

Thrixspermum odoratum (Orchidaceae), a new species from Hainan Island, China

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A new species, *Thrixspermum odoratum* X.Q. Song, Q.W. Meng & Y.B. Luo from Hainan Island, south China, is described and illustrated. It belongs in sect. *Thrixspermum* and is closely related to *T. tsii*, but differs by having dense and distichous bracts, an irregularly-shaped clump or an erect lamellum at the base of lip, longer midlobe of lip, and fragrant flowers. A key to the five species of sect. *Thrixspermum* in China is presented. *Thrixspermum odoratum* is a host-specific epiphyte, being found only on one tree species.

Key words: flora, new species, taxonomy, *Thrixspermum*, tropical mountain rain forest

The genus *Thrixspermum*, which is characterized by a short column with a broad foot, a callus on the front of the sac on the lip, and four unequal pollinia united in pairs on a short broad stipe, is mainly distributed in southeastern Asia (Seidenfaden 1988). The number of species is uncertain and given as being between 100 and 150 (Seidenfaden 1992). Thirteen species have been known heretofore in China, occurring mostly in south China (Lin 1988, Tsi 1999, Chen & Shui 2005).

During a botanical expedition on Hainan Island, south China, in 2004, an unusual epiphytic orchid was collected by the first author from a tropical mountain rain forest. As no flower was available for study, the plant was identified only as a member of the genus *Thrix-*

spermum. Flowering specimens were collected in 2005 and 2006 from the same locality and they showed a new species was at hand. Herbarium specimens of the somewhat similar *T. tsii* deposited in PE were examined for comparison. In addition, living plants of *T. amplexicaule* and *T. centipeda* were collected in the field and herbarium specimens of *T. japonicum* deposited in PE were examined.

Thrixspermum odoratum X.Q. Song, Q.W. Meng & Y.B. Luo, *sp. nova* (Figs. 1 and 2)

Thrixspermo tsii W.H. Chen & Y.M. Shui *affinis*, *sed bracteis densis distichis, labio basi caespedo*

