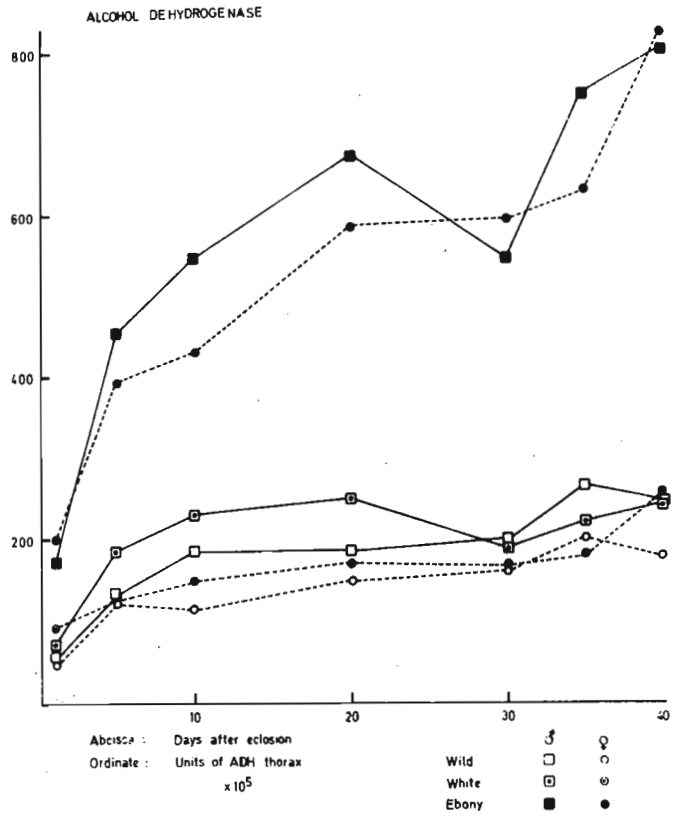
Libion-Mannaert, M. and A. Elens. Facultés Universitaires N.D. de la Paix, Namur, Belgium. Ageing in D. melanogaster ebony, white and wild: alcohol dehydrogenase and other enzyme activity changes.

The total protein content, and the activities of alcohol dehydrogenase, acid para-nitrophenyl phosphatase, and catalase, have been measured on adult flies varying from 1 to 40 days after eclosion. The tests were made according to Wattiaux et al. (1971) for total protein content Sofer and Ursprung (1968) for alcohol dehydrogenase, Neil and Horner (1964) for acid para-nitrophenyl phosphatase (but at 35°C instead of 37° and at pH 5.5 instead of 5.0) and Baudhuin et al. (1964) for catalase (at pH 7.5 instead of 7.0). A pooling of 30 thoraces was used for each measure and 10 repetitions were made for each strain, sex, and age.



A variance analysis reveals striking influences of the age, sex, and strain on the variations of the total protein content, and the alcohol dehydrogenase and acid para-nitrophenyl phosphatase activities. The influence of age and strain is marked on the catalase activity, but the differences between sexes are not significant.

The activity of catalase and acid para-nitrophenyl phosphatase falls from the 1st to the 5th day after eclosion, after which it increases. A second minimum is observed at 30 or 35 days for the catalase activity, followed by a second increase.

The most interesting fact is the much greater activity of alcohol dedydrogenase in the strain ebony (e^{11}). Further experiments will have to show if it depends on the gene ebony itself or on other genes present in the strain e^{11}, and if different isozymes of alcohol dehydrogenase are at work in the strains white and wild (Canton S).

References: Baudhuin, P., H. Beaufay, Y. Rahman-Li, O.L. Sellinger, R. Wattiaux, P. Jacques and C. de Duve 1964, Biochem. J. 92:179; Neil, M.W. and M.W. Horner 1864, Biochem. J. 92: 217; Sofer, W. and H. Urspring 1968, J. Biol. Che. 243:3110; Wattiaux, J. M., M. Libion-Mannaert and J. Delcour 1971, Gerontologia 17:289.

Nettleton, R.* University of Nebraska, Lincoln, Nebraska. A failure to demonstrate an influence of temperature on the "sex ratio" phenomenon in D. athabasca.

An attempt was made to determine whether the influence of temperature on the X chromosome caused "sex ratio" phenomenon of D. athabasca is like that found in D. pseudoobscura by Darlington and Dobzhansky (Proc. Nat. Acad. Sci. 28:45-48, 1942), who observed less extreme effects of the "sex ratio" X at high than at low temperatures. The source of the athabasca "sex ratio" X was a wild strain from Englewood, New Jersey. Since no sex-linked mutant genes were available to mark either normal or "sex ratio" X, it was necessary to use males taken at random from the progeny of females that must have been either homo- or heterozygous for the "sex ratio" X since they were daughters of males that had nearly all female progeny. The males employed were expected to be a mixture of ones with a normal X and ones with a "sex ratio" X, with the proportion of the latter at least 50%. Such males were divided at random