

Book reviews

Between Continents: proceedings of the twelfth symposium on boat and ship archaeology, Istanbul 2009

NERGIS GÜNSENIN (ed.)

342 pp., fully illustrated in colour and b&w

University of Istanbul via Zero Books, Kalio Mustafa Celebi Mahallesi, Abdullah Sokak no. 17, Beyoğlu Istanbul 34433 Turkey, 2012, €99 (hbk), ISBN 978-6054701025

The publication of the proceedings of the International Symposium on Boat and Ship Archaeology (ISBSA) is always an event eagerly awaited. This symposium is in fact the only international event in the field of boat and ship archaeology, and every three years provides a review of the discipline, the state of research and new discoveries. The proceedings of the 12th symposium edited by Nergis Günsenin are no exception and bring together, in addition to the keynote address, 47 papers from 21 different countries belonging, albeit unevenly, to the five continents, and so reflect the gradual expansion of the increasingly international discipline.

Held in Istanbul under the highly symbolic title *Between Continents* the ISBSA 12 publication acknowledges the very first scientific underwater excavations in nautical archaeology that took place in Turkey at Cape Gelidonya and Yassıada as G. F. Bass recalled in his opening address, and the latest exceptional discoveries of the Yenikapı wrecks in Istanbul's Byzantine port. An entire section of the work is devoted to the latter discoveries. The duality implied in the title illustrates a major development in the discipline: the increasingly important role of wreck excavations on land, often as rescue operations, today stands alongside underwater excavations (recoveries and research). Indeed, from the ancient Greek wrecks of Place Jules-Verne in Marseille to the Byzantine wrecks of Yenikapı in Istanbul, land excavations have in recent years brought major contributions to nautical archaeology. This reflects the maturity of the discipline and better standing of ship archaeology which is no longer confined to the single field of activity of underwater archaeology.

The Proceedings are divided into eight sections. The first includes papers concerning current research in the Mediterranean: from an underwater survey of the maritime heritage on the coast of Kaş (G. and A. Varinlioğlu Denel) to the study of modern wrecks such as the 16th-century wreck of the island of Mljet in Croatia (I. Mihajlović, I. Mihaljek and M. Pešić) and that of Akko I in Israel (D. Cvikel). The concept

of 'Mediterranean' is taken here in a broad sense as one of the papers concerns the Red Sea and the remains of Pharaonic ships (c.2000 BC) from Ayn Sukhna (P. Pomey). Discussion of vessels of the Bronze Age and Early Iron Age is dominant in this section and several discoveries are of great interest for the early history of ship architecture. Besides the ship remains from Ayn Sukhna, which illuminate our knowledge of the construction of seagoing vessels and the organization of maritime expeditions to Sinai at the time of the Middle Kingdom, there is a report of the discovery, still on land, at Mitrou in Greece, of a boat dated c.1900 BC derived from an expanded logboat (A. van de Moortel). The hope is that the excavation of the Phoenician shipwreck from the end of the 7th century BC at Bajo de la Campana, Spain (M. E. Polzer) can provide new data on Phoenician ship construction that remains little known despite its considerable importance. If the analysis of the hull remains of the Kızılburun 'column wreck' (J. D. Littlefield) shows no fundamental difference from the construction of other merchant ships from the same time (late 1st c. BC), the study of the wreck Tantura E, Israel, dated between the 7th and 9th century AD (E. Israeli, Y. Kahanov), reconfirms the importance of the Dor site in the study of naval architecture at the end of Antiquity and the beginning of the Byzantine period, having a construction based on frames in the local early Islamic period.

The second section deals with new research in Northern Europe. It opens with the study of the Skaftö wreck, Sweden, corresponding to a large clinker-built cargo vessel of the 15th century, relatively well preserved, which could be a late medieval 'hulk' (S. von Arbin) and the impressive discovery of 15 Nordic clinker-built boats from the 16th and 17th centuries in the city centre of Oslo, Norway (J. Gundersen). The rescue operation, dubbed 'Barcode', once again confirms the exceptional richness of naval archaeology on land. On the other hand, the rediscovery of the Swedish *Prinsessan Hedvig Sophia* in the Baltic Sea near Kiel, Germany (J. Auer, M. Segscheider) and the investigation of the wreck-site of the 18th-century Russian warship *St. Alexander* near the Tarkhankutski lighthouse in Ukraine's Crimea (O. A. Zolotarev, V. D. Kobets) appear more conventional; as does the serious task of identifying the 18th-century shipwreck W-27, located off Gdansk, Poland, based on archival sources which indicate a *kuff* or galliot-type vessel.

The third section is entirely devoted, quite rightly, to the Byzantine ships at Yenikapı, Istanbul. After Nergis Günsenin's historical recall of the city harbours from Antiquity through Medieval times, there is an overall

presentation by U. Kocabaş of the 36 shipwrecks dated to the 5th–10th centuries AD, discovered in the Theodosian harbour of Constantinople. Two of these wrecks, Yenikapı 12 and 17, are the subject of a special presentation. The first corresponds to a small cargo vessel dated to the 9th century AD, built in a mixed mode based on a bottom shell (I. Özsait Kocabaş). In contrast, the second wreck, from the 8th–9th centuries, is an early example of a frame-based construction (E. Türkmenoğlu). According to U. Kocabaş, most of Yenikapı wrecks are built using a mixed process as seen in YK 12, while YK 17 shows that the transition toward a frame-based construction is already accomplished. Comparing the Yenikapı and Dor wrecks, one realizes that the process of transition in Mediterranean shipbuilding from shell-based to frame-based construction was certainly complex, non-linear and progressed from different sources. Lastly and quite logically, the section on Byzantine wrecks ends with a study of the ethnicity and sphere of activity of the crew of the 11th-century Serçe Limanı ship, leading F. H. van Doorninck to propose an origin in the Levant.

The fourth and fifth sections are extensions of the previous one. They mainly concern the Black Sea and the Ottoman shipbuilding. However, two papers deal with general considerations about ships and seafaring in the Ancient Mediterranean. The first considers ships carrying marble (C. Beltrame and V. Vittorio), a subject already addressed through discussion of the Kızılburun wreck—the conclusions of which are highly speculative given the lack of archaeological data. The second paper investigates the activity of eastern *naukleroi* in the western province of the Roman Empire which was dominated by the western *navicularii* (Th. Schmidts). The Black Sea naturally takes an important position through iconographic studies of Byzantine ship graffiti in the *Kilise Mescidi* (Mesdjid chapel) of Amasra (K. Damianidis), the graffiti of Hagia Sophia at Trebizond (Trabzon) (L. Basch) and on the illustration of the Codex 5 of ‘The romance of Alexander the Great’ in the Hellenic Institute of Venice which tells of the galley of the 14th-century fleet from the Black Sea (Y. D. Nakas). Two other papers focus on traditional shipbuilding of the Black Sea through the study of the famous Inebolu boat which is a last surviving ‘shell-first’ construction found on the western Black Sea coast of Anatolia (H. Çoban) and the reconstruction of a Black Sea Ottoman merchantman from the Kitten shipwreck (K. N. Batchvarov). All these studies show the originality of the Black Sea and its role in preserving nautical traditions. Finally, two papers deal with the dockyards of the Ottoman period: one about anchor manufacture (Y. A. Aydin), the other about the activity during the 19th century of the *Tir-i güverte* as a branch of the imperial dockyard (M. Ünver).

Various topics are covered in the sixth section under the title ‘Ship Building’. Several papers relate to research in rivers and inland waterways. In France, two studies concern Gallo-Roman wrecks of the

1st century AD: the Saint-Georges 8 wreck which corresponds to a ferry or a lighter from the river Saône (M. Guyon and E. Rieth), and the Arles-Rhône 3 which is a river barge with some Mediterranean influences (S. Marlier, S. Greck, F. Guibal, V. Andrieu-Pomel); a third paper is related to the 15th-century EP1 Canche wreck (North of France) of a fluvio-maritime coaster in the cog tradition (E. Rieth). In Poland, W. Ossowski considers the inland waterways of the Vistula and Oder from the 16th to 18th century (W. Ossowski). Three other papers provide an overview of the diversity of shipbuilding traditions, with a Mediterranean example from the archive study of a Genoese trading ship from 1202 (F. Ciciliot), an Irish Sea example of the 16th-century wreck of the seagoing clinker-built Drogheda Boat (H. Schweitzer) and an example of Iberian-Atlantic tradition, the 16–17th-century wreck of Arade 1 in Portugal (V. Loureiro). A paper on the use of pine sheathing on Dutch East India company ships (W. van Duivenvoorde) ends this section.

The final seventh and eighth sections include experimental archaeology and research methods which are always a good barometer of the vitality of the discipline and its future. Here ISBSA 12 was particularly rich and promising. Papers on reconstructions and trial sailing were focused on: *Min of the Desert*, a floating hypothesis of an ancient Egyptian boat which confirms the capacity of the ancient Egyptians to make long-distance sea voyages (C. Ward, P. Couser, D. Vann, T. Vosmer and M. Abd-el-Maguid); *Jewel of Muscat*, a 9th-century sewn-plank boat based on the Belitung wreck (Indonesia) sailing with success the ancient maritime Silk Route (T. Vosmer); *Sea Stallion from Glendalough*, the sailing replica of the 11th century Viking longship Skuldelev 2 which sails, sometimes in extreme sea conditions, from Roskilde (Denmark) to Dublin (Ireland) passing by the north route and from Dublin back to Roskilde by the south route through the Channel (S. Nielsen); analysis of travel speeds of several trial voyages of Viking sailing replicas (A. Engert); several experimental sailings along the waterway from the Varangians in Sweden to the Byzantine Greeks in Istanbul (P. E. Sorokin); and a 17th-century Taiwanese junk, a hypothetical reconstruction that had not sailed at the time of the conference (J.-H. Chen). That is a very wide range of ship replicas with differing origins, dates and construction methods. Most of these are based on precise archaeological data, or scientifically based hypotheses, where fantasy has no place.

