NEPENTHES SIBUYANENSIS, A NEW NEPENTHES FROM SIBUYAN, A REMOTE ISLAND OF THE PHILIPPINES

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Summary

A new species of Nepenthes from Mt. Guiniguindin on Sibuyan Island, Philippines is described and illustrated.

Introduction

In September 1996, Thomas Alt, Phill Mann, Trend Smith and Alfred Öhm started an expedition to some Philippine islands in search for Nepenthaceae. One of these was Sibuyan Island; it belongs to a group of small isolated islands located between the Northern islands of Luzon/Mindoro and the Southern islands of Cebu. At the centre of Sibuyan Island there is a high mountain named Mt. Guiniguindin with an altitude of 2057 m. Here three species of Nepenthaceae have been found. One of them, Nepenthes sibuyanensis, will be described in this paper; another one (N. argentii) was described recently (Jebb & Cheek, 1997).

Nepenthes sibuyanensis Nierz sp. nov.

Folia mediocria sessilis, lamina linearis-lanceolata, nervis longitudinalibus utrinque 5-6, basi in alas 2 decurrente, vagina 0.; ascidia mediocria v. media, ovata v. infundibuliformis, costis 2 prominentibus, nonnullum ad os rudimento alae ciliatae ornatam; peristomio operculum versus acuminato in collum breve elongato, applanato, 20 mm lato, costis 1.5 - 2 mm distinctibus, dentibus 5 x longioribus quam latis. Operculo ovato-cordato, facie inferiore plano; inflorescentia racemus parvus pedicellis 8 mm longis, omnibus 1-floris; indumentum in partibus vegetativis subnullum, in inflorescentiis densum adpressum, e pilis simplicibus compositum.

Holotypus: P. Mann & T. Smith, Mt. Guiniguindin, Sibuyan island, Philippines, 1300 m above sea level, growing between Dipteris and high grasses on open slopes, 5/10/1996, 051001(L)

Stems short, up to 0.7 m long, the part with adult leaves about 8 mm in diameter, cylindrical to asymmetrical in cross-section, the internodes 1-1.5 cm long. Leaves thin-coriaceous, sessile, linear-lanceolate or slightly spatulate, broadest little above the middle, 10 to 15 cm long, 3-3.5 cm broad, acute, gradually attenuate to the base, decurrent into 2 attenuate wings on two angles of the stem over 2/3 to nearly the whole internode. Longitudinal nerves 5 to 6 on each side, originating in the basal part of the midrib, running parallel in the outer half of the leaf; tendrils 1 to 2 times as long as the pitcher, about

1The sheet 051001 (L) contains a typical pitcher of Nepenthes sibuyanensis; this material was chosen as holotype because the pitcher of Nepenthes sibuyanensis is the most characteristic organ of this species.
2 to 3 mm thick near the leaf, 7 to 9 mm near the pitcher. Pitchers incurred from the hanging end of the tendril, the curve is tightly appressed to the pitchers; pitchers ovate to infundibuliform, 20 cm high, 12 cm wide in the widest part beneath the mouth, with two prominent ribs over the whole length, with 2 scarcely fringed wings in the upper 2/3 of the pitcher, 2 to 3 mm broad. Mouth oval, almost horizontal to slightly oblique, usually elongated into a short neck. Peristome cylindrical, 20 mm broad, the ribs 2 mm apart, 1 mm high, the teeth of the inner margin about 3 to 4 mm long, up to 5 times as long as broad. The whole inner surface of the pitcher is glandular. Glands at the bottom of the pitcher are approximately 500 cm², overarched, about 0.1 to 0.2 mm in diameter, below the rim 200-250 cm², about 0.5 to 0.8 mm in diameter, not overarched; lid broadly ovatecordate, 8 cm long, 6.5 cm broad, rounded at the apex, usually slightly cordate, without appendages, small compared with size of mouth; glands ovate, deepened, 1 mm in diameter, concentrated at the central part; only few, scattered. Midrib of the lid prominent at the basal half, branching at the apical end into 2 to 3 longitudinal nerves. Longitudinal nerves 5 to 6 on each side, originating in the basal part of the lid, branched at the end. Spur filiform, 2-3 mm long, 0.5 mm in diameter, insertion at the base of the lid. Male inflorescence a raceme, the peduncle at least 18 cm long, 6 mm thick at the base, the axis 15 cm long, the pedicels all of them 1-flowered, with no or much reduced bract, the lower ones 12-14 mm long, the upper ones little shorter. Tepals oblong, about 3 mm long, obtuse. Staminode column about 5 mm long, the anthers inclusive. Anthers uniseriate. Fruit 18 to 22 mm long, the valves lanceolate, 3 to 4 mm broad. Seeds filiform, 8 mm long. Indumentum: In the vegetative parts almost none, the inflorescence very densely and adpressed stellate-hairy, staminode column sparsely covered with short hairs. Colour of herbarium specimens light brown to reddish, pitchers light brown to reddish, rim dark brown, pitchers with few reddish spots in the upper part, 5 to 10 mm in diameter. Interior of the pitcher shiny brown. Colour of living specimen: Leaves yellowish to dark green, midrib light green; pitchers yellowish to orange, sometimes with some few scattered red spots beneath the mouth, 5 to 10 mm in diameter, rim dark red to black, lid yellowish to orange (Figure 1, page 22; Figure 2, page 23).