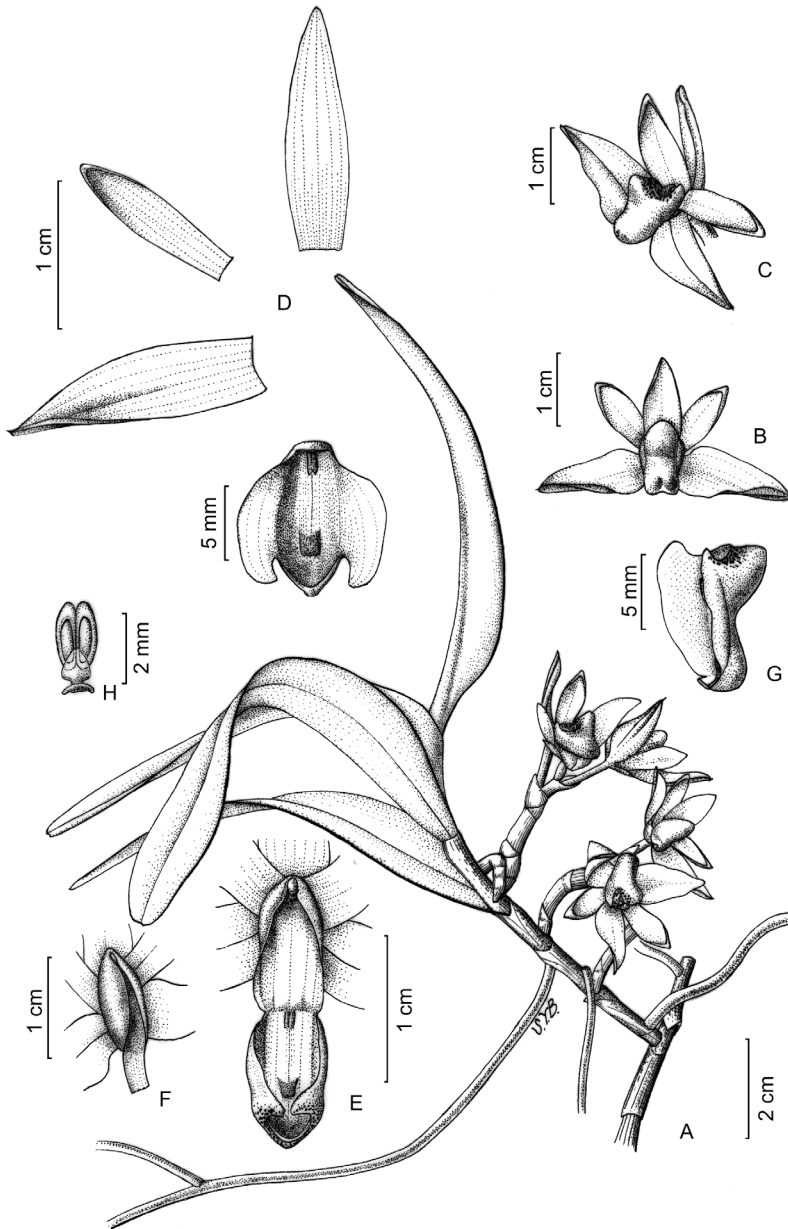


Fig. 1. *Thrixspermum odoratum* (from the holotype). — **A:** Habit. — **B:** Flower, front view. — **C:** Flower, side view. — **D:** Tepals. — **E:** Column and labellum. — **F:** Column. — **G:** Labellum, side view. — **H:** Anther.

irregulari uno vel lamello erecto uno ornato, lobo medio longiore, floribus fragrantibus differt.

TYPE: China. Hainan Province, Changjiang County, alt. ca. 1000 m, 19°01'N, 109°08'E, 14.IV.2004 X. Q. Song & Q. W. Meng 2004040912 (holotype PE; isotypes PE).

ETYMOLOGY: The epithet "*odoratum*" refers to the fragrant flowers.

Epiphytic herb. Stem erect or horizontally spreading, stout, terete, 10–20 cm long, 3–4 mm

in diameter. Internodes 1.2–1.5 cm long. Leaves distichous, thick and fleshy, oblong, elliptic to linear-oblong 8.5–11.5 × 1.0–1.5 cm, apex unequally bilobed and obtuse. Inflorescences racemose, extra-axillary, sub-erect or slightly pendant, usually 1–2-flowered, 1.2–1.5 cm long; rachis flattened, ca. 0.6 cm long; bracts broadly triangular, dense and distichous, conduplicate-concave, apex acute, 2.5 × 5 mm. Flowers large, with a strong jasmine fragrance, white, tinged



Fig. 2. *Thrixspermum odoratum*. — **A:** Plant growing on the trunk of *Quercus bawanglingensis*. — **B:** Inflorescences. — **C:** Flower. — **D**

with light yellow, borne in succession, usually 2 flowers at a time, flowering more than two days, 1.8–2 cm long, 1.2–1.3 cm in diameter, erect or horizontally spreading; pedicel and ovary about 8–10 mm long, greenish; dorsal sepal elliptic, 1.6–1.8 × 0.8 cm, margin entire, apex obtuse and 3-veined; lateral sepals obliquely ovate or elliptic, 1.6–1.8 × 0.9 cm, apex obtuse with a short tip, 5-veined; petals similar to but slightly smaller than sepals, oblong-spathulate, 1.4–1.6 × 0.5–0.6 cm, apex obtuse and slightly concave, 3-veined; lip widely ellipsoid, pale yellow or yellowish, 1–1.2 cm in total length, 1.2–1.4 cm wide, the base of lip shallow saccate with a yellow irregular clump or an erect lamellum, 3-lobed; lateral lobes erect, short falcate, 7–8 mm long, 5–6 mm wide, apex obtuse-rounded, with brownish irregular stripes or blotches, midlobe 2 mm long, thick, conical, with densely brownish irregular stripes or blotches, disc brown-yellowish, the center of disc with a single, arched, auriculate callus, callus 1.5 mm high, apex truncate. Column short and broad, the column foot 4–6 mm long; anther cap whitish yellow; pollinia 4 in 2 pairs. Capsules linear-cylindric, 0.4 × 3.0 cm. Flowering April to May and fruiting May to August.

