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# *Cephalanthera nanlingensis* (Orchidaceae), a New Species from Guangdong, China

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**ABSTRACT.** *Cephalanthera nanlingensis* A. Q. Hu & F. W. Xing, a new species of Orchidaceae from Guangdong, China, is described and illustrated. It is similar to *C. longifolia* (L.) Fritsch and *C. erecta* (Thunberg ex A. Murray) Blume, sharing slender stems, plicate leaves, and white flowers. The new species is distinguished by its deltoid bracts and a subactinomorphic perianth.

**Key words:** *Cephalanthera*, China, IUCN Red List, Orchidaceae.

The orchid genus *Cephalanthera* Richard belongs to the tribe Neottieae of the subfamily Epidendroideae (Pridgeon et al., 2005) and consists of ca. 12 species mainly found in northern temperate regions with a few species extending south to the Himalayas and northern Africa (Su, 2000). There are 10 species of *Cephalanthera* recorded from China (Zhu, 1999; Chen & Zhu, 2002).

During four botanical expeditions to Ruyuan County in northern Guangdong Province, China, we collected a peculiar *Cephalanthera* with a subactinomorphic perianth. After careful study, we concluded that this is a new species closely related to *C. longifolia* (L.) Fritsch and *C. erecta* (Thunberg ex A. Murray) Blume.

***Cephalanthera nanlingensis*** A. Q. Hu & F. W. Xing, sp. nov. TYPE: China. Guangdong: Ruyuan, Nanling Mtns., 24°94'N, 113°10'E, 1500 m, 19 Apr. 2006, Ai-Qun Hu 46 (holotype, IBSC; isotype, PE). Figure 1.

Species affinis *Cephalantherae longifoliae* (L.) Fritsch, sed ab ea bracteis omnibus deltatis 2–3 mm longis, perianthio

fere actinomorfo, labello petalis lateralibus simili atque sepalis 7–8 mm longis petalis leviter longioribus differt.

Terrestrial herb, 13–24 cm tall, with short and indistinct rhizome; roots fasciculate, fibrous, 2–3 mm diam.; stems slender, somewhat flexuous, slightly ridged, 1–1.5 mm diam., glabrous, bearing sheaths at base; sheaths brown, cylindric, increasing in size acropetally, the lowest one scaly. Leaves 3 to 6, papyraceous, subsessile, plicate, elliptic to lanceolate, acuminate at apex, contracted at base, 32–46 × 8–12 mm, glabrous, 5- to 7-veined. Inflorescence a raceme, 3.2–5 cm, 3- to 5-flowered; bracts deltoid, 2–3 mm, obviously shorter than pedicellate ovary; pedicel and ovary green, 8–11 mm, glabrous, claviform, slightly ridged. Flowers white, 7–8 mm, suberect, slightly or not opening at anthesis; perianth subactinomorphic; sepals free, cymbiform, suboblong, obtuse at apex, unguiculate at base, 7–8 × 2–2.5 mm, 3(5)-veined; lip similar to petals; petals obovate, obtuse at apex, unguiculate at base, 5–6.5 × 1.7–2 mm, 4- to 5-veined; column erect, semi-terete, ca. 5 × 1 mm; anther erect, hinged to the top of the column by a short stalk, ovate to cordate, ca. 1.5 mm, 2-celled; stigma subterminal, oblate to concave; staminodes 2, ligulate, obtuse at apex; rostellum absent; pollinia 2, each divided into 2 halves, ca. 1 mm, white, naked, farinaceous. Fruit not seen.

**Habitat and distribution.** *Cephalanthera nanlingensis* grows at the edge of evergreen broad-leaved forests in which *Castanopsis eyrei* (Champion ex Benth) Tutch., *Elaeocarpus sylvestris* (Loureiro) Poir., *Schima remotiserrata* Hung T. Chang, and *Pleioblastus amarus* (Keng) Keng f. are dominant. So far, the new species is known only from two sites in the

