

NOTES ON THE GENUS *SMARDAEA* IN CHINA

CAO JIN-ZHONG

(Institute of Edible Fungi, Academy of Agricultural Science of Shanxi, Taiyuan)

FAN LI LIU BO

(Department of Biology, Shanxi University, Taiyuan)

ABSTRACT Two species of the genus *Smardaea* are reported in this paper. Of them, *S. microspora* is new to science and *S. purpurea* is the first record in China.

KEY WORDS *Smardaea*; *S. microspora*; *S. purpurea*

The genus *Smardaea* was erected by Svrcek (1969) on the basis of *Ascobolus amethystinus* Phill. Almost at the same time, Brummelen (1969) referred the species to the genus *Jafneadelphus* Rifai and made the combination, *J. amethystinus* (Phill.) Brummelen. Zhuang and Korf's (1986) study convince us that *Aleurina* Massee is the correct generic name for *Jafneadelphus* Rifai and that *Ascobolus amethystinus* is not a species of *Aleurina* because of the presence of purple pigments in the apothecia and the different excipular structure. A similar genus *Greletia* Donad. segregated from *Pulparia* (= *Marcelleina*) was erected by Donadini (1979) with type species *Greletia planchonis* (Dun. ex Boud.) Donad. Both *Smardaea* and *Greletia* have been noticed the presence of purple pigments in apothecia and the similarity of excipular structure. Cells of the ectal excipulum are nearly isodiametric, globose to angular but not elongate polygonal-shaped. The only difference between them is the ascospores which are globose and smooth in the type species of *Greletia* but typically ellipsoid and sculptured in *Smardaea*. However, in both *Greletia ovalispora* and *G. marchica*, the ascospores are subellipsoid, moreover, recent SEM photomicrographa reveal that a lower and fine ornamentation is also present in *G. planchonis*. For these reasons, many authors suggested that the distinctions between *Greletia* and *Smardaea* are questionable (Zhuang and Korf, 1986; Moravec, 1987; Dissing, in litt. 1988). We fully agree with their concept and think that further study of this problem is needed.

The genus *Smardaea* Svrcek (1969) had been monotypic for a long time until *S. purpurea* and *S. protea* were added by Dissing (1986), Zhuang and Korf (1986) respectively. The genus has never been reported from China before. In the research of Chinese flora of the Pezizales, two species of this genus were found, one is *S. purpurea* and another is described as a new species, *S. microspora*.

Smardaea microspora Cao, Fan et Liu sp. nov.

Fig. 1

Apothecium scutellatum, sessile 3—6 mm latum; hymenium purpureum vel atropurpureum in vegeto, planum; superficies exterior dilute purpurea vel purpurea, indistincte pustulata, in sicco hymenium et superficies exterior atropurpurea vel nigra. Excipulum exterius 60—

80 μm crassum, textura globulosa ad angulare, cellula singularis 10—20 μm diam, globosa vel subglobosa vel leniter elongata, leptotunicata vel leniter crassitunicata, tunica purpurea, particulae coloratae in cytoplasmatis adsunt; excipulum medullare 80—100 μm crassum, textura intricata cum cellulis sphaericis immixta, hyphae 4—7 μm diam septatae, ramosae, leptotunicatae, tunicae leniter purpureae; subhymenium indistinctum. Asci cylindrici, 8-spori, I-, 190—210 \times 10—12 μm , crozier adsunt. Ascospores uniseriatae, ellipsoideae, 16.5—18 \times 7.5—9.5 μm , hyalinae, glabrae deinde irregulariter porcatae vel reticulatae, plerumque biguttulatae. Paraphyses filamentosae, 3—4 μm diam, non ramosae, septatae, apice tumidae ad 4—7.5 μm diam, tunicae dilute purpureae, particulae coloratae in cytoplasmatis adsunt.

Hab. ad terram. Luo Dao Zhuang, Beijing, China. 12-IX-1961, Hu Fu-mei (HMAS 31182, Holotypus).

