

As we can observe, the percentage of the populations which have a fixed locus in the Est-C^F is higher than that of the other authors, although the genic frequency on an average of the ten populations does not differ at all from the others, as a result our fixations can have some sampling error.

The same as Girard et al. (1976, 1977), Voelker et al. (1980) and Langley et al. (1981), a null recessive allele has been found by us with frequencies higher than those from the French populations. But on the whole these allelic frequencies for the Est-C⁰, have an insignificant value. All the last ones with lower values detected for other alleles, make this locus practically monomorphic.

References: Anxolabehere, D., P.Girard, L.Palabost & G.Periquet 1976, Arch.Zool.exp. gen. 117:169-179; Beckman, L. & F.M.Johnson 1964, Hereditas 51:212-220; Cavalli-Sforza, L.L. & W.F.Bodmer 1971, The Genetics of Human Populations, Freeman, San Francisco; Girard, P. & L.Palabost 1976, Arch.Zool.exp.gen. 117:41-55; Girard, P., L.Palabost & C.Petit 1976, Biochem.Genet. 15:489-599; Johnson, F.M. & H.E.Schaffer 1973, Biochem.Genet. 10:149-163; Kojima, K., J.Gillespie & Y.N.Tobari, Biochem.Genet. 4:627-637; Poulik, M.D. 1957, Nature 1180:1477-1479; Singh, R.S., D.A.Hickey & J.David 1982, Genetics 101:235-256; Triantaphyllidis, C.D. 1973, J.Hered. 64:69-72; Triantaphyllidis, C.D. & C.Christodoulou 1973, Biochem.Genet. 4:383-390; Triantaphyllidis, C.D., J.N.Panourgias, Z.G.Scouras & G.C.Ioannidis 1980, Genetica 51:227-231.

Alonso, A., A.Rodero and A.Munoz. Universidad de Cordoba, ESPANA. Study of seven wing measurements and of esterase-6 locus in *Drosophila melanogaster*.

Since 1966 when Harris in Europe and Lewontin & Hubby in America first applied, almost simultaneously, electrophoretic techniques in the study of allelic variants attempts to relate this allozymic polymorphism to biometrical characters began in laboratory species as

well as in domestic ones. Genetic markers were tested for their usefulness in Zootechnics.

Electrophoresis provides us with data on an individual gene. That is, for each protein and variable enzyme, there is a variation associated with different alleles in the loci, and vice versa, each invariable protein corresponds to a monomorphic locus. They attempted to associate the qualitative polymorphism with biometrical traits which are polygenic and whose genes could not be individualized. In this way, Aguade (1974), Cuello (1974), Serra (1977) and Porrás (1978) oriented their studies which yielded unsatisfactory results. This occurred because the authors tried to establish a linear relationship between two variation levels of differing complexity, in which the more complex could depend on the simpler, but not in a linear function. On the other hand, the allozymic polymorphisms used

TABLE 1. Frequency distribution of the seventh measurement.

25°C	CLASSES SIZE			30°C	CLASSES SIZE		
	GROUP	<6.20	6.25-6.75		>6.80	GROUP	<5.25
Est-6 ^{FF} males	28	11	1	Est-6 ^{FF} males	30	21	1
Est-6 ^{FF} females	0	11	21	Est-6 ^{FF} females	0	12	11
Est-6 ^{FS} males	35	9	0	Est-6 ^{FS} males	16	25	0
Est-6 ^{FS} females	0	16	30	Est-6 ^{FS} females	1	31	25
Est-6 ^{SS} males	4	6	1	Est-6 ^{SS} males	4	6	0
Est-6 ^{SS} females	1	3	7	Est-6 ^{SS} females	0	6	7
TOTAL	68	56	60	TOTAL	41	101	44

TABLE 2. Frequency distribution of the first measurement.

25°C						30°C					
GROUP	CLASSES SIZE					GROUP	CLASSES SIZE				
	<0.20	0.25	0.30	0.35	>0.40		<0.20	0.25	0.30	0.35	>0.40
Est-6 ^{FF} males	8	20	11	1	0	Est-6 ^{FF} males	8	30	4	0	0
Est-6 ^{FF} females	0	4	17	9	2	Est-6 ^{FF} females	1	7	13	2	0
Est-6 ^{FS} males	3	30	11	0	0	Est-6 ^{FS} males	10	22	9	0	0
Est-6 ^{FS} females	0	4	30	12	0	Est-6 ^{FS} females	3	11	35	7	1
Est-6 ^{SS} males	0	3	8	0	0	Est-6 ^{SS} males	2	6	2	0	0
Est-6 ^{SS} females	0	1	6	4	0	Est-6 ^{SS} females	1	1	8	2	1
TOTAL	11	62	83	26	2	TOTAL	25	77	71	11	2

had not been previously determined in the experiment outline, but instead by the techniques available in the laboratory at that moment.

Recently Pieragostini et al. (1979, 1981) have found a relationship between the Adh genotype and the body size of *Drosophila melanogaster*.

We have caught three natural populations of *Drosophila melanogaster*, they were pooled into one laboratory population equilibrated at the Est-6 locus. Afterwards, we maintained it in stable conditions of temperature and humidity for 24 generations without overlapping. The Est-6 locus was chosen because it codified a nonspecific enzyme which can act on exogenous substrates or on endogenous ones, and because it acts in the glucose metabolism and other systems. The measurements were taken according to Alonso & Munoz (1984) results in order to detect the size as well as the form of the wing. In the 25th generation, we separated two groups and one of them was submitted to 30°C. Table 1 shows the results of wing measurements no. 7 (Alonso & Munoz 1984) for different phenotypes and sexes at 25°C and 30°C, respectively, and Table 2 shows the same for the first measurement.

We have analyzed these data with a simple nested ANOVA, none of the analyses showing any differences between the esterase phenotypes in any of the seven measurements (the first 7 measurements of Alonso & Munoz, 1984) but all of them exhibiting differences between sexes and temperatures.

In the multivariate analyses (principal components) carried out, the individuals are always grouped according to sex and temperature and never according to the Est-6 phenotype.

In conclusion we do not detect any relationship between the wing size or form and the phenotype expressed by the Est-6 locus.

References: Aguade, M. 1974, Relacion de la variabilidad enzimatica en leucinamino-peptidasa-D y xantindeshidrogenasa con la seleccion por tamano en *Drosophila melanogaster*, Thesis, Barcelona; Alonso, A. & A.Munoz 1984, DIS 60:5-6; Cuello, J. 1974, Relacion entre la variabilidad enzimatica en esterasa y fosfatasa alcalina y la seleccion por el tamano en *Drosophila melanogaster*, Thesis, Barcelona; Harris, H. 1966, Enzyme polymorphisms in man, Proc.Roy.Soc.Ser. 164:298-310; Lewontin, R.C. & J.L.Hubby 1966, Genetics 54:595-609; Pieragostini, E., S.Sangiorgi, & S.Cavicchi 1979, Genetica 50:201-206; Pieragostini, E., S.Sangiorgi & S.Cavicchi 1981, Genetica 56:27-37; Porras, A. 1978, Relacion entre el polimorfismo bioquimico y los caracteres de la lana en ovejas merinas, Thesis, Cordoba; Serra, L. 1977, Relacion entre la variabilidad enzimatica de los sistemas que controlan la α -Glicerofosfato deshidrogenasa y la alcohol deshidrogenasa y la seleccion por el tamano en *Drosophila melanogaster*, Thesis, Barcelona.