

Maritime Archaeology in the Mediterranean

A. J. Parker

The archaeological study of the Mediterranean sea and its coasts is, for the most part, thought of as underwater archaeology, and the history of maritime archaeology in the Mediterranean has conventionally been conceived as the story of underwater exploration¹. However, the discipline of archaeology as a whole has continued to develop, and the concern with conceptual issues which has characterized much archaeological scholarship in recent years is having an effect on the study of cultural remains found, not just on land, but in the sea as well. This paper will start with a brief review of the history of maritime archaeology in the Mediterranean region, and proceed to consider some of the new approaches which promise to deliver stimulating insights into the function of the sea and the role of seafarers during prehistoric and historic times.

Although, even from classical antiquity, it had been realized that historic treasures might be raised from the sea, there was little thought until recently of any process of discovery or historical reconstruction, let alone of systematic exploration or recording. Salvage and happy chance were the only approaches, even after, in the eighteenth century, topographers and tourists noticed groups of material or submerged structures through clear, sunlit water. In the early twentieth century, the adoption of diving apparatus by sponge-fishermen led to the first exploration of wreck sites, at Antikythera and Mahdia, using the personnel and techniques of those fishermen². During World War II, efficient self-contained breathing apparatus was developed, and this

brought about a rapid change in the post-war years: not only was there now a cheap and simple means of descending to the seabed, but the autonomy and alert posture of the scuba divers led to a new approach to underwater exploration, in which responsibility would ultimately pass from the archaeologist on the surface to the excavators down below. This did not happen all at once, however – unfortunately! Popularizers of diving strove to maintain a mystique about the underwater environment and the skills of scuba divers, while archaeologists of the classical tradition were unwilling to transfer responsibility to those they regarded as mere operatives – the ‘savants v. servants’ division. In the end, two methodologies converged to establish underwater archaeological techniques: skilled practitioners, especially F. Dumas and P. Tailliez, saw how underwater engineering procedures could be used for scientific recording, while new-generation archaeologists, especially G. Bass and A. Tchernia, brought their experience of more systematic recording and more individually responsible excavators to underwater excavation³. It was also important that a new generation of archaeological graduates, especially in France, had grown up familiar with scuba sport diving, and found no difficulty in adopting underwater exploration as an adjunct of their research. By 1980 it was widely held that there were no outstanding technical problems affecting underwater archaeology in the Mediterranean, and that the study would henceforth be focused on nautical technology and maritime trade⁴.

Of course, it was not so simple. Not all sites enjoyed the clear visibility or calm water which enabled well-educated student divers to take control of the project; many sites were destroyed by looters before they could be recorded; sites which lay below the safe limit of compressed-air diving, and some of the deeper sites which could be dived on compressed-air, were inaccessible before the eventual development in the 1990s of mixed-gas apparatus for amateur divers. Nearly all the solutions to these problems are expensive, normally too expensive for archaeological research or state cultural resource management. Fortunately the continued emergence of cheap, simple robotic vehicles, effective systems of positioning and remote sensing, and high-definition underwater video has overcome these difficulties. In the abyssal depths, advanced technology has helped archaeology rather as a side-effect, though the latest report by R. Ballard and his colleagues on exploration in the Black Sea shows how good research can be done by a responsible interdisciplinary team if enough energy can be put into the fund-raising for it⁵.

Not just shipwrecks, but also submerged structures and changed coastlines have come to be studied effectively. Indeed, it was the realisation that scuba divers could be responsible for decision-making and recording on site that made possible the work, for example, of N.C. Flemming on coastal change or A. Raban on ancient harbours⁶. Such work made archaeologists in general aware of the

potentialities, not only of submerged sites, but also of waterfront or waterlogged sites on land. Influence from the North also alerted archaeologists, especially in Italy, to the likely richness of marshes and lakes for finding boats and other cultural material; and all these considerations, together with an appreciation of the complex history of shipbuilding technology which was derived from shipwrecks, produced a stronger response to the development of harbour-front sites, especially in France.

