6. Progress report on the big ring.

A ring of eight was observed in 3 plants out of 17 progeny from the cross of the F_1 of permanant rings of six (2-4b+2-3d x 2-4b+4-8a) x a standard normal. As predicted on pages 55 and 56 of the 1955 Maize News Letter, two rings of four were observed in the F_1 plants.

At the present time it appears to be possible by an extension of the method to produce combinations of big rings at will, once the component rings of six are available. After the permanent rings of six have been produced by a crossover in the differential segment of the F_1 of a cross between two translocations with breaks on a common chromosome, the larger rings are produced by the segregation of translocated chromosomes from crosses between the component smaller rings.

L. Inman

7. Striate-asynaptic stock.

The striate-asynaptic stock, originally under Emerson's #28-569 and carried along for several years at Minnesota, has been examined cytologically. Pollen sterile plants had 10 II and normal pairing. Seed-set on these plants was normal. This stock is apparently carrying a male sterile and does not contain the as gene.

O. F. Miller

8. Location of na_2.

The following data confirm last year's results (News Letter 1956). This gene is in chromosome 5 as shown by the following F_2 data:

Pr Na_2	Pr na_2	pr Na_2	pr na_2	(-) Aleur. Na_2	(-) Aleur. na_2	total
90	10	12	7	86	28	119
180	27	36	32	--	--	275

segregating c and r. p = 27.45% I2.72

Gertrud Joachim
C. R. Burnham

9. Crossing over in reciprocal crosses.

In chromosome 2, the fl - v_4 region showed much higher recombination in the ♂, the other regions only slightly higher.

	♀	♂
lg-gl	14.91 ± 1.81	17.53 ± 1.89
gl-f1	28.02 ± 2.28	31.60 ± 2.31
f1-v_4	12.60 ± 1.68	27.41 ± 2.22
N	389	405

10. Location of Y in chromosome 6.

A stock homozygous for T 5-6c, (break in short arm of 6 adjacent to the centromere) showed 14.5 ± 1.2% recombination between Y and Pl. Therefore Y as well as Pl are in the long arm. This new chromosome (6^S) is not attached to the nucleolus. The lower recombination (the normal value is 31) might conceivably be the result of the substitution of a short arm in which crossing over is higher than in the short arm of 6 normally present.

11. Big ring.

Some progress has been made in building other permanent rings of 6. Those now available are 2-4b+2-3d, 2-4b+4-8a, 8-9b+ 8-10a, and 1-7 (4405-2) + 5-7 (5179-9).

Following the scheme suggested by Inman, the following combinations are being produced: 1-9 X 1-7, 3-6 X 2-3, 9-10 X 2-9, 4-8 X 8-9, and 3-6 X 5-6.

A new series of crosses for producing rings of six which can be used for other purposes has been planned by Inman.

C. R. Burnham

12. Unlinked genes.

We have been unable to confirm by linkage tests with P, f, bm, the indication from T-Bla tests (News Letter 29: p. 51) that a crinkly-leaved dwarf is in chromosome 1.

X^2 tests for independence show:

silky tassel vs. colored and colorless aleurone (2 factors segregating) are associated, p = .02.
midget and Y vs. y in a culture segregating pale yellow - P = <.01.
gl_{11} no close association with py, Y y, mi,
gl_6 no close association with f, bm_2, Y y.
dwarf " " " with y ms.
fired " " " with su_2, Y, Pr-pr.