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***Pseudolachnella vermospora* sp. nov. from *Yushania vigens* in China**

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This paper describes and illustrates *Pseudolachnella vermospora* sp. nov., from living culms of *Yushania vigens*, and the new taxon is compared with similar species. A synopsis and diagrams of all accepted species of *Pseudolachnella* are provided.

**Key words:** anamorphic fungi, systematics, taxonomy

### **Introduction**

There have been several recent surveys on the fungi of Yunnan (Cai *et al.*, 2002; Zhao *et al.*, 2003) and on fungi on bamboo in China (Hyde *et al.*, 2002; Zhou and Hyde, 2002). We are studying the fungi from the pristine forest of Gaoligong Mountain National Natural Reserve in Yunnan Province. In this paper we report on a new species of *Pseudolachnella* occurring on culms of bamboo.

### **Material and Methods**

Material was collected in the field and returned to the laboratory in sealed plastic bags. It was examined periodically for fungi. The conidioma were sliced by hand and examined by a light microscope. Material is deposited in Plant Pathology Herbarium of Southwest Forestry College Kunming, Yunnan, China (HSFC).

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## Taxonomy

*Pseudolachnella vermospora* R.L. Zhao, Y.M. Yang & G.C. Zhao, **sp. nov.**

(Figs 1-2, 3G)

*Etymology*: referring to the vermicular conidia.

*Conidiomata* 257-772  $\mu\text{m}$  diam., 200-330  $\mu\text{m}$  alta, eustromaticea, dissita, acerula vel cupulata, subepidermalia, atro-brunnea, circa sunt seti. *Setae* ex stromate basali subhyalino tenui oriundae, simplices, subulatae, atro-brunneae, rectae vel curvatae et apicem quaeque habent obtusum vel acutum, septatae,  $310 \times 3.5\text{-}5 \mu\text{m}$  lat. *Conidiophora*  $25\text{-}36 \times 1.3\text{-}2 \mu\text{m}$ , lineata, septata, hyalina, ramosa, longa. *Cellulae conidiogenae* discretiae, cylindricae vel clavatae, acropleurogenae, hyalinae vel pallidae, leaves,  $5\text{-}10 \times 2\text{-}3 \mu\text{m}$ . *Conidia* hyaline, cylintraceo-obclavata, (5-)7-euseptata, leaves, guttulata  $22\text{-}28 \times 3.5\text{-}7 \mu\text{m}$ , longe/late = 5:1; cellula apicalis et basalis orta in appendice, hyalina, simplicia, apicalis 1-2, basalis 3-6;  $5\text{-}13 \mu\text{m}$  longa.