How ancient ships were built is something that was, in fact, known before the scuba age, from the Roman ships raised from Lake Nemi in the 1920s; however, it has been subsequent underwater discoveries which have revealed how widespread was the construction technique using multiple plank-edge joints, how many variations there were in the classical period, and how a change to edge-positioned planking (ultimately with no edge-fastenings at all) began as early as the fourth century AD. Other technical aspects, such as the size and potential performance of classical ships, or the use of sewn or stitched edge-fastenings instead of joints to assemble the planking in various periods or regions, have also emerged. All of this constitutes an important addition to the debate on progress, or the lack of it, in antiquity.

Archaeologists have been less successful, whether in the Mediterranean or elsewhere, with analysing distributions of single finds, or with

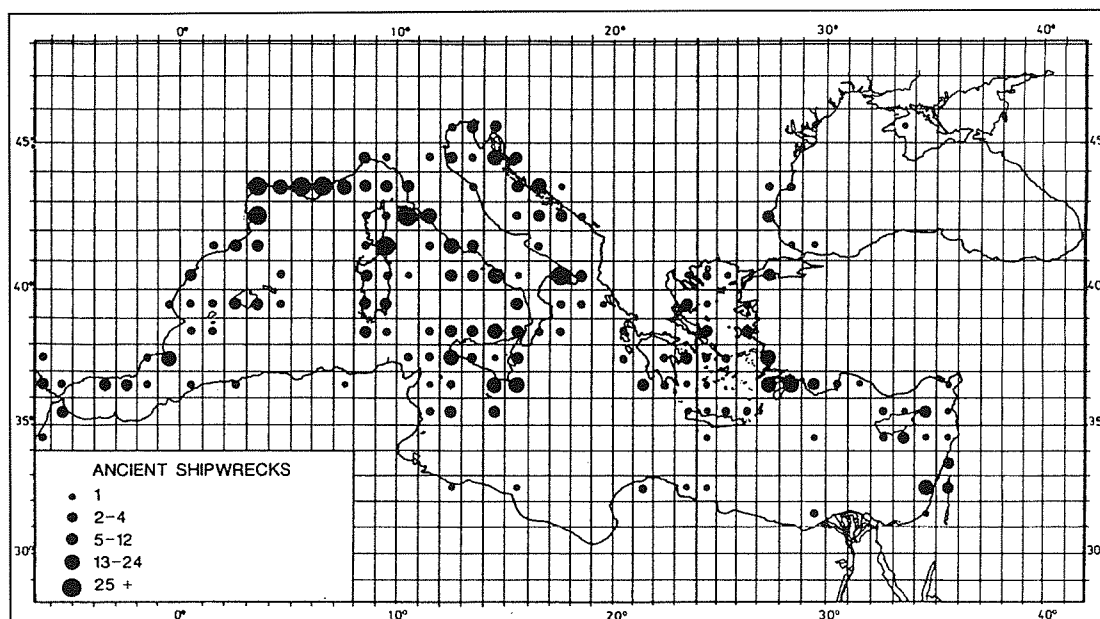


Figure 1. Ancient shipwrecks of the Mediterranean region. The many sunken cargoes, numbering well over a thousand, which are now known represent a new and growing resource for the history of the ancient world.