**Distribution and Ecology**

*Nepenthes sibuyanensis* is known only from its type locality at Mt. Guiniguadin, Sibuyan Island; here it grows quite sparsely on open grassy slopes among *Dipteris conjugata* and high grasses; small shrubs also grow in the same area. It occurs at altitudes from 1500 to 1800 m. Characteristically the pitchers are hidden in the ground; the pitchers are of pale yellow to slightly reddish colour with some red spots. The rim is usually dark red to blackish. The only pitcher which has been found growing in the sun was orange to reddish with a shiny red rim. At Mt. Guiniguadin two more species of *Nepenthes* have been found, one grows in abundance at lower altitudes (800-1000 m) in bushes and seems to be closely related to *N. alata*. The other one is a small new species which has been found at about 1800 m above sea level on steep slopes in open places. Very few specimens of it have been found. This species has been described recently as *Nepenthes argenti* (Jebb & Cheek, 1997, pp. 19-22). A range map is included in Figure 3, page 23.

**Systematic Links**

The characteristics of *Nepenthes sibuyanensis* show it to be a member of the group *Insignes*, to which belong *Nepenthes merrilliana* Macfarl., *Nepenthes insignis* Danser, *Nepenthes burkei* Masters and *Nepenthes ventricosa* Blanco. These species seem to be the nearest relatives of *Nepenthes sibuyanensis*. It is remarkable that *Nepenthes sibuyanensis* shows morphologic features which are intermediate especially between *Nepenthes merrilliana* Macfarl. and *Nepenthes ventricosa* Blanco. Also geographically, *Nepenthes sibuyanensis* is situated between these two species. *Nepenthes merrilliana* Macfarl. is only known from Mindanao, an island located South of Sibuyan, and *Nepenthes ventricosa* Blanco is just known from Luzon, North of Sibuyan. Maybe *Nepenthes sibuyanensis* is a species intermediate between *Nepenthes merrilliana* Macfarl. and *Nepenthes ventricosa* Blanco.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th><em>Nepenthes sibuyanensis</em></th>
<th><em>Nepenthes merrilliana</em></th>
<th><em>Nepenthes insignis</em></th>
<th><em>Nepenthes burkei</em></th>
<th><em>Nepenthes ventricosa</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>teeth of interior margin of rim</td>
<td>distinct teeth, 5 times as long as broad, 5 mm long</td>
<td>teeth of interior margin of rim as long as broad, small, 1 mm long</td>
<td>teeth of interior margin of rim as long as broad, small, 1 mm long</td>
<td>teeth of interior margin of rim 2 to 3 times as long as broad, 1 to 2 mm long</td>
<td></td>
</tr>
<tr>
<td>Rim</td>
<td>with distinct, 1 mm deep ribs, 2 mm apart</td>
<td>ribs 0.5 to 1 mm apart</td>
<td>ribs 0.5 to 1 mm apart</td>
<td>ribs 0.5 to 1 mm apart</td>
<td>ribs 0.5 to 1 mm apart</td>
</tr>
<tr>
<td>Neck of rim</td>
<td>borders of rim close together at neck, with a distinct neck</td>
<td>borders of rim do not fit together at the upper end near the lid, leaving a distinct gap</td>
<td>rim towards the lid without neck</td>
<td>rim towards the lid without or with slightly developed neck</td>
<td>rim towards the lid without or with slightly developed neck</td>
</tr>
<tr>
<td>Wings</td>
<td>pitchers without or just slightly developed wings in the upper half of the pitcher</td>
<td>lower pitchers with well developed, fringed wings</td>
<td>lower pitchers rarely with 2 narrow wings</td>
<td>lower pitchers without or just slightly developed wings in the beyond the rim</td>
<td>lower pitchers without wings</td>
</tr>
<tr>
<td>Shape of lower pitchers</td>
<td>ovate to slightly infundibulate</td>
<td>ovate</td>
<td>ovate in the lower half, cylindric in the upper half</td>
<td>ventricose below, slightly constricted in the middle</td>
<td>slightly ventricose below, constricted in the middle</td>
</tr>
<tr>
<td>Lid</td>
<td>broadly ovate-cordate, 8 cm long, 6.5 cm broad, glands at the lower surface rather large, concentrated at the central part of the lid, few, scattered</td>
<td>ovate, 12 to 14 cm long, 5 to 6 cm broad, few minute glands at the lower surface</td>
<td>orbiculate to ovate, up to 6 cm long, up to 4.5 cm broad, many glands at the lower surface, rather large, aggregated near the 2 main lateral nerves, missing in the median and lateral part</td>
<td>ovate-cordate, 5 to 8 cm long, 3 to 5 cm broad, few glands at the lower surface, aggregated near the lateral nerves</td>
<td>ovate-cordate, 3 to 4 cm long, 2 to 3 cm broad, small compared with the size of mouth/ few glands at the lower surface, aggregated near the lateral nerves</td>
</tr>
<tr>
<td>Insertion of mouth</td>
<td>almost horizontal</td>
<td>distinct oblique</td>
<td>slightly oblique</td>
<td>slightly oblique</td>
<td>almost horizontal</td>
</tr>
<tr>
<td>Size of pitchers</td>
<td>up to 26 cm</td>
<td>up to 30 cm</td>
<td>20 to 35 cm</td>
<td>15-20 cm</td>
<td>10-15 cm</td>
</tr>
<tr>
<td>Male inflorescence</td>
<td>1-flowered</td>
<td>2-flowered</td>
<td>2-flowered</td>
<td>1-flowered</td>
<td>1-flowered</td>
</tr>
<tr>
<td>Growth form</td>
<td>in grassy area, plants short, 0.5-0.7 m, no climbing plants known</td>
<td>sometimes climbing up to several meters in shrubs</td>
<td>frequently epiphytic on trees, shortly climbing</td>
<td>unknown</td>
<td>climbing in shrubs, up to 2 m</td>
</tr>
</tbody>
</table>

