Michal Ernée, **Prag-Miškovice. Archäologische und naturwissenschaftliche Untersuchungen zu Grabbau, Bestattungssitten und Inventaren einer frühbronzezeitlichen Nekropole.** Römisch-Germanische Forschungen, volume 72. Publisher Philipp von Zabern, Darmstadt 2015. 322 pages with 187 figures, 64 plates, 47 tables.

The analysis of the rich early Bronze Age cemetery discovered in the capital of the Czech Republic was recently published by Michal Ernée and eighteen co-authors, in the monographic series of the German Archaeological Institute. The first author was the leader of the excavations in 1999–2001 presented in the volume, and is currently a faculty member of the Institute of Archaeology of the Czech Academy of Sciences, Prague. The wide-ranging analysis of the forty-four graves using a great deal of scientific methods was funded by a state project in the Czech Republic (2007–2009, GA404/07/1408, An Early Bronze Age Human Community. A Complex Analysis of the Early Bronze Age Únětice Culture Cemetery at Prague 9 – Miškovice) and by a fellowship of the Humboldt Foundation in 2010–2012, Halle. Some results of the research were already available before 2015, including an elaborate paper on metallurgical analyses and radiocarbon dates from the cemetery (M. Ernée / J. Müller / K. Rassmann, Germania 87, 2009 [2012] 355–410).

This volume follows the well-edited structure of the Römisch-Germanische Forschungen series. As a conclusion after the overview of the Czech research history in the Introduction, Ernée emphasizes the lack of recently excavated Bronze Age burials analyzed by modern methods. The present volume is supposed to fill this research gap (p. 5).

With the contribution of Jan Zavřel, the following two chapters include the detailed description of the geological and terrain conditions of the site,

as well as the circumstances and methods of exploration (pp. 6–19). The excavation took place in the suburban areas of Prague, near the Mratínský brook, and revealed settlement traces of several archaeological periods and forty-four graves of the early Bronze Age Únětice culture as well. Since the disposition of the excavation trenches was determined by the location of edifices, there was no possibility to examine the full extent of the cemetery or the grave groups. The burials were excavated in strata of five to ten centimetres, which were documented by photography and measured drawings, similarly to the documentary method of the extended Early Bronze Age cemeteries in Austria (Taf. 1–49; W. Neugebauer / Ch. Neugebauer-Maresch, Franzhausen. Das frühbronzezeitliche Gräberfeld I 1–2. Fundber. Österreich Materialh. A5, 1–2 [Vienna 1997]).

The results of the archaeological evaluation of the graves that formed six groups (A, B, C, D, E and F) are described in the following eight major chapters, discussing the elaborate description and the evaluation of the phenomena and the findings separately. The results of the scientific analyses are presented in the second half of the volume. This thematic confinement results in several repetitions, for example, stone tools possibly used for silver working from Grave 16 are mentioned in at least four places (p. 113; pp. 130–140; pp. 152–155; pp. 284 s.). The processing order is similar to that of the Gemeinlebarn cemetery (F. Bertemes, Das frühbronzezeitliche Gräberfeld von Gemeinlebarn. Kulturhistorische und paläometallurgische Studien. Saarbrücker Beitr. Altkde 45 [Bonn 1989]), but in the case of the Miškovice cemetery the grave catalogue is not published as a separate volume but as the first chapter of the archaeological evaluation (pp. 20–47).

The description and documentation of the burials is very thoroughly done. Due to this accuracy, several types of grave pits and categories of body disposal could have been established (pp. 48–61), the latter being explained only in some cases with taphonomic or intentional manipulations, like binding the legs together (p. 59; p. 61). Differences in the size of the grave pits were only observed between earlier and later burials, the extent not correlating with the sex of the deceased or the type and the number of grave goods. The comparison of grave groups and the relationships between individual burials, however, do not get much attention in the volume. Concerning the linkage between individual graves the authors shortly refer to their vertical stratigraphy (p. 52), which is indispensable for setting the chronological models later.

Direct or indirect traces of containers for the dead bodies were observed in fourteen cases (pp. 62–68), suggesting that coffins were commonly used in the later, classical Únětice phase of the cemetery. The burials are characterized by a wide spectrum of grave structures from coffin supporter stones to elaborate stone constructions. Interestingly, the grave of a girl of five to eight and a girl of ten, whose sex was determined by DNA testing (see below), were edged and covered by many stones. At the same time, stones roofed the completely empty Grave 28, interpreted as a cenotaph, in which even the soil phosphate values did not indicate in situ any organic material decomposition (see below). In one case, the remains of a child were discovered in a large storage jar (pithos) among several burials excavated from below Graves 34 and 24.

