A recognition that the corn grass and teopod loci are involved in phase change may lead to a better understanding of the genetic control of differentiation in corn.

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6. Somatic mosaicism in corn grass.

Several features of corn grass (*Cg* gene) seemed at first to be evidence that phase change in this mutant at least was primarily 'physiological' and, therefore, to cast doubt on the suggestion of Brink that phase change involved a somatic paramutational process. Not only is the phase change process gradual in corn grass, as if following some physiological gradient, but the length of shank on which an ear is borne is usually related to how 'vegetative' the ear becomes. Ears with short shanks are usually more vegetative as if they were precociously thrust into ear formation before the vegetative phase had run its course.

However, somewhat to our surprise, the first experiment designed to detect the possibility of mutational phase change in corn grass seemed to reveal it. The first and second ears of a line of corn grass apparently homozygous for the *Cg* gene were pollinated by a normal inbred, A 158. The hybrid progenies from the two ears were grown the following year and there were differences reflecting the differences in the two parental *Cg* ears from one plant. The classifications were made on a basis of five types of terminal inflorescences. Type one was completely proliferated with no functional spikelets. Type three had a single spike male region subtended by leaves and one or more sub-tassel ears. Type five was normal, at least in regard to the tassel.

Although the data are still limited, the differences in tassel types between the progenies of vegetative and normal ears from a single plant are consistent (Table 1) and are significant ($P = < .01$).

Table 1
Frequency distributions for hybrid progeny from two types of corn grass ears borne on a single plant.

Parental Type	Tassel Types 1	2	3	4	5	Totals
Vegetative ear	6	16	16	9	7	54
Normal ear	0	4	15	17	22	58

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