

PARAISARIA GRACILIOIDES COMB. NOV., THE ANAMORPH OF CORDYCEPS GRACILIOIDES

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拟细羽束梗孢 (新组合) ——拟细虫草的无性型

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Isaria gracilioides, the anamorph of *Cordyceps gracilioides* Kobayasi (see also Shimizu, 1994), was described by Kobayasi (1941) on larvae of Cossidae (Coleoptera). The fungus differs from *Isaria dubia* Delacr., the anamorph of *Cordyceps gracilis* Durieu & Montagne. The former has much bigger conidia than the latter. Samson & Brady (1983) established a new genus *Paraisaria* on the base of *Isaria dubia* which possessed white and loose synnemata consisting of verticillately branched conidiophores with flask-shaped sympodially proliferating phialides. *Cordyceps gracilioides* and *Cordyceps gracilis* isolates were successfully collected from China through the method of collecting discharged ascospores from a sterile glass slide and transferring the spores to potato dextrose agar plus 1% peptone (PPDA) (Fan et al., 2001; Li et al., 2002). Recently, *Isaria gracilioides* was distinguished in the isolate RCEF0921 obtained from the specimen ST000903-01 collected by Y. Y. Chen. The fungus seemed to fit the descriptions of *Paraisaria* and therefore the following change of the name was made. This is a new record in China.

***Paraisaria gracilioides* (Kobayasi) C. R. Li, M. Z. Fan & Z. Z. Li comb. nov. Plate I**
Isaria gracilioides Kobayasi, Science Reports of Tokyo Bunrika Daigaku 5: 231, fig. on p. 233 (1941).
Teleomorph: *Cordyceps gracilioides* Kobayasi, Science Reports of Tokyo Bunrika Daigaku 5: 140, fig. on p. 142 (1941).

Pure culture was obtained from both germinating ascospores and conidia.

Colonies on PPDA 3.5-4.2 mm diam., on Czapek agar felt, white, wet, flat, with hillock at the center, spreading slowly, only 2.0-3.5 mm diam. after 14 days at 25°C, slight brown on reverse of PPDA and white on Czapek agar. Conidiogenous structure and conidia not observed until 60 days on the above media. No growth appeared on Malt Extract Agar (MEA).

Colonies on PPDA 31-42.5mm in diameter after 88 days, with hillock or shrinkage at the center

and radiate veins outside the center, and with radiate veins on reverse too. Hyphae hyaline, ca. 2.0 μm wide. Conidiogenous structure consisting of single or branched phialides with 2-3 in a whorl coming from hyphae obliquely or almost erectly. Conidigenous cells phialidic, 5.5~27 \times 2.0~3.9 μm , frequently sympodially proliferating, with a swollen venter giving rise to 1-4 sharply narrowed necks (Plate I, 6-7), 2.5 μm long. Conidia narrowly cylindrical to fusiform, one-celled, hyaline, smooth-walled, 3.0~14.5 \times 1.0~2.0 μm , produced in basipetal succession and usually 2-6 conidia aggregating in heads or fascicles.

Fruitbody with immature perithecia was observed on rice media after 18 months. In addition, many white, loose synnemata were found, 6.8 \times 0.1mm. However, synnemata were not observed on Czapek agar and PPDA media even 115 days later.

Kobayasi (1941) noted the differences between *Isaria gracilioides* and *I. dubia*, but he mistook both *I. dubia* and *I. gracilioides* for the anamorphs of *C. gracilis* (Kobayasi, 1941). In 1982, he mentioned correctly that only *I. dubia* was the anamorph of *C. gracilis*.

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(图见文后彩版)