

LOCAL COLLEMBOLAN DIVERSITY (HEXAPODA, COLLEMBOLA) IN OLD-GROWTH LANDSCAPES OF MIDDLE VOLGA FOREST-STEPPE

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Abstract. *Background.* The border of the Don's part of the glacier passes in the forest-steppe zone of the Middle Volga in the Penza region. It is possible to identify the rich and diverse fauna of collembolans, as well as to find rare species in the old-growth soils of non-glacial areas with the lowest anthropogenic impact. The aim of the work is to analyze the local faunal diversity and the key parameters of collembolan population in the old-growth landscapes of the protected Kuncherovskaya forest-steppe. *Materials and methods.* The territory surveyed in 2000–2016 is not affected by the Dnieper glaciation. Despite the light mechanical composition of soils, soil formation takes place here according to the chernozem type. And finally, the site presents a diversity of forest, steppe and forest-edge habitats at the placore. Soil samples up to 20 cm deep in 2000–2006 and up to 10 cm deep in 2009–2015 were taken in spring, summer and autumn. The collembolans were removed using the eclector method (in total 14 biotopes, 21 accounting, 930 samples, 23 631 specimen were studied). *Results.* The fauna of collembolans at the Kuncherovski site was analyzed. The dominant species and the main parameters of collembolan population in different habitats of forest-steppe (steppe, forest-edge, forest) were presented. *Conclusions.* A high local diversity of collembolans was identified – 122 species were observed at the site of 984 hectares. The fifth part of the faunal spectrum is presented by narrowly spread and (or) rare species. Detection of some European species in the forest-steppe zone of Russia (5 species were noted for the first time) significantly expands the Eastern borders of their natural habitats. We specify a second point of location for the 3 species of collembolans, previously described in Poland, Bulgaria, Ukraine and Slovakia. Another 6 species are new to science (three of them are currently described). Despite the dry conditions of the Kuncherovski site, faunistic complex of collembolans consists of various ecological groups. Predominance of the specialized inhabitants in both forest biotopes (37 %) and open spaces (33 %) is profound.

Key words: collembola, forest-steppe, middle Volga region, rare species, non-glacial areas, old-growth landscapes.