

the promise of synthesizing a maize system to mimic a human chromosomal abnormality such that data would be available from progeny testing of maize prior to the attainment of reproductive age by the carrier of the abnormality.

We have been developing during the last 2½ years in this laboratory a catalogue of the karyotypes of various standard stocks--both hybrid materials and genetic tester stocks. We would be particularly interested to receive from other laboratories stocks containing known structural abnormalities not already available through the Co-op or stocks possessing chromosomes which appear cytologically "abnormal."

D. B. Walden

5. Root tip squash technique.

The following is the procedure of root tip squash technique presently used in our laboratory.

1. Pretreat the excised root tips in 0.002 M 8-hydroxyquinoline for three hours. Root tips can be obtained by germinating seeds in petri dishes or by growing plants in pots. In both cases, we usually keep the seedlings at 28-30°C.
2. Fix in a mixture of one part of acetic acid and three parts of absolute alcohol overnight.
3. Wash with 70% alcohol and store in the same fluid in a refrigerator until needed.
4. Hydrolyze in N HCl at 60°C for 8 minutes.
5. Rinse in distilled water for three changes, 2-3 minutes each change.
6. Stain in leuco-basic fuchsin for 1-2 hours.
7. Treat with 5% pectinase for two hours.
8. Put in 45% acetic acid for about 10 minutes before squashing to clear the stain in cytoplasm.
9. Squash the meristematic regions in 45% acetic acid.

We found this technique quite satisfactory for the somatic chromosomes of maize. The ten pairs of chromosomes can be identified without much difficulty by their relative lengths, arm ratios and presence or absence of a satellite at metaphase. The eu- and heterochromatic regions and even some knobs can be differentially stained at prophase. Using this technique, we are studying the karyotypes of several diploid strains and translocation stocks and identifying the extra chromosomes of different trisomics.

C. C. Chen