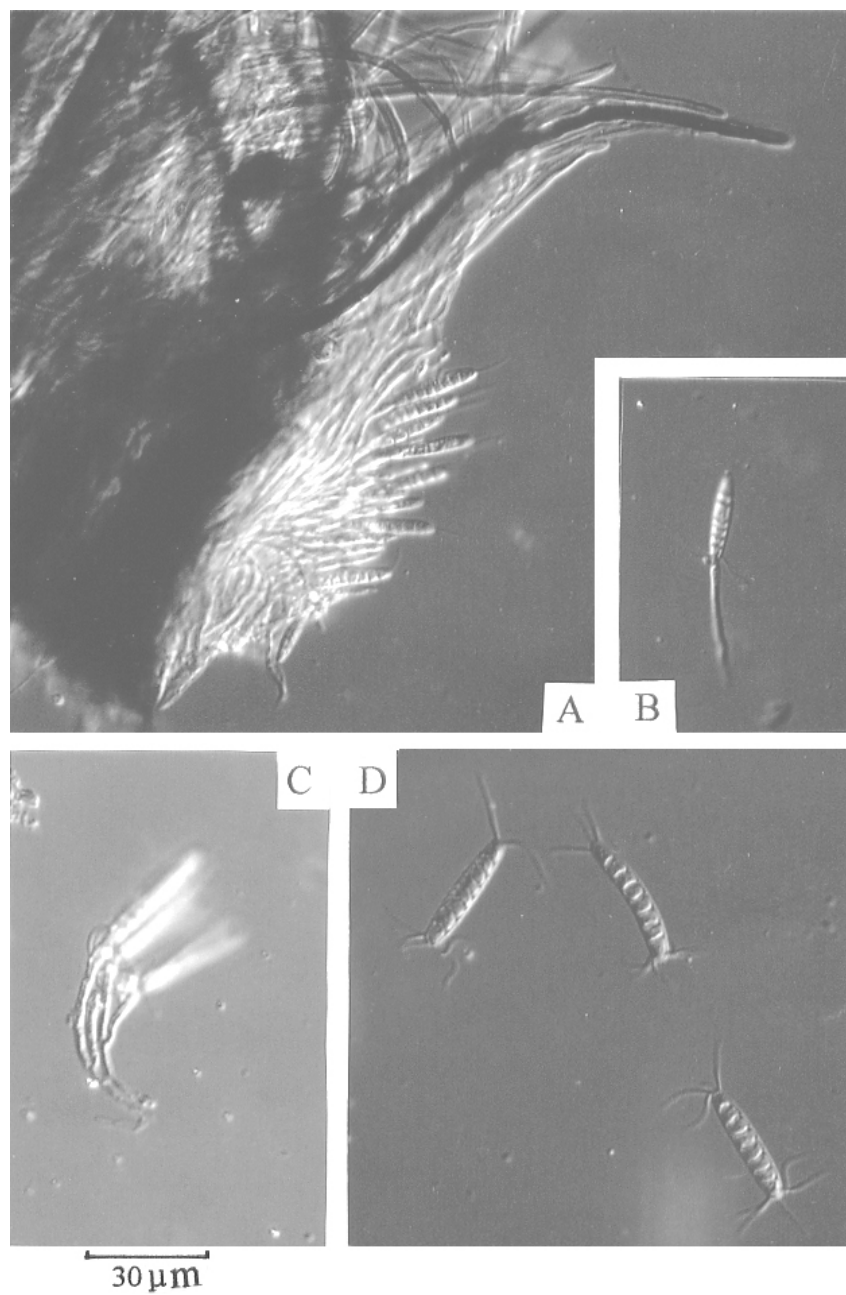
*Caulicolous*. *Conidiomata* 257-772  $\mu\text{m}$  diam., 200-330  $\mu\text{m}$  high, stromatic, scattered, firstly closed and subcuticular in origin, later erumpent, acervuloid or cupulate, dark brown, setose; basal stroma and peridium tissue of *textura angularis*. *Excipulum* absent. *Conidiomatal setae* marginal, dark brown to black and paler towards the inside, straight or incurved over the conidial hymenium, cylindrical with a blunt or sparingly acute apex, thick-walled, septate, the longest 310  $\mu\text{m}$ , the widest 3.5-5  $\mu\text{m}$ . *Conidiophores*  $25\text{-}36 \times 1.2\text{-}2 \mu\text{m}$ , filiform, colourless, septate, dichotomously branched or unbranched, bearing 1-2 conidiogenous cells on the apex. *Conidiogenous cells* discrete, cylindrical to subcylindrical with marked periclinal thickenings in the collarete zone, colourless, smooth,  $5\text{-}10 \times 2\text{-}3 \mu\text{m}$ . *Conidia* vermicular, fusiform, acerose, colourless, (5-)7-septate, smooth, guttulate,  $22\text{-}28 \times 3.5\text{-}7 \mu\text{m}$ , length/width ratio = 5:1, bearing appendages at both ends. *Appendages* filiform, flexuous, colourless, unbranched, 5-13  $\mu\text{m}$ ; basal appendages 3-6, eccentric and discrete; apical appendages 1-2, scarcely 3-4, same length or not.

Material examined: CHINA, Yunnan Province, Gaoligong Mountain Nation Natural Reserve, altitude 3400m, May 2001, G.C. Zhao, R.L. Zhao and Y.M. Yang and S.B. Tan, deposited in Plant Pathology Herbarium of Southwest Forestry College Kunming, Yunnan, China (Holotype: HSFC 010534).