Lastly, the research methods focused on the problems of excavation strategy through the example of the emergency rescue of 15 wrecks found in the Oslo harbour (H. Vangstad) and the approaches to the well-preserved Baltic Sea shipwrecks (N. Eriksson and P. Höglund) and, secondly, on the post-excavation recording systems and hull-reconstruction methods used in Roskilde, Denmark (M. Ravn), on the Oseberg ship, Norway (V. Bischoff), on the Newport medieval ship, Wales (N. Nayling and T. Jones), and, in France,

on the Dramont E shipwreck (P. Poveda). It appears that the new recording methods coupled with computer 3D reconstruction offer particularly promising prospects for future research in this field.

Let us add, finally, that the book is richly illustrated, remarkably well edited under Nergis Günsenin's care, and follows the usual layout of ISBSA proceedings.

In total, the ISBSA 12 proceedings *Between Continents*, according to a now well-established tradition, is the most current reference work in the field of boat and ship archaeology. Wealth, interest and the variety of communications offer a comprehensive perspective on new discoveries, research in progress, research perspectives and methodological reflections, and, more generally, on the evolution of the discipline. In this respect, this volume is indicative of the development of nautical archaeology which regularly expands its field of study to take into account more systematic study of the ship whatever its context and chronological origin or geography. This book is absolutely essential for anyone interested in boat and ship archaeology but also has its place in all archaeological libraries, given the increasing universal status of by nautical archaeology.

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P.S. Angela Croome (just returned from ISBSA 13 in Amsterdam) writes:

It was inevitable after the highpoint of Istanbul that ISBSA 13 in Amsterdam would be an anticlimax: 2012 is a very different year and climate from 1988 when ISBSA previously met there.

In his opening address, the organiser Dr Benno van Tilburg, remarked that the Netherlands 'is the world's largest ship graveyard on land'. He touched on the formidable archaeological responsibility presented by perhaps 8000 buried vessels from the past. (They represent the full gamut, from Pesse, the earliest known logboat, on.) In this context the meeting's title 'Ships and Maritime Landscapes' seemed entirely appropriate. ISBSA 13, however, has proved a tissue of paradoxes.

First we learnt that the ship research laboratory of the government Heritage Agency—the hub of the country's nautical archaeology research and management and the host of the meeting's traditional 'away' visit—was to close 'in a fortnight'. Its building at Lelystad lies within an area—part water part reclaimed land—chosen for an UNESCO World Heritage Site. And, we understood, was to be subsumed into a theme park centred on the rather fanciful life-size floating model of Batavia, the notorious mutiny ship wrecked off Western Australia and rediscovered by Western Australians to become an icon of early



(With permission of the Netherlands Cultural Heritage Agency)

underwater maritime success. Batavia is now owned and run commercially, and the level of the associated exhibition nearby is not much more encouraging.

It seems that to meet the economic crisis the authorities have determined on 'development' as the solution. Instead of the 'landscapes' of the ISBSA title the country is filled with 'infrastructure' (see image above). The four-year refurbishment of the Scheepvaartsmuseum, the re-opening of which was part of the ISBSA occasion, must be seen in this context too. But in the cultural sphere 'development' seems to mean 'dumbing down'. The interior and its collections seem now most to resemble a giant play pen, while the stately 17th century exterior still stands serene on the waters edge. But, another paradox, the full-size model Dutch East Indiaman floating beside the museum is treated as a toy and known by everyone as 'the pirate ship'. It seems moreover that the duplicate collection of artefacts recovered from the several VOC shipwrecks off Australia in the one brilliant negotiated solution to the finds problem has been returned to Australia—part of the 'refurbishment'? Certainly another avenue lost for public appreciation of this compelling archaeology.

When it comes to the contents of the meeting—well perhaps we shall need to see the published Proceedings before having a clear idea of how the presentations hung together. The hours were long and sessions in parallel, so there was plenty of opportunity for Dutch scholars to analyse their findings from their unique 'graveyard'. The extraordinary behaviour of the sands and shoals off the Dutch coast round Texel and a thronged waterway in the Golden Age of Dutch shipping seemed to mesh with the peak numbers of wrecks of this period.

By far the highlight of the symposium was the announcement by Patrice Pomey of his Protis Project for the construction of two sailing replicas of 6th century BC Archaic Greek vessels based on two recoveries from the Place Jules-Verne site in Marseille

is to go ahead and will start very soon. *Gyptis* the sailing replica of J-V 9 will be a large coastal boat, 10 m long, with mixed propulsion of sail and oar and the plan is for it to be ready to take part in the celebrations for Marseille-Provence as European Capital of Culture in 2013. *Gyptis* will be held together entirely by stitching as was its original. *Protis* (based on J-V 7) will be larger, 15 x 3.8 m, and a merchant sailor and the type of principal carrier in the expansion of Massalian maritime trade in the late 6th century BC. Its assembly technique depended on stitching and mortise and tenons. Both originals are direct descendants of the craft that carried the Phocaean colonists that founded Marseille and reflect the construction techniques then in use in the Aegean Sea.

Amsterdam was not a hands-on conference. It erred on the theoretical side. One veteran participant summed it up: 'Too many buns; not enough boating.'

Across Atlantic Ice: the origin of America's Clovis culture

DENNIS J. STANFORD and BRUCE A. BRADLEY

iv + 319 pp., 80 figs, 6 tables

University of California Press, Berkeley 94704, USA or via John Wiley and Sons Ltd, European Distribution Centre, New Era Estate, Oldlands Way, Bognor Regis PO22 9NQ, England, 2012, £24.95 (hbk), ISBN 978-0520227835

In 2004 I was asked to review conflicting referee reports for a paper submitted to *World Archaeology* which, very sensibly, the editor was inclined to publish on the ground that however radical a scholarly hypothesis might be it ought to see the light of day. The paper, predictably, was very soon embroiled in debate and then largely disappeared from mainstream discussion. Now it is back. In this book, Stanford, Curator of Archaeology and Director of the Paleo-Indian Program at the Smithsonian Institution, and Bradley, Associate Professor of Archaeology, Director of the Experimental Archaeology Programme at Exeter University, and a lithic technology specialist, have updated their material and added refinement and abundant detail to their hypothesis. They contend that the distinctive Clovis technology of North America originated in the Solutrean culture of southwest Europe at the height of the last glacial expansion, and was transported across the Atlantic by maritime hunters moving along the edge of the transoceanic ice-sheet. They call this the 'Solutrean hypothesis' and it is starkly different from the conventional view that the Americas were colonized from Siberia, either on foot across the Beringian land-bridge and then through an ice-free corridor east of the main cordillera, or by boat along the Pacific coast.

Stanford and Bradley do not deny the possibility that some terminal Pleistocene migration to North America occurred from east Asia, but they contend that there was, at least, also some colonization, probably earlier, from western Europe. The Solutrean hypothesis arises from a strong similarity between projectile points with indented bases that occur both in the Spanish Solutrean, 18–25,000 years ago and North American pre-Clovis sites, especially in the eastern states, such as Cactus Hill dated about 16,000 years ago.

Much of *Across Atlantic Ice*—in fact about three-quarters of the volume—is an extended technological argument which aims to show, on the one hand, that an Asian origin of Clovis assemblages is improbable and, on the other hand, that modern lithic analysis, in particular, places the distinctive common attributes of Clovis and Solutrean assemblages beyond coincidence. The argument flows logically and understanding it is enhanced substantially for non-specialists in lithics, by an introductory chapter explaining the terms and techniques involved in analysing flaked stone technology. The authors argue that the Asian origin model is doubtful because Beringian lithic traditions of the Pleistocene-Holocene transition exhibit very little of the large-flake bifacial technology exemplified by Clovis. In addition, the pre-Clovis sites in North America have lithic technologies with indented-base points, that appear to be ancestral to Clovis.

Turning to the Solutrean comparison, Stanford and Bradley compile an impressive dossier of evidence. Their cluster analysis of early Paleo-American tool types with Beringian and European assemblages shows a clear distinction between American and Beringian against European, which favours the conventional out-of-Asia hypothesis, but analysis by lithic technology, centred on the characteristic overshot flaking technique, groups pre-Clovis clearly with Solutrean. Wider cultural comparisons also show some intriguing similarities, for example in the spear motifs incised on stones. Some pre-Clovis sites in North America are also dated, although still controversially, to around 20,000 years ago, overlapping with the Solutrean-Age range. Out of these various sources of evidence the authors conclude (p.184) that, 'the technological, behavioural and dating evidence overwhelmingly support the theory that the fluted-point traditions in North America derived from a regional and chronological variant of the Solutrean cultures of southwestern Europe'.

So far, so good; but the sea-elephant in the room is how that could have been accomplished. It is not difficult to accept that Solutrean subsistence was turning to greater reliance upon coastal resources, including large marine mammals, even if these are barely represented in Solutrean sites. Stanford and Bradley argue that the coastal hunting stations, and possibly base camps, in the Bay of Biscay were in areas now drowned by post-glacial eustasy. It is quite possible, as the authors argue, that the hard-rock coast and the margins of the pack-ice north of Iberia were suitable

habitats for seal rookeries, given that they were within the flow of the Gulf Stream. Further northwest, however, the sea temperatures at the LGM may have been too cold and deep to support fish and seals at comparable densities. Even conceding sufficient subsistence resources, the distances to be travelling along the edge of the ice-pack are huge. Plotting the two proposed routes from off the north Iberian coast to the Grand Banks, shown in their figure 9.4, on Google Earth (thus, very much minimum distances) suggests that the shorter is about 4000 km, the longer about 4700 km. Having to hunt most days, being often weather-bound, and with the intervention of various family and other contingencies, would mean that, even travelling on every possible day, the journey on foot was likely to take four-to-six months. If resource abundance declined westward then a powerful motivation existed to return before even half the journey was over. This, of course, does not mean that it was impossible or did not happen. Exploratory instincts can be powerful, but a successful colonizing propagule would need to be quite large—probably in excess of 30 people—and gender balanced, and the high risk of failure in leaving familiar hunting grounds and venturing far along the ice-front must have been obvious from the outset.

