NEW RECORDS OF COLLEMBOLA (HEXAPODA) FROM "VILA NISPORENI" PROTECTED AREA

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<https://doi.org/10.53937/9789975315975.67>

The Protected Area "Vila Nisporeni" is situated in the basin of the Prut River (47°04'N 28°12'E) with surfaces of 3499ha covered by several types of natural mixed deciduous forest on the base of *Quercus* species, including a total of 314 species of vascular plants. Along the natural forest edge in several parts were planted forest belt of *Robinia pseudoacacia*. It grows rapidly and frequently substitutes native tree species.

Samples were collected from soil, litter and rotten trunks of *Quercus* covered by moss of the natural forest and *Robinia pseudoacacia* plantation during 2015 - 2018 years. Litter and soil were sampled by a metallic square frame of 25 cm² for 5 cm depth, each sample including 4 subsamples. Decaying wood and moss were taken additionally by hand. The specimens were extracted using modified flotation method Buşmachi et al., 2015 and fixed in 96% ethyl alcohol. They were sorted, cleared in lactic acid and KOH and mounted on permanent slides using Marc-Andre II solution. The specimens were identified using a phase contrast microscope LEICA 2500 equipped with camera lucida.

For identification of Collembola species determination keys published within Synopses on Palaearctic Collembola (Bretfeld 1999, Potapov 2001, Thibaud et al. 2004, Dunger and Schlitt 2011, Jordana 2012) and Fjellberg (1998, 2007) were used. Geographical distributions and ecological characteristics were selected from the same sources.

As a result of our investigation 60 species of 37 genera and 15 families are revealed in both studied habitats of the Protected Area "Vila Nisporeni". The species number identified in the natural forest was 51 but in *Probinia pseudoacacia* plantation was 44. Common for both types of studied habitats was only 37 species. The most specious were the family Entomobryidae represented by 15 species, followed by the families Isotomidae - 15, Tullbergiidae - 6 species, Neanuridae, Hypogastruridae with 5 species each; other 10 families Onychiuridae, Odontellidae, Tomoceridae, Cyphoderidae, Neelidae, Sminthuridae, Sminthurididae, Arrhopalitidae, Katiannidae and Dicyrtomidae included a small number of species. One genus - *Jesenikia* and five species, namely *Jesenikia filiformis* Rusek, 1997, *Folsomia fimetaria* (Linnaeus, 1758), *Folsomia dovrensis* Fjellberg, 1976, *Orchesella pannonica* Stach, 1960 and *Vertagopus hagvari* Fjellberg, 1996 are new for the fauna of the Republic of Moldova

Comparing the number of collembolan species revealed in summer and winter we found that it was similar, i.e. 38 and 40 respectively. But the representative of the family Entomobryidae especially *Orchesella* and *Pseudosinella* prefers summer having a larger number of species and individuals as well as Arrhopalitidae which have been found usually in summer, if in winter - only in rotten trunk, whilst the most part of Isotomidae species prefers winter time.

Five species *Mesaphorura critica* Ellis, 1976, *Protaphorura sakatoi* (Yosii, 1966), *Parisotoma notabilis* (Schäffer, 1896), *Lepidocyrtus lignorum* (Fabricius, 1775) and *Pseudosinella horaki* Rusek, 1975 were present in all samples of both habitats.

Several collembolan species such as *Deuteraphorura silvaria* (Gisin, 1952), *Thaumanura carolii* (Stach, 1920), *Superodontella montemaceli* Arbea & Weiner, 1992, *Jevania weinerae* Rusek, 1978, *Tetracanthella pilosa* Schött, 1891 etc. show the preference to the natural forest.

The majority of the revealed species in the studied habitats have wide geographic occurrence, namely Palaearctic (18), Holarctic (15), Euro-

pean (13), and Cosmopolitan (8) distribution, and four species have a Mediterranean range, two species *Pseudosinella pygmaea* and *P. variabilis* were described from the Republic of Moldova (Gama & Buşmachiuc 2004).

According to the classification of life forms, 22 collembolan species were epiedaphic, 20 hemiedaphic and 18 euedaphic.

The particularity of collembolan communities which inhabits the ecosystems situated in the Prut River basin is the small number of species from Onychiuridae family. In the Protected Area "Vila Nisporeni" only two species from this family were identified. One of them *Deuteraphorura silvaria* was collected in a few numbers of individuals, being present in two samples in the natural forest. The second species is *Protaphorura sakatoi* (Yosii, 1966) which is common for all studied ecosystems along the bank of the Prut River.

We had about the same result, only two species from the family Onychiuridae, in our previous study carried out on the bank of the Prut River in Northern part of the Republic of Moldova (Buşmachiuc et al., 2017).

The studies were performed within the fundamental project 11.817.08.13F and within bilateral equivalent Moldavian-Polish academic exchange program.