

Use of scanning electron microscopy for the study of *Hoplopleura* (Phthiraptera, Anoplura) lice taxonomy

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Analysis of sucking louse morphology often poses problems in identification of species, or even higher taxa. The standard study methods related to the use of different preparing techniques for examination under optical microscopes do not provide enough data enabling analysis of morphological characters, significant for taxonomy. The lice of the genus *Hoplopleura*, associated predominantly with rodents, constitute an interesting study object. The range of their host specificity raises a number of questions, which is linked to identification problems of individual species; a number of them require redescription or revision. The presently reported study aimed at a comparison of different examination techniques used in species identification of *Hoplopleura* spp. – optical microscopy (analysis of preparations for tests under transmitted light) and scanning electron microscopy (SEM). The microscopic preparations were carried out via submerging lice specimens in polyvinyl-lactophenol, and then observation under transmitted light using optical microscope. The scanning images were made using Field Emission Scanning Electron Microscope JSM-7800F. The technique did not require metal sputtering, thus it was possible to recover and reuse intact lice material. It was demonstrated, that the study conducted using the latter technique provides much data, difficult to obtain in a traditional way and improves efficiency of the correct identification; it enables noticing the characters that are invisible in an optical microscope, e.g., the structure and shape of the setae, mouth structure, detailed structure of the last segment of the legs with pads. Moreover, scanning microscopy provides the full image of the shape of pleural plates, which are one of the major characters used in the diagnosis of the genus *Hoplopleura*. The comparison of usability of two microscope analysis techniques for lice the study of lice taxonomy indicates the possibility of a more detailed analysis of a number of characters using the scanning technique. The study of numerous morphological characters of these lice, particularly certain elements useful for taxonomy is problematic and an extension of the methodology with SEM examination now appears to be necessary.