backcrosses are as follows:

<table>
<thead>
<tr>
<th></th>
<th>S.S.</th>
<th>F</th>
<th>Lg</th>
<th>Lg</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 2-3/a/1g + O X 1g/1g (group 1)</td>
<td>149</td>
<td>109</td>
<td>178</td>
<td>186</td>
</tr>
<tr>
<td>&quot; X &quot; (group 2)</td>
<td>259</td>
<td>252</td>
<td>301</td>
<td>265</td>
</tr>
<tr>
<td>1g/1g X + 2-3/a/1g +</td>
<td>388</td>
<td>346</td>
<td>324</td>
<td>294</td>
</tr>
<tr>
<td>Bm 1-5 (8041)/bm + X bm/bm</td>
<td>446</td>
<td>409</td>
<td>Bm₁</td>
<td>Bm₁</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

In no case, was there an excess of fertile progeny. Certain of the differences in the other direction were significant, but were not consistent, either in different tests or for similar deviations in the segregation for closely linked alleles.

It is obvious that in corn in this type of material, segregation of unequal chromatid pairs at anaphase 2 is at random in the female parent. In species in which this segregation is not random, segregation ratios for alleles linked with the breakpoints would be different in reciprocal backcrosses.

C. R. Burnham

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3. Recombination in single and multiple interchange heterozygotes in maize.

The single interchanges used were: T1-7 (4405) = 1S.43, 7S.46; T1-9b = 1L.50, 9L.60; T5-7 (5179) = 5L.55, 7L.73; and T9-10b = 9S.13, 10S.40. The multiple interchange stocks that had been synthesized from these stocks were: T1-7-5, T7-1-9, T1-9-10, T5-7-1-9, and T5-7-1-9-10. The order of genes and breakpoints and recombination values with genes nearest the single interchange breakpoints were:

Chromosome 1: Sr-10-(T1-7)-4-P- ad-1-(T1-9)-35-bm₂
Chromosome 5: Fr-2-(T5-7)-4-y₅
Chromosome 7: O₂-2-(T1-7)-1-y₅-rr gl-23-(T5-7)
Chromosome 9: wx-6-(T9-10)-6-gl₁₅ bk-6-(T1-9)
Chromosome 10: n₁-1-(T9-10)-11-g₁

Recombination values in regions adjacent to the breakpoints were reduced in single and multiple interchange heterozygotes. There was no consistent change in recombination in the other regions of the chromosomes.
including the differential segments in the bigger rings.

Cytological analysis of backcross progeny from the ring of 8 and the ring of 10 showed that 64% and 76% of the progeny, respectively, were the parental type, either the big ring or 10 pairs. The remainder had smaller rings and were presumably the products of crossing over in differential segments. "The fact that there is no drastic reduction in recombination in the bigger rings must be taken into account in any application of multiple interchanges as a tool in gametic selection."

Helmy Ghabrial (Ph.D. Thesis)
C. R. Burnham


chromosome 1
  br segregating ts2

chromosome 3
  Stock segregating ra2 and d1

chromosome 4
  Stocks homozygous for su, expected to segregate for la g14

Linkage tests with a3
  Tests of a3 with R vs r, st2, and g1 give no satisfactory evidence of linkage.

C. R. Burnham
Richard V. Kowles

5. Albino seedling W7748.

Stocks segregating albino W7748 (originally from Coop stock 60-529-1) failed to show linkage with ba1 (originally from Coop stock 62F-1116-4), as reported in M.N.L. 41:133, 1967. Ears of this material that were segregating for one to three aleurone color factors were used by a senior undergraduate student, Mr. Robert Kennedy, as a special problem. He made the seedling tests for linkage between aleurone color and albino seedlings. Cultures from ears segregating for three aleurone color factors, and certain of those segregating for two, showed linkage between aleurone color and albino.

The past summer, plants from the colored aleurone classes from ears showing linkage were selfed. An ear segregating 3:1 for aleurone