

Discriminant analysis of dental and cranial characteristics in the wood mice *Apodemus hyrcanicus* and *A. hermonensis* (Rodentia, Muridae) from Iran

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Abstract. We studied the morphometric characters of 33 wood mice of the genus *Apodemus* from 3 localities in Iran. The following species were identified: *Apodemus hermonensis* from the Central Elborz Mountains and Sorkhehesar National Park and *Apodemus hyrcanicus* from Noor in the Hyrcanian forests along the Caspian Sea in northern Iran. The 26 measured cranial and dental characters were subjected to discriminant function analysis in order to find morphometric measurements allowing species identification. A stepwise discriminant function analysis showed that 3 cranial and dental characteristics are sufficient to separate the two species and correctly assign 100% of individuals to their respective species correctly. Our work also provides new records of *Apodemus hyrcanicus* and *Apodemus hermonensis* from Iran.

Kurzfassung. Wir untersuchten morphologische Eigenschaften von 33 Waldmäusen aus der Gattung *Apodemus*, die von drei Stellen im Iran stammen. Tiere aus dem Mittleren Elbursgebirge und dem Sorkhehesar-Nationalpark konnten als *Apodemus hermonensis* identifiziert werden, solche aus Noor in den Hyrcanischen Wäldern entlang der Küste des Kaspischen Meeres als *Apodemus hyrcanicus*. Die gemessenen 26 kranialen und dentalen Parameter wurden einer Diskriminanten-Analyse unterworfen, um morphologische Eigenschaften zu finden, die eine Artbestimmung erlauben. Eine schrittweise Diskriminanzfunktionsanalyse zeigte, dass drei Eigenschaften in der Lage sind, die beiden Arten zu trennen und mit 100%-iger Sicherheit zu bestimmen. In dieser Arbeit werden auch neue faunistische Nachweise der beiden Arten mitgeteilt.

Key words. *Apodemus*, wood mice, morphology, discriminant analysis, distribution, zoogeography, taxonomy, Iran, Middle East.

Introduction

Wood mice of the subgenus *Sylvaemus* Ognev, 1924 include taxa which are morphologically similar to each other (MUSSER et al. 1996). *Apodemus hyrcanicus* was previously believed to be a subspecies of *Apodemus arianus*, known from the Talysh Hyrcanian forest of Azerbaijan. However, fundamental morphological differences and important differences in the karyotype (BULATOVA et al. 1991, MEZHHERIN 1997) demonstrated that this is a distinct species with a special position in the phylogenetic tree (FILIPPUCCI et al. 2002). The geographic distribution of the latter species, which is native to the Hyrcanian region, extends from the deciduous lowland forests of the eastern Caucasus in the west to the easternmost limit of the hyrcanian forests on the southern coast of the Caspian Sea (MACHOLAN et al. 2001). *Apodemus hermonensis* (Filippucci, Simson & Nevo, 1989) was described as a new species from Israel but was later found to be widespread, extending to western Anatolia