

ting. Interactions with eye color genes such as brown, brown dominant, and vermilion, as well as different environmental factors such as temperature and moisture conditions, and also varying amounts of heterochromatin in the genotype throw further light on the phenomenon of V-type position effect in *Drosophila*. (Work supported by U. S. Atomic Energy Commission grant—Contract No. AT(11-1)-89, Project No. 7.)

MILLER, W. J., and W. H. STONE, University of Wisconsin, Madison, Wis.: *Blood typing of the erythrocytes of bison with reagents for antigenic factors of cattle*.—Blood samples from 193 bison were recently obtained by courtesy of MR. E. J. GREENWALT from the Wichita National Wildlife Refuge, Cache, Oklahoma. These samples were tested with the same reagents (blood typing fluids) which are used to type the blood of cattle. All the bloods tested possessed antigenic factors either similar to or identical with V, L, X₁, X₂, X₃, and L'. There were 10 factors (A₁, H, J, S, Z, C₁, C₂, W, E'₂, and E'₃) which were present in some bison and lacking in others. These 10 factors represent specificities controlled by genes at 6 independent loci of cattle. Reagents for 24 other factors commonly found in cattle blood failed to react with the bison cells. The results of absorptions of the various reagents by reactive bison cells indicate that 3 factors (H, L', and V) are similar but not identical in the two species. (This duplicates previous unpublished data for the factor V by C. STORMONT). Antisera for several antigenic factors of cattle were produced by immunization of rabbits with bison cells, and all of these anti-bison sera showed that bison cells contain one or more antigenic specificities not shared with the cells of cattle.

MOREE, RAY, State College of Washington, Pullman, Wash.: *A comparison of selection and inviability curves relating to experimental populations of Drosophila melanogaster*.—Four population cage experiments were started from the cross $+/e^{11} \times +/e^{11}$ and the decreasing frequencies of recessives from each cage were combined to give a single selection curve covering a period of 217 days. From supplemental experiments covering a range of population densities, coefficients of inviability were obtained and from these a theoretical selection curve was calculated for each density experiment, it being assumed as a working hypothesis that mating was random and that inviability coefficients were equal to selection coefficients. Since competition appears to approach a maximum in both population cages and supplemental experiments, it might be expected that all of the theoretical curves would have less slope than the experimental selection curve. Instead, the theoretical curves for the highest densities have greater slopes, and a theoretical curve can be constructed approximating to the experimental selection curve. Agreement between these curves cannot be taken as indicating, however, that selection is a consequence solely of inviability or of any of the other selection components. This would require, among other things, that competition in the population cage falls quite short of maximum, which seems unlikely. It is suggested that, in addition to inviability, these results depend in some way upon a balance between overlapping of generations and heterosis, which would decrease the effect of selection, and selective productivity of parents and selective mating on the other hand, which would increase it. (Work supported by grants from the National Institutes of Health and from the State of Washington Initiative Measure No. 171 for the support of biological and medical research).

MORSE, M. L., University of Wisconsin, Madison, Wis.: *Cis-trans position effect in transduction heterogenotes of Escherichia coli*.—The phage lambda can transduce a chromosome fragment which includes a cluster of genes for galactose fermentation. Most of the transformed clones are "diploid" or heterogenetic for the transduced genes. Many combinations of non-allelic *Gal*⁻ mutants give galactose positive heterogenotes as readily as *Gal*⁺/*Gal*⁻. However, some combinations of *Gal*⁻ gave smaller and delayed yields of positive clones. Further analysis disclosed a cis-trans position effect between certain loci. For example, while the cis $++/--$ heterogenotes formed by transduction from *Gal*₁⁺/*Gal*₄⁺ to *Gal*₁⁻/*Gal*₄⁻ are positive, the trans $+ - / - +$ heterogenotes from the transduction from *Gal*₁⁺/*Gal*₄⁻ to *Gal*₁⁻/*Gal*₄⁺ are phenotypically galactose negative. In the negative clones, positive heterogenotes are later formed by crossing over in occasional cells. Further segregation results in all possible haploid combinations, $+ -$, $- +$, $++$, and $--$. The delayed yields that were observed initially are based on these secondary events. Reciprocal transductions have given identical phenotypes, so that