

2. Concomitant occurrence of different controlling elements.

Further testing of the unstable factor reported in previous News Letters (1967, pages 100-101; 1968, page 91) has led to the following conclusions:

(a) The pale bronze unstable factor, controlled by an Activator factor in chromosome 9, is confirmed not allelic to any of the color factors-- $\underline{a}_1$ ,  $\underline{a}_2$ ,  $\underline{c}_1$ ,  $\underline{c}_2$ , and  $\underline{r}$ . Confirmed is also the linkage with markers of chromosome 1.  $F_2$  data from four plants having the unstable factor in repulsion phase with  $\underline{f}_1$  or  $\underline{br}_1$  are as follows:

	X Y	X y	x Y	x y
$\underline{f}_1$	721	366	320	10
$\underline{br}_1$	882	360	159	16

They give  $16.9 \pm 1.7\%$  and  $31.6 \pm 1.6\%$  crossing over between the factor and the markers  $\underline{f}_1$  and  $\underline{br}_1$ , respectively. The indication that the factor is  $\underline{bz}_2$  has been definitely proven by testcrosses with the Neuffer  $\underline{bz}_2$  stocks.

(b) Crossing of our material with the stocks provided by Dr. Neuffer revealed that actually we are dealing with a situation similar or identical with that described by this author.

(c) The Spm test has been repeated and, on the basis of the  $\underline{wx}^{m-8}$  and  $\underline{a}_1^{m-1}$  response, we have to assume that an Spm element is present.

(d) Since the material, in which we now recognize the presence of both an Ac element and an Spm element, had been under control for several years without manifesting signs of possessing controlling elements, there is an indication that the breakage-fusion-bridge cycle which occurred in the short arm of chromosome 9 as a consequence of radiation treatment (Bianchi and Tomassini, 1965, Mutation Research 2:352-365) gave rise to a controlling element located on the same chromosome as well as to another one possibly located elsewhere.

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