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NATURAL SCIENCES IN ARCHAEOLOGY

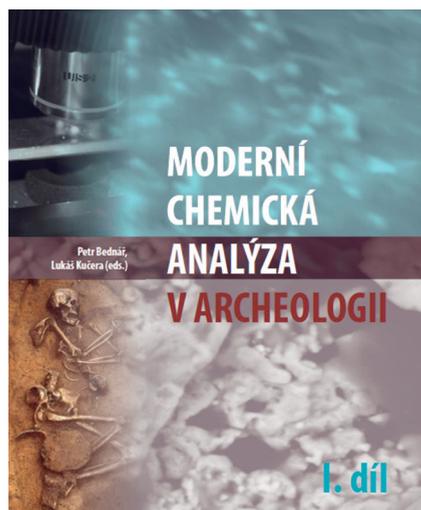
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Book reviews

Modern Chemical Analysis in Archaeology, Part 1

Moderní chemická analýza v archeologii
Petr Bednář, Lukáš Kučera, eds.
Palacký University in Olomouc, Olomouc
(2021), 292 pp., ISBN 978–80–244–5949–3
(online; pdf)



The book “Modern Chemical Analysis in Archaeology” was published by the Palacký University in Olomouc as an electronic publication in the Czech language. In this book, the editors Bednář and Kučera present their views on the current concept of the use of chemical and chemical-physical methods in archaeology with case studies from around the Czech Republic. Their view, or more specifically the view of the authors of the individual chapters, is based on long-term cooperation in the field of Czech archaeology – and also, therefore, on methodological approaches that are either commonly used today or which form a kind of extension to common methods. It is apparent from reading the texts that the authors know the methods well and have used them in detail. This makes the book more valuable because it is not just a review of methods. The book has the potential to be not only good resource / study material for university students, both in the fields of archaeology and others now a common part of archaeological research (chemistry,

geology, anthropology), but also as a kind of manual for educating the general public.

The texts are divided into two main parts. The first part, in addition to the introduction to the issue, contains mainly methodological texts for individual analyses. The reader will be able to learn about primary analytical methods – and it is not only chemical but often physical methods that are used as a common part of sample preparation for chemical analysis (see volumetric or weighing methods), and which can be performed in a common laboratory without special equipment. And, further to that, it is also an introduction to the issue of methods that are not a standard part of archaeological research, but whose use is already becoming quite common in this area. In the following part, the authors present methodology that deals mainly with the specialised workplace of the Palacký University in Olomouc: this is the analysis of (bio) macromolecules. Compared to the previous part, a fairly incomplete part of the book, this part represents some highly-specialised reading. This first section of the book also includes an introduction to databases and the documentation of archaeological finds. This part can also not be considered as an analytical chemical method; however, it certainly does belong – as an illustration of the situational use of chemical analysis in archaeology it is often necessary. Among other things, it describes how to approach individual types of findings. The second part of the publication, to which I would like to return later, contains case studies in which the presented methodology has been applied.

It must be stated that the authors have taken on a difficult task. It is therefore no surprise that while reading the texts we can notice some relatively different levels of quality among the individual chapters, as well as their overall readability. This does not refer to the quality of the elaboration of methodological approaches, but rather the quality of the presentations of some of the methodology. Although the book is written in Czech, this does not have to mean that, for example, some more up-to-

date international literature could not have been included in the chapter explaining the individual terms. Yes, two Czech sources certainly have a chance to cover the issue, but, in my view, quoting internationally-recognised literature would have elevated the erudition of the introductory chapter. However, this is the first part of this kind of textbook, after which the reader should be more or less familiar with the basic chemical methods applicable to solving archaeometric questions, so we may turn a blind eye to the many inconsistencies. I assume that this is probably why the authors tried to include in the text the methodology (although sometimes in a rather harsh direct manner) that is fundamental, but here somewhat lacking relevance in the solution of archaeometric questions as it is basically not used: we do not find it in current publications and its interpretive power is minimal. This applies, for example, to the weighing or measuring methods. Another disadvantage of the publication is the effort to present a number of methods in great detail. If the reader is a humanities student, for example, the presentation given here – without any attached instructional pictures – would be too complicated for them, making the book too difficult to follow.

This was exactly the view I had from my first impressions of the book and seemingly one shared by others. However, I feel I ought to make my statement more precise – just how did this book give me such a first impression. Perhaps this may be just the view of a geoarchaeologist like me, a specialist who moves in archaeometry? But what of the view of a student or field archaeologist? However, the book has a much broader scope. Why should it be a bit detached from the field of archaeology for a classical geoarchaeologist or pedologist? This is probably due to the fact that the presented analytical methods focus primarily on the examination of artifacts, *i.e.*, those findings once transferred to the laboratory, and the authors mostly ignore the study of the lithological content of an archaeological context, *i.e.*, the sediments, rocks and

soils. On the other hand, the publication lacks the physicochemical and related sedimentological methods that are used to study formation processes; for example, the absence of granulometric methods, magnetic methods or microscopy. And what about the archaeology student? It seems to me that the book contains a lot of intricate detail, but is without the accompanying graphic illustrations through which it would be possible to understand the methodology in more detail. It is not a criticism as such of archaeology students, but rather my age-old experience of being frequently reminded of how different and seemingly incompatible the understanding of an archaeologist, a humanities-educated expert, and a natural-science trained person can be.

The last part of the book, as already mentioned, mainly represents case studies. I do not see this part of the publication as being the happiest. The individual chapters here have different levels of appropriateness and clarity, but, more importantly, they have completely different information content and potential than do the chapters in the first part of the book. These are mostly case studies that are not published elsewhere, and one has to ask why. Nowadays, the important effort

of most researchers is the “collecting of points” for publishing scientific articles: to “list” an article in a (preferably highly-ranked) peer-reviewed journal. Not just because for the “gaining of points”, but if the study is not published elsewhere, then it is not reviewed by a specialist for the self-same issue. So, is its level sufficiently good enough for publication? The reader must inevitably end up asking these questions. Leaving aside this viewpoint, I would like to admit that most of the case studies presented are very interesting in themselves and deserve to have been given a more detailed treatment in an internationally-recognised journal.

And now to the “awakening” of the author of this review. As I mentioned previously, the authors had set themselves a very difficult task. Readers who like to always find “something” to pick bones with will always find something to complain about, and there are plenty of those here. This publication, for which I still have much respect for, not least because of the enormous task it has set itself, is not only intended for students or archaeologists, who are just starting to orientate themselves in the many chemical issues, but it is also intended for chemists who have been “bred” in classical chemistry, and

have simply not had the chance to orient themselves within the complexity of geo-archaeological issues. It is basically a tool to facilitate a level of communication between the chemist and the archaeologist: revealing the potential of each method. At first reading, I found it unnecessary to read some parts, especially the very trivial methodological details. On the other hand, when one gives it space, one will have much greater opportunities to understand the study of the given context and will not be limited merely by the dogma of the commonly-used methodology. The publication, although it can be blamed for some of its disadvantages, is not just a summary of chemical methods that the reader can use. The authors have tried to introduce the reader to not only the method itself, but also to the method of application in an archaeological context. This is the place of the handbook that takes the book to the next level among the flood of chemical publications that an archaeologist can usually resort to when necessary. I therefore recommend this book from various points of view. At the same time, I recommend that it be read slowly – and that individual methodological chapters be returned to as and when necessary.

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