

Vanda youyangensis (Orchidaceae: Epidendroideae; Vandae), a new species from Chongqing, China

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Abstract

Vanda youyangensis, a new species of Orchidaceae, is described from plants collected in Youyang, Chongqing, China. This new species is akin to *Vanda falcata* subsp. *richardsiana* (Christenson) Motes (= *V. richardsiana* (Christenson) L.M.Gardiner), from which it differs in its smaller perianth segments, a much shorter cylindrical spur (4.0–5.0 mm versus 10.0–11.0 mm), purple-red dorsal-sepal margins, mucronate lateral sepals, a swollen lip mid-lobe, and a longitudinally dilated lamella on the disc. The relationship of the new species to *V. falcata* subsp. *richardsiana* and the taxonomic limits of the *V. falcata* complex are discussed.

Key words: Chongqing, Chinese orchid, New species, *Vanda youyangensis*

Introduction

Neofinetia Hu (1925: 107) was established based on *Orchis falcata* Thunberg (1784: 811). The genus traditionally comprised three species: *N. falcata* (Thunberg) H.H. Hu (1925: 107), *N. richardsiana* Christenson (1996: 220), and *N. xichangensis* Z.J. Liu & S.C. Chen (2004: 299), distributed in China, Japan, and Korea (Liu & Chen 2004). Based on molecular evidence, Gardiner (2012) synonymized *Neofinetia* under *Vanda* Jones ex R. Brown (1820: t. 506), and transferred the three species as *V. falcata* (Thunb.) Beer (1854: 317), *V. richardsiana* (Christenson) Gardiner (2012: 51), and *V. xichangensis* (Liu & Chen) Gardiner (2012: 51). More recently, Motes (2021: 254) treated *V. richardsiana* as *V. falcata* subsp. *richardsiana* (Christenson) Motes, a treatment currently followed by Plants of the World Online (POWO 2026).

During a botanical expedition to Youyang, Chongqing, China, in March 2026, several living plants of a taxon closely related to *V. falcata* subsp. *richardsiana* were discovered growing on tree trunks or rocks in shaded places along valleys. Comparative study of living plants and published descriptions showed a consistent combination of floral differences, especially in spur length and lip morphology. The taxon is described and illustrated below as *V. youyangensis*. Because rank limits in the *V. falcata* complex remain debated, the alternative infraspecific treatment and the need for future molecular and population-level analyses are discussed.

Materials and methods

Morphological observation:—Gross morphological data were obtained during fieldwork, and the type specimen was deposited in the Herbarium of Fujian Agriculture and Forestry University (FAFU). Measurements, shapes, colours and

other details given in the description are based on living material from the type population. Comparative morphological data were obtained from the protologues and the Flora of China (Christenson 1996, Liu & Chen 2004, Chen & Wood 2009).

Taxonomy

An identification key to the taxa of *Vanda* formerly assigned to *Neofinetia* is provided below:

1. Spur 35.0–50.0 mm long *V. falcata* (风兰)
1. Spur 4.0–16.0 mm long
2. Spur 10.0–16.0 mm long
3. Sepal and petals white; spur straight, pendulous or nearly so, 10.0–11.0 mm long, shorter than or as the sepals; lateral sepals not mucronate at apex *V. falcata* subsp. *richardsiana* (短距风兰)
3. Sepal and petals pinkish or becoming whitish in later stage; spur curved, spreading horizontally, 15.0–16.0 mm long, much longer than the sepals; lateral sepals mucronate at apex *V. xichangensis* (西昌风兰)
2. Spur 4.0–5.0 mm long *V. youyangensis* (酉阳风兰)

Vanda youyangensis Y. Fan, F. Lin & S. Lan, *sp. nov.* (酉阳风兰; Fig. 1–2)

Type:—CHINA. Chongqing (重庆), Youyang (酉阳), elevation 1400–1500 m, on a tree trunk along a valley, 12 March 2026, S.R. Lan 202601 (holotype FAFU! fan001).

Diagnosis:—This new species is akin to *V. falcata* subsp. *richardsiana* (Christenson) Motes but differs in its smaller perianth segments (dorsal sepal 5.0–5.5 mm long vs ca. 6.0 mm; lateral sepals 4.0–5.0 mm vs ca. 7.0 mm; petals 4.0–4.5 mm vs ca. 6.5 mm), a much shorter cylindrical spur (4.0–5.0 mm vs 10.0–11.0 mm), purple-red dorsal-sepal margins, mucronate lateral-sepal apices, and a swollen lip mid-lobe with a longitudinally dilated lamella (vs a tongue-shaped mid-lobe with a single basal callus).

