

and paraffins by co-chromatography of knowns. Positive identification has not been made of the remaining two spots, but they are tentatively identified as primary alcohols and either ketones or esters. These four spots have been found in extracts from all the normal and glossy seedlings. However, the glossies in general produce much lighter spots than the normal inbred lines. Thus, a quantitative difference was found between the normals and glossies, but no qualitative differences were detected by this method. Based upon these results, the visual difference between normals and glossies lies in the relatively greater amount of surface waxes on the leaves of normal plants than on glossy.

Several other observations are worth noting. First, although the same four spots were developed from the 13 different glossies, a wide range of quantitative differences was noted. It seems apparent, therefore, that the various glossy genes are acting at different sites in the synthesis of surface waxes. Secondly, glossies exhibit their mutant phenotype while in the seedling stage and ultimately develop a normal wax covering. A difference was evident in the rate of developing the normal wax complement among glossies. Lastly, leaves taken from plants at the time of anthesis developed six spots by the previously described chromatographic technique. Four of these were identical to those described for the seedling extracts, but the other two were new. Therefore, the surface waxes of mature plants are more complex than those of seedlings.

C. S. Levings, III

## 2. Application of plant hormones to cytoplasmic male steriles.

To determine the effect of hormones on cytoplasmic male sterile tassels,  $GA_3$ , IAA and kinetin were applied individually to male fertile and sterile plants of the inbred line T 204. Sterility was due to the Texas type male sterile cytoplasm. Treatment was begun at the onset of tassel differentiation (42 days after planting) and continued until tassel emergence. The late treatment start was chosen deliberately to coincide with the beginning of tassel development. Ten milligrams of hormone were pipetted into the plant whorl every 3 days. A season total of 60 milligrams of hormone was applied to each treated plant. Alterations of sterility or fertility were not detected on the treated plants when compared with appropriate checks. No differences were noted in plant height or shape between treated and untreated plants. Since similar quantities of  $GA_3$  have been reported to cause misshapen plants, taller plants, tassel silks and pollen sterility when the treatment was initiated at the time of plant emergence, it is believed that the treatment was begun too late. Therefore, although the late treatment was ineffective, it is doubtful that an adequate test of hormone effects on pollen fertility and sterility has been performed.

C. S. Levings III