Table 1: Species that seem to be closely related to *Nepenthes sibuyanensis* are compared. Characteristics clearly distinguishing *Nepenthes sibuyanensis* from *Nepenthes merrilliana*, *Nepenthes insignis*, *Nepenthes burkei*, and *Nepenthes ventricosa* are shown.

Carnivorous Plant Newsletter
Specimens Examined

*Nepenthes sibuyanensis*: P. Mann & T. Smith, pitcher, Mt. Quintuginin, Sibuyan island, Philippines, 1300 m above sea level, growing between *Dipleris* sp. and high grasses on open slopes, 5/10/1996, 051001 (L-holotype); P. Mann & T. Smith, Mt. Quintuginin, vegetative part without pitchers, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051002 (L); P. Mann & T. Smith, Mt. Quintuginin, fruit, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051003 (L); P. Mann & T. Smith, Mt. Quintuginin, male flower, Sibuyan island, Philippines, 1300 m above sea level, 5/10/1996, 051004 (L).

*Nepenthes merrilliana*: D. Mendosa & P. Convocar, Mt. Kabatuan, Surigao Province, April 1919, 10523 (MAN); M. Ramos & J. Pascasio, Surigao Province, Mindanao, 34503 (BO).

*Nepenthes insignis*: Brass, 4 km SW of Bernhard Camp, Idenburg River, 3/1939, 13379 (BO); 8 km SW of Bernhard Camp, Idenburg River, 3/1939, 13669 (BO); Docters van Leeuwen, border of affluent C of the Rouffaer River, 250 m, 9/1926, 10258 (BO-type); Docters van Leeuwen, Rouffaer River, 9/1926, 10289 (BO), Pulle 277, Border of the Beaufort River, 80 m, 9/11/1912, 201110 (L).


*Nepenthes burkei*: G. E. Edano, Mt. Halcon, Mindoro, summit 2828 m, 15/2/1948, 3375 (MAN); C. E. Ridsdale, M. J. E. Coode, E. Reynoso, N-coast Mindoro, Subaan River headwaters, inland from San Teodoro, mossy forest on ridge, 920 m, 2/5/1986, 5689 (K).

Besides the study of herbarium material we had also the opportunity to examine living plants of *Nepenthes merrilliana* at its natural habitat at ‘Red Hill’, Mindanao and to examine living cultivated material of *Nepenthes ventricosa* and *Nepenthes burkei* in several Botanic Gardens and private collections.

**Acknowledgments**

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References:
Macfarlane, J.M. 1911, New Species of *Nepenthes*, Contributions from the Botanical Laboratory of the University of Pennsylvania, 3 (3), 207 ff.
Masters, M.T. 1889, New or Noteworthy Plants, The Gardeners' Chronicle, 3. ser. 6, 492.
Figure 1: *Nepenthes sibuyanensis*. A. leaf with typical pitcher. B. lower surface of lid. C. pitcher from a sunny position. D. typical rosette. E. stem with insertion of leaf. F. ripe capsules.
Figure 2: *Nepenthes sibuyanensis*

Figure 3: Distribution of *Nepenthes sibuyanensis*, *Nepenthes merrilliana*, *Nepenthes ventricosa* and *Nepenthes burkei* at the Philippines.

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