In the current context, the issue of whether Solutrean explorers were competent seafarers naturally arises. Stanford and Bradley think they were, but there is no evidence either way in north Atlantic and west European archaeology. Appeal to other regions is not a particularly useful tactic. Clearly sea travel of up to a few hundred kilometres offshore occurred in the western Pacific more than 45,000 years ago, but the great advantage of bamboo rafts, even if they were only natural clumps, in supporting a substantial cargo weight, together with the warmest sea and air temperatures on earth and very short passage times (most not necessarily longer than a day or two), are no useful basis for comparison (Anderson, 2010, *The origins and development of seafaring: towards a global approach*, pp. 3–16 in A. Anderson, *et al.* (eds) *The Global Origins and Development of Seafaring*. McDonald Institute Monographs, Cambridge). Other arguments for more sophisticated early voyaging in the western Pacific are difficult to validate. A recent and widely accepted hypothesis that there was systematic tuna fishing at 42,000 years ago in Timor (O'Connor *et al.*, 2011, *Pelagic fishing at 42,000 years*), is fatally flawed by the failure to identify any tuna at the site in question and by the related probability that the small specimens of Scombridae that were identified were more probably inshore fish such as scombrid mackerel. Offshore travel that suggests advanced maritime capability is essentially a Holocene phenomenon, as many examples cited by Stanford and Bradley show.

Where does that leave us? The case for some connection between Solutrean and Paleo-Indian has been well-made, and, some aspects of it, including the lithic technology comparison and a genetic argument, look to

be rather convincing. Inasmuch as the authors do not reject the possibility of an Asian connection, although they have it later than conventional wisdom asserts, there is no need to set one hypothesis against the other. Skin-boat technology probably did exist by the terminal Pleistocene, as suggested by sites of this age on islands along the Norwegian coast (for instance H. B. Bjerck 1995, *The North Sea continent and the pioneer settlement of Norway*, in A. Fischer (ed.) *Man and the Sea in the Mesolithic*, pp. 131–144), at a time when the Fennoscandian ice-cap was still extensive, so the implicit model of a pioneering population moving by sea along an ice-front is not outlandish. It is, in any case, envisaged in the Pacific coastal route for settlement of the Americas. Yet, crossing the north Atlantic by way of an immensely long ice front, especially if watercraft were not available, remains beyond my sense of what a Solutrean clan might have attempted, given the sheer distance and its prior unknowability, the environmental harshness and the logistics involved. Nevertheless, Stanford and Bradley have done a thorough job in constructing and defending an hypothesis which, though still conjectural, might turn out to be archaeologically demonstrable. It should be taken seriously and tested systematically by adherents of opposing views.

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A Small Greek World: networks in the ancient Mediterranean

IRAD MALKIN

284 pp., 18 b&w figs, 14 maps

Oxford University Press Inc., 198 Madison Avenue, New York, NY 10016, USA, 2012, £40 (hbk), ISBN 978-0199734818

For the readers of this journal, there is a definite sense of 'preaching to the converted' in Irad Malkin's *A Small Greek World*. Taking the view from the ship to the shore and considering maritime networks are things that we intuitively do. So does the volume have anything to offer us? Absolutely. It presents an interpretation of a world that feels 'right' from a maritime perspective, which is reached through the clear articulation of a particular methodological approach—the use of network theory. Such ideas could be profitably applied to other aspects of Greek maritime society not dealt with here, as well as other seafaring communities.

The central premise of *A Small Greek World* is encapsulated in the conundrum contained in its opening lines, namely how did 'Greek civilisation come into being just when the Greeks were splitting apart' (p. 1). Dealing with the processes involved in Greek colonization during the Archaic period (roughly from the 8th to the early 5th centuries BC), Malkin charts aspects

of the social development of the numerous Greek communities that functioned within the ‘decentralised network’ or the ‘small world’ of the Mediterranean and Black Sea. Within his vision movement across the sea is key; Greeks migrated overseas to found new cities; goods and ideas were transported and a specific identity and civilization created because and not in spite of the distance between the far-flung Greek settlements. Yet curiously within all of this, the ships and their sailors, as well as merchants and traders are largely unexplored in the volume, despite being the clear ‘technology of communication’ (pp. 48–49) through which this level of connectivity and commonality was achieved.

We are presented with a sophisticated view of Greek colonization and its results in which the connections between people and places led to the creation of both global and local identities. This combination of global and local—‘glocalization’ (p. 14)—is a recurring feature of the volume, as is the use of the vocabulary of network theory: for some readers the terms used could feel jarringly anachronistic—‘Greek Wide Web’ (p. 25) is a case in point. Nevertheless, the vocabulary is clearly explained so that a reader can answer questions such as what exactly is a ‘decentralised network’ (see pp 8–10, Fig. 1.4), a ‘small world’ (p. 33), or a ‘middle ground’ (p. 46)? Overall though it is not necessarily the terms that are used, but the perspectives that they offer when enmeshed within richly textured historical narratives that are the important outcomes of this volume.

In chapters 2 and 3, Malkin picks up the theme of the largely simultaneous emergence of a generalized Hellenic identity alongside regional ones. For example, the political unification of the island of Rhodes from its three independent *poleis* (city-states) at the end of the 5th century is used to demonstrate how through participation in external Hellenic contexts, such as in the Olympic games, military action and the settlement of new colonies, an island rather than a *polis* identity was formed where overseas experiences condensed local political entities into island ones. This would have been both an outsiders’ view of the inhabitants of the island and also how islanders viewed themselves in wider trading or Panhellenic networks. Chapter 3 adds regional and non-Greek perspectives to this discussion in its consideration of Sicily. Here a regional identity was created through colonization and the arrival of Greeks from all over, leading to an awareness of being Greeks living in Sicily—*Sikeliôtai*. The island was also populated by non-Greeks, and consequently we see that the Sikels, a non-Greek regional ethnic identity, also arose in parallel to the emergence of the Sikeloites.

Chapters 4 and 6 examine the types of ‘cultural borrowings’ that occurred between the Greeks, Phoenicians and other peoples as they came into contact, traded, established emporia and colonies using the concept of the ‘middle ground’ as a way of understanding cultural exchange between peoples. An interesting case is the study of the cults of Herakles and Melqart,

similar god-heroes for similar maritime peoples, both of whom were associated with colonization. Malkin suggests that Melqart functioned as the god of promontories for Phoenician sailors and through association with Melqart the terrestrial Herakles of the Greeks became associated with maritime colonization: ‘in other words, the maritime and city-founding attributes of the Greek Herakles may have first appeared among Phoenicians’ (p. 141). Here Malkin draws out the multi-faceted and fluid nature of identities and the active role of maritime people within the middle grounds at the interfaces between cultures—principally here ports and port cities—to the reorientation and recreation of cultures at both the global and local levels.

The processes of colonization and the maritime networks within which these cities sat are examined in chapter 5. Malkin notes that colonies such as Massalia, with their initially small territories, clearly looked towards the sea, the ‘shared space of cultural and commercial connectivity’ (p. 149). Such colonies sat within a multitude of different networks, for example, Alalia on Corsica, was founded by the Phocaeans and connected to the rest of their long-distance network as well as to a regional network involving its neighbours and the Etruscans and to the long-distance non-Greek network of the Etruscans and Phoenicians. Malkin also traces how these networks develop over time through the growth of Massalia. Here the regional network transforms itself as the smaller ports in the Massaliot area reoriented their trade and concentrated on supplying Massalia as it rose to regional importance and became a major commercial hub. The traders within these networks are neatly exemplified through the use of an inscribed lead tablet from Pech Maho, France, concerning the purchase of a boat (pp 166–7). Although written in Ionian Greek, the witnesses to the sale are clearly not of the same ethnic origin, revealing something of the complex world of Mediterranean commerce and connectivity.

Malkin’s interpretations tap in to the ‘contemporary zeitgeist’ (p. 9) and the active creation of interconnected cultural networks by people making their own pathways in the world is something that resonates with this reviewer. The overall value of this volume though is not that it is ‘theoretically trendy’ but that it provides wide-scale interconnected ancient history through the use of detailed case studies as seen through the lens of a particular theoretical approach. I do wonder though how much richer the volume could have been had the material evidence for maritime trade been incorporated in the analyses in a more developed way. The volume though is more about people than pottery and presents the ancient Mediterranean, and the Greek small world in particular, as a self-organized complex system of interconnected networks at varying geographic scales that organically change across the *longue durée*. It successfully abandons the centre-periphery vision of the Greeks at home and Greeks overseas, of Greeks/colonists and barbarians/natives

and instead replaces this with multi-layered networks and middle-ground cultural negotiations between different peoples in different places. Importantly, it emphasizes the development of Greek civilization as a collective identity based upon the experience of colonization, ‘Greeks looking at each other from across the sea’ (p. 218).

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Trireme Olympias: the final report—sea trials 1992–4, conference papers 1998

BORIS RANKOV (ed.) with 19 Contributors

243 pp., 91 b&w figs and drawings, many tables, colour cover

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The Trireme ‘hypothesis’ *Olympias*, designed by J. S. Morrison and J. F. Coates and built by the Greek government, has spawned a large literature that has focused on the ship’s design, its construction process, and its operational experience in a series of sea trials conducted in 1987, 1988, 1990, 1992, and 1994. This volume represents the last report on the sea trials and serves as an excellent conclusion to the entire project (for previous reports, see the bibliography on pp. 8–9). The book is nicely produced, thoughtfully organized, and largely free of typographical errors, presenting papers of high quality and interest. While most of the chapters stem from papers prepared for a conference held at Oxford and Henley-on-Thames in September 1998, it is clear that, during the long lag between presentation and publication, many authors revised their papers in order to react to others in the collection, and even attempted to include references to important literature published after 1998.

Unfortunately, the scope of this review prohibits me from summarizing everything I found important or interesting in the 31 chapters of this volume, as each paper contained many points worth mentioning. Fortunately, this job has been done for the reader by the volume’s editor Boris Rankov, who has summarized each chapter in a brief and incredibly useful introduction (pp. 1–9). Although I have consulted individual papers from other sea trials volumes many times over the years, I confess that I have never read an entire volume from start to finish. Like others, I gained an overview from the last chapter of the 2nd edition of Morrison, Coates and Rankov, *The Athenian Trireme* (Cambridge: CUP, 2000: pp. 231–75). Faced with this review, I obviously read the book from cover to cover,

and I must say that I benefited tremendously from doing so. In fact, I recommend a ‘complete read’ to others as the best way to see the staggering amount of useful knowledge created by the *Olympias* project. Still, I suspect that most readers will approach this volume as I originally approached the others, dipping in and out of subjects that most interest them. I was therefore pleased to find the insertion of numerous internal cross-references that help the reader see how single chapters interact and respond to points made by other authors in the collection.

