

III. REPORTS FROM COOPERATORS

ALABAMA POLYTECHNIC INSTITUTE
 Auburn, Alabama
 Department of Botany and Plant Pathology

1. Production of linkage testers and translocation stocks adapted to the South.

A program has been initiated to incorporate certain linkage testers and translocations into lines which are adapted to the South. Linkage testers have been selected to mark each of the ten chromosomes and translocations have been selected to mark each arm of every chromosome. Most of this material was obtained from Dr. C. R. Burnham. The lines which are being used are Alabama 17, a white, early midseason line and Alabama 18, a yellow, late midseason line.

2. Relative maturity of certain inbreds compared with Alabama lines.

<u>Inbred</u>	<u>First pollen</u>
W23	6/30
A188	7/3
W22	7/6
Ab20	7/8 - early Alabama line
CC5	7/9
KYS	7/15
Ab12	7/15 - late midseason Alabama line
Ab2	7/19 - late Alabama line

Edward M. Clark

BEAR HYBRID CORN COMPANY
 Decatur, Illinois

High seed set and low seed set selections from the elongate-produced tetraploid "synthetic A" were crossed in reciprocal combinations so that the direct effect of the pollen parent could be studied. The results are shown on the next page.

The high by high crosses show a significantly higher seed set than do the low by low crosses. The reciprocal crosses between the two levels of seed set gave the same average and are intermediate to the high by high and low by low.

Cross	Female	Male	Percent Seed Set						
			Replication						
			1	2	3	4	5	6	Ave.
High Seed Set x High Seed Set			63.4	58.8	53.3	56.3	62.3	56.7	58.5
Low Seed Set x High Seed Set			49.3	55.2	54.7	51.7	48.7	52.4	52.0
High Seed Set x Low Seed Set			57.3	51.9	51.1	54.9	51.9	49.9	52.8
Low Seed Set x Low Seed Set			50.3	40.4	48.9	53.4	53.9	40.0	47.8

This data indicates that both the pollinator and the ear parent have an effect upon the seed set percentages expressed by the ear parent. Both appear to have equal or near equal effects in determining the percent of the ovules laid down by the female parent that can develop into normal kernels.

T. C. Warfield, Jr.

BLANDY EXPERIMENTAL FARM
University of Virginia
Charlottesville, Virginia

1. Blandy Radiation Field.

The Blandy Radiation Field was put into operation in July 1957. The field is a paved circle 30 feet in diameter embedded in the side of a hill with a Co^{60} source of 125 curies in the center. Doses as high as 1800 r can be given in a 24 hour period, sufficient to produce abundant "mutations" in corn. Current research work is devoted to ascertaining the nature of mutations induced at different stages in the life cycle of the corn plant. Present indications are that changes induced after meiosis are largely chromosomal while the recoverable mutants induced prior to meiosis resemble intragenic mutations. All plants exposed to radiation in the Blandy field are grown in 12-quart pails and moved in for a limited period of radiation.

2. Blandy Experimental Farm Graduate Fellowships.

A few graduate fellowships of \$1200 each are available for students wishing to do graduate work at the Blandy Experimental Farm. Blandy Fellows are exempt tuition and fees at the University. About one half of the year is spent at the Blandy Farm, the remainder of the year in Charlottesville. While at the Farm students are supplied rooms at no cost, and board is on a cost basis, rarely as much as \$30 a month. So