Editiones externae

M. Novotná: Die Vollgriffschwerter in der Slowakei. Prähistorische Bronzefunde Abt. IV. Bd. 18. Franz Steiner Verlag, Stuttgart 2014. – ISBN ? – 136 Seiten, 42 Tafeln.

The latest volume of the fourth *Prähistorische Bronzefunde* series catalogues the 181 solid-hilted swords *(Vollgriffschwerter)* and sword fragments found in the territory of Slovakia. By this volume the solid-hilted swords of the eastern Urnfield culture have become almost entirely researchable from Northern Germany over the Carpathian Basin and Italy to Greece. By now only the Check volume is missing for a complete systematization of all the known solid-hilted swords made in the Alpine region and its vicinity. This book bears a special importance in respect of the Carpathian Basin, since it enables the uniform investigation of the distribution and technological development of this region's solid-hilted swords.

The earliest solid-hilted Apa-type swords, the first items discussed in the volume appeared during the Hajdúsámson horizon, in the P. Reinecke (Rei.) Br. B1-B2 period. Although it is certain that the Eastern Slovakian stray find discovered in the Valley of the Topľa Stream belongs to the Middle Bronze Age bronze workshop of the Upper Tisza region, fitting separately cast hilts to swords cannot be considered a general practice during this period.

The actual mass production of swords began only in the early Urnfield period namely in the Rei. Br. D. period, to which phenomenon the Slovakian region is no exception. Here the solid-hilted swords of the Tumulus culture are missing; therefore the weapons of the Koszider period are followed immediately by early Urnfield period items. Effects of the armament race of the Rei. Br. D and Ha A1 periods can be noticed in the northern areas of the Carpathians: almost half of the 181 items presented in the volume had been created during these two periods.

The Riegsee-type sword, as well as the Ragály-type in the Carpathian Basin is one of the most common swords of the Rei. Br. D period in Central Europe. The attached maps of the volume greatly represent that in Slovakia their distribution is concentrated in the Gemer and Košice Basins. The author considers the sword hilt found in Martinček a separate type, or rather an artefact that cannot be listed to any types; indicating that transitional stages of the technological development can be also discovered on the swords produced in this area.

Casting of the Liptov-type, flange-hilted swords *(Dreiwulst-, Mehrwulstschverter)* began in the Rei. Ha A1 period, i.e. in the second half of the early Urnfield period. Most of these weapons are know from hoards hidden in the following Rei. Ha A2 period. This uncertainty of dating can be also observed in the case of Slovakian pieces, since only the dating of unique finds is doubtful.

Most of the artefacts of the Rei. Ha A2 period – which is a short period and often interpreted as a transitional phase – had begun to be in use during the previous horizon, while the use of artefacts appearing at this time also extends into the following Rei. Ha B1 period. This duality also characterizes the dating of the Högl- and Zvolen-type swords, which must have been used over a long period of time similarly to the Liptov-type weapons. For dating flange-hilted but atypical swords the author had to recline upon the composition of depot finds and T. Kemenczei's PBF volume systematizing swords found in Hungary, however, in the case of unique finds their dating to more periods reflects the chronological uncertainties resulted by the differences of the time of production and use. The distribution area of the swords collected in this volume reveals that by the Rei. Ha A2 period the presence of the armed elite is transferred from the Gemer and Košice Basins to the inner valleys of the Tatra Mountains, to the surroundings of larger ore sources.

Compared to their number in Hungary Rei. Ha B1 period swords with cup-shaped hilt *(Schalenknaufschwerter)* are only known from Slovakia in a low number (18 pieces). M. Novotná's investigation proves that although their distribution is sporadic, it covers the total area of the Northern Carpathians. Based on their low number and great spreading one can suppose that the use of flange-hilted swords appearing in the previous period extended into the young Urnfield period. Due to the few number of formal variants the author applies T. Kemenczei's Hungarian, T. Bader's Romanian or the Ukrainian typological system of J. V. Kobal' in every cases. This allows us to examine swords which can be considered unique in Slovakia within their whole distribution area.

The collection ends with antenna-hilted swords *(Antennenschwerter)* dated to the youngest stage of the Urnfield period, which

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can be analysed more easily within Central European context due to their few parallels from the Carpathian Basin.

