obscura. The results of the experiments with hybrids are consistent with this hypothesis (table 1). Males of D. persimilis inseminate a higher percentage of the hybrid than of their own females. The isolation index\(^1\) is negative in both crosses (\(-0.15, -0.32\)). The greater activity of the hybrid females is apparently more than sufficient with males of D. persimilis to compensate for their genetic inferiority in regard to factors one and two. The greater activity of the hybrid females is not quite sufficient in tests with the males of D. pseudoobscura to overcome the adverse influence of factors one and two. The isolation index remains positive (+0.11, +0.42). Still, the discrimination of the pseudoobscura males against hybrid females is much slighter than against persimilis females. At best (with persimilis ♀ × pseudoobscura ♂ hybrids), only twice as many of their own females are inseminated as against ten times as many in the control experiment.

The relative desirability of the hybrid females is a puzzling fact, considering the wide overlap of the two species in nature. There would seem to be an apparent opportunity for a good deal of introgressive hybridization. The factors that keep this potential danger in check need further investigation.

\(^1\) Mayr, E., and Dobzhansky, Th., these PROCEEDINGS, 31, 75–82 (1945).


\(^3\) Mayr, E., 1946 (unpublished).

INHERITED DIFFERENCES IN SENSITIVITY TO RADIATION IN ESCHERICHIA COLI*

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The study of spontaneous and radiation-induced mutations is at present our best approach to the investigation of genetic mechanisms in bacteria. Mutations involving resistance to destructive agents (bacteriophage,\(^1\) penicillin\(^2\)) are especially suitable for genetic analysis, since resistant mutants can easily be detected in bacterial cultures. This preliminary report concerns a mutation in Escherichia coli leading to resistance to both ultraviolet radiation and x-rays, which was detected by exposing samples from normal cultures to high doses of radiation.

Most investigators of the effects of ultraviolet radiation on bacteria have considered the population within a strain to be fundamentally uniform in sensitivity. Most of the differences found seem to depend upon transient