were the homologues of the chemical arrested stocks $T_{5-7}$ or the non-homologues of either stocks $T_{1-4}$ or $T_{5-7}$.

When the distances between all possible nonhomologous chromosomes taken pairwise were compared to the expected distribution of distance for randomly associating chromosomes, only four of a possible 315 distance distributions were significantly different ($p \leq 0.05$). There was no evidence for the nonrandom association of nonhomologues in any of the treatments examined in this study.

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4. Cycloheximide-affected metaphase morphology in maize.

In squash preparations of 3:1 alcohol-acetic acid fixed root-tips of maize, 8% of the metaphase figures were observed to be polar in configuration. Roots of intact, 4 day old seedlings were treated with a 15 minute pulse of 0.002% cycloheximide at 27°C followed by a 5 minute wash in 27°C running water. An immediate post-treatment increase in the frequency of polar metaphases was observed with a maximum of 61% of the metaphases being polar at 30 minutes after treatment. The increased number of polar metaphases arose as a result of a reduced number of cells leaving metaphase. The proportions of prophase and normal metaphase cells to the total number of cells observed remained at the control levels throughout.

The post-treatment polar metaphase configuration is unique and strongly resembles a polar view of normal anaphase. Electron microscope studies showed that the nuclear membrane was still intact in the cycloheximide treated polar metaphase cells.

A pattern of radiating arms was observed and this was characteristic and repeated from cell to cell. This pattern of chromosomes may be representative of the spatial organization of the chromosomes during the previous anaphase and consequently during interphase and prophase.

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