The majority of swords collected in the volume originates from depot finds and weapon hoards with homogeneous composition, and the number of finds getting to collections in the 18th century within uncertain circumstances is also high. Beside them weapons found in burials or an authentic feature of a settlement only scarcely occur. All the same, on the strength of dating and place of origin the author aimed to connect each finds and assemblages to the traditional archaeological cultures, and thus to distinguish the bronze using and armament practices of the Piliny, Lausitz, Kyjatice and Gáva cultures.

The detailed, three-parted review of the results of the metallographic analysis is a precious supplement of the book. On the course of a materials testing (SEM-EDXS) in 1999 the composition of nine swords were analysed on segments cut of the blades. Beside the great differences of the bronze of the swords various traces of secondary processing could also be observed. D. Ozdín carried out an even deeper investigation concerning the material composition of a sword from Obišovce and another one from Turnianske Podhradie. The examination of samples taken from different parts of the swords (EMS-WDS) allowed a more detailed analysis and comparison than the previous testing project. The material composition of the two swords strongly differs from each other, and it can only be proven in the case of the weapon from Turinanske Podhradie that its material originates from the Spiš-Gemer Ore Mountains. B. Sicherl's technological analyses based on X-ray images constitute the third part of these investigations. He classified the casting techniques of the hilts and blades and the technological details of their fitting together on the basis of the shaping of the hilt hole, the shape and size of the blade tang, and the technological solutions of the construction. The obtained classification groups reflect even in typo-chronological groups that almost two thirds of all sword types had been produced by the same technological implementation. Such metallurgical and technological investigations (or an even more detailed one) should be an essential part of each PBF volumes.

A significant increment of the X-ray based analysis is that pictures from two views had been published of almost every sword. This way the authors achieved a quality of publication which has created new expectations for the authors of all future *Prähistorische Bronzefunde* volumes.

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Editio externa

László Bartosiewicz with Erika Gál: Shuffling Nags, Lame Ducks. The Archaeology of Animal Disease. Oxbow Books, Oxford 2013. 264 p. 211 ill. – ISBN: 978 1 782971894

Although it was published in 2013, László Bartosiewicz's book *Shuffling Nags, Lame Ducks. The Archaeology of Animal Disease* written with a chapter contributed by Erika Gál still lacks a proper review. The volume, published by one of the prominent figures of the discipline of archaeozoology, summarizes several decades of research in the field of palaeopathology, the study of animal disease through the archaeological record. In the past 20 years, Bartosiewicz has maintained a research interest in the history of animal disease: he published a number of articles on animal palaeopathology, and also co-authored a book at the end of the 20th century that explored the osteological identification of draught cattle in archaeological assemblages,[1] a topic that has heavily relied on work-related osteological deformations observed in archaeological specimens.

The last exploration of this subject that aimed to provide a handbook-like summary was published well over thirty years ago by J. R. Baker and D. Brothwell.[2] This paucity was not due to ignorance or a lack of interest on the researchers' part. The Animal Palaeopathology Working Group of the International Council of Archaeozoology (ICAZ) has operated since 1999.[3] There is always at least one session dedicated to this topic at major international conferences in the field, and triennial meetings are also held by the working group itself. As a result, valuable volumes of conference proceedings have been published on this topic. It seems, however, that even though this sub-discipline is of general interest, scholars are reluctant to come up with comprehensive studies and a new overview of the subject has long been overdue – a fact probably rooted in the incredible complexity of this research field and the yet unsolved methodological problems it poses. L. Bartosiewicz's book is the most recent – and, in fact, the only – endeavor to review and summarize this vast topic again.

Palaeopathology has, in fact, some tradition in Hungary. The palaeontologist András Tasnádi-Kubacska dedicated several articles to this subject as early as in the 1930s, and later summarized his findings in a larger volume in the middle of the last century.[4] Sándor Bökönyi, one of the key figures of archaeozoology in the discipline's earlier days, and director of the Institute of Archaeology of the Hungarian Academy of Sciences in 1979–1993, initiated a small animal palaeopathology collection, which continued to grow after his death. Bartosiewicz started his career as an agronomist and has had a natural scientific approach to archaeological questions; he continues Bökönyi's heritage also in this regard.

