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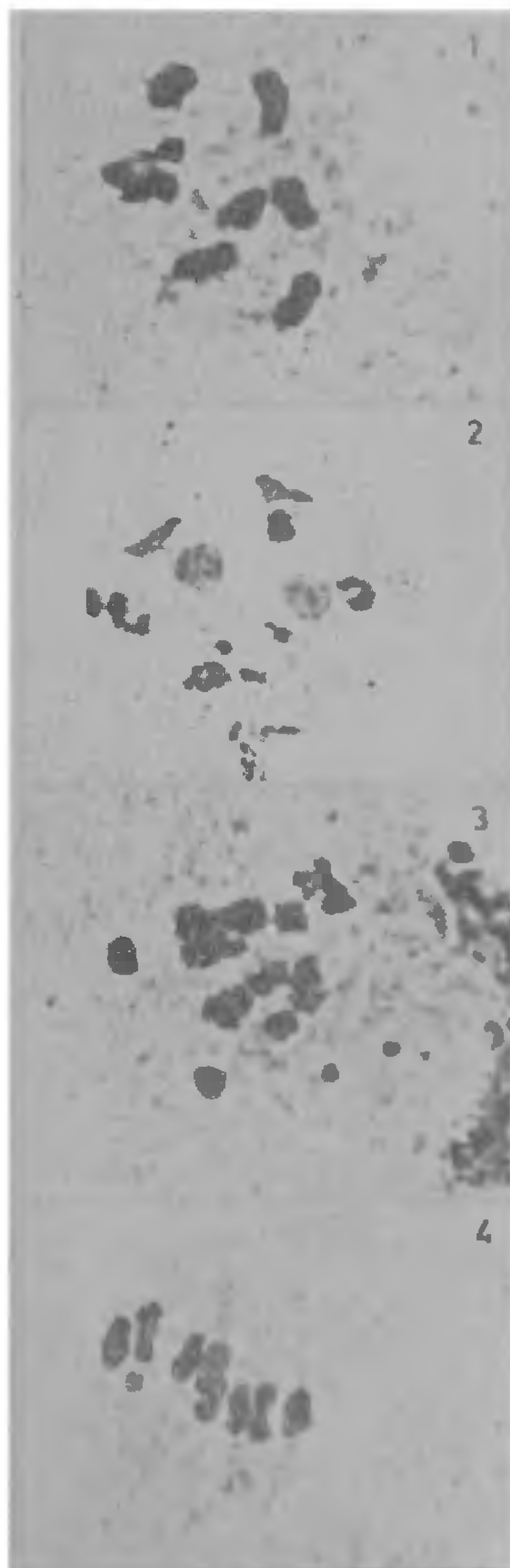
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ACCESSORY CHROMOSOMES IN *TRIGONELLA CORNICULATA* L.

A NUMBER of plant species is known to contain supernumerary B-chromosomes in addition to the standard complement of A-chromosomes^{1,4}. The frequencies of plants with B-s, vary over a wide range (0-100%) according to the species and/or to populations of one and the same species. Occurrence of accessory chromosomes in *Trigonella corniculata* has not been reported so far, although they are recorded in the related species *T. foenum-graceum*^{5,6}. In the present communication, the occurrence and cytological behaviour of accessory B-chromosomes observed in *T. corniculata* have been reported for the first time.

T. corniculata was found to be diploid with $n = 8$ (Fig. 1). Out of 60 plants analysed cytologically, 2 were found to be carriers of B-chromosomes. The carrier plants have two types of PMCs, one having 16 chromosomes and the other $16 + B$ -chromosomes. The B-chromosomes range in number from 1-4 (Figs. 2, 3 and 4). The frequency of PMCs having B-chromosomes is nearly 50%. The behaviour of B-chromosomes in PMCs has been studied in detail. They differ in size, shape and stainability and can be distinguished from the normal chromosomes. They appear to be polymorphic in nature. Two of the B-s have centric constrictions while the other seems to be telocentric. However, this observation has to be confirmed from pachytene studies. At anaphase I some of the B-s were observed to be lagging and others showed no signs of lagging. Morphologically there exists no distinction between the individuals possessing the accessory chromosomes and the plants without them. Hence the B-s appear to be genetically inert. Their mode of origin could not be studied.

Studies of Lewis³ and Frost² revealed that B-chromosomes exhibit marked variation in their frequency with their ecological conditions. This geographical difference largely coincided with difference in humidity and temperature, the accessory chromosomes being higher in the arid regions. Although, *T. corniculata* plants have been studied in detail by Singh⁷ and Singh and



FIGS. 1-4. Meiotic stages in *Trigonella corniculata* L. Fig. 1. Metaphase I with 8 bivalents, $\times 8,550$. Fig. 2. Diakinesis showing two nucleoli and 3 B-chromosomes, $\times 5,625$. Fig. 3. Metaphase I with 2B-s, $\times 8,602$. Fig. 4. Metaphase I with 1B, $\times 6,750$.

