Table 1 *Viability of conidia of C. canescens in simulated airborne conditions (studied at 1 hr intervals)*

Exposure time (hr)	Per cent spores germinated	Germ tube length (μm)			
		Average per conidium	Basal cell	Inter-calary cells	Apical cell
0 (Control)	96.0	151.69	255.64	117.18	141.42
1	76.0	182.82	246.86	167.72	140.56
2	39.0	140.08	155.68	137.20	108.08
3	19.7	96.78	104.58	106.82	74.34
4	3.5	47.14	50.68	51.38	38.50
5	1.3	35.91	38.64	0	28.00
6	0	0	0	0	0

and the threads cut with a sharp blade. Two or three drops of distilled water were placed on the spores present on the threads and the slides were incubated for 24 hr in humid petri chambers at room temperature (25 ± 2°C) to observe spore germination. At the start of the experiment the percentage of germination was recorded for spores freshly collected from leaf spots.

In a preliminary experiment the conidia were tested for germination at 2 hr intervals. It was observed that they lost viability within 6 hr and hence, their germination was again studied at hourly intervals. The conidia completely lost germinability after 5 hr of exposure to atmospheric conditions. After 1 hr exposure, 76% conidia showed germination. The germination dropped to 39% and 19.7% after 2 and 3 hr, respectively and then steeply decreased to 1.3% after 5 hr. The same trend was also observed in germ tube growth (table 1). The average germ tube growth recorded at 1, 2, 3, 4 and 5 hr was 182.82 μm, 140.08 μm, 96.78 μm, 47.14 μm and 35.91 μm respectively. The number of germ tubes per conidium decreased from 8 to 2 when the exposure period to atmospheric conditions increased from 1 to 5 hr. These studies were conducted on rain- and mist-free days in January 1985. On this day the atmospheric temperatures were 28°C maximum and 20°C minimum and the relative humidity was around 88%.

The conidia of *C. canescens* lost viability very rapidly within 6 hr in simulated airborne conditions. The conidia are thin-walled, filiform and hyaline and this may be the reason for rapid loss of viability when exposed to the aerial environment. There are no previous studies on this aspect on *Cercospora* species. Urediniospores of rust fungi, which are relatively thick-walled, were reported to lose viability within 4–5 days under normal aerial environment as reported earlier[2–4].

Thanks are due to CSIR, New Delhi for financial assistance.

20 March 1987

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A NEW SPECIES OF *ASTERINA*

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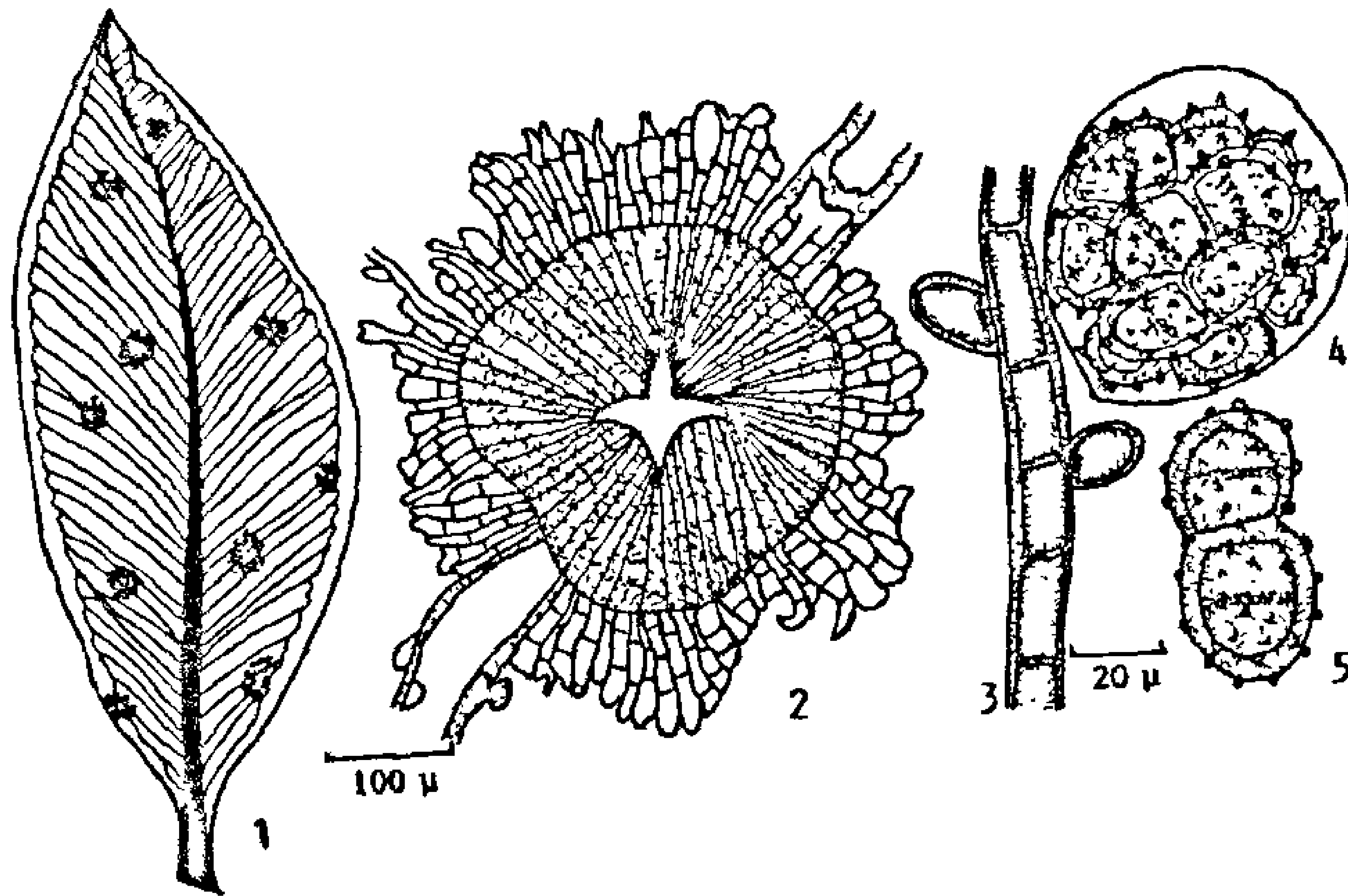
Asterina gopalkrishnanii sp. nov. (figures 1–5)

