	Chromosome numbers in the Progeny				Total
	21	39	41	40	
Frequency of plants	1	5	8	56	70
Percentage	1.43	7.14	11.43	80.00	100

Only 20% of the plants studied showed any variation in chromosome number. The 21 chromosome plant (trisomic) might have originated by parthenogenetic development of an unfertilized egg carrying 21 chromosomes (due to irregular distribution of chromosomes at anaphase). The plants with 39 and 41 chromosomes were probably resultants of mating between a normal gamete (n=20) and a gamete with one chromosome added (n=21) or removed (n=19) owing to irregular distribution at anaphase. The plants with 40 chromosomes could result by the union of normal gametes or of gametes having 19 and 21 chromosomes. It is not known, however, whether the male gamete carrying the unbalanced number functions normally with other pollen, but on the female side such gametes seem to function. All the plants with 4n number in the progeny showed multivalent formation (up to quadrivalents). In the 41 chromosome plants, as expected, a pentavalent was observed in a proportion of cells. In the 39 chromosome plants, in all the cells, either a trivalent or an univalent was clearly seen. The trisomic plant showed 9 bivalents and 1 trivalent.

Seed setting is generally good in all the progeny but some plants produced abundant seed. Seed size and shape are varied, sometimes even within the plant. The color is usually black but in some it is diluted to brown.

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4. Meiosis in Sclerachne punctata R. Br.

The genus Sclerachne, with only one species (S. punctata) and restricted in distribution to Java, Modoera, and Timor (Henrard, 1931), is an Oriental relative of maize. Cytological studies on this species were limited to observations made by Mangelsdorf and Reeves (1939) and Larsen (1963) on somatic chromosomes (2n=20). Some observations on meiosis were made now and reported here. Seeds were kindly provided by Professor Paul Weatherwax. The chromosomes at pachytene appear uniformly stained. Formation of 10 bivalents at diakinesis and metaphase I and a 10:10 distribution of chromosomes at anaphase I were observed. Two bivalents were usually found near the nucleolus. Among the 10 bivalents, 2 are large, 2 slightly smaller than the large ones and 6 are small. All the bivalents do not always orient on the metaphase plate, but are often found to occur in 6 or 7 groups due, perhaps, to secondary associations; 3 or 4 groups of two bivalents each and

2 or 4 groups of one bivalent each were found. The second division is also quite regular but in two cells, out of several studied at anaphase II, chromosome bridges in one cell and a laggard in the other were observed. Pollen fertility and seed setting are good.

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1. Absence of a detectable change in Ds at the A_1 locus following mutagenic treatments.

In last year's MNL we reported our observations in regard to the stability of Ds at the A_1 locus. We now present additonal data regarding the absence of a detectable change in Ds at the A_1 locus following certain "mutagenic" treatments viz. Ultraviolet radiation, gamma-rays and Mitomycin C.

It is known that UV irradiation of pollen produces discrete changes at the genic level. It was assumed that a "change" in Ds, without affecting the A_1 locus, would restore the function of A_1. No such change was detected as Table 1 shows. That the treatment was in general mutagenically effective is shown by the fact that a very large number of cases of sh_2 were obtained, although most of these must be losses of Sh_2 following the generation of breakage-fusion-bridge cycles.

Similarly no change was detected for Ds following gamma irradiation of pollen or plants. Gamma radiation in general does not produce discrete changes and practically all the changes must be due to marker loss. However, the B-F-B cycles are correlated with the "recreation" of Dt-like elements but in the present case no Ac-like elements were generated.

Mitomycin (MC) was used since it is a known agent for the induction of lysogenic bacteria. If Ds were like a prophage, then conceivably it could be induced by MC treatment. MC was apparently very mildly mutagenic. Its ability to "induce" Ds, if it is an inducible prophage, remains in doubt. No colored kernels were obtained (Table 1).

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2. Induced mutation of I and C: a comparison.

The complex inter-relationships of expression and dominance among I, C and c are not readily interpretable in terms of the structure and function of the locus or loci involved. By themselves III, CCC and ccc genotypes respectively condition colorless, colored and colorless aleurone. I and c are resolved only when present together with C, the former being dominant and the latter recessive to C. Further, because both I and C are mapped very close together, it is generally considered that I and C or c are either components of a compound locus or form an allelic series of a