

Vanda perplexa (Orchidaceae): a new species from the Lesser Sunda Islands

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Summary. *Vanda perplexa*, a new species of orchid from the Lesser Sunda Islands is described and discussed.

Key Words. Blume, Indonesia, orchid, Rumphius, section *Deltoglossa*, *Vanda furva*.

Introduction

The identity of *Vanda furva* (L.) Lindl. has been confused for over 300 years. Georgius Rumphius (2003) described and illustrated the species in his 17th century work *Amboinsche Kruidboek* as *Angrecum furvum*. Linnaeus (1763) included the species in *Planta* as *Epidendrum furvum* L. based on Rumphius' drawing and description. For decades living material of Rumphius' "yellow lipped" *Vanda* species were unknown to science. Later Lindley (1844) successively attributed *V. furva* to two newly discovered Chinese species, *V. concolor* Blume and *V. fusco-viridis* Lindl. Blume (1848) in his *Rumphia*, pointed out Lindley's error but illustrated a species which is clearly not Rumphius' *V. furva* and is to date undescribed.

In 2008 the true identity of *Vanda furva* was questioned, with suggested earliest names for the taxon, until now, known as *V. lindenii* Rchb. f., a markedly different species from *V. furva sensu* Blume belonging in section *Hastifera* (Motes & Roberts 2008). However during a review of the section *Hastifera* a more likely candidate has emerged in the form of J. J. Smith's *V. saxatilis*. Here, we describe Blume's concept of *V. furva* as a new species and discuss its relationship with *V. limbata* Blume and *V. insignis* Blume from the section *Deltoglossa*.

***Vanda perplexa* Motes & D. L. Roberts sp. nov.** Type: Cult., Motes s.n. (holotype K!; isotype SEL!).

<http://www.ipni.org/urn:lsid:ipni.org:names:60460809-2>

Erect herb, 50 cm high. *Leaves* ligulate, unequally apically acutely bilobed, praemorse, up to 230 mm

long, 20 mm wide. *Inflorescence* erect, short, c. 14 cm long, up to 11-flowered; floral bracts sheathing, ovate, 3 mm long. *Flowers* russet, suffused white on the back of tepals; pedicel with ovary 24 mm long. *Dorsal sepal* spatulate, 16 mm long, 11 mm wide. *Lateral sepals*, spatulate, 19 mm long, 13 mm wide. *Petals* spatulate, 18 mm long, 12 mm wide. *Labellum* pink to pale mauve, thickened, forward pointing, midlobe, rectangular, obscurely bilobed at apex, 22 mm long, 12 – 14 mm wide, lateral lobes oval. *Column* white, conical, entire, widening at base, 5 mm long, 8 mm wide; rostellum triangular; anther-cap cucullate, glabrous, 3 mm long, 2 mm broad; pollinia 2, hard; viscidia, <1.0 mm long. *Capsule* 65 mm long. Fig. 1.

RECOGNITION. Affinity to *Vanda limbata* Blume but lacking a white margin to the petals and sepals, lip rectangular 12 – 14 mm wide (vs lip narrowly pandurate to 10 mm wide), column cylindrical (vs distinct thickening at base), inflorescence erect and compact (vs long and lax) (Fig. 1).

DISTRIBUTION. Indonesia: Rinac, Komodo National Park; Bima on Sumbawa, western Nusa Tenggara.

SPECIMENS EXAMINED. CULT. 30th April 2007, Motes s.n. (holotypus K; isotypus SEL). **INDONESIA.** Bima, Sumbawa, L 0533564 (L).

HABITAT. Unknown.

CONSERVATION STATUS. Data Deficient, although conserved in Komodo National Park where it is the most abundant orchid species (pers. comm.).

ETYMOLOGY. The specific epithet *perplexa* refers to the confusion the identity this taxon has created over the past 300 years.

NOTES. The *Vanda furva* described by Linnaeus (1763) was based on the drawing in Rumphius' *Amboinsche*

