The diallel system has provided data on the heritability of the difference between the kernel weight in the normal and opaque-2 phenotypes. A large fraction of the genetical variance is of the additive type. Significant are also the components related to dominance and to maternal effect.

The main conclusions are as follows:

(a) the lack of phenotypic effect of the o_2 gene on the plant suggests the use of heterozygous plants in selection, which permits the evaluation of weight decrease in o_2;
(b) the selection for a negligible difference between o_2 and normal kernels is expected to be successful on the basis of the statistical significance of the additive component of heritability;
(c) the variability in lysine content of o_2 kernels justifies the selection for a better expression of the character;
(d) the simultaneous selection for o_2 kernel weight increase, total protein content, and lysine content appears feasible.

T. Ekpenyong
F. Salamini

2. Further data on an unstable factor affecting anther and aleurone color.

The data obtained recently on the system reported in the 1967 M.N.L. (100-101) permit us to present the following conclusions:

(1) A factor appears to affect both anther and aleurone tissues; in fact the color pattern in the anther corresponds perfectly with that of the aleurone.
(2) The segregation data suggest that the instability of the color gene is controlled by an Activator factor. The latter is linked to chromosome 9 markers (sh, wx). When the Activator is absent the phenotype produced by the color gene is pale bronze. Such a gene is not allelic to any of the following factors: A_1, C_1, C_2, R, Bz. The only indication of linkage is with chromosome 1 markers; consequently we suspect that we are dealing with a bz_2 allele.
(3) A Spm test has been carried out with plants exhibiting the typical anther and aleurone pattern of instability. The wx pollen from these plants on a wx^{m-8} tester produced typical Wx patches in the kernels.
(4) The activator shows dosage effect. Two or three doses of the factor delay the formation of the colored spots which, in such cases, appear very small.

A. Bianchi
F. Salamini

3. The knob endowment of selected lines of maize.

A number of standard inbred lines have been studied as to knob endowment as appears from the following table:

Table 1
Knob Constitution of American Inbred Lines

Line denomination	Spreading index (1)	Position of each knob (K) or large chromomere (C) (2) 1S	2S	2L	3L	4L	5L	6L	7L	8L	9S	Type of nucleolar organizer (3)
B 14	3					K			K		C	1
M 14	3					K	K	Kd	K		C	1
WM 13 R	3					K	K	Cd	K	K	C	2
C 103	2										C	1
38-11	1	K	K?				K?	2c	K			1
W 75	2									K		1
WF 9	1					K	K	Cp	K	K		1
A 158	2					K	K	Cp	K	K		2
OH 07	3			C			K		K		C	2
OH 41	1		K			K	K		K		C	2
W 15	2							Cd			C	2
W 79A	4				K	C	C	Cd	K	K		1
W 9	2	C?			K	K	C		K	K	C	2
W 37A	3	C				K		Cd	K	K		2
W 64A	2			K		K		Cp	K	K		2
B 2	3						C	K	K	K		1
W R 3	4					K	K	2c	K	K	C	1
33-16	4					K						2

(1) Spreading indexes are those used by Wellwood and Randolph: 0-1-2-3-4; 0 stands for extremely entangled chromosomes, 4 stands for the best spreading, and 1-2-3 for increasing degrees of spreading.

(2) K stands for reasonably large knob; C indicates a consistently prominent chromomere. In the long arm of chromosome 6 no case has been found of a knob in its median region: the C cases reported refer to the proximal and distal chromomeres.

(3) The different organizer types were recognized by McClintock (1934) and are distinguishable according to the portion of the elongated organizer which develops the nucleolus. Type 1 refers to the distal portion, type 2 to the median, and type 3 shows the greatest nucleolar organizing activity nearest the proximal end of the organizer.

M. Vetturini