

ha<sup>-1</sup> day<sup>-1</sup>. *Fimbristylis bisumbellata* seems to possess a reasonably high nitrogen fixing ability. The nitrogen fixing potential of sedges and their contribution to the N-economy of the ecosystems deserves systematic evaluation. The N<sub>2</sub>-fixation by *Fimbristylis bisumbellata* deserves careful study of host-microsymbiont relationship and detailed investigation of the ecological factors which could promote N<sub>2</sub>-fixation under natural conditions.

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### A NEW FRUIT ROT DISEASE OF KANDURI (*COCCINIA CORDIFOLIA* LINN.)

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KANDURI (*Coccinia cordifolia* Linn.) is a pretty twinning shrub of rainy season, found throughout India. The fruits are used as vegetables and said to be useful for diabetes.

During July and August (1979 and 1980) a severe fruit rot disease of Kanduri was observed in the vegetable fields around Gwalior, M.P. The disease was marked by discoloration and softening of the fruit tissues which in an advance stage became brown in colour. The pathogen finally reached the seeds.

Isolations made from the infected fruits yielded consistently a fungus culture. Pathogenicity tests were performed on young fruits by Prick method of inoculation. Symptoms appeared within 3-4 days and reisolations from these yielded the same organism as was used for inoculation. The fungus produces septate, light yellow coloured aerial mycelium on PDA plates. It is characterized by the production of microconidia in chains. Macroconidia are 3-5 septate,

spindle-sickle-shaped, slightly curved, generally pointed at the tip and 24-31 × 3.6-4 μ in size. Chlamydo-spores are lacking. The fungus was identified as *Fusarium moniliforme* Sheldon.

Perusal of literature<sup>1</sup> showed that the fruit rot of Kanduri caused by *F. moniliforme* has not been reported from India so far.

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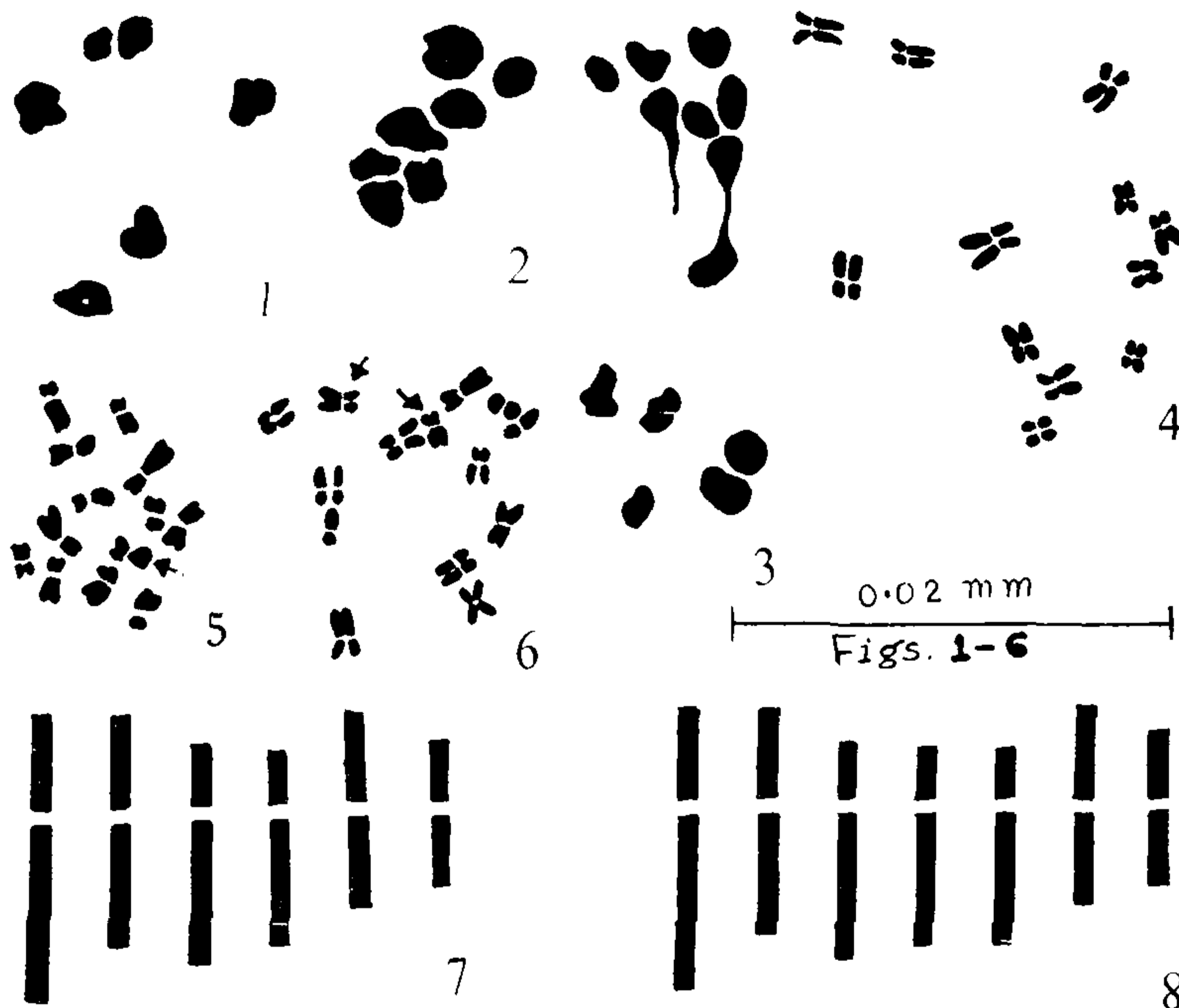
### CYTOLOGICAL STUDIES ON WEEDS—I *SESBANIA BISPINOSA*

