

## STUDIES ON RHIZOSPHERE FUNGI—III\*†

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(Communicated by C. V. Subramanian, F.N.A.)

(Received 26 August 1971)

During the course of studies on the rhizosphere mycoflora of some crop plants several interesting fungi were isolated and in this paper six species of fungi, which are new records for India, are described.

*Aspergillus viride-nutans* Ducker and Thrower

McLennan, E. I., Ducker, S. C. and Thrower, L. B., 1954.

*Aust. J. Bot.*, **2**, 355-364.

(Fig. 1)

Colonies on Czapek's agar slow growing, white when young, becoming bluish green with age. Conidial heads columnar and up to  $40 \times 25 \mu$ . Conidiophore arising from the substrate or from the aerial hyphae, sinuous, up to  $50 \mu$  long,  $3.3-4.0 \mu$  wide, smooth, septate. Vesicles flask-shaped to subglobose,  $7.5-12.0 \mu$  in width, set at an angle on the conidiophore to present a nodding appearance. Phialides directly borne on the upper surface of the vesicle,  $5.5-7.5 \times 2.0-2.5 \mu$ ; conidia globose, smooth, pale green,  $2.0-2.8 \mu$  in diameter.

Isolated from the rhizosphere of *Pennisetum typhoides* (var. HB 1) grown in red soil.

*Gliomastix musicola* (Spegazzini) Dickinson

Dickinson, C. H., 1968. *Mycol. Pap.*, **115**, 8.

(Fig. 2)

Colonies on PDA floccose, mycelial ropes present, white turning black after sporulation. Mycelium superficial and composed of hyaline, smooth-walled, septate, branched hyphae  $1-2.5 \mu$  wide. Phialides straight or slightly sinuous, hyaline, smooth, variable in length,  $1.5-3.5 \mu$  wide. Phialospores formed in persistent chains, single-celled, ovoid, with scars at both ends of the spores, which indicate the points of attachment of spores in the chain, otherwise smooth, black in mass, pale brown to black when viewed singly,  $3.1-5.5 \times 1.6-4.2 \mu$ , mostly  $5.1 \times 2.6 \mu$ .

Isolated from the rhizosphere of *Vigna sinensis* grown in paddy field soil.

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\* Memoir No. 129 from the Centre of Advanced Study in Botany.

† Part of the thesis of the author approved for the degree of Doctor of Philosophy by the University of Madras, 1970

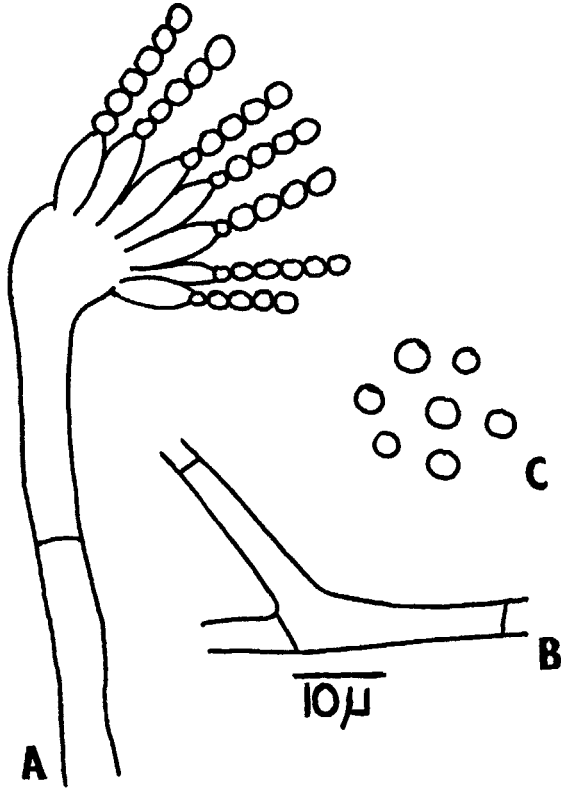


FIG. 1. *Aspergillus viride-nutans*. A, conidial head; B, foot cell; C, conidia.

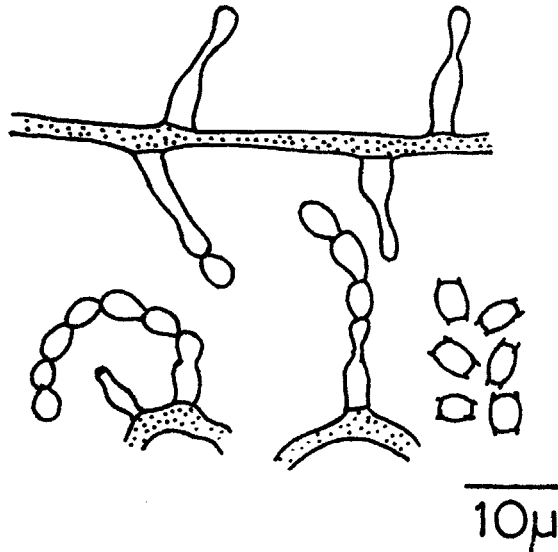


FIG. 2. *Gliomastix musicola*.

