*an extract from*

# Pitcher Plants of the Old World

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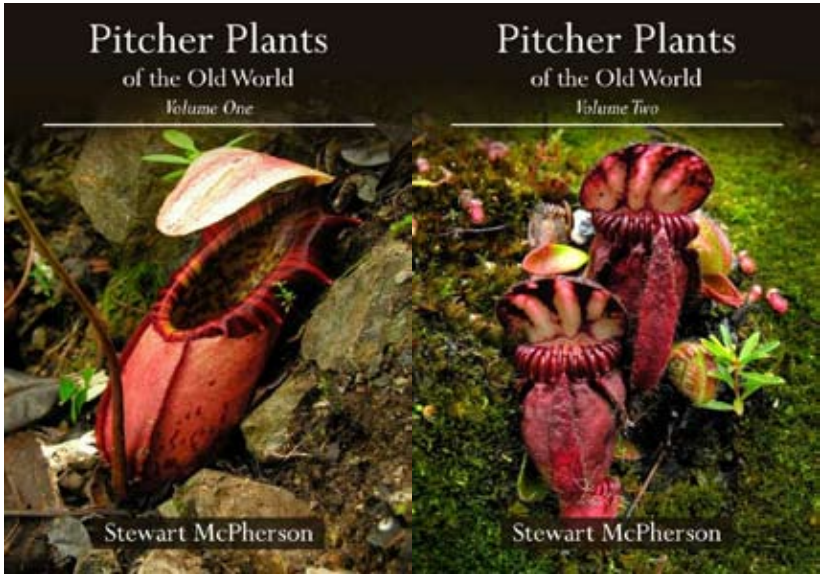


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## *Nepenthes clipeata* Danser

**Original Description;** Danser, B., 1928, *Bulletin du Jardin Botanique de Buitenzorg* 3(9):281

The specific epithet is derived from the Latin *clipeus* (a round shield) referring to the shape of the peltate leaves. *Nepenthes clipeata* does not have any synonyms or infraspecific taxa.

*Nepenthes clipeata* originally occurred between 600-800 m altitude on the summit and cliff faces of Mount Kelam, a steep-sided granite outcrop in West Kalimantan (Figure 1). Johannes (Hans) Hallier was the second European to observe this species, and provides an account of the original population of *N. clipeata* on Mount Kelam;

> *After climbing another steep slope covered with* Gleichenia *thicket, one arrives all of a sudden at the foot of a towering cliff that encompasses the mountain…* (it) *has been worn smooth by water and is marked with deep gullies; it almost seems as if the whole mountain was a single huge monolith. Alongside this wall there is a 46 m tall vertical rattan ladder that is only attached to the ground at the bottom, the middle, and top; but lying freely against the naked rock for the remaining part.*
>
> *Some way above the middle of the ladder there is a ledge with a thin layer of humus, just wide enough to stand on and to allow a short rest. Both here and at the top of the ladder I found a* Nepenthes *with unusually large pitchers. The latter are expanded in their lower part like a bottle and thus… capable of holding a large amount of water… (yet) the relatively narrow neck impedes the escape of trapped insects. Since this peculiar plant occurs only at places that have been ascended by only one European* (Dr. Gürtler) *before, it was hardly known before* (Hallier, 1895: 436-437, cited in Danser (1928)).

During the 1980s, *Nepenthes* enthusiasts and plant collectors began to visit Mount Kelam and started to poach *N. clipeata* plants from

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**Figure 1 (facing page)**. *Nepenthes clipeata* plants growing on Mount Kelam, a sight now lost as this species is virtually extinct in the wild.

the wild. Local communities in the lowlands soon learned of the value of the plants and harvested increasing numbers to sell in markets and villages. The combined effect of poaching by locals and foreign *Nepenthes* enthusiasts was a catastrophic decline in the wild population of this species. The loss was compounded by drought and wild fires caused by El Niño events during the early 1990s, and by 1995, *N. clipeata* had been driven to the brink of extinction.

Today, it is virtually impossible to observe *N. clipeata* plants growing on Mount Kelam. Small numbers of plants may persist in inaccessible points on the mountain where poachers cannot easily reach them, but the viability of any remnant populations is questionable. The decline of this, one of the most beautiful and rare of all *Nepenthes*, is the terrible legacy of the selfish and grotesque greed of local and foreign visitors to Mount Kelam and the total failure of local authorities to protect endemic biodiversity. Searches for further populations of this unique species at sites near to Mount Kelam have been unsuccessful.

The rapid decline of the wild population of *N. clipeata* is particularily surprising considering the (traditional) inaccessibility of the summit of Mount Kelam. Johannes Hallier commented;

> *Mount K'lamm is a unique mountain of grand beauty. It rises singly and abruptly from a wide plane overgrown by young forest almost up to 1000m above sea level and stretches approximately from west to east. Up to about half the mountain the steep slopes are covered with vigorous virgin forest, but the upper half is encompassed by mighty, almost vertical cliffs made of rock, over which water runs down in numerous gullies. Above the upper edge of the cliff there is high mountain vegetation compiled of bushes and small trees* (Hallier, 1896: 101).

The original populations of *N. clipeata* grew terrestrially, in eroded gullies, on ledges and in crevices amidst scant scrub and vegetation, usually in direct or strong sunlight. While this species readily formed stems up to 2 m in length, it was incapable of growing upright unaided, since its stem could not support the weight of the plant's

foliage. For lack of surrounding support, it mostly grew as a straggling scrambler, trailing prostrate across the ground, or appressed against the vertical cliff faces of Mount Kelam. Natural hybrids with *N. albomarginata* and *N. reinwardtiana* are recorded.

