

First Recording of the Genus *Satyrium* Sw. (Orchidaceae) in Thailand

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Abstract.— A representative of the orchid genus *Satyrium* was recently discovered in Thailand which is a new generic record for the country. On account of having yellow flowers and a pubescent lip base the respective specimens are referred to the Chinese *S. yunnanense* Rolfe. As they differ from the typical plants of this species by having much longer inflorescences and considerably larger flowers they are here described as a new subspecies *longispica* Kurzweil and Suksathan.

KEY WORDS: *Satyrium*, Thailand, new distribution record, new subspecies

INTRODUCTION

Satyrium Sw. is a genus of about 90 species in the almost exclusively terrestrial orchid subfamily Orchidoideae (Kurzweil et al., 2001). The genus is mostly African in distribution where the greatest diversity is found in the Western Cape of South Africa, and in addition this genus ranges also into Asia. A total of 16 species have been reported in Pakistan, Nepal, northern and southern India, Bhutan, Sri Lanka, Myanmar (Chin State, Shan State) and China (Hunan, Sichuan, Yunnan, Guizhou, Xizang) but it has been shown that these are merely variations as well as different sexual forms of

the two currently accepted species *S. nepalense* D. Don and *S. yunnanense* Rolfe (Hooker, 1890: 168; Seidenfaden, 1999: 1224; Pearce and Cribb, 2002: 193–195; Chen et al., in prep.). *S. nepalense* and *S. yunnanense* are listed as separate species in two comprehensive publications on Chinese orchids (Chen et al., 1999; Chen et al., in prep.), although the first author of these publications had previously interpreted *S. yunnanense* as merely being the male form of *S. ciliatum* Lindl. (= *S. nepalense* var. *ciliatum*) (Chen, 1979).

The two Asian *Satyrium* species are very similar in most vegetative and floral characters but differ in their flower colour (light purple or pink to white in *S. nepalense*, yellow in *S. yunnanense*). Another distinguishing character is the lip base which is glabrous in *S. nepalense* but pubescent in *S. yunnanense* (Chen et al., 1999: 382; Chen

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et al., in prep.). Also the inflorescence shape has been used to distinguish between the two species (elongate in *S. nepalense*; subcapitate in *S. yunnanense*) but can no longer be used after the discovery of our Thai specimen. In *S. nepalense* two varieties are distinguished,

a var. *nepalense* with spurs 8–16 mm long which are as long as or longer than the ovary, and a var. *ciliatum* (Lindl.) Hook. with spurs of mostly 3–6 mm length which are shorter than the ovary (Table 1).

TABLE 1. Various characters of *Satyrium nepalense* D. Don and *S. yunnanense* Rolfe.

Characters	<i>S. nepalense</i> var. <i>nepalense</i>	<i>S. nepalense</i> var. <i>ciliatum</i>	<i>S. yunnanense</i> subsp. <i>yunnanense</i>	<i>S. yunnanense</i> subsp. <i>longispica</i>
stem height	15–70 cm	12–35 cm	11–35 cm	(13–)31–36 cm
leaf number	2–3	1–2	1–2	3
leaf size	4–25 × (1–)2–10 cm	4–15 × 2–5 cm	3–11 × 2–5 cm	(5–)8–17 × (1.8–)3.2–4.5 cm
rachis length	7–20 cm	4–13 cm	2–4.5(–6) cm	(5.5–)12.5–21 cm
flower colour	pink to white	pink to white	yellow to golden yellow	yellow
median sepal, size	4–6 × 1.5–1.8 mm	5–6 × ca. 1.3 mm	4–6 × 1.5–2 mm	6.8–8.2 × 1.5–2 mm
lateral sepal, size	4–6 × 2–2.5 mm	5–6 × 1.5–1.8 mm	5–7 × ca. 2 mm	7–8.2 × 2.3–2.8 mm
petal, size	3.5–5.5 × 1–1.2 mm	4–5 × ca. 1.2 mm	3.5–5 × ca. 1.2 mm	6–7.7 × 1–1.5 mm
petal, margins	sometimes finely ciliate	erose, ciliate or denticulate	entire or papillose	denticulate in the distal part
lip, apical flap	variable	often denticulate	denticulate	minutely erose
lip base, pubescence	glabrous	glabrous	hairy	hairy
lip spurs, length and relative length	8–16 mm, as long as or longer than the ovary	3–6(–10mm), shorter than the ovary, rarely sac-like or absent altogether	3.5–6 mm, shorter than the ovary	6–8 mm long, shorter than the ovary