Overall, the final volume is comprised of five separate parts, which worked best when read in sequential order. Part 1 (4 chs) described the 1992 and 1994 sea trials as well as other excursions—notably a trip to England in 1993 and a brief voyage, after a major refitting, to carry the torch at the Olympics in 2004. In this part, the reader gained a sense of the oarsmen’s routine from a minute-by-minute log presented from one particular voyage segment (p. 16), and from a description of intimate details such as problems in keeping an oarstrap tight (pp. 26–29), or effects on oarsmen in seats that were slightly out of tune (pp. 30–31), or, techniques used for replacing a damaged oar while rowing (pp. 29–30). The reader also sees the trial experience from different viewpoints reflecting various sectors of the oar-crew (pp. 32–36) and learns how *Olympias* functioned when its oar-crew was only two-thirds its full strength (pp. 50–57). In all, this first part revealed the high degree of collaboration among the participants and underscored the fact that ‘an interdisciplinary, integrated design effort is essential for any future reconstruction’ (P. Lipke and F. Weiskittel, p. 39).

Part 2 (5 chs) discussed proposals for a revised design based on the ship’s performance under oar and under sail. Much of this section is quite technical, for instance T. Shaw’s theoretical discussions of the effects of wind and waves on a ship like *Olympias* (pp. 63–75) and how this would impact her ability to match a voyage attested by Xenophon (*Anab.* 6.4.2) from Byzantium to Heraclea ‘in a [very] long day under oar’. It also included details of the oar-system (T. Shaw and J. F. Coates), which might be improved by slightly increasing the length of the cubit on which the ‘room’ (horizontal distance from thole to thole on the same level) is based, and by canting the seats outboard at an 18.4 degree angle. This modification would enable the oarsmen to reach their full potential by lengthening their stroke (pp. 76–91).

Part 3 (6 chs) included critiques of *Olympias*, both pro and con. Of the six chapters in this section, four were supportive (R. Burlet, E. Gifford, S. McGrail, A. J. Papalás) and two were critical (A. W. Sleswyk and A. Tilley). Both the editor and Trireme Trust showed their maturity by including these last two critical chapters. Sleswyk was disappointed that the trials did not examine (even in simulation) the most important aspect of trireme warfare—ramming

attacks—and the effects of deceleration on both the attacker and the attacked. Among his list of deficiencies, he suggested the correct hull shape would resemble the flaring U-shaped cross-section of Renaissance galleys, and argued that a 4th-century trireme would need to be heavier than *Olympias* to be useful in ramming warfare. The most vocal of the project's critics was A. Tilley, whose paper 'An Unauthentic Reconstruction' (pp. 121–32) argued that just about everything is wrong with *Olympias*. Much of Tilley's argument is repeated more fully in his book *Seafaring on the Ancient Mediterranean*, BAR International Series S1268 (2004), reviewed by this author in *IJNA* 35.1 (2006) 156–57.

Part 4 (7 chs) deals with various kinds of evidence for the operation and performance of ancient triremes. J. F. Coates takes up Tilley's observation that *Olympias* is too heavy to be easily beached and describes ways in which this might have been accomplished both on campaign and in the context of shipsheds. He concludes (p. 140) that 'beaching a trireme is no light operation and that it is unlikely that triremes were any heavier than *Olympias*'. The reader who has just finished Part 3 will remember Sleeswyk's pronouncement that a 4th-century trireme must be heavier than *Olympias* to be militarily viable (p. 119) and Tilley's that it must be lighter to fit other evidence that we have (pp. 123–24). Perceptive readers are thus reminded that *Olympias* and her performance raise many questions that cannot yet be answered definitively—from design to construction to deployment to maintenance—topics that are all treated in this volume. Other papers in Part 4 discuss *Olympias*' performance under sail (D. Lindsay), *trireis* under oar and sail (I. Whitehead), and the human mechanical engine and ways to manage it for periods of long-duration trireme-rowing (J. F. Coates, H. Rossiter and B. Whipp). Two superb papers from this section are by B. Rankov (pp. 145–51) and H. Wallinga (pp. 152–54). Rankov minutely dissects an ancient fleet voyage from Brindisi to Corfu in 168 BC and demonstrates how a proper reconstruction must take into account contemporary conceptions of time, wind speed, wind direction, and changing currents as well as boat speed (the fleet surely included 'fives'). The result is fascinating and produces a broad range of average speeds through the water ranging from 5.25 to 8.75 knots depending on the variables chosen (pp. 149–50). Wallinga's chapter casts doubt on the reliability of Xenophon's evidence (presented in *Anabasis* 6.4.2) for calculating the sustained cruising speed of a trireme. This throws into question the 7–8 knot value calculated by Shaw (pp. 64–67) as a useful benchmark for ancient trireme performance under oar and reminds us (no matter who we choose to believe) that ancient *testimonia* must always be read in the context of the works from which they are lifted.

Part 5 (5 chs) presented a number of fascinating aspects of ancient trireme construction and maintenance. R. Bockius' paper (pp. 170–81) on the

multiplicity of 'room' lengths attested in ancient wreck evidence was masterful. It served to remind us that Vitruvius' 2-cubit unit should not be interpreted as providing an exact value on which to base a revised model of *Olympias*. P. Lipke has two papers in this section: one on the characteristics of wood and how tenon crushing and plank slippage contributed to the hog that developed in *Olympias*: the other, on the difficulties in protecting a wooden ship from shipworm (*Teredinidae*) and the quick, catastrophic results of an infestation. This second paper made me wonder how 'fives' and larger polyremes (seemingly too heavy to be regularly beached and dried out) lasted more than a single season. In another paper, A. W. Sleeswyk observed that the *cordone* and *contracordone* (structural reinforcements applied to Genoese galleys c. AD 1600) ought to guide our understanding of how *hypozomata* or 'undergirds' functioned. His proposed method for fitting an ancient *hypozoma* is well thought out and convincing. To my mind it explains a curious term in the Athenian inventory lists that has bothered me for years. ΔΙΑΖΥΞ (*IG* II2 1629, 2) may well refer to the fact that a rigged *hypozoma* ran through the side of the hull (*dia* in Greek) into its tightening mechanism as Sleeswyk describes.

The final section, Part 6 (3 chs), discusses some interesting research conducted after the original 1998 conference. R. Oldfeld ('Collision Damage in Triremes') concluded that trireme hulls were so lightly constructed that damage could occur when the attacker's speed was just half a knot faster than the attacked (perhaps partly answering Sleeswyk's objection that *Olympias* was not built heavily enough). Although his collision diagrams (figs. 29.6–29.16) needed more explanation to be easily understandable, he demonstrated that a high degree of skill was required for successful attacks when the speed differentials by the pursued and pursuing ships were less than a knot. B. Rankov detected a 'foot' or unit of measure (= 0.308 m) in the preserved remains of the Zea harbour shipsheds and concluded that this unit had a direct relationship to the ships destined for the sheds, important for any future reconstruction attempt. The final chapter by A. Taylor modelled battle manoeuvres for small squadrons (five or ten vessels) of fast triremes. In a series of effective diagrams, he demonstrated the complexity of various attacks and the resulting responses to them from a defensive fleet. This paper goes a long way toward demonstrating the possibility of Morrison's *diekplous* definition as a fleet manoeuvre (see Morrison and Coates, *Greek and Roman Oared Warships*, pp. 360–63; the manoeuvre can also be used by single ships) and suggested a plausible way to model other tactical manoeuvres.

I can say with enthusiasm that this volume offers much food for thought. As for its shortcomings, I can think of only two. Due to the diverse nature of the topics, the volume cries out for a comprehensive bibliography combining the useful bibliographies

appearing at the end of each chapter. The reader would also benefit greatly from an index, since overlapping issues are discussed in many chapters. Despite these minor desiderata, *Trireme Olympias: the final report* serves as an excellent concluding volume to the previous reports on the sea trials. Considering the large number of papers included, the disparate topics, and the time lag between the papers' initial composition and final publication, the volume is surprisingly unified. As a result, the reader comes away with a feeling of admiration for those involved with the entire project and the thoughtfulness with which the participants (and editor) grappled with various problems as they tried to maximize the information produced by the trials. As such, the volume stands as a brilliant end to a brilliant project and points the way toward future research. For those deeply interested in the trireme *Olympias*, it is a 'must-have book', despite its hefty price tag.

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Maritime Archaeology and Ancient Trade in the Mediterranean

(*Oxford Centre for Maritime Archaeology, Monograph 6*)

DAMIAN ROBINSON, ANDREW WILSON (eds)

230 pages, 85 colour and 36 b&w illustrations, 11 tables

Oxford Centre for Maritime Archaeology, Institute of Archaeology, 36 Beaumont Street, Oxford OX1 2PG, 2011, £40 (hbk), ISBN 978-1905905171

A unique surprise! Your reviewer opened this volume, sent to him for review in the usual way, to discover that it was dedicated to him (and, jointly, to David Blackman). How should one handle a book which opens with a compliment to one's 'knowledge and erudition'? Adopt a stiff upper lip, and slate it? Or flush to the roots and toady to the well-meaning dedicators?