The archaeology of animal disease continues to be a widely debated and, at the same time, popular field among archaeozoologists. Debates rise partly due to the unavoidable problems posed by the interpretation of symptoms from bones alone, without having access to information provided by other types of tissue. This fact also explains why palaeopathology has been acknowledged as a discipline of its own, separated from – although interconnected with – veterinary science. Archaeozoologists have to describe, analyze and, if possible, diagnose animal disease on the basis of information gained from the skeleton alone, that is, the part of the body on which disease usually manifests only in a severe stage. Thus, the archaeological findings

[1] Bartosiewicz *et al*. 1997.
[2] Baker–Brothwell 1980.
[3] APWG 2015.
[4] Tasnádi-Kubacska 1960.

present a relatively limited amount of information, especially in case of meat-purpose animals that are usually slaughtered immediately if illness or injury appears. Written accounts of veterinary treatment in the past may complement the picture, although in most cases only an educated guess can be made about the kinds of cures that were utilized to heal an individual.

As opposed to human palaeopathology that usually works with data derived from whole skeletons, archaeozoologists investigating animal disease often have to deal with specimens only represented by a single bone fragment due to different patterns of human and animal bone deposition. In most cases, the age and sex of the animal is unknown, as are other possible disorders manifested on the same animal body. Moreover, as opposed to human palaeopathology that explores past diseases of one species, this sub-discipline of archaeozoology deals with various taxa with different skeletal morphology, habitat, and possible ways of human exploitation. Modern veterinary science has sometimes little relevance to archaeological specimens, not only because of the discrepancies in the available sources of information and between past and present animal populations, but also between animal husbandry realities of the past and present-day animal welfare standards.

Its methodological limitations kept in mind animal palaeopathology has implications far beyond the simple history of animal disease. Any animal bone recovered from an archaeological site is, by any standards, not only a natural object providing biological information, but also an artefact shaped by human decisions in various ways. It may be even more so in the case of pathological finds. The information on when and how sick individuals were slaughtered or kept alive, and, in some cases, were cared after and healed by humans, has the potential to reveal complex animal husbandry strategies and herd management, as well as possible emotional or cultural values placed on a certain individual or species. Human selection of animals for traits that are undesirable by modern standards, or the way an animal is used for work, may contribute to the development of pathological conditions as well. Moreover, animal and human welfare were intimately intertwined as people shared space with their animals and were exposed to a variety of zoonoses.

Bartosiewicz's book may be criticized for focusing on the visual, macroscopic study of finds (with radiography utilized only in a few cases), while he expresses criticism on these traditional methods himself. The author is aware of the available histological, molecular genetic, immunological etc. data and methods that started to be utilized in the study of pathological bones most recently, but refers to these only sporadically. In fact, up-to-date examination techniques have been used only experimentally on archaeozoological specimens in general, which justifies why the book is based on the more traditional macroscopic evaluation. The volume encompasses methods that may seem outdated in certain cases, but still provide the basis for any archaeozoological study, and are available for all specialists; more sophisticated methods are usually expensive (and sometimes also invasive and time-consuming). Despite its obvious methodological limitations, this book nicely summarizes presently available morphological information on pathological conditions of bones, which is also indispensable for other research methods. This thought-provoking volume has thus the potential to evoke and support working hypotheses to be tested with more technology-ridden methods.

After the introductory chapters discussing the basic concepts, the history of the discipline, the differences between human and animal palaeopathology and the basic methodology used in this research field, Bartosiewicz provides a systematic review of the available information on archaeological animal disease and trauma. The structure of this part reflects the methodological problems of the field: some chapters summarize aetiological categories, while others rather focus on the context of a disorder. Age-induced phenomena, traumatic lesions, inflammatory diseases, arthropaties, tumorous bones, dental anomalies and inherited disorders are discussed in separate chapters. Another chapter is dedicated to pathological lesions in working animals, which is a category slightly overlapping with others (joint diseases are, e.g., typical in animals with work overload). Diseases connected to the environment (insufficient nutrition, parasites and environmental stress), also discussed separately, may again overlap with other categories (environmental stress being a key factor in many forms of diseases). Taxonomic differences are discussed in connection with several categories of disorders. It is particularly useful in the discussion of traumatic injuries that intraspecific (reproductive competition) and interspecific conflicts (hunting, maltreatment of animals, intrusive body-modification methods) are touched upon separately. At the end of the volume, additional chapters are dedicated to pathological lesions of bird and fish bones. The chapter on birds is written by Erika Gál, another prominent Hungarian archaeozoologist, specialized in the avifauna. Discussing these taxonomic classes separately is somewhat justified due to their different skeleton and biology; however, many of the disorders seen on bird bones display basically the same symptoms and could have been discussed along with the mammal remains. Evidence available for pathologies in fish is scarce partly for taphonomic reasons (the lack of wet sieving) and accordingly, only a few pages are dedicated to this issue (besides, the most frequently occurring disorder, hyperostosis in fish, is so common that it may even be considered rather normal than pathological).

