

## PETRAKOMYCES, A NEW GENUS OF THE SPHÆROPSIDALES

BY C. V. SUBRAMANIAN AND K. RAMAKRISHNAN

(University Botany Laboratory, Madras-5)

Received December 18, 1952

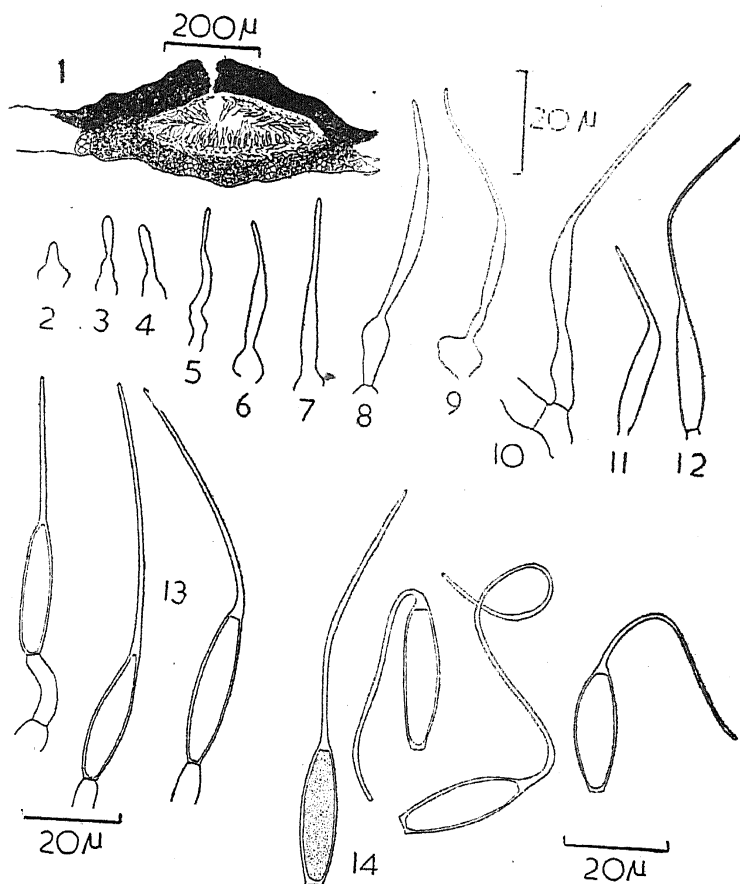
(Communicated by Prof. T. S. Sadasivan, F.A.Sc.)

RECENTLY we collected a pycnidial fungus on living leaves of *Bambusa* (?) sp. from Walayar (Malabar District, Madras State). A description of the fungus based on this collection is given below.

The fungus forms circular, oval or ellipsoid, black stromata on leaves. The stromata are up to 2 mm. long, darker-coloured, more raised and hence more prominent on the upper surface of the leaf than on the lower. The stroma is biconvex in shape, is found to extend from the upper to the lower epidermis, and encloses a cavity within which conidia are produced (Fig. 1). The stroma enclosing the cavity is "phyllachoroid". The conidiophores arise from the entire inner surface of the cavity and not merely from its floor. They are usually hyaline, stout, short, and of variable shape,  $11-23 \times 3-5 \mu$ . The conidia (Fig. 14) are produced acrogenously on the conidiophores (Fig. 13) and are hyaline, slightly thick-walled, one-celled, elliptical with a truncate base and with a long, filamentous, whip-like appendage at its tip,  $25-32 \times 8-11 \mu$  without the appendage. The measurements of the appendages are:  $43-76 \times 1 \mu$ .

The development of the conidia appears to be as follows. The conidium starts as a papillate outgrowth from the tip of the conidiophore (Fig. 2). The papilla elongates rapidly and the apical portion develops into the long appendage as a result of the more rapid elongation of this part of the papilla (Figs. 3-9). Thus the appendage reaches its full length much earlier than the body of the conidium completes its development. In the meantime, the lower portion of the papilla bulges and also elongates and forms the body of the spore (Fig. 10). Finally, the body of the spore is cut off from the conidiophore (Fig. 12).

The structure of the pycnidium and the one-celled hyaline conidia indicate that the fungus should be placed in the Sphærioideæ-Hyalosporæ. The fungus resembles *Ciliochora* Hoehnel in having a "phyllachoroid" pycnidium (Hoehnel, 1919). Hoehnel's (1919, p. 159) description of *Ciliochora* is: "Stroma phyllachoroid, Lokulus tief eingewachsen, Konidie einzellig,



FIGS. 1-14. *Petrakomyces indicus*, from type specimen (Herb. M.U.B.L. No. 836). Fig. 1, section of pycnidium; Figs. 2-13, development of conidiophore and conidium; Fig. 14, mature conidia.

hyalin, oben mit geteilter Zilie." The type species is *C. longiseta* (Racib.) Hoehnel (= *Neottiospora longiseta* Racib.). A description of *N. longiseta* Racib. is given by Saccardo (1902, p. 891) wherein the conidia are described as: "Sporulis ovatis, utrinque acutis, hyalinus v. pallide griseis, 20-24 x 10, apice setam pro basi furcatum vel in ramos tres divisam tenuissimam, hyalinam, ca. longam gerentibus." From the generic description of Hoehnel and from the description of the type species given by Saccardo, it is obvious that our fungus is different from *Ciliophora* Hoehnel in having a simple apical appendage.