Key to the Asian species and intraspecific taxa of *Satyrium*

1. Flowers light purple, pink or white; lip base glabrous.....*S. nepalense* 2
- 1'. Flowers yellow; lip pubescent at the inside base*S. yunnanense* 3
2. Lip spurs 8–16 mm long, as long as or longer than the ovary var. *nepalense*
- 2'. Lip spurs normally 3–6 mm long, shorter than the ovary.....
.....var.*ciliatum* (Lindl.) Hook
3. Inflorescence subcapitate, rachis 2–4.5 (–6) cm longsubsp. *yunnanense*
- 3'. Inflorescence elongate, rachis mostly 12.5–21 cm longsubsp. *longispica* Kurzweil and Suksathan

***Satyrium yunnanense* Rolfe**

Satyrium yunnanense Rolfe, Notes Roy. Bot. Gard. Edinburgh 8: 28. 1913. *Satyrium nepalense* subsp. *yunnanense* (Rolfe) Soó, Ann. Hist.-Nat. Mus. Natl. Hung. 26: 380. 1929. Type: China, Yunnan, Niu Chang Pass, Forrest 143 (E?).

Satyrium pycnostachyum Schltr., Repert. Spec. Nov. Regni Veg. 17: 63. 1921. Type: China, Yunnan, Kouty, Tén s.n. (B†).

Satyrium microcephalum Kraenzl., Repert. Spec. Nov. Regni Veg. 17: 109. 1921. Type: China, Yunnan, Ni thon, Tén 1397 (B†).

subsp. *longispica* Kurzweil and Suksathan, subsp. nov. (Figs. 1, 2)

Type.— Northern Thailand, Phitsanulok Province, Phu Soi Dao, montane grassland-open sandstone scrub along Thailand-Laos border, 17th Sept 2008, *Suksathan* 4602 (QBG holotype, including dried and spirit material; BKF, SING isotype).

Etymology.— The name refers to the long inflorescence.

A subspeciebus typica racemis multo longioribus et floribus magnioribus differt.

Plant terrestrial with underground root tubers, deciduous, glabrous except for the lip base. *Flowering shoots* (13–)31–36 cm tall. *Basal scale leaves* 2, tubular, sheathing, enveloping the stem base to 6 cm high, uppermost with an obtuse blade to 0.5 × 1 cm. *Leaves* 3, spreading, cauline, scattered in the lower quarter of the stem, elliptic-lanceolate, acute or subacute, blade (5–)8–17 × (1.8–)3.2–4.5 cm, with 7 pronounced veins, with a prominent pale border, margins entire. *Sterile bracts* (1–)2, if 2 the lower one erect and the upper deflexed or both suberect, if rarely only 1 then suberect, narrowly lanceolate, acute or acuminate, 3.2–4.8 × 1.1–1.6 cm, margins entire. *Inflorescences* dense to semi-dense, many-flowered; rachis (5.5–)12.5–21 cm long; floral bracts elliptic-lanceolate, acute or acuminate, deflexed, 17–21 × 7–10 mm, much longer than the pedicel plus the ovary, margins entire. *Flowers* not resupinate, yellow; median sepal, lateral sepals and petals basally fused for about one fifth to one quarter of their length and slightly decurved, all denticulate on the margins in the distal part. *Pedicel and ovary* indistinguishable, 6.5–9 mm long, with pronounced ridges. *Sepals* elliptic, obtuse, 3-veined; median sepal 6.8–8.2 × 1.5–2 mm; lateral sepals 7–8.2 × 2.3–2.8 mm, weakly twisted inwards. *Petals* similar but untwisted, 6–7.7 × 1–1.5 mm. *Lip* hooded, 5–6.5 × ca. 5 mm, 5–5.5 mm deep, size of the entrance about one half of the galea width, lip with a pronounced raised median ridge on the dorsal side, lip base pubescent on the inside; lateral lip margins flaring, about 0.8 mm long, recurved, minutely erose; apical lip flap about 1 mm long, minutely erose, erect or

reflexed; lip spurs 2, parallel to the ovary and slightly shorter than it, 6–8 mm long. *Gynostemium* 4–5 mm long, anther pendent, 2–2.3 mm long, stigma flap 1.5–2.5 mm

long, erose and bilobed, rostellum 2.5–2.8 mm long, viscidia 2, orbicular, lateral on the rostellum.

