

crossover probability were 0.09, 0.12 and 0.16. From the F<sub>3</sub> generation from selfing crosses of (Rpp<sub>1</sub> X Rpp<sub>2</sub>) X susceptibles, lines were selected that were pure for both genes together.

2. Field breeding for resistance to P. polysora.

Colleagues on field stations in East Africa, using our pure resistant lines crossed and back-crossed to adapted local maizes, have developed, and brought into production, lines homozygous for either Rpp<sub>1</sub> or Rpp<sub>2</sub>. In general these new lines are as productive as the old in the absence of P. polysora and greatly superior in its presence.

No evidence has as yet been obtained that any race of P. polysora other than EA.1 is prevalent in the field; consequently genes Rpp<sub>1</sub> and Rpp<sub>2</sub> are proving equally effective (although Rpp<sub>1</sub> would become ineffective if EA.2 appeared).

H. H. Storey

A. K. Howland

EASTERN STATES FARMERS' EXCHANGE  
West Springfield, Mass.

1. Preliminary observations of three types of leaf necrosis which appear to be simply inherited.

a. The field corn inbred line Q83 consistently exhibits a characteristic interveinal leaf necrosis. This condition has been observed on all plants of the line at many locations in the Northeast and in southern Florida for many years. F<sub>1</sub> progeny of Q83 x + do not show the condition.

b. The sweet corn inbred Iowa 5125B consistently exhibits a characteristic large circular necrotic area on the leaves, several times the size of typical H. turcicum lesions. All plants of the line are affected; the condition has been observed for a number of years in many locations across the northern United States.

During the course of routine selfing of Iowa 5125B two sister lines, differing by only two generations, were evolved. One of these, R43-9-1-2-1-2-1-1 has proved free of the leaf necrosis, while the other R43-9-1-2-1-2-2-2 remains typical of the original line. F<sub>1</sub> progeny of Iowa 5125B x + do not show the condition. The cross between the sister lines was made last year.

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.