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# A new species of *Thrixspermum* (Orchidaceae) from China

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Chen, W. H. (Kunming Institute of Botany, the Chinese Academy of Sciences, Heilongtan, Kunming, Yunnan 650204, China; email: whchen@mail.kib.ac.cn) & Y. M. Shui (Kunming Institute of Botany, the Chinese Academy of Sciences, Heilongtan, Kunming, Yunnan 650204, China; email: ymshui@mail.kib.ac.cn). A new species of *Thrixspermum* (Orchidaceae) from China. *Brittonia* 57: 55–58. 2005.—A new species from China, *Thrixspermum tsii* (Orchidaceae), is described and illustrated and its relationships to *T. centipeda* and *T. subulatum* are discussed.

**Key words:** *Thrixspermum*, Orchidaceae, China.

*Thrixspermum* Lour. has about 120 species distributed from tropical Asia to the South Pacific islands and Australia. About 12 species are known in China, growing mostly in the southern provinces and on the island of Taiwan (Lin, 1988; Tsi, 1999). This genus is similar to *Kingidium* P. T. Hunt and *Phalaenopsis* Bl. in having flowers with a column foot and a 3-lobed labellum, while *Thrixspermum* differs from these genera by having the base of the medial lobe with no attachments.

The second author bought two plants of *Thrixspermum* in the flower market at Wenshan on 3 November 2001 and cultivated them at the Kunming Botanical Garden. These plants reportedly came from Panzhihua Community, Wenshan County, Yunnan Province. They flowered during late May 2002, and they appeared to represent a new species. Also, while doing field work during 14–17 May 2002, the authors went to the Jinchang Community in Malipo County, Yunnan, and collected about 30 species of orchids on a limestone hill at ca. 1500 meters. Among them, the authors found a population of the *Thrixspermum* growing, five meters up, on a tree trunk. Two individual plants were transplanted to the Kunming Botanical Garden, where they flowered and

were observed. Because of the short flowering period, each flower lasting only about one day, the chance of collecting a plant in flower in the field is very rare.

From our study of *Thrixspermum* in China and neighboring areas (Averyanov, 1994; Gagnepain & Guillaumin, 1911; Lin, 1988; Su, 2000; Tsi, 1999), we found that the new species, *T. tsii*, is similar to *T. centipeda* Lour. and *T. subulatum* (Bl.) Rchb.f. The new species is vegetatively similar to *T. centipeda* in having unequally obtuse-bilobed limbs at the top of leaves, but the characters of inflorescences, bracts, sepals, petals and lips are quite different. *Thrixspermum tsii* is more similar to *T. subulatum* in floral structure, but the differences in the leaves, bracts, and lips are obvious.

## *Thrixspermum tsii* W. H. Chen & Y. M. Shui, sp. nov. (Fig. 1)

TYPE: CHINA. Yunnan Province: Malipo County, Jinchang community, Xiao-ping-an, in bushes, at summit of a limestone hill, ca. 1500 m, 5 Jun 2002 (fl), Shui Yumin et al. 21607 (HOLOTYPE: KUN; ISOTYPE: NY).

*T. centipedae* Lour. simile, sed bracteis 3.5–4.0 mm longis laxis, apice acutis (nec ca. 6 mm longis conferatis, apice obtusis) sepalis petalisque ellipticis 1.1–1.5 cm longis (nec steno-falcatis 3–4.5 cm longis) labellis late ellipsoideis (nec anguste ovoideis) differt. *T. subulato* (Bl.) Rchb.f. simile, sed foliis apice inaequaliter

