

of Burton⁹ was adopted. For quantitative estimation of RNA, the method described by Markham¹⁰ and modified by Acharyya Chowdhury¹¹ was followed.

The results in Table I show that the DNA contents in the tissues of healthy and infected

TABLE I
DNA and RNA contents of healthy and
Macrophomina jute stems

Age of the plants (in days)	DNA content (in μg) per mg of dry tissue			RNA content (in μg) per mg of dry tissue		
	Healthy	Infected	Gain (+) or Loss (-) due to infection	Healthy	Infected	Gain (+) or Loss (-) due to infection
15	2.41	2.37	-0.04	8.03	8.71	+0.68
30	2.52	2.41	-0.09	8.91	9.93	+1.02
45	2.71	2.54	-0.15	9.27	10.94	+1.67
60	2.94	2.67	-0.27	10.63	13.25	+2.62
75	2.83	2.52	-0.31	12.06	14.77	+2.71
90	2.64	2.15	-0.49	13.51	11.37	-2.14
105	2.31	1.78	-0.53	11.24	7.34	-3.90
120	2.19	1.58	-0.61	10.73	5.51	-5.22

plants vary slightly. In healthy tissues the amount increases slightly with an increase in age of the plants upto 2 months. With further increase in age, the amount of DNA decreases slightly. The loss of DNA contents, however, increases slightly with the disease development and at the end of the experimental period the loss of DNA content becomes 0.61 μg per mg of dry tissue. This is in accordance with the earlier observations in wheat varieties having compatible reaction with *Puccinia graminis* which shows that DNA contents remain slightly less or almost unchanged⁵⁻⁶.

In contrast to the changes in DNA, the RNA increases in the tissues of the infected plants in the early stages of the disease. But a decline in the RNA contents in the infected tissues is prominent in the three month old plants. The decrease in RNA becomes more prominent with further aging of the plant. The initial increase in RNA is in accordance with similar observations made earlier in a number of cases^{2-4,7}. The decrease in both DNA and RNA at some advanced stages of the disease may be due to denaturation of nucleic acids associated with degeneration of cellular components of the host tissues.

Botany Department,
Burdwan University,
Burdwan (W.B.), January 30, 1975.

DEBDAS MUKHOPADHYAY.
B. NANDI.

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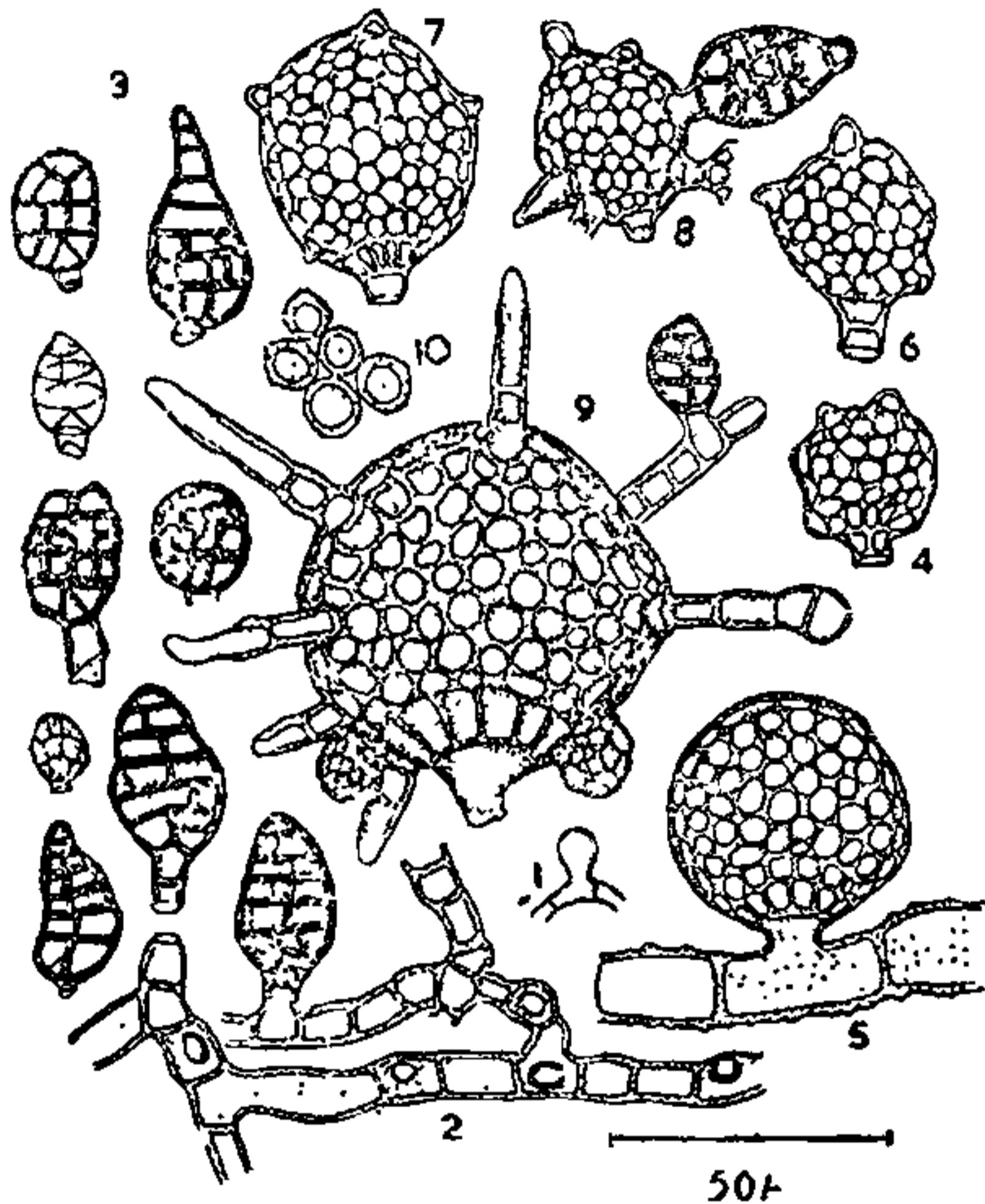
A NEW SPECIES OF *PITHOMYCES* WITH BULBILS

