

PUCCINIA CREMANTHODII SP. NOV.

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ABSTRACT *Puccinia cremanthodii* J. Y. Zhuang et S. X. Wei, a new rust species on *Cremanthodium discoideum* Maxim. (Compositae) from Qinghai Plateau is described. The rust is characterized by the ellipsoid teliospores (measured $32-48 \times 19-32 \mu\text{m}$) with reticulately rugose walls and fragile pedicels. The host genus is new for rusts. The type specimen is kept in Herbarium Mycologicum Instituti Microbiologici Academiae Sinicae (HMAS), Beijing.

KEY WORDS *Puccinia cremanthodii*; *Cremanthodium discoideum*; Qinghai

An alpine rust species which is worth paying special attention is reported herein as new to science. The specimen was collected by Mr. Xing Jun-chang and Mr. Ma Qi-ming at an altitude of 4200 m above sea level in Ulan (Xiligou) near Qaidam Basin, Qinghai Plateau, on *Cremanthodium discoideum* Maxim. (Compositae). The species may be described as follow:

Puccinia cremanthodii J. Y. Zhuang et S. X. Wei sp. nov. Fig. 1

Spermogonia, aecia et uredinia ignota.

Telia amphigena vel petiolicola, aggregata, rotundata, ca. 0.5—0.8 mm diam., pulvinata, epidermide rupta cincta, atro-brunnea, subpulverulenta. Teliosporae ellipsoideae vel subobovatae, utrinque rotundatae, medio leviter constrictae, $(32-35-45(48) \times (19-22-28(-32) \mu\text{m}$, membrana 2—3.5 μm crassa, supra poros in umbonem pallidiorem usque ad 5 μm incrassata, cinnamomeo-usque castaneo-brunnea, reticulato-rugosa, porus superior apicalis, inferior juxta septum situs, pedicellus hyalinus, usque ad 100 μm longus sed fragilis.

Hab. in foliis petiolisque *Cremanthodii discoidei* Maxim. GINGHAI: Ulan (Xiligou), alt. 4200 m, 1 VIII 1959, leg. Xing Jun-chang et Ma Qi-ming No. 1291 (HMAS 58147) (TYPUS).

Hiratsuka (1976, 1980) recorded 30 autoecious *Puccinia* species that parasitize species of Compositae from different localities of the Japanese Archipelago and its adjacent areas (Korea and northeast provinces of China). Recently, Wei & Wang (1986) recognized 39 *Puccinia* species on the same plant family in China. There is no species of eastern Asian compositicolous *Puccinia* to which the present *Puccinia* can be referred.

The teliospores of this species are ellipsoid or slightly obovate, rounded at both ends, $(32-35-45(-48) \times (19-22-28(-32) \mu\text{m}$. The wall is reticulately ru-

gose with wartlets usually fused in various patterns, 2—3.5 μm thick, slightly thickened (up to 5 μm) over the germ pores as defined umbos. The pedicels are up to 100 μm long or longer, but are usually broken near the hilum.

This species has features in common with several *Puccinia* species on *Zexmenia* from Mexico and Central America (Parmelee, 1967; Cummins, 1978; Leon Gallegos, 1979). It differs in having comparatively larger teliospores with longer pedicels. The germ pore is apical on each cell, and the height of umbos usually not exceeds 5 μm .

The species is represented by only one collection. The life cycle is uncertain. Only the telia are known in the specimen, and whether the rust possesses spermatogonia, aecia or uredinia, is yet wholly open questions.

The identity of the host was verified by Prof. Emer. Zhou Gen-sheng, Institute of Botany, Academia Sinica. This appears to be the first rust recorded on the host genus *Cremanthodium*. The genus *Cremanthodium* so far known comprises 55 species, and about 50 species are recognized in China (How, 1982). It is endemic and confined to the Himalayas and Qinghai-Xizang Plateau, and mainly distributed above the timberline up to subnival zone at elevations over 4000m. It could be conjectured that this rust is also endemic to the alpine meadow zone in the plateau.

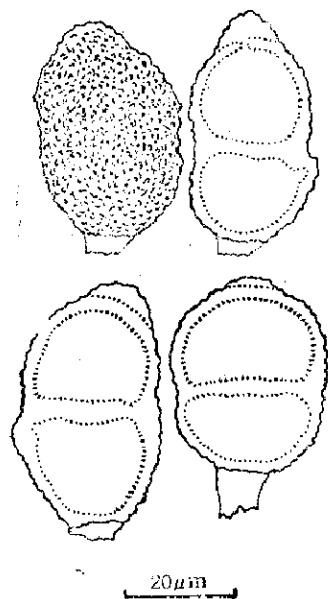


Fig. 1 Teliospores of *Puccinia cremanthodii* J. Y. Zhuang & S. X. Wei

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垂头菊柄锈菌新种

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摘要 本文报告了盘花垂头菊 *Cremanthodium discoideum* Maxim. 上的一锈菌新种——垂头菊柄锈菌 *Puccinia cremanthodii* J. Y. Zhuang et S. X. Wei。模式标本采自青海省, 保藏在中国科学院微生物研究所真菌标本室。本种主要特征是: 冬孢子椭圆形或近倒卵形, 两端圆, 中部略缢缩, $32-48 \times 19-32 \mu\text{m}$, 孢壁肉桂褐色至栗褐色, $2-3.5 \mu\text{m}$ 厚, 连同孔帽约 $5 \mu\text{m}$ 厚, 有不规则的网状皱纹, 柄达 $100 \mu\text{m}$ 长, 易破碎。垂头菊属植物上未曾记载过有锈菌, 本种为首次报道。垂头菊属是喜马拉雅和青藏高原的特有属, 分布高海拔地带, 推测此菌可能为青藏高原所特有。

关键词 垂头菊柄锈菌; 盘花垂头菊; 青海