic, *ca* 2 mm long, staminal column 2.5-3.0 mm long. Female inflorescence and **fruit** unknown. **Indumentum** absent on all parts of plant except for the developing pitcher and tip of the tendril, which are covered with caducous silver-brown hairs. Color of living specimens: leaves light green with red margins and red midrib on upper and lower surface; stems dark red to purple with green spots; tendril red; upper pitchers pale yellow with orange-red stripes, interior of pitcher and underside of lid pale yellow; peristome orange-red.

*Habitat*: Secondary vegetation in submontane forest at an altitude of 1800 m.

*Distribution*: Lore Lindu National Park, Central Sulawesi.

*Conservation Status*: The geographical range of *N. pitopangii* is not yet established (see below). Although the population from which all collections and observations have been made consists of a single plant, it is unlikely that this species does not grow elsewhere. We therefore propose an IUCN Red List classification of "data deficient" (DD) until further detailed field surveys can be conducted.

*Notes:* This species has a number of characteristics in common with *N. glabrata* Turnbull & Middleton, another montane species from Central Sulawesi. These species share a similar leaf shape, pitcher lid, inflorescence, colouration and lack of indumentum in nearly all parts. They appear to be very closely related, but *N. pitopangii* differs in the unusual, widely infundibular upper pitchers, as well as being more robust in all parts. Communication with R. Pitopang, collector of the type specimen, confirmed that the specimens in CEB were collected from the same individual plant as the one on which the field observations were made by the present authors, this being the only plant at the type locality. Given that no other plants of *N. pitopangii* have been found to date, nothing is known about intraspecific variation within the taxon and the possibility that this plant is a natural hybrid cannot be ignored. However, we have discounted a hybridogenic origin for *N. pitopangii*, as it does not display any morphological characteristics that suggest one. All natural hybrids of *Nepenthes* recorded to date bear some obvious similarities to either parent, but although *N. pitopangii* is sympatric with *N. maxima* and *N. tentaculata*, it has little in common with these. The only other species in Sulawesi with infundibular upper pitchers are *N. maxima* and *N. eymae* and all known natural hybrids involving these bear petiolate leaves, triangular lids, and/or appendages on the undersurface of the lid (C. Lee, pers. observation), none of which are present in *N. pitopangii*. Moreover, the upper pitchers of *N. pitopangii* are more widely infundibuliform than those of *N. maxima* or *N. eymae*. Based on these observations, we have no doubt that *N. pitopangii* is not a natural hybrid.

Field observations in the surrounding area and nearby mountains (S. McPherson & G. Bourke in 2007 and C. Lee & S. McPherson in 2008) did not reveal any additional plants of *N. pitopangii*, despite the presence of extensive mossy forest in which *N. maxima* and *N. tentaculata* occurred. It is therefore presumed that the principal habitat for this species may be at lower elevations (below 1600 m) or perhaps, as with *N. glabrata*, it occurs in submontane to montane scrub on ultramafic outcrops. Many species of *Nepenthes* are opportunistic colonizers of disturbed areas, such as road embankments with seedling recruitment primarily taking place before the heavy growth of other plants. It is possible that the type specimen for this species originated from a stray seed that germinated in a habitat, which had only recently been cleared. The thick growth of ferns and other plants at this site would normally impede the successful growth of a *Nepenthes* seedling.

The phenology, ecology and geographical range of *N. pitopangii* is difficult to ascertain until more wild plants are discovered, but observation conducted at the type locality showed that prey items in the upper pitchers consisted primarily of small dipterans (particularly midges) and small numbers of other insects such as wasps, ants, earwigs, and beetles.

*Nepenthes pitopangii* represents an interesting contribution to the flora of Sulawesi, suggesting that more detailed explorations of the island may yield further insights into patterns of diversity and endemism in Nepenthaceae there, as well as further discoveries of new taxa. Detailed field observations on other populations of *N. pitopangii*, should these be found, will add greatly to our knowledge of this taxon.

This species is named for Dr. Rahmadanil Pitopang, curator of the herbarium of Universitas Tadulako, who has studied the flora of Central Sulawesi for over 18 years.

*Specimens of other species examined: -Nepenthes glabrata:* Res. Manado. O. aft. Poso. Tusschen. Biv. III N uitlooper. van G. Loemoet. 3 Sep 1938. *Eyma* 3585 (BO); E. Celebes. G. Loemoet. North Spur. 1938. *Eyma* 3585a (BO); Menádo O.A. Póso. Bózo-Póena. 1700-1800m. 10 Aug 1937. *Eyma* 1604 (BO). *-Nepenthes hamata:* Res. Manado. O. aft. Kolonedale, tusschen Tomongkobae. *Eyma* 3969 (BO); Gunung Loemut. *Eyma* 3573 (BO); Poso. Gunung Loemut. *Eyma* 3643 (BO); Tomongkobae. *Eyma* 3970 (BO); Gunung Poka Pindjang. *Kjellberg* 1492 (BO); Mt. Roroka Timbu, summit region, alt 2450 m. *Balgooy* 3335 (BO).

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