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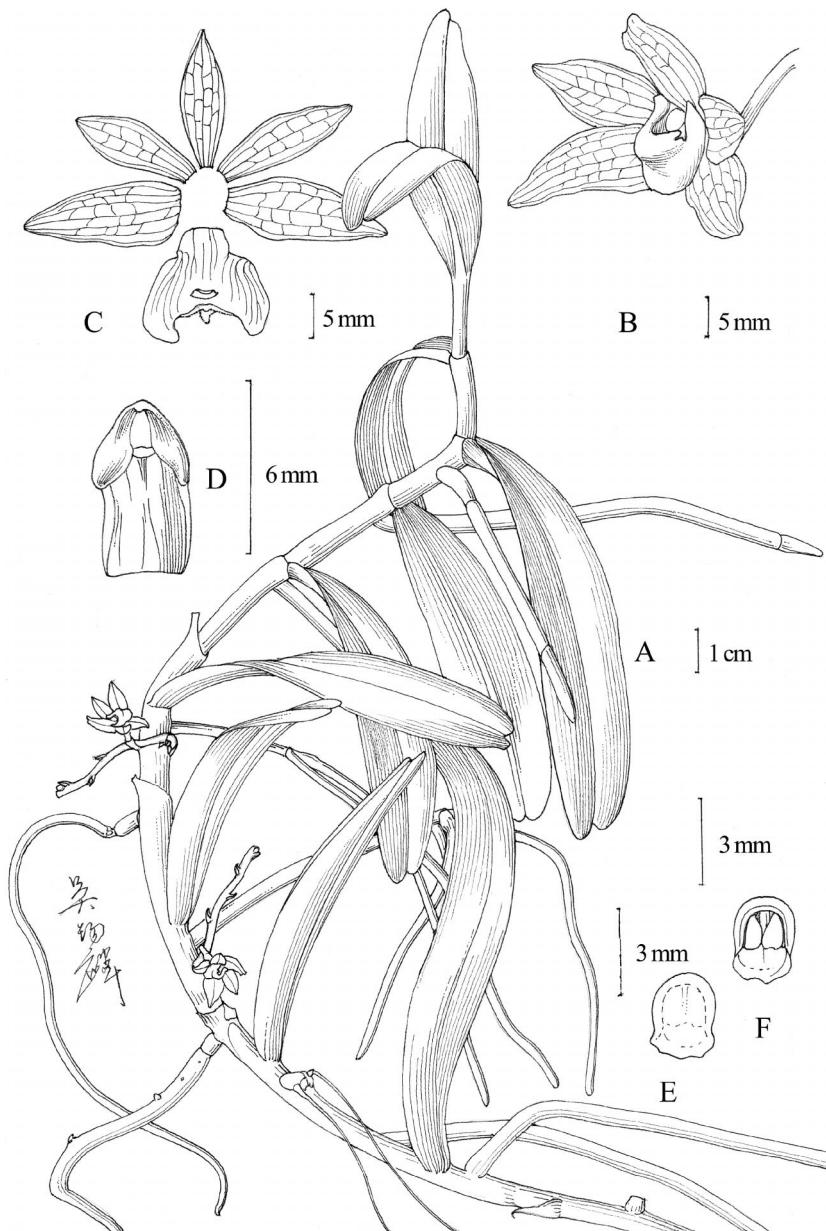


FIG. 1. *Thrixspermum tsii*. A. Habit. B. Flower. C. Perianth of flower spread open. D. Column, ventral view. E. Anther cap, dorsal view. F. Anther cap, ventral view. From the holotype, Shui Yumin et al. 21607 (KUN).

bilobatis (nec cuspidatis), inflorescentibus 1.5–2.5 cm longis (nec 6–12 cm), bracteis distichis (nec spirali- bus), lobo medio labelli mucronato (nec retuso), disco labelli prope apicem lamellato (nec protuberanti) differt.

Epiphytic plant. Stem arching or pendent, stout, terete, slightly flattened, to 30–40 cm long, 5–6 mm wide. Internodes 1.5–

2.5 cm long. Leaves distichous, thick and fleshy, oblong, 6–12 × 1.9–2.2 cm, apex unequally bilobed and obtuse, sheathing and amplexicaulous at base, the nerves 9, raised on both surfaces when dry. Inflorescences racemose, extra-axillary, arching, 1–3-flowers, rachises flattened, about 1.5–2.5

