corresponds to 42% G-C content (Ifft et. al., 1961, J. Phys. Chem. 65: 1138-1145).

Figure 3 is the tracing of a run when excess DNA from plants with an average of 4.8 B-chromosomes per diploid genome was used in order to note any minor amounts of DNA of a different density. As can be seen from this curve, no significant minor peaks are present. All centrifuge runs reported banded at the same point in relation to the reference markers in the centrifuge.

This study indicates that the B-chromosome DNA has an overall G-C content of 42%, the same as the DNA from the A-chromosomes. Heat denaturation studies of plants with B-chromosomes give results consistent with this base-ratio. Dr. Norman Sansing at The University of Georgia has analyzed the DNA from a single cross hybrid of maize using CsCl centrifugation, heat denaturation, and enzymatic hydrolysis and subsequent column chromatography. He determined a G-C content of 42% for this stock.

Note: van Schaik and Pitout in this MNL have reported that they find differences in base-ratio for three different stocks studied. Their base-ratio determination for the inbred agrees with those reported here, but their determinations for the other lines do not. Differences in extraction and analysis procedures exist and at this time no definite conclusions can be stated.

Karl Rinehart

9. Loss of dominant markers in single chromosomes.

In the 1964 field planting and in the 1965 greenhouse crop, crosses of $\underline{A}_1\ \underline{Sh}_2/\underline{A}_1\ \underline{Sh}_2$ male parents on $\underline{a}_1\ \underline{sh}_2$ silks gave a few a sh seeds. Many and perhaps all of these had colored embryos. A large number of crosses were made in 1965 involving the same $\underline{A}_1\ \underline{Sh}_2$ stock as male parent with female parents homozygous for recessive genes on several different chromosomes (su, pr, r, wx, c, $\underline{a}_1$). The resulting ears showed a low frequency of the mutant present in the female parent. Although these kernels must be tested further, it is evident in several cases that contamination is not the explanation. For example, the a sh kernels on ears resulting from a cross of a sh dt females with A Sh/A Sh, Dt/Dt males were also Dt. In crosses of r wx females with R/R Wx/Wx males, colorless kernels were found which were Wx in phenotype. A few colorless waxy kernels also were found and these are probably contaminants. Kernels with small sectors of mutant tissue have also been observed but the frequency of fractional deficiencies is much less than that of whole kernel losses in the "high loss" ears. Preliminary observations indicate the highest rate of loss occurred for markers on chromosome 3.

Two sib plants arising by self pollination of an $\underline{A}_1\ \underline{A}_1\ \underline{A}_2\ \underline{A}_2\ \underline{C}\ \underline{C}\ \underline{R}\ \underline{R}$ plant in the "high loss" stock showed quite different behavior when used as males in crosses with an $\underline{a}_1$ tester. The seeds were classified for whole losses of $\underline{A}^1$ and mosaics; the latter class is not as well defined since some kernels were small or had loose pericarp making it difficult to score small sectors. The results are presented below:

Male parent	A	A-a mosaics	a Dt
27342-19	364	5	45
	77	1	2
	252	0	20
	469	9	40
	380	11	27
	320	3	27
Total	1862	29	161

Male parent	A	A-a mosaics	a Dt
27342-27	378	3	1
	329	5	1
	427	5	1
	309	3	0
	410	7	0
	244	0	0
Total	2097	23	3

It is evident that there is considerable variation in this phenomenon from plant to plant, but that it is fairly consistent for any one male parent. This would indicate that the loss phenomenon has a genetic basis which will be the subject of further investigation.

A few of the exceptional a kernels were planted. They gave rise to A plants and on backcrossing showed typical 1 A: 1 a ratios. It was considered possible that the a kernels with A embryos arose by nondisjunction of chromosome 3 in the mitosis giving rise to two sperm cells. This is apparently not the case since the A plants did not exhibit trisomic ratios for A:a.

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10. Cytological location of gl_6.

In the MNL 29:48, backcross data were presented involving TB-3a heterozygotes of Gl_6/Gl_6 constitution as male parents