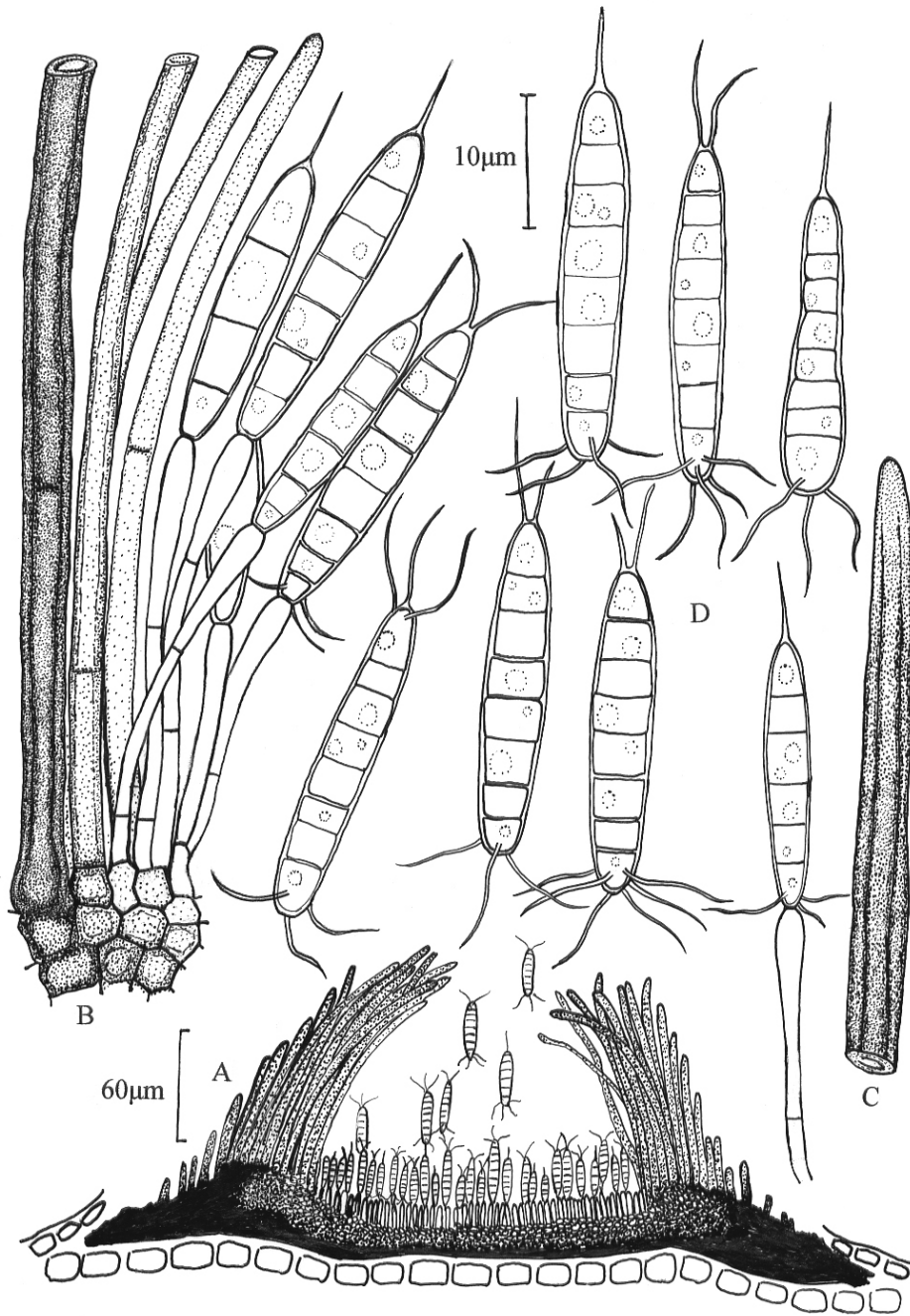
*Habit*: on living twigs of *Yushania vigens* Yi.

*Pseudolachnella longiciliata* (Hino & Katumoto) Nag Raj was discovered in the same specimen.

*Notes*: Sutton (1980) described *Pseudolachnea* Ranojevic (Annls. Mycol. 8: 593, 1910) and regarded *Pseudolachnella* Teng (Sinensia 7: 775, 1936) as one of its synonyms. Nag Raj (1993) however, transferred some species of *Pseudolachnea* lacking an excipulum, with more than 3 septa and with long appendages into *Pseudolachnella*. He therefore maintained *Pseudolachnella* and *Pseudolachea* as distinct genera. We agree with this treatment by Nag Raj (1993) and place our new species in *Pseudolachnella*.

