

Growth on PDA and MA was very slow. Immersed mycelium composed of dark brown septate hyphae; aerial mycelium abundant, denser and more compact towards the centre, becoming floccose, sparse and finally absent from the advancing edge; reverse brown, vinaceous; sporulation abundant. The culture of *Echinocatena arthrinioides* was also tested for cellulase production but it was unable to produce C<sub>1</sub> or C<sub>x</sub> activities on cellulosic substrates.

The fungus was isolated from decaying leaf litter of *Tectona grandis* (Verbenaceae), Pariyat Forest, Jabalpur. Dec. 1980, IMI No. 254970.

The authors are grateful to the Director, Commonwealth Mycological Institute, Kew, England, for his help in identification of the fungus.

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**A NEW LEAF SPOT ON *TRICHOSANTHES ANGUINA* L. CAUSED BY *PHAEOTRICHOCONIS CROTALARIAE* (SALAM & RAO) SUBRAM.**

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A new leaf spot disease was seen on *Trichosanthes anguina* L. (snake gourd) in a 30-day-old crop at this Institute, in March 1987. Both young and old leaves were affected. The spots were irregular, measuring 1–4 mm in length and 1–2.5 mm in breadth, and pale brown in colour. They were seen on the lower surface of the leaves on the interveinal space; the corresponding regions of the upper surface turn pale brown. Numerous spots were seen scattered all over the leaf surface. When incubated on oat agar, a mycelium developed.

Mycelium light brown, septate 3.5 to 6.0  $\mu\text{m}$  thick, branched; multiseptate conidia, borne singly at the tip of conidiophores, after 15 days of incubation at  $35 \pm 2^\circ\text{C}$ ; conidiophore hyaline or brown in colour and not sharply distinguishable from the hyphae; conidia brown to dark brown, acrogenous, 4- to 6-septate, not constricted at the septa, with a definite beak measuring  $58.5 \times 25.7 \mu\text{m}$  ( $42\text{--}78 \times 12\text{--}18 \mu\text{m}$ ); a definite scar at the base of the conidium at the point of attachment with the conidiophore; end cells hyaline and middle cells brown to dark brown; second and third cells larger than the rest; sclerotia seen in plenty in culture after 15 days, irregular in shape, dark brown, 0.5 to 3.0  $\mu\text{m}$  in size.

The isolate was pathogenic to *T. anguina* when inoculated. The fungus was identified as *Phaeotrichoconis crotalariae* (Salam & Rao) Subram. by Dr Sutton and Dr P. M. Kirk, International Mycological Institute, Kew, England, under IMI Number 317151 & 317152. This is the first report of this fungus on *T. anguina* L.

The authors thank Dr Sutton and Dr Kirk, International Mycological Institute, Kew, England, for identifying the fungus.

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***PYTHIUM INTERMEDIUM* CAUSING ROOT ROT OF *OROXYLUM INDICUM* IN KERALA—A NEW INDIAN RECORD**

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WHILE raising nurseries of different moist deciduous tree species for afforestation work, a severe root rot disease of seedlings of *Oroxylum indicum* Vent, a medicinal plant of the family Bignoniaceae, was recorded during October–December 1987. The disease appeared in the form of irregular patches in seed-beds and caused slow wilting of seedlings. The first symptom was the change of pigmentation of a few leaves from normal green to yellow. Subsequently all leaves were affected, and the apical portion of the seedlings wilted. The root system (feeder roots as well as main roots of such wilted plants) was found to be completely rotten (figure 1). The colour of the affected tap root was light brown to dark brown



Figure 1. H, Healthy seedling of *O. indicum*; D, root rot diseased seedlings showing various stages of infection.

while roots of healthy plants were white. In some affected specimens even the root collar zone was affected, causing decay. Consistent isolation from the infected roots yielded *Pythium intermedium* de Bary (IMI No. 316590) on potato dextrose agar medium (PDA).

The pathogenicity of the isolate was tested on 2-month-old seedlings raised in pasteurized soil. For inoculation, cultures were raised on corn meal sand medium, blended and mixed separately with sterile soil in aluminium trays, and incubated for 5–7 days. *O. indicum* seedlings were transplanted after washing the root system thoroughly with sterile water. All the trays were transferred to a humidity chamber with >95% RH, and the temperature between 25 and 31°C. Observations on the appearance of disease symptoms were recorded every day.

Typical symptoms of root rot developed after 5–7 days of incubation. On the tenth day most of the seedlings died owing to severe rotting of roots. The pathogen was re-isolated from the infected seedlings.

*Pythium intermedium* de Bary, a typical soil-borne pathogen, has a world-wide distribution, but predominates in the temperate zone. In temperate countries, *P. intermedium* is known to cause damping off and root rot in seedlings of ornamentals<sup>1,2</sup> and forest tree species<sup>3,4</sup>.

Earlier *Synchytrium cassiae*, *S. oroxyli* and *Cercospora oroxyli*<sup>5–7</sup> were reported from India on *O. indicum*. This is the first report from India of *P. intermedium* causing root rot of *O. indicum*.

The authors thank Dr D. J. Stamps, CAB International Mycological Institute, England, for confirming the identity of the fungus.

21 October 1988; Revised 29 December 1988

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#### RECORD OF *MIMELA XANTHORRHINA* HOPE (COLEOPTERA: SCARABAEIDAE), AS A NEW PEST OF CARDAMOM *ELETTARIA CARDAMOMUM* MATON

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WHILE surveying cardamom plantations for insect pest infestation during February 1988, grubs of *Mimela xanthorrhina* Hope were found to cause severe damage to the roots of cardamom at Ancmahal, Sakleshpur (12°56'30" N, 75°48'38" E, 976 m AMSL) in Hassan district of Karnataka.

The grubs were curved, black, flat-bodied, with brown head and fleshy abdominal ends (figure 1). They were found below the cardamom rhizome in soil, 4–6 inches deep. On an average, 4 grubs/clump ( $n=50$  clumps) were found feeding on cardamom roots. The rhizome portion remained undamaged. When grubs were offered roots of two-year-old cardamom plants in the laboratory in a cage (72 cm<sup>3</sup>), the grubs cut the roots vertically (figure 3). In the field, severely affected cardamom clumps showed stunted growth and the roots lacked matty structure. No new suckers and roots were noticed in affected clumps. The existing suckers showed yellowing and wilting symptoms.

The grubs were collected and enclosed in glass jars (36 × 15 cm) with soil. The beetles emerged in the glass jar in May. The beetles (1.6 × 1.1 cm) were shiny, olive green on dorsal side and coppery brown ventrally (figure 2). When the same cardamom