

The progeny consists of plants with 10, 13, 15, 17 and 20 chromosomes as somatic number. Plants with the aneuploid numbers (13 and 17) and the desynaptic plant were completely sterile and did not set seed. The rest were partly fertile. The plants with $2n = 10$ (desynaptic) and $2n = 13$ were dwarf, and had a bushy habit with narrow, short, thick, and dark green leaves. The plant with $2n = 13$ had aborted ovaries also. Plants with $2n = 15$, $2n = 17$ and $2n = 20$ all showed the gigas characters usually associated with polyploidy. From the occurrence of chromosome numbers varying from 10 to 20 in this progeny it appears that in Coix aquatica gametes with n , $2n$ and intermediate numbers as well function successfully in fertilization.

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2. Meiosis in a spontaneous tetraploid of Coix aquatica.

Two spontaneous tetraploids with $2n = 20$ were located in the progeny of a population of Coix aquatica known to contain plants heterozygous for translocations (See this News Letter: Further studies on spontaneous chromosomal variation in Coix aquatica). Chromosome pairing, in one of the two plants, was studied at metaphase I in 40 nuclei. In addition to bivalents, trivalents and quadrivalents, associations of five, six and eight chromosomes were present. Univalents were also observed. The mean frequency of chromosome pairing was 0.05_{VIII} , 0.2_{VI} , 0.075_{V} , 1.6_{IV} , 0.4_{III} , 4.9_{II} , 0.625_{I} . In only one case two associations of six chromosomes (one ring and one chain of six) were observed in a cell; otherwise, as at diakinesis, only one association of five or more chromosomes occurred per cell. Probably during open pollination of plants heterozygous for translocations fusion of two gametes with $2n$ chromosome number gave rise to this tetraploid.

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3. Further studies on apomixis in Coix aquatica.

In last year's News Letter (1965) Venkateswarlu and Chaganti reported apomixis in Coix from attempted crosses between maize and Coix. The following additional observations have been made in this regard. In Coix aquatica it has been observed that at the upper nodes on a culm both male and female flowers are produced while at the lower nodes, down from the fifth or sixth node, only female flowers are produced which are suspected to set apomictic seed. Embryo sacs were studied in squash preparations according to the method of Bradley (1948) from these flowers. Preliminary observations revealed occurrence of two to three embryo sacs per ovule all of which were four nucleate. This is suggestive of the occurrence of apomixis in Coix aquatica.

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