2. Relation of centromere associations to knob number.

In studies of pachytene, observations were made of both knob associations and centromere associations. Two families were used, an F_1 of Maiz Chapolote X Tama Knobless Flint (heterozygous for 12 knobs), and an F_1 of a standard genetic line X Tama Knobless Flint (heterozygous for 8 knobs).

It was observed that centromere associations occurred with significantly more frequency in the family with the fewer knobs. (Table I) In this family, knob associations and centromere associations occurred with equal frequency. In the family with 12 knobs, knob associations were 3.54 times as frequent as centromere associations. (Table II)

Table I

family	# of knobs	# of cells	total # of centromere associations	frequency of centromere association
'60-862	12	25	13	52.0%
'60-844	8	25	24	96.0%
	$x^2 = 12.578$		$P<0.01$	

Table II

family	# of knobs	# of knob associations	# of centromere associations	ratio: knob/ centromere
'60-862	12	46	13	3.54
'60-844	8	25	24	1.04

Sylvia Zvingilas

3. Relation of multiple chromosome associations at diakinesis to knob associations at pachytene.

Using the same crosses as above, pachytene figures of the family having 12 knobs showed significantly more multiple knob associations (3 or more knobs per association) than that with 8 knobs. (Table I)

In diakinesis studies of the same plants, the family with 12 knobs showed fewer single individual bivalents, but more double and multiple bivalent associations. (Table II)

These observations suggest that the knob associations observed at pachytene persist through diakinesis.

Table I (Pachytene)

		# of associations		
family	# of knobs	of 2 knobs	of 3 or more	total
'60-862	12	21	25	46
'60-844	8	24	1	25

$$x^2 = 21.775 \qquad P < 0.005$$

Table II (Diakinesis)

family	# of knobs	cells	single bivalents	association of 2 bivalents	associations of 3 or more bivalents
'60-862	12	242	1647	194	106
'60-844	8	243	1777	161	80

$$\text{For single bivalents, } x^2 = 10.09 \qquad P < 0.025$$

Sylvia Zvingilas

ISTITUTO DI GENETICA VEGETALE
UNIVERSITÀ CATTOLICA DEL S. CUORE
Piacenza, Italy

and

ISTITUTO DI GENETICA
UNIVERSITÀ DI MILANO
Milano, Italy

1. Defective endosperm factor in maize teosinte derivatives.

The study of such de^t factors has been continued. Other allelism tests have been carried out. However, while no other sure cases of allelism have been found, it seems fairly well established that de^{t13} is not allelic to de^{t25} and to de^{t12}.