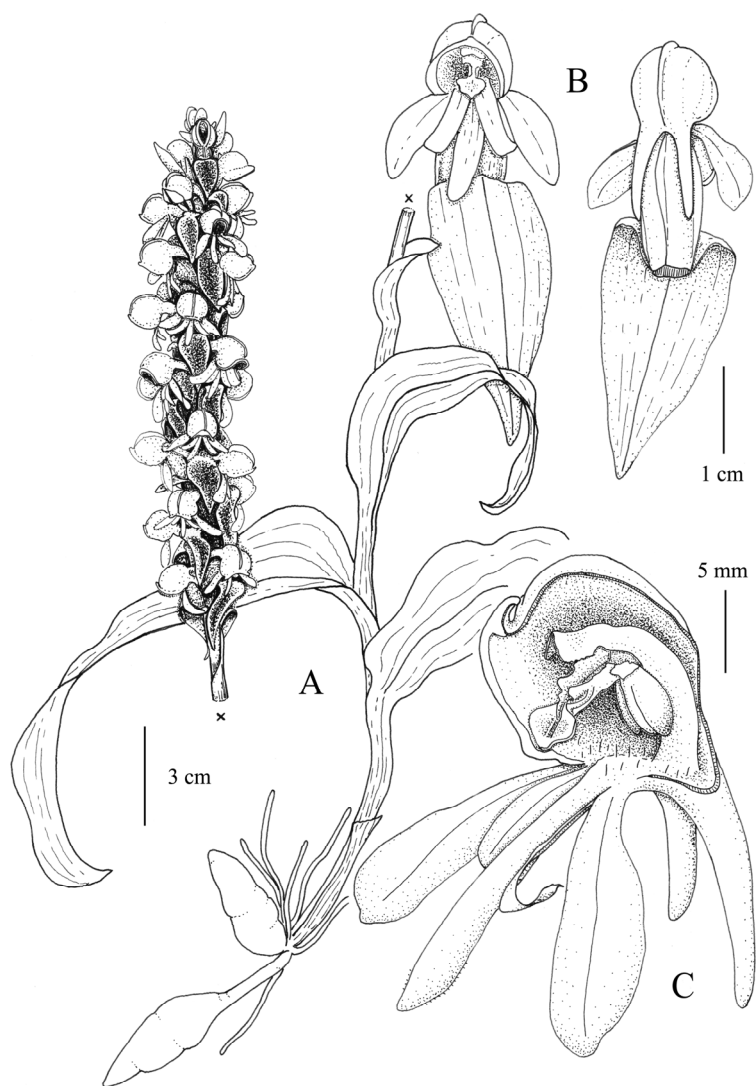


FIGURE 1. *Satyrium yunnanense* subsp. *longispica*. A. Plant. B. Flower seen from the front and from the back. C. Flower in side view, artificially opened. From *Suksathan 4602*, drawn by Piyakaset Suksathan.



FIGURE 2. *Satyrium yunnanense* subsp. *longispica*. A. Inflorescences. B. Plants in their natural habitat. C. Inflorescence, close-up. From Suksathan 4602. Scale bars: A–B = 10 cm; C = 1 cm.



FIGURE 3. Distribution of the two subspecies of *Satyrium yunnanense*. Subspecies *longispica* is only known from Phu Soi Dao, Phitsanulok Province, northern Thailand; while subspecies *yunnanense* is found in SW Sichuan and C to NW Yunnan, China (distribution of the latter subspecies only approximate).

Remarks.— This new subspecies is so far only known from the type collection and is the first recording of the genus *Satyrium* in Thailand. The plants grew in a population of about 50 plants in grassy areas and among open low bushes on a sandstone plateau and next to cliffs at about 2100 m altitude, but we assume that further plants are found in other parts of the mountain ridge which have the same habitat type.

On account of the yellow flowers and the pubescent lip base the plant was here referred to *Satyrium yunnanense* Rolfe. A major point of difference relates to the shape of the inflorescence which in typical specimens of *S. yunnanense* is subcapitate and measures 2–4.5(–6) cm (Rolfe, 1913; Chen et al., 1999;

Chen et al., in prep.) but mostly ranges from 12.5 to 21 cm in the Thai specimen. A shorter rachis of 5.5 cm was found in one out of the five measured Thai specimens which may well have been caused by environmental features or the young age of the particular plant. Also the size of the flowers differs as the Thai specimens have clearly longer sepals and petals (Table 1). Also the distribution of the Thai specimen adds support to its recognition as a separate subspecies, as *Satyrium yunnanense* is currently only known from south-western Sichuan as well as central and north-western Yunnan (Chen et al., 1999; Chen et al., in prep.) (Fig. 3).

Therefore we feel that it is justified to treat the Thai population as a new subspecies.

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