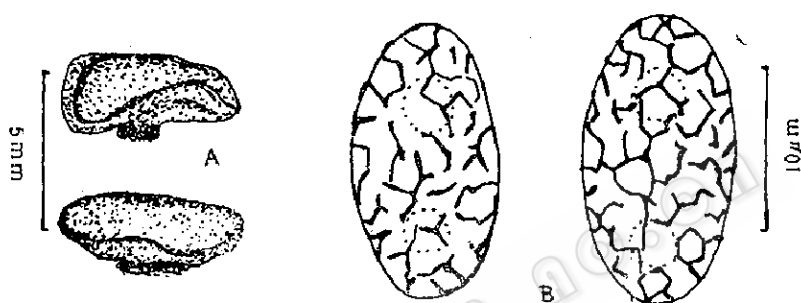


图1 小孢紫盘菌

A. 子囊盘 B. 子囊孢子

Fig. 1 *Smardaea microspora*, Cao Fan et Liu

A. Apothecia B. Ascospores

Apothecia discoid, sessile, 3—6 mm broad; hymenium purple to dark purple when fresh; external surface purplish to purple, not distinctly pustulate, both hymenium and external surface black-purple to nearly black when drying. Ectal excipulum 60—80 μm thick, of textura globulose to textura angular, individual cells 10—20 μm in diam, globose, subglobose to slightly elongate, thin-walled to slightly thick-walled, with purplish pigmented walls, pigmented particles present in cytoplasm; medullary excipulum 80—100 μm thick, of textura intricata intermixed with globose cells, hyphae 4—7 μm in diam, septate, branched, thin-walled, walls light purple; subhymenium indistinguishable. Asci cylindrical, 8-spored, I-, 190—210 \times 10—12 μm , with distinct crozier at base. Ascospores uniseriate, ellipsoid, hyaline, 16.5—18 \times 7.5—9.5 μm , smooth at first, marked with irregular lower ridges to reticula at maturity which can be seen under oil immersion lens only, mostly biguttulate. Paraphyses filiform, 3—4 μm in diam, unbranched, septate, swollen to 4—7.5 μm at apex, cytoplasm pigmented.

On sandy soil. Luo Dao Zhuang, Beijing, China. 12-IX-1961, Hu Fu-mei (HMAS 31182, Holotypus).

The specimen cited above is labelled as *Humaria violacea* (Pers.) Sacc. in the Herbarium of Mycology, Institute of Microbiology, Academia Sinica. It is evident that this fungus was misidentified and is convincingly a *Smardaea* species because of the nonamyloid asci, marked, ellipsoid ascospores, and the purplish pigments of excipular cells. By now, three species have been described in this genus, the fourth species, which is described as *Smardaea microspora* sp. nov. here, differs from them mainly in its smaller ascospores.

Smardaea purpurea Dissing, Sydowia, Annales Mycologici Ser. II. 38: 35, 1986(1985).

Fig. 2

This species firstly reported from Switzerland and DDR (Dissing, 1986). It can be easily distinguished by more distinct spore ornamentations, irregular ridges and warts. The Chinese materials were collected from subalpine belt regions of northern Shanxi province, where it is fairly common in summer and autumn under conifers (*Picea* sp.).

Specimens examined: Mts. Guancen, Shanxi province, China, on the ground under conifers (*Picea* sp.), VIII-1974, Li Zhong-ying (MHSU 640); ibid, 10-VIII-1987, Cao Jin-zhong (MHSU 716).

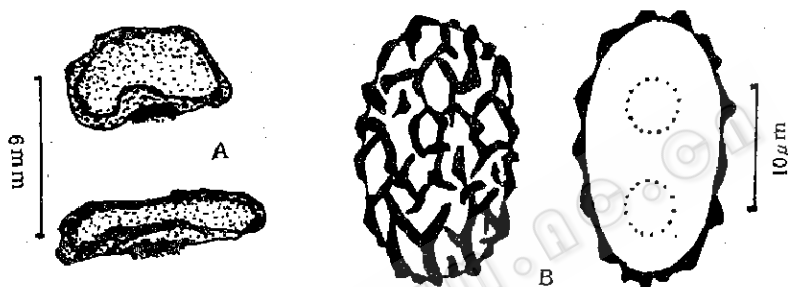


图2 紫色紫盘菌

A. 子囊盘 B. 子囊孢子

Fig. 2 *Smardaea purpurea* Dissing

A. Apothecia B. Ascospores

ACKNOWLEDGEMENTS

The authors would like to thank Prof. H. Dissing, university of Copenhagen, Denmark for giving valuable suggestions to the new species.

LITERATURE CITED

- [1] Brummelen J van (1969) Studies on Discomycetes III. *Persoonia* 5: 225—231
- [2] Dissing H (1986) *Smardaea purpurea* (Pezizales), another new species from Graubunden, Switzerland. *Sydowia Ser II*. 38: 35—40 (1985)
- [3] Donadini JC (1979) Un genre nouveau: *Greletia* nov. gen. (ex *Pulparia* Karsten emend. Korf pro parte. Pezizales). *Bull Soc Mycol Fr* 95: 181—184
- [4] Moravec J (1987) A taxonomic revision of the genus *Marcelleina*. *Mycotaxon* 30: 473—499
- [5] Svrcek M (1969) Nove rody operkulatnich diskomycetu (Pezizales). *Ceska Mykol* 23: 83—96
- [6] Zhuang WY, Korf RP (1986) A monograph of the genus *Aleurina* Massee (= *Jafncadelphus* Rifai). *Mycotaxon* 26: 361—400

中国紫盘菌属志略

曹 晋 忠

(山西省农业科学院食用菌研究所, 太原)

范 黎 刘 波

(山西大学生物系, 太原)

摘要 紫盘菌属 *Smardaea* 是 Svrcěk (1969) 在 *Ascobolus amethystinus* Phill. 基础上建立的。其主要特征为：子囊非淀粉质，孢子椭圆形，具纹饰，囊盘被组织明显紫色，2 层，内层交错丝组织型，外层球胞组织型至角胞组织型。本属成员以前在我国未见报道。作者近年来在研究中国盘菌区系过程中发现本属 2 个种，一个为紫色紫盘菌 *S. purpurea* Dissing；另一个为新种，命名为小孢紫盘菌 *S. microspora* sp. nov. 本新种与本属其它 3 个种的区别主要在于较小的子囊孢子，低的表面纹饰。

关键词 紫盘菌属；小孢紫盘菌；紫色紫盘菌