Singh⁸ from Ludhiana, they did not record the occurrence of B-chromosomes. It is quite possible that B-chromosomes may be absent in *Trigonella corniculata* plants growing in certain regions of India and present in others.

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OCCURRENCE OF PERITHECIAL STAGE OF *SPHAEROTHECA FULIGINEA* ON MUSKMELON (*CUCUMIS MELO* L.) FROM BANGALORE (KARNATAKA STATE)

DEVELOPMENT of perfect stage in Erysiphaceae has been attributed to low relative humidity and temperature. Due to this reason perithecial stage seldom develops in nature under tropical conditions. It has been shown that perithecia develop best around 20° C and further it is also reported that perithecia of both *Sphaerotheca fuliginea* and *Erysiphe cichoracearum* develop only on some cucurbits, and, *Cucumis melo* has been a most congenial host for *S. fuliginea* (Khan¹).

The perithecial stage of *Sphaerotheca fuliginea* was observed on 20th March 1978 on older leaves of muskmelon (*Cucumis melo*) var. Arkajeet cultivated in the experimental field at Hessaraghatta at Indian Institute of Horticultural Research. The crop was about three months old and the fruits were almost ripening.

An average maximum temperature of about 27° C and minimum of 12.7° C with an average humidity of 22–57% favour the development of perithecia. Coupled with these favourable weather factors, the availability of *Cucumis melo* as the most congenial host, are the required conditions for the development of perfect stage of this powdery mildew. The other

factor was non-occurrence of *Ampelomyces* a hyper-parasite during the season which had favoured the development of perithecia as earlier reported by Patwardhan² and Kamat and Patwardhan³.

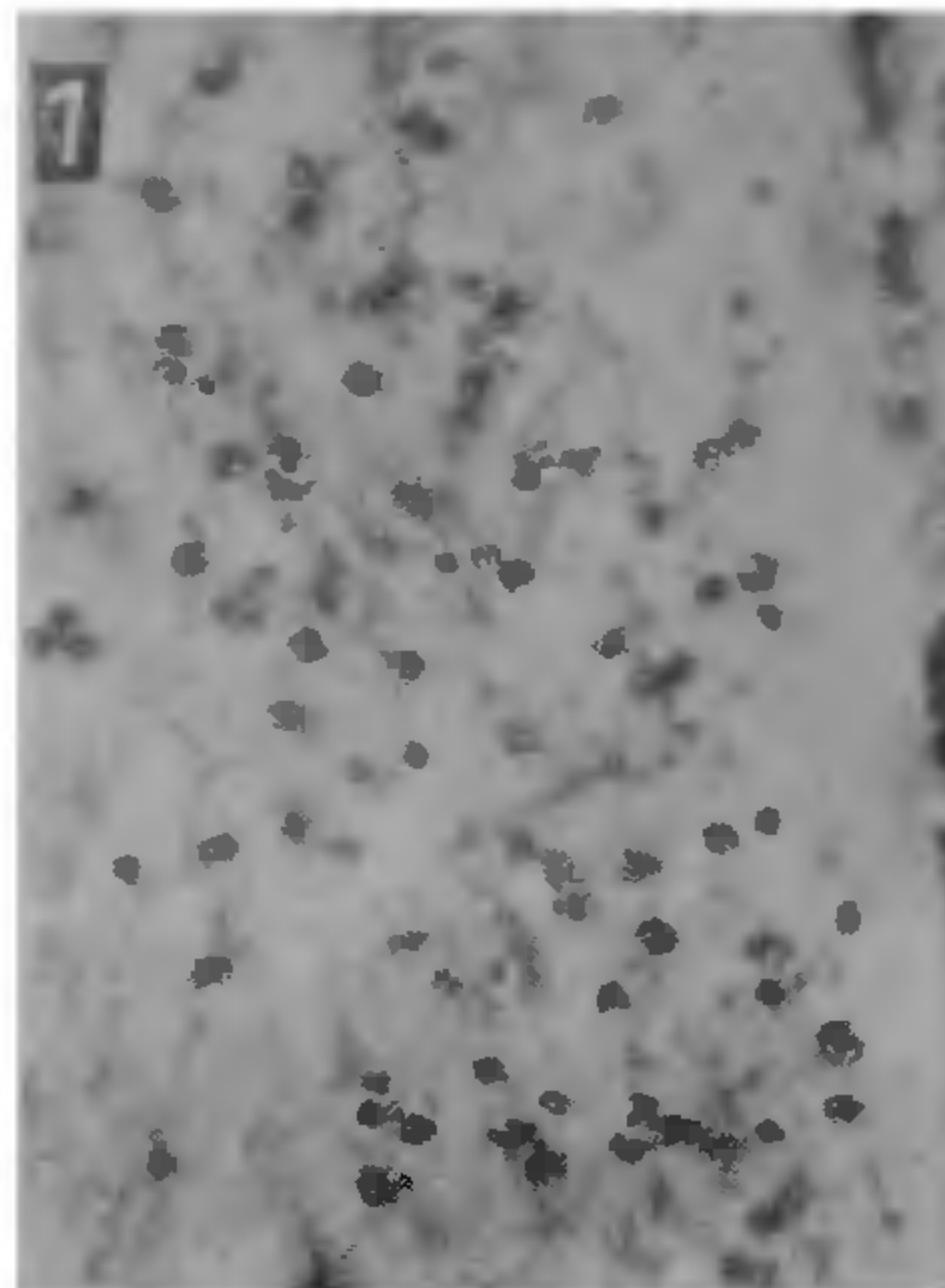


FIG. 1. Habit and nature of distribution of perfect stage on leaf surface, $\times 20$ approx.