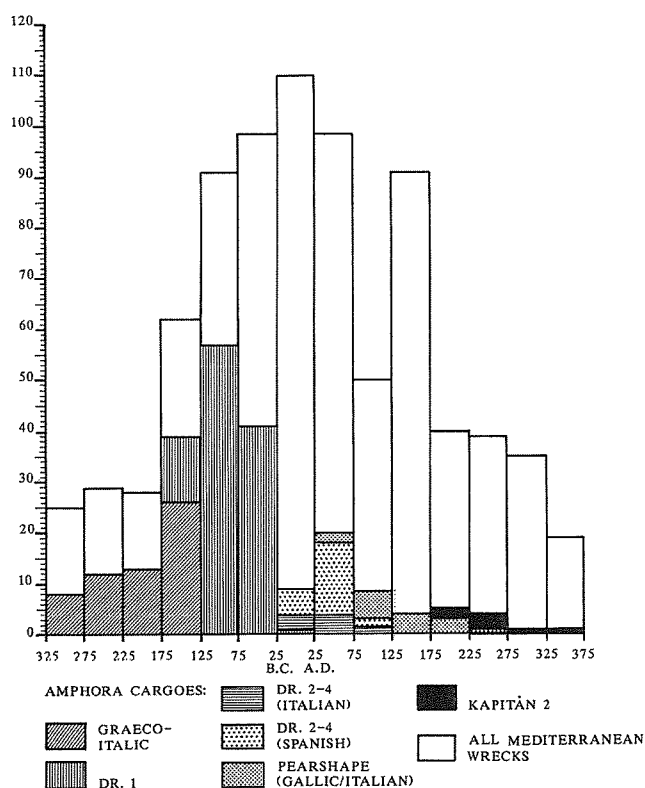
understanding scatters of anchorage debris or casual rubbish. It is clear that the distribution of goods which set out from their point of origin by ship will be different from the distribution of land finds; the latter reflects the movement of travelling salesmen or the passing of objects from hand to hand, whereas transport by sea will result in one or more **gaps** in a chain of deposits. Although some suggestions have been made by I. Hodder & C. Orton⁷ about recognizing the distinctive regression pattern of such distribution, their theory remains, for the most part, untested. As for the use of entrepôts and intermediate staging ports, several scholars, principally X. Nieto, have proposed models, but these have not been extensively tested⁸. Likewise, the definition of a port assemblage, the artefacts which might define a settlement as a port, remains unclear. These aspects of maritime archaeology remain primitive, but progress may yet come.

Another problem has been the definition of different types of underwater site. In the earlier scuba years, some archaeologists found difficulty

in recognizing a strewn of broken pottery as a wreck-deposit rather than a haphazard dump of rubbish; conversely, it was also considered that a shipwreck was a 'time-capsule' which had been frozen at the moment of sinking. Gradually, with a greater understanding of underwater conditions and a stronger interest in site-formation as part of processual archaeology, these difficulties were overcome, and a wide range of site preservation and situation is now generally accepted for the Mediterranean⁹. Site-formation process can often be understood by modelling the particular conditions, and this has become important for understanding wreck sites on exposed, gently-shelving coasts such as much of western or southern Sicily or the coast of Israel: a recent study by S. Kingsley¹⁰ has shown, using early modern travellers' accounts, that in such conditions cargo may be looted or scattered beyond recognition, but the degraded remains of a ship's hull will tend to remain in position and be capable of archaeological discovery. From such technical approaches has emerged increased confidence in the particular importance of shipwrecks as an archaeological and, indeed, historical resource in the Mediterranean.

Shipwreck cargoes, especially of amphoras, offer firm archaeological evidence for ancient commercial activity, unbiased by difficulties of rubbish survival or of recycling on land sites. When, back in the 1960s, the writer started to research new approaches to Roman economic history, it was clear that wrecks were of crucial importance; as a result, a process was set on foot of collecting and tabulating information about shipwrecks, first in the writer's doctoral thesis and then (twenty years later, in 1992) in *Ancient Shipwrecks of the Mediterranean* (Figure 1). Such a compilation can never be truly complete or up to date, and it is good to see people rewriting and correcting the original lists, which, it has to be admitted, are based on information which is often of very flimsy quality¹¹; however, the catalogue has been of interest to ancient historians, some of whom have made prominent use of my tables and graphs¹², and it has been useful in introducing new evidence for economic history, as with the statistics for changes in the Roman wine trade¹³ – especially the emergence of Spain as a major supplier in the reign of Augustus (Figure 2).

Figure 2. Shipwreck cargoes of wine amphoras (Hellenistic to late Roman period). The analysis shows how the export of wine from Italy in Graeco-Italic and Dressel 1 amphoras collapsed in the period of Augustus, and was to a large extent substituted (though on a smaller scale) by export of wine from Spain, Gaul and the Aegean during the Empire period.



