

From these it was determined that the striped effect, tentatively designated Sd, was located on the long arm of chromosome 3. Its position in relation to the known markers on this chromosome is at present uncertain.

M. G. Nuffer

9. Another two-unit mutator system.

The above described plant was unique in another respect. It grew from a colored-colorless mosaic seed selected from an otherwise full colored ear. The mosaic pattern was transmitted to its progeny and proved to be the result of changes at the R locus. The character appears to be a mutable seed color allele (R^m) which changes to r, thus producing colorless patches on an otherwise colored or mottled aleurone. These changes occur only in the presence of another factor (tentatively called M) which is located on chromosome 9 between sh and wx. The three characters Sd, R^m, and M first appeared in a single plant suggesting that they have a common origin. However, they are all on separate chromosomes and a careful check of the parents of the original cross revealed that the A C R dt parent carried Sd without expressing it. Therefore, the appearance of these three characters in a single plant most likely was the result of the chance combination of a mutator factor, M, producing a mutable allele at R, and of a favorable genotype for the expression of Sd.

M. G. Nuffer

NAGANO AGRICULTURAL EXPERIMENT STATION
Kikyogahara, Nagano Prefecture, Japan

1. Serological investigation with the phylogenetical relationship among inbred lines in maize.

Up to the present, many works on the serological classification of various species in the plant kingdom have been carried out by using leaves or seeds of the plant. But, within a species, data on the phylogenetical relationship among races or inbred lines have not been accumulated. Since 1952, work has been done along the latter line by using the protein extracts of maize pollen as an antigen.

Pollen grains collected from the plant were preserved in a dessicator. According to need, they were immersed in physiological saline, and centrifuged at 3,000 r.p.m.; the supernatant was used as an antigen. Rabbits were immunized with three intravenous injections of such extracts, amounting to 5 to 8.5 cc in total. At the tenth day after the last injection, bleedings were taken, and held in a refrigerator at a temperature of 2°C. At the next day, antisera were performed, and then, inactivated