A small epiphytic plant. Stems 2–3 cm long, enclosed in leaf bases. Leaves 6–7, distichous, alternate, greenish, rigid, linear, 3.0–4.8 × 0.4–0.5 cm, conduplicate and sheathing toward the base, articulated. Inflorescences axillary, racemose, 4–5-flowered; peduncle 1.0–1.5 cm long; floral bracts small. Pedicel and ovary 4.5–5.0 cm long, green, becoming purple-brown toward the base. Flowers not scented, white, with the dorsal sepal and anther cap purple-red at margins. Dorsal sepal oblong, 5.0–5.5 × 1.8–2.0 mm, apex obtuse. Lateral sepal obliquely oblong, 4.0–5.0 × 1.5–1.8 mm, apex mucronate. Petals oblong, 4.0–4.5 × 1.5–1.8 mm, apex obtuse. Lip oblong, 5.0–6.0 × 2.0–2.2 mm, 3-lobed; side-lobes erect, oblanceolate; mid-lobe oblong, 2.8–3.3 × 1.5–1.8 mm, distinctly swollen; disc with a longitudinally dilated lamella extending from its middle to near the base of the mid-lobe. Spur cylindrical, spreading toward the ovary, 4.0–5.0 × 0.6–0.7 mm; column 1.5–2.0 mm long. Anther cap cucullate, ca. 1.5 mm wide. Pollinia 2, yellow, subglobose; stipe whitish; viscidium suborbicular. Stigma deeply concave.

Distribution and Habitat:—*Vanda youyangensis* is currently known only from its type locality in Youyang, Chongqing, China. It grows as an epiphyte on tree trunks or on rocks in more or less shaded places along valleys, at elevations of 1400–1500 m. No individuals referable to *V. falcata* subsp. *richardsiana* were observed at or near the type locality during our field surveys.

Phenology:—Flowering in March.

Etymology:—Named after its type locality.

Conservation status:—*Vanda youyangensis* is currently known only from a single population at the type locality. Due to the lack of comprehensive field surveys and the difficulty in assessing similar microhabitats in adjacent areas, we recommend classifying its conservation status as Data Deficient (DD) according to the IUCN (2024) categories and criteria.

Taxonomic notes:—*Vanda youyangensis* shares a monopodial epiphytic habit and spurred flowers with *V. falcata* subsp. *richardsiana* and *V. xichangensis*. The pedicel and ovary are not longer in absolute terms than those of *V. falcata* subsp. *richardsiana* (45.0–50.0 mm vs ca. 50.0 mm) and have therefore been removed from the diagnosis. The apparent proportional difference relative to the spur is entirely driven by the shorter spur and is not treated as an additional independent character. Species recognition is based on the combined differences in spur length and shape, perianth size and colour, lateral-sepal apex, and lip morphology (Table 1; Figs 1–2).

TABLE 1. Comparison of *Vanda youyangensis* with *V. falcata* subsp. *richardsiana*, *V. xichangensis*, and *V. falcata*. All measurements are in millimetres.

