

The wall of the microsporocyte very early starts going through a morphogenetic development similar to that of the pollen grains. Thus frequently one comes across cells looking like pollen grains but containing degenerating meiotic figures from pachytene to metaphase.

A fourth type of aberration observed was translocation. So far two plants were observed which were heterozygous for a reciprocal translocation each in the maize chromosomes.

These effects resemble abnormalities of meiosis due to genetic causes (eg. asynapsis) and due to the action of chemical and physical agencies. It appears that the *Tripsacum* chromosomes act in disrupting the balance of genetic and physico-chemical factors at several points which together make meiosis and the subsequent events in the microspore an integrated system.

Further studies are in progress along these lines for a fuller understanding of these phenomena.

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#### 9. Northern flint-like characters derived from *Tripsacum*.

Certain plants in our maize populations segregating *T. dactyloides* and *T. floridanum* chromosomes had acquired from *Tripsacum* several characteristics which resemble those of the northern flints including the early flowering habit, tillering habit, flag leaf development, and long internodes above the ear position. The genes for earliness from *Tripsacum* may be hidden by the perennial character in this grass. But once the perennial plants are well established, these genes may serve to speed early flowering in the spring. The identification of northern flint-like characters with *Tripsacum* germplasm agrees with other evidence that the northern flints are tripsacoid.

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#### 10. Teosinte introgression and fasciation.

Origin of fasciation. Fasciation, a sort of incipient branching which flattens the ear while it increases the number of kernel rows, has an ancient history in maize, perhaps as a mechanism to concentrate the grain under short protective husks. Although obvious fasciation is rare in modern maize, it does occur in extreme form in certain relic races, which are now restricted to high elevations, such as Palomero Toluqueño in Mexico and Confite Puneño in Peru as well as in a race which is maintained as a novelty type in the United States, Strawberry popcorn. Experimental evidence now indicates that genetic factors for