

males. Male and female individuals of the same age have no significant differences between the mean total length values ($P > 0.05$). Maintenance of species and balance of density in population are important in terms of economic fishing of this species in the area (Sasi and Demir, 2016).

**EPIGENETIC VARIABILITY OF INVASIVE SPECIES
PERCCOTTUS GLENII DYBOWSKI, 1877 IN WATER RESERVOIRS
OF THE DAUGAVAS RIVER BASIN IN LATVIA**

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Amur sleeper (*Perccottus glenii*, Dybowski, 1877) is a freshwater invasive fish species which has rapidly spread during the last two decades in many European countries. The total registered areal of *P. glenii* covers at least the central and eastern part of Latvia (Pupina, 2015) also. Apart from its well defined adaptation potential, the Amur sleeper also represents a factor not only for the economic loss in the fishponds (Reshetnikov, Schliewen, 2013– as their trophic spectrum includes spawn and small fish – but also for the biodiversity depression in the habitats they colonize (Reshetnikov, 2004). The study of invasion succes must be considered complete with the evolutionary genetics, as it might be correlated with the genetic (Lee, 2002) and epigenetic polymorphism of populations, which directly influence the invasive species capacity for dissemination.

The epigenetic changes in genome may be an important regulatory mechanism responding to the environmental conditions a heritable change. One of the epigenetic mechanisms regulating the gene expression is DNA methylation. DNA methylation is involved in the control of gene expression; give the possibility of speculating that an evolutionary connection between environment, gene expression, and adaptation is possible.

Before being subjected to epigenetic analysis, the *P. glenii* individuals belonging to the some ecological different lakes near from town Daugavpils (Trikartā, Lubaste, Zirgezers, Olimpīc) were morphometrically investigated. The morphological variability by 23 plastic parameters was studied. It was known, that the plastic parameters of fish are most affected by environmental factors. The age of *P. glenii* was determined by scales. For study of influence of environmental factors of epigenetic changes of Amur sleeper (total DNA methylation) the luminometric methylation assay (LUMA) was applied to ecological studies for the first time. This method is based on digestion of genomic DNA with methylation sensitive and insensitive restriction enzymes

(*HpaII* and *MspI*), followed by quantification of the resulting number of cut sites using a luminometric polymerase extension assay on a commercialized pyrosequencing platform (Karimi et al., 2006). DNA was isolated from the muscles of Amur sleeper samples and *HpaII/MspI* ratios were calculated and relative DNA methylation levels were detected in invasive fish Amur sleeper in first time and were compared with its others fish species. Total DNA methylation levels were detected and compared in *P. glenii* samples from ecological different lakes. It was shown, that in the same age, sex and size of *P. glenii* samples the total DNA methylation levels are different in ecological different lakes

The role of epigenetic modifications in adaptation potential of Amur sleeper was discussed.

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РЕЗУЛЬТАТЫ ГЕМАТОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ РЫБ оз. ВОЛЬЖИН И оз. ЧЕРНЕЧНОЕ ЧЕРНИГОВСКОГО ПОЛЕСЬЯ Е.В. Барбухо

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Озера Вольжин и Чернечное – водоемы из группы Деснянских озер, расположенные в Куликовском районе Черниговской области. Данный район по своей специфике является аграрным и большая часть территорий водосбора озер задействована под с/х угодья. В результате их ежегодной химической обработки, представленные гидроэкосистемы подвергаются интенсивному пестицидному загрязнению (Барбухо, 2016). Учитывая данный факт, закономерен вопрос о проведении мониторинговых исследований с целью оценки физиологического состояния рыб при диагностике и прогнозировании развития патологии у рыб в условиях пестицидной нагрузки. В данном случае, именно гематологические показатели, в частности различные морфологические нарушения клеток крови рыб, в виду своей информативности, являются важным элементом мониторинга состояния популяций рыб, в том числе при прогнозировании последствий антропогенного воздействия на аборигенную ихтиофауну природных водоемов.