

found to be later in flowering, and slower in growth than their sibs.

For another study on the differential DNA synthesis in eu- and heterochromatin of maize, kernels with varying numbers of B-chromosomes were grown. At the early seedling stage, when length of their primary roots averaged about two inches, they were fed with H^3 -thymidine in Hoagland's solution. In preparing autoradiographs a standard dipping technique was followed. Data gathered up to the present indicate that the time of DNA synthesis in eu- and heterochromatin (B-chromosomes) differs. The euchromatin of maize, or A-chromosomes, started DNA synthesis before the heterochromatin. The investigation, it is hoped, may also lead to a detailed analysis of the mitotic cycle of maize.

Y. C. Ting
Richard Phillips

3. Extra chromosome element.

At the first meiotic prophase of the microsporocytes of a maize plant 67-44-2, an extra chromosome element was consistently observed. It was stained as well as the regular chromosomes either with propionic carmine or with Schiff's reagent. At pachytene, it always formed a circular configuration and its length on the average measured about 20 u. Its location was not confined to a certain part of the cell.

As the division advanced to diakinesis, no evidence of shortening of this element was obtained. At metaphase I, it fragmented into two elements. No centromeres were identified. Apparently due to their lack of regular movement at anaphase I, both of these elements were always found in only one part of the spindle. However, at telophase I, they were no longer identifiable in most of the cases. Among a total of approximately 500 cells examined, these elements were definitely observed in only about two per cent of the cells.

A few years ago a similar element was seen in one of the teosinte derivatives. That element was somewhat shorter than the one reported in the present communication. But its meiotic behavior appeared to be the same. Selfings and crosses with this plant, 67-44-2, were attempted last summer in order to know more about the significance of this element.

Y. C. Ting

BROOKHAVEN NATIONAL LABORATORY*
Upton, New York
Biology Department

1. Genetic recombination among spontaneous and ethyl methanesulfonate-induced waxy mutants in maize.

Ethyl methanesulfonate (EMS) has been reported to produce "point mutations"⁴ and "single locus mutations"¹ in maize. Since intracistron

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