consistently more in the Kerala ecotype, the difference however, being limited to 15% approximately.

Puncturing of the midgut of the test hoppers shortly before or immediately after acquisition access, marginally enhanced the percentage of infective individuals but much more remarkable was the considerably reduced incubation period in such vectors, being 2–4 days against the known minimum of 5 days when acquired through feeding during July to September. Injection of partially purified sap of diseased plants rendered 7% of the test hoppers infective while the corresponding figure for extract or viruliferous individuals was nearly 11. When test hoppers were injected with freshly drawn haemolymph of infective individuals, about 12% became infective within 7–10 days during September against 5–15 days in control.

No difference in longevity was noted between infective and GSV-free individuals of the vector.

While evidences like transstadial passage, a well-defined latent period between acquisition and attaining infectivity, prolonged retention of infectivity and vector-to-vector passage through mechanical inoculations are more than enough to prove the virus to be circulative, it is still uncertain whether the virus is propagative in the vector or not. Basic work on purification of the virus and successful application of the injection technique may resolve the issue unequivocably.

24 March 1986; Revised 28 August 1986

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HENDERSONIA PUNITHALINGAMII SP NOV FROM INDIA

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DURING the mycoflora survey of Andhra Pradesh, India, a pycnidial fungus was isolated from the forest soil of Mannanur (pH 7.3; temperature 27°C) using dilution plate method[1] and soil plate method[2] employing acidified potato dextrose agar medium and tomato agar medium, respectively. On critical examination it was assigned to the genus *Hendersonia* Sacc as the fungus produced dark and ostiolate pycnidia with yellowish brown, 0–3 septate conidia. Subsequently, the fungus was compared with *Hendersonia* spp with similar conidial dimensions reported in the literature. A survey of literature indicated that Sprague[3] had described many species of *Hendersonia* producing 3-septate and 3–5 septate conidia on grasses. Wehmeyer[4] had described eight species of *Hendersonia* from North–Western India. The present isolate differs from previously described isolates in having smaller conidia, hence described[5,6] as a new taxon, *Hendersonia punithalingamii* Thulasi Reddy and Manoharachary sp nov (figure 1) (named in honour of Dr E. Punithalingam, C.M.I., Kew, U.K.).

Conidiomata pycnidia, solitaria vel aggregata, brunnea vel nigra, subglobosa vel globosa, 120–130 μm diam., ostiolata, cellulae conidiogenae globosae vel doliiformes, hyaline, phialidicae, Conidia flavobrunnea vel pallide brunnea, cylindrica, basi truncata, apice rotundata, 0–3 septata, conidia unicellularia 6–8 × 2.0 μm. Conidia uniseptata 6–11 × 2.5 μm. Conidia 2–3 septata 10–14 × 2–3 μm.

Eterra silvatica; Mannanur, Mahabubnagar District, Andhra Pradesh, India, V. R. Thulasi Reddy and C. Manoharachary, 10–7–1978, OUFS 3 (IMI 232556) holotypus.

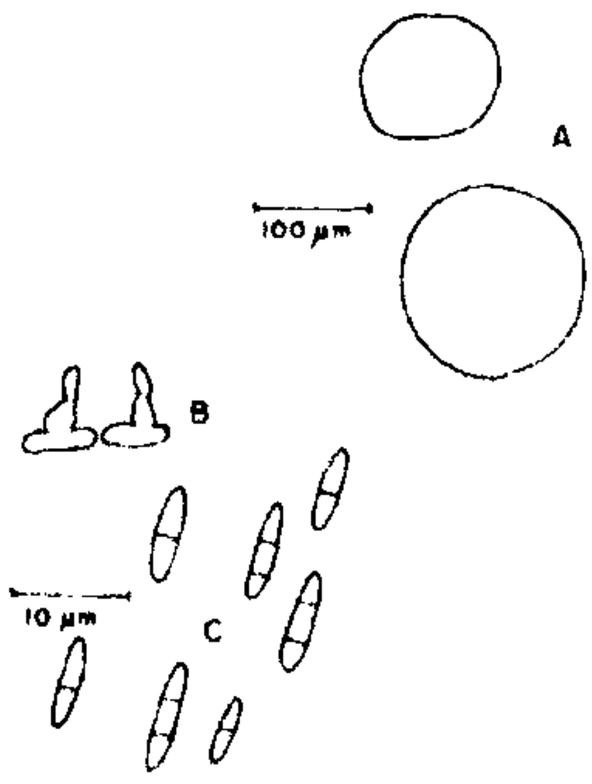

Figure 1. *Hendersonia punithalingamii* sp nov **A.** Pycnidia; **B.** Phialides with developing conidia; **C.** Conidia.