In the event, neither—this is a well-produced and valuable collection of essays, a credit to the Oxford Centre and to the editors. There are 13 papers, beginning with 'Introduction: Maritime archaeology and the ancient economy', a generally well-judged summary and introduction by the two editors. Of the rest, Oleson, Brandon and Hohlfelder on Roman concrete engineering, and Hohlfelder on Lycia, while excellent, are along lines published elsewhere; likewise, Franck Goddio's paper on Heracleion-Thonis and Alexandria is interesting and well presented, but is essentially an overview. In 'Developments in Mediterranean shipping and maritime trade from the Hellenistic period to AD 1000' Andrew Wilson sets out at greater length

some of the criticisms of method or philosophy he has expressed in other publications; together with some other contributors, he gives a 'forthcoming' publication as a supporting reference, suggesting that we may never arrive at a full and final exposition of his argued opinions—I hope not! He also takes advantage of his editor's position to comment on submissions made by other contributors, which seems unfair—especially as his rather schematic, generalizing approach is, it seems to me, inferior to the more complex, subtle arguments of Pascal Arnaud, in 'Ancient sailing-routes and trade patterns: the impact of human factors'.

By contrast, the paper by David Fabre, on the shipwrecks of Heracleion-Thonis, is an eye-opener. Survey of the submerged port has produced hundreds of anchors and more than 60 ancient wooden hulls, dating mostly from the 6th to the 2nd century BC. The ship remains which have been studied are of shallow-draft sea-going ships (some with ballast), mostly of local acacia wood. There are many unusual construction features, including some planking assembled by free tenons which pass through mortises cut right through four or more adjoining planks. Fabre rightly promises a monograph on this extraordinary collection of ship remains, and one must forebear from generalizing on the basis of what he admits is merely a preliminary study; however, it is worth questioning whether he has taken the best approach to discussion of this novel material, for one senses that he is not at ease in composing technical descriptions in English, especially since he apparently feels it necessary to adopt well-worn expressions such as 'mortise and tenon' when a more specific terminology, if necessary newly devised, seems more appropriate to what he wishes to describe and explain.

Of the remaining papers, which are all on specific subjects in Roman archaeology, the most convincing is by Theodore Papaioannou, on the export of amphoras and fine-ware from Asia Minor (1st c. BC–7th c. AD). The author selects material judiciously, prepares his own helpful illustrations, shows an awareness of relevant archaeological theory, and is open about the limitations of his method. As with some other papers in this volume, one badly needs to see the author's ideas more patiently and extensively set forth, and it is to be hoped that the Oxford Centre will be able to support such publications by means of fellowships and sabbaticals.

Candace Rice, on ceramic assemblages and ports, presents a well-argued paper, though the field of view is limited; she says nothing about the term 'port', or about the nature of the assemblages listed. Katia Schörle, on harbours of the Tyrrhenian coast, gives an interesting review of the subject, analysing harbours by size rather than by other aspects, but wanting in systematic comparisons or a feeling for landscape. Karen Heslin, on dolia wrecks and the wine trade, seems to lack involvement with the archaeology; her paper seems to depend only on secondary sources, and to

have gaps in the reading. This raises a matter of concern, at least to the present reviewer: where are now the resources which enable well-informed research in marine archaeology? The library resources, in London and Oxford, on which I drew to compile *Ancient Shipwrecks of the Mediterranean and the Roman Provinces*, had by 1995 dwindled, and this was one reason why there has never been a follow-up to that work. If there is to be effective scholarship on classical marine archaeology in Britain, surely it is up to the Oxford Centre to ensure that adequate library and information resources are available to its researchers.

Some of the above points, and others related to the remaining two papers, can be illustrated from the case of the Roman Columns Wreck of Camarina in Sicily. My entry for this site in the 1992 catalogue (no. 163) mentioned 'recent' finds and other work: in the 1990s, more was published about the site by both G. Di Stefano and A. Freschi, and material from the wreck was exhibited in Sicily. From all this, and from comparison with other wrecks of the kind, it became clear that neither the two *giallo antico* columns nor the African amphoras and coarseware on board were definitely a cargo in the general, commercial sense; it could be that the ship was chartered, or borrowed, or even owned, by an African of senatorial or equestrian rank who was moving some or all of his household to Italy following advancement by Septimius Severus. Whether or not this scenario is justified, it illustrates the importance of a detailed examination of every site so as to bring up their 'fine-grained texture', while not losing sight of wider issues of archaeological modelling or historical context. Moreover, one can see that the fullest possible knowledge of reports, catalogues, publications and technical assessments is essential in order to build a proper picture of the site. Of course, this will appear a counsel of unattainable perfection to the PhD students whose papers are under review here! But, whether student or professor, the archaeologist needs to progress systematically. Ben Russell's paper on stone-carrying ships is thorough, sober and well informed: excellent work, well presented. However, the author is tempted, in my view too readily, to go for historicist 'cash value'—as when he comments, not far from the start of the paper: 'How representative these shipwrecks are of ancient shipping patterns is, of course, impossible to say.' Likewise, Victoria Leitch, reviewing what she calls 'African Cooking Wares' (mostly black-rimmed plates or lids and rilled casseroles) is puzzled by the small number of wrecked cargoes—of which she thinks the pottery from the Camarina Columns Wreck is one. Both authors are seeing their material as a point on a graph, a cell in a spreadsheet, when perhaps they need to rethink all their assumptions about who traded what with whom and how in the Roman world, and then see what shipwrecks have to tell.

For brevity, this review omits caveats, queries and qualifications. It goes without saying that the reviewer

could probably do no better than any of the authors whose work he so readily criticizes. But, just as vigilance is the price of freedom, so close autopsy and constant self-questioning are the way to archaeological results. I hope the Oxford Centre for Maritime Archaeology can build upon the foundations set forth in this volume.

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Gujarat and the Sea

LOTIKA VARADARAJAN (ed.) with 39
Contributors

653 pp., 230 b&w illustrations and some colour

Darshak Itihas Nidhi Publishers, Vadodara, Gujarat, available Rangdwar Prakashan, G-15, University Plaza nr. Dadasaheb Pagla, Navrangpura Ahmedabad 380 015, Gujarat, India, 2011, \$39 /1600 rupees (hbk), ISBN 978-8192263908

The volume is the outcome of a seminar held in October 2010 at Mandvi in Kutch, Gujarat, India, where 38 papers were presented over three days. The volume under review contains 35 papers, including an Introduction by the editor. Of the 18 overseas contributors there were one each from China, Singapore and Sri Lanka; two French, three Americans, four from Portugal and six from the United Kingdom. The subject is divided into seven themes. The first three papers relate to 'Hydrography', discussed largely with reference to the Harappan period; 'Technology' (equated in this volume with ethnographic accounts), and 'Navigation' dealing with Portuguese writings of sailing in the Indian Ocean, while the next three topics cluster around 'Trade', 'Mercantile Communities' and 'Memory as Validation'. The seventh moves away from trade and shipping and instead represents a region; that is East and Southeast Asia. Perhaps an eighth should have been added to cover West Asia and Africa to complete the spatial coverage. The chronological span of the papers is very wide and ranges from the Harappan civilization of the third millennium BC to the present. To provide coherence and unity to the papers within this wide canvas was a challenge that required academic rigour and dialogue among the paper presenters.

The editor's primary objective in putting together the book, however, was different. As she states in the Introduction, it is to project Gujarat as 'perhaps the only State in the Indian union, which has a substantive tradition of seaborne trade in which local communities have actively participated in ships which have been locally made' (p. 1). A survey of the literature on maritime history of South Asia over the past six

decades belies any such claim. Nor is this contention supported by many of the papers in the volume. It is time to confront assertions that boat-building traditions can be defined within present political boundaries, such as the present State of Gujarat which came into existence on linguistic grounds only in May 1960: while boat-building activity along the west coast (extending from the mouth of the Indus in present-day Pakistan) is in evidence at least from the third millennium BC onwards.

Patrice Pomey, for example, raises several pertinent questions with regard to the widespread use of the sewn tradition; the presence of parallel ship-building techniques in the Indian Ocean and the Mediterranean, and the extent to which these overlapped with trading networks. He emphasizes independent origins of ship-building traditions rather than diffusion from a single place of origin, and also stresses evolution and change over time. There is evidence for the widespread use of the lashing technique in ship construction extending from Pharaonic Egypt to the Persian Gulf and the Indian Ocean, as also in the Mediterranean. In the case of the latter, the lashing technique seems to have been replaced by 'mortise-and-tenon joints with pegs' in the 4th century BC, while the former survived in isolated pockets in the Indian Ocean. How is this survival to be explained? There is no proof of Mediterranean contacts with the Indian Ocean in the 6th–4th centuries BC. At the same time there is evidence for the presence of diverse boat-building traditions within the larger lashing technique of boat construction. For example, the *vadhera* technique mentioned by Admiral Paris in the 19th century occurs all along the west coast of India extending from the Persian Gulf to the Malabar coast. According to the description provided by Paris, the technique incorporated the use of wooden wedges for tightening the lashings. It would seem that the use of lashings disappeared by the first half of the 20th century, thus indicating changes within the *vadhera* technique. Another method in use in ancient India was the dove-tailed tenon assembly, as evident from sculptural representations of a boat on the Buddhist monuments of Bharhut in central India dated to the 2nd century BC. Clearly there are no simple equations between ancient technological practices and present political identities.

Somasiri Devendra divides the watercraft of the Indian Ocean into several technological zones, such as the 'sewn boat zone', the 'dhow zone', the 'single outrigger zone', the 'double outrigger' zone, the 'shaped-log-raft micro-zone' and the 'hybrid craft zone'. He then traces the local development of the *oru* or single outrigger canoe in the Sri Lanka-Kerala/Lakshadweep/Andamans area, based on the working environment, the available building materials and resources. Given these methodological questions, to what extent can ethno-technology or the study of the technology specifics unique to cultural groups of people become a useful tool of analysis? This is a

theme that required discussion and clarity in the work under consideration.

Pierced stone has been used as an anchor for a very long time and provides important clues to the size of watercraft and the use of sea lanes. Stone anchors have been found at several sites in the Indian Ocean though dating them remains a problem. Honor Frost, known for her pioneering work on anchors, has long stressed the need to develop reliable typologies of stone anchors. Including photographs is not adequate. Instead the emphasis should be on recording and providing information on size, weight, nature of the stone, marine encrustations, breakage, etc. The paper by Sundaresh, Gaur and Tripathi refers to 167 stone anchors discovered from the Okhamandal region of Gujarat. It is time that the authors are persuaded to provide detailed catalogues that enrich the data-base of finds from the Indian Ocean rather than giving impressionistic accounts of discoveries. Rigorous research on anchors along the west coast of India would help provide deeper understanding of the nature of early watercraft and the routes they used. Frost's draft contribution—she died just before leaving for the 2010 meeting so only the draft is included in the volume—raises an important issue: what is the significance of the presence of stone anchors in temples and mosques and the stories associated with them? Rigorous work on anchors along the west coast of India would help provide deeper understanding of the nature of watercraft and routes used.

