INTERNATIONAL REFERENCE COLLECTIONS

A. G. LANGE

NETHERLANDS NATIONAL SERVICE FOR
ARCHAEOLOGICAL HERITAGE

ABSTRACT

Whatever paradigm is guiding our research and analyses, in whatever specialist niche we are interested, archaeological theory and practice will always be founded upon the interpretation of physical remains from the past. Such remains can be tangible remains (finds, movables, artefacts) or recognisable traces in the soil of past human activity (features, crop marks, chemical composition). The interpretation of remains takes place on three levels: a) by analysing the intrinsic characteristics of the remains themselves, b) by analysing the (extrinsic) context of the remains in the local setting and c) by comparing the intrinsic and extrinsic characteristics of the remains with similar finds or features from elsewhere. Comparable remains are dispersed all over Europe (and beyond), as are the specialists and the literature on the specific remains. Contemporary specialists together with the available literature covering finds and features form the basic archaeological knowledge base.

In the Netherlands, many developments in society at large and in the discipline itself are responsible that the archaeological knowledge base has become widely scattered, fragmentary and, partly, out-of-date. The erosion of knowledge continues at a high pace and threatens the quality of archaeological research, heritage management and education. In the Netherlands the National Services for Archaeological Heritage (ROB) studies the possibilities of developing an instrument for acquisition, storage and access to expert knowledge on archaeological artefact and feature types (Nieuwhof and Lange 2003). This so called National Reference Collection is considered an essential part of the quality control in the Dutch system of archaeology, as this has developed after signing the Treaty of Valetta (Malta, 1992) (Willems 1997).

It is proposed here to develop this knowledge management system further on a European scale as a) similar changes in the archaeological "setting" are recognised in many other countries, and because b) the dispersion of culture, material or immaterial, has never been constrained by national borders.

KNOWLEDGE BASE

Any interpretation of material remains from the past needs the ability to identify archaeological finds and features, which is the very basis of the discipline of archaeology. In order to do further archaeological research, to protect sites, to teach archaeology and to tell the story of our past, we first must identify what was found. To identify the remains, references are used as pointers to knowledge of similar remains found elsewhere. Interpretation of the identified finds will lead to models of explanation. For over 200 years professional archaeologists have continuously accumulated knowledge on material culture (Brongers 2002). At the universities, this knowledge passed on from generation to generation by lectures and through the literature. The published corpus together with the insights of contemporary specialists, form the knowledge base on which archaeological theory and practise are constantly being (re-) built.

CHANGES, THREATS AND OPPORTUNITIES

Recent developments in European society as a whole, and the archaeological discipline in particular, threaten the accumulation and accessibility of this knowledge base, in particular on

material culture. With this knowledge base under pressure throughout Europe, the identification and interpretation processes, that are considered the core-business of archaeology, are being threatened as well.

This is illustrated by the following phenomena:

First, when evaluating the educational system, only part of the archaeological knowledge has been made explicit in publications and therefore a proportion is not accessible, except by direct contact with the specialist. In recent years, this so-called tacit knowledge has had little chance of finding its way to a younger generation of students through the educational system, due to a combination of reasons:

- The ready availability of absolute dating techniques, made the classification and use of type series much less important as a dating tool. Material culture studies lost their indispensable place in archaeology.
- Repeated budget cuts at the universities in recent decades are a major reason why older staff has not been replaced and there is little capacity for material culture studies pro grammes.

- The recent reduction and the limitation of the period of study have decreased the capacity for the time-consuming mate rial culture studies as well.

Secondly, in the practice of excavation, the need for access to information on material culture is growing fast, due to an enormous growth of the number of projects and participants. Large infrastructural projects have involved in many investigations a great number of young archaeologists. At the same time, with the arrival of commercial archaeology in a few big, but many small companies, the participants are often removed from, and have no ready access to, information-rich resources.

Additionally, the equally fast growing numbers of archaeological reports sometimes have a limited distribution. With low levels of availability, these reports reside in the realm of "grey literature", and contribute little to the archaeological knowledge base. The chances are that the expected level of scientific sophistication is no longer attainable.

Although we see a tremendous growth in the number participants, for the commercial archaeologists the possibility of participating in the conventional archaeological discourse and the scientific network is often restricted due to the physical distance, difficulties of planning or for budgetary reasons.

Finally, in the broader context of environmental planning, since the signing of the Treaty of Valetta (Malta, 1992) the number of people involved from outside the discipline has grown tremendously also. Today, civil servants, architects, landscape designers, environmentalists, contractors, solicitors, planners, etc. are professionally and structurally occupied with archaeology. Archaeology is taken seriously and plays a role in landscape and town planning in its early stages. However, the knowledge base, on which decisions are made, is often far from explicit and remains a black box to the uninitiated. Consequently, archaeological motivations are rarely objectively verifiable, while the consequences for society might be considerable.

