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PROCESS OF ANTHROPOGENESIS FROM THE POINT OF VIEW OF CONTEMPORARY ETHOLOGY AND BEHAVIOURAL SCIENCES

ABSTRACT. — *Behaviour is the main form of adaptation of man. The laws of progressive evolution of behaviour as one form of adaptation as well as the knowledge of behaviour of recent apes and other mammals are very important for the new understanding of the hominization process. Socially adapted behaviour was the main character which was supported by natural selection in the period of anthroposociogenesis.*

1. The process of formation of the *Homo sapiens* species which 20–30 years ago seemed relatively simple, conceptionally perfect and logically correct, got confused and unclear due to new data from some finds of fossil material in newly discovered localities. The largest confusion was brought into the problem of anthropogenesis from the African continent, especially in connection with the discovery of the so called Olduvan culture (pebble tools) — i.e. discovering that tools were used already in the early stages of hominization, and that there existed some "side" branches of hominids (the representatives of which were found).

2. An urgent problem, in connection with the present state of knowledge about anthropogenesis, is answering some pressing and principal questions from the neighbouring scientific fields. I think that behavioral sciences (including ethology) represent one part of this scientific region. My assumption is based on a fact that the main species character of man (i.e. his main principal form of biological adaptation to the environment) is his behavior which is controlled by the central nervous system.

3. The fact that behavior is the main biological specialization of *Homo sapiens* forces us to pay attention not only to the role of progressive evolution of behavior as form of adaptation in the history of life on Earth (Leonovich, 1978) but to the analysis of behaviour of the contemporary apes and other

mammals (which have an intricate behaviour and social way of living) as well.

4. Behaviour, being a special form of adaptation of living systems, differs from other forms of adaptation by the following facts:

a) Behaviour is an integrated act — it is the function of an organism as a whole. Behaviour is rendered possible only in a cooperation of sensoric, motoric and integrated systems of an organism in contrast with other forms of adaptation, which could possess a relative local significance and can be relatively unambiguously determined by environmental conditions (e.g. the coloring of bird feathers).

b) Behaviour, being a form of adaptation, is characterized by a high number of possible manifestations and abilities to change form. The same groups of muscles make possible different types of behaviour (flight from predators, bringing up the offspring, search for the food etc.). An identical situation may stimulate different kinds of behaviour depending on the state of an organism and its experience. On the contrary, different situations can stimulate an identical behaviour. This speciality in behaviour should not surprise if we take into consideration the possible quantity of combinations of determinants which influence behaviour (i.e. the state of an individual, his experience and situation in the environment).

c) Besides the marked variability of behaviour there exists some kind of invariability, a constancy of an objective to which behaviour is concentrated. Behaviour is always aimed at reaching an optimal relation with the environment. In the case of man these relations include also relations of etical, aesthetical and political characters.

5. Results of behavioral research provided by a number of scientific fields could serve as a guidance in constructing a model of the process of anthropogenesis in which behavioral adaptations will be stressed the most. On the ground of these data we may formulate clearly at least two theses: 1. The process of anthropogenesis represented the culmination of the progressive evolution of behaviour which is backed by the abilities of an individual to adapt effectively to a new situation using the integrated activity of the highly organized brain. 2. The fundamental speciality of a qualitative character was the pressure of natural selection on a certain pattern of behaviour — behaviour which made possible the existence and improvement of a society.

6. We may presume that during the process of natural selection the socially adapted behaviour gradually accepted some features of the morphologico-functional organization of individuals which were genetically connected with this behaviour. (According to Vavilov's law). Natural selection favoured (during the process of anthropogenesis) in populations an increase of number of individuals who where less aggressive and more sociable, i.e. who exhibited a certain type of "domesticated behaviour". This represented the main symptom, when the rest of morphologico-functional specialities of *Homo sapiens* was formed as correlatives genetically connected with the behavioural properties.

7. It is probable that main significant features which have represented the basis of the hominization process are the inner genetically fixed correlations between the highest cortical mechanisms and the system of hormonal regulation.

8. Very important from this point of view are the results of a long-lasting research of D. K. Beliaev (1979) from Novosibirsk, who performed a selection on foxes according to the symptoms of a domesticated behavior (friendly behavior towards man of a non-aggressive and social character). The selec-

tion was done according to a single symptom only. This kind of selection in the experimental population yielded individuals which were fully "tamed" since the moment of their birth, who exhibited friendship towards man as well as delight from communication not only with man but with the individuals of their own species as well. Besides this, the morphologico-functional symptoms of these individuals were similar to those of dogs (e.g. shapes of tails and ears, reproductive cycles etc.).

9. Analysis of biological basis of human intellect — its unique abilities to analyse, without which no development of social production can be imagined — gains, from these point of view, a special meaning. The research of D. Premack, Wooldruff (1978), Gardner and Gardner (1969), Firsov (1977), Lolygina-Kots (1923, 1935), Fouts (1975), the observations of J. van Lavick-Goodall (1968, 1975) and other scientists provide the essential fundamentals for the formulation of a new concept of anthroposociogenesis.

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