

The aim of presented work is to provide characteristics of the karyotypes of scorpions of the genus *Euscorpium*. Genus *Euscorpium* is a typical representative of scorpions in Europe. Its occurrence is wide throughout Europe. Until now, 18 species of this genus have been described. In this work six species were karyologically analyzed and one species was shown to possess only basic diploid number of chromosomes: *E. carpathicus* - $2n=90$, *E. concinnus* - $2n=88$, *E. hadzii* - $2n=68$, *E. sicanus* - $2n=66$, *E. tergestinus* - $2n=60$, *E. naupliensis* - $2n=60$, *E. italicus* - $2n=36$. Description of the karyotypes revealed that all species studied exhibit achiasmatic meiosis; no presence of sex chromosomes was detected. The basic hypothesis of phylogenetic relationships and karyotype evolution of the genus *Euscorpium* was outlined. High interspecies variability in chromosome total count was found and by analysis of the 16S rRNA gene the taxonomic status of the species was confirmed. Hence, it seems that cytogenetic methods can contribute to the understanding of species diversity and differentiation of possible cryptic species within the genus *Euscorpium*.