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Introduction of some *Entomobryidae* Species (Apterygota: Collembola) from Different Caspian Regions

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Abstract

Worldwide about 8,000 species of Collembola have been described (Bellingeret *al.* 1996 –2012). Most Collembola species have been reported from Europe or North America but little literature or taxonomic keys are available from Asian countries especially from those of the Middle East. The Collembola fauna of Iran is little known and no comprehensive examination of this group of Hexapoda is available for this region. The only notable work on Collembola was carried out by Cox (1982). Recently, studies on the Collembola fauna have started in several regions. In this paper, five genera and five species of the family Entomobryidae are recorded from Sari area (North of Iran): *Heteromorus major* (Absolon, 1901), *Entomobrya multifasciat* (Tullberg, 1871), *Entomobrya atrocincta* (Schott, 1986), *Entomobrya dolifusi* (Denis, 1924), *Pseudosinella octopunctata* (Boerner, 1901), *Seriado mestica* (Nicolet, 1842).

Introduction

The family Entomobryidae is a group of Collembola that also called "slender springtails". They are considered as a group of springtails characterized as having an enlarged fourth abdominal segment and a well-developed furcula. Fourth segmented antenna always is present. The species in this family may be heavily scaled and can be very colorful. They can be found throughout the world in a wide range of habitats but most species live among leaf litter, on the soil surface, under the bark of trees, in the forest canopy or in caves

Materials and Methods

Soil and leaf litter samples were collected mainly from Sari areas, during 2010 and 2011. The samples were placed in dark polythene bags. Collembola were extracted from soil and leaf litter by Berlese funnels (Figure 1). Animals were collected in water and separated under a dissecting microscope. The extracted specimens were preserved in 75% ethanol. Permanent microscopic slides were prepared using Hoyer medium; for immediate identification, a mixture of lactic acid and glycerin (5:1) was used. For observing detailed structures of specimens, a 100× oil immersion objective was used. The specimens were identified by taxonomic keys such as Gisin (1960), Fjellberg (1980, 1998; and 2007). Identification of species was confirmed by Collembola experts such as Dr. Hans-Uergen Schulz (Germany).

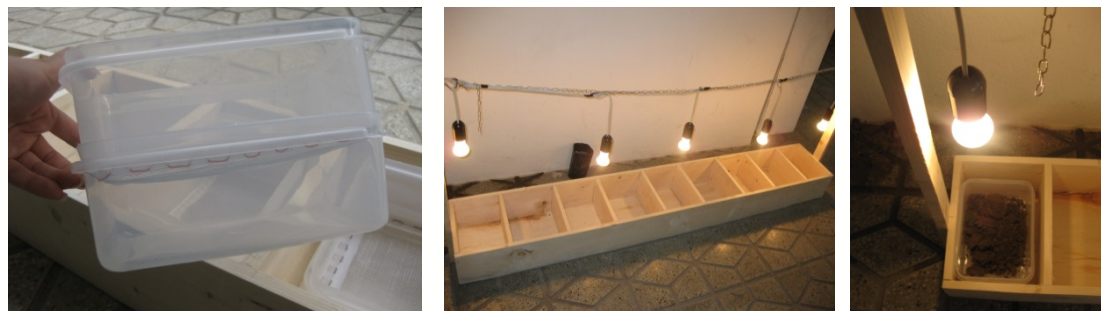


Figure 1. Extractor system for soil animals.

Table 1: Sampling information for Collembola species of different regions from Sari

Location of sampling	Habitat	Date of sampling	species
Kordkheil Vilage	Margin of Citrus orchards	2010/12/24	<i>Heteromurus major</i>
			<i>Entomobrya atrocincta</i>
			<i>E. multifasciata</i>
Abmal Vilage	Citrus garden	2010/06/05	<i>Heteromurus major</i>
Panbehcholeh Vilage	Citrus garden	2010/09/29	<i>E. multifasciata</i>
Yard of university (Sari Agricultural Science faculties)	Under ornamental shrubs	2010/02/11	<i>E. atrocincta</i>
			<i>Lepidocyrtus</i> sp
			<i>Seriadomestica</i>
Yard of university (Natural Resources faculties)	Under Maple trees	2010/10/08	<i>Heteromurus major</i>
			<i>Heteromurus major</i>
			<i>E. atrocincta</i>
Zarrin Abad Forest	Leaf litter	2010/02/11	<i>E. multifasciata</i>
			<i>Pseudosinella octopunctata</i>
Salardareh Forest	Leaf litter	2011/02/23	<i>Heteromurus major</i>
Kiasar Forest	Leaf litter	2011/01/15	<i>Seriadomestica</i>
Poultry Farm	Fertilizer	2010/08/28	<i>Heteromurus major</i>
Dashtnaz	Land farm	2010/05/13	<i>Seriadomestica</i>
Badeleh	Under Pine trees	2010/06/07	<i>E. atrocincta</i>
			<i>E. multifasciata</i>

Results and Discussion

In general, five genera and five species were collected that three species (indicated by *) were new for Iran. The specimens belonging to the genus *Lepidocyrtus* (Bourlet, 1839) were not matched with available taxonomic keys. The identified species are as follows: *Entomobrya atrocincta**, *E. multifasciata**, *Seriadomestica**, *Heteromurus major*, *Pseudosinella octopunctata*.

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