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Cremastra aphylla (Orchidaceae), a New Mycoparasitic Species from Japan

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遊川知久：日本産菌寄生ラン科の新種，モイワラン(*Cremastra aphylla*)

Cremastra, a distinct, terrestrial orchid genus from eastern Asia, comprises 2 to 7 accepted species depending on authors. Recently, Lund (1987) revised the genus and recognized 2 species: viz. *Cremastra appendiculata* (D. Don) Makino and *Cremastra unguiculata* (Finet) Finet. The former was further subdivided into *C. appendiculata* var. *appendiculata* and *C. appendiculata* var. *variabilis* (Blume) I. Lund. The distribution of this genus is Nepal, Sikkim, Northeast India in westwards, to Thailand, Vietnam, China, Taiwan, Korea, and Japan in eastwards.

Taxonomic position and affinity of this genus have not been settled: e.g., Dressler (1981) treated it as a member of tribe Maxillarieae subtribe Corallorhizinae; and he later moved all members of this subtribe into tribe Calypsoeae (Dressler 1993). On the other hand, Burns-Balogh and Funk (1986) included Corallorhizinae in tribe Coelogyninae; besides Szlachetko (1995) separated *Cremastra* from the remaining members of subtribe Corallorhizinae and suggested its placement in tribe Cymbidieae subtribe Cymbidiinae.

In this paper I describe a new *Cremastra* species characterized by a leafless habit due to mycoparasitic life history.

Cremastra aphylla Yukawa, *sp. nov.* TYPE: JAPAN, Honshu: Shimokita Peninsula [Aomori Prefecture], Sai-mura, near Arasawa, forest floor, alt. 400 m, 26 June 1998, *Yukawa 98–71* (Holotype: TNS). Figs. 1 and 2.

Paratype: JAPAN, Hokkaido: Sapporo-noujou, 15 June 1912, *sine coll. s. n.*, herb. S. Hayakawa (TI). JAPAN, Honshu: Nagano Prefecture, Shimoina-gun, Kizawa-mura, June 1950, *Yokouchi s. n.* (MAK); Nagano Prefecture, Shimoina-gun, Kami-mura, Kitamatazawa, 30 May 1950, *Muramatsu s. n.* (TNS).

Affinis Cremastrae appendiculatae, sed foliis destitutis differt.

Plant terrestrial, up to 45 cm tall. **Roots** few, developed from the basal part of corm, fibrous, up to 2.3 cm long. **Rhizome** clustered, warty, multibranched, with fine hairs from the wart, cream. **Stems** cormous, subterranean, erect, cylindrical-globose, somewhat flattened, thick, covered by leaf sheaths, cream, up to 2.0–2.2 cm long × 1.8 cm wide. **Leaves** none. **Inflorescence** lateral on cormous stems, 5- to 12-flowered, partly covered with a few tubular, brownish sheaths, dark brownish purple; peduncle 23–33 cm long; rachis 7.0–10.5 cm long; floral bracts obliquely lanceolate, obtuse, up to 17 mm long × 3.0 mm wide. **Flowers** glabrous, not opened widely, secund, pendulous; pedicellate ovary and abaxial surface of perianth lobes dark brownish purple; adaxial surface of perianth lobes brownish purple with dark mottles; process of labellum whitish. **Pedicellate ovary** terete, reflexed, up to 18 mm long. **Dorsal sepal** oblanceolate-spathulate, obtuse, 5-nerved, 30–34 mm long × 4.8–5.0 mm wide.

