

4. *Calotropis procera* (Ait.) R.Br. *Curvularia eragrostidis* (P. Henn.) Meyer. (IMI 195063)  
*Chaetomium globosum* Kunze ex. Fr. (IMI 195074)  
*Fusarium equiseti* (Corda) Sacc. (IMI 195068)  
*Acremonium rutilum* Gams. (IMI 195083)  
*Nigrospora oryzae* (Berk & Br.) Petch.
5. *Vitex negundo* Linn. *Colletotrichum* state of *Glomerella cingulata* (Stonem) Scauld and Schrenk. (IMI 195077)  
*Drechslera* sp. (IMI 195063)  
*Curvularia tritici* Kumar and Nema (IMI 195082)  
*Alternaria alternata* (Fr.) Keissler (IMI 195063)  
*Curvularia lunata* (Wakker) Boedijn.

The author is grateful to Professor K. S. Bilgrami for valuable suggestions and critically examining the manuscript. He is also indebted to the Director, Commonwealth Mycological Institute, Kew, for help in the identification of some of the fungi.

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## SHORT SCIENTIFIC NOTES

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### Occurrence of Collar Rot of Fenugreek in Karnataka

Fenugreek (*Trigonella foenum-graecum* L.), a common leafy vegetable, was found to die prematurely in an experimental plot, in December 1975, at the Agricultural College, Hebbal. The affected plants were characterized by a sudden wilting of the seedlings, distinctly seen in patches in an otherwise healthy plot. The symptoms at the collar region was girdling of the epidermal tissue associated with brown discolouration. The roots were shortened and dark.

Isolations made from the affected parts yielded consistently a non-sporulating, septate fungus with abundant brown sclerotia, loosely formed among and connected by mycelial thread. The fungus was brought into pure culture and was then grown on corn meal sand agar. A week old of this culture was mixed with sterile soil so as to give different inoculum levels starting from 1% upto 10% of the soil (w/w). Surface sterilized seeds of Fenugreek were then sown, 100 each per pot. Ten days later observations were recorded.

In the pots mixed with inoculum, the sprouted seeds were affected by the fungus which resulted in complete death, as against 90% germination in uninoculated check. There was cent per cent death at all the inoculum levels tried. The same fungus was reisolated from the affected sprouts.

The pathogen was identified as *Rhizoctonia solani* Kuhn. The culture has been deposited in the culture collections of the Department of Plant Pathology, University of Agricultural Sciences, Bangalore, bearing accession No. 142. Hitherto there is no record of *R. solani* on Fenugreek from India and this constitutes first report.

The authors are grateful to Dr. H. C. Govindu, Head of the Department of Plant Pathology, for providing facilities.

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***Veronaea simplex* from India**

The hyphomycete *Veronaea simplex* Papendorf was described<sup>1</sup> in 1969 from leaf-litter and top soil of a mixed *Acacia karroo* community Potchefstroom, Transvaal, S. Africa. A fungus which matches the description of *V. simplex* perfectly has been isolated by the author twice, first in March 1962 and then in August 1975 from soil of a sal (*Shorea robusta*) forest of Gorakhpur, U.P. Both isolations were made in soil-plates prepared with Martin's peptone-dextrose agar medium containing streptomycin and rose bengal<sup>2</sup>. The species is reported here for the first time from India. A dried culture has been deposited in the Commonwealth Mycological Institute, Kew, as IMI 197680.

The author wishes to thank Dr. M. B. Ellis of C.M.I., Kew, for confirming the identity of the fungus, and Prof. K. S. Bhargava for laboratory facilities.

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**Leaf Spot of Cacao**

'Black pod' disease caused by *Phytophthora palmivora* Butl.<sup>1</sup> and 'charcoal pod' rot caused by *Botryodiplodia theobromae* Pat. and *Macrophoma* sp.<sup>2</sup>, in cacao (*Theobroma cacao* L.) have been reported so far in India. Incidence of a leaf spot disease was first noticed in 1972 in plants of 'Forestero' and 'Criollo' varieties of cacao grown in CPCRI farms at Kasaragod (Kerala) and Vittal (Karnataka), and also in some private plantations near Sullia (Karnataka).

The disease appears as minute yellowish specks which are later discernible as circular reddish brown lesions often with a chlorotic halo. A mature lesion may reach a size of 2–4 mm and occasionally two or more adjacent lesions may coalesce forming irregular necrotic patches. In severe cases crinkling of the leaf also is noticed. The mature lesions being dry and brittle, at times, may either drop off partially or be blown away completely by wind resulting in 'shot-hole' formations. The fructifications are noticed mostly on the lower side of the lesions as greyish white masses. The disease is seen throughout the year but the intensity is more during October–January when a temperature range of 19–33° C and R.H. range of 77–98% prevail. The disease was not found to do much damage to the leaf. However, in serious cases much of the lamina will be involved resulting in impairment of the functional

photosynthesis. *Colletotrichum*, sp. was isolated from the affected leaves. The fungus was also isolated from the pods affected by rot. The isolates were found to be cross inoculable giving positive pathogenicity on leaves and pods.

