



## A checklist of the water mites of Turkey (Acari: Hydrachnidia) with description of two new species

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## Abstract

A review is given of all species of water mites reported from Turkey, based on published records and original data from recent research. In total, 236 species and subspecies in 52 genera and 23 families have been found. Two species, *Atractides (Atractides) anatolicus* Pešić, Erman & Esen **sp. nov.** and *Atractides (Atractides) martini* Pešić, Erman & Esen **sp. nov.** are described as new to science. The following species are reported for the first time for Turkey: *Atractides inflatipalpis* K.Viets, 1950, *A. remotus* Szalay, 1953 and *A. orghidani* Motaş & Tanasachi, 1960. The following synonyms are established: *Hydrovolzia persica* Bader & Sepasgozarian, 1979 and *H. persica anatolica* Oezkan, 1982 = *H. cancellata* Walter, 1906; *Arrenurus (Rhinophoracarus) hazarensis* Özkan & Erman, 1990 = *A. abbreviator* Berlese, 1888. The characteristics of the water mite fauna in the treated area are briefly outlined.

**Key words:** Water mites, new species, biodiversity, Turkey, Asia Minor

## Introduction

Turkey is a transcontinental Eurasian country. Asian Turkey (made up largely of Anatolia), which includes 97% of the country, is separated from European Turkey by the Bosphorus, the Sea of Marmara, and the Dardanelles (which together form a water link between the Black Sea and the Mediterranean Sea). European Turkey (eastern Thrace or Rumelia in the Balkan peninsula) comprises 3% of the country. Anatolia (Asian Turkey, also known as Asia Minor) is a biologically diverse region mainly due to the variable topography and climate which provide many different macro- or micro habitats, being a bridge between Asia and Europe in the south and also linking to the Ethiopian region via the Arabian peninsula, thus providing a natural pathway for the spread of species both north-south and east-west. Its tectonic evolution has continuously changed through Tertiary and Quaternary periods and being an important refugium during the Quaternary ice ages, receiving populations via the Balkans and/or the Caucasus. Anatolia, or its mother continent the Aegeid plate, provided connections with the European, Arabian, Iranian and Caucasian plates many times throughout the Tertiary (especially during the Miocene) and provided many opportunities for faunal exchange (Çıplak 2003).

Research on water mites from Turkey started in 1905 with the publication of Thon who studied water mites collected from Erciyes Mountain (Kayseri Province), and followed later on by the publication of Szalay (1912) who studied water mites from the Ereğli district of Zonguldak Province. After a long time, research on water mites re-started in Eastern Anatolia in 1977 with the comprehensive work of Professor Muhlis Özkan (Özkan 1982), followed by studies of the water mite fauna of Erzurum, Muş, Elazığ and Van Provinces (Özkan 1982; Erman 1990; Küçüköner 2001). Later on, the water mites of Sultan Marshes (Kayseri Province), Konya, Kars, Ardahan, Artvin, Rize, Afyon, Malatya Provinces and the Yeşilirmak River Basin were systematically studied (Özkan *et al.* 1995; Boyacı 1995; Aşçı 2002; Bursalı 2002; Uysal 2005; Esen 2006; Güderoğlu 2006). Additionally, there has been an increase in studies in which material collected from different provinces of Turkey has been examined over the last two decades. To date, three checklists of mites of Turkey have been published including water mites (Özkan *et al.* 1988, 1994; Erman *et al.* 2007). It has been