

SPECIES OF THE GENUS *ORCHESELLA* (COLLEMBOLA: ENTOMOBRYIDAE) FROM THE REPUBLIC OF MOLDOVA

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Abstract. *The species from the genus Orchesella are wonderful and beautiful Collembola with distinctive colour patterns, usually present in the litter and moss of the forest, herbs along the streams, shores of lakes and meadows. The species are common and widely distributed, common also in orchards and vineyards. Among those ten registered species, seven species have European and Central-European distributions; two are known from Europe and USA and one species O. pontica has a restricted area of distribution.*

Keywords: *Collembola, Orchesella, Republic of Moldova.*

Rezumat. Speciile genului *Orchesella* (Collembola: Entomobryidae) din Republica Moldova. *Speciile genului Orchesella sunt unele din cele mai superbe și frumos colorate colembole, fiind un component stabil al litierei și mușchilor pădurilor, abundente pe plantele erbacee de pe malurile râurilor, lacurilor și ale luncilor umede. Speciile, ecologic mai plastice, sunt prezente și în plantațiile pomicole și cele viticole. Printre cele zece specii semnalate în Republica Moldova, șapte sunt cunoscute în Europa sau în Europa Centrală; două sunt răspândite în Europa și SUA, iar specia O. pontica se întâlnește numai în Republica Moldova și România.*

Cuvinte cheie: *Collembola, Orchesella, Republica Moldova.*

INTRODUCTION

Orchesella TEMPLETON, 1835 is a genus of Collembola belonging to the family Entomobryidae. According to the updated list, there are 107 species of this genus in the world (JANSSENS, 2009). The species of the genus *Orchesella* are easily recognisable among other Collembola specimens by their clear pattern of the body. They are wonderful and beautiful Collembola up to 4 mm long when full grown, have very variable colour and look very pretty. The ground colour of the insect is generally yellow with a dark pattern formed by black-blue or black-brown pigment. In some species, the correct determination is difficult because of the very variable intensity of pigmentation or lack of distinct, easily discerned details of the dorsal side of the body.

MATERIAL AND METHODS

Samples of soil and litter were collected from the different types of forests, steppes, orchards, vineyards and also wetlands of the Prut and the Dniester Rivers during 1998-2009 years. Additionally, the specimens of *Orchesella* from the tree trunks, herbs and aquatic plants were collected by exhaustor and fixed. Specimens from the soil, litter and moss were extracted by means of Berlese-Tullgren funnels and then fixed in 80% ethyl alcohol. Collembola were identified according to key of Stach, 1960. Several specimens of each species were stored in an alcohol collection.

List of biotopes and localities:

1. Apple orchards and vineyards;
2. "Bugeac", South steppe region;
3. Chisinau city, parks;
4. Wetland of the Lower Prut;
5. "Codri Tigheci" Forest Reserve;
6. Natural forest in Central Moldova;
7. Petrophyte forest near the Dniester River;
8. Natural forest in the South of Moldova;
9. Meadows near the Dniester River;
10. "Plaiul Fagului" State Nature Reserve;
11. Shores of Manta Lake;
12. Wetland of the Lower Dniester.

RESULTS AND DISCUSSIONS

As a result of investigations ten species of the genus *Orchesella* were found in the Republic of Moldova. Most of them were collected from different types of biotopes including forest, steppe, wetlands, orchards and vineyards. For some species such as *O. cincta*, *O. flavescens* and *O. pseudobifasciata* there were found variable forms of pigmentation of the body according to STACH, 1960.

1. *Orchesella albofasciata* STACH, 1960.
Occurrence: Europe.
Ecology: steppe and wetland.
Material: numerous specimens (ssp.), collected in locality (loc.) 2, 4, 9, 11, 12.
2. *Orchesella cincta* (LINNAEUS, 1758).
Occurrence: Europe and USA.
Ecology: litter of forest, meadows and wetland.
Material: numerous ssp. collected in loc.1, 3, 10-12.
3. *Orchesella disjuncta* STACH, 1960.
Occurrence: Republic of Moldova, Poland, Romania, Russia and Ukraine.
Ecology: litter of forest.
Material: loc. 3 and 9.
4. *Orchesella flavescens* (BOURLET, 1839).
Occurrence: Europe and USA.
Ecology: litter of forest.
Material: loc. 3, 5 and 10.
5. *Orchesella multifasciata* SCHERBAKOW, 1898.
Occurrence: Central Europe.
Ecology: widely distributed.
Material: loc. 1-12.
6. *Orchesella orientalis* STACH, 1960.
Occurrence: Republic of Moldova, Romania, Russia and Ukraine.
Ecology: banks of river, shores of lake.
Material: loc. 6, 11 and 12.
7. *Orchesella pontica* (IONESCU, 1915).
Occurrence: Moldova and Romania.
Ecology: banks of rivers, shores of lakes.
Material: loc. 5 and 10.
8. *Orchesella pseudobifasciata* STACH, 1960.
Occurrence: Central Europe.
Ecology: banks of rivers, shores of lakes.
Material: numerous ssp. collected in loc 6, 11 and 12.
9. *Orchesella spectabilis* TULLBERG, 1871.
Occurrence: Central and South Europe.
Ecology: banks of rivers, shores of lakes.
Material: loc.7 and 10.
10. *Orchesella xerothermica* STACH, 1960.
Occurrence: Central Europe.
Ecology: litter of forest and moss.
Material: numerous ssp. collected in loc.2, 3, 6 and 10.

Orchesella xerothermica is a common species during all the season in the litter of “Plaiul Fagului” State Nature Reserve (BUȘMACHIU, 2008). However, in the moss of this reserve, the dominant species are: *O. pseudobifasciata* f. *obscura*, *O. albofasciata* and *O. orientalis*. These species were collected from vegetations along the streams, shores of lakes and meadows (BUȘMACHIU, 2004; 2006). *O. cincta* and *O. multifasciata* are widely distributed and prefer mostly open habitats, such as meadows (KAPRUS et al., 2004), but it can be also found in orchards and vineyards. *Orchesella disjuncta*, *O. pontica* and *O. spectabilis* are rare or with a few specimens in the studied habitats.

Orchesella species from the Republic of Moldova have European and Central-European distributions and only two species have been found in Europe and USA. *O. pontica* has a limited area of geographical distribution including only two countries - Republic of Moldova and Romania (FIERA, 2007).

CONCLUSIONS

The species from the genus *Orchesella* are typical for all natural biotopes. They prefer litter of forest, moss and herbs near the banks of rivers, shores of lakes and meadows. Widely distributed species are common also in open habitats such as meadows, orchards and vineyards.

Orchesella species have European and Central-European geographical distributions. Two species have a large area of distributions including Europe and USA. One species - *O. pontica* is present only in the Republic of Moldova and Romania.

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