When artificially inoculated the symptoms appear in 4–6 days after inoculation. The isolate sporulates moderately on potato-sucrose-agar and abundantly on oats agar media. The fungus was identified as *Colletotrichum gloeosporioides* Penz. and the same has been confirmed by CMI London (IMI. 184312). So far two species of *Colletotrichum* have been recorded on cacao: *C. crassipes* (Speg.) V. Arx causing cacao wilt<sup>3</sup> and *C. gloeosporioides* Penz. causing pod rot, leaf blight and die-back<sup>4,5</sup> in Brazil. We record the occurrence of leaf spot of cacao caused by *C. gloeosporioides* in India for the first time.

Thanks are due to Shri M. C. Nambiar, Project Co-ordinator (Species and Cashew) and Dr. K. V. A. Bavappa, Director, CPCRI, Kasaragod, for their encouragement, and to the Director, CMI, London, for identification of the fungus.

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***Pteris excelsa* Gaud.—A New Fern Record for Jammu and Kashmir State**

Perusal of literature has revealed that *Pteris excelsa* Gaud. which is common in Kumaon Garhwal, Dalhousie, Sikkim and Naini Tal has not been reported from the Jammu and Kashmir State so far. The present report based upon the specimens collected from Poonch (Buffiaz Forest, 2000 m) along slow moving waters; and from Bhaderwah (Nandoun Nallah, 1750 m) in J and K State, under the collection Nos. 1469 and 1116 of Harvender thus constitute a new fern record for the State. The pressed specimens have been deposited in the Botany Department of Government Degree College, Poonch.

**Brief Description:**

*Pteris excelsa* Gaud. in *Freye. Voy. Bot.* 388. 1829.

Fronds 1-1.20 m lang, submembranaceous, light green to pale in colour, pinnate; pinnae large, remote, numerous, lanceolate, sessile, 30-45 cm long, lower one's long petioled, all deeply cut nearly to the costa; segments 4-10 cm long, linear-lanceolate, obtuse, serrated, subfalcate; Veins free, forked near the middle; sori continuous from the base, almost to the apex, broad; stipes very stout and flexuous, rachises bright castaneous.

Grateful thanks are due to Prof. S. S. Bir, Head, Department of Botany, Punjabi University, Patiala, for identifying the specimens and to Dr. A. K. Koul, Department of Bio-Sciences, Jammu University, for going through the manuscript.

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#### Natural Occurrence of Potato on Virus-Y *Datura metel*

A disease of *Datura metel* Linn. characterized by severe mosaic, malformation and distortion of leaves and in some cases crinkling of leaf lamina, resulting in filiform leaves was found in the fallow lands in Bangalore. Flowers also showed distortion and the fruits were partially or wholly devoid of spines.<sup>1</sup>

The disease was readily transmissible by sap to *Datura metel* Linn., *Capsicum annuum* Linn. var. California wonder, *C. frutescens* Linn. var. Tabasco, *Nicotiana tabacum* Linn. var. White Burley, *N. glutinosa* Linn., *Solanum tuberosum* Linn., *S. nigrum* Linn. and *Petunia hybrida* Vilm. producing systemic infection. The virus produced chlorotic local lesions on inoculated leaves of *Chenopodium amaranticolor* Coste and Reyn. and necrotic local lesions on 'A<sub>6</sub>' hybrid potato. The aphids *Myzus persicae* Sulz. and *Aphis gossypii* Glover could transmit the virus from infected to healthy *D. metel* and also to *C. annuum* var. California Wonder. The virus was not seed borne.

The virus had a thermal inactivation point of 55-60° C, dilution-end-point of 1 : 500 to 1 : 1000 and longevity *in vitro* for 4 days at room temperature. It was purified by polyethylene glycol method<sup>2</sup>. The purified preparation was highly infectious and the electron microscopic studies revealed the presence of flexuous rods with 733 m $\mu$  length and 13 m $\mu$  breadth.

There are several reports of virus diseases reported on different species of *Datura* from

India<sup>1 2 4 6 8 9</sup>. The virus under study differs from all these viruses in its host range, physical properties and also being able to produce local lesions on *Chenopodium amaranticolor* and A<sub>6</sub> hybrid potato. Feldman and Gracia (1972) for the first time reported that *D. feroxa* Linn., as a natural host of PVY in Mendoza, Argentina. The present observations made on the virus disease of *D. metel* shows that it has the host range, physical properties and insect vectors similar to that of PVY. Further, electron microscopic studies also indicated that the virus is a flexuous rod measuring 733 m $\mu$  length and 13 m $\mu$  breadth which falls in the range of PVY particles<sup>7</sup>. From the above studies the present virus could be considered as PVY naturally occurring on *D. metel* not reported earlier.

Grateful thanks are due to Dr. H. C. Govindu, for his keen interest and encouragement throughout the course of this investigation and to Dr Rama Mohan for taking Electron micrographs.

