The activity in the carcass and head of adults very likely corresponds to what is found in the dispersed fat tissue; thus, this tissue probably accounts for most of the ADH found in imagos.

Figure 2 shows the developmental pattern of accumulation of active enzyme in some of these organs. Of the organs examined, only the Malpighian tubules persist from larval to adult stages; it is interesting to notice that they do not display the general rise in activity during the third instar but they do so in the adult.

References: Ursprung et al. 1970, W.Roux Archiv. 164:201-208; Maroni 1978, Biochem. Genet. 16:509-523; Maroni et al. 1982, Genetics 101:431-446.

Martinez-Sebastian, M.J. & R.deFrutos. University of Valencia, Spain. Chromosomal polymorphism in Drosophila subobscura populations submitted to selection for a quantitative character.

Table 1. Frequencies of chromosomal arrangements (%) in the laboratory population.

Capture	3/79 n=118	6/79 n=156	11/80 n=109	12/81 n=145
A_{st}	38.36	45.65	16.95	16.1
A_1	4.11	6.52	5.08	4.3
A_2	57.53	47.83	77.97	78.5
A_{1+2}	-	-	-	1.1
J_{st}	27.97	24.34	16.51	16.0
J_1	72.03	75.66	83.49	84.0
U_{st}	4.31	0.66	-	-
U_{1+2}	43.97	47.37	45.37	41.3
E_{st}	34.75	46.05	47.66	40.5
E_{1+2}	10.17	11.19	8.41	2.1
E_{1+2+9}	18.64	9.21	16.82	16.1
$E_{1+2+9+12}$	29.66	27.63	26.17	41.3
$E_{1+2+9+3}$	5.09	3.95	0.93	-
E_8	1.69	1.97	-	-
O_{st}	20.34	21.79	33.94	22.1
O_{3+4}	27.12	24.36	45.87	72.4
O_{3+4+7}	32.20	25.64	14.68	2.75
O_{3+4+8}	5.09	19.87	1.83	-
O_{3+4+2}	1.69	4.49	1.83	2.75
O_{3+4+22}	0.85	0.64	-	-
O_{3+4+1}	11.02	-	1.83	-
O_7	1.60	3.21	-	-

The evolution of chromosomal polymorphism in several abdominal bristle selection lines was analyzed.

A laboratory population (R) was established with individuals from nature, and was developed without selection throughout the entire duration of the experiment. Four selection lines, two high (P_1 and P_2) and two low (N_1 and N_2), and two control lines (C_1 and C_2) were taken from the laboratory population and run during 24 generations.

The sum of the bristles on the 4th and 5th abdominal sternites was the criterion of selection and the intensity of selection used was 20%.

The first time the chromosomal polymorphism of the natural population was analyzed, and later, periodic analyses of the selection lines, control lines and laboratory population were carried out.

The results of the analyses of the laboratory population are given in Table 1. As it can be seen, the chromosomal arrangements present in the initial population at a low frequency tend to be eliminated. A X^2 homogeneity test comparing the different analyses shows no significant differences in chromosome U (X^2=1.29; d.f.=3; P=0.73). However, chromosomes J (X^2=7.91; d.f.=3; P=0.05), A (X^2=27.59; d.f.=3; P<0.001), E (X^2=48.99; d.f.=9; P<0.001) and O (X^2=133.49; d.f.=9; P<0.001) show clear differences. In A chromosome the A_2 arrangement tends to be selected, in E chromosome the E_{st} and $E_{1+2+9+12}$ arrangements increase and in O chromosome the O_{3+4} arrangement increases strongly.

Selection lines and control lines were analyzed several times during the experiment, but in this paper we give only the results of the last analysis, which was done in the 24th generation of selection. The results (see Table 2) show a general tendency to homozygosis, stronger in selection lines than in control lines.

In chromosome A, all lines except C_1 are practically homozygotic. In the two high selection lines the A_2 arrangement is fixed, but in low selection lines the A_2 is fixed in N_1 and

Table 2. Frequencies of chromosomal arrangements (%) in selection lines.

