SHORT SCIENTIFIC NOTES

Cucurbita pepo DC, A New Host to _Phoma herbarum_ Westend

A severe leaf spot infection of *Cucurbita pepo* DC was observed near Guntur, Andhra Pradesh, during the present rainy season (September–October, 1975). This disease, a new record for India, is reported here.

The leaf spot disease was manifested by the presence of large, dark brown necrotic lesions along the margins of the leaves and oblong to oval, necrotic spots (0·8 cm × 0·5 cm) on the lamina which gradually increased in size covering the entire lamina. The disease spreads from basal to upper leaves. Isolations from several necrotic lesions on Czapek–Dox agar medium yielded a pycnidial fungus. The pathogenecity of the fungus isolated from the lesions was proved by spraying the spore suspension on detached, healthy twigs and covering with moist polyethelene bags for three days. Typical symptoms appeared in 3–5 days after inoculation. Reisolations yielded the original fungus.

Mycelium brown-black with rough surface, hypha dark brown, septate, pycnidia dark brown, numerous, globose to subglobose, pycnidiospores hyaline, single celled, oval to elliptical and measure 5–10 μ × 2–4 μ. The fungus was identified as *Phoma herbarum* Westend.

One of us (CSKV) is thankful to CSIR, New Delhi, for awarding Junior Research Fellowship.

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***Trichoderma harzianum*—A New Record from India**

During a survey of diseases of sunflower in February 1975, root-rot (*Sclerotium rolfsii*) affected plants were collected at Regional Research Station, Mandya, Karnataka. A closer examination of the affected plant parts revealed greenish moldy growth at the collar region. Isolations from these portions yielded a species of *Trichoderma*.

Colonies on potato dextrose agar spreading, floccose, white at first, becoming green in five to six days, reverse side of the colony colourless, vegetative hyphae septate, hyaline, branching, chlamydospores globose, hyaline, intercalary. Philades ampuliform, bearing terminal heads composed of subglobose phialospores held in a mucous aggregate. The fungus was identified as *Trichoderma harzianum* Rifai, by Dr. R. A. Samson of C.B.S., Netherlands. The measurements of the present isolate are within the limits of *T. harzianum* described by Rifai[1].

As the fungus was consistently associated with *S. rolfsii* the nature of its relation with the latter was studied on PDA. Both the fungi grew without any apparent antagonism to each other. However, in due course, *T. harzianum* over-grew *S. rolfsii* parasitizing the latter. Attempts to reisolate *S. rolfsii* from such plates were not successful. *T. harzianum* has been employed successfully to control root-rot of groundnut, tomato and lupine[2]. There is no report of this fungus from India and this constitutes a new record from India.

Grateful thanks are due to Dr. R. A. Samson, Centraalbureau Voor Schimmelcultures, Netherlands, for identifying the fungus and to Dr. H. C. Govindu, for facilities.

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On the Occurrence of a Rotifer _Asplanchnella sieboldii_ (Leydig) _urawaensis_ (Sudzuki) in Indian Waters

In the course of studies on rotifers in July, 1975, we have come across a species of the genus *Asplanchna* from the plankton collections of Allipuram Tank, Visakhapatnam, Andhra Pradesh. At the time of collection the temperature was 27·5° C, pH 8·5, dissolved oxygen 6·8 ppm and turbidity 6·5 ppm.

The species described here has a horse-shoe shaped vitellarium and conforms very well with *Asplanchnella sieboldii* (Leydig) *urawaensis* (Sudzuki) reported earlier from Japan[1]. So far 3 species, *Asplanchna priodonta* (Gosse), *A. brightwelli* (Gosse) and *A. intermedia* (Hudson) are described from the Indian water[2,3]. The present species *Asplanchnella sieboldii* var. *urawaensis* is being reported for the first time from India. It has a transparent, soft sock-formed body, which is changeable in shape as the internal and the external organs move. There are twenty-eight

nuclei in the vitellarium. The gastric glands round, no intestine, large body cavity and trophi incudate.

The forms measure a total length of 645–680 μm and a maximum breadth of 375–395 μm.

We are grateful to Prof. K. Hanumantha Rao, and one of us (RKR) thanks the C.S.I.R., for awarding a Junior Research Fellowship.

Department of Zoology, Andhra University, Waltair, *October* 27, 1975.

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Sclerotial Wilt of *Oscimum canum* Sims. A New Record from India

Oscimum canum Sims. (Ban Tulasi) grows wild in Gorakhpur (U.P.), locality. Leaves and seeds of this plant are used medicinally. During August, 1975, a severe sclerotical wilt of the plants was observed in this region when high temperatures prevailed after heavy rains. The infection started from the collar region of the plants. In advanced stage of the disease the whole main stem was covered with white mycelial growth bearing sclerotial aggregations. Lastly, the infection resulted into complete wilting.

