10. SUMMARY

The subfamily Malachiinae is nowadays recognized as a group within the family Meleyridae. It was treated as a separate family in previous works. Malachiinae includes small beetles, several millimeters long, green or black in color with orange pattern. Representatives of this subfamily are not popular subjects of research and are most often by-catched while collecting other beetles. In Poland, this group has never been comprehensively elaborated. The best key for identifying the native species is the study by Kolibáč et al. (2005) covering the fauna of the Czech Republic and Slovakia. Unfortunately, it does not contain all Polish representatives of Malachiinae.

In terms of morphological structure, Malachiinae are distinguished by the presence of light orange skin sacs located on the thorax, which can be everted outward as a defensive reaction. The second characteristic features are excitators - glands that produce a secretion intended to induce the female to copulate. Their location and shape vary between species. The larval stage is known only in a few species and leads a predatory lifestyle, which may reduce the population of insects feeding on crops and wild plants. Adult beetles feed on pollen. Malachiinae prefer warm and sunny environments such as meadows, steppes, forest edges, clay slopes, or river valleys. The subfamily has a worldwide distribution, excluding Antarctica and New Zealand. Available data indicate the Gondwanian origin of the group, the oldest fossils are known from the Eocene. None of the species found in Poland is protected.

The aims of the work were a survey of the collections of Coleoptera, preparation of a key for identifying the genera and species of Polish Malachiinae, and faunistic analysis along with distribution maps. All goals were achieved. During the study of museum materials, the determinations and faunistic data for 4,111 specimens were accumulated and verified. Additional records were obtained from literature and own field collecting. The key for Polish species was developed based on features such as body length, the shape of the pronotum and antennal segments, tips and color of the elytra, legs and, maxillary palps. Faunal data in the systematic part, in addition to the descriptive form, are also presented on maps of Poland with a division into regions according to the Polish Fauna Catalog (1986) and additionally covered with a UTM grid. Records are marked with two types of graphic symbols, circles for verified records and triangles for those from the literature. Additionally, the symbols were marked with five colors depending on the time period from which they came (black before 1900, blue 19001-1945, green 1946-2000, red after 2000, and yellow in the absence of a date). Based on the collected data, it was concluded that the *Troglops silo*, *Ebaeus ater*, *Ebaeus coerulescens*,

Ebaeus rufipes, Attalus alpinus, *Sphinginus coarctatus* should be removed from the list of Polish fauna, because their occurrence was not confirmed from any time period used in this work or old reports are based on erroneous determination of other species. Based on the analysed data Polish fauna of Malachiinae contains of 32 species but 7 of them lack records younger than 1901-1945 period. The genus *Apalochrus* has not changed its coastal range. No new records of the *Troglops* have been recorded after 2000. The only species of the genus *Hypebaeus* occurs rarely but in all time intervals adopted in the study. *Ebaeus flavicornis* has expanded its range to new regions of the country. The already known range has been confirmed for *Ebaeus pedicularius*. *Ebaeus thoracicus* still remains very rare. All three species of the genus *Anthocomus* did not change their status in relation to the KFP. The data on *Attalus analis* has been expanded by one new locality. For *Nepachys cardiacae*, no new records were obtained. In the genus *Axinotrasus*, more localities of *A. ruficollis* have been discovered in recent times, while two other species, *A. marginalis* and *A. pulicarius*, remain widespread throughout the country. *Cerapheles terminatus*, although collected in single specimens, has been recorded from all over Poland except the south-eastern regions and the Białowieża Forest. Both species of the *Charopus* have not changed their range of occurrence. In the genus *Clanoptilus*, the most common remains *C. marginellus*. The occurrence of *Clanoptilus geniculatus* has been confirmed by new records. No new data were found in the post-war period for *C. affinis, C. elegans, C. spinipenis*. Additionally, no new records for *C. spinosus* were found during the query. *Clanoptilus stangulatus* occurs only in the Tatra Mountains. *Cordylepherus viridis* and *Malachius bipustulatus* remain the most numerous and most widespread representatives of the Malachiinae in the country. *Malachius aeneus* is not as numerous as the previous two species, but it is also present in almost the entire country. *Malachius rubidus* localities are scattered over a large distance, suggesting a large range but low population density. *Malachius scutellaris* occurs in the south and southwest of the country, and the survey revealed new localities in Masovia.

Further research, especially a more detailed knowledge of bionomics, is necessary to determine whether species known from single specimens but in different locations are really rare or simply lead a secretive lifestyle.