An unusual chloroplast mutant — An albino corn mutant, v*-4801, arose during the examination of the F_2 of dwarf d-Tall x d crosses. In a population of 3000 dwarf F_2 seedlings, segregating 1:2:1 for the dwarf alleles, there were 150 albino mutants.

The mutant is unusual in that there is incomplete penetrance of expression. The albino plants are able to develop green leaves or regions of green in the leaves. There are never yellow regions, and white areas do not occur in a "banded" pattern. Seedlings that emerge green sometimes subsequently produce white leaves or regions of white in green leaves. Plants that survive develop green in the first and second leaves; the remaining leaves either are entirely white, have green bundle sheaths or develop normally. Only 20 plants have survived to the five leaf stage, and only one plant produced a tassel.

The mutant appears to be chromosomal since the same type of albino mutant has appeared in populations of homozygous d plants. However, the mutant has not been observed in the F_2 of dwarf d x d-T. It is thought not to be a temperature sensitive mutant since it has appeared in both greenhouse and growth chamber plantings. At present, research is underway to develop purebred lines and to examine development under varying conditions of light and temperature.

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Further studies on maize x perennial teosinte hybrids — Pachytene chromosomes of the F_1 plants of perennial teosinte x maize were again examined with the light microscope to see if the chromosome pairings occurred at random; particular attention was paid to the short chromosomes. Great difficulty was encountered in identifying the chromosomes because of their extreme entanglements. Limited data lead to a conclusion that teosinte chromosomes paired preferentially with teosinte chromosomes, and the maize homologue was left unpaired in most of the cases. The single chromosomes (the third homologue) frequently synapsed nonhomologously on themselves. At anaphase I the distributions of chromosomes were extremely irregular; among a few hundred microsporocytes studied, no 10-20 distributions of chromosomes were observed.

The fertility of the F_1 plants was, as expected, very poor. Only one well-developed kernel was obtained from more than 200 pollinations including both selfs and backcrosses to the maize parent. This was apparently due to the unbalanced chromosome constitutions in the gametes produced.