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During 1975 an extreme drought was observed in the Urals (non-typical for this zone). All the summer cohorts were represented by the young of the year born only from the overwintering animals. No individuals of these youngs of the year were able to breed during the year of birth (the animals of 1-phase growth were absent). This was for the first time in this described area (Olenev, 1977; 1981).

Morphophysiological data for all the young of the year were quite similar to those examined every year for the wintering cohorts of the youngs of the year.

The comparative analysis of the drought and winter conditions has shown that the adaptive reaction of animals in a population upon the extremal unfavourable conditions such as drought (Olenev, 1981), and high population density (Shilov, 1977; Olenev et al., 1987) are not very different from those developed in the course of evolution in response to periodical, regular (autumn-winter) unfavourable influences.


Amylase is an extracellular digestive enzyme that breaks down starch and other oligopolysaccharides. It is an ubiquitous enzyme found in a number of different organisms. Due to its physiological role it is likely that selection is operating on this gene-enzyme system.

We have identified a correlation between the ecological niche of some Drosophila species and the occurrence of different kinds of amylases. For example fungus breeding Drosophila species possess original proteins but are devoid of the usual amylases found in most Drosophila species living on amylaceous food resources. For the latter species amylase correspond to major proteins and the duplication of the coding genes has been frequently reported. Gene expression is strongly modulated by different kinds of regulations.

Up to now, the most complicated system known is that of Drosophila ananassae, a tropical and cosmopolitan polyphagous species for which at least four active Amy genes have been described. These genes, organized into two independent blocks localized on different chromosomes, have evolved through a functional differentiation: one cluster of genes being preferentially expressed in larvae and the other in adults.

248. DIVERSITY OF SOIL ANIMALS IN EGYPT. Ghabbour S.I., Mikhail W.Z.A., Cairo University, Egypt.

Populations of soil fauna were investigated from 13 sites in various parts of Egypt, representing the NW Mediterranean coast (6 sites), the Delta coast (1 site), the Sinai coast (1 site), Middle Egypt (1 site), Upper Egypt (1 site), and the Nubian desert in the SE part of Egypt adjacent to Lake Nasser (3