

AN UNDESCRIBED SPECIES OF
HAPLOSPORELLA ON ROSE FROM
MAHARASHTRA

DURING a mycological survey at Bhimashankar (Dist. Poona) in 1973, a stem canker disease was observed on some rose plants. On microscopic examination these cankerous bodies were identified as dark stromata of *Haplosporella* sp.

Since no species of *Haplosporella* is known in literature^{1,2} to infect *Rosa indica* L. and the present collection has thus been considered as a new taxon. The same is described as under:

Haplosporella rosae sp. nov. (Fig. 1A and B)

Pycnostroma brunnea vel atra, erumpentia, bilocularia, 2.5 mm crassa vel 0.30-0.60 mm alta, cellulis pseudoparenchymatibus, non-ostiolata; conidiophora simplicia, filiformia, brunnea, septata; conidia ovoidia, pallide-brunnea vel fusca-brunnea, unicellularia, magnitudine 16-20 × 8-12 μm; hyphis sterilis nullae.

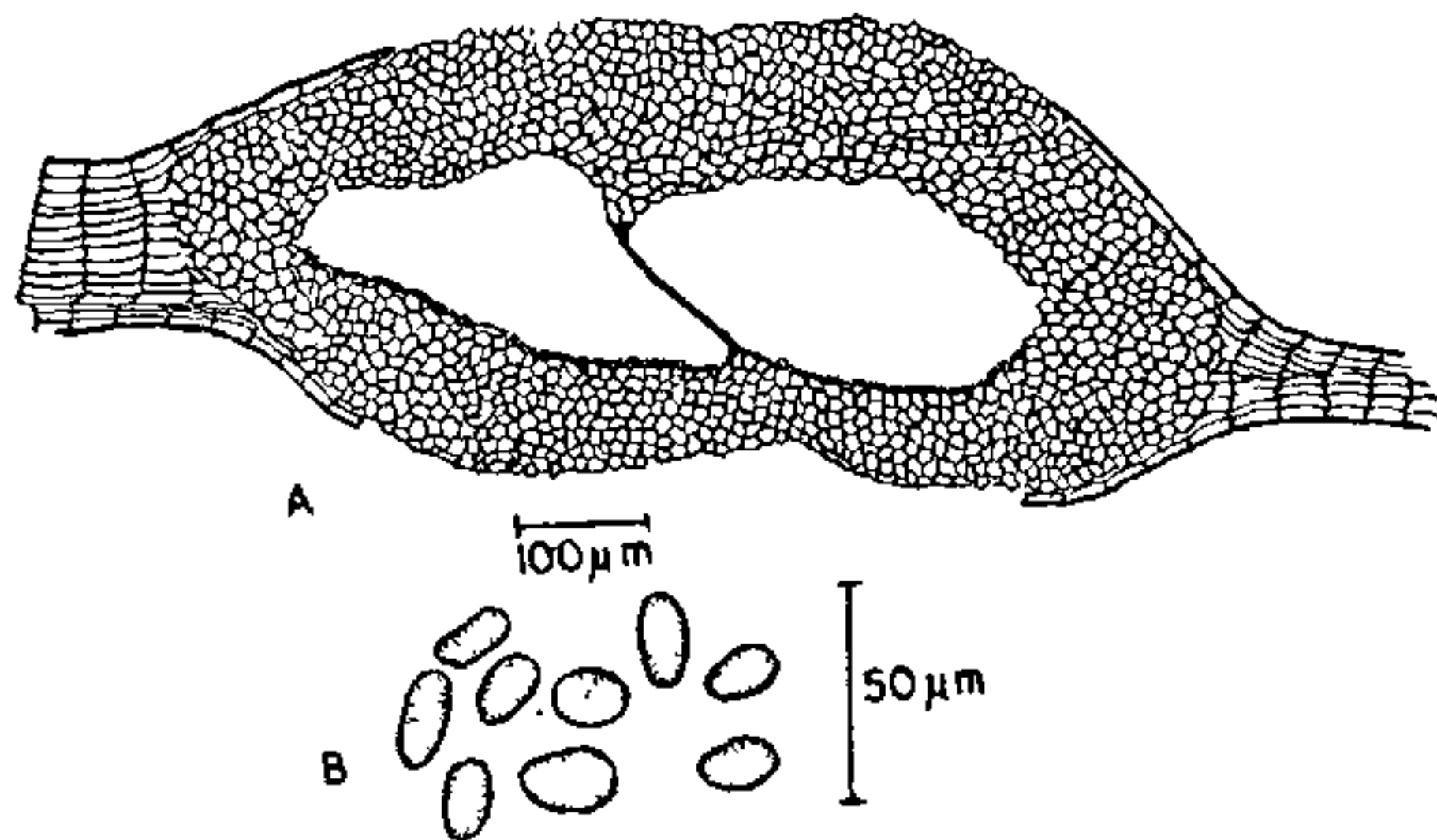


FIG. 1 A-B. *Haplosporella rosae*.

Matrix: On stems of *Rosa indica* L. (Garden Rose) (Fam. Rosaceae) Legit. A. W. S. on 2-12-1973 at Bhimashankar (Maharashtra No. AMH 3492 (Holotype)).

Pycnostroma brownish to black, erumpent, 2-loculate, upto 2.5 mm across, 0.30-0.60 mm in height, pseudoparenchymatous cells, non-ostiolate; conidiophores simple, filiform, brown, septate; conidia oval, light brown to dark brown, one celled, measure 16-20 × 8-12 μm, sterile threads absent.

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ISOLATION OF THERMOPHILIC FUNGI FROM
DUST ON BOOKS

THERMOPHILIC fungi have been repeatedly isolated from natural habitats (Apinis and Pugh³, Cooney and Emerson⁵, Eggins and Malik⁷, Tansey and Brook¹⁸, Ward and Cowley¹⁹, Kuster and Locci¹¹, Subrahmanyam¹⁶) and also man made self-heated environs (Fergus⁹, Resz¹⁴, Mulinge and Apinis¹², Tansey¹⁷, Subrahmanyam¹⁶). In all these instances development of thermophilic fungi was correlated with the onset and prevalence of elevated temperatures either due to natural sources like geothermal heat, sun heating or artificial means like microbial metabolism, accumulation of materials to provide insulation. During the course of