



## Taxonomic status of the genus *Spermophilus* (Mammalia: Rodentia) in Turkey and Iran with description of a new species

ŞAKIR ÖNDER ÖZKURT<sup>1</sup>, MUSTAFA SÖZEN<sup>2</sup>, NURI YİĞİT<sup>3</sup>, IRFAN KANDEMİR<sup>4</sup>, REYHAN ÇOLAK<sup>5</sup>, MOHAMMED MORADI GHARKHELOO<sup>6</sup> & ERCÜMENT ÇOLAK<sup>7</sup>

<sup>1</sup>Kırşehir Education Faculty, Ahi Evran University, Kırşehir, Turkey. E-mail: onderozkurt64@gmail.com

<sup>2</sup>Department of Biology, Science & Arts Faculty, Zonguldak Karaelmas University, 67100, Zonguldak, Turkey. E-mail: spalaxtr@hotmail.com

<sup>3</sup>Department of Biology, Science Faculty, Ankara University, 06100, Beşevler, Ankara, Turkey. E-mail: yigit@science.ankara.edu.tr

<sup>4</sup>Department of Biology, Science & Arts Faculty, Zonguldak Karaelmas University, 67100, Zonguldak, Turkey. E-mail: irfankandemir@hotmail.com

<sup>5</sup>Department of Biology, Science Faculty, Ankara University, 06100, Beşevler, Ankara, Turkey. E-mail: rcolak@science.ankara.edu.tr

<sup>6</sup>Department of Biology, Science Faculty, Zanjan University, Zanjan, Iran. E-mail: moradi\_g@yahoo.com

<sup>7</sup>Department of Biology, Science Faculty, Ankara University, 06100, Beşevler, Ankara, Turkey. E-mail: colak@science.ankara.edu.tr

### Abstract

We report a new species of *Spermophilus* (Rodentia: Sciuridae), here designated as *S. torosensis* **sp. nov.**, distributed in the Taurus Mountains in southern Anatolia, Turkey. A total of 161 specimens of the genus *Spermophilus* from Turkey and Iran were analyzed for their morphological, morphometric, and karyological characteristics. Uni- and multi-variate statistical analyses of morphologic data for 95 adult specimens yielded 4 distinct groups. Taxonomic evaluations classified the specimens into 4 species *Spermophilus citellus*, *S. xanthopymnus*, *S. fulvus* and *S. torosensis* **sp. nov.** Morphometrics, coat coloration, a brush-shaped tail, and a NFA value of 72 are diagnostic characters that distinguish *S. torosensis* **sp. nov.** from the other species. In Turkey, *S. torosensis* **sp. nov.** was found in 6 locations. The karyotype of *S. fulvus* also is described for the first time as  $2n=36$ ,  $NFA=70$  and  $NFA=66$ ; new karyotypic data is reported for *S. xanthopymnus* from Iran and Turkey.

**Key words:** *Spermophilus citellus*, *Spermophilus xanthopymnus*, *Spermophilus fulvus*, *Spermophilus torosensis* **sp. nov.**, sousliks, karyology, morphology, nonmetric characters, Turkey, Iran

### Introduction

The genus *Spermophilus* is one of the most diverse and widely distributed representatives of the family Sciuridae, containing 41 species that are distributed through western North America, eastern Europe, and northern and central Asia (Herron *et al.* 2004, Wilson and Reeder 2005). In Turkey and Iran, three species are known to occur. *S. citellus* (Linnaeus, 1766) and *S. xanthopymnus* (Bennett, 1835) are found in Turkey and *S. fulvus* (Lichtenstein, 1823) occurs in Iran; all are currently recognized species (Wilson and Reeder 2005).

Previous studies have utilized morphologic, karyologic, and genic data in investigating the systematics and taxonomy of species in the region. Mursaloğlu (1964, 1965) based on morphological and biometrical data reported *Spermophilus (Citellus) citellus thracicus* (Mursaloğlu, 1964) from the European part of Turkey (Thrace) and *S. c. gelengius* (Mursaloğlu, 1965) (Central Anatolia) and *S. c. xanthopymnus* (Eastern Anatolia) and *S. c. xanthopymnus* from the Asiatic part of Turkey. Based on karyological differences, Zima and Kral (1984) recognized *S. citellus* as a taxon separate from *S. xanthopymnus*. This difference was further