The perithecia were observed on some of the severely infected leaves as minute black bodies scattered in small groups on the brownish floury patches (Fig. 1). They were present only on the lower surface of the leaves and were small, round, orange to brown in colour turning dark brown to black later. The perithecial wall consisted of somewhat irregular cells of various shapes and possessed a few simple, septate myceloid appendages measuring 100 to 150 μ m in length. Perithecia were 100 to 120 μ m in diameter (Fig. 2). Each peri-

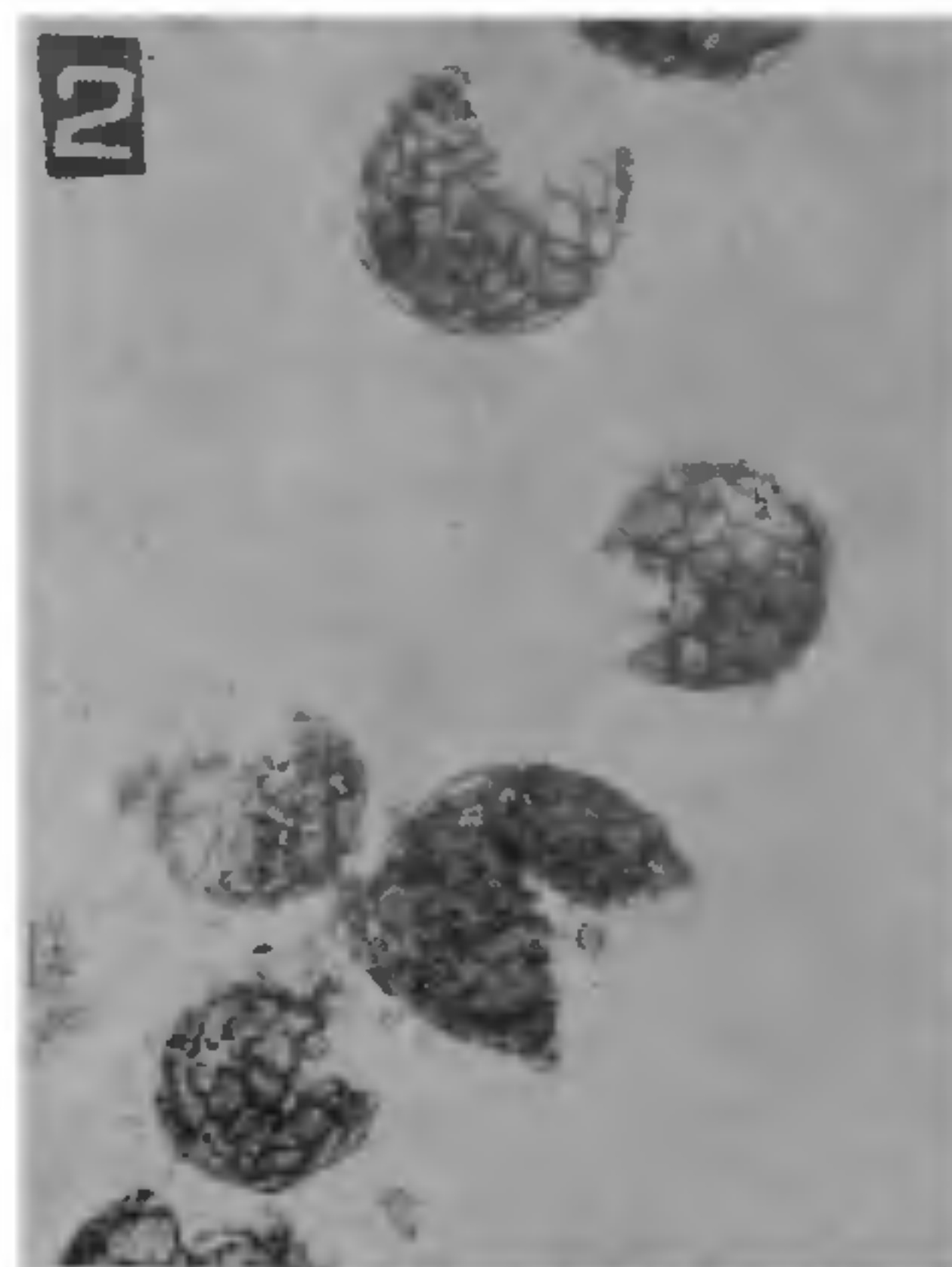


FIG. 2. Perithecia at different stages of development, $\times 150$ approx.