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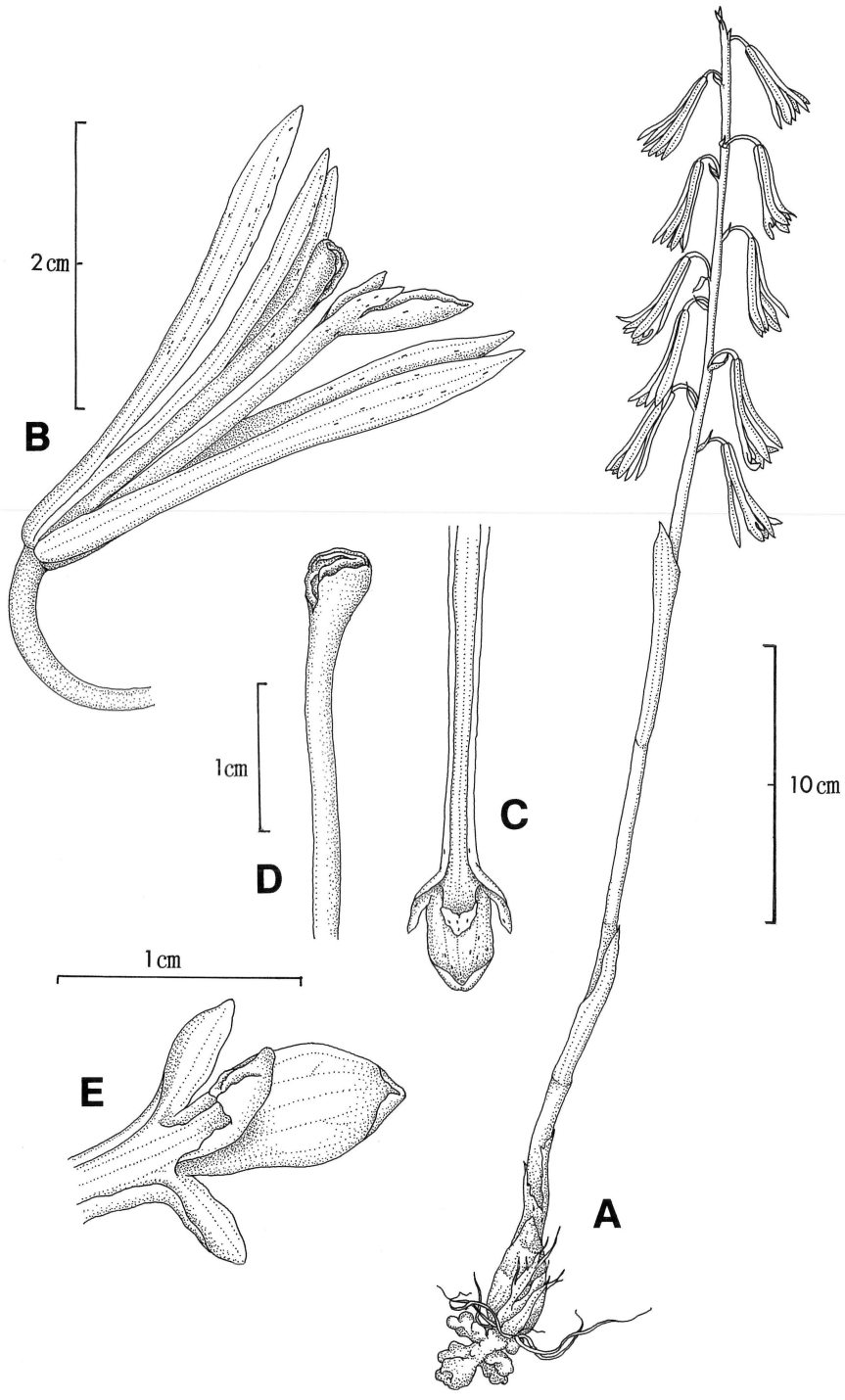

Fig. 1. *Cremastra aphylla* Yukawa. **A**. Habit; **B**. Flower; **C**. Labellum, front view; **D**. Column, side view; **E**. Apical part of labellum. Drawn from *Yukawa 98-71*.

Fig. 2. *Cremastra aphylla* Yukawa in its type locality (Shimokita Peninsula, Honshu, Japan).

