

## **Streszczenie w języku angielskim**

Nepomorpha is a group of hemipteran insects living in water. The majority of them have a specific: the short antennae hidden beneath the eyes. The shorter antennae clearly differentiate Nepomorpha from terrestrial bugs, whose antennae are often very long and extend over the head. The antennae perform a very important function in the life of insects because they bear sensillar structures. The sensillar structures of 61 species of water bugs (38 genera and 11 families) were analyzed to assess whether the adaptation of Nepomorpha to the aquatic environment contributed to changes in its set of sensory organs (sensilla). Thirty different morphological forms of sensilla were described, including 9 types of mechanoreceptive sensilla (sensilla trichodea, chaetica, cone-like, brush-like, club-like, paddle-like, squamiformia, campaniformia and basiconica), 2 types of chemoreceptive sensilla (sensilla basiconica and coeloconica), 2 types of thermo-hygroreceptive sensilla (sensilla coeloconica and ampullacea), and 2 types of sensilla of unknown function which are probably olfactory sensilla (sensilla plate-like and placodea multilobated). It was shown that for some taxa the sets of sensilla are very uniform, while for others very diverse. This diversification was visible in the taxa that inhabits different types of environment, which shows that sensilla evolved along with the antennae during secondary adaptations to aquatic habitats. On the other hand, the set of sensilla specific for the studied taxon coincides with the basic set of sensilla present in terrestrial bugs and other terrestrial insects.

A cladistic analysis based on the examined features was conducted, which confirmed the monophyly of some families (Belostomatidae, Nepidae, Micronectidae, Corixidae, Gelastocoridae, Ochteridae, Notonectidae and Pleidae). A great variety of sensillar types and their various distributions on antennomeres, within the lower systematic units (subfamily, genera, species), lead to the assessment that sensilla are not useful for basic taxonomic studies on Nepomorpha.