

# Cytotaxonomic Characteristic of Four Species of *plumosus* Group in Genus *Chironomus* Meigen 1803 (Diptera: Chironomidae) from Bulgaria and Poland

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**Abstract:** Four sibling species *Chironomus plumosus*, L., *C. balatonicus* DEVAI, WÜLKER, SCHOLL, *C. muratensis* RY-SER, SCHOLL, WÜLKER, *C. agilis* SHOBANOV, DJOMIN of *plumosus* group, cytocomplex “*thummi*” have been studied cytotaxonomically. They have  $2n=8$ , with chromosome arm combinations: AB CD EF G. AB, CD chromosomes – metacentric, EF - submetacentric, G - telocentric. The species are distinguished by fixed, species-specific homozygous inversions as well as marker chromosome features located in the arms B, C, D, E, F of *C. plumosus*; in arms A, C, D, F of *C. balatonicus*; in arms A, C, D, E, G of *C. muratensis*; and in arms B, G of *C. agilis*. The chromosome variability of these species, expressed by inversions, was considered in three different aspects: fixed, polymorphic and rare chromosome rearrangements. On the basis of species – specific signs of chromosome G a key for determination of the studied species was prepared. Chromosome polymorphism in *C. balatonicus* and *C. plumosus* from different basins (artificial and natural) as well as from different geographical regions was shown. In *C. plumosus* the inversions have varying selective priorities in different ecological conditions. The cytogenetic variability in *C. balatonicus* showed some geographic dependence. In both species chromosome aberrations in low frequency was detected. A dendrogram showing the cytogenetic distance between Palearctic populations of *C. plumosus* and *C. balatonicus* as well as between both species was constructed.

**Key words:** sibling species, “*plumosus*” group, chromosome inversions, cytogenetic distance.