

(A <sub>1</sub> A <sub>2</sub> Bz <sub>1</sub> C R)	<u>Constitution</u>	<u>Pericarp Sheen</u>
	Pr in	yes
	pr in	occasional
	a <sub>1</sub> Pr in	yes
	a <sub>1</sub> pr in	occasional
	a <sub>2</sub> Pr in	yes
	bz <sub>1</sub> Pr in	yes
	c Pr in	no
	Ci Pr in	no
	r Pr in	no

These interactions can be interpreted simply as indicating that C and R actions precede the effects of in, assuming that a diffusible substance is produced in excess in in kernels, and that this substance develops into a brown pigment (not anthocyanin) when it enters the pericarp. It is suggested that C and R are essential for the production of this substance.

A logical construction for the sequence of action, using the available information, is (C, R); In; A<sub>1</sub>; (Bz<sub>1</sub>, A<sub>2</sub>). The position of Pr is not clear, but probably preceding A<sub>2</sub>, at least.

#### 4. High-haploid line.

Further data on frequency in self progenies of the two sources of stock 6 (see News Letter 30: 98, 1956) were obtained this year:

##### Stock 6 Selves

<u>Year</u>	<u>Haploids</u>	<u>Total</u>	<u>% Haploids</u>
1955	15	760	1.97**
1956	36	1,184	3.04
Both years	51	1,944	2.62**
(Hap. X sib) Selves			
1955	35	1,222	2.86
1956	156	4,540	3.44
Both years	191	5,762	3.31
Grand Total	242	7,706	3.14

\*\* Highly sign. diff. from grand total.

The effect of background is still not clear, but may be slight (note 1956 data alone).

Outcross tests clearly show a high frequency of maternal haploid parthenogenesis, but not of the same magnitude as in self progenies:

Stock 6 (R<sup>G</sup>) X R<sup>r</sup>

<u>Year</u>	<u>Haploids</u>	<u>Total</u>	<u>% Haploids</u>
1955	6	1,085	0.55
1956	186	21,196	0.88
Both years	192	22,281	0.86

The percentage above may be a little below the true frequency, as it has been found that stock 6 occasionally shows a weak R<sup>r</sup> expression. For R<sup>r</sup> X stock 6, however, no difficulty in classification was experienced:

R<sup>r</sup> X stock 6

<u>R<sup>G</sup> haploids</u>	<u>Total</u>
0	6,946

No sperm-derived haploids were found. Haploid androgenesis probably does not contribute significantly to the high percentage of haploids in selfs.

A very high frequency of heterofertilization occurs in the line, and may be associated with the production of haploids.

5. Test for non-homologous crossing-over in translocation heterozygotes.

The test reported last year is negative. The single case proved to be spurious.

6. Ds and sticky.

Cross:

$$\frac{c \text{ sh } wx}{c \text{ + +}} , \frac{+}{st} , ac \text{ X } \frac{C \text{ + + } Ds}{c \text{ + +}} , \frac{+}{st} , ac$$

compared with:

$$\frac{c \text{ sh } wx}{c \text{ + +}} , \frac{+}{st} \quad \times \quad \frac{C \text{ + +}}{c \text{ + +}} , \frac{+}{st}$$