investigations of thermophilic fungi, isolations were made from dust accumulated on rarely used library books where the existence of elevated temperatures was not detectable. Further in view of their pathogenicity to man and animals it is considered worthwhile to examine their presence and role in causing allergic reactions or disease.

Two local libraries with huge collection of books were chosen for the study. Samples were collected thrice in the year, i.e., May, July and October for two consecutive years. With the help of a sterile cotton swab dust accumulated on books was carefully and quickly collected into presterilized plates (15/90 mm). On reaching laboratory 5 ml. of sterile distilled water was aseptically transferred to each sample and four serial dilutions were made. 30 ml. of YpSs agar (ph 7.2) containing an antibacterial substance (30 ppm Tetracycline HCl added just before pouring the plates) was dispensed into each plate. The plates were gently rotated to ensure proper mixing. After setting, the agar plates were sealed with a self adhesive tapes and incubated at 55°C (± 0.5). Plates were examined at 24 h. intervals and when discrete colonies appeared each colony was transferred aseptically to another agar plate and incubated for ten days for further examination. Thermophilic fungi isolated from dust on books and the frequency of their occurrence are shown in Table I.

Sixty samples were screened. Eight fungi representing six genera were isolated including a new variety of *Mucor miehei* Cooney and Emerson, var *minor* A. Subrahm the details of which will be published elsewhere. Growth was generally apparent in 5 days of incubation. Of all the isolates *Hemicola lanuginosa* (Griffon and Maublance) Bunce and *Thermoscypha aurantiacus* Mische were predominant and first to appear (Table I) although the latter was considered rare by the earlier workers (Pore and Larsh¹³, Cooney and Emerson⁵, and Crisan⁶). *Thermomucor indicae-seudaticae* A. Subrahm. and Thirum. and *Mucor miehei* var. *minor* appear rare on this habitate as they were isolated only in two instances.

