2. Vestigial-tunicate hybrids in the production of glumeless sweet corn.

The advantages and the difficulties involved in utilizing Sprague's *Vg* gene in the production of glumeless sweet corn have been adequately described by Galinat (Jour. Heredity 42:115-116, and Nos. 24 and 25 of the News Letter). While engaged in maintaining the Coöp stocks in 1949, the writer, unaware of the similar work at Connecticut, began a series of crosses to incorporate the *Vg* gene in sweet corn. This work has been continued here. Apparently different methods and procedures have been used in the two programs. Both have been successful in producing glumeless ears on plants which shed pollen.

The starchy *Vg* stock (Coöp 49-40) was outcrossed to a number of sweet corn strains and also to genetic types which have very large tassel glumes. The latter included Ts_6, Ts_5, and *Tu*, all of which were homozygous for su. Two sources of tunicate were used -- the original strain considered to be conditioned by a semidominant lethal, and Manglesdorf's derived homozygous stock.

From limited F_2 and backcross populations planted in 1951, thirty-two segregates were observed which had glumeless ears but produced large quantities of pollen. All these segregates were in cultures derived from the vestigial-tunicate crosses. Tassel glumes on these modified plants ranged from mere vestiges in some to practically normal ones in portions of others. The amount of pollen shed also varied but was not necessarily higher in the larger glumed types.

It is also of interest to note that these plants shed pollen under quite adverse conditions of temperature and drought.

Selfed and crossed seed of these plants will be used in studies this season to determine more about the nature and number of the modifier gene(s) concemed. Early production of glumeless sweet corn also seems feasible.

James E. Wright, Jr.