# Distribution of endemic earthworm species in Turkey

**(Oligochaeta: Lumbricidae)**

**Mete Mısırlıoğlu**

**Abstract**. Seventy-five earthworm species have so far been found in Turkey. Out of them five species (7%) belong to families Criodrilidae, Megascolecidae and Acanthodrilidae, and 70 species (93%) are from the family Lumbricidae. Twenty-five lumbricid earthworms (33% of all species) are regarded as Anatolian endemics, i.e., endemics of the larger Asiatic part of Turkey. In contrast, no endemic species are known from the much smaller Thrace region (European part of Turkey). As expected, the endemism is not distributed evenly all over the territory; the level of endemic species richness is decreasing from the northern part of Anatolia (16 species, 64% from all endemics), through the Anatolian part of the Marmara region (9 species, 36%), Central Anatolia (4 species, 16%), the Mediterranean region (4 species, 16%), the Aegean region (3 species, 12%), and the eastern Anatolia regions (2 species each, 8% each) up to south-east Anatolia (no endemic species recorded). However, more detailed investigation is needed because large areas of Turkey have not yet been surveyed properly for earthworms.

**Key words**. Endemism, biodiversity, earthworms, Lumbricidae, Anatolia, Turkey.

## Introduction

Turkey is divided into seven geographic regions according to differences in their climate, flora and fauna, human habitat, agricultural diversity, and topography (Fig. 1). These regions have been clustered into four main climate regions (Fig. 2). The Aegean and Mediterranean coasts have cool, rainy winters and hot, moderately dry summers. The Black Sea coast (Black Sea Region) receives the largest amount of rainfall. Inner, Eastern and South-eastern Anatolia and also a small part of Thrace have continental climate characterized by hot and dry summers and cold and snowy winters.

It was shown that plate tectonics play a role in the observed species distribution patterns of Oligochaeta (PAVLÍČEK et al. 2010). The most important barriers to earthworm distribution are the North Anatolian Mountains, the Taurus Mountains, and also the so called Anatolian diagonal, a mountain range consisting of Amanos, Binboğa, Munzur, Palandöken, Allahuekber and Kargapazarı Mountains between Hatay and Kars City. In this study, I tried to compare the geographic and climate regions with the distribution of endemic earthworm species.

## Results and discussion

Faunistic studies on Turkish earthworms resulted in recording 75 species. Five of them belong to families Criodrilidae, Megascolecidae and Acanthodrilidae, and 70 species

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