One of the most exciting parts of the volume is the chapter discussing the funeral customs (pp. 73–81). In addition to the accurate excavation observations, systematic soil phosphate analyses performed by Antonín Majer helped reconstruct the individual funerary processes (pp. 216–228). Based on these, four kinds of burial forms could be identified: (1) primary graves, where the corpses were laid directly into the grave pit, and decomposed there; (2) secondary graves, where the decomposition of the corpse had occurred somewhere else, and the body was buried in skeleton state; (3) symbolic graves, where soil phosphate values did not indicate any organic material decomposition at all; (4) exhumed graves, where the high soil phosphate values within the pits referred to previously buried corpses that were removed at various stages of the decomposition process. Secondary burials were detected in four cases, of which Grave 8 is a particularly interesting example. Here, the regular rectangular arrangement of the bones indicated that the remains and grave goods could have been buried in a wooden box (Taf. 25, D–F). In the case of the only consecutive burial revealed it can be assumed that partially decomposed human remains were placed into a previously used grave pit.

This part is followed by several chapters on the detailed archaeological analysis of the grave inventory (pp. 81–167). Beside the tables at the end of the volume the most important object types, their analogies, and their dispersion are all illustrated by high quality inline images. The distinction of typological features is facilitated by interpreting graphics (e.g. Ösenkopfnadel Abb. 55). A total of twenty-one vessels were recovered from the graves, which allowed the distinction of an earlier (A) and a later (B) burial horizon. It is somewhat confusing that similarly to the grave groups, chronological phases are also indicated in capital letters. The evaluation of the ceramic finds is thorough, strictly based on typochronological considerations. It is, however, regrettable that manufacturing and functional aspects or use-wear analyses that were

carried out in the case of other find types were not applied in the analysis of pottery at all. Some differences could be observed in the placement of vessels of the earlier and the later burial horizon, but conclusions were drawn from only a small number of cases.

A large number of bronze objects were found in the excavated tombs, eighty-six pieces altogether. The elaborate formal analysis of the spiral beads and Noppenringe provided some results on the production technique, but the variants found could not be related to chronological differences or clothing habits. According to their location in the grave, bronze pins could have been used for binding a cloak or fixing the shroud, but they could have had decorative function or were simply added grave goods as well. A pair of pins were found in a single grave. The varied shape of the pins proved to be a more reliable chronological indicator than the Noppenringe and spiral beads. Classical Únětice eyelet type pins (Ösenkopfnadel) were obtained from six graves belonging to the later phase (Horizon B). Bronze weapons and tools were found in a relatively low number of graves, the chisel from Grave 32 is quite uncommon in the Early Bronze Age of the Czech Republic area.

In my opinion, the most spectacularly illustrated part of the book is the chapter on the amber finds (pp. 116–125). Ernée has elaborated the typology of Early Bronze Age amber beads on the basis of the rich collection of amber finds from the Miškovice cemetery (ninety-three beads and spacers), completed by a broader collection of material from other Únětice cemeteries in the Czech Republic a few years earlier (M. Ernée, Pam. Arch. 103, 2012, 71–172). After the Czech publication, the typology became also available in German language in the monograph under review. The ninety-three amber artefacts were recovered from eleven graves, mostly forming multi-strand necklaces in female burials. Aside from the amber finds, the few seashell jewels from the cemetery are considered imports as well. Evidencing prehistoric seashell jewellery provenance through long-distance exchange networks of raw materials instead of fossil sources, stable isotope studies have been published more recently (B. Bajnóczi et al., Journal Arch. Scien. 40, 2013, 874–882). Almost all of the four pieces of chipped stone tools came from graves belonging to Horizon A.

The previously mentioned stone artefacts used for punching and hammering (Grave 16) were subjected to stereomicroscopic use-wear analysis and scanning electron microscopy, which helped identify silver mica flakes on the surface of one of the tools. Animal bones excavated in four graves may be interpreted as the remains of food offerings. Soil phosphate analyses aiming at the identification of further food residues resulted in different values between the contents of vessels and their environment in two cases. The type and context of the artefacts from the graves were compared to seven hundred fifteen Únětice culture burials from twenty-two sites within the Czech Republic. Evidencing that graves with amber beads, eyelet type pins and classical Únětice vessels concentrated in Central Bohemia.

