phenotype, it appeared plausible that they might represent mutations at different sites within the Bt cistron. Intra-cistron recombination between the two presumed mutant sites would produce + + and bt sh chromatids. The former would result in a plump kernel while the latter should yield a defective kernel which might be difficult to distinguish from bt homozygotes. However, plump kernels on an ear segregating for bt and sh would be easily recognized. It would appear that we have here an exceptionally favorable opportunity to test for intra-cistron recombination. Accordingly, hybrids of A_2 sh_3 pr/ a_2 bt_1 Pr constitution were pollinated by a_2 bt_1 pr bv plants. The bv mutant is the needed check on pollen contamination. The 1400 backcrossed ears obtained by carefully controlled hand pollinations gave a population of approximately 500,000 kernels. We have not found the plump kernels expected from recombination and indeed we found no plump kernels at all. This speaks well for our pollinating technique but unfortunately provides no evidence that the Bt_1 locus consists of mutant sites, separable by recombination.

M. M. Rhoades

9. Pollen longevity.

Data from the concluding tests of a series begun in 1957 at Cornell indicate conclusively that corn pollen viability may be retained for varying periods of time under widely different conditions of storage. Pre-storage treatment of the pollen, in addition to temperature and humidity control during storage, have been shown to be critical. Optimum storage conditions have been shown to include the 10° range, 5° either side of 0° C. and a relatively high humidity.

Noteworthy results from two 1960 experiments show: 1) corn pollen viability (as measured by the production of seed) was retained for at least twelve days; 2) the viability was markedly enhanced at a controlled humidity of 75% compared to 25% or 50% at 5°C.

The conclusion is inescapable, and has been confirmed by several demonstrations, that the exchange of pollen among investigators is feasible. The shipment of viable pollen permits at least two applications: 1) the use of pollen at relatively great distances from the site of pollen production; 2) the exchange of genomes without the exchange of cytoplasm.

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