The lamina is up to 20 cm long and 20 cm wide and is exceptional in that it is ovate to almost entirely circular in shape. The leaf is strongly peltate, with the tendril emerging from the underside of the leaf at a distance of approximately one third from the leaf apex. The base of the leaf is petiolate and the petiole is canaliculate, up to 10 cm long and clasps the stem. The pitchers of this species are borne on short tendrils usually less than 12 cm long and do not generally coil. The lamina is green, the stem is usually dark red and the midrib and tendril may be yellow, green or suffused red. Most parts of the plant, except for the upper surface of the lamina, are covered with brown hairs up to 5 mm long.

Although the species is generally regarded as producing only one type of pitcher, tendril attachment does vary according to leaf position, as in all *Nepenthes*. Leaves located toward the base of a plant therefore exhibit tendril attachment toward the front of the pitcher, whereas in more distal leaves, tendril attachment is toward the back of the pitcher. Nevertheless, unlike most *Nepenthes*, the shape and relative proportions of the pitchers of *N. clipeata* remain fairly consistent at all growth stages of a plant.

The bottom fifth to third of the pitcher is ovate or globose, the part above this narrowing considerably (Figure 2). The upper parts toward the pitcher opening are cylindrical to infundibular, and in some individuals, there may be a slight constriction immediately below the peristome. The pitchers are up to 30 cm tall and 10 cm wide. The peristome is flattened, up to 10 mm wide, and may be slightly expanded at the sides of the pitcher opening. The peristome is lined with very fine ribs up to 0.3 mm high, spaced up to 0.3 mm apart. In mature plants, wings are consistently reduced to narrow ridges, but these are sometimes hardly discernible at all. The lid is ovate to cordate, up to 7 cm long and 5 cm wide and strongly vaulted, especially towards the base. Danser

(1928) recorded that a "laterally flattened ear-shaped or claw-shaped" appendage is present on the lower surface of the lid. The spur is thick, unbranched and up to 10 mm long.

Plants grown in cultivation have shown that the traps of very young specimens may be lined with narrow wings up to 3 mm wide, sparsely fringed with filaments up to 5 mm in length. These pitchers, which may be regarded as true lower pitchers, are also less elongated, with a proportionally enlarged bulbous base. Once pitchers larger than 5 cm are produced, the shape of the traps is generally as described above.

The pitchers of *N. clipeata* are predominantly cream coloured or, especially in bright sunlight, white. They are often marked with faint dark red blotches on the exterior and more conspicuous purple blotches on the interior. The lid is white, lined predominantly on the lower surface with small, dark red or purple flecks, and the peristome is white, striped with narrow bands of dark red and purple.

The inflorescence is a raceme, to 45 cm long. The peduncle is up to 25 cm long, the rachis up to 20 cm long. Flowers are borne on 2-flowered partial peduncles, the pedicels up to 15 mm long. Tepals are oval-oblong and less than 5 mm long.

The leaf of *N. clipeata* is so unusually shaped that it could only be compared to the uniquely broad-leaved *N. truncata*. However, the leaves and pitchers of these two species are very distinctive and very different. *N. clipeata* is unlikely to be confused with any other known species.

*Nepenthes clipeata* is among the most critically imperiled of all *Nepenthes*. The only known population of this plant may already be extinct in the wild, and with no local infrastructure or government interest in safeguarding this plant or its habitat, the immediate future of this species in the wild seems hopeless.

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**Figure 2 (facing page)**. The spectacular upper pitcher of *N. clipeata*.

In response to the critical status of *N. clipeata* in the wild, in January of 2004, the International Carnivorous Plant Society initiated a desperate attempt to save *N. clipeata* by establishing the *Nepenthes clipeata Survival Project* as a mechanism to track and record strains of *N. clipeata* in cultivation. This is of fundamental importance to ensure that the maximum genetic diversity of this plant is retained and propagated to prevent the few remaining, distinct lineages of this species from being permanently lost.

The *Nepenthes clipeata Survival Project* may represent a valuable resource if future efforts are made to re-introduction *N. clipeata* into its natural habitat. To assist this project, horticulturists growing *N. clipeata* are encouraged to register their plants at www.carnivorousplants.org/conservation/Nclipeata1.php (see also www.sarracenia.com/pubs/ncsp.doc). Currently, approximately six distinct strains of *N. clipeata* have been recorded through the *Nepenthes clipeata Survival Project* and are grown across the world, although in most of these cases, the sex of each of these strains has not yet been established. Four distinct strains of *N. clipeata* are artificially propagated and sold by The Nepenthes Nursery (see www.wistuba.com) and two further distinct strains will be released for sale in the near future by Borneo Exotics (see www.borneoexotics.com). Both male and female plants have been entered into cultivation during the past, and viable seed has previously been produced by the Munich Botanical Gardens on at least one occasion. It is of paramount importance that all lineages of *N. clipeata* are retained in cultivation and propagated to preserve the reproductive potential of this species. For more information on the *Nepenthes clipeata Survival Project*, see *Habitat Loss* chapter.

PLEASE NOTE: Since the publication of *Pitcher Plants of the Old World* (2009) the *Nepenthes clipeata Survival Project* has been deemed insufficient to save this species from extinction, and has now been abandoned. However, the *Nepenthes clipeata Survival Project* directly inspired the establishment of Ark of Life and can be seen as a precursor of the permanent Rare *Nepenthes* Collection).