Another section that could have been gainfully used to provide insights into the seafaring traditions of the Indian west coast is 'Memory as Validation', which includes four papers. Sonawane describes two sailing vessels painted in red pigment in a prominent hollow in the rock at Chamardi, a small village 6 km south of Vallabhipur in the Gulf of Cambay, while Ratan Parimoo discusses manuscript paintings of Śrīpāla Rāsa, a story located along the south Gujarat and Konkan coast of Maharashtra and composed in a Jain monastic establishment in the 18th century. It describes the maritime adventures of Śrīpāla and Dhaval Sheth. The sole paper on fishing communities is included in this section and discusses them through a linguistic reading of the short stories of a contemporary Gujarati writer, Nazir Manasuri. The last paper in the section, by Edward Simpson, refers to the withering of agricultural lands in Kutch in the late 19th century, which drove the Kutchis to take to the sea and travel to different lands (p. 537). The author goes on to argue that there was prohibition on voyages overseas among the communities of Kutch which was a deterrent to seafaring activity and created tensions among those who stayed at home and those who traversed the ocean (p. 544). More importantly how does this paper tie up with the last section 'Mercantile Communities'? This traces the travels of Banias, Bhatias, Jains and Khojas from Gujarat across the seas. Clearly the tensions between anthropologists and historians need resolution.

'Trade and Commerce' is supposedly dealt with in section IV where trading activity is traced from the Harappan period to the Portuguese entry into the Indian Ocean. Yet the allocation of papers to particular sections is somewhat baffling. The regional section for instance is largely devoted to trade in textiles from Gujarat to Southeast Asia. The papers by Pulin Vasa on the early historic site of Nani Rayan located on the Rukmavati River, 4 km from its confluence with the ocean, and by John Carswell on Mandvi highlight an important aspect of trade networks; the shifts in coastal settlements in history. Mandvi was founded in the 16th century on an island and later joined to the mainland. It was also the terminus for overland camel caravans crossing the desert from the north, thereby combining access to both land and sea routes. Another common feature was the location of port sites such as Cambay, Broach and Surat on the estuaries of rivers. Large ocean-going vessels docked at some distance from the coast and were serviced by smaller craft to transship cargoes to the coast. At the same time there were changes in the ethnic and religious communities involved in trade, as well as in the commodities required. Chinese celadon ware and blue-and-white porcelain were in demand in 15th-century Gujarat. Andaya discusses trade in textiles from Gujarat to Melaka and Aceh in the 15th and 16th centuries as also the spread of Islam from the west coast of India to the Malay world and the Indonesian archipelago.

Overall the book would have benefited from better engagement between contributors, comprehensive editing and a focused approach to maritime connections. Nonetheless it covers a lot of ground and there is much good stuff within the rather disorderly arrangement, and, it certainly opens up the potential of Gujarat for maritime studies of the past, the object of the conference and this book.

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Mariners and Merchants: a study of the ceramics from Sanjan (Gujarat)

(Sanjan Reports Volume 1/BAR International Series 2231)

RUKSHANA J. NANJI

pp. 241, 10 b&w figs and pottery line drawings, 4 maps, 4 graphs, 11 table series; 18 colour plates. Additional full-colour images at <http://www.wzcf.org/sanjan-excavations/pottery.html>

BAR, via Archeopress, Gordon House, 276 Banbury Road, Oxford OX2 &ED, 2011, £45 (sbk), ISBN 978 1407307930

This book represents the first in what is intended as a series on the 2002–2004 excavations at Sanjan con-

ducted under the auspices of the World Zarathushtri Cultural Foundation and the Indian Archaeological Society. The importance of Sanjan to the history of the Persian Zoroastrians or Parsis cannot be overstated. The once coastal site, now buried and inland, has long been known through oral tradition and texts as the first Zoroastrian settlement site in India, in response to the establishment of Islam in Persia, during the Early Medieval period. While within the region of Sanjan there are Early Medieval copper plates that mention the site, and even earlier inscriptions, the oldest written account of their migration and subsequent dispersal from Sanjan, the *Kisse-i-Sanjan* (Story of Sanjan), is dated much later (1599 AD).

It is within this framework that the excavation at Sanjan was undertaken to establish a sequence for the site which could then be used to evaluate the reliability of the texts. The work on the pottery was therefore fundamental for dating the archaeological sequence and an extremely rich ceramic assemblage was excavated from the site. The ceramic study by Rukshana Nanji, which formed her PhD thesis granted by Deccan College, is here presented in four chapters and five appendices: 1) Introduction (pp. 1–22), 2) Sanjan Ceramics (pp. 23–168), 3) Data Analysis (pp. 169–211), 4) Evaluation and Interpretation of the Early Medieval Settlement at Sanjan (pp. 212–223).

In addition to setting the background to the study, ch. 1 describes the excavation, which was conducted in two main areas approximately half a kilometre away from each other: the Sanjan Bandar (port) and a mound adjacent to the Kolikhadi stream. A number of trenches were excavated in each locality with only one trench (TT4) providing a complete cultural sequence. Excavation of the Dokhma, or Tower of Silence, near the Kolikhadi stream is the feature most significant for Zoroastrian studies, and supports documentary evidence for site function. The pottery from this feature was quite mixed, but a large array of personal items such as bangles were found with the 350–400 individuals recovered (see V. Mushriff and S. R. Walimbe, 2005, 'Human Skeletal Remains from Sanjan Excavations' in *Journal of Indian Archaeology* 2, 73–92).

Within the study of the pottery two problems – repeatedly acknowledged by the author – can be identified. Firstly, a sizeable volume of pottery was discarded before the final study was carried out. This problem was overcome by constructing a methodology based on diagnostic sherds (rims, bases, handles) that compensated for this situation. The second problem is more fundamental, and this is the lack of a reliable stratigraphic sequence, explained in great detail in the volume.

The presentation and analysis of the ceramics comprise the bulk of the volume. In ch. 3, N. summarizes the ceramic types identified at Sanjan, including a description of their fabric (a petrographic study by K. Krishnan is integrated into this chapter and appears

separately in Appendix 4, pp. 232–7), form, dating and distribution at Sanjan and other sites (particularly from the Gulf, Mesopotamia and East Africa). The pottery is catalogued according to internationally established classifications and is extensively illustrated, primarily line drawings (without scales), but with three pages of excellent quality colour photographs. Colour photography is especially important for many of the glazed pottery types represented at Sanjan, and the small quantity of colour photography in the volume is more than compensated for by a companion website (<http://www.wzcf.org/sanjan-excavations/pottery.html>), which cross-indexes many of the line drawings. The chapter is rich with information, but it is difficult to navigate between the various sections. More structure would have been helpful and probably cut down on repetition, which runs throughout the volume. Here as elsewhere thorough copy-editing would have been beneficial.

Chapter 3 presents the quantified data by count. The balance of the chapter consists of tables and graphs, which present the data in three different ways: by layer, by depth and by ware type—although given the problems, ‘layer’ could have been excluded from the publication. Ultimately from this data N. isolates three ceramic horizons: 1) Strong contacts with West Asia during the 7–9th centuries, with the first identification of Chinese pottery during the later stages of this phase; 2) Introduction of the Samarra horizon pottery from the mid-9th to the late-12th centuries; 3) An overall decline in pottery with West Asian wares almost absent and slightly more Chinese wares towards the end of the sequence in the early/mid-13th century.

In India Nanji’s work is ground-breaking as the first study to classify rigorously Early Medieval pottery and quantify it. Without a reliable stratified archaeological sequence, the author has taken the only available course: to study the pottery by depth, which relies on an unfounded assumption of uniformity. Depth provided a framework for studying the pottery from the bottom up, but lacks the rigour imposed by a stratigraphic sequence. Because of the nature of the pottery found at Sanjan, a large proportion of which belongs to imported types that are very well dated from excavations in the Gulf, this approach was workable and enabled the identification of the three main ceramic horizons described above. A more detailed study of the Far Eastern wares—including porcelain—which has yet to be undertaken may further refine the dating of the assemblage. In any Indian excavation the dating of Indian coarse pottery provides the biggest challenge and Sanjan is no exception. Importantly N. has used the chronology of the imported wares as a framework for suggesting an evolution of the local pottery.

The final chapter compares Sanjan with Chaul and Khambat, rare examples of Early Medieval sites which are known archaeologically. By contrast the richness of the Sanjan assemblage is evident and attests to its

importance as a distribution centre throughout the 12th century, declining in the 13th century. As noted above, this volume is not without fault, but it is the first study of this kind in India and represents an important achievement on the part of N. Hopefully it will act as a catalyst for Early Medieval studies in India.

ROBERTA TOMBER

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Taeon-Mado Shipwreck No. 2: underwater excavation by the National Research Institute of Maritime Cultural Heritage of Korea

NRIMCH (ed.) with MINKOO KIM,
SEON-YOUNG PARK, DEOGIM AN and 14 other
Contributors

478 pp., more than 500 colour pictures and plans,
b&w line drawings

NRIMCH, Namrong-ro 136, Mokpo, Jeollanamdo
530–840, Republic of Korea, 2011, npg (sbk), ISBN
978-8963257815

In 1985 John Gifford and colleagues noted the need for training, funding, legislation and public awareness of underwater archaeology (The UNESCO international survey of underwater cultural heritage, *World Archaeology* 16:3). The Republic of Korea is an example of a country that has worked hard to address the challenge arising from the discovery of hundreds of medieval shipwrecks in its coastal waters. The research report reviewed here considers the second of four Goryeo-period (918–1392) wrecks found in waters off the coast of Taeon county, Chungcheong province. Taeon-Mado shipwreck No. 1 was excavated in 2007 and published in 2009. The Goryeo court, in the present-day city of Gaeseong, North Korea, obtained food supplies and ceramics in enormous quantities from the provinces of Jeolla, Chungcheong and Gyeongsang (present-day South Korea). Cargo ships travelling north towards the capital had to navigate the strong currents, high tides and mud-flats of the Taeon peninsula as they headed up along the western coast of the Korean peninsula. Since about 1971, some 250 discoveries and reports of underwater cultural heritage have been made in Republic-of-Korea waters. Two excavated vessels, the Shinan wreck (a Chinese vessel) and the Wando wreck (a Korean ship) were on display at the National Maritime Museum of Korea at Mokpo when the reviewer visited in 2011. The Shinan Wreck, discovered in 1976, has been thoroughly published, and is well known to art historians and nautical archaeologists.

