Xenylla mediterranea da Gama, 1964 (Collembola: Poduromorpha: Haypogastruride): A new record for Iranian fauna (Mazandaran province)

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ABSTRACT. During the collecting of Hypogastruridae (Collembola) in Mazandaran province, Xenylla mediterranea da Gama, 1964 was reported for the first time from Iran. With the new record in this study, the number of Xenylla species known from Iran increased to four. Information for species including material examined, description, ecology, distribution, and illustrations are given.

Key words: Xenylla mediterranea, Hypogastruridae, Collembola, Iran, New record

Introduction

The family of Hypogastruridae Börner, 1906 is common and wide-spread and springtails with cosmopolitan distribution (Park & Park, 2006). This family consists of three main lineage of Ceratophysella, Hypogastruran and Xenyllan (Thibaude et al., 2004). Xenylla Tullberg, 1869 has 134 species with the highest number of species in the Xenillan lineage (Bellinger et al., 2017). Members of this genus are usually dark and small or medium sized animals resembling Hypogastrura. They differ from other Hypogastruridae by the absence of Post-antennal Organ. Fourth antennal segment with simple apical bulb and six curved sensila. Thoracic terga II and III without lateral microsensilla, chaeta m2 absent. Retinaculum in various stages of reduction, never more than two setae on dens. Anal spins present, always shorter than claws (Fjellberg, 1998). Cox (1982) reported Xenylla humicola (Fabricius, 1780) and Xenylla maritima Tullberg, 1869 for the first time from Gilan, East and west Azarbaijan provinces for Iran fauna. Yahyapour (2012) reported the species Xenylla welchi Folsom, 1916 for the first time in Iran from Mazandaran and Falahati et al. (2012) from Kohgiluyeh and Boyer Ahmed. Shayanmehr et al. (2013) published a checklist of Iranian springtails which includes three species of Xenylla, including, X. humicola (Fabricius, 1780), X. maritima Tullberg, 1869 and X. welchi.
Folsom, 1916. Yoosefi Lafooraki & Shayannmehr (2015) reported the *Xenylla maritima* Tullberg, 1869 for the first time in Mazandaran province. *Xenylla boerneri* Axelson, 1905 is recognized as a saffron bulb pest in South Khorasan (Tabadkani, 2016), but this has not been reported for the Iranian Collembola fauna. Özata et al. (2017) reported *X. mediterranea* da Gama, 1964 for the first time from Turkey.

**Material and methods**

The study area is located in the Amol Halomsar forest park, and the Babol Bezchaft forest park. Collembola specimens were collected from mosses on the tree in the Halomsar forest park (19 May, 2017) and mosses on the rock in the Bezchaft forest park (01 June, 2017). The species were extracted by Berlese Funnel and stored in 85% ethanol. After clearing, they fixed on the Hoyer medium for preparing microscopic slides and was identified by valid identification keys. Confirmation of genus and species was done by Dr. Dariusz Skarżyński (Poland).

**Results**

**Material examined:** 47 specimens, Halomsar forest park (N36°23'E52°20'), moss, 19.V.2017; 68 specimens, Bezchaft forest park (N36°22'E52°46'), moss, 01.VI.2017.

**Description:** Size 1 mm, colour bluish-grey (Fig 1A). 5+5 ommatidia (Fig 1B). Body hairs slightly longer and coarser, with relatively shorter lateral sensilla on thoracic and abdominal terga. Mandibles is developed (Fig 2A). Ventral tube with 4+4 setae (Fig 2B). Retinacum with 2+2 teeth. Mucro smaller, not clearly set off from dens. Mucrodens significantly longer (Fig 3A). Dens with two setae. Two anal spins (Fig 3B).

**Distribution:** Canary Islands, Corsica, Croatia, Greece, Italy, Morocco Sicily, Portugal, Scandinavia, Spain and Ukraine, (Fjellberg, 1998; Thibaud et al., 2004) – New to Iran (Mazandaran: Amol, Babol) (this study). The specimens were collected on mosses and rock vegetation.

**Figure 1.** *Xenylla mediterranea* da Gama, 1964: A. General habitus, dorso-lateral view (Original); B. Ommatidia, 40x.
Figure 2. *Xenylla mediterranea* da Gama, 1964: A. Mandibles, 40x (Original); B. Ventral tube, 40x.

Figure 3. *Xenylla mediterranea* da Gama, 1964: A. Furca and retinaculum, 40x (Original); B. Anal spins, 40x.
Discussion
The species was originally described as a subspecies of \textit{X. brevisimilis} Stach, 1949. It is distinguished from it by the fact that the number of teeth in the retinaculum is 2+2 instead of 3+3 (Fjellberg, 1998). Babenko \textit{et al.} (1994) found that \textit{X. mediterranea} da Gama, 1964 has sublobal hair and seta $m_5$ present on Abdominal tergum IV, and ranked it as a full species. With our new records in this study, the number of \textit{Xenylla} species known from Iran increased to a total of four. So far, the species \textit{X. humicola}, \textit{X. maritima}, \textit{X. welchi} and \textit{X. mediterranea} have been reported for Iran.

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Conflict of Interests
The authors declare that there is no conflict of interest regarding the publication of this paper.

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گزارش جدید برای فون ایران از استان مازندران

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چکیده: طی نمونه‌برداری از خانواده Hypogastruridae (Collembolla) در استان مازندران، گونه Xenylla mediteranea da Gama، گزارش می‌شود. بنابراین، تعداد گونه‌های خانواده Xenylla در ایران به چهار مورد افزایش یافت. اطلاعات ویژه، اکولوژی، پراکندگی و واحدهای چگال‌شکلی ارائه شد.

واژگان کلیدی: Xenylla mediterranea، Hypogastruridae، پادمااان، ایاران، گزارش جدید

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