Characteristic	<i>Vanda youyangensis</i>	<i>V. falcata</i> subsp. <i>richardsiana</i>	<i>V. xichangensis</i>	<i>V. falcata</i>
Stem	20.0–30.0 long, completely enclosed in persistent leaf bases	ca. 15.0 long, enclosed in persistent leaf bases	ca. 20.0 long, enclosed in leaf bases	10.0–40.0 long, somewhat compressed, enclosed in leaf sheaths
Leaf	30.0–48.0 × 4.0–5.0, rigid, linear	ca. 65.0 × 6.0, rigid, linear	40.0–60.0 × 5.0–6.0, rigid, linear	50.0–120.0 × 7.0–10.0, thickly leathery, narrowly oblong-falcate
Inflorescence	Axillary, 4–5-flowered; peduncle 10.0–15.0 long; pedicel and ovary 45.0–50.0 long	Racemose, densely few-flowered; peduncle ca. 8.0 long; pedicel and ovary ca. 50.0 long	Axillary, (2–)3–4-flowered; peduncle 3.0–5.0 long; pedicel and ovary 33.0–35.0 long	Racemose, 2–3(–5)-flowered; peduncle ca. 10.0 long; pedicel and ovary 28.0–50.0 long
Sepals	Dorsal sepal 5.0–5.5 × 1.8–2.0, margins purple-red; lateral sepals 4.0–5.0 × 1.5–1.8, apex mucronate	White, bases pale pinkish; dorsal sepal ca. 6.0 × 2.0; lateral sepals ca. 7.0 × 2.0, apex not mucronate	Pinkish; dorsal sepal 6.0–7.0 × 2.0–3.0; lateral sepals 6.0–7.0 × 2.0–3.0, apex mucronate	Pure white; dorsal sepal 8.0–10.0 × 2.5–4.0; lateral sepals 8.0–10.0 × 2.5–4.0, apex obtuse
Petals	Oblong, 4.0–4.5 × 1.5–1.8, apex obtuse	Obliquely oblong, ca. 6.5 × 1.5, apex obtuse	Suboblong, 5.0–6.0 × 1.5–2.0, apex obtuse	Oblanceolate or subspatulate, 8.0–10.0 × 2.2–3.0, apex obtuse
Lip	Mid-lobe 2.8–3.3 × 1.5–1.8, swollen, disc with a longitudinally dilated lamella; spur 4.0–5.0 long, cylindrical	Mid-lobe ca. 6.5 × 3.0, tongue-shaped, base with 1 callus; spur 10.0–11.0 long, curved	Mid-lobe ca. 3.0 × 1.5, ligulate, disc with an indistinct transverse ridge; spur 15.0–16.0 long, curved	Mid-lobe 7.0–8.0 × 2.0–2.5, tongue-shaped, base with a triangular callus and 3 ridges; spur 35.0–50.0 long, slender
Column	1.5–2.0 long	ca. 1.5 long, thick and short	ca. 2.0 long	ca. 2.0 long

