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1. The blotching system involving the c locus.

Three of the four genes involved in the blotching system which causes color to develop in the aleurone in the presence of recessive c have now been located on the chromosomes through backcross linkage tests. The data follow:

Row	Genes	Number of Individuals					Recombinations	
		XY	Xy	xY	xy	Total	No.	Percent
184	Bh Su	169	148	130	198	645	278	43.1
186	Bh Y	378	168	158	304	1008	326	32.3
181	Bh Wx	248	306	300	245	1099	493	44.8

The Bh gene on chromosome 4 shows very weak linkage with De^{t-1}. Since this locus appears to be on the short arm of chromosome 4 (Bianchi) it is probable that Bh is on the long arm. Rhoades (MNL, 1948) has already shown that the Bh on chromosome 6 is closely linked to Pl and, therefore, is on the long arm of that chromosome. Since the Bh locus on chromosome 9 shows 44.9 per cent of crossing over with Wx, it could be on either arm and, if on the short arm, is probably near Yg. If this is true, then the experiment reported by Rhoades (MNL, 1945), in which he found less blotching in the aleurone of kernels carrying a chromosome 9 deficient for the c locus than in kernels with normal chromosomes, may involve the loss of the Bh factor on chromosome 9 and thus represents a case of dosage differences with respect to Bh factors rather than an indication that c is mutating to C.

2. The blotching system affecting the r locus.

Three of the five or more loci involved in the system in which blotches of color appear in the aleurone in the presence of recessive r have been located through backcross linkage tests. Two of the genes are linked with Su. Earlier data had indicated that two of the genes in this system were linked with each other. This occurred in modifications of 9:7 ratios as follows: