

NO started with the 80-ies, when R. Furchgot and J. Zawadzki showed that the expansion of blood vessels under the influence of acetylcholine occurs only in the presence of endothelial-epithelial-cells lining the inner surface of all blood vessels. Substance secreted by the endothelial cells in response to not only acetylcholine, but also on many other external factors, leading to vasodilatation, has been called "endothelial vasodilator factor". Later, it was proved that the substance is NO gas and the cells are specific enzyme systems capable of synthesizing it.

Studies conducted in 1986 - 1989, it was found that nitric oxide is synthesized in the vascular epithelium and spreads to the adjacent smooth muscles, causing them to relax. According to their chemical structure related to the nitrogen oxide neutral diatomic molecules. Due to the presence of an unpaired electron in the outer orbital of π -molecule NO is highly reactive and free radical properties.

To date evidence accumulated so much that is not yet understood, even overall pattern produced by them. In the body, nitric oxide is produced by oxidation of L-arginine amino acid with simultaneous synthesis of different amino acids under the influence of the citrulline enzyme NO-synthase. The enzyme was named synthase instead synthetase, since its operation is not required ATP energy. Nowadays we studied:

- a) macrophage NO-synthase, which has a cytotoxic effect or a microbicidal;
- b) endothelial NO-synthase, the main role, which is that NO is a potent vasodilator agent and is involved in the regulation of the cerebral circulation.

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ASSESSMENT OF ANTHROPOGENOUS INFLUENCE ON AMPHIBIOUSES OF THE MINSK DISTRICT DURING THEIR REPRODUCTION

Due to the active growth of the urban population, especially acute raises question of the conservation of biodiversity in urban areas. This is especially important for amphibians, which are very sensitive to the manifestation various kinds of human activities. Because of it, the decision of any questions related to their present range, as well as natural and anthropogenous conditions in which these animals change their morphological and genetic indicators is of great importance for the theoretical and practical biology. The purpose of research - to identify the impact of urbanization on amphibian populations Minsk region during their breeding – the most vulnerable period of their life cycle.

The material for the writing of this paper were the results of field research in 2016 (April), held on the pond in the village Schomyslitsa Minsk district area of 952 m². Censused of amphibians conducted by routing method in the period of greatest activity of amphibians (Handogiy, 1995). Features amphibian reproduction were studied by well-known population parameters (Bannikov et al. 1978).

Species diversity of amphibians in the spawning ground in the village Schomyslitsa limited to 3 types.

Gray toads dominated (97,2%) while of outsiders – the moor frogs and green toads was the share only 2,0 and 0,8% respectively dominated. Emergence of amphibiouses on a spawning area wholly depended on weather conditions. In a clear weather, at a temperature from 9 to 13 °C, moderate humidity and pressure, the greatest number of species of Amphibia was observed. Population density of amphibiouses on a spawning area was very low and made 0,26 individuals on 1 m².

The analysis of features of manifolding of amphibians showed that the index of density of layings of caviar on 1 m² a reservoir in a reservoir of of Shchomyslits makes about 0,99. In the territory of all spawning area only seven places with the postponed layings of caviar of an moor frog were revealed. In process of increase in air temperature, the quantity of layings of caviar increased and by the time of the end of spawning made 111. All layings of caviar of gray and green toads were found in 4 places practically in a northern part of a reservoir.

It is well-known that during migration of an amphibian are more subject to anthropogenous loading (Pikulik, 1985; Handogiy, 1995). By us it is established that of 1500 m of Highway Shchomyslits – Minsk was the share about 236 frogs who died under wheels of the motor transport. In separate years of the current century (2006) here on the road about 350 frogs perished (the oral message A. V. Handogiy). The index of density of the died amphibians on this highway made 0,46 frogs on 1 meter (2016).

Thus, absence in city landscapes of the favorable reservoirs for manifolding results in high concentration of amphibiouses on simple spawning areas and as a result – to their high death on roads at migration to them.

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INFLUENCE OF MINERAL FERTILIZERS ON HEAVY METALS ACCUMULATION IN SOILS

Besides main components of fertilizer (batteries) their composition usually contains heave metals and metalloids impurity. Their content degree depends on quality of feed stock and its processing technology. Heavy metals and arsenic concentration in nitrogenous and potash fertilizers is low. These fertilizers also can contain some not big impurities of Mn, Cr, Ni, Zn, Ti – up to 100–400 mg/kg, as well B – up to 50–60 mg/kg. Phosphoric fertilizers (table 1) are most enriched with chemical elements impurities.