

two-thirds of the length of the arm.

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6. Cytological observations on extracted "teosinte" chromosomes from maize varieties.

In last year's News Letter, Mangelsdorf reported the extraction from Latin-American maize varieties through repeated backcrossing to the inbred, A158, of chromosomes having genetic effects similar to those of teosinte chromosomes. Some of these strains of A158 which had been modified by substituting extracted teosinte chromosomes have now been studied cytologically in F_1 hybrids with an inbred strain of Wilbur's Flint which is virtually knobless. The following observations have been made.

Knobs on the long arm of chromosome 1 have been introduced into A158 from Honduras 1639 and Venezuela 1536. A knob on the long arm of chromosome 2 has been introduced from Guatemala 197.

Asynapsis was observed in approximately two-thirds of the short arm of chromosome 3 and in almost the entire length of the short arm of chromosome 7 in a strain of A158 modified by introducing chromosomes from Nicaragua 501. Asynapsis was also observed in a derivative of Honduras 1639 in about one-fifth of the long arm of chromosome 2 and in the long arm of chromosome 4 involving a segment from the regular knob position to the distal end. In the derivative of Venezuela 1536, there occurred an asynaptic loop about four chromomeres in length in the long arm of chromosome 2 adjacent to the centromere.

Nonhomologous association was found in approximately one-third of the long arm near the centromere in chromosome 2 of a derivative of Nicaragua 500. The association was with a chromosome not yet identified.

Chromatid bridges and fragments were present at anaphase 1 in the F_1 hybrid of Wilbur's Flint with a derivative of Cuba 398. The chromosome involved has not been identified, perhaps because the segment is too short to regularly form a loop at pachytene.

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7. Chromosomes in three teosinte varieties.

Florida-type teosinte from Honduras. A collection of teosinte from Honduras resembles Florida teosinte in vegetative characteristics