the total number of the kernels on the ears and the ratio of wx. That, together with the appearance of the two regular wx ears in a population of 55 ears, seems compatible with an hypothesis that some ga pollen grains are functioning and that some crossing-over occurs between wx and ga. In backcrosses of heterozygous Ga Wx/ga wx as the male on homozygous waxy plants 32 wx kernels were obtained out of 672 (4.76%). All the reported data indicate that the Ga factor detected in the maize-teosinte derivative is identical or allelic to Gag, described by Schwartz (Maize News Letter 25:30).

Another aberrant ratio perhaps caused by a ga factor on chromosome 9 has been found which, however, gives minor deviations of the wx classes. The family in which it was detected showed 21% wx; its progeny gave 3 Wx Wx ears, 3 low wx ears (20.2%), 2 normal wx ears (24.7%) and 1 high wx (30.8%). These data suggest that, if actually a ga factor is involved, it should be a very weak allele of gag or, as seems more likely, a ga factor loosely linked to wx.

A ga factor should be postulated in the family 56-488, too, where the su class ranges from 28.5 to 35.1% and in the family 56-392 in which the su percent is 21.3 (17.5 to 24.3). In both these cases progeny tests are not yet available.

A ga factor that has been lost may have been present on chromosome 7 in a cross in which the percentage of gl_1 was as low as 7.2% instead of the expected 25%.

4. Incomplete synapsis in a multiple tester.

Incomplete synapsis has been found in the multiple tester stock bred by Dr. P. C. Mangelsdorf. In almost every pollen mother cell one or more of the pachytene chromosomes show usually one or two non-paired regions. These asynaptic segments cover one fourth to one half of the arm length. The centromere region is almost always regularly paired. The stock is wholly fertile. Specific linkage data are not yet available, but indirect evidence suggests that possibly the irregularity does not effect appreciably the crossing-over.

5. Mitotic disjunction and non-disjunction in the case of interchanges involving the B-type chromosomes.

One of the two gametes of the mature pollen grain unites with the polar nuclei in the embryo sac to form the triploid endosperm; the other fertilizes the egg. The two gametes of a single pollen grain are usually identical, with the exception of plants carrying B-chromosomes or interchanges between a B-type chromosome and a member of the A complement. The B-type centromere with the translocated A-segment undergoes non-disjunction in the second microspore mitosis. Thus one