

Karyotype analysis of selected species from arachnid orders Amblypygi and Uropygi Whip spiders (Amblypygi) and whip scorpions (Uropygi) represent relict arachnid orders which has been found already at Upper Carboniferous strata. Although cytogenetic data from amblypygids and uropygids might be important to reconstruct karyotype evolution of arachnids, cytogenetics of these orders is almost unknown. Presented study is aimed in analysis of karyotype and meiosis in 16 species of Amblypygi and 4 species of Uropygi. Both groups are characterized by considerable range of diploid chromosome numbers ($2n = 24 - 86$ in Amblypygi and $36 - 66$ in Uropygi). Analysed species does not exhibit morfologically differentiated sex chromosomes. Differentiation of sex chromosomes on molecular level was revealed in amblypygid *Paraphrynus mexicanus* by comparative genome hybridization. Obtained data indicate XY/XX sex chromosome system in this species. Comparison of karyotype data indicates reduction of chromosome numbers during evolution of both orders. In Amblypygi, this reduction was accompanied by increase of number of biarmed chromosomes. This trend is not apparent in Uropygi. Karyotypes of most analysed amblypygids and uropygids are also characterized by low amount of heterochromatin. Most studied species exhibit two pairs (Amblypygi) or three pairs (Uropygi) of nucleolar organizer regions. Meiosis is chiasmatic with one, two or exceptionally three chiasmata per bivalent. Prophase I of all analysed species is characterized by presence of a diffuse stage.

Key words: Amblypygi, Arachnida, diffuse stage, fluorescence in situ hybridization, heterochromatin, chiasma, chromosome, karyotype, meiosis, nucleolar organizer region, sex chromosomes, Uropygi