To answer why certain objects were placed in the graves, Ernée resorted to the system developed by François Bertemes (Bertemes, Gemeinlebarn op. cit.). Some objects, such as food offerings and their containers or vessels, were placed in graves for ritual reasons (Beigaben), while clothing elements (Tracht) were put into the ground as parts of the deceased's garments. The personal property of the departed could also be placed in the grave (Mitgabe). In their opinion, these personal belongings expressed the social status of the dead in the first place. There was no case of subsequently, intentionally deposited artefacts in the investigated graves of the Miškovice cemetery, however, tiny vessel fragments were accidentally mixed in the infill of the tombs. The above listed formal categorization is applied to the artefacts excavated in the graves in Table 14. However, there are several uncertainties in their determination, like in the case of necklaces placed into bowls in several graves. There are countless other reasons for placing artefacts into the grave: underlying taboos, considering them unclean, offerings, gifts or cursed artefacts of the burial community, and so on. Buried artefacts therefore should not be investigated in connection with the dead exclusively, but also in the context of the living, as the funeral is also a means of self-expression of the community (K. Rebay-Salisbury in: B. Christiansen / U. Thaler [ed.], Ansehenssache. Formen von Prestige in Kulturen des Altertums. Münchner Stud. Alte Welt 9 [München 2012] 433).

A significant part of the book is the multiple aspect evaluation of the remains of the thirty-nine recovered individuals (pp. 168–215). Gender and age estimation based on morphological observations were carried out by Petra Stránská. Primary definitions by anthropologist Pavel Kubálek, who was present at the excavation, were also taken into account during the analysis. For twenty-four individuals age estimations were supplemented by histologic analyses of femur thin sections by Bärbel Heußner. Table 25 shows the results of the morphological (Kubálek, Stránská) and the histologic examination. Unfortunately, it is not clear which one is considered to be more reliable when the two methods lead to different results (thirteen cases), especially if taking into account the limitations of both methods (grave descriptions and analyses are both based on morphologically estimated ages).

The palaeopathological studies were carried out by Jakub Likovský. However, the poor preservation of the bones greatly limited the possibilities of analysis.

DNA-based sex determination opens up new perspectives for archaeological evaluation, especially in the study of gender roles. The method can provide information on the biological sex of children, preadolescents and morphologically unsexable individuals. It is a special virtue that the method was widely applied in the study of the Prag-Miškovice cemetery by Martin Hájek (pp. 201–204). Based on a total of twenty-five sampled individuals (multiple bone and tooth samples were taken from every single individual) nine female and four male individuals could be identified. The deceased buried in Grave 14 was anthropologically determined as a female, but genetic testing identified it as a male. Since grave goods were not included in this tomb, the results did not greatly affect the archaeological interpretation. Burial contexts of male and female children are separately discussed in other chapters as well. The identification of the sex of four individuals, whose remains proved to be insufficient for genetic testing due to low chromosomal content, is controversial. In the summary tables, the mature individual from Grave 32 buried with a dagger and a chisel is referred to as possibly female by the genetic testing (Tab. 17), and as a male based on the grave inventory (Tab. 29). The mitochondrial DNA examination of two individuals (Grave 13 and 20) revealed that they belong to haplogroups U and H, which are both very rare in Europe.

Thanks to the work of Corina Knipper, stable isotope analyses could be more successfully implemented (eleven individuals; pp. 207–215). Based on the isotope ratios obtained from teeth enamels, half of the examined individuals could have spent their childhood in a geologically different environment from Miškovice. Various geological features of the wider region of the cemetery, however, may indicate an intraregional change of residence. Moreover, the greater number of women under this analysis supports the possibility of local marriage mobility as well.

An important focus of scientific studies here is on the analysis of bronze or copper artefacts. On the one hand, stereomicroscopic examination carried out by Miroslav Králik revealed plant fibers and textile residues in the corrosion of metal finds (pp. 237–245). Possible wool fibers were preserved on the surface of the dagger from Grave 16, while traces of human hair could be identified on one of the Noppenringe from Grave 42. On the other hand, elemental composition analysis of the metal finds was carried out by Jaroslav Frána, who examined forty artefacts by X-ray fluorescence analysis (RFA) and neutron activation analysis (INAA) (pp. 246–260). Non-alloy objects, objects with 0,5–2 percent and 2–15 percent tin content were defined, of which the latter clearly refers to deliberate alloying. The majority of the alloys show high antimony, silver, and arsenic content, which refers to a specific raw material, called Ösenringkupfer. This metallurgical tradition was widely spread in the eastern lines of the Alps and east of there. Principal component analysis comparing the results of the elemental composition and lead isotope analyses refined the opportunities in provenancing the raw materials (Knut Rassmann, Zofia Anna Stos-Gale, pp. 261–265). Based on this, the sources of copper raw materials could be located predominantly in present-day Slovakia, mainly in the Spania Dolina area. For some of the artefacts, however, the Tyrol and Harz Mountains have been identified as possible sources as well.