cm long; bracts broadly triangular, lax and distichous, conduplicate-concave, fleshy,  $2.5\text{--}3.0 \times 3.5\text{--}4.0$  mm, the apex acute and persistent. Ovary and pedicel ca. 1.5 cm long, greenish. Flowers white, becoming yellowish, glabrous, not opening wide, lasting only one day; upper sepal elliptic, ca.  $1.5 \times 0.6$  cm, margin entire, the apex obtuse and 5-nerved; lateral sepals somewhat obliquely elliptic,  $1.4\text{--}1.5 \times$  ca. 0.6 cm, 5-nerved, apex obtuse with a short tip; petals similar to but slightly smaller than sepals, oblong-ovate, ca.  $1.1\text{--}1.2 \times 0.6$  cm, 5-nerved, apex acute; lip slightly pouched, widely ellipsoid, ca.  $0.8 \times 1.2$  cm when spread wide, side-lobes abruptly narrowed to an acute apex, slightly curved forward, mid-lobe very short, fleshy, densely covered with many mastoid hairs, disc golden-yellow, the center of disc with a single, narrow horizontal callus and the top mucronate, the upper part elongating into a lamella that is broadly linguiform, ca.  $3.0 \times 1.5$  mm high, truncate at apex. Column short, the column foot ca. 3 mm long; anther cap whitish yellow, ca. 1.8 mm wide; pollinia 4, in 2 pairs. Capsule oblong, ca. 9.5 cm long, 0.6 cm diam.

**Distribution and ecology.**—*Thrixspermum tsii* is only known from Fooning, Malipo, Wenshan, and Xichou Counties, southeastern Yunnan, China. The plants were found on a trunk of a tree growing on the summit of a limestone hill, at 750–1500 m, where the dominant plants are *Vaccinium dunalianum* Wight and *Swida oblonga* (Wall.) Sojak. In addition, *Thrixspermum tsii* was found in association with *Bulbophyllum ledungense* T. Tang & F. T. Wang, *Cleisostoma racemiferum* (Lindl.) Garay, *Dendrobium guangxiense* S. J. Cheng & C. Z. Tang, *Schoenorchis gemmata* (Lindl.) J. J. Smith, and *Sunipia scariosa* Lindl. (Tsi, 1999).

**Phenology.**—Flowering from May to June.

**Etymology.**—*Thrixspermum tsii* is named to honor Professor Tsi Zhanhuo, a famous Chinese taxonomist of Orchidaceae. His hard work provided a great contribution to the study of Chinese orchids; his excessive drive was one of the main reasons that he died prematurely from cancer (Chen et al.,

1999; Tsi, 1983, 1989a, 1989b, 1995, 1999; Tsi & Chen, 1994, 1995a, 1995b; Tsi & Ma, 1985).

Additional specimens examined. CHINA. YUNNAN: Fooning County, Chia-chieh, on rocky hill, epiphytic and on rocks, occasional or rare, ca. 750 m, 23 May 1940 (fl), C. W. Wang 89510 (IBSC, PE) & 89516 (IBSE, PE); Wenshan County. Originally collected at Panzhihua Community, in secondary limestone forests, ca. 1400 m, but cultivated at the Kunming Botanical Garden, Wenshan County, 27 May 2002 (fl), Shui Yu-min et al. 15356 (KUN); Xichou County, For-doe, in dense woods, epiphytic on branch, rare, ca. 1300 m, 12 Dec 1939 (immature fr), C. W. Wang 85667 (PE).

The vegetative body of *Thrixspermum tsii* is similar to *T. centipedata*, but the floral structure is similar to *T. subulatum*. Schlechter (1911) divided *Thrixspermum* into three sections based on the arrangement of flowers on the inflorescence. The new species is placed in Sect. *Oridice* based on the distichous nature of its flowers, with *T. centipedata* being the most similar species within the same section. *Thrixspermum tsii* is similar to *T. centipedata* in having unequally obtuse and bilobed limb at the top of leaves, but the obvious differences of *T. centipedata* are the inflorescences, 6–12 (20) cm long; the bracts ca. 6 mm long, crowded, and obtuse at top; the narrow, falcate sepals and petals, 3–4.5 cm long; and the narrow, ovoid lip. Although *T. subulatum* has been placed in section *Katocolla* (Lin, 1988), the structure of its flowers is very similar to that of *T. tsii*. *Thrixspermum tsii* is similar to *T. subulatum* in having ca. 1.5 cm long inflorescences and a widely ellipsoid lip, but the differences between them are that *T. subulatum* has mucronate leaf apices, spiral bracts, a retuse top of middle limb of lip, and the upper part of the disc of the lip elongated into a protuberance. To some extent, the new species seems to be positioned between the sections *Oridice* and *Katocolla*.

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