gl_2 actually synapsed at pachytene and therefore available for crossing over (if this occurs at pachytene) based on 115 measurements of pachytene trivalent configurations is 14 units. The amount of recombination found proximal to gl_2 in this experiment did not differ significantly at the 5 percent level from standard expectation based on these maximal estimates (chi square - 3.47 for 20 chromosome progeny, d.f. 1). Since all the estimates were intentionally maximized, the results are inconclusive, and it may be that crossover frequency was in fact increased somewhat in the region synapsed proximal to gl_2. In any event there does not seem to have been enough increase in crossover frequency in this region to compensate for the crossover suppression in the region at snyaptic failure. Further tests are planned in which markers on both sides of the point of interchange may be utilized with progenies sufficiently large for studies of interference.

M. P. Maguire

2. Recombination inhibition and enhancement in disomic plants heterozygous for a substitution from Tripsacum.

In disomic plants which are heterozygous for a segment derived from a Tripsacum chromosome substituted for approximately the distal 60 percent of the short arm of chromosome 2, pachytene synapsis is usually normal throughout the complement. The Tripsacum segment has been shown to carry normal dominants for the chromosome 2S markers ws_3 lg_1 gl_2, but in test crosses crossing over rarely occurs between the Tripsacum and corn segments, a region estimated to contain 54 map units. Preliminary tests have indicated, however, that crossing over may be greatly increased elsewhere in chromosome 2 in plants of this constitution. Forty-four percent recombination (215/484) was found in the gl_2-v_4 region although it is probable that only about 29 crossover units were available for crossing over in this region, 5 of these on the long arm side of the centromere. Tests are planned using additional marker loci to determine the degree and distribution of possible crossover frequency increases outside the region of crossover suppression. The extent of this region of crossover suppression may be varied by the use of rare recombinants between the Tripsacum and corn segments.

M. P. Maguire

3. Behavior of Tripsacum chromosomes added to the normal corn complement.

Studies are continuing on the genetic and snyaptic homologies of Tripsacum chromosomes in the corn complement. A number of new stocks are currently available for tests. In one of these an extra chromosome from Tripsacum, having physical properties similar to chromosome 9 or 10