II. REPORTS FROM COOPERATORS

BLANDY EXPERIMENTAL FARM
University of Virginia
Charlottesville, Virginia

1. Homozygous "Old Gold".

In the processes of developing multiple gene stocks for our radiation program we have developed a stock which is Og Og. Each of these stocks exists in two or more inbred lines and hybrids of all the stocks have been made. The following stocks are available:

BL39 P^{wr} B A_1 Su A_2 Pr Y Pl IC Sh Bz Wx R

also may be Og, b or pl

BL44 P^{wr} B A_1 Su A_2 Pr Y Pl C Sh Bz Wx R

also may be P^{ww}, b or pl

BL41 P^{wr} B A_1 A_2 pr y Pl C sh bz wx R

also may be P^{ww}, b pl or c

BL27 P^{ww} b a_1 sh_2 A_2 pr y pl C R

BL3 P^{ww} b A_1 su A_2 pr y pl C sh wx r

These stocks are all homozygous for the genes listed.

Alan Caspar

2. Reconstruction of Dent Corn

It is well known that the best theory on the origin of dent corn is that it resulted from an accidental cross of an early northern flint type and the many-rowed Gourdseed corn, a type that grew in the southern part of this country, especially in Virginia. (See Wallace and Brown "Corn and Its Early Fathers," Michigan State Press, 1956.) Following the publication of that book I wrote to Dr. Brown to see if it would be possible to obtain any of the Virginia Gourdseed variety. Fortunately seed of this was available and we grew it for the first time in the spring of 1957. It was a vigorous single stalked variety with no tillers, as illustrated in Wallace and Brown. This was crossed with an early yellow flint corn, Canada Yellow Flint, which we secured from the Comstock-Ferre Company in Weathersfield, Connecticut. The F_1 hybrid was unusually

vigorous and showed considerable variation with most of the ears intermediate between a flint and a dent. A number of these were selfed last year, both with and without the benefit of radiation, and we plan to grow a small isolation plot of this for several years to see whether any progress can be made toward reconstructing a good dent type. Selfed seed is available of the Canada flint, of the Virginia Gourdseed and of the F_1 hybrid.

W. Ralph Singleton

3. Mutable Pericarp and Plant Color.

Several years ago a mutation arose from an intensely pigmented plant color much more intense than the A B Pl. Also the character appears early in the seedling stage or shortly thereafter. In addition to the intense color in the plant the pericarp is colored very dark, almost black, which must be considerably darker than cherry pericarp. Like the cherry pericarp it has been observed only in stocks which are A B Pl. The silk color of plants possessing this character are deep wine in color. The anthers usually are a sort of mottled dark and light red. One of the interesting things about this character is that we have not yet been able to get a homozygous stock of it. It keeps mutating back to the normal A B Pl color. It is almost but not quite completely recessive when crossed with other stocks. There is almost a complete correlation between the type of pericarp color and the type of silk and anther color, although classification is somewhat difficult and not completely satisfactory. Seed is available.

W. Ralph Singleton

4. Height Potential in Brachytic-2 and Brachytic-3 Types.

Both brachytic-2 and brachytic-3 are mutations from the inbred R4. They are about equal in height, 114 centimeters for br_2 and 113 centimeters for br_3 in 1958. In crosses back to the R4 they contribute about equally to the height of the plant, giving hybrids that were 227 and 230 centimeters, respectively, for br_2 and br_3 hybrids. However, almost without exception, when these two inbreds are crossed to unrelated stocks the brachytic-3 contributes much more height to the hybrid than does the brachytic-2. Crosses with an unrelated type, reduced 38-11, gave the following types: rd38 x R4 = 273 (av. 2 rows), rd38 x R4br_2 = 241 (av. 4 rows), and rd38 x R4br_3 = 304 cm (av. 3 rows). When crossed with wf9, the following heights resulted: wf9 x R4br_2 = 233 cm (1 row), wf9 x R4br_3 = 265 cm (av. 2 rows). These data agree with our observations in previous years. More extensive tests are planned. In addition to being somewhat shortened br_2 hybrids usually show some of the enlarged stalk characteristic of brachytic-2.