The other genus which was considered is *Ciliophora* Petrak (Sydow and Petrak, 1929). The type species, *C. cryptica* Petrak is stated to have hyaline, one-celled, fusoid, falcate or lunate conidia, each with a long, oblique, apical cilium. Although our fungus agrees with *C. cryptica* in having one-celled hyaline conidia each with an apical appendage, it differs from *C. cryptica*

in minor details of spore characters such as shape, etc. Apart from this, there is a more important distinction between the two fungi in that *Ciliophora* is a hyperparasite on *Phyllachora*, a fact incorporated by Petrak in the generic as well as specific diagnoses; our fungus, on the other hand, is a parasite on the leaves of a phanerogam. Further, the pycnidium in *Ciliophora* is not phyllachoroid.

Our fungus therefore has to be placed in a new genus. We name it *Petrakomyces*, in honour of Dr. F. Petrak of Vienna, well known for his work on Sphærosporidales.

***Petrakomyces* Subramanian and Ramakrishnan gen. nov.**

Pertinet ad Fungos Imperfectos, sect. Sphærioidearum, atque Hyalosporar. Stroma phyllachoroideum, includens cavitatem pycnidialem absque ostiolo, dehiscens per fissuram elongatum. Conidiophori simplices, insidentes toti superficiei internæ cavitatis pycnidialis. Conidia acrogena, hyalina, unicellulata, ornata appendice simplici, apicali, hyalina, longa, flagelli instar, filamentosa.

Species typica sequens.

***Petrakomyces indicus* Subramanian and Ramakrishnan sp. nov.**

Stromata in foliis, circularia, ovalia vel elliptica, nigra, usque ad 2 mm. longa. Cavitates pycnidiales singulæ in unoquoque stromate, absque ostiolis, dehiscentes per fissuras elongatas. Conidiophori insidentes toti internæ superficiei cavitatis pycnidialis, simplices, robusti, hyalini, breves,  $11-23 \times 3-5 \mu$ . Conidia acrogena, hyalina, unicellulata, parietibus aliquantum crassis prædita, elliptica, ad basim truncata, ad apicem ornata appendice longa, filamentosa, flagelli instar; conidia  $25-32 \times 8-11 \mu$ , appendices  $43-76 \times 1 \mu$ .

Habitat in foliis viventibus (?) *Bambusæ* spec.; typus lectus in loco Walayar, provincia Malabar, in Statu Madras, die 5 Octobris anni 1952, a C. V. Subramanian et K. Ramakrishnan, et positus in Herbario M.U.B.L. sub Numero 836.

***Petrakomyces* Subramanian and Ramakrishnan gen. nov.**

Fungus Imperfectus, Sphærioideæ, Hyalosporæ. Stroma phyllachoroid, enclosing pycnidial cavity without an ostiole, opening by an elongate cleft. Conidiophores simple, arising from entire inner surface of pycnidial cavity. Conidia acrogenous, hyaline, one-celled, with a simple, apical, hyaline, long, filamentous, whip-like appendage.

Type species:

*Petraomyces indicus* Subramanian and Ramakrishnan sp. nov.

Stromata on leaves circular, oval or elliptical, black, up to 2 mm. long. Pycnidial cavities in stroma, one in each, without ostioles, opening by elongate clefts. Conidiophores arising from entire inner surface of pycnidial cavity, simple, hyaline, stout, short,  $11-23 \times 3-5 \mu$ . Conidia acrogenous, hyaline, one-celled, slightly thick-walled, elliptical with a truncate base and with a long, apical, filamentous, whip-like appendage; conidia  $25-32 \times 8-11 \mu$ , appendages  $43-76 \times 1 \mu$ .

Habit: on living leaves of (?) *Bambusa* sp., Walayar (Malabar District, Madras State), 5-10-1952 (Herb. M.U.B.L. No. 836-Type), coll. C. V. Subramanian and K. Ramakrishnan.

We thank Prof. T. S. Sadasivan for critically reading the manuscript, and Prof. H. Santapau for translating the generic and specific diagnoses into Latin.

#### REFERENCES

- Hoehnel, F. v. .. "Fünfte vorläufige Mitteilung mycologischer Ergebnisse (Nr. 399-500)," *Ber. deutsch. bot. Ges.*, 1919, **37**, 153-61.
- Saccardo, P. A. .. *Sylloge Fungorum*, 1902, **16**, 891.
- Sydow, H. and Petrak, F. .. "Fungi costaricensis a cl. Prof. Alberto M. Brenes collecti," *Ann. mycol.*, Berl., 1929, **27**, 1-86.