HARVARD UNIVERSITY
Cambridge, Massachusetts

1. Blotching gene on short arm of chromosome 4.

Earlier tests (MNL 31:60) have shown that one of the three genes involved in the blotching system, which causes blotches of color to appear in the aleurone layer when the genotype for the principal color factors is AA cc RR, is located on chromosome 4. Three-point backcross tests completed during the past season show that the Bh gene is located on the short arm of this chromosome, 42 cross-over units from Su and 50 units from Gl_3. This is one of the few genes so far located in this general region. The data are shown below:

Table 1
Three-point Tests of Linkages of Bh, Su, and Gl_3 on Chromosome 4.

Genotypes XY	Linkage Phase	Number of Individuals XY	Xy	xY	xy	Total	Recombinations Number	Percent
Su Bh	RB	439	593	631	454	2117	893	42.2
Su Gl_3	CB	180	149	138	200	667	287	43.0
Su Gl_3	RB	248	382	338	234	1202	482	40.1
Total						1869	769	41.1
Bh Gl_3	CB	287	303	299	313	1202	602	50.1
Bh Gl_3	RB	159	171	159	178	667	337	50.5
Total						1869	939	50.2

P. C. Mangelsdorf

2. Races of maize in Argentina.

This work has been started with a collection of maize ears from the highlands of Northwestern Argentina.

On the basis of the external morphology of the ear, a preliminary classification of the entire collection was made and it was possible to choose typical ears to represent the different races. The internal characters of the ear and kernels are being studied and the preliminary classification may have to be altered in some cases. Roughly there seem to be about 20 different races of indigenous corn in Northwestern Argentina. Almost half of them are related to races of Peru such as Confite Puntiagudo, Kculli, Confite Puneño, Chullpi, Uchuquilla, and most of the races show close relationship with Bolivian races.

Cytological material has been collected to obtain information on the knob numbers and their position at the pachytene stage for each race. However, it was found that most of these races showed a poor spreading of chromosomes at pachytene. Nevertheless, it has been possible to obtain the following frequencies of total number of knobs: 0 knobs, 35.4 per cent; 1 knob, 47.0 per cent; 2 knobs, 13.7 per cent; 3 knobs, 3.9 per cent; 4 or more knobs, 0.0 per cent. The percentage of knobless chromosomes is higher than that reported by Grobman et al. (1961) for the races of Peru, probably because the proportion of high-altitude races is larger than in the Peruvian studies.

Julián A. Cámara-Hernández

3. A preliminary report of meiosis in Tripsacum lanceolatum.

Cytological studies are being made on plants of Tripsacum from Mexico and Guatemala collected by Wilkes and Chaganti (MNL 39) and now maintained at the Fairchild Tropical Garden in Florida. A study of one of these, originally collected from Penjamo and identified as T. lanceolatum, has produced the following data: The pachytene chromosomes are differentiated into proximal deep staining heterochromatic and light staining distal euchromatic regions. The euchromatic regions are terminated by a knob or more often by a deeply stained chromomere. This species is a tetraploid and consequently the chromosomes are often associated in more than pairs. Usually the two sets of homologs that make up a quadrivalent are associated at the centromere. However, in a few cases association and partner exchange was observed in the euchromatic regions also.

At diakinesis and metaphase I, varying numbers of quadrivalents, trivalents, bivalents, and univalents were observed. Of the ten possible types of quadrivalents (Darlington, 1937), types 11, 12, 15, 16, 17, and 18 were encountered. The most frequent types, however, are types 11 (a chain of four) and 17 (a ring of four). The average quadrivalent frequency at diakinesis is 5.8. Both ring and rod types of bivalents are present and the mean number of bivalents per nucleus is 22.5. At metaphase I the chromosomes are pretty much crowded on the plate and the univalents were found scattered outside the plate. Several lagging chromosomes were observed at anaphase but these eventually reach the poles. The second division is quite regular and at the end of the second meiosis normal pollen tetrads are organized.

R. V. Tantravahi