In the course of his studies on Hyphomycetes of Bhopal, the author collected an interesting species of *Pithomyces* Berk and Br., on dead bark of *Eucalyptus* species. The morphological characters of the fungus are given below.

Colonies: dark blackish brown to black, irregular and often effused. Mycelium partly immersed but mostly superficial, composed of a network of branched and anastomosing, subhyaline or brown, smooth or occasionally verruculose; conidiophores borne laterally on the hyphae, simple, straight, occasionally curved, continuous, subhyaline to light brown, concolorous with hyphae, 3–10.5 μm long, 3–5 μm thick. Conidia formed singly as blown out ends at the apex of each conidiophore, straight or curved, usually obclavate or obpyriform, sometimes subspherical or oval, muriform, 5–18 celled, with the cells arranged in 3–8 transverse rows, smooth-walled, brown or dark brown, 20–38 μm long, 15–23 μm thick in the broadest part. Bulbiferophores borne laterally on the hyphae, simple, straight, cylindrical, hyaline or subhyaline, 7–13.5 μm long and 6.5–15 μm thick; bulbils generally globose, 27–50–75 μm in diam, brown to dark brown, smooth or tuberculate or with 5–20 radial appendages, sometimes with multicellular tuberculate outgrowths at basal part around bulbiferophores; appendages stiff, straight, hypha-like, 0–5 septate, 20–55 μm long, 5–7 μm wide, simple, rarely once branched at the apex, sometimes bearing conidia terminally or laterally. The conidia and bulbils usually become detached through fracture of the wall of the conidiophore and each conidium carries away with it the upper part of the conidiophore.

The present species of *Pithomyces* Berk and Br. differs from all other taxa classified in this genus from the characteristic stipitate bulbils and conidia.

The specimen was examined by Dr. M. B. Ellis who considers it to be a new species of *Pithomyces*. It is, therefore, being described here as a new species.



FIGS. 1-10. *Pithomyces bulbilius*. Fig. 1. Developing conidium. Fig. 2. Hyphae with a conidium in side view and five scars of broken conidiophores in top view. Fig. 3. Conidia. Figs. 4-9. Stipitate bulbils. Fig. 10. Cells in a small fragment of bulbil.

Pithomyces bulbilius Satya sp. nov.

Coloniae effusae, fuscae vel atrae, irregulares. Mycelium superficiale ex hyphis septatis, subhyalinis vel brunneis, levibus, rarius verrucosis, 3-7.5-15 μm crassis, reticulatis compositum; conidiophora singula ex lateribus hypharum oriunda, simplicia, recta, cylindrica, continua, subhyalina vel pallide brunnea, 3-10.5 μm longa, 3-5 μm crassa; conidia singula in apice conidiophori oriunda, recta vel curvata, obclavata vel obpyriforma vel rotunda vel ovalia, dictyospora, 5-18 cellularia, vulgo cellulis in 3-8 ordines transversa depositis, brunnea vel atrobrunnea, levia, 20-38 μm longa, 15-23 μm crassa. Bulbilio-phora singula ex lateribus hypharum oriunda, simplicia, recta, cylindrica, hyalina vel subhyalina, 7-13.5 μm longa, 6.5-15 μm crassa, bulbilia vulgo globosa, 27-50-75 μm in diam., brunnea vel atrobrunnea, levia vel tuberculata vel cum 5-20 appendicibus; appendices rigidi, recti, similis hyphis, 0-5 septati, 20-55 μm longi, 3-5 μm lati, simplices, non-nunquam producentes conidia acropleurogena.

In cortice emortuis *Eucalypti* sp. leg. H.N.S. die 1 Januari, anni 1965, typus positus in C.M.I., Kew, sub numero IMI 111863,

The type specimen has been deposited at C.M.I., Kew, London, as No. IMI 111863. The author expresses his grateful thanks to Dr. S. B. Saksena, Department of Botany, University of Saugar, for encouragement and to Prof. O. N. Handoo for facilities. He thanks Dr. M. B. Ellis, Director, C.M.I., Kew, for helpful suggestions and Rev. Fr. Devanand for Latin diagnosis.

