

**Figure 2A,B.** Morphological characters of *Colletotrichum lindemuthianum*. A. Acervulus with setae, and B. Conidia.

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Research Station, Sri Ganganagar. The disease first appeared as small, scattered and pale to light brown spots on the upper surface of leaves. With advancement of disease the spots became circular to irregular and dark brown in colour.

The causative fungus was isolated on potato dextrose agar (PDA) and identified as *Scopulariopsis brevicaulis* (Sacc.) Bainier (IMI No. 299368). Pathogenicity was tested successfully by inoculating 7-day-old cultures into healthy chickpea plants. The characteristic symptoms were observed eight days after inoculation. The fungus has been recorded

### A NEW LEAF SPOT DISEASE OF CHICKPEA INCITED BY *SCOPULARIOPSIS BREVICAULIS*

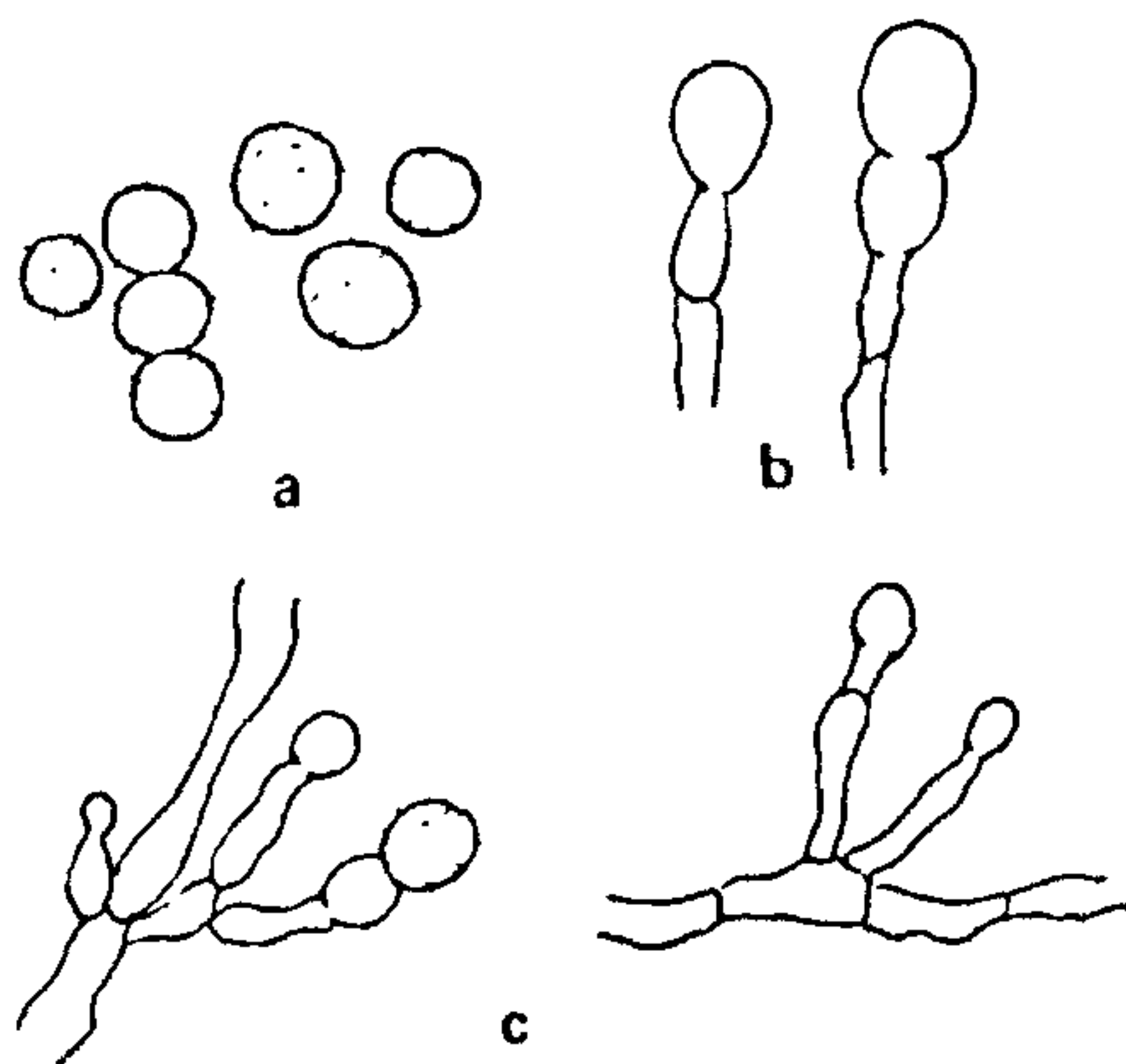
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CHICKPEA (*Cicer arietinum* L.) commonly known as "Chana" occupies an important position among the legume crops in India. Rajasthan has the third largest area under chickpea cultivation among Indian states and Sri Ganganagar district alone accounts for 0.6 million ha<sup>1</sup>. During Rabi 1985 and 1986, a new leaf spot disease of chickpea was observed in the experimental plots at Agricultural



**Figure 1a-c.** *Scopulariopsis brevicaulis*. a. Conidia; b. Conidiophores bearing conidia, and c. Hyphae ( $\times 900$ ).

earlier from insect larvae<sup>2</sup>, soils<sup>3-7</sup> and opium<sup>8</sup>, but this is the first record from chickpea.

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## PARTHENOGENESIS UNDER MAGNETIC FIELD IN *MARSILEA* L.

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THE amphibious fern *Marsilea* L. is a fascinating experimental plant. This led us to study the effect of

a magnetic field on parthenogenesis in this plant<sup>1</sup>.

*M. diffusa* var. *approximata*, a Madagascar species, was taken up for the study of parthenogenetic embryo formation. The sporocarps were scarified and placed in tapwater for extrusion of sorophore and spore dispersal. The megaspores were picked up and transferred to another dish after ascertaining that no microspores accompanied any of the isolated megaspores.

The isolated megaspores kept in distilled water were subjected to a magnetic field between two poles of a magnet separated by a distance of 2.3 cm. A strong magnetic field of intensity 10.2 kG was provided by supplying a current of 2 amperes for different times (2.30, 3, 4.15, 4.45, 6, 12 and 24 h). Two batches of treated megaspores were kept under identical conditions of light and temperature along with controls for further observations.

Parthenogenetic embryo formation from these sets of isolated megaspores was found to occur and the data are given in table 1. It may be observed (table 1) that 2.30 h magnetic field of 10.2 kG did not lead to any significant effect on megaspore germination and parthenogenetic embryo formation since the control and experimental sets of megaspores contained almost the same number of embryos. However, magnetic field of 3 h duration markedly enhanced the percentage of embryo formation in treated megaspores (85.3) in comparison to control (50%).

Enhancement of the duration of magnetic field beyond 3 h up to 24 h showed, by and large, a continuing enhancement of percentage of embryo forma-

Table 1 Effect of magnetic field on embryo formation in *M. diffusa* var. *approximata*

	Duration of treatment													
	2.30 h		3 h		4.15 h		4.45 h		6 h		12 h		24 h	
	C	T	C	T	C	T	C	T	C	T	C	T	C	T
Number of megaspores	71	71	24	41	160	220	77	111	82	115	32	36	70	66
Number of embryos formed	67	64	12	35	102	183	34	81	63	108	25	33	44	53
Per cent embryos formed	94.3	90.1	50	85.3	63.7	83.1	44.1	72	76.8	93.9	78.1	91.6	62.8	80.3

C = Control; T = Treated.