The thirty C-14 results obtained from twenty graves were suitable for the detailed modelling of the absolute chronology of the graves (twenty-three radiocarbon samples were analyzed in Kiel, seven in Utrecht). The dates were calibrated and modelled by Pieter M. Grootes, John Meadow and Marie-Josée Nadeau, whose results indicate that the most probable dating of the burials falls between 2200–1800 B.C. (pp. 266–284). The later, classical Únětice graves (Horizon B) can be dated from 2000 cal. B.C. onwards. Ernée compares the absolute chronological model of the burials and the typochronology of the finds in one of the closing chapters (pp. 294–297). According to the typochronological study there is a gap between the earlier (Horizon A) and the later graves (Horizon B), however, it is not clearly justified by radiocarbon dating. The youngest burial is Grave 27, which can be dated around 1800 B.C., to the post-classical (nachklassische) period of the Únětice culture. Classical Únětice tombs represent the R BA2 period, which was preceded by a heterogeneous development of artefact types (mainly ceramic). This may explain the relatively late dates of Early and Proto-Únětice graves (Horizon A).

Infrared spectroscopic examination of fifty amber beads indicated Baltic provenance, thus they can be interpreted as long-distance raw materials (pp. 234–236). In contrast, the petrographic analysis of the stones forming grave structures referred to local origin. The rocks could be collected from the surface in a one-and-a-half to three kilometres area around the site (pp. 229–232). The provenance of stones plays a significant role in modelling the labour invested in the construction of each grave (pp. 286–288). According to the calculations based on the quantity of the excavated soil and the weight of built-in stones, the construction of Grave 16 (an adult buried with an axe, a chisel, and bronze work-

ing tools) and Grave 27 (a young girl buried with a spherical head pin) could have taken more than one day.

It was impossible to identify intentionally reopened graves with in situ corpses among the burials, not even by the examination of bronze patina traces on human bones (pp. 289–293). The occurrence of grave robbery is relatively rare in the Early Bronze Age of Central Bohemia anyway. The explanation and theoretical background of secondary burials revealed by soil phosphate analyses are discussed here, again, by Ernée, he considers them to be a variation of regular burials.

In the last chapter (pp. 298–300), the findings of the cemetery are compared to those of the abovementioned twenty-two Únětice burial sites in the Czech Republic. Based on this, the »inventory« of the Miškovice graves can be considered as above average. Amber beads, for example, generally occur in seventeen per cent of the graves there, while they occur in thirty-seven per cent of the burials here.

Due to the low number of burials and the partial excavation of the grave groups, a traditional cemetery analysis could not be performed on the burials from Prague-Miškovice. At the same time, the biggest deficiency of the book is that the interpretational summary of the individual results (applied at least for each grave or grave group) is missing. Information obtained from a variety of sources could shed some light on exciting personal stories and individual identities. Perhaps the authors have deliberately left open such an accomplishment of the interpretation of the results for further studies. Unfortunately, the thoroughness of the documentation slightly turns into over-categorization in the typological chapters, which does not always contribute to the interpretation (e. g. in the case of the grave pit forms, Abb. 20–21). Due to the book format, handling and review of this large amount of information are hard sometimes, even for forty-four graves. Publishing all data in the form of a digital or online database could be a saving solution to facilitate search and data management in the case of extended cemeteries evaluated to a similar depth (cf. M. Lochner / I. Hellerschmid: Dokumentation Franzhausen-Kokoron. Ein Gräberfeld der jüngeren Urnenfelderkultur aus Zentraleuropa. Erweiterte interaktive Datenbank mit Illustrationen und Fundbeschreibungen. Version 03/epub [Wien 2016]).

The greatest virtue of the volume is the combination of multidisciplinary research methods, even if this integration leaves something to be desired. However, Ernée's striving to maximize the amount of information on the burials and the deceased that can be extracted from the very first moment of the excavation to the often complex organization of scientific studies is highly valued. The graves represented in the book are well-documented ones from the Early Bronze Age of the Czech Republic area, and serve as excellent examples to fill the research gap mentioned in the introduction. The combination of accurate excavation observations and composite evaluation results gives a shaded picture of the variety of Early Bronze Age burial customs, the diversified sources and wide-ranging networks of raw material procurement, or the sequential and parallel systems of various chronological phases. Another positive aspect of the monograph is the beautiful design and the careful composition. The volume written and edited by Michal Ernée, deploying several excellent authors, may be a frequently referred work of Central European Bronze Age archaeology, and serve as a starting point for further investigations in the following years.

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