The author discusses the classification of pathological conditions in the chapter on methodology (one of the basic, and heavily approach-based debates within the discipline), and justifies the book's structure. For those not familiar with the main methodological issues of animal palaeopathology, however, it may be somewhat confusing first that different paradigms are mixed: rough aetiological (e.g. overworking and age, environmental factors) and anatomical categories (dental anomalies) appear alongside symptom-based descriptions. Lesions are also grouped according to their frequency in the archaeological record. This grouping may be problematic and results in overlap between the categories. However, it reflects the attempt to provide a proper archaeological interpretation for these phenomena instead of simply describing them in veterinary terms. Pre-existing schemes taken from veterinary science or human palaeopathology, such as purely aetiological categories or formal symptoms, would be difficult or even misleading to apply on the archaeozoological record.

The author meticulously collects and discusses a wide range of archaeological specimens described in the literature, most of which have been available only in individual reports of sites. Pathological bones have mostly been published as "interesting specimens", often with inconsistent recording and description practices, which obviously made the endeavor to synthesize them a challenging one. The causes, development, subtypes, and typical symptoms of the conditions are explored in order to help the reader understand the underlying biological processes, and a large number of archaeological examples are discussed (277 sites are cited, virtually from all continents and time periods). This amount of findings even allows the author to present statistical data of disorders at times (which is usually impossible due to the sporadic nature and, consequently, small sample of pathological finds), although mostly modern comparative data is used for such purposes throughout the book. The descriptions are illustrated by a par-

ticularly impressive, rich and high-quality image material, including contributions of archaeozoologists from different countries from Slovenia to Argentina. Bartosiewicz also cites modern and ethno-veterinary data on a regular basis; the extensive bibliography counts 738 titles and covers all essential publications that came out in the past 20 years. What I missed a bit is a short discussion of the potential palaeopathological study of mummified animal remains. While it is clear that only a few studies have been dedicated to animal mummies in general (many of which concentrate on ancient DNA), and so the possibilities for such a summary is limited, mummified animal bodies have the potential to provide information on soft tissues and thus, are expected to contribute to the field of palaeopathology as non-invasive methods and imaging techniques continue to improve.

Although reference is frequently given to Baker and Brothwell's 1980 book, the author attempts to surpass this old study by integrating cultural aspects of the findings into the discussion instead of sticking to a dry and mainly diagnosis-oriented description. Thus, he targets one of the main problems of the field, that is, the lack of integration of palaeopathological data with other types of archaeological and historical evidence. This task is extremely difficult as for such an interdisciplinary approach, a deep knowledge of veterinary science, archaeology, history, art history, ethnography, and the methodological limitations of the sources these disciplines use, is a precondition. Bartosiewicz tries to reach a wide audience, from specialists to archaeologists who would like to get a better understanding of the importance of such finds and their cultural implications, and to lay people simply interested in this intriguing topic. The basic concepts are discussed in a short chapter in the first part of the volume, however, for those who have never had any training in (archaeo)zoology or veterinary science, and are unfamiliar with the vocabulary and nomenclature, it may be challenging to read this book.

Given the structure discussed above, it may prove difficult to look for information on one specific time period, as the structure is not chronology-based. Specifying the time period in the sites' index at the end of the volume may have solved this problem. Otherwise, a detailed taxonomic and geographical guide complements the general index, and so it is relatively easy to find data on different species or diseases.

A danger this volume may pose is due to its otherwise great and meticulously collected image material. Animal palaeopathology still lacks a referential atlas that would allow researchers to identify disease, and there is a reason for this. A proper diagnosis is very difficult, if not impossible to establish in many cases, simply because a variety of diseases may result in very similar symptoms on the bones. Bartosiewicz does not aim to create such an atlas, however, some readers may inevitably try to use the book this way, taking the published photos as standards to compare finds with, on the basis of pure formal similarities. This, however, is probably unavoidable (and happened with Baker and Brothwell's groundbreaking volume, too).

Bartosiewicz's book is a commendable effort to bridge disciplinary divides, and will certainly serve as a basic textbook for future students of archaeozoology. Hopefully, this volume will contribute to a deeper integration of this unique set of data into archaeological and historical discussions of the human-animal relationship, and pave the way to future research of pathological bones utilizing modern imaging techniques such as MRI, CT, ancient DNA analysis, or stable isotopes.

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