

3. Cytology of homozygous diploids.

Progenies of eight inbred lines derived from monploids through chromosome doubling have been checked for pachytene pairing at meiosis. Although the lines were two and three generations removed from their monoploid parents each appeared to be phenotypically homozygous. Two of the eight progenies exhibited cytological evidence for heterozygosity in the form of one or more short, non-paired chromosomal segments. Internal segments only were considered and no attention given to the rather frequent occurrence of unpaired ends. In most cases chromomere patterns of the unpaired chromosomes were visibly different. No evidence of nonpairing was observed in progenies of the remaining six lines. In these few auto-diploids the number of progeny exhibiting heterozygous segments seems to be about the same as that occurring in many inbred lines developed by continuous self pollination and suggests that complete homozygosity, if ever present, persists through relatively few generations.