Coloniae amphigenae, dispersae vel aggregatae densae vel subdensae. Mycelium superficiale, reticulatum, hyphis subrectis, cellulis 20–25 μm longis, 5–7 μm latis. Hyphopodia sessilia, alterna, hemisphaerica, ex una cellula constantia, 5–7 μm lata. Thyriothecia carbonacea ostiolata 226–240 μm diametro dehiscentia modo stellato. Asci ovati, sine paraphysibus 50–65 μm × 25–50 μm. Ascospore ex duabus cellulis constantes, 12–16 × 30–45 μm, parietibus crassis spinosae brunneae, media cellula vittata duabus fuscis vittis.

Habitat: In foliis *Syzygium cumini* (Myrtaceae).

Colonies amphigenous, scattered or aggregated dense to subdense. Mycelium superficial, reticulate, hyphae substraight, cells 20–25 μm long, 5–7 μm broad, Hyphopodia sessile, alternate, hemispherical, one-celled, 5–7 μm broad. Thyrothecia carbonaceous, ostiolate, 226–240 μm in diameter, stellately dehiscent. Asci ovate, aparaphysate, 50–65 μm × 25–50 μm. Ascospores two-celled, 12–16 × 30–45 μm, thick-walled, spiny, brown with two dark brown bands in the middle of each cell.

Habit.: On leaves of *Syzygium cumini* (Myrtaceae)
Loc. Mahabaleshwar, Maharashtra, India, February 1979
Leg. L.N.N. and V.P.K.



Figures 1–5. *Asterina gopalkrishnanii* sp. nov. **1.** *Syzygium cumini* leaf with infection; **2.** Thyrothecium; **3.** Hypha with capitate hyphopodia; **4.** Ascus with eight ascospores; **5.** An ascospore.

This species of *Asterina* differs from *Asterina fawcetti* Ryan[1] on the same host in having spinules and a dark band in the middle of each cell of the dark brown ascospores and hence is a new species reported from India[2].

The authors are indebted to Dr M. S. Balakrishnan, for encouragement.

9 April 1987

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A RAPID STAINING TECHNIQUE FOR STAGING OF MICROSPORES IN RICE (*ORYZA SATIVA* L.) AND RICE BEAN (*VIGNA UMBELLATA*)

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Breeding through haploids reduces the time needed to reach homozygosity and allows expression of recessive genes in an early generation. In androgenic haploid production the stage of microspore at which the anthers are cultured is known to be crucial than the composition of the nutrient medium. There is a staging optimum for each species as has been reported in several cases. Anthers of many cereals respond better at the early uninucleate microspore stage[1] or on mid-uninucleate stage i.e. when the microspores are half-way through the uninucleate stage e.g. maize[2], wheat[3] and rice[4].

Microscopic staging of microspores for determining the mid uninucleate stage is desirable before plating of anthers, but some researchers have used external morphological features of the panicle to select microspores of this stage[5,6]. The use of such morphological features has been found to be erroneous in our laboratory, and also by Mercy *et al*[7]. Therefore, microscopic staging can only lead to the exact determination of the stage. The stain generally used in microscopic staging is 2% acetocarmine[8] which in our experience does not stain nucleus and cytoplasm differentially[9]. A modified acetocarmine staining was advocated by Genovesi and Magill[10], nevertheless, many researchers have found even this method as not very satisfactory. The present investigation reports an easy and rapid staining technique for the staging of microspores in rice.

Young panicles of rice[2], while enclosed in the boot leaf, were collected from field and stored in a