CYTOLOGICAL STUDIES ON THE PROGENIES OK TETRAPLOID PLANTS OF PISUM[1]

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Six plants ot _P. sativum (JI 863) and three plants of P. fu1vum (J I 865)) obtained as tetraploids from the John Innes Institute (Norwich, U.K.). were confirmed to be tetraploid (2n=4x=28).

Mitotic and meiotic analyses on the progenies of these plants are reported in Table 1. Four plants of the progeny oi a tetraploid of Pisum sativum were 2n=28; meiotic analysis carried out on one ol these plants showed cells with 14 bivalents and cells with quadrivalents (Fig. 1).

The progeny of one P. fu1vum tetraploid had a chromosome number varying from 28 to 30; the meiotic analyses on three of these plants showed associations of four and five chromosomes (Fig. 2) and never 14 bivalents.

The presence of two pentavalents in the plants with 2n_=30 indicates that the two additional chromosomes are different.

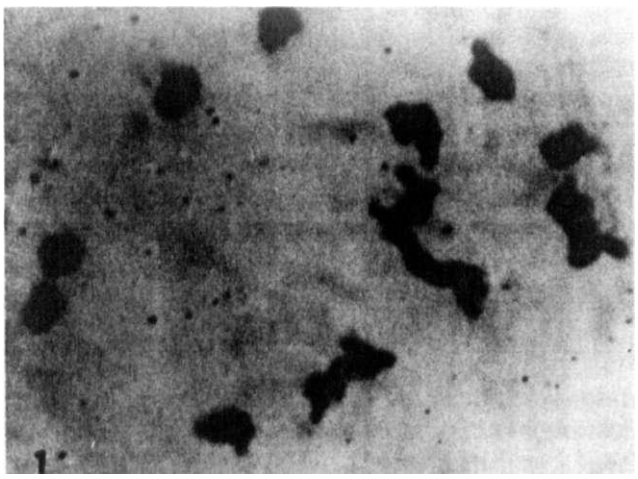

Fig. 1. Diakinesis showing 121I+1IV in the plant "A" of P_. sativum with 2n=28.

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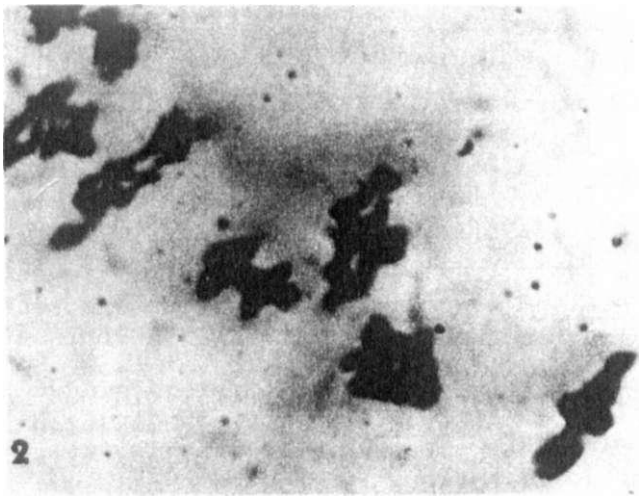

Fig. 2. Diakinesis showing SIV+1V+2II in the plant "A" of P. fulvum with 2n=29

Table. 1. Mitotic and meiotic analyses in the progenies of tetraploid plants in Pisum.

Material	Mitosis: PIants analyzed	Mitosis: Chromosome number (2n)	No. ce11s analyzed	Meiosis: No. cells with: 14 bivalents	2 quadrivalents	4 quadrivalents	6 quadrivalents	7 quadrivalents	1 pentavalents	2 pentavalents
P. sativum JI 863 (2n=28)	A	28	21	14	2	3	1	1	-	-
P. fulvum JI 865 (2n=28)	A	29	27	-	-	-	-	-	27	-
	B	30	28	-	-	-	-	-	-	28
	C	30	36	-	-	-	-	-	-	36