Colonies on oat agar fawn to greyish sepia with abundant aerial mycelium; reverse greyish sepia with black spots. Mycelium composed of septate, branched, smooth, straw yellow to brown hyphae 3–4 μm wide. Conidiomata pycnidial, abundant, solitary or in groups, partially immersed, brown to black, subglobose to globose, 120–300 μm diam., ostiolate. Pycnidial wall composed of 2–3 layers of pseudoparenchymatous cells, the outermost layer brown to dark brown, the inner layers hyaline. Conidiogenous cells globose to doliform, phialidic, arising from the innermost layers of cells lining the pycnidial cavity. Conidia yellowish brown to pale brown, straight to slightly curved, cylindrical, base truncate, apex rounded, 0–3 septate, 10–14 × 2–3 μm, unicellular conidia also present, 6–11 × 2.0–2.5 μm.

Isolated from soil, Mannanur forest, Mahabubnagar District, Andhra Pradesh, India, V. R. Thulasi Reddy and C. Manoharachary, 10-7-1978, OUFS 3 (IMI 232556) holotype.

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UTILIZATION OF HYDROCARBON IN CRUDE OIL BY FUNGI

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PETROLEUM hydrocarbon as substrates for growth of fungi has been a topic of special interest in recent years and reports of studies on the use of purified substrates such as alkanes of specified chain length are available[1–4]. A few studies have demonstrated the ability of fungi to grow and degrade on crude oil[5]. The present study aims at identifying the fungal species potentially useful in degrading the crude oil effluents of the Madras Refineries Limited.

Fungi were isolated from crude oil affluents of the Madras Refineries using serial dilution method[6]. The basal medium consisted of a salt solution of Bushnell and Haas supplemented with 0.1% yeast extract and the pH adjusted to 6. The medium was sterilized by autoclaving for 20 min at 15 Psi. Filter-sterilized crude oil (1%) was added to the medium aseptically. Spore suspensions (1×10^6 spores per ml) of different fungi were prepared separately and 1 ml was pipetted into 100 ml of the medium taken in 250 ml Erlenmeyer flasks. Duplicates were maintained for each fungus. Cultures were incubated at 30 ± 2°C. Oil samples from incubated cultures were recovered periodically by repeated extraction of the mycelium with 10 ml aliquots of petroleum ether (b.p. 40–60°C). The filtrates from duplicate flasks were combined and shaken well in a separating funnel. The layers were allowed to separate after which the lower water phase was drained and the upper oil phase was taken in a beaker and concentrated by evaporation on a steam bath.

Quantitative analysis was done by using a Hewlett–Packard (Model 5730 A) gas chromatograph with dual flame ionization detectors. Stainless steel columns (2% OV stationary phase carbowax with 3% phase loading on chromosorb G-HP 100/200 mesh) were used with column injection of 2 µl of samples. The carrier gas, nitrogen, was run through the columns at a rate of 30 ml per min. Tracings were obtained on a chart recorder and the peaks of the alkanes were identified by comparison with standards of each alkane (C_8–C_{14}). Utilization of fractions of crude oil was thus determined by comparing the peak areas of each alkane from each test corresponding to the control extract.

It is observed that only two species, *Aspergillus flavipes* and *Penicillium* sp registered significant growth and caused a shift in pH towards acidity. Of the two species the shift in pH and the extent of the growth were greater in *A. flavipes* than in *Penicillium* sp.

Gas chromatographic analysis of the residual crude oil of the mycelium of *A. flavipes* and *Penicillium* sp showed that *Penicillium* sp was more effective in degrading crude oil than *A. flavipes*, although dry weight of the mycelium and the decrease in pH of the aqueous phase was comparatively less in *Penicillium* sp than in *A. flavipes*.