

4. Tassel-in-the-seed from Gaspé Flint?

The earliest flowering plants in the  $F_2$  and  $F_3$  of the cross Gaspé Flint by Amecameca teosinte have<sup>2</sup> between five and seven leaves, the embryonic leaf number of corn as reported by Sass and others. The main stalk of these plants is in full bloom at the 'thinning stage' when only a foot high and about three weeks old. Then, as also reported by Brawn for his id id Gaspé Flint plants, the basal tillers begin to elongate and ultimately reach a height of about ten feet when they flower during short days six weeks later on. As suggested by Brawn for his id material, the primordial tassel was probably already induced if not differentiated in the seed at planting time, having been laid down during the short days of the previous Fall. This 'Gaspé trait' is dominant, simply inherited and may have economic value in the breeding of teosinte for the North. Such a Gaspé teosinte would produce two crops of seed, a Spring crop and a Fall crop. It is possible that the 'Spring crop' seed formed during long days would not have 'tassel-in-the-seed'. During the long days of Summer, it would tiller profusely or, if perennial, develop rhizomes.

Longitudinal sections will be cut from the embryos from the Gaspé Flint-teosinte lines to study the growing point.

W. C. Galinat

5. The corn grass and teopod loci involve phase change.

The switching from one phase of growth to the next is usually rather abrupt in typical corn as it is with other plants. That is the organs of the phytomer (internode, leaf, axillary bud and prophyll) attain a distinct form which is characteristic for the juvenile, mature vegetative, pistillate-floral and staminate-floral modes of their expression. The time of phase change is usually programmed for a certain point in development although in certain genotypes the external environment may trigger the switching as, for example, in short day corn.

In contrast to normal, phase change in corn grass, and to a lesser extent in teopod, is a gradual process. The narrow bloomy leaves of the juvenile phase integrate into the broad pubescent leaves of the adult vegetative phase followed by a gradual transition into the two forms of floral development. Although variability is common, the tendency is for an intergradation between solitary vegetative branches at the base of the plant to paired spikelets near the apex of the plant. The various intergrading forms as evidence of homologies between vegetative and floral phytomers have been described elsewhere (Galinat, 1959, Bot. Mus. Leaflet, Harvard U.).