

Scharloo, W., and W. Vreezen. Universities of Groningen and Leiden, Netherlands. Selection for 5th vein interruption in a Hairless mutant.

Selection for a larger 5th vein interruption was practised on the mutant H^{57c} introduced in the Kaduna cage population. Progress was steady until no 5th vein material was left posterior to the 2nd crossvein. Then progress was almost halted (generations 8-

12) and the variability very small. After the appearance of some individuals with a break proximal to the 2nd crossvein, advance was resumed and the variability increased again. In generation 7 the first individuals appeared which showed a 5th vein interruption without the presence of H^{57c} . The penetrance and expression of these assimilants increased steadily, even when progress in H^{57c} expression on which selection was practised, was apparently halted in generations 8-12.

It can be concluded that the lack of progress and the small variability in these generations is the reflection of a zone of canalization in 5th vein formation around its junction with the 2nd crossvein. This is supported by the result of introduction of chromosomes with dominant markers in stocks obtained from the selection line by relaxation at different stages. The effect of the modifiers introduced in this way seems to depend on the expression range and is very small when they act in the neighbourhood of the 2nd crossvein.

Beardmore, J. A. and W. Kramer. University of Groningen, Netherlands. Selection responses in different environments.

The choice of environment in selection experiments is of considerable theoretical and applied interest. Falconer (Genet. Res. 1, 1960) on the basis of experiments with mice, suggested that for good overall expression of the selected character, selection should

be practised in an environment unfavourable to the expression of this character.

In order to test this thesis and in an effort to establish in how far the genes involved in determining the same character in different environments are the same, an experiment involving selection for number of abdominal chaetae on the 5th sternite of *D. melanogaster* has been started. High, low and unselected control (H, L and C) lines are grown at 22°C and 28°C, giving in all six lines.

The mean values for the character at S 16 are as follows:

H 28	<u>26.54</u>	C 28	<u>19.91</u>	L 28	<u>16.42</u>
H 22	<u>25.36</u>	C 22	<u>20.84</u>	L 22	<u>15.34</u>

1. Selection is clearly effective in both environments.
2. Selection response is greatest in the environment whose effect acts against that of selection (28° for H, 22° for L).

Cross tests in the other temperature were made at S 16 and the values for the six lines are:

	22°	28°		22°	28°		22°	28°
L 22	15.65	14.99	H 22	24.48	24.14	C 22	20.84	20.40
L 28	17.51	15.97	H 28	24.79	25.51	C 28	21.94	19.91

1. Selection response is largely maintained in the new environment using, as a basis of comparison, deviation from control in both environments. This might indicate that the genes selected in the two conditions are broadly similar.

2. The effect of shifting from one environment to the other is not reciprocally equal in any of the three comparisons, 28° lines being more sensitive than 22° lines in all