

## SUMMARY OF DOCTORAL DISSERTATION

Two main aims of the thesis were to conduct archaeobotanical analyses of plant macroremains collected at the Early Bronze Age (EBA) sites and to research taphonomy of the sampled features. Additionally, issues of taxonomy, weed infestation, agricultural activities were considered. Along, a hypothesis of dominance of animal husbandry over plant cultivation within the Únětice communities was examined. The basis of the research are analyses of charred plant macroremains i.e. fruit, seeds, and charcoal. The materials were collected at three sites located within borders of the Silesian Lowlands. The first is a large circular structure in Pietrowice Wielkie site 13, commune Pietrowice Wielkie whereas the second is a settlement in Radłowice site 22, commune Domaniów. Both of the sites are associated with the Únětice culture (UC). The last is a grave field of the proto-Mierzanowice culture located in Dzielnica site 17, commune Cisek. The subject was chosen because of the lack of archaeobotanical data from the described territory during EBA and the insufficient recognition of the UC agriculture in Poland. Furthermore, the sites in Dzielnica and Radłowice, thus far, have not been studied by means of archaeobotanical analyses. Whereas some of the materials of Pietrowice Wielkie were previously researched by Agata Sady-Bugajska of the Silesian Museum in Katowice. This dissertation has been divided into six chapters followed by four appendices. In the first chapter introduction to the methodology together with geographical, environmental and archaeological backgrounds of the Silesian Lowlands are described. Chapters four and five are the main core of the thesis. Major information of case study sites and both quantitative and quality results of archaeobotanical analyses are shown in chapter four. Whereas, chapter five is focused on taphonomic processes including deposition and/or post-deposition of seeds, fruit and charcoal observed in the studies assemblages. Additionally, the results obtained from Pietrowice Wielkie, Radłowice, and Dzielnica are compared both with each other and with identifications collected from other EBA sites. In total 438 soil samples were floated and researched. The analysed residues demonstrate a relatively low density of macroremains per litre. The remnants are badly 118 damaged as a result of high charring temperature and/or other depositional and postdepositional processes. During two seasons of research in Pietrowice Wielkie 284 soil samples were collected, which yielded 3753 seeds, fruit, and charcoal fragments. The density of plant macroremains per litre was established to 8.83. Over 50% of the whole assemblage comprise of charcoal fragments, of which the most frequently occurring taxa is oak (*Quercus* sp.). Hulled wheats (*T. monococcum*/*dicocon*/*spelta*), along with barley (*Hordeum vulgare*), are the most common cultivars identified in the residues. The weed infestation in Pietrowice Wielkie equals 41.9%. Sixty-three soil samples from the Radłowice site were floated resulting in 1157 plant remains and the density of 10.42 items per litre. Similarly to Pietrowice Wielkie, in Radłowice charcoal fragments comprise more than half of the whole assemblage and pieces of oak (*Quercus* sp.) are the most common. The second biggest group comprise of cultivars and ruderal and segetal species. Likewise in the Pietrowice Wielkie materials, barley (*Hordeum vulgare*) and wheat (*Triticum* sp.) were observed in the residues. Other taxa, such as common millet (*Panicum miliaceum*), einkorn (*T. monococcum*) and emmer (*T. dicocon*) wheats, lentils (*Lens culinaris*), rye (*Secale cereale*), and oat (*Avena* sp.) were as well identified. The weed infestation equals 47.37%. In total, 49 soil samples were collected from



the grave field in Dzielnica. It resulted in 694 plant macroremains identified yielding the density of 7.17 items per litre of soil. The largest group, described as "other" comprise of fragments of organic slag, nutshells of common hazel (*Corylus avellana*), and feather grass (*Stipa* sp.) awns. The second biggest group comprises of ruderal and segetal plants, and hulled wheat (*T. monococcum/dicoccon/spelta*) chaffs. The cultivated species comprises only of 7% of all identification, which is a reason for the very high weed infestation estimated to 74.88%. Furthermore, features of various chronology (from the Neolithic to the Late Bronze Age) were sampled in order to compare the botanical assemblages and verify the dating. The analyses of taphonomy (Chapter V) showed that only ca. 30% of identified plant remains from the Pietrowice Wielkie site could be interpreted as primary deposition, which is directly connected with the function of the feature. In case of remaining sites, most probably, the fills of the features are of secondary and/or tertiary character. 119 The last chapter contains of conclusions and general discussion. The results of the large-scale (over 430 researched soil samples) analyses allow to draw interesting interpretations. Firstly, the assemblages from Pietrowice Wielkie and Radłowice show a resemblance, most likely, due to storage and consumption of products that were undertaken at the sites as well as similar purpose of both sites. Secondly, differences both of qualitative and quality character were noticed between materials from two aforementioned sites and Dzielnica. The residues from Dzielnica most probably represent fuel waste, accidentally deposited in the grave fills. Generally, the differences and similarities among sites might be the result of several factors, among which differences in the purpose and localisation of the sites. Nevertheless, features with various functions and chronologies in Dzielnica have been examined for archaeobotanical material, and it was observed that the plant assemblages did not differ significantly. Therefore, it is assumed that the homogeneity of materials is a result of contamination, most likely caused by older materials. Thus, the plant remains found in the grave fills should not be associated directly with the EBA activities. In the light of other EBA sites, it appeared that the most common identified cereals are emmer (*T. dicoccon*) and einkorn (*T. monococcum*) wheats, hulled wheats (*T. monococcum/dicoccon/spelta*), and barley (*Hordeum vulgare*). The studies of taphonomy demonstrate that only in case of Pietrowice Wielkie we can connect the identified plant macroremains with their primary use and deposition. Whereas, in case of remaining sites taphonomy is uncertain and therefore it is not possible to directly link the materials with the EBA settling. The assemblages, probably, represent secondary or tertiary deposition. Four appendices were added to the main part of the dissertation. The first appendix contains of information about analysed samples including, among others, the sampling depth and volume. In the second all the samples with their identifications are listed meanwhile in the third data set and taphonomy charts are demonstrated. Within the charts suggestions of possible filling episodes of pits, ditches and graves were marked.