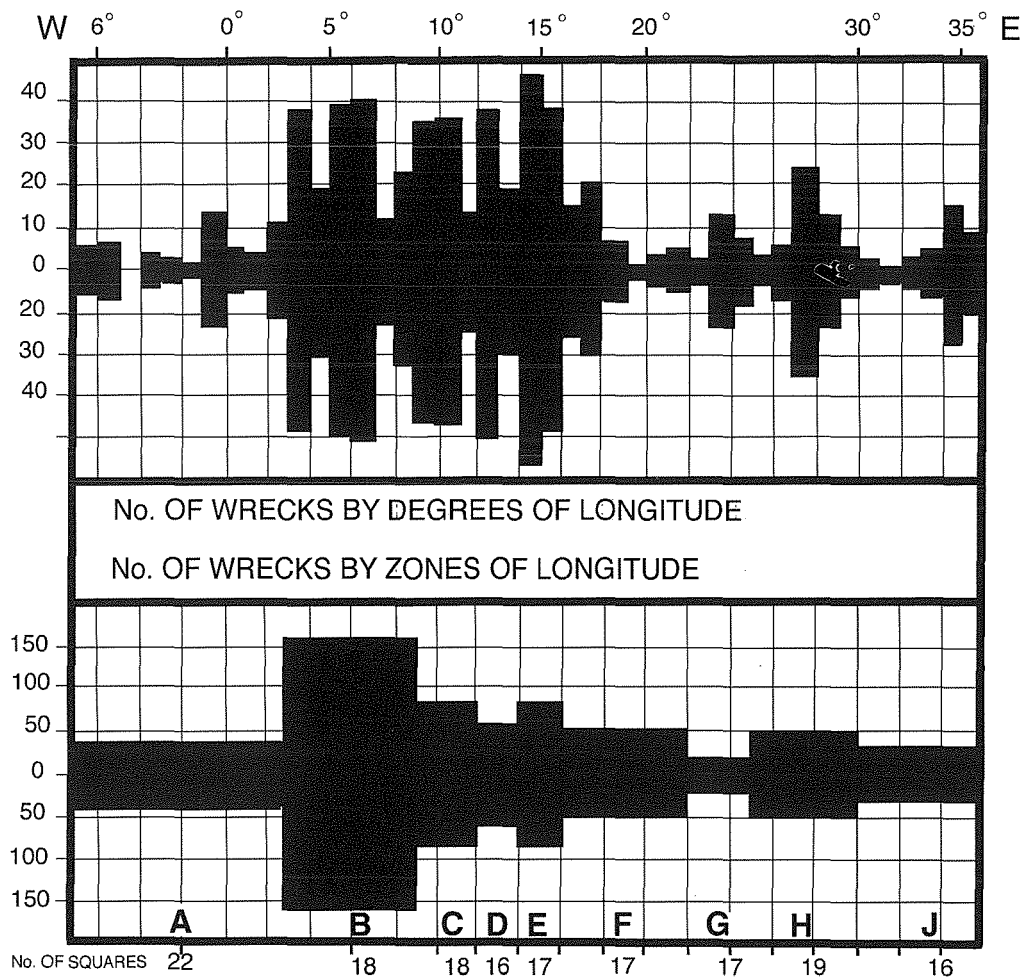


Figure 3. Ancient shipwrecks of the Mediterranean region: the distribution of wrecks (cf. Figure 1, above) is transformed into a schematic map of wrecks (upper) which can be further manipulated into a graph-type chart (lower).

By and large, the picture derived from ancient shipwrecks tends to support a view of the Roman Imperial economy as 'open', rather than 'embedded' or 'command-based', and that is a concrete historical conclusion which provides some reward for all the work which has gone into recording and listing them! But one has to confess that tools to construct even middle-range, let alone general, theory from the wreck-list have scarcely been developed.

