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1. *En* at the mutable locus, a_1^m.

The identification of the regulatory element *En* at a mutable locus can be facilitated by the diversity of the forms of mutability that exist. Among the diverse mutable alleles, one that mutates to a readily identifiable mixture of pale and deep purple dots a_1^m (p and p) is available. Colorless forms, noted as $a^{m(r)}$, also exist and these respond to the presence of *En* in a predictably recognizable manner (Peterson, Genetics 1961). When a heterozygote is made between a_1^m (p and p) and $a_1^{m(r)}$ the resulting expression is a very heavily mutable form showing the effect of *En* on $a_1^{m(r)}$. Proof that it is the *En* of the $a_1^{m(p\text{ and }p)}$ allele that is causing the mutability is obtained by testcrossing the heterozygote (by *a1sh*/*a1sh*). The resulting progeny shows the separation of kernels -- 1/2 of which are pale and purple dotting and 1/2 are colorless, $a_1^{m(r)}$, since the *En* is coupled with the $a_1^{m(p\text{ and }p)}$ allele. A small percentage of exceptions appear and these will be discussed in the next section.

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2. Changes at the $a_1^{m(p\text{ and }p)}$ allele: The status of *En*.

Among the progeny arising from testcrosses (by *a1sh*/*a1sh*) of the $a_1^{m(p\text{ and }p)}$ allele, stable non-dotting pale types ($a^{p(nr)}$) and colorless types ($a^{m(nr)}$)* are observed. It has previously been reported (Peterson, 1961 Genetics) that the colorless types do not respond to the presence of *En* and are designated $a_1^{m(nr)}$. Similarly, the pales do not respond to the presence of *En* and are therefore *nr* (non-responding) types. If these derivatives are canvassed for the presence of *En*, it is found that they invariably do possess *En*. In crosses of $a^{p(nr)}$ and $a^{m(nr)}$ by $a^{m(r)}$ (*Cross #1*), mutability is observed in the heterozygote. In testcrossing these heterozygotes -- $a^{p(nr)}$*/$a^{m(r)}$* x *a1sh*/*a1sh* (*Cross #2*) -- a variable percentage of mutable kernels results. These mutable kernels represent the effect of *En* on the $a_1^{m(r)}$ allele. This would indicate that the *nr* kernels possess *En* in coupling $a_1^{p(nr)}$ *En* and the distance between $a_1^{p(nr)}$ and *En* is proportional to the frequency of mutable kernels that arose from *Cross #2***.