*Periconia lateralis* Ell. et Ev.Ellis, J. B. and Everhart, B. M., 1886. *J. Mycol.*, 2, 104.

(Fig. 3)

Colonies on PDA brown, fast growing; aerial hyphae subhyaline, septate, branched, 1.0–2.0  $\mu$  in diameter, hyphae brown, coarsely warted, 2.5–5.0  $\mu$  in diameter, at the point of origin of conidiophores. Macronematous conidiophores formed singly or in groups of 2 to 3. Stipe erect, septate, brown,

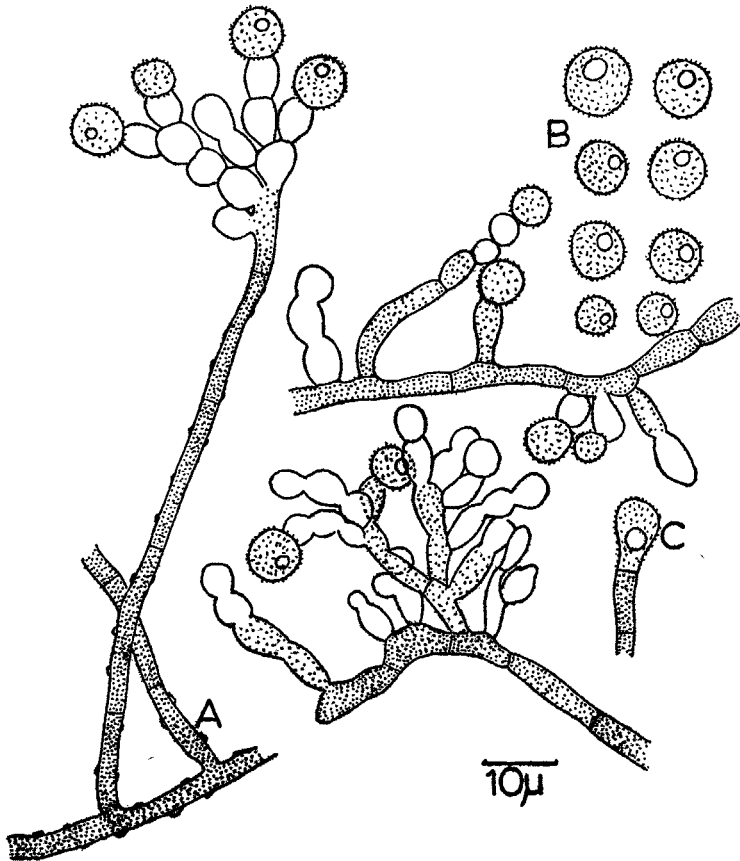


FIG. 3. *Periconia lateralis*. A, conidiophore with sporogenous cells; B, conidia; C, chlamydospore.

up to 300  $\mu$  long, 8.0–10.0  $\mu$  wide. Conidia produced on sporogenous cells; sporogenous cells normally only on one side of the apical region of the stipe. Length of the sporiferous part 50.0–75.0  $\mu$ ; sometimes one or two branches arising from the cells of the stipe in the sporiferous region. Conidia also produced on sporogenous cells arising on one side of the branches. Branches 3–4 septate, up to 75.0  $\mu$  long. Sporogenous cells pale brown, subglobose,

5.5–7.0 × 4.0–6.0  $\mu$ . Conidia blastospores, produced acropetally in chains and maturing from apex backwards. Mature conidia guttulate, 8.0–9.6  $\mu$  in diameter. Brownish black clavate chlamydospores present. Conidia formed on sporogenous cells on micronematous conidiophores also.

Isolated from the rhizosphere of *Vigna sinensis* grown in paddy field soil.

*Pithomyces quadratus* (Atkinson) M. B. Ellis  
Ellis, M. B., 1960. *Mycol. Pap.*, 76, 18.

(Fig. 4)

Colonies blackish brown to black. Mycelium smooth or verrucose septate, subhyaline to pale brown. Conidiophores borne laterally on the hyphae, short. Conidia formed singly as blown-out ends at the apex of each conidiophore, subspherical, oval, oblong or obpyriform with transverse and longitudinal septa, the latter in more than one plane, brown to dark brown, usually verrucose, 15.0–23.0  $\mu$  long, 11.0–33.0  $\mu$  thick at the broadest part.

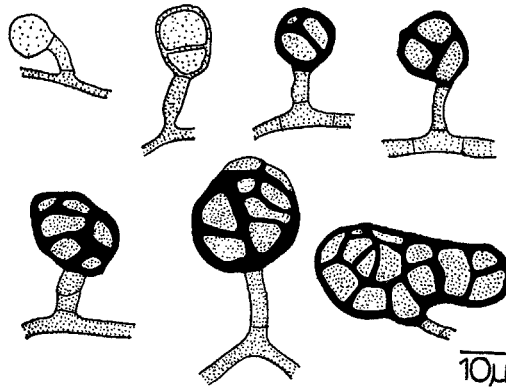


FIG. 4. *Pithomyces quadratus*.