It is very important to realise that sailing ships (and oared ships, which also sailed whenever they could) did not follow routes like railway lines, ruled across the surface of the globe, but made the best progress they could in the face of wind and sea. Of course, shelter, trade, revictualling and other factors led sailing ships to converge on focus points around the sea, but one cannot construct a 'route' by joining the dots of shipwreck sites. However, the data do mean **something**. We can model the dispersal of cargoes over the sea by a sort of weighted random walk formula¹⁴, but this work is

regrettably still to be done. Something similar, but simpler, has been done by the writer with an analysis of the West-East distribution of ancient shipwrecks. If one visualizes the Mediterranean as a long strip of flat space, the number of shipwrecks at each successive division along the strip can be shown graphically as a column (Figure 3, upper). If groups of columns are run together, this produces a statistic which is easier to manipulate (Figure 3, lower). To the ordinary person, like the writer, this is a sort of **map** of the Mediterranean, reshaped and distorted to show where the wrecks mostly are. Well, this diagram can be rearranged as a cumulative frequency graph (Figure 4): the curve represents the **normal** distribution of shipwrecks, but, of course, only along a linear axis from West to East. But then the equivalent curves for **selected** wrecks can be compared with this baseline curve, and the point of maximum divergence can be identified and the extent of divergence quantified; such a comparison can be seen, for example, in Figure 5. This shows cargoes of

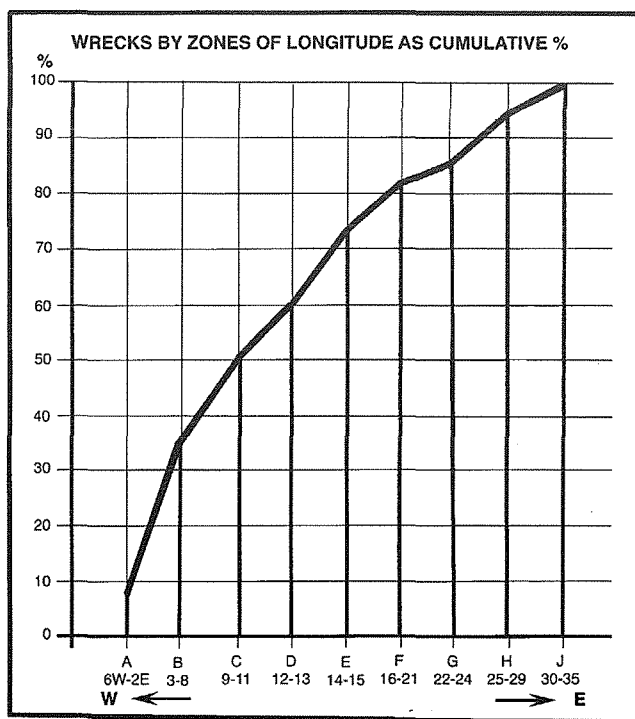


Figure 5. Ancient shipwrecks: the distribution of Dressel 1 and Dressel 6 amphora cargoes, compared with the 'normal' distribution of all wrecks, shows that trade went in different directions, and that the divergence from the 'norm' was especially strong in the case of Dressel 1.

two kinds of Italian wine amphoras - Dressel 1, from Lazio and Campania, with a strongly western distribution, and Dressel 6, from NE. Italy, much more biased towards the East. The same comparison can, of course, be judged from a straightforward distribution map¹⁵, but there the characterization of the distributions remains essentially subjective, and the degree of variation between distributions is not expressed in quantitative and readily comparable terms. The approach outlined here obviously has much to offer in terms of analysing the trends of cargo loss, even though a much more complicated and weighted model has still to be worked out before the method can reach its full potential. A similar analysis is impossible for almost any other part of the world until the modern period, and should yet contribute much more to Mediterranean historical understanding.

