

c. In 1957 several inbreds and some early breeding material were observed to top fire. All plants of the line 213-12(S5)9-1-1, planted at several locations within the nursery at Feeding Hills, Massachusetts, top fired. Segregation for this character was observed among twelve S<sub>2</sub> sister lines drawn out of a local Massachusetts open pollinated variety. No clear cut top firing was observed among plants from open pollinated seed of this variety. Plant populations of the S<sub>2</sub> lines were small. No consistent phenotypic ratio obtained.

Surface sterilized isolates made during 1957 suggest that *Gibberella zeae*, or a very similar fungus, is associated with all of the symptoms described. The same fungus, however, was observed among some isolates taken from apparently normal leaves of lines which at no time exhibited any of the symptoms described.

These preliminary observations suggest that a single recessive gene may be involved in the cases of Q83 and Iowa 5125B and may possibly be involved in the top firing symptoms of 213-12(S5)9-1-1. Seed of the material described is available.

David L. Matthews

ESCUELA NACIONAL DE AGRICULTURA  
La Molina, Lima, Peru

1. Presence of B chromosomes in Andean maize.

B chromosomes were determined to be present in at least three collections from the Peruvian highlands, in a preliminary examination made by Dr. Barbara McClintock at this institution. The maximum number of B's found per cell was three. This is the first report of B chromosomes from the Andean area of adaptation.

2. Frequencies of knobs in chromosomes of three races of the Peruvian coast.

Representative collections of the races of maize from Peru are being studied in order to determine the relative frequencies of presence of knobs in each chromosome, and in each arm of the respective chromosome. These studies were started under the guidance of Dr. Barbara McClintock, and this report deals with preliminary observations on the lowland races Perla (tropical flint), Alazan (floury, red pericarp, of high altitude origin), and Arizona (a Tuxpeño derivative introduced a good number of years ago). Relatively good data are available for the race Perla, while for the other two there are not yet enough observations to make results definite.

Pooling the frequencies for all three races, the following distribution is obtained:

<u>Chromosome No. and arm</u>																			
1		2		3		4		5		6		7		8		9		10	
S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L	S	L
.31	.16	.38	.46	.27	.27	0	.77	.07	.23	0	1.0	.23	.85	0	.61	.61	.69	0	.07

Each figure shows the frequency of presence of each knob (not considering the fact that there is more than one knob per arm in some chromosomes) per chromosome arm in percent of all collections studied; i.e.: .38 for chromosome 2 short arm, means that 38 percent of all collections studied for presence of knobs in that position showed a knob there.

A comparison of the three races discloses that there is a consistent high frequency of presence of knobs at chromosome 4 Long arm, 6 Long arm, 7 Long arm, 8 Long arm, and 9 both Short and Long arm. A good differential between races may prove to be chromosome 3 Short arm, with a frequency of knobs of .47 for Perla and zero for both Alazan and Arizona.

Extremely low frequencies of knob presence were found up to now for chromosome 4 Short arm, 5 Short arm, and 10 Long arm, where knob presence has been previously reported elsewhere.

Ulises Moreno  
Alexander Grobman

### 3. Test for sugary endosperm gene in Chullpi. Andean sweet corn.

Two ear selections of the Andean sweet corn race Chullpi were crossed to Pajimaca, a tropical sweet corn from Cuba, originated by transfer of su<sub>1</sub> (sugary endosperm - 1 in chromosome 4) from North American varieties. All F<sub>1</sub> ears in both crosses showed sugary kernels, indicating that Chullpi carries at least su<sub>1</sub> prevalent in North American sweet corn.

A secondary observation made on the ears of the F<sub>1</sub> plants indicated the presence of a variegated pericarp pattern, which is known to be entirely absent in either parent. This would indicate the presence of a Controlling element (such as McClintock's Activator) introduced in the cross from one of the parents. Tests for presence and origin of this Controlling element will be made.