Lateral sepals falcate-spathulate, obtuse, 5-nerved, 32–36 mm long × 4.5–5.0 mm wide. **Petals** falcate-spathulate, obtuse, 5-nerved, 29.5–30.5 mm long × 3.5 mm wide. **Labellum** 3-lobed, dilated, 32–35 mm long × 6.5 mm wide; basal part linear, canaliculate, much thickened; lateral lobes extended from the inrolled margins of the basal part, oblong, obtuse or retuse, 2–3-nerved, 4.5–5.0 mm long × 1.3–1.8 mm wide; midlobe oblong-oblanceolate, obtuse, 5–7-nerved, 8.5–9.8 mm long × 5.0 mm wide; disk with a rugose-verrucose process extended from the apex of the basal part, 4.0-6.0 mm long. **Column** straight, swollen at apex, 25–29 mm long; operculum cucullate, 2.5 mm long × 2.0 mm wide; pollinia laterally flattened, 4 in 2 pairs.

ETYMOLOGY: This species is named for its leafless habit.

JAPANESE NAME: Moiwa-ran.

C. aphylla is easily distinguished from the rest of *Cremastra* species by its leafless habit and a more closed form of flowers. The new species has darker flower colour and fewer flower numbers than *Cremastra appendiculata* var. *appendiculata*, which is distributed from the Himalayas to Taiwan; both

taxa, however, show an identical floral structure. On the other hand, *C. aphyllum* differs from *C. appendiculata* var. *variabilis*, a Sino-Japanese element, by its wingless column, a rugose-papillate process of the labellum, darker flower colour, and fewer flower numbers.

C. appendiculata tends to detach its leaves by the flowering time and lies dormant after flowering. This is a probable reason why the new species has been overlooked. It must be emphasized that *C. aphylla* never bears foliage leaves in any stages of its life history (T. Kinoshita, personal comunication). Further investigation may result in more findings of *C. aphylla* from various parts in Japan and eastern Asia as well.

Maekawa (1971) applied a Japanese name, Moiwa-ran to a leafless *Cremastra* plant, but he did not describe it formally. He mentioned that the locality is Mt Moiwa in Hokkaido. I, however, failed to find any specimens from Mt. Moiwa to support his observation.

It appears to me that *C. appendiculata* var. *appendiculata* is not distributed in Japan, whereas Lund (1987) indicates its distribution. The similarity of floral structure of *C. appendiculata* var. *appendiculata* and *C. aphylla* can cause wrong identification. She cited three specimens from Japan: *Yokouchi s. n.* actually represents a paratype of *C. aphylla*, and the remaining two specimens from Hokkaido may also belong to *C. aphylla* because this species is recorded in Hokkaido.

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Summary

Cremastra aphylla, a new mycoparasitic species of the Orchidaceae, is described from central and northern parts of Japan. This species is readily distinguished from the remaining members of *Cremastra* by its leafless habit and a more closed form of the flowers. Moreover, the new species differs from *Cremastra appendiculata* (D. Don) Makino var. *variabilis* (Blume) I. Lund, which is also distributed in Japan, in having a wingless column, a rugose-papillate process of the labellum, darker flower colour, and fewer flower numbers. Besides, *Cremastra aphylla* shares the floral structure with the Himalayan-Formosan variety, *Cremastra appendiculata* (D. Don) Makino var. *appendiculata*, but the former shows darker flower colour and fewer flower numbers.

摘　要

青森県下北半島で発見されたラン科サイハイラン属の1新種，モイワラン *Cremastra aphylla* Yukawa を記載する。本種は菌寄生に強くシフトした生活史を展開し，まったく普通葉を生じないこと（木下哲夫，私信），そして花被片の開度が小さいことで，同属の他のすべての種から区別される。花の構造は，ヒマラヤから台湾にかけて分布する *Cremastra appendiculata* (D. Don) Makino var. *appendiculata* に酷似するものの，花色が褐色を帯びた赤紫であること，花序あたりの花数が少ないことが異なる。一方，日本のサイハイラン *Cremastra appendiculata* (D. Don) Makino var. *variabilis* (Blume) I. Lund からは，蘂柱先端より少し下の腹側に見られる翼がないこと，唇弁基部先端の突起が平滑でなく皺～いぼ状になること，花色が褐色を帯びた赤紫である

こと，花序あたりの花数が少ないことで，よく区別できる。

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