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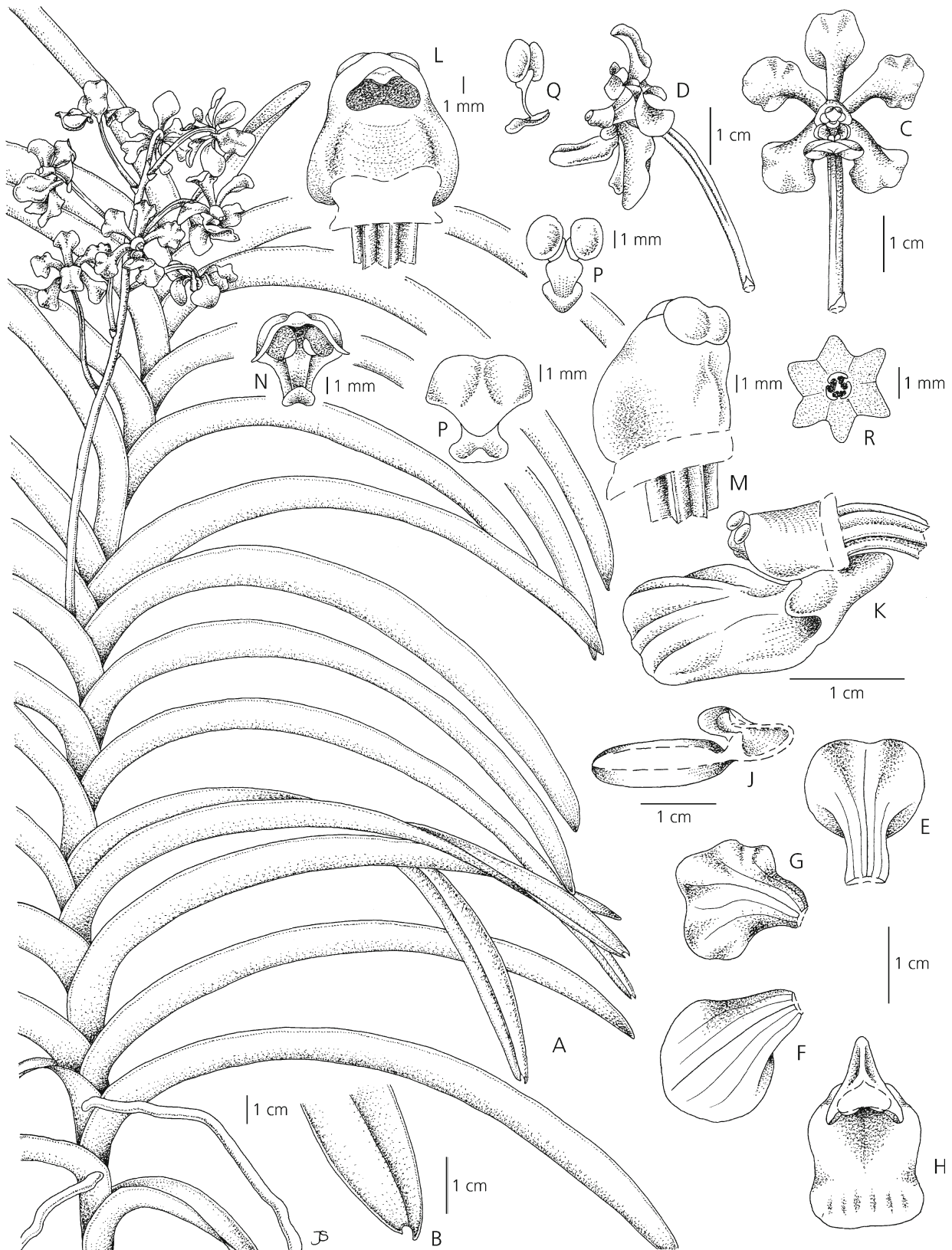


Fig. 1. *Vanda perplexa*. A habit; B leaf apex detail; C flower, front view; D flower, side view; E dorsal sepal; F lateral sepal; G petal; H labellum, view from front; J longitudinal section of labellum; K column and labellum, side view; L column, front view with anther cap removed; M column, side view; N anther cap from above; P anther cap from below; Q pollinium, front view; R pollinium, side view. All from the type collection (Motes s.n.). DRAWN BY JUDI STONE.

Table 1. Morphological comparison between *Vanda perplexa* sp. nov., *V. insignis* and *V. limbata*.

	<i>V. insignis</i>	<i>V. perplexa</i>	<i>V. limbata</i>
Flowers	large, 4.5 – 5.5 cm	small, 3.0 cm	large, 4.0 – 5.0 cm
Lip	broad spreading, 3.2 cm	rectangular, 1.4 cm wide	narrowly pandurate, 1.0 cm wide
Column	with prominent thickening at base	with only slight thickening at base	with distinct thickening at base
Inflorescence	short, 12 – 14 cm; lax, 6 – 7-flowered	short, 14 – 16 cm; erect, 7 – 10-flowered	long; lax to 30 cm
Flowers	closely spaced on inflorescence	very closely spaced on inflorescence	widely spaced on inflorescence
Sepals and petals	without white margin	without white margin	with white margins
Plant habit	large, spreading leaves 2.5 × 23.0 cm	short, leaves short, narrow 2.2 × 19.5	tall, leaves short and broad 2.8 × 18.0 cm
Internodes	wide, 4.5 cm	very close 2.0 cm	wide spaced 3.5 cm