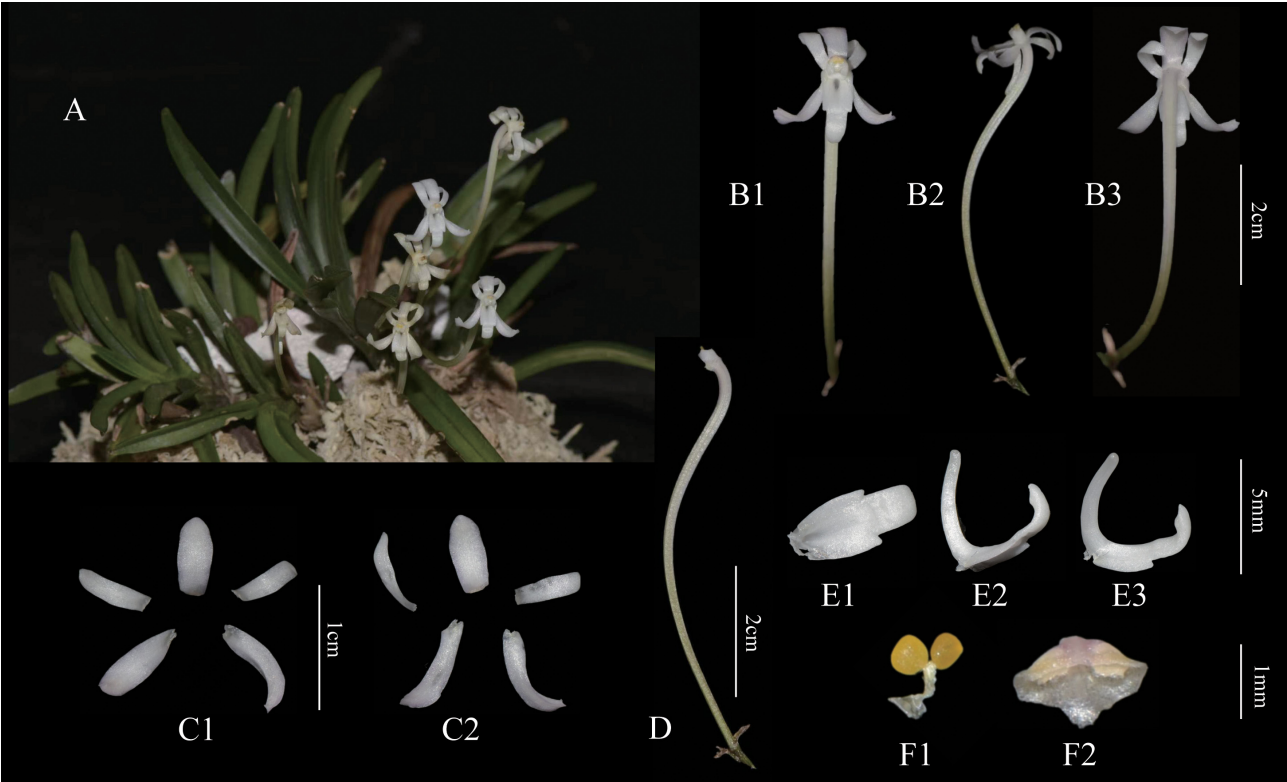


FIGURE 1. *Vanda youyangensis*. A. Plant in natural habitat. B1–B3. Flower views (B1. front view; B2. side view; B3. back view). C1–C2. Floral dissection (C1. adaxial surface; C2. abaxial surface). D. Pedicel and ovary. E1–E3. Various views of the lip. F1. Pollinarium. F2. Anther cap.

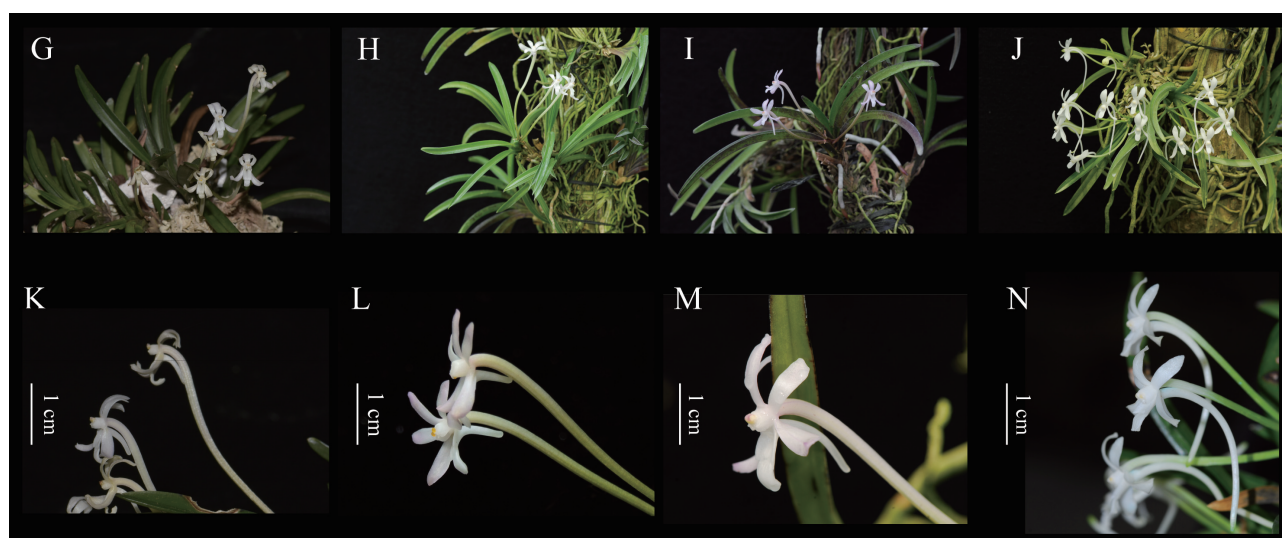


FIGURE 2. Comparison of the habit and floral morphology of *Vanda youyangensis* and related taxa. G and K, *V. youyangensis*; H and L, *V. falcata* subsp. *richardsiana*; I and M, *V. xichangensis*; J and N, *V. falcata*. G–J, plants in flower; K–N, lateral views of flowers showing differences in spur length and shape. Scale bars: K–N = 1 cm.

POWO (2026) follows Motes (2021: 254) in accepting *V. falcata* subsp. *richardsiana* rather than recognizing *V. richardsiana* at species rank. Regardless of its taxonomic rank, this taxon differs from typical *V. falcata* in its much shorter spur (10.0–11.0 mm vs 35.0–50.0 mm) and different lip callus. Rank limits within the *V. falcata* complex require further testing using population-level morphometric and molecular data. Pending such evidence, *V. youyangensis* is treated here as a distinct species based on its diagnostic combination of spur length and shape, perianth size and colour, lateral-sepal apex, and lip morphology.

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