Chapter 1
Introduction – New Methods and Technologies of Natural Sciences for Archaeological Investigations in Nasca and Palpa, Peru

Markus Reindel and Günther A. Wagner

1.1 Natural Sciences in Archaeology

Applications of natural sciences in archaeology have actually a long tradition. In particular the chemical composition of metal artefacts was sporadically used for more than two hundred years, mainly for the purpose of material classification. One of the earliest examples is the quantitative analysis of Roman coins in 1799 by Martin Heinrich Klaproth in Berlin, a chemist who is better known as the discoverer of the element uranium. Based on the material composition of dominant remains, the Danish archaeologist Christian Jürgensen Thomsen formally introduced in the 1820s the three-age system of prehistoric archaeology into three consecutive time periods: the Stone Age, the Bronze Age, and the Iron Age.

Especially during the second half of the twentieth century, natural scientific approaches in archaeology experienced a nearly explosive increase. It became obvious that, when trying to reconstruct the past as comprehensively as possible, the archaeologist needs to take into consideration all sources of relevant information including those which are hidden to the naked eye, being the foremost tool of an archaeologist's perception, and which are only revealed by scientific studies. Terms such as 'science-based archaeology' or simply 'archaeometry' are used for this new discipline. Originally coined in 1958 as the title for a journal (M. Aitken, in Olin, 1982, p. 142) and subsequently also used for an international symposium, 'archaeometry' was increasingly adapted within the past few decades for this field of research. It is acknowledged in the meantime by most archaeologists as an indispensable and integral part of archaeology.

M. Reindel (✉)
German Archaeological Institute (DAI), Commission for Archaeology of Non-European Cultures (KAAK), Dürenstraße 35-37, 53173 Bonn, Germany
e-mail: reindel@kaak.dainst.de