

# Preface

Seabed prehistoric archaeology has arrived during the last decade at what economists like to call 'escape velocity'. Archaeological sites ranging from 5,000 years old to around 1 million years old have been found offshore, mapped and sometimes excavated off all major continents, in both hemispheres, from the shore to depths of over 100 m, and from almost the pole to the equator. Research groups that have durability and funding are becoming established in many countries. The new data are being absorbed and interpreted.

Good ideas, good inventions, and new frontiers of research have a way of being discovered or invented many times before they are finally proven to work or to be intellectually useful. From flying machines to steam engines, from diving gear and safety razors even to the alteration of species through time, the story has been the same. Flood myths such as Deukalion, Noah and Gilgamesh go back thousands of years in written form, and probably 10,000 or more to their oral beginnings. Submerged cities in the Mediterranean were well known to the ancient geographers and historians, sometimes correctly and sometimes with embroidered details. Successive glaciations in the European Alps were deciphered during the mid-nineteenth century, and immediately led to the calculation that the ice volumes on the continents would lead to a global sea level drop of the order of 100 m.

By the early twentieth century, palaeontologists and archaeologists had noted shoreline caves in Algeria and southern France containing bones of extinct megafauna that could only have walked there when the sea level was much lower. Fossil bones, terrestrial peat, and occasional flint tools were trawled up by fishermen, and correctly explained as originating when the continental shelf was occupied by human ancestors. All finds occurred by chance, and there seemed no way of making research on the seabed proactive. The available technology was seriously inadequate. During the twentieth century, steady enhancement of acoustic survey of the seabed through single-beam echo sounding, side-scan sonar, and then multibeam swath bathymetry, resulted in a much fuller understanding of drowned river valleys, periglacial phenomena such as moraines and ice tunnels, fossil coral terraces, and many other terrestrial or fossil coastal features remaining intact on the continental shelf. After 1945, the exploitation of offshore hydrocarbons and dredging for aggregates and navigational channels produced still more data. Divers, both commercial and

amateur, reported complex geomorphological features on the seabed, submerged caves that could only be Pleistocene low sea level shorelines, and sometimes found prehistoric remains in sedimentary areas. I started research for my PhD in 1960 when side-scan sonar was a new tool, and just before oil and gas were discovered in the North Sea. Anything seemed possible. However, I also knew that my plans to study submerged Pleistocene caves and tectonically submerged classical ports in the Mediterranean were based on more than a century of previous scholarship. My hero was A. C. Blanc whose work on the west coast of Italy in the 1930s and 1940s showed how it might be plausible to go beneath the surface of the sea and search for prehistoric remains as a deliberate plan with a chance of success. Since then, a host of discoveries by many researchers in the southern Baltic, off the coast of Israel, in the North Sea, off both the Atlantic and Pacific coasts of the Americas have shown how far-sighted Blanc's ideas were.

This book is not an exhaustive global catalogue, which would have to contain references to many thousands of known seabed prehistoric sites. Rather, it is a highly selective set of sites, projects, surveys, and excavations from a wide variety of oceanographic conditions, climates and prehistoric cultures. The cumulative significance of this amalgam of sites is synthesised at the end of the book in the concluding chapter by Geoff Bailey. There are still huge uncertainties about the early migrations of hominins and anatomically modern humans which will only be resolved when we have a much larger data set to study from the sea floor. Equally, the role of the continental shelf as a refugium on the periphery of glaciated areas is still not understood, nor is the effect of the accessibility generally of the continental shelf and its resources during glacial maxima.

This book originated at the Sixth World Archaeology Conference (WAC 6) held in Dublin in June 2008. There was a session on seabed prehistoric research organised by Amanda Evans and Joe Flatman, and Amanda took the initiative to plan a published volume based on the papers in that session. Less than a month later, in July 2008, the Third International Conference on Underwater Archaeology (IKUWA 3) was held in London, with Joe Flatman chairing that conference's organising committee. At IKUWA 3, I organised a session on prehistory, co-chaired by Dimitris Sakellariou. Again, there was discussion of publication, and Amanda and Joe invited me to co-edit the proposed book with them. Inevitably, we found that some speakers were not ready to write fully argued texts, and the ones that were provided resulted in an unbalanced global selection, so we invited further contributors to make a more representative picture of the situation.

I thank the authors and my fellow editors who did much more work than I did, and I hope that my long experience in this field provided some guidance and help when most needed. The subject is entering a new era when new sites will be discovered in critical areas such as the Sunda-Sahul shelf and Beringia, and when the more fully explored sectors of the shelf will provide so many sites with a rich variety of dates, modern interpretation of cultures, demographics, change through time, and social structure will be possible.

Governments are beginning to plan systematic topographic and bedform mapping of their continental shelves at high resolution with multibeam survey for

commercial, military and management purposes. This will have the fringe benefit of providing the maps needed to reveal drowned terrestrial landscapes where they are not cloaked in a thick over-burden of marine sediments. Other sonar techniques can then provide maps through the sediments, while Remote Operated Vehicles and Autonomous Underwater Vehicles are opening up new possibilities for systematic photography and optical surveying of large areas. Ultimately, the great majority of prehistoric sites can only be examined in sufficient detail and excavated by divers, with the progress in diving systems, and training the archaeologists to dive, as an essential step. I hope that this book enthruses some of the younger generations to join this exciting research.

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