

exact places of discovery and the finding conditions are totally unknown. However, analysis of material, style and imagery suggests that their origin is in the following areas: Attica, Sicily, Campania, Paestum, Apulia (Tarentum and Canusium). The last of these is an interesting case, for it seems that the Apulian fish plates were manufactured especially for funerary use. So it may be that the motif of fish (and of other sea animals) is to be explained as a symbol of Okeanos, the sea by which it was possible to get to the life beyond. This is one of the main conclusions of the book.

Not only is the text factual, but the volume also abounds with high quality illustrations that make it aesthetically enjoyable reading. Though probably meant as funerary symbols, I should add that some scenes with mullets and sepias are very appetizing. In one case, however, the expression in the eye of a fish is so touching (p. 75), that I would let it swim into the Ocean together with the departed.

Mika Kajava

KLAUS GREWE: *Licht am Ende des Tunnels. Planung und Trassierung im antiken Tunnelbau*. Zaberns Bildbände zur Archäologie. Verlag Philipp von Zabern, Mainz am Rhein 1998. ISBN 3-8053-2492-8. 218 S. DEM 78.

When looking at the achievements of ancient technology, the question that often comes to mind is "How did they do it?" Finding an answer to this question can be puzzling as most often no plans or written descriptions of their construction are available. Klaus Grewe has taken up the formidable task of recreating the process of planning and quarrying tunnels in the entire ancient world. The work is also his doctoral dissertation and a result of his almost lifelong interest in the making of ancient tunnels. The volume is part of the *Zaberns Bildbände zur Archäologie* which is very fortunate as the text is greatly illuminated by the huge amount of photographs, plans, and sections mostly taken or drawn by Grewe himself.

The ten chapters first treat terminology and technological aspects of tunnelling and then move on to describe a large number of ancient tunnels chronologically starting from the Qanat tunnels of the Iron Age Near East. The water tunnels of ancient Israel are also examined. Most of the book is dedicated to Roman tunnel building and this long chapter is divided into several subsections by the function of the tunnels: drainage tunnels, tunnels for lowering water in lakes, river diversions, road tunnels, and aqueduct tunnels. The last two chapters are very short and describe the use of tunnels in warfare and the continuation of Roman tunnel building in later periods.

For the benefit of the non-specialist reader (such as myself), the technical part is fairly clearly written and covers the most important techniques. Perhaps the two pages devoted to the meaning of the term "tunnel" as defined in German is a bit exaggerated, but otherwise most terms are explained concisely and clearly. After the terminological chapter, the strategy of tunnel building is explored, both for the two-end technique and for the Qanat (or light-hole) technique. In the later various descriptions, these theoretical explanations are seen at work in the actual tunnels. The technical chapters also include a description of ancient measuring equipment.

As emphasized by Grewe, we have only few descriptions of tunnels and their construction surviving from ancient times, and so the main source for the study of their making is the tunnel itself. For this type of study, it is paramount to enter a tunnel, to go through it, and simultaneously document different features of test tunnels, test shafts, mistaken tunnel directions, etc. in the walls and roofs of the tunnel. Grewe himself has done the detailed documentation for many of the tunnels – often previous researchers have not paid attention to small details. This is probably behind the selection of tunnels featured in the book. In some cases it is clear that Grewe has very little to say on the actual remains, but they have nevertheless been included, for example the few meagre paragraphs treating the tunnels of Rome's aqueduct system. He does, however, include reference literature where the interested reader can find more information. Sometimes it is slightly difficult to see the relationship between Grewe's and previous researchers' results.

The geographical range of sites is impressive, reaching from Central Europe to the Near East. Most attention is given to some of the more famous ancient tunnels: Eupalinos' tunnel on the island of Samos and the drainage of the Fucine lake by the emperor Claudius. Less known, but very interesting tunnels include the drainage of a lake at Fontvieille in France or the Saldae aqueduct in modern Algeria, where additional information is provided by a long inscription.

Many questions still remain open, in some cases even the actual function of the tunnels. Such is the case, for example, with the Etruscan *cuniculi* in the areas around Rome: drainage, irrigation, or both? Dating the tunnels is also an interesting question which remains mostly outside Grewe's treatment, although in some cases he is able to provide a relative dating of the working process in individual tunnels, such as the *emissarium* of Lake Nemi near Rome.

On the whole, the book provides an interesting insight into one aspect of ancient tunnel making. The catalogue of tunnels is comprehensive enough for other researchers interested in various regions to find reference points for their own work.

*Eeva-Maria Viitanen*

*Deliciae Fictiles II. Proceedings of the Second International Conference on Archaic Architectural Terracottas from Italy held at the Netherlands Institute in Rome, 12-13 June 1996.* Edited by PATRICIA S. LULOF and ERIC M. MOORMANN. Scrinium 12. Thesis Publishers Amsterdam, Amsterdam 1997. ISBN 90-5170-441-0. 274 pp., 199 photographs. NLG 170.

PETER DANNER: *Westgriechische Akrotäre*. Salzburger Studien zur Archäologie. Verlag Philipp von Zabern, Mainz am Rhein 1997. ISBN 3-8053-2002-7. 163 S., 40 Taf. DEM 148.

PATRIZIO PENSABENE: *Terracotte del Museo Nazionale Romano I. Gocciolatoi e protomi da sime*. Studia Archaeologica 101. "L'Erma" di Bretschneider, Roma 1998. 469 pp., 47 ill., 145 tavole. ITL 400.000.

CARLO RESCIGNO: *Tetti Campani, età arcaica: Cuma, Pitecusa e gli altri contesti*. Pubblicazioni scientifiche del Centro di Studi della Magna Grecia dell'Università degli