Kruidboek. The most salient part of Rumphius' description of *V. furva* was its yellow lip (a feature not otherwise known in the genus in the early 19th century). When a plant from China described by Joseph Hooker (*Bot. Mag.* 1835: t. 3416) as *V. roxburgii* var. *unicolor* appeared, John Lindley jumped to the conclusion that this was Rumphius' yellow-lipped species (*Bot. Reg.* 1844: misc. 42). Lindley was apparently in correspondence with Blume who pointed out his error. Lindley (1848), still sure from Rumphius' description that *V. furva* was yellow-lipped, described another newly discovered Chinese species as *V. furva*. This species too proved to be different from Rumphius' *V. furva*, and Lindley later described it as *V. fuscoviridis*. Lindley was therefore doubtless surprised to see the illustration in Blume's (1848) *Rumphia*, which has a rosy violet lip. Lindley (1853) in *Folia Orchidacea* placed a question mark behind Blume's Latin description of the lip "labello patulo panduriformi glabro (?)" (lip spreading fiddle-shaped glabrous(?)).

The origin of Blume's taxon (our *Vanda perplexa*) has become clearer. One plant in cultivation in the US was apparently acquired as *V. limbata* on Bali, but originated from Rinac, near Komodo in the Lesser Sunda Islands. A further specimen has come to light in the Leiden herbarium (L 0533564) consisting of a single leaf and flower, collected from Bima on Sumbawa, western Nusa Tenggara, Blume also cites Bima as the locale of his *V. furva*. A quick search of the internet for *V. limbata* and Komodo yields several images of *V. perplexa* described as *V. limbata*, many asserting that it is widespread on Komodo and Rinac. While the taxon is clearly related to *V. limbata*, it differs in having sepals and petals that are white on their outer surface, red-chestnut overlaying a tessellated pattern and coloured to the margins, a broader, more rectangular labellum, white column only very slightly broader at the base, erect inflorescence, of half the length and flower count and much more compact growth habit.

The specific epithet refers to the long standing confusion surrounding Rumphius' *Vanda furva*

which the authors, based on Rumphius' drawing and description, believe to be synonymous with the later described *V. saxatilis* J. J. Sm. The clearest evidence for this is the uppermost flower in Rumphius' drawing where the narrow triangular lip with pointed base to the midlobe is clearly seen superimposed on lateral sepal. Rumphius describes this "leaflet like a tooth, pale yellow with two white little flaps below" (Rumphius 2003: 32). This is a rather elegant description of the narrow lobule adorned lip of *V.* section *Hastifera*. The cylindrical column is also visible in the same flower. Blume's flower is totally different: a broad rounded violet lip and a column slightly thickened at the base, clearly from the section *Deltoglossa* of *Vanda*. Christenson looking at another flower in Rumphius' drawing (the lower right), saw the broad lip of *V. furva sensu* Blume and the thickened column base of a *Deltoglossa* section *Vanda* (E. Christensen pers. comm.). This conclusion is illogical as *V. furva sensu* Blume is distinct from *V. limbata* (and other *Deltoglossa* section species) by its near total lack of the thickened column base characteristic of the remaining species in the section. Blume illustrated it with both *V. insignis* and *V. limbata* and hence concluded that *V. furva sensu* Blume was a distinct species. Other investigators who examined Rumphius' text and drawings reached the same conclusion as the current authors: that *V. furva* is a species from the section *Hastifera*. De Wit (1977) raised the possibility that *V. celebica* Rolfe is synonymous with Rumphius' *V. furva*. Like De Wit (1977), O'Byrne & Vermuelen (2008) also cited Rumphius' description of the lip as a "leaflet like a tooth" to exclude the *Deltoglossa* species (*V. metusalae* P. O'Byrne & J. J. Verm.) they described from Rumphius' *V. furva*, clearly a species of *Vanda* from the section *Hastifera*.

The flower colour, brown sepals and petals and violet/pink lip intermediate in width between *Vanda limbata* and *V. insignis* might suggest the possibility that *V. perplexa* is a natural hybrid between those species. This possibility is precluded by the (a) lack

of overlap in the range of these two established insular species, (b) erect inflorescence of *V. perplexa* in contrast to the lax inflorescence of the other two species, (c) smaller plant stature and (d) flower size (Table 1).

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