

CIRRENALIA TROPICALIS, AN ADDITION TO INDIAN MARINE FUNGI

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WHILE studying the distribution of lignicolous marine fungi in the Vellar estuary, East Coast of India, a hyphomycete, *Cirrenalia tropicalis* was collected. This species was earlier described from Liberia, Atlantic ocean¹. The species is now recorded for the first time from India and outside the Atlantic Ocean. A brief description of the fungus is given below.

Cirrenalia tropicalis Kohlm. *Mycologia* 60: 267, 1968. Figures 1 and 2.

Conidiophores hyaline to light brown, not differentiated from the hyphae, lateral, often remaining connected with detached conidia. Conidiogenous

cells monoblastic, integrated, terminal, determinate. Conidia acrogenous, solitary, mostly $1\frac{1}{2}$ times coiled, 6–12 septate, constricted at the septa, reddish brown, cells increasing in diameter from base to apex, 35–43.2 μm in diameter; terminal cells subglobose, 7–10 μm high, 5.6–8.4 μm in diameter, basal cells cylindrical, 5–7.5 μm high, 3–4.8 μm in diameter.

Recorded from an intertidal wood on 14.3.1986 in the Jetty area, Vellar estuary, Tamil Nadu, India.

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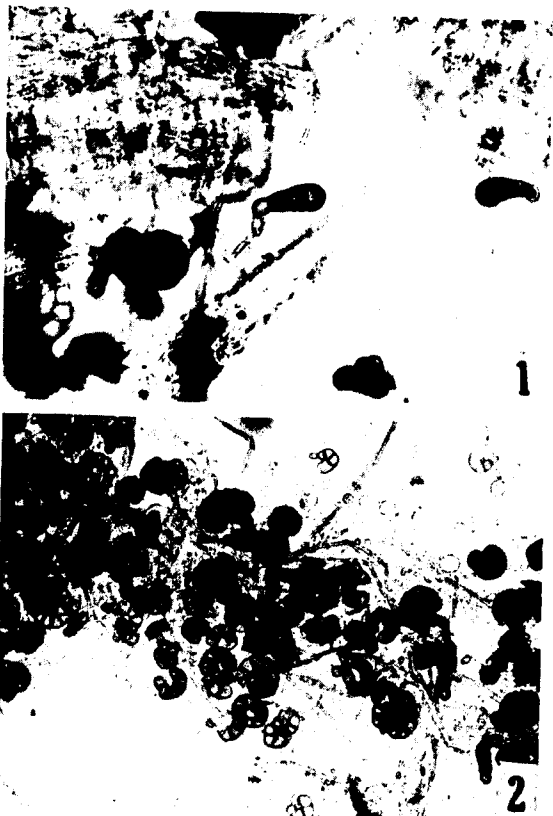
1. Kohlmeyer, J., *Mycologia*, 1968, 60, 267.

LEAF SPOT DISEASE OF COCONUT INCITED BY *BIPOLARIS INCURVATA* (BERNAD) ALCORN

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A leaf spot disease has been recorded on coconut occurring sporadically in the coconut-growing tracts of South Andaman, Little Andaman, Campbell Bay of Andaman and Nicobar Islands. The disease causes moderate to severe damage to the leaves of young seedlings as well as grown-up palms. The



Figures 1 and 2. *Cirrenalia tropicalis*. 1. Developing conidia ($\times 400$), and 2. Mature conidia ($\times 400$).



Figure 1. Oval, dark brown spots at the tip of leaflets and on the margins incited by *Bipolaris incurvata* on coconut leaves.

severity of the disease is slightly higher in the dry season.

The leaf spots appear at first as small, oval, dark brown spots, usually towards the leaf tip, later enlarging and becoming pale buff in the centre with a broad, dark brown margin. With multiple infection the lesions coalesce and the leaf becomes blighted from tip to backwards (figure 1). A fungus was isolated from lesions and it was identified as *Bipolaris incurvata* at the Commonwealth Mycological Institute, London (No. 302957). The incidence of the disease was recorded as 0.12% (South Andaman), 0.1% (Little Andaman) and 1% (Campbell Bay) of the palms covered under preliminary survey.

This pathogen was reported earlier as *Helminthosporium incurvata* (Bernad) from countries¹ like Indonesia, Malaysia, Sri Lanka, New Guinea, Virgin Island, French Polynesia, Sahah, Seychelles, New Hebrides and Andaman (India)².

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1. Anonymous, *Nematodes, fungi, insects and mites associated with coconut palm*, Tech. Bull. 2, CPCRI, 1979, p. 60.
2. Anonymous, *Annual Report*, Central Agricultural Research Institute, Port Blair, 1985, p. 54.

UP-TO-DATE LIFE CYCLE OF *NEOVOSIA INDICA* (MITRA) MUNDKUR

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NEOVOSIA INDICA (Mitra) Mundkur, the causal organism of Karnal bunt of wheat was first described from Karnal in Northern India¹. Since then, Karnal bunt has spread to many countries and frequently assumed epidemic proportions in north-western India, Pakistan and the Yaqui Valley of Mexico^{2,3}. There is an urgent need to develop Karnal bunt resistant wheat varieties to avoid deterioration of

wheat quality and the spread of the disease to other parts of the world.

An understanding of the life cycle of *N. indica* is useful in the study of breeding for resistance and in controlling the pathogen with chemicals. On the basis of new information collected during the studies in the field and the laboratory at CIMMYT, Mexico, the life cycle of *N. indica* needs to be revised and updated.

Karnal bunt is a seed, soil-borne, floral infecting disease^{1,4}. The soil-borne teliospores germinate producing primary sporidia, which are carried by wind to floral structures⁵. The sporidia enter the developing grain either through stigma or through the ovary wall⁶⁻⁸. Until recently, little was known of what is occurring in nature during the period between the production of primary sporidia and the appearance of bunted grains in the mature wheat spike.

On potato-dextrose-agar (PDA) medium, the primary sporidia, within the tuft and while still on promycelium, germinate to produce hyphae, which in turn produce two types of secondary sporidia: (i) falcate (allantoid) which are released forcibly⁹, and (ii) filiform-like that of primary sporidia which can be easily distinguished from the allantoid form^{10,11}. Liquid cultures from the old and newly derived *N. indica* cultures produce only filiform secondary sporidia which when transferred to PDA again, produce allantoid secondary sporidia¹⁰. Wet soil inoculated with allantoid secondary sporidia produced only filiform sporidia, but on soil under limited moisture had only the allantoid form.

Laboratory studies to study the release of various kinds of sporidia indicated that only the allantoid secondary sporidia were released from the colonies¹⁰. Spore-trap studies using the Burkard's spore trap under various field conditions trapped only the allantoid secondary sporidia (Dhaliwal, unpublished) between midnight and sunrise. The allantoid sporidia germinate on sterilized leaves of bread wheat, durum wheat, triticale, barley, rye and *Phalaris* and produced superficial colonies which generated more allantoid sporidia (Dhaliwal, unpublished). Warham¹¹ obtained a low incidence of Karnal bunt from boot and spray inoculation using a high concentration of filiform sporidia from liquid cultures, indicating their limited direct role in the spike infection. Artificial inoculation of the wheat spike with a suspension of secondary sporidia with a hypodermic syringe at the boot stage results in a high incidence of Karnal bunt¹². The present results indicate that only allantoid secondary sporidia are the real incitant of Karnal bunt in nature and the