The organism responsible for the wilt was isolated and studied on potato dextrose agar medium. On the basis of typical morphological features and cultural characteristics, the organism was identified as *Sclerotium rolfsii* Sacc. [*Corticium rolfsii* (Sacc.)] Curz. The pathogenecity of the organism was established by inoculating the plants under natural conditions. Symptoms appeared and manifested similar to those observed in naturally infected plants. Reisolation yielded the same organism.

Sclerotium rolfsii has elicited good deal of attention from the pathologists as it causes collar and root rot of several economically important plants in this country[1-6]. *Oscimum canum,* however, constitutes a new host record for this fungus from India. The specimen has been maintained as GPU Herb. No. 331 in the Departmental Herbarium of the University.

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New Record of *Bacillus cereus* and *Streptococcus* sp. on the Pink Bollworm of Cotton, *Pectinophora gossypiella* (S.)

In India, *Bacillus* Fr. and Fr. has been reported to occur on *Papilio demoleus*[1] and on seven lepidopteran insects[2]. Recently Thontadarya[3] reported it on *Earias vitella.* Though various species of *Streptococci* have been found to cause disease on different insects[4,5], no record of *Streptococcus* sp. and *Bacillus cereus* has appeared on *Pectinophora gossypiella* in India. While examining the bollworm infested cotton bolls from the fields around Coimbatore, the authors noticed some of the dead larvae inside the bolls and were found infected by mixed bacteria. The pathogens were identified as *Bacillus cereus* and *Streptococci* sp. The pinkish white infected body had putrified fluid inside. Mostly the late stage larvae were susceptible to infection.

This appears to be the first record of *B. cereus* and *Streptococci* sp. on *P. gossypiella.*

Our thanks are due to Dr. Gerard, M. Thomas, of the University of California, for identifying the pathogens.

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Estimation of the Population of *Xanthomonas oryzae* Introduced into Natural Eco-systems

The chief drawback in studying the population dynamics in natural eco-system is the absence of standard procedures to measure accurately the populations of the bacterium when introduced into a heterogeneous microbial community. Work was initiated[1], therefore to incorporate antibiotic resistance in the bacterium to study the population dynamics of the bacterium. Studies carried out elsewhere[2], independently on the role of seed transmission by employing similar technique proved to be successful.

A streptomycin resistant mutant was isolated from isolate 'P' of *X. oryzae* by streaking on Silva and Buddenhagen (SB)[3], medium supplemented with 500 ppm streptomycin sulphate and the colonies which developed were re-streaked serially on plates containing graded concentrations of the antibiotic. At different levels of streptomycin resistance, the bacterial suspension was added to the soil and checked for *X. oryzae* growth on the respective concentration of streptomycin supplemented medium. At 25,000 ppm it was found that all soil bacterial flora could be effectively checked allowing only the growth of streptomycin resistant *X. oryzae*. But some colonies of *Aspergillus* and *Penicillium* spp. were found growing faster overtaking the growth of *X. oryzae*. Mycostatin and actidione were found to be the effective fungicides in suppressing the soil fungal flora at 100 ppm.

The virulence of the bacterium was maintained by inoculating to rice plants and re-isolating on streptomycin and mycostatin incorporated medium thrice.

Ten ml of bacterial suspension of 10^9 cells/ml was added to 100 g of field soil and mixed thoroughly, to which 90 ml of tap water was added, shaken thoroughly and the suspension was allowed to settle down. Serial dilutions of this suspension were made. Petri plates of 10 cm size were poured with 25,000 ppm streptomycin and 100 ppm mycostatin supplemented SB medium and allowed to harden. Three ml of the SB medium supplemented with 25,000 ppm of streptomycin and 100 ppm mycostatin mixed with 1·0 ml of the serial dilution of the soil suspension was poured as the top layer and was allowed to solidify. The plates poured without streptomycin and mycostatin served as control. Four replicate plates were maintained for each treatment and were incubated at 28° C for 6 days and observed for the appearance of colonies of *X. oryzae*.

In control plates no *X. oryzae* could be recovered because of the fast growing saprophytic soil microflora. In the treatment with both 25,000 ppm streptomycin and 100 ppm mycostatin, all the soil bacterial and fungal flora could be suppressed enabling the colonies of *X. oryzae* to grow.

This technique can be used effectively in studying the ecology of the bacterium, *viz.*, viability in soil, plant debris, etc., without interference from faster growing soil microflora though this technique is limited to streptomycin resistant mutants of *X. oryzae*.

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