UNIVERSITY OF MARYLAND
College Park, Maryland

1. Interchromosomal effects of deficiencies in chromosome 1 on association.

Homozygotes for *zb*$_4$ *P*^{ww} *As* *br*$_1$ in chromosome 1 were crossed with X-rayed pollen carrying *Zb*$_4$ *P*^{wr} *As* *Br*$_1$. Forty-four plants hemizygous for one or more of the three recessive genes were amenable to analysis at diakinesis or metaphase I. Fifteen of the deficient plants, including three monosomics showing loss of all dominant morphological markers, were variably asynaptic. Syncytes, curved spindles, and fragmentation--characteristic of asynaptic homozygotes--occurred in the deficient plants exhibiting failure of association. It seems likely that *As* was deleted along with linked dominant markers in the X_1 asynaptic plants. The single dose of *As*, contributed by the female parent, was insufficient to control normal first division association, thereby simulating the homozygous recessive.

R. L. Baker
(Dept. of Horticulture)

D. T. Morgan, Jr.
(Dept. of Botany)

UNIVERSITY OF MASSACHUSETTS
Department of Environmental Sciences
Waltham Field Station
Waltham, Massachusetts

and

HARVARD UNIVERSITY
Cambridge, Massachusetts

1. Genetic correspondence of Tripsacum chromosomes to their homeologs from corn.

Further progress has been made during the year in identifying *Tripsacum* chromosomes both genetically and cytologically. When a *Tripsacum* chromosome in a 2n+1 stock substitutes in physiological function for a dominant gene in corn by covering its recessive marker allele present in the maize chromosome complement, we can locate a *Tripsacum* gene on a particular *Tripsacum* chromosome. Thus we can map the *Tripsacum* chromosomes, not by their own recessive genes, but by the ability of their dominant genes to prevent the expression of recessive marker genes, either singly or in linked series, from corn. The data so far obtained, presented below, show that one *Tripsacum* chromosome carries dominant genes preventing the expression of three recessives on the short arm of chromosome 2 while another *Tripsacum* chromosome corresponds to the other arm. A similar situation exists with respect to chromosome 4. A single *Tripsacum* chromosome carries dominant genes which mask four recessive genes on chromosome 7 and another *Tripsacum* chromosome masks five recessive genes on the short arm of chromosome 9.

Corn chromosome	Dominant from Tripsacum
1	Bm_2 *
2S	Ws Lg_1 Gl_2 (does not cover v_4)
2L	V_4 * (does not cover lg_1 gl_2)
3	A_1 *
4S	Su_1 (does not cover gl_3)
4L	Gl_3 (does not cover su_1)
7	V_5 Ra_1 Gl_1 I_j
8	J_1 *
9	Yg C Sh_1 Bz Wx

*Allo-trisomic stocks which were lost but are being re-developed. The data for a more complete genetic map of *Tripsacum* will be forthcoming as crosses and backcrosses to multiple marker gene stocks of corn are made.

W. C. Galinat
P. C. Mangelsdorf

2. A planting in Florida of perennial relatives of maize.

Arrangements have been made during the year to establish and maintain at the Montgomery Foundation of the Fairchild Tropical Garden, Miami, Florida, a collection of the perennial relatives of maize. Representative specimens of the collections of *Tripsacum* from Mexico and Guatemala made by Dr. Raju Chaganti and Mr. Garrison Wilkes (mentioned in last year's News Letter) were delivered to Florida and are now well established in a planting protected from frost by a sprinkler system. The planting includes all of the known species of *Tripsacum*, some interspecific hybrids in *Tripsacum*, perennial teosinte, three species of *Manisuris*, and *Elyonurus tripacoides*. In February all species except *T. australe* were in flower. The National Science Foundation has made a grant to the Fairchild Garden to