Less well known is the published research on medieval Korean wrecks, which has led to important advances in the understanding of Korea's shipbuilding technologies and history. The Taean-Mado No. 2 report forms part of this body of research. Since most of this material has been published in the Korean language, the findings have not been widely circulated to the international community. However, scholars, including Randall Sasaki and Whan Ki Moon, have begun to present English reports of highlights of Korea's maritime archaeological achievements since about 2000, and these are worthy of note.

The report of Taean-Mado shipwreck excavations published in 2011 describes work undertaken from May to October 2010. The authors note that the publication timescale was very tight, and that further research reports will be issued later. High-quality images of major discoveries begin the report. As well as wooden cargo tags, invaluable for identifying the date, origin and intended recipients of excavated items, two fine celadon vases are illustrated. These two vases, of a type known variously by their Chinese, Korean and English names as *meiping*, *mae-byong* and plum vase, are of a distinctive shape. Past studies have described them as flower vases or containers for wine. The cargo tags attached to them in this wreck, however, state that they contained sesame oil and honey. The tags also use the Chinese character-word *jun* 樽 to describe the vases. This is a new term to scholars of Goryeo-period ceramics. Ceramics manufactured in the major coastal pottery centres of Gangjin and Buan have been a major component of excavated finds in sea-bed archaeology in 20th- and 21st-century Korea. These were the kilns that produced the beautiful plain and decorated ceramics required by the Goryeo court—ceramics whose quality was so high that a 12th-century visiting Chinese envoy, Xu Jing, praised them in his travel diary description of Goryeo life and society. While the No. 2 wreck contained only 140 ceramic objects (far fewer than the 20,000 excavated from No. 1 wreck) the record of these two vases containing honey and oil constitutes a significant addition to the literature about Goryeo celadon, a ceramic type which is considered by modern Koreans as one of the archetypal Korean cultural icons. Both vases are made of high-fired porcellanous stoneware and are covered in iron-rich glaze fired in a reducing atmosphere to a jade-green colour. One is lobed, and has inlaid decoration in black and white. The other is monochrome, smooth walled, and subtly incised with graceful floral designs.

As well as the ceramics, wooden tags with personal and place names were significant finds on the vessel. They have led researchers to date the sunken vessel to c. 1200 AD. The dating is based both on the stylistic analysis of the ceramic vessels, and through associating the names of LEE Geuk Soo and YOO Dae Gyeong (found on the wooden tags) with historical figures who

are recorded in the dynastic archive as officials in the capital, active around 1200 AD.

After the 'highlights' section of the book, the report proceeds to detail the geo-data of the wreck-site, the dates of the excavation, a site-map, excavation photographs and diary (team photograph, p. 35). The 100-page section following lays out the climate and tide data relevant to the excavation. At p. 88 there is a striking, large pull-out plan of the ship. In common with other Korean cargo-carriers of the period this was a heavily built vessel entirely fastened by wood—pegs, treenails and tenons. No nail or any iron was used (though well attested in Goryeo then). It was of clinker construction in pine, with a single mast, and, apart from the regular wooden fastenings, this ship had a special type of long tenon, known in Korean as a *jangsak*, to hold the five bottom planks as they are brought together at the stern. In all 41 ship parts in exceptional condition were recovered. There are about 20 pages (105 ff) showing frames with drawings and models; pp. 102–3 give different angles on the mast-step; and, another whole section (pp. 448–467) is devoted to joints, fastenings and reconstructed parts. Unfortunately the text and captions are all in Korean. The team has been able to conclude that the vessel's dimensions were 12.6 m long and 4.4 m wide with a depth of 1.2 m. It had a fairly sharp chine which was connected to the bottom in two different ways: either by butt joint or with an L-shaped riser cut diagonally. Some frames were fitted slant-wise to give extra strength. The one unique feature noted in the English page-long abstract was the use of the *jangsak*.

A 200-page section of the work describes and illustrates the cargo with photographs and drawings: baskets, grains, animal bones, ceramics, spoons and cooking vessels. As already mentioned, cargo tags are among the most important finds and 47 of them were found. They demonstrate that the ship was travelling from Gochang, North Jeolla Province, to Gaegyeong (modern Gaeseong) capital of the Goryeo dynasty. Foodstuffs identified are rice, beans, malt, fermented soya beans and salted fish. Of the ceramic vessels, most were dishes, bowls and cups. Baskets, bronze spoons in the distinctive Korean 'swallow tail' shape (p. 390) and chopsticks were also found and thought to be personal possessions of the crew. Cast-iron cooking pots were also present. The report details the technical analysis (including microscopy) of the various materials—ceramic, wood, metal—excavated. For instance, p. 375 presents the composition of glaze and body materials of ceramics of various types.

The Taean-Mado Shipwreck No. 2 is an example of the riches on the sea-bed near that area of the southwest Korean coast. Korean people think of the coast of Taean county as an 'underwater Gyeongju', drawing a comparison with the archaeological treasure house that survives in the former capital of

another early peninsular kingdom, Unified Silla (668–935 AD). It is clear that the treacherous waters of the Taean Sea area contain much valuable material heritage from the Goryeo dynasty, an age when a cultivated and devoutly Buddhist elite required goods and food in huge quantities to be shipped from the south to satisfy its needs. As present-day divers, archaeologists, historians and conservators continue to explore and record this material, we will greatly expand our understanding of what Sasaki and Lee (*op. cit.*) have described as the rich, well-developed and diverse shipbuilding tradition of Goryeo Korea. The Taean-Mado Shipwreck No. 2 report is a valuable as well as a handsome addition to the literature and should lead those with an interest in world transport systems in medieval times to examine the Korean case closely. The supply routes, the economic history and the shipbuilding technology of Goryeo Korea is a subject of increasing interest being steadily revealed thanks to the efforts of the NRMCH.

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The Oxford Handbook of Engineering and Technology in the Classical World

JOHN PETER OLESON (ed.)

896 pages, 60 b&w illustrations

Oxford University Press Inc., New York, NY 10016,
2009 softback edition, \$60/£40, ISBN
978-0199734856

Encyclopaedias of *Realien* have a long history in classical scholarship, and increased specialization tempts publishers and editors to assemble contributions from a crowd of contributors (33, in the present case), despite the weaknesses which such a procedure introduces. The volume, readable and interesting as much of it is, contains only two chapters of direct interest to readers of this journal. The first is on ‘Ships and Navigation’, by Seán McGrail: this, though well written and authoritative, is inevitably little more than a synopsis of the contributor’s more extensive works, and suffers from lack of illustrations. The second is on ‘Harbors’, by David Blackman: this is a most useful and informative update of the author’s classic two-part paper in *IJNA* 1982, and should certainly appear henceforth on every reading-list.

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Seaward Landward: investigations on the archaeological source value of the landing site category in the Baltic Sea region

KRISTIN ILVES

144 pp., 33 illustrations (some colour)

Department of Archaeology and Ancient History, Box 626, Uppsala University, Sweden, 2012, npg (sbk), ISBN 978-9150622850

This is a doctoral thesis of the modern variety, where the thesis itself is rather short, but based on previously published papers. In this case, there are four papers including one previously published in *IJNA* (41:1, 94–105) and a manuscript. The papers are republished in full. A short introduction states the aim of the work: ‘I define landing sites for watercraft in the widest social sense as water-bound contact zones; places of social interaction that can be archaeologically identified and investigated’, and ‘What I present here is an archaeological methodology for exploring landing sites’. Both in the papers and the dissertation, the author is a stern critic of much previous work: ‘In my opinion, archaeological study of the maritime aspect of past societies has regularly been driven by applying empathy as the main methodological approach, which has been combined with a haphazard attitude towards source criticism’, and ‘It has become clear to me that such a methodology is lacking in the archaeological research designs that are oriented towards sites in coastal and shore-bound areas, particularly landing sites and harbors.’ The first paper, ‘Discovering harbors’, evaluates earlier research. A central point is that it has been assumed that early ships could land on any suitable beach, so landing sites might leave no traces for the archaeologist to find. Possible landing sites have been identified by place names, topography and other ‘non-archaeological’ criteria, and sites near the coast have been identified as landing sites without discussing other possible functions. Paper 2, ‘Do ships shape the shore?’, looks at remains of structures found at landing sites and discusses the importance of landing sites in society. The author points out that quite complicated structures have been built even when the vessels used were small log-boats. Paper 3, ‘Is there an archaeological potential for a sociology of Landing Sites?’, the author introduces the landing sites as ‘contact zones’ for human interaction. Three very different sites are used as examples; a seasonal fishing village in Estonia, the ‘repair shipyard’ at Fribrødre Å on Falster, and the anchorage Krogen in the archipelago outside Stockholm. The fourth paper describes the use of phosphate analysis for establishing former shorelines at relevant sites, applied to the situation in the Baltic, where shorelines have changed drastically since the Ice Age. The manuscript ‘Identifying Water-bound strategies in the Archaeological Record’, describes the strategies selected for the investigation of a

Swedish site, Garn, based on the theoretical framework established in the four papers.

The material selected for the thesis is restricted to the Baltic, most of it from Swedish sites. The author claims that landing sites in the Baltic have not been utilized to their full archaeological potential. Her ‘Contact Zone’ approach is a fruitful new way of using the material. The demand for a more stringent theoretical approach and the practical solutions suggested are valuable. The author stresses the importance of landing sites as areas for social activity using the many religious sites at the Roman London waterfront as one example. The use of her new definitions and research strategies will surely give valuable new results.

