

Figures 1–3. 1. Metaphase I showing only 3 II^s. 2. Metaphase I showing 5 II^s. 3. A group of seven cells connected due to cytomixis.

causing cytomixis. The phenomenon of cytomixis in this species may be due to genetic or physiological disturbances or both.

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OCCURRENCE AND SEVERITY OF A NEW COLLAR AND STEM ROT OF *CASSIA SERICEA* SW FROM INDIA

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CASSIA SERICEA Sw is one of the important herbs growing extensively in conspicuous colonies along railway lines, road sides and waste lands. Joshi and Mahadevappa reported that *C. sericea* grows fast suppressing the growth of the important noxious weed i.e. *Parthenium* sp. Further, they suggested that *C. sericea* could be grown whenever *Parthenium* sp poses a problem.

In the present work it was observed that 8–12% of *C. sericea* seedlings wilted around Dharwad during 1984 and 1985 kharif. Normally the wilting symptoms were noticed during the flowering period of the crop.

The affected plants showed yellowing, followed by wilting and drying, finally resulting in the death of the seedlings. Close observations on the infected plants revealed that white mycelial mat along with white to brown sclerotial bodies covering the collar region and the stem upto 3–6 inches. Repeated isolations from infected parts of the plant invariably yielded *Sclerotium* sp.

Pathogenicity of the fungus was established by inoculating the soil in which *C. sericea* seedlings were grown with fungus grown on corn meal sand medium (1:1 w/w). The pathogen was found to infect the germinating seeds resulting in premature death. Such seeds were covered with white mycelial mat. The pathogen caused post-emergence death of seedlings, manifesting in the form of brown discoloration of stem, at the ground level followed by wilting. Further, the white mycelial mat along with sclerotial bodies was observed on the root zone of the infected *C. sericea* seedlings.

The characteristic features of the fungus are mycelium superficial on the host, sclerotia chocolate brown in colour and ellipsoidal or subrotundum in shape. The size of sclerotial bodies varied from 0.5 to 1.5 mm. Based on these characters, the fungus was identified as *Sclerotium rolfsii* Sacc. This is the first report of *S. rolfsii* causing seed rot, seedling wilt on *C. sericea* from India.

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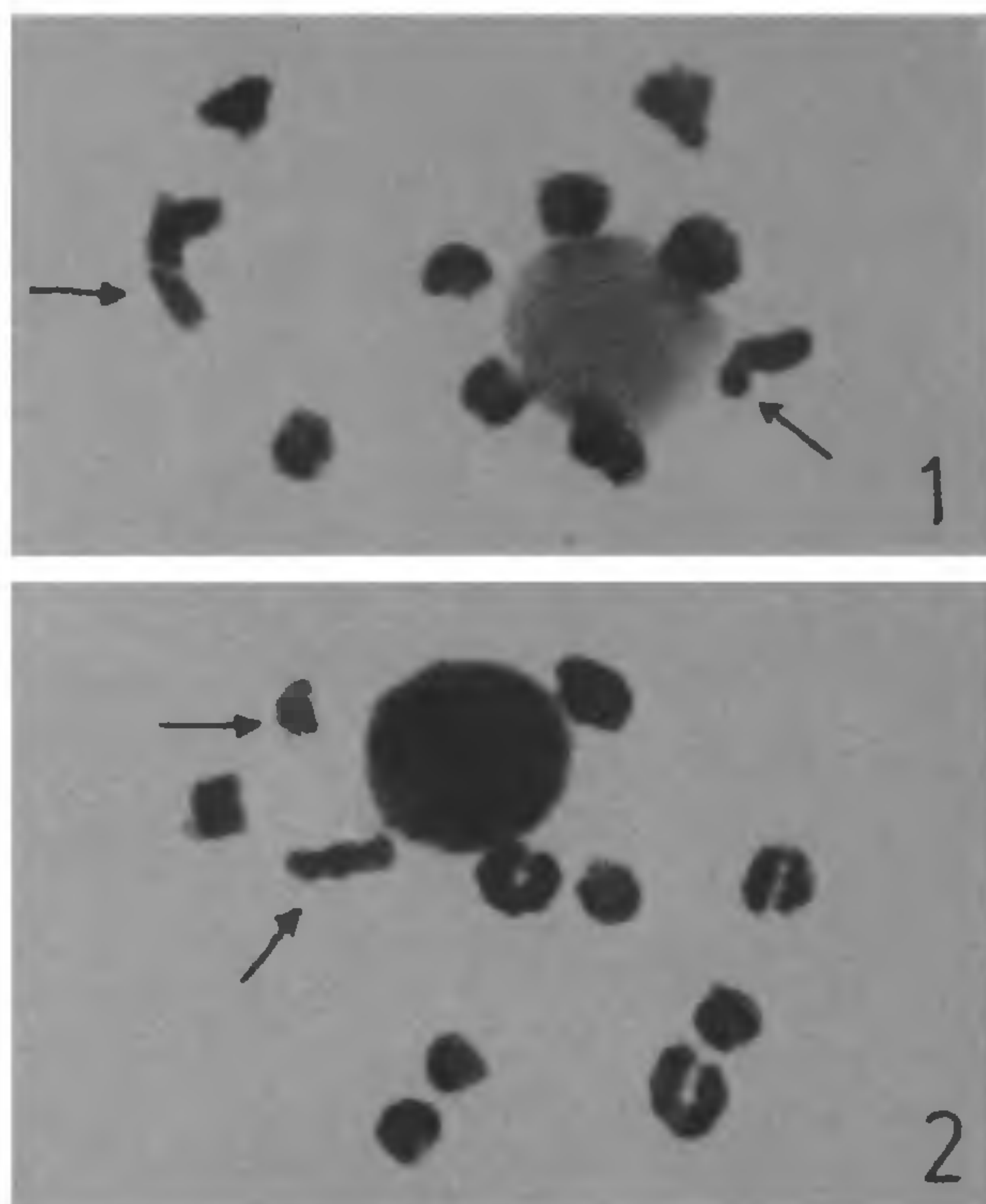
MONO-TRISOMIC IN *COIX GIGANTEA* (POACEAE)