1. Mukerji, K. G. and Juneja, R. C., *Fungi of India*, Emkay Publication, New Delhi, 1975, pp. 224.
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TABLE I
Showing the occurrence and frequency of thermophilic fungi in the dust accumulated on books

Organism	Source														
	Content of Law	Taxation	Indian History	Capitalist	Economist	Ind. Law	J. Biol. chem. '10	J. Biol. Chem. '12	Ind. Med.	Nut. Abs.					
	J	M	O	J	M	O	J	M	O	J	M	O	J	M	O
<i>H. lanuginosa</i> 1976	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
(Griff. & Maubl) Bunce 1977	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>H. brevispora</i> 1976	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
A. Subrahm. & Thirum. 1977															
<i>Thermoascus aurantiacus</i> 1976	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Miehe 1977	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Mucor pusillus</i> 1976	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Miehe 1977															
<i>M. miehei</i> 1976															
Cooney & Emerson var. <i>minor</i> 1977	+														
A. Subrahm. 1976	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Chaetonium thermophile</i> 1977															
La Touch 1976															
<i>Penicillium emersonii</i> 1977															
Stolk 1976															
<i>Thermomucor indicae-seudaticae</i> 1977															
A. Subrahm. & Thirum. 1977															

+ : Present. J : July. M : March. O : October.

Occurrence of fungal spores in dust was reported by several workers although their role in causing allergic reactions and infection is a subject of controversy (Brown⁴, Reyman and Schwartz¹⁵). However none of them dealt with thermophilic fungi. The presence of thermophilic fungi in the thin film of dust accumulated on books in libraries is of interest since the existence of elevated temperatures is not detectable. Thermophilic fungi have a wide range of temperature tolerance. The spores present in dust remain dormant until elevated temperatures necessary for germination and growth are available. It is also observed that they are ubiquitous in nature and can be isolated from almost all habitats notwithstanding the existence of elevated temperatures. Thermophilic fungi were reported to cause disease or allergic reactions in animals and man (Ainsworth and Austwick^{1,2}, Gregory and Lacey¹⁰, Pore and Larsh¹³). However none of the isolates included in the present study were found to be pathogenic as the albino rats inoculated (I.P. route) with different concentrations of spore suspension prepared in saline showed no visible symptoms even after a month of inoculation. Thus the present investigation confirms the view (Ainsworth and Austwick^{1,2}, Emerson⁸) that the medical implications of thermophilic fungi do not appear to have more than minor economic significance.

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ADDITIONAL DIAGNOSTIC SYMPTOMS OF COVERED SMUT OF BARLEY

COVERED smut of barley [*Ustilago hordei* (Pers.) Lagerh.] is a disease of world-wide distribution. It is normally characterized by conversion of spikelets of ear-head in black powdery mass covered by grayish-white persistent membrane. However, during the course of a survey of plant diseases in March 1978, at the University farm, Kanpur, some plants of huskless barley (Variety DL 281) were observed to show smut sori on top leaves and base of the peduncle as well. Since no smut fungus is reported to cause any symptom on parts other than earhead of barley, detailed studies were taken up.

The affected ears exhibited typical symptoms of covered smut of barley. In addition, smut sori were also observed on flag leaf and the leaf below in the form of grayish-white amphigenous streaks. In most cases the midrib was primarily involved, but leaf tissues on either side of the midrib were also replaced by smut sori. It was not uncommon to find two or three streaks running parallel side by side along long axis of leaf (Fig. 1A and 1B). Initially, the streaks were yellow, changing gradually to grayish-white with the formation of hard, persistent membrane of the sorus. It was remarkable to note that smut sori on flag leaves were evident even before emergence of the smutted earheads and in certain cases the smutted ear remained enclosed for long in the sheath whorl of three to four abnormally congregated leaves due to shortening of internodes, and the laminae of these leaves exhibited judicious development of smut sori (Fig. 1B). At maturity the leaves were torn away along the sori thus giving them a ragged appearance. Spherical to