To summarise, the "old" expert knowledge base is incomplete and widely scattered, and the accessibility of the new literature is low. This impedes the proper accumulation of new knowledge, while the demand for knowledge is growing at a high speed. This implies the need for measures to safeguard the very basis of our discipline.

A rather obvious solution is sought in the wide-ranging use of the various possibilities of the Internet. Web-applications can be developed as a means for storing, distributing and accessing the knowledge base. Web-based communication allows professionals to take part in the scientific discourse, independent from place and time.

DUTCH MODEL

The Netherlands National Service for Archaeological Heritage (ROB) has submitted applications to national and international organisations for the co-funding of the develop-

ment of a prototype for the web site of the National Reference Collection (NRc). The NRc will be a central site where the visitor finds state-of-the-art knowledge on material culture, in the form of images and descriptions or is referred to the latest literature and is presented with information on where the physical remains can be studied. In a fully developed NRc, there will be a discussion and publication platform, while a users are invited to pose questions to the system. Where the technical and functional infrastructure of the NRc is centrally organised, the content is provided by specialists and organisations scattered over the various regions. The actual data may reside at different web sites, but is harvested into the central site ("information hub"). The visitor need not necessarily has to be aware of this process.

The prototype of the NRc will present two data sets. The first is a description of a type series of late medieval glass. It will present profile drawings and photographs of the material as well as a strict, but widely accepted, nomenclature. The ROB maintains the described collection. The second collection to be presented is the Corpus Middeleeuws Aardewerk (Vlierman 1983). This is a series of descriptions of medieval pottery types from particular well-dated closed finds. As such, this "collection" exists only on paper, while the objects themselves are scattered among different archaeological archives. In the Netherlands, the provincial governments maintain these archives where, in principle, all excavated material is deposited. The archives are now developing from warehouses, closed to members of the public, towards public information centres (Ploeg 2001) where it is possible to study the actual remains and original documentation of excavations. The archives all use the same software package to register the remains. The web site of the NRc will play a role in providing information about location, content and accessibility of the different elements of the Corpus Medieval Ceramics. The ability to provide a visitor of the web site with a location of a particular collection and give him/her information on the content of this collection, is an asset in its own right, next to the virtual collection that is present on this site integrated with the virtual collections of other sites in the network.

EUROPEAN ADDED VALUE

From early prehistory onwards, material culture (artefacts, techniques, raw material) has been transported over large distances across Europe (and beyond). It is of vital importance for researchers to know what specialists in other countries contribute to the knowledge base, in terms of, for instance, the provenance of raw materials, production methods, cost calculations, trading routes and distribution patterns in geographical, socio-economical and cultural sense.

The development of a European network of national or super-regional and interoperable web sites, each presenting reference collections relevant to the own region seems only a natural extension of the Dutch model, and certainly would serve as a significant step forward in conserving and updating the European knowledge base. Such a development could be described as "Moving from idea to practise in E-Science", buil-

ding on earlier EU-funded initiatives like Aquarelle, ArchTerra and ARENA, etc. It will consist of a network of national and/or super-regional "information hubs". In turn, these central hubs will be the access points for the regional and local sites. Together this network forms the European Reference Collection (eRC). The wider archaeological discipline is currently operating at quite different levels of sophistication. The eRC builds bridges for all to the same knowledge base. This process is sometimes referred to as the "democratising" of knowledge.

At the same time, the eRC can be an instrument to unify European archaeological descriptive concepts, while preserving scientifically idiosyncratic "dialects", to indicate gaps in the knowledge base, to formulate general hypotheses, etc.

OPEN EXPERT NETWORK INFRASTRUCTURE

The eRC requires the co-operation of many, and the agreement and acceptance on many issues, such as technical protocols, procedures of communication and coding, to name but a few. Building an eRC is more than just presenting cultural heritage on the Internet's World Wide Web. As scientific insights and theories change, the content of the eRC should change accordingly. The eRC should be a state-of-the-art body of knowledge, kept up-to-date by groups of specialists. Throughout Europe national and international specialists groups are operating, some of these formally organised. Actually, the eRC should evolve towards a virtual meeting point for these specialist groups: a place to exchange ideas, to develop theories, to publish articles and to make suggestions for reformulating typologies and thesauri. The eRC also makes specialist knowledge available to all who are interested: discussions will be open to specialists and students, to professional non-archaeologists and to non-professional archaeologists, from inside and outside the European Community.

