That this linkage with waxy is due to the presence of the translocation is shown by the absence of any indication of linkage when the translocation is not present. Although not reported last year, an F_2 population from a cross between waxy-M14 and $\underline{w}_{7716}$ did not give any indication of linkage between the waxy locus and $\underline{Cl}_M^{M14p}$. An F_2 involving waxy-OH43 and $\underline{cl}_1$ $\underline{cl}_1$ $\underline{Cl}_M^3$ $\underline{Cl}_M^3$ also did not give any indication of linkage between waxy and $\underline{Cl}_M^3$ in tests completed this year. Since linkage with waxy only occurs in the presence of the 8-9 translocation and does not occur when the translocation is absent or in the presence of other wx-9 translocations involving chromosomes other than 8, the $\underline{Cl}_M$ locus must be located on chromosome 8.

Since $\underline{Cl}_M^3$ and $\underline{Cl}_M^{M14p}$ are both located on chromosome 8, it is very likely that $\underline{Cl}_M^{M14p}$ is indeed an allele at the $\underline{Cl}_M$ locus. Allele tests confirming this should be completed this year.

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2. The ordering of $\underline{y}_9$ and $\underline{bf}_2$ on the linkage map of chromosome 10.

The $\underline{y}_9$ mutant has a pale yellow endosperm and seedlings that vary from yellow green to green. In the M.G.C.N.L. 44:81-83, 1970, I reported linkage of $\underline{y}_9$ with $\underline{g}_1$ and $\underline{bf}_2$ but the genes could not be ordered at that time. Tests with TB-10a (breakpoint 10L.35) (M.G.C.N.L. 44:84-91, 1970) showed that $\underline{y}_9$ was not uncovered by this translocation. Hypoploid tests indicated that $\underline{y}_9$ was about 22.8 or 15.2 units from the TB-10a breakpoint depending upon whether the hypoploid plant was used as a male or female, respectively, in the testcrosses.

Crosses were made in which plants carrying $\underline{y}_9$ and $\underline{bf}_2$ in coupling were pollinated by TB-10a plants. No $\underline{bf}_2$ seedlings were seen in the progeny of this cross, indicating that this locus is also proximal to the TB-10a breakpoint. Hypoploid plants from the above tests were in turn crossed to homozygous $\underline{y}_9$ $\underline{bf}_2$ plants. The results of these crosses are summarized in Table 1.

Table 1

Data from the crosses of $\underline{y}_9\ \underline{bf}_2/++$ hypoploid TB-10a plants with $\underline{y}_9\ \underline{y}_9\ \underline{bf}_2\ \underline{bf}_2$.

$+\ +$	$+\ \underline{bf}_2$	$\underline{y}_9\ +$	$\underline{y}_9\ \underline{bf}_2$	Total	% $+\ +$	% $+\ \underline{bf}_2$
80	68	0	323	471	17.0%	14.4%

The data from Table 1 indicate that $\underline{y}_9$ is distal to $\underline{bf}_2$ with respect to the TB-10a breakpoint. Crossing over between $\underline{bf}_2$ and the breakpoint results in the $+\ +$ class while crossovers between $\underline{y}_9$ and $\underline{bf}_2$ result in the $+\ \underline{bf}_2$ class. In order to get $\underline{y}_9\ +$ a double crossover would have to occur--one between $\underline{y}_9$ and $\underline{bf}_2$ and the other between $\underline{bf}_2$ and the breakpoint. Such double crossovers were not observed. These data indicate the order of $\underline{y}_9$-$\underline{bf}_2$-$\underline{g}_1$ in chromosome 10. This order was confirmed by a three-point test involving $\underline{y}_9$, $\underline{bf}_2$ and $\underline{g}_1$. The results of this testcross are given in Table 2; they indicate a linkage map of $\underline{y}_9$-3.6-$\underline{bf}_2$-18.2-$\underline{g}_1$.

Table 2

Testcross results from the trihybrid $+\ +\ \underline{g}_1/\underline{y}_9\ \underline{bf}_2\ +$.

	$+\ +\ \underline{g}_1$	$\underline{y}_9\underline{bf}_2+$	$+\ \underline{bf}_2\ +$	$\underline{y}_9\ +\ \underline{g}_1$	$+\ +\ +$	$\underline{y}_9\underline{bf}_2\underline{g}_1$	$+\ \underline{bf}_2\underline{g}_1$	$\underline{y}_9++$	Total
No.	229	257	14	5	52	57	1	2	617
%			3.1		17.7		0.5		

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3. Linkage relationships of chlorophyll defective mutants on chromosome 6.

As part of a study of luteus seedling mutants, six ($\underline{w}_{8896}$, $\underline{l}_{\text{Brawn \#1}}$, $\underline{l}_{\text{Blandy \#3}}$, $\underline{l}_{4120}$, $\underline{l}_{10}$ and $\underline{l}_{4920}$) were found which showed close linkage with $\underline{y}_1$ on chromosome 6. Allele tests of the mutants demonstrated allelism only between $\underline{l}_{\text{Brawn \#1}}$ and $\underline{l}_{\text{Blandy \#3}}$. The linkage relationships of the