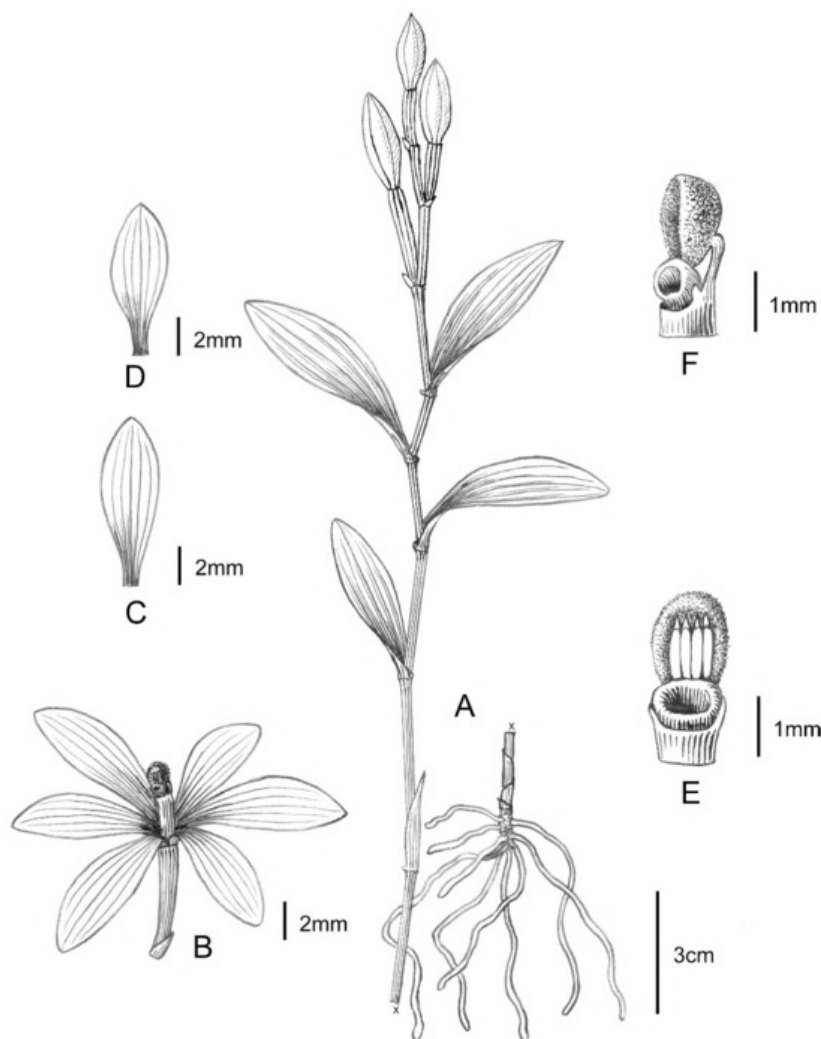


Figure 1. *Cephalanthera nanlingensis* A. Q. Hu & F. W. Xing. —A. Plant with flowers. —B. Flower. —C. Sepal. —D. Petal. —E. Ventral view of stigma. —F. Side view of stigma. Drawn from the holotype, *Ai-Qun Hu* 46 (IBSC), by Han-Ping Yu.

Nanling Mountains, one at an altitude of ca. 700 m, the other at ca. 1500 m. Only a small population was found at 700 m, with less than 10 individuals, while four populations were found at 1500 m, which should have at least 30 individuals by our estimate. Based on comparison to other regions with similar vegetation and climate between 700 and 1500 m in the Nanling

Mountains, this species should be expected to have more populations and individuals at other localities. Although the population size has increased each year we have observed it, according to the current knowledge of the species and using IUCN Red List criteria (IUCN, 2001), *C. nanlingensis* should tentatively be classified as Critically Endangered (CR).

Table 1. Comparison of *Cephalanthera nanlingensis*, *C. longifolia*, and *C. erecta*.

Characters	<i>C. nanlingensis</i>	<i>C. longifolia</i>	<i>C. erecta</i>
Stem	somewhat flexuous	erect	erect
Leaves (cm)	elliptic to lanceolate, 3.2–4.6 × 0.8–1.2	lanceolate, 2.5–13 × 0.5–2.5	elliptic to lanceolate, 2–8 × 0.7–2.3
Lowest bract (cm)	deltoid, 0.2–0.3	foliaceous, 5–13	foliaceous, 2–8
Perianth	subactinomorphic	zygomorphic	zygomorphic
Sepals (mm)	7–8 × 2–2.5	11–16 × 3.5–4.5	8–10 × 2.5–3.5
Petals (mm)	obovate, 5–6.5 × 1.7–2	obovate, 7–8 × ca. 4	elliptic to oblong, 7–7.5 × 2.5–3
Lip	similar to petals, without sac or spur, unlobed, glabrous	different from petals, saccate at base, 3-lobed, with 3 to 4 lamellae and papillae	different from petals, spurred, 3-lobed, with 3 lamellae and papillae

**Phenology.** *Cephalanthera nanlingensis* has been observed to flower in April and May. Fruits have not been seen.

**Discussion.** *Cephalanthera nanlingensis* is similar to *C. longifolia* and *C. erecta*. All three taxa have slender stems, plicate leaves, and white flowers. However, the latter two taxa have a foliaceous lowest bract, a zygomorphic perianth, and a 3-lobed lip with three or four lamellae that are densely papillose toward the apex. A close morphological comparison of the three taxa is given in Table 1.

*Cephalanthera nanlingensis* has a subactinomorphic perianth. Botanists are divided on treatment of this character, with some considering it a peloric form (Pridgeon et al., 2005), which should not be treated as a separate species; however, others consider this character to be a distinct and stable entity that merits definition at the species level (Chen, 1987). Regarding distribution, *C. longifolia* is not found in Guangdong Province. *Cephalanthera erecta* is recorded in northern Guangdong (Zhu, 1999), but has not been found to be sympatric with *C. nanlingensis*. Therefore, as *C. nanlingensis* has a separate distribution with distinct and stable populations, it should not be considered a peloric form of *C. erecta* or *C. longifolia*, and should instead be treated as a new species.

**Additional specimens examined.** CHINA. **Guangdong:** Ruyuan, Nanling Mtns., Baimakeng, 700 m, 25 Apr. 2007, Huai-Zhen Tian & Xia-Lan Chen 631 (IBSC).

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