Such studies are largely the 'traditional' processual archaeology of the 1970s. In the last 25 years, however, maritime archaeology has been influenced by developments in other contexts and responded to more **interpretative** concerns. Foremost in this has been O. Crumlin-Pedersen¹⁶, who has set out to develop 'the

maritime perspectives of archaeology', entailing study of 'the maritime aspects of past societies' and 'the perception of landscape and settlements, as seen by sailors or fishermen in the past'. The maritime perspective is especially important for archaeology in that seaborne communications have so often been the means of introducing new cultural influences. This viewpoint is shared by P. Horden & N. Purcell¹⁷ who stress connectivity by sea as a distinctive characteristic of the Mediterranean region. In this they differ from the more formal approach of F. Braudel, who emphasized the compartmentalized seas and the linear routes of the Mediterranean in history as he saw it. Well, long ago as a schoolboy I learnt the apophthegm of A. Zimmern, 'In Greece, the land divides, the sea unites' - so the idea of the sea and sea travel as the unifying and distinctive characteristic of Mediterranean history and culture is not novel; however, it is useful, especially when (as with Horden & Purcell) stress is laid on the connectivity, the neural network of communications, at the expense of concern with the sequence of individual settlement sites. Indeed, the redesignation of harbours and ports as 'nodal points on networks' rather than, e.g., port cities with quays, porticoes, statues and temples is of help in understanding prehistoric or more primitive seafaring.

Political control and ritual observance are important factors in the emergence of such nodal points, and recognition of this important cognitive element in ancient interaction with the sea has been an important contribution of recent scholarship¹⁸. Such an approach has the advantage of emphasizing that human activity has to be studied in its setting, in a landscape. This is an important correction to the very site-specific emphasis of underwater archaeology as it has developed so far, and is part of the growth of **maritime landscape archaeology**, which is surely a significant and positive trend, to which I shall return.

'The land divides, the sea unites' is, of course, not just a geographical observation but an analysis of human attitudes. Thor Heyerdahl once said that an archaeologist lacked full understanding 'unless he had some salt in his beard' - a significant echo, and development, of R.E.M. Wheeler's dictum that we must have 'mud on our boots'. Just as the terrestrial

scholar needs to be alert to the archaeological potentiality of the submerged seabed, so the landlubber needs to understand that people's perception of the sea, and their attitudes to seagoing, can vary widely. To some people, the sea is a dangerous, unpleasant, hostile force which must be propitiated and as far as possible shunned; to others, it offers exciting opportunities to win new knowledge, riches and adventurous experience. How well the archaeologist can infer such 'maritimity' or 'maritime consciousness' from antiquity needs more study; however, as far as the Bronze Age Cyclades are concerned, one may mention the important work of C. Broodbank¹⁹. Relying largely on ethnographic parallels, Broodbank has shown the extreme importance of maritime links in Aegean prehistory; he has also been able to propose a theory that, as population grew and settlements became more numerous, the frequency and importance of maritime communications declined. This is a significant contrast to the 'longue durée' maritime connectivity proposed as a general theory of the Mediterranean by others. This an area of research from which one may well expect more in coming years, especially from Malta.

At one point Broodbank demands a new maritime archaeology, 'an archaeology of the dynamics of maritime culture'²⁰. This seems to mean 'a new awareness of maritime activities as archaeological explanation', for the problem which he is concerned to tackle using this new approach is, how (in Early Bronze Age II) to interpret such cultural changes as a rise in the richness of burials, especially of women²¹. He suggests that such a change should be ascribed, not just to increased affluence from overseas trade, but to the enhanced status of seafarers as men who brought home mysterious knowledge, magical objects, riches and even women. The status of such seafarers in their island communities was displayed in the adornment of their womenfolk, in death if not in life too. This may seem far-fetched, but it is an important example of more dynamic archaeological thinking in the post-processual era, and the general direction we should be moving. Also, it relates to the recommendation of Crumlin-Pedersen, mentioned above, that, since many new influences are due to contact by sea, an