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*Sesbania bispinosa* (Jacq.) W. F. Wight commonly grows as a weed in cultivable lands of Patiala District, Punjab State. Meiotic studies show  $n=6, 7$  and  $2n=13$  (Figs. 1-3) as also recorded by Bir *et al.*<sup>3</sup> from Punjab plain. Scrutiny of data shows  $n=6$ ,  $2n=12$  (Rao<sup>6</sup>; Baquar and Akhtar<sup>1</sup>; Bir and Sidhu<sup>2</sup>),  $n=7$  (Bir and Sidhu<sup>2</sup>) and  $2n=24$  (Datta and Sen<sup>5</sup>; Danna and Datta)<sup>4</sup> have generally been recorded for the species. In root tip cells of this weed, variation in somatic chromosome number has also been observed. In the majority of the plants root tips yield  $2n=12=V_4+L_8$  (Figs. 4, 7) whereas in a few plants  $2n=13=V_5+L_8$  (Fig. 5) or  $2n=14=V_6+L_8$  (Figs. 6, 8) are recorded. Chromosomes range in size from 2-3.7 μm. The total chromatin length of haploid complement is 16 μm in plants with  $2n=12$  while in plants with  $2n=13$  and  $2n=14$  the value is 16.75 μm and 17.5 μm respectively.

From the karyotypic analysis it is thus clear that in cells with  $2n=13$ , one extra chromosome, which is morphologically similar to the metacentric chromosomes of the 4th homologous pair, is present in addition to the normal complement of  $2n=12$ . On the other hand, in cells showing  $2n=14$ , one additional pair of homologous chromosomes is present. This additional pair is also similar to the metacentric chromosomes. Thus the comparative karyotypic studies indicate that the change in chromosome number



FIGS. 1-8. Fig. 1. PMC showing 6 bivalents. Fig. 2. 7 bivalents at M-I. Fig. 3. PMC at A-I giving  $2n = 13$ . Fig. 4. Somatic cells with  $2n = 12$ . Fig. 5. 13 Chromosomes at mitotic metaphase. Fig. 6. Somatic cell with  $2n = 14$ . Figs. 7-8. Idiograms for complements with  $2n = 12$  and 14 respectively.

is not due to rearrangement of chromosomes in the complement, rather there is an addition of one or two chromosomes giving  $2n = 13$  or 14 resulting in an increase in the total chromatin length of the complement.

The 12-, 13- or 14-chromosomed plants are morphologically quite similar but could be segregated on the basis of micro-characters of pollen and stomata. This species very well illustrates the evolution of new genotypes with the addition of chromosomes in the haploid complement.

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#### A NOTE ON THE OCCURRENCE OF TWIG BLIGHT AND STEM CANKER OF *GOSSYPIMUM HERBACEUM* L. IN INDIA

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JAYADHAR, a cultivar of *Gossypium herbaceum* L., is widely cultivated under different agroclimatic conditions in India. It occupies a major portion in Karnataka being cultivated in scanty rainfed eastern cotton zone and transitional cotton zones. During August, September, 1976-77 and 1977-78 a severe infection was noticed on *Gossypium herbaceum* L. for the first