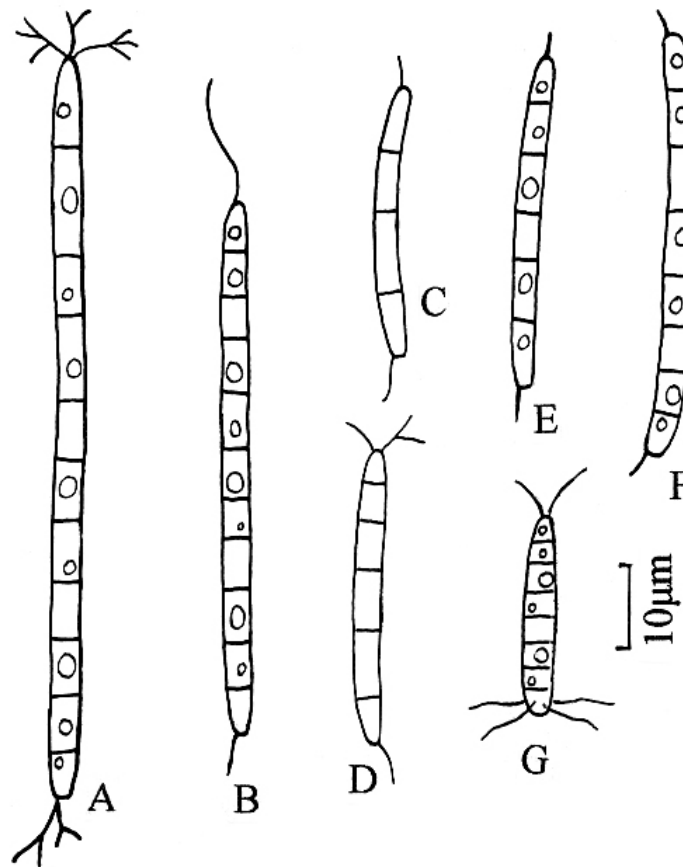


**Fig.1.** *Pseudolachnella vermospora* (from holotype). **A.** Part of vertical section of conidioma. **B-C.** Conidiophores, conidiogenous cells and developing conidia. **D.** Conidia.



**Fig. 2.** *Pseudolachnella vermospora*. A. Vertical section of conidioma. B. Base of setae, conidiophores, conidiogenous cells and developing conidia. C. Apex of setae. D. Conidia.

Six species of *Pseudolachnella* are presently accepted. The important differences between these species and the new species are: (1) The length/width ratio of the new species is 5:1, which is smaller than that of other species (*P. coronata* 33.3:1; *P. indica* 14.4:1; *P. longiciliata* 21.8:1; *P. ryukyuensis*, 13:1 *P. scolecospora* 15.8:1, *P. setulosa* 22:1). Thus it has the appearance of a short worm. (2) The conidia of the new species have three to six unbranched basal appendages. The only other species with branched appendages is *P. coronata*, but the appendages are branched and the conidia are considerably longer (Fig.3).



**Fig. 3:** Comparison of conidial features in *Pseudolachnella*. **A.** *P. coronata*. **B.** *P. longiciliata*. **C.** *P. indica*. **D.** *P. ryukyuensis*. **E.** *P. scolecospora*. **F.** *P. setulosa*. **G.** *P. vermospora* (Drawn from Nag Raj, 1993).

## Key to species of *Pseudolachnella*

1. Conidial appendages branched..... 2
1. Conidial appendages unbranched..... 3
2. Conidia 7-11-septate, 70-110  $\mu\text{m}$  long; mean conidial length/width ratio = 33.3:1; apical appendages 2-4, branched dichotomously, trichotomously, branches 7-11  $\mu\text{m}$  long; basal appendages unbranched or irregularly branched, 5-8  $\mu\text{m}$  long..... *P. coronata*
2. Conidia 4-6-septate, 30-40  $\mu\text{m}$  long; mean conidium length/width ratio = 13:1; apical appendages 1-2, branched dichotomously, branches 4-6  $\mu\text{m}$  long; basal appendages unbranched or branched once, branches 3-4  $\mu\text{m}$  long ..... *P. ryukyuensis*
3. Conidia mostly 3-septate, occasionally 5-septate..... 4
3. Conidia with more than 3 septa..... 5
4. Mean conidium length/width ratio = 14.4:1; conidia 24-38  $\mu\text{m}$  long ..... *P. indica*
4. Mean conidium length/width ratio = 15.8:1; conidia (27-)30-50  $\mu\text{m}$  long ..... *P. scolecospora*
5. Conidia with one appendage at both ends..... 6
5. Apical appendages 1-more; basal appendages 3-6..... *P. vermospora*
6. Appendages 2-3  $\mu\text{m}$  long ..... *P. setulosa*
6. Apical appendages 10-47  $\mu\text{m}$  long; basal appendages 8-22  $\mu\text{m}$  long ..... *P. longiciliata*

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