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#### *Helminthosporium* Leaf Spot on Cotton

GIZA-7, the cotton (*Gossypium barbadense* L.) grown in Guntur and Prakasam Districts was severely affected by a leaf spot disease, at the age of 4 to 5 months during January, 1975. Numerous, circular, light red to dark purple spots with ashy centres, measuring 1 to 10 mm in diameter were observed on the leaves.

Examination of the infected leaves showed constant association of *Helminthosporium* sp. in the diseased tissues. The fungus was brought into culture on P.D.A. but no sporulation was observed even after a month. Artificial inoculation of the GIZA-7 plants of 4 months old, with 12 days old

culture of the fungus, produced typical symptoms of the disease in 6 days. Examination of the spots revealed the presence of *Helminthosporium* sp. and the same was brought into pure culture. A comparison of the morphological characters of the present fungus with those of *Helminthosporium gossypii* reported from Porto Rico by Tucker<sup>1</sup> (1926) showed close resemblances except in the length of conidia. Hence the present fungus is tentatively identified as *Helminthosporium gossypii* Tucker.

The authors are grateful to Dr. S. N. Rao, Principal, Agricultural College, Bapatla, for his keen interest and for providing necessary facilities.

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Bapatla, April 5, 1976.

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#### Leaf Blight of Green Gram Caused by *Curvularia eragrostidis*

A leaf blight of green gram (*Phaseolus aureus* Roxb.), affecting the tips, was observed in the later part of October, 1975, in the Research Farm of Assam Agricultural University, Jorhat. Initially the disease manifested as small, irregular brown spots at the apices usually about 1–4 mm long which increased in size, became necrotic and covered with copious growth of fructifications.

Isolations from the affected regions consistently yielded a *Curvularia* sp. Pathogenicity was established by inoculating both wounded and unwounded leaves by spraying spore suspension of the fungus from a one-week old culture: symptoms developed after 3–4 days on wounded and 8–10 days on unwounded leaves.

In a field survey the disease was found to attack all the 11 cultivars grown in a varietal trial but with different intensities as shown within the parentheses (% of plants infected)—Madira (80), ML 24 (75), H-70-16 (72), Sirsa (70), ML 4 (64), T44 (61), PS 11 (55), K 85 (50), PS 2/1 (44), S 9 (58), K 851 (30).

The fungus has been identified as *Curvularia eragrostidis* (P. Henn.) J. A. Meyer. Among the leguminous plants, only the members of *Arachis* have been categorized as hosts of this fungus<sup>1</sup> and therefore, *P. aureus* is a new addition. This pathogen has recently been recorded on pineapple from Assam by Roy<sup>2</sup>.

The specimen has been deposited to the H.C.I.O., New Delhi, under the accession No. 31970.

Thanks are due to Shri L. Upadhaya, Pulse Geneticist, for referring the problem to us.

Mycology Research Section, B. BARMAN.  
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#### A New Host Record of *Pringsheimia* sp. on Sannhemp (*Crotalaria juncea* L.)

During the month of September, 1965, some brown spots bounded by veins and veinlets were observed on the lamina of mature green leaves of *Crotalaria juncea*. The spots were found to be associated with a fungus, hitherto not reported on this crop.

Microscopic observation showed that these were globose, black, erumpent perithecia scattered all over the necrotic spots. The outer perithecial wall was thin and pseudoparenchymatous. Each perithecium contained a number of pyriform (or slightly clavate), hyaline asci with a thin but tough wall. Each ascus was with 8 spores, which were hyaline, somewhat thick walled, 4–7 celled, muriform with longitudinal septum appearing in one or two cells only.

The perithecia *in vivo* were 128.0  $\mu$  to 137.0  $\mu$  in diameter. The asci measured 41.3  $\mu$  to 48.0  $\mu$  long and 24.1  $\mu$  to 27.5  $\mu$  broad. Ascospores measured 24.1  $\mu$  to 27.5  $\mu$  long and 8.2  $\mu$  to 10.3  $\mu$  broad, 4–7 celled muriform.

The fungus was easily isolated on standard potato dextrose agar. Initially the developing mycelium forms a brown appressed mat which gradually turned into mouse-grey by the fourth day and were mature after seven days of growth.

The perithecia *in vitro* measured 146.0  $\mu$  to 154.8  $\mu$  in diameter. The asci measured 48.16  $\mu$  to 89.44  $\mu$  long and 24.0  $\mu$  to 36.1  $\mu$  broad. The ascospores measured 26.4  $\mu$  to 29.2  $\mu$  long and 9.5  $\mu$  to 11.0  $\mu$  broad, 4–7 celled muriform with somewhat thick wall.

The only report of *Pringsheimia* from India, which the author is aware of, published by Kapoor and Gill (1961).

The author is grateful to Dr. S. P. Ray Chaudhary, former Head of Division of Mycology and Plant Pathology, I.A.R.I., for identifying the pathogen.

Jute Agricultural Research Institute, C. B. P. MISHRA.  
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