deviated highly significantly from the expected ratios and indicated linkage.

In order to calculate linkage intensities between *lu*$_1$ and the other markers, individual recombinant types had to be determined and the frequencies of detected recombinants used to calculate the frequency of the total recombinants. For example, when considering *pr* and *lu*$_1$, four recombinant gamete types are possible: *Pr Lu*$_1$ *Lu*$_2$, *Pr Lu*$_1$ *lu*$_2$, *pr lu*$_1$ *Lu*$_2$, and *pr lu*$_1$ *lu*$_2$. When crossed to the homozygous recessive, only one of these gametes will produce the recombinant phenotype: red aleurone, lutescent plant. Since 55 of this phenotype were observed, the total number of recombinant gametes produced by the hybrid would be 55 x 4 = 220. This represents 31% of the total plants, indicating a map distance of 31 units.

The other distances were calculated on the basis of the recombinant phenotypes observed multiplied by eight, since, out of the eight recombinant genotypes possible, only one will produce the double recessive recombinant phenotype. The distances calculated in this way are: *lu*$_1$ - *bm*$_1$ 12 units, and *lu*$_1$ - *bt*$_1$ 13 units. According to the maps of Neuffer (MNL 40:167-172), these data would place *lu*$_1$ at map locus 9 on chromosome 5.

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2. Inheritance patterns and distribution of the low temperature-chlorosis genes in Oh51A.

A low temperature-chlorosis effect in maize inbred line Oh51A has been described (MNL 41:152-153). F_1 and F_2 populations were on hand which involved this line of Oh51A as one parent and material which displayed no low temperature response as the other parent. Seeds from these populations were germinated at 10 ± 1°C and were scored for the chlorotic condition. All F_1 seedlings were green. In the F_2 population 710 seedlings were green and 53 were chlorotic, a good fit to a 15:1 ratio (p=0.45). These results indicate a bigenic pattern of inheritance. It appears that two recessive genes are required for this expression. These genes have tentatively been designated cold-chlorotic-1 and -2(*cc*$_1$ and *cc*$_2$).

In an effort to determine whether or not this was a universal trait in Oh51A, seeds of this line were obtained from a number of agricultural experiment stations across the country. The results of germinating these seeds at 10 ± 1°C are presented in Table 1. It is apparent from these data that this trait is not universal with this line. It was indeed fortuitous that the original material used for this work, obtained from the Pennsylvania Agricultural Experiment Station, was homozygous for these genes.

Table 1
The distribution of the cold-chlorosis genes

Oh51A Source	Seedlings (at 10 ± 1°C) Green	Chlorotic
Illinois	0	17
Indiana	0	3
Iowa	4	16
Minnesota	2	18
New Jersey	6	10
New York	11	10
North Dakota	8	9
Ohio	8	12
Pennsylvania	0	182
South Dakota	2	5
Wisconsin	12	6
Wisconsin (outcrossed and recovered)	12	0

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1. Studies on cytoplasmic male sterility in maize.

It was of interest to determine if cytoplasmic male sterility in corn is specific for male florets or if it could confer sterility in both male and female floret born on the tassel. To study this problem the inbred line T 204 ms, which is male sterile due to the Texas type cytoplasm, was crossed with stocks heterozygous for the dominant tassel seed gene, either $\underline{Ts}_5$ or $\underline{Ts}_6$. $\underline{Ts}_5$ and $\underline{Ts}_6$ plants produce tassels which contain silks and anthers. Some kernels usually develop on the tassel, although the tassel is very susceptible to smut. Seed from the cross was grown in the field. Approximately half of the plants segregated for the tassel seed phenotype, that is, silks were born on the tassel. All plants were completely male sterile. Tassel born silks were allowed to open pollinate and then covered with bags to prevent bird predatoriness. At maturity the seeds set on the tassels were harvested and planted in the greenhouse. These seeds