DISTRIBUTION: Known only from Changjiang Country, Hainan Island, south China.

Thrixspermum odoratum was growing on the trunks of *Quercus bawanglingensis*, at the summit of a limestone hill at an elevation of ca. 1000 m. Thus it is a host-specific orchid and it was growing at a height of ca. 1 meter among the branches. The dominant species in the community are *Ficus microcarpa*, *Fraxinus griffithii*, *Radermachera hainanensis*, *Ficus gibbosa*, *Schefflera arboricola*, *Dracaena cambodiana*, *Ardisia crassirhiza*, *Mahonia hainanensis*, *Fagraea ceilanica*, *Dehaasia hainanensis*, *Milletia dielsiana*, *Tetrastigma caudatum*, *Cycas hainanensis*, *Stephania hainanensis*, *Chirita heterotricha*, *Euphorbia hainanensis*, *Begonia peltatifolia*, and *Asparagus cochinchinensis*. The epiphytic orchids in association with *T. odoratum* are *Cleisostoma williamsonii*, *Dendrobium aduncum*, *D. lindleyi*, *D. nobile*, *D. hainanense*, *Flickingeria fimbriata*, *Schoenorchis gemmata*, *Phalaenopsis hainanensis*, *Thelasis pygmaea*, *Liparis viridiflora*, *Eria tomentosa*, *E. rosea*, *E. coronaria*, *E. obvia*, *Acampe rigida*, *Cheirostylis yunnanensis*, *Vanda subconcolor*, and *Coelogyne fimbriata*.

Schlechter (1911) divided the genus *Thrixspermum* into three sections based on the arrangement of flowers on the inflorescence. *Thrixspermum odoratum* clearly belongs to the section *Thrixspermum* because its flowers are

borne along the margin of a flat rachis in two alternating rows. In general appearance, *T. odoratum* is similar to *T. tsii* in having inflorescences 1.2–1.5 cm long, an elliptic dorsal sepal and a widely ellipsoid lip, but differs by having dense and distichous bracts, an irregular clump or an erect lamellum at the base of lip, longer midlobe of the lip, strong jasmine fragrance, and each flower flowering 2–3 days. In *T. tsii*, the bracts are lax, without a clump or lamellum at the base of lip, non-fragrant, and the individual flowers wither after flowering just one day. Section *Thrixspermum* has now five species in China (Tsi 1999, Chen & Shui 2005), and they can be identified with the key below.

Key to species of sect. *Thrixspermum* in China

1. Sepals and petals more than 3 times as long as broad
..... *T. centipeda*
1. Sepals and petals less than 3 times as long as broad .. 2.
2. Leaves 2–4 cm long 3.
2. Leaves more than 6 cm long 4.
3. Leaves not amplexicaul; rachis slender, less than 5 cm long *T. japonicum*
3. Leaves amplexicaul; rachis stout, 10 cm long or more ...
..... *T. amplexicaule*
4. Floral bracts dense; an appendage present at base of lip; flowers with a strong jasmine fragrance; each flower blooming 2–3 days *T. odoratum*
4. Floral bracts lax; without an appendage at base of lip; flowers without fragrance; each flower blooming one day or less *T. tsii*

ADDITIONAL REPRESENTATIVE SPECIMENS EXAMINED. — *Thrixspermum japonicum*: **China**. Prov. Guizhou, Yinjiang County, Fanjing Mountain, *China–America Science Exped. Prov. s.n.* (PE); Sichuan, Emei County, Emei Mountain, *K. Y. Lang, B. C. Gao et al. 044* (PE), *J. H. Xiong 32546* (PE); Nanchuan City, Jinfo Mountain. *C. Bei 7342* (PE), *Z. Y. Liu 8935* (PE). — *Thrixspermum tsii*: **China**. Prov. Yunnan, Fooning County, Chia-chieh, *C. W. Wang 89510* (PE) and *89516* (PE); Xichou County, For-doe, *C. W. Wang 85667* (PE).

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