The involvement of many content providers involves a reorientation of the communication practices of the specialists groups. Content providers will be invited to participate in discussions on the Internet. Such discussion could take place in the framework of, for instance, Internet research communities. Internet communities are the virtual counterpart of assemblies of people who are interested in a special topic. Access to a particular community might be restricted, but generally everyone can join. The advantage over conventional means of communication is that in virtual communities discussions can be followed independently from time or place. Changes in behaviour are often difficult to realise. The investment in behavioural change would be easily paid back by the much wider audience and the speed of the new media.

The eRC will further enable the identification of gaps in our knowledge and will, consequently, stimulate multidisciplinary material culture studies and the international exchange of students and scientists. The archaeological heritage will become also easily accessible to a wide public with an interest in human history and technological developments. The eRC will thus contribute to the insight and public support for cross-cultural heritage, which adds to the coherence of the multicultural community by showing the influences of, similarities and flux between technological and cultural developments in various regions in Europe (and beyond).

Next to providing access to the European knowledge base on archaeological heritage, the eRC serves also as knowledge base on the more technical issues involved in developing and maintaining the network. Examples of current issues are; international standards for the exchange of metadata, machine to machine protocols for data transmission, standardisation, personalisation, data enrichment, generating presentations and the protection of Intellectual Property Rights (IPR).

The Semantic Web is another example of an innovative technology to which cultural heritage is presently contributing very little, in terms of solutions, but the technology is also yet to present its challenges. So it may happen that this technology grows without taking into account the particular needs of cultural heritage, notably archaeology, e.g. in terms of validation, scientific credibility and IPR. The eRC can bridge the gap between technological innovation like the Semantic Web and as yet implicit requirements of archaeological research concerning new technologies. An example of the latter could be the development of Content Based Image Retrieval methods. These will be crucial for an optimal service to the user of the image-oriented site of the eRC. The eRC will seek alliance with national and international technical research programmes to develop together with ICT-scientists new tools for archaeology. Another positive contribution of the eRC would be to balance the differences in awareness and starting conditions about such topics in the different European countries.

CONCLUSION

The development of the eRC will be a long-term commission involving many participants from a number of disciplines to build a network along the contours as sketched above. The eRC will deliver a knowledge base, which is preserved, maintained and updated, and accessible to anyone. The content will consist of the foundation of archaeological theory and practice: the knowledge on archaeological material remains and features. The eRC will promote high standards of the evaluation of archaeological remains throughout Europe. By unifying identifications and nomenclature the long-term accessibility and usability of the archaeological record is guaranteed.

The costs of the development will be high, both in time and money, but the reward will be a solid, sustainable foundation for the wider archaeological discipline and historical science at large. Therefore, the commitment from European partners is of vital importance.

After a presentation at the EAA conference in Thessaloniki in 2002 (Lange 2002) a number of participants had already taken sincere interest into the matter, notably from England, Denmark and Belgium. Since then, this group expanded with representatives from institutes from Spain, France, Italy, Romania, Finland,

Norway and Iceland. From this group a task force has been formed to develop plans for the realisation of the eRC and to formulate proposals for funding by national and European bodies. A first task will be to arrange for funds to enable the participants to meet and discuss the co-ordination of activities and prepare a time schedule.

REFERENCES

BRONGERS, J. A., 2002. Een vroeg begin van de moderne archeologie; Leven en werken van Cas Reuvens (1793-1835). ROB, Amersfoort, The Netherlands.

LANGE, A.G., 2002. Co-operation in the development and exploitation of National Reference Collections. The European Archaeologist 18.

NIEUWHOF, A. and LANGE, A.G., 2003. Op weg naar een Nationale Referentiecollectie Archeologie; Eindrapport Haalbaarheidsonderzoek NRc. ROB, Amersfoort, The Netherlands, in press.

PLOEG, F. van der, 2002. Brief aan de Tweede Kamer 27 432 nr. 54. State secretary of the Ministry of Research, Culture and Science, 27 mei.

VLIERMAN. K., 1983. Aardewerk uit de inventaris van twee laat-middeleeuwse vrachtschepen OK73-74 en ON5. Corpus van middeleeuws aardewerk uit gesloten vondstcomplexen in Nederland en Vlaanderen, 1-2. Rijksdienst voor de IJsselmeerpolders / Museum voor Scheepsarcheologie, Lelystad/Dronten.

WILLEMS, W.J.H., 1997. Archaeological Heritage Management in the Netherlands: Past, Present and Future. Archaeological Heritage Management in the Netherlands: Fifty Years State Service for Archaeological Investigations. Willems, W.J.H., Kars, H. and Hallewas, D.P.(eds.), Van Gorcum/ROB, Amersfoort, The Netherlands, 1997.