macrochaetae on the thorax, especially in the dorsocentral and scutellar regions. Homozygous Hw^{49c} females have 3-4 extra dorsocentrals per side, in addition to having microchaetae on the wing cells and bristles along wing veins. However, many Hw^{49c} homozygotes are missing one or more ocellar or postvertical macrochaetae. Flies heterozygous for Hw^{49c} and the ClB chromosome or a wild-type X-chromosome show 1-2 extra dorsocentrals per side and the absence of 75% of ocellar and 25% of postvertical macrochaetae.

The female progeny of crosses of Oce/Oce females with Hw^{49c} males, and the non-Bar female progeny of crosses of Hw^{49c}/ClB with Oce males, are heterozygous for these two mutants in the trans configuration. On the thorax, the effects of Oce appear to be completely epistatic to those of Hw^{49c}, in that the flies show about 10% of the dorsocentrals missing; that is, there is virtually no sign of the typical Hairy-wing appearance of extra dorsocentrals. However, the interaction of the two mutants in the mediation of formation of macrochaetae on the head appears to be synergistic - 95% of the ocellars and almost 100% of the postverticals are absent. Thus, the phenotypic expression is not only more extreme in these heterozygotes than that of either Hw/+ (or Hw/ClB) or Oce/+ alone; it is more extreme than that of either homozygote alone. This interaction represents an interesting example of autonomous pleiotropy, in which two dominant mutations, each of which has diverse effects on the entire organism, show different interaction phenotypes in different body regions.

Experiments are in progress to analyze the regional specificity of the Hairy-wing-49c - Ocellarless interaction and in the presence of homozygosity of one or both mutants.

Khovanova, E.M. Research Institute of Medical Radiology, Academy of Medical Sciences, Obninsk, U.S.S.R. The influence of the content of live yeast in the medium on the frequency of somatic mosaicism in Drosophila simulans.

The influence of the content of live yeast Saccharomyces cerevisiae in the medium on the frequency of somatic recombination in the cells of the dorsal prothoracal disc was analyzed in heterozygous y/y^+ females of simulans. Virgin ♀♀ y w/y w were mated with ♂♂ y^+ w^+/Y from the laboratory stock 2. In this type of mating the frequency of yellow mosaic spots in the area callus humeralis was approximately 10 times greater than in the case of mating with ♂♂ from stock 1. Mosaic females eclosed almost completely in the first 2-3 days from the beginning of the emergence in the culture bottles. In the following days (from the 3-4th to the 9th) the frequency of humeral yellow spots sharply decreased and approached that in the case of mating with stock 1. Propionic acid was added to the medium for preservation against the fungi infection. The surface of the medium was covered with a suspension of live yeast Saccharomyces cerevisiae at 1-2 hours before putting in flies. In the experiments with medium containing 10 ml of propionic acid per 1000 ml medium, 5430 females y w/y^+ w^+ were obtained, 175 of them having mosaic spots in the humeral area (3.22%). In the experiments with the medium containing 1 ml propionic acid (per 1000 ml of the medium) the frequency of humeral mosaicism was increased to 4.28% (379 mosaics among 8837 heterozygous females). The differences are statistically significant: $\chi^2 = 11.38$, $p < 0.001$.

Two hypotheses were proposed: 1 - propionic acid is an inhibitor of somatic recombination in the cells of dorsal prothoracal disc; 2 - the frequency of somatic recombination depends on the quantity of live yeast in the medium; propionic acid acts as an inhibitor for growth of yeast colonies. To test these hypotheses, matings were made on the medium containing 10 ml (the first variant) and 1 ml (the second variant) of propionic acid (per 1000 ml of medium), but the yeast suspension was not put on the medium surface. Mosaicism frequencies decreased under these conditions: 2.69% (3932 females, 106 mosaic ones among them) in the first variant, and 2.83% (5090 females, 144 mosaics) in the second one. The differences between the variants are statistically insignificant: $\chi^2 = 0.222$, $0.5 < p < 0.75$, d.f. = 1. So different concentrations of propionic acid did not change mosaicism frequency by themselves. Finally, another series of experiments was made: yeast suspension was put on the surface of the medium containing 1 ml propionic acid (per 1000 ml of the medium), and after that culture bottles with the medium were put in the incubator at 24°C for a day. Flies were put into bottles with the medium, the surface of which was overgrown by yeast colonies. From 1965 heterozygous females, 125 were mosaics, i.e., the mosaic frequency increased under such conditions to as much as 6.36%. Even a single day in the incubator, on the medium with 10 ml propionic acid (on which yeast colonies grew poorly), the frequency of mosaic females was 3.60% (23 out of 626). Further investigations on the mechanisms of influence of live yeast on the frequency of somatic recombination are in progress now.