3. The effects of X-radiation on maize pollen.

Before crossing, pollen grains of the male parent in a cross of Wilbur's Flint X tester, having the genotype $\underline{A_1}$ $\underline{C}$ $\underline{R}$ $\underline{pr}$ $\underline{su}$, were subjected to acute X-radiation with a dose of 1500r. Among the F_1 individuals, one of the plants which was shown to contain aberrations was self pollinated. All of the 51 seeds from this plant were grown last summer. Forty-one of them germinated and grew into mature plants. Twenty-three plants were available for chromosome studies. The inflorescences were collected and fixed and the anthers were squashed by following standard acetocarmine squash techniques. Of the 23 plants studied, one was found to contain a fragment. This fragment was measured at pachytene and found to be approximately 29.5u. Another plant frequently showed a bridge at anaphase I, but no fragment accompanying the bridge was observed. A further study is in progress to trace the fragment through to the quartet stage.

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1. Studies on induction of cytoplasmic male sterility with ethyl methanesulfonate.

"Apparently EMS can be used to produce cytoplasmic mutants in plants . . . and may be useful to produce cytoplasmic sterility in maize . . . probably more important, cytoplasmic sterility may be produced in other species . . ." (1). This statement was made based on research started at Brookhaven National Laboratory in 1967. At that

*Portions of this research carried out at Brookhaven National Laboratory under the auspices of the U.S. Atomic Energy Commission.

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