	R n=157	P1 n=128	P2 n=89	N1 n=116	N2 n=145	C1 n=126	C2 n=149
A_{st}	45.65	1.3	-	-	98.75	52.1	-
A_1	7.52	-	-	-	-	-	-
A_2	47.83	98.7	100.0	100.0	1.25	47.9	100.0
J_{st}	24.34	0.8	-	-	33.79	9.5	-
J_1	75.66	99.2	100.0	100.0	66.21	90.5	100.0
U_{st}	0.66	-	-	-	-	-	-
U_{1+2}	47.37	100.0	100.0	-	72.73	60.0	48.30
U_{1+2+8}	51.97	-	-	100.0	27.27	40.0	51.70
E_{st}	46.05	16.4	51.69	-	43.75	46.0	23.81
E_{1+2}	11.19	-	1.12	73.3	24.31	2.4	12.93
E_{1+2+9}	9.21	-	-	-	-	-	-
$E_{1+2+9+12}$	27.63	83.6	47.19	26.7	31.94	51.6	63.27
$E_{1+2+9+3}$	3.95	-	-	-	-	-	-
E_8	1.97	-	-	-	-	-	-
O_{st}	21.79	-	56.82	-	-	58.1	32.21
O_{3+4}	24.36	-	43.18	100.0	100.0	17.7	67.11
O_{3+4+7}	25.64	100.0	-	-	-	24.2	-
O_{3+4+8}	19.87	-	-	-	-	-	-
O_{3+4+2}	4.49	-	-	-	-	-	0.67
O_{3+4+22}	0.64	-	-	-	-	-	-
o_7	3.21	-	-	-	-	-	-

A_{st} is fixed in N_2. In chromosome J, frequency of the J_1 arrangement reaches values close to 100% in all selection lines, except in N_2 where J_1 arrangement shows samller values than in the initial population.

As in A and J chromosomes, in U chromosome the same arrangement (U_{1+2}) is fixed in the two high selection lines and N_2 shows a different behaviour to N_1. In control lines the two most frequent arrangements (U_{1+2} and U_{1+2+8}) reach values close to 50%.

In chromosome E, the most polymorphic, in no case was homozygosity reached. A different arrangement tends to be increased in each line.

In chromosome O which shows a great number of gene arrangements, homozygosity was reached in several selection lines. The two low selection lines are homozygotic for the O_{3+4} arrangement and P_1 for O_{3+4+7} arrangement. The rest of the lines remained polymorphic.

On comparing the chromosomal frequencies in the initial population with the frequencies in the selection lines and control lines after 24 generations of artifical selection, it can be seen that the two high selection lines and one low selection line (N_1) tend to reach homozygosity while the control lines and N_2 low line tend to remain polymorphic.

In some chromosomes the same arrangement was fixed in the two high selection lines or in the two low selection lines, as happens with the A_2 arrangement in the two high selection lines and with the O_{3+4} arrangement in the two low selection lines. These two arrangements tend to be increased in the laboratory population. Also the J_1 and U_{1+2} arrangements were fixed in high selection lines. In the rest of the chromosomes the behaviour of high and low selection lines is similar.

Martinez-Sebastian, M.J. & J.L. Mensua. University of Valencia, Spain. Variations of wing dimensions in Drosophila subobscura populations selected for abdominal bristle number.

In a laboratory population (R) od D. subobscura, the characters of wing length and wing width were measued.

Two replicate selection lines for abdominal bristle number in both, high (P_1 and P_2) and low (N_1 and N_2), directions and two control lines (C_1 and C_2) were established from the laboratory population. At 17th generation of selection, wing length and wing width were measured.

Table shows the means of wing dimensions in the laboratory ppulation, control lines and selection lines.

Significant differences exist between the laboratory population and the selection and control lines (except wing length males R versus males C_1). Also there are significant