Isolated from the rhizosphere of *Vigna sinensis* grown in black cotton soil.

*Thielavia hyrcaniae* Nicot  
Nicot, J., 1961. *C. r. hebdom. Séanc. Acad. Sci. Paris*, 253, 305.

(Fig. 5)

Colonies slow growing. Mycelium branched, septate. Ascocarps brown, globose, 100.0–175.0  $\mu$  in diameter, and smooth. Peridium formed of several layers of cells. Asci clavate, 8-spored, unitunicate, 35.0–48.0 × 15.0–22.0  $\mu$ . Ascospores smooth-walled, one-celled, brown, limoniform, 12.0–15.0 × 5.0–6.0  $\mu$ .

Isolated from the rhizosphere of *Pennisetum typhoides* (variety HB 1) grown in garden soil.

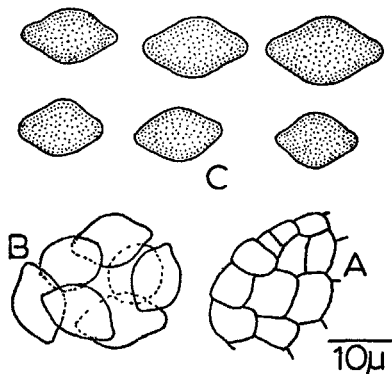


FIG. 5. *Thielavia hyrcaniae*. A, ascocarp wall; B, ascus; C, ascospores.

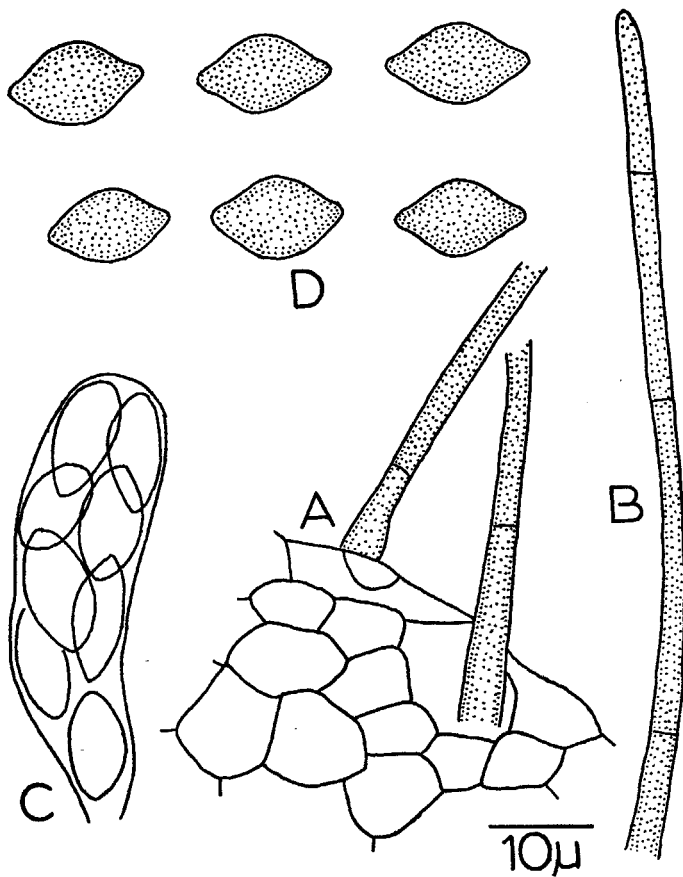


FIG. 6. *Thielavia pilosa*. A, ascocarp wall with setae; B, seta; C, ascus; D, ascospores.

*Thielavia pilosa* Booth and Shipton

Booth, C. and Shipton, W. A., 1966. *Trans. Br. mycol. Soc.*, 49, 665-666.

(Fig. 6)

Colonies slow growing. Mycelium septate, branched. Ascocarps black, globose, 100.0-250.0  $\mu$  in diameter with appendages on the irregular wall surface, peridium formed of two to six layers of cells. Appendages acicular, septate, 10.0-18.0  $\mu$  long, 1.2-3.5  $\mu$  wide. Asci clavate to pyriform, unitunicate, 8-spored, 25.0-45.0  $\times$  12.0-18.0  $\mu$ . Ascospores smooth-walled, one-celled, dark brown, broadly lenticular to limoniform, 10.5-15.0  $\times$  7.0-10.0  $\mu$ .

Isolated from the rhizosphere of *Pennisetum typhoides* (variety HB 1) grown in garden soil.

## ACKNOWLEDGEMENTS

The author is thankful to Prof. C. V. Subramanian for guidance, and to the University Grants Commission for awarding a Junior Research Fellowship during the tenure of which this work was carried out.