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SEVERAL kinds of aneuploids have been reported since they were first reported in plants¹⁻³. Khush⁴ defined 32 different type of aneuploid constitutions considering the addition or deletion of regular chromosome(s), isochromosome(s), telochromosome(s) or interchanged chromosome to the disomic complement. Recently two more polysomic constitutions, pentasomy ($2n + 3$) and hexasomy ($2n + 4$), in *Coix gigantea*^{5,6} and a tetratrismic ($2n + 2 + 1$) in *Pennisetum americanum*⁷ have been added to the above list. A new two-in-one aneuploid constitution, mono-trisomic, in *Coix gigantea* is presented here.

Seeds of *Coix gigantea* Koen ex Roxb were collected from the Purandar Fort and a population of this species is being maintained at the Botanical Garden of the Marathwada University for the past ten years. Some of the diploid plants ($2n = 20$) that showed meiotic nondisjunction⁸ and a few irregularities in the chromosome segregation⁹ were selfed by bagging the whole plants with muslin cloth before the onset of flowering with a view to obtaining aneuploids. Selfed seed progeny, raised in the following year, comprised about 200 plants each of which was separately studied cytologically by the routine aceto-carmin (1%) squash technique. Among several types of aneuploids recorded in this progeny, one plant that showed mono-trisomic constitution is reported in this communication for the first time. In this mono-trisomic plant ($2n = 20$), as is expected, a large univalent and a small trivalent was noted at diakinesis (figure 1) in quite a few PMCs. However, as is common among trisomics, the extra chromosome was also left out as a univalent (figure 2), there being strong competition for pairing



Figures 1, 2. Typical chromosomal associations in the mono-trisomic of *C. gigantea*. 1. Diakinesis showing $8II + I + III$. 2. Diakinesis showing $9II + I + I$. (arrows indicate trivalent and univalents, $\times 2,400$).

and chiasmata between the three homologues, and more so in the present plant because the chromosome involved in the trivalent formation is smaller in size.

Monosomics and trisomics, involving different members of the genomic complement one-by-one, have been reported in *Datura*, *Nicotiana*, *Hordeum*, *Triticum* etc⁴. However, complex aneuploids involving different chromosomes at a time on the plus and/or minus side of disomics, as has been reported in *P. americanum* ($2n + 2 + 1$)⁷ and in the present note ($2n - 1 + 1$), seem to be rare situations. It is well known that aneuploidy leads to severe cytogenetical, biochemical and hence physiological imbalance seriously affecting the health, survival and reproduction in aneuploids. The mono-trisomic of *C. gigantea*, however, is normal and highly fertile. Further study on its progeny is in progress.

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