characterization of individuals within this class of alleles, because all the paramutable R alleles thus far tested are subject to small but heritable and progressive changes in degree of mottling even when maintained in heterozygotes with alleles hitherto considered non-paramutagenic. These changes may be in either direction, up or down the color scale, and by the correct choice of the opposing allele any paramutable allele may be manipulated so as to express different degrees of mottling. Alleles initially mottled may be enhanced to self-colored expression in single dose by continued maintenance opposite the recessive r. Alleles initially self-colored, or nearly so, can be induced to demonstrate a distinctly mottled phenotype if maintained in a heterozygote with a mottled allele, and a darkly mottled allele will become progressively lighter when maintained with another R allele more lightly mottled than itself.

Derek Styles

2. An aleurone color factor seemingly at the B locus.

In the 1964 News Letter it was reported that a duplicate R factor, conditioning colored aleurone and green seedling, had been located on chromosome 2, probably close to the B locus. This duplicate factor will be referred to here provisionally as 'R-2'. Data presented below suggest that R-2 is allelic to B. All crosses were made in W22 stocks homozygous r^g for the chromosome 10 locus but otherwise with all the necessary complementary aleurone color factors. The testcross progeny were scored at the three leaf stage in the greenhouse, at which stage the B phenotype was clearly expressed.

Testcross mating: r-2 B/R-2 b ♀♀ X r-2 b/r-2 b ♂♂

Progeny phenotypes from 34 testcross ears:

Colored kernels		Colorless kernels	
Red seedlings	Green seedlings	Red seedlings	Green seedlings
28	2642	2631	1

The 28 colored kernels giving rise to the red seedlings were distributed among six of the 34 ears as follows: Four ears with one, one ear with five, and one ear with 19. Contamination is a probable source of the majority

of these kernels. The one green seedling from the colorless kernel class started to develop pigment at the six leaf stage, and so may represent a mutation of the B gene.

Derek Styles

3. Interaction of modulator with stippled.

Following introduction of Mp into an R^{st} stock, several ears were observed carrying sectors of kernels with abnormal spotting patterns among the otherwise standard stippled kernels.

Three classes of abnormal stippled kernels, all with reduced amounts of pigmentation and designated R^{st} (l.st.), R^{st} (ll.st.), R^{st} (coless), respectively, have been selected and further analyzed in order to determine:

1. If their phenotype reflects a change at the R locus or at M^{st}, a modifier of stippled 5.7 crossover units distal to the R locus, and

2. Whether alteration in paramutagenic capacity accompanied the change in stippled phenotype.

In regard to point 1, Table 1 indicates that the "abnormal stippled" kernels can be grouped into two classes:

(A) R^{st} (l.st.) and R^{st} (ll.st.) are due to a change of the modifier M^{st} or to its transposition (see next report) and

(B) R^{st} (coless) reflects a change at the R locus.

The test of paramutagenicity indicated that R^{st} (l.st.) does not differ significantly from R^{st} (standard) in capacity to reduce R pigmenting potential.

R^{st} (ll.st.) and R^{st} (coless) seemingly are more paramutagenic than R^{st} (standard). Additional data on this point, however, are needed.

The last finding suggests that paramutation and repression at the R locus exhibited by the R^{st} alleles and derivatives are not independent phenomena.