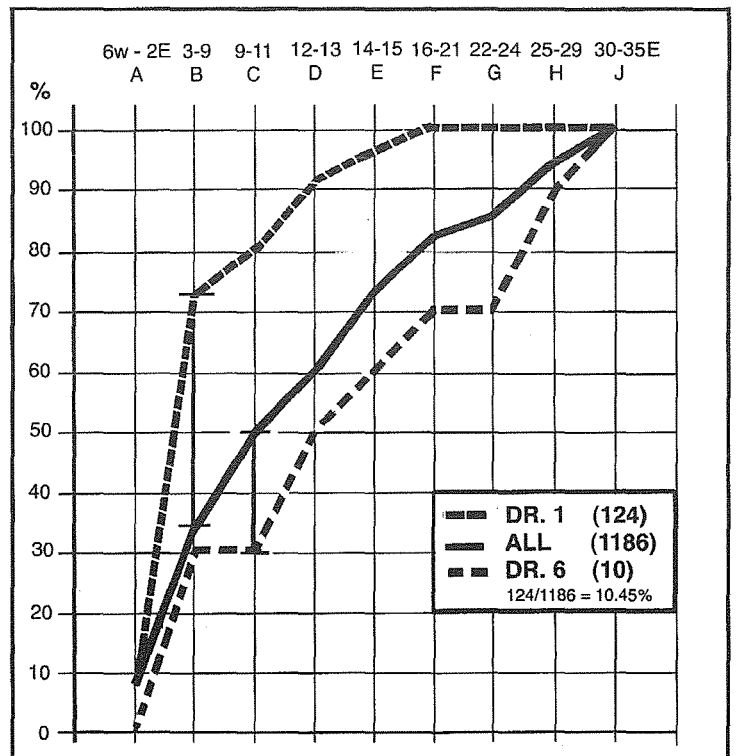


Figure 4: Ancient shipwrecks of the Mediterranean region: the distribution of wrecks along the West-East axis, using the data as organized in Figure 3 lower, is represented as a cumulative frequency graph. The shape of this graph can be used as a basis for comparing the distribution of particular classes of shipwreck as compared with the 'normal' distribution of all shipwrecks.

appreciation of past times must include at least the possibilities of overseas contact.

The influence of Scandinavian archaeology is clearly seen in the concept of the **maritime cultural landscape**, so named by C. Westerdahl²². This has not yet been made explicit, for the most part, in the Mediterranean. The notion of 'landscape' in archaeology is as the topmost term in a hierarchy which starts with the individual find at the bottom:

- LANDSCAPE
- ENVIRONMENT
- SITE
- CONTEXT
- FIND

The procedure of landscape archaeology can best be seen as three levels of activity, viz.:

- INTERPRETATION
- PATTERN
- PLOT

'Plot' is the work of the cultural resource manager, delineating sites on the topographical map; 'pattern' that of the field archaeologist, relating his site to others; 'interpretation' is

the setting of the pattern in a topographical landscape, distorted and weighted by factors of economic competition, ease of movement, accessibility of natural resources, and so on²³. Westerdahl introduced the concept of a structure, a model, on which an interpretative scheme should be erected. The structure includes ideas which are common to much geographical or even historical analysis – the importance of bridgeheads as transition nodes between sea and inland navigation, for example; but there are other concepts specific to the sea, such as coastal zones, demarcated by anchorages or straits, which often correspond to distinct traditions of boatbuilding or trade specialisms. Another concept is that of what D. Tomalin has called the ‘closing zone’ or ‘apron’, where the approach to a port is signalled archaeologically by a litter of artefacts and even shipwrecks²⁴. Tomalin has also carried out extensive searches on a sampling basis of the seabed to demonstrate how scatters of material in anchorages or on shallows can be added to the map of the cultural resources, and used to give an interpretative dynamic. Such structural interpretations can be summarized in a schematic plan or model, such as Figure 6 here, in which the various elements of the maritime landscape are arranged to show their relationships, and so enable the testing of historical and archaeological information as a means of reconstructing history. The structures derived by Nordic scholars from the situation in Scandinavia and northern Europe are not, at first sight, suited to Mediterranean conditions, but this is the basis on which the study of the Mediterranean maritime past can be advanced now – combining the systematic exploration and proper recording of the cultural resource, both submerged and at the coast, with a structured interpretation involving physical, cultural and cognitive elements of historical records and archaeological remains.

In conclusion, it can be seen that new approaches in archaeology generally have their specific counterparts in the marine context, and that maritime archaeology in the Mediterranean stands to benefit from the development of methods which are more analytical and conceptual than merely processual or data-gathering.

Acknowledgement

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