Pathology Section,
Department of Botany,
S.N. College, Khandwa,
January 10, 1975.

H. N. SATYA,

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A NEW SPECIES OF *MASSARINA* SACC.

AUTHORS collected a species of *Massarina* on dried stem pieces of *Lantana camara* L., which differed from all the existing species¹⁻⁴ in having 3-celled ascospores and uniseriate arrangement of ascospores. Hence it is being described here as a new species.

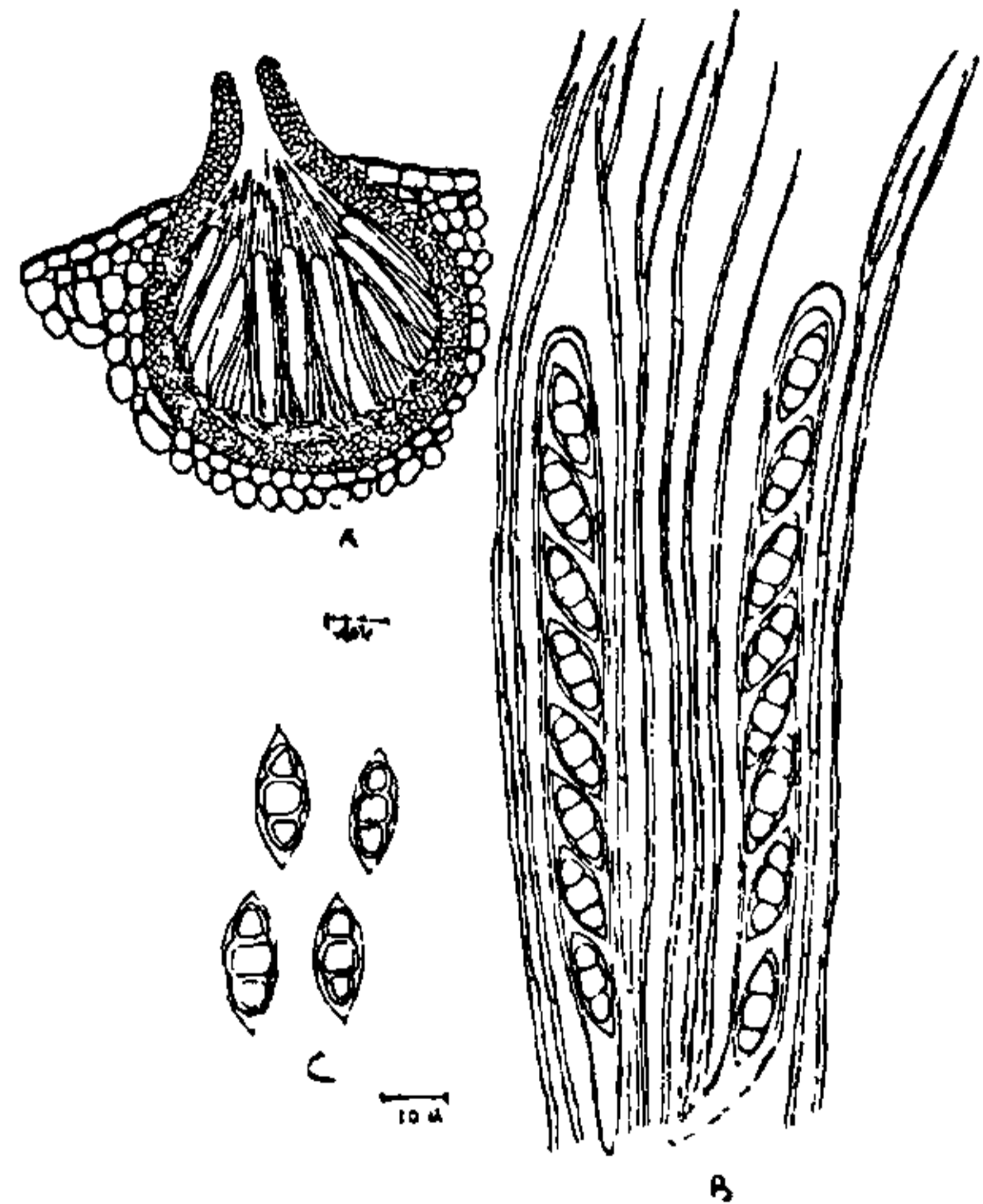


FIG. 1. A. Median L.S. Perithecium, B. Asci containing ascospores, paraphysoids. C. Ascospores with mucous sheaths.

Massarina tricolorata Sp. Nov. Panwar and Kaur

Ascocarpace pyriformes, innatae, dispersae inter emortuorum ramunculorum corticem, rostrum nigrum, erumpens, 220-405 × 200-385 μ magnitudinis. Ascocarpace quarum crassitudo parietis est amplitudinis 3-4 cellulae, habent crassos parietes, cellulae polyhedrae, et cellulae interiorae cavitate versus