Considering the close cultural contacts which have always existed between Denmark, Sweden and Norway, it is astonishing how little Danish and Norwegian material has been used, even with a strict geographical concentration on the Baltic. Fribrødre Å, on the island of Falster, and Hedeby may be called Baltic sites. However, a pioneer work such as *The Coast of Funen from the Iron Age to the Middle Age*, (Crumlin-Pedersen (ed.) 1996) has not been consulted. The numerous and extensively published Norwegian boathouses are not mentioned at all. In fact, I have not been able to find the word ‘boathouse’ in the dissertation. The closest we get is a paper on Greek shipsheds, among the references in paper 3 (Blackman D., 2003). In the light of the statement that the author’s main aim has been to ‘understand landing sites as an archeological as well as a social category’, the sole use of Baltic material limits the value of the work. Blockages are a well-researched type of monument in Danish waters. As they were evidently built to prevent landing, they could throw light on eventual important landing sites behind the blockages. This type of site is not considered.

The printing and presentation is of high quality, with numerous illustrations, some in colour. One printers’ or proof-readers’ error is the use of the plural ‘watercrafts’ for watercraft in paper 3.

ARNE EMIL CHRISTENSEN
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Roles of the Sea in Medieval England

RICHARD GORSKI (ed.) and eight other
Contributors

204 pages, colour cover, 2 b&w maps, 16 tables

The Boydell Press, PO Box 9, Woodbridge, Suffolk,
IP12 3DF, £50 (hbk), 2012, ISBN 978-1843837015

In this reviewer’s experience, the problem with many books of collected conference papers is the lack of a consistent theme, even where one is stated. Such is the case of *Roles of the Sea in Medieval England*. There is nothing wrong with the nine papers presented in this

book—but there is nothing particularly original or stimulating about them either, and crucially, the book doesn’t address the theme of its title. ‘Documentary History and the English Seas in the High Middle Ages’ might have come closer to an accurate description, but that does not trip so neatly off the tongue.

As outlined in the introductory chapter, *Roles of the Sea* stems from a conference held in October 2008 in Rye, England. Richard Gorski goes on to explain that the book brings together a mix of established scholars and early career historians to ‘contribute to the maritime historiography of the medieval English kingdom, with a focus on the 14th century, and a slight emphasis on military and naval affairs’. A laudable if imprecise aim, I refer to my earlier point about the lack of a consistent theme, since the chapters actually range in date from c. 1200–1500 AD, and from as far westwards as Sligo and as far eastwards as the Hansa. In fact, this reviewer’s suspicion is that the aim of this book was actually to make an easy win in the upcoming 2014 Research Excellence Framework (REF), the system for assessing the quality of research in UK higher education institutions, in which academics have to submit publications for peer review on a sliding scale of ‘4*’ (world leading) to ‘unclassified’ (work that falls below the standard of nationally recognized work). That aim cannot be admitted in public, but it is the driving force behind countless academic publications at the present time. The tight timeframes and ruthless competition of the REF in terms of its grading criteria would explain this book’s publisher (distinguished), content (diverse) and authors (respected): these papers have 4*—at worst 3*—written all over them. This book will thus tick REF boxes, but alas it does not really stimulate a wider audience. But that is the fault of the system, not the authors. Welcome to the world of academic publishing in the early 21st century!

To be fair to the editor and to the authors, all of these papers are sound pieces of work, and Gorski has done an excellent job in melding them into as coherent a whole as possible. Gorski’s opening chapter, and Friel’s closing one, do a particularly good job in framing the debate, and the chapters of some of the established authors are very good indeed; the ever-reliable Susan Rose and Craig Lambert in particular. Rose and Lambert both focus on the documentary history of the Cinque Ports, and in their chapters it is possible to pick up a sense of the conference that this book stems from. Had that conference and this book focused in on that issue alone, then this would have been an exceptionally useful work, since a full reassessment of the Cinque Ports (including discussion of new architectural and archaeological data—see for example this writer’s review of work at Sandwich and New Romney (2011, *IJNA* 40.2)) is long overdue. Other chapters are more of a mixed bag, primarily because of the aforementioned issue of thematic consistency. After Gorski’s introduction, Richard Unger considers changes in ship design and construction in chapter 2,

placing England in a European context. This is an excellent and thought-provoking paper, placing particular emphasis on the impact of social changes on technological choices in ship design. For many *IJNA* readers it is likely to be the 'standout' paper of the volume. Similarly, chapters 3 and 4 by Rose and Lambert respectively stand alone as a distinctive and valuable section. But from chapter five onwards the content and quality of the book begin to vary. Chapter 5 is by one of the 'early career' scholars, David Simpkin, on English admirals between 1369 and 1389; chapter 6 is by another 'early career', Tony Moore, on the cost-benefit analysis of the 1387 'battle' of Margate/Cadzand. Both of these are heavy documentary history of the most traditional sort, un-enlivened by the types of cross-disciplinary approach that many historians and archaeologists alike now employ. Both chapters add nothing to the wider discussion of the roles of the sea in medieval England; these are, rather, about the roles of individuals in the sea. They would be much better placed in a traditional peer-reviewed journal. Chapter 7, by another 'early career', Marcus Pitcaithly, is better. Discussing piracy and Anglo-Hanseatic relations in the 14th and 15th centuries, Pitcaithly's writing is stronger than the others and his theme—and its data—livelier. From an archaeological perspective, it made the reviewer ponder again the absence of physical evidence of vessels of this period from English archaeological contexts, and why this should be so. But while good, again, this chapter adds nothing to the wider discussion of the roles of the sea in medieval England. The same is true of chapter 8, by another 'early career', Tim Bowly on Bristol's maritime trade with Ireland in the 15th century. There is nothing inherently wrong with this chapter, but nothing about it that genuinely contributes to the aim implied in the title of the book. Ian Friel draws the volume to a close with a frankly heroic effort to tie all of these disparate threads together. He does this with aplomb but even so, clearly struggles at times—witness the opening sentence of the closing paragraph: 'in many ways, the sea and its uses mattered enormously to medieval England' (p. 184). The response to this, as to the whole of this book, is surely: 'Yes, and . . .?'

JOE FLATMAN
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The Terror of the Seas? Scottish Maritime Warfare, 1513–1713

STEVE MURDOCH

444 pp. (inc. 57 pp. of Appendices), 8 b&w illustrations
Brill, PO Box 9000, Leiden 2300 PA, The Netherlands,
2010, £119/€140/\$199 (hbk), ISBN 978-9004185685

We thought we knew it all. Sources for the study of naval history in Britain during the early modern period

are (most of us believed) relatively complete and easy of access, because they were the products of organized state bureaucracies which ultimately became lodged in well-ordered national archives. Scotland's resources in this respect, as might be supposed for a country now part of Britain but formerly an independent state, were thought to be slender in comparison with those of her larger southern neighbour, and most of what existed were to be found, conveniently calendared and transcribed, in *The Old Scots Navy from 1689 to 1710*, compiled by James Grant for the Navy Records Society in 1914. Consequently Scotland's naval history was widely considered to be small-scale, fully studied, and relatively insignificant.

We were wrong on all counts. Although 'official' Scottish naval affairs were sometimes linked with those of England following the Union of the Crowns in 1603 and of the Parliaments in 1707, a great deal of the country's naval activity was of a complex and semi-privatised nature, which went largely unrecorded in the formal state dossiers. As a result the sources that do survive are scattered and often oblique, and many lie in the archives of other nations, including the Scandinavian countries, Holland, Germany and France. Another repository of prime importance is Scotland's High Court of Admiralty, the records of which chronicle litigation concerning the disposal of prizes. Professor Murdoch, who for many years has been at the forefront of studies into Scotland's extensive connections with continental Europe, has pulled these varied sources together to produce a strikingly original study of the country's maritime and naval history, from which he has drawn many important and often unexpected conclusions.

As far as conventional naval activity is concerned—the creation, maintenance, and deployment of state-owned vessels for defensive or aggressive purposes—Scotland's track-record is indeed minimal. Apart from the ambitious and short-lived warship *Michael* of James IV (closely contemporary with and probably not dissimilar to the *Mary Rose* in her original configuration), the royal Scottish navy throughout the period under consideration rarely consisted of more than a few lightly armed vessels which generally operated defensively in home waters.

Much of the country's naval effort, however, was privately sponsored and thus escaped inclusion in the easily accessed state papers. Scotland's hereditary Lord Admiral, unlike most of his European counterparts, lacked a dedicated fleet of warships with which to apply violence on the state's behalf and was therefore obliged to persuade private shipowners to provide this service voluntarily and without charge. Fishery protection required specialized gunboats known as 'waughters' (watch vessels). These were contracted privately and paid for by imposing a levy on the fishing boats. Merchant shipping was organized into convoys for which hired escorts were provided, again paid for by the protected vessels. The convoy system worked

best if a proportion of the merchantmen were themselves armed, and this was encouraged by offering a 50% reduction on the dues payable by ships that sailed 'nakit'.

Offensive action against enemy shipping and installations required a different approach, for which the enemy himself was expected to pay. To stimulate a process of high-risk private investment with potentially massive returns the Lord Admiral issued letters of marque in time of war, authorizing captains to raid, plunder, capture or sink an enemy's assets and derive benefit from the prizes. Such authority might be issued to individual privateers (including, on occasion, foreign ships), or to groups of marauding wolf-packs or 'Marque Fleets'. Letters of reprisal were rather different. These were issued to specific individuals, authorizing them to make good by predatory means wrongs done to them by another nation, whether in war or peace.

These carefully regulated inducements to violence on the state's behalf were usually seen as piracy by those against whom they were directed (as they have been by uncritical historians), but as Murdoch emphasizes the legal distinctions are clear and from a historian's perspective the extensive litigation generated has provided a rich and often extremely detailed source of evidence. Of course true piracy did take place, by and against Scottish shipping, but of its nature such clandestine activity is much more poorly documented.

These sources, and the often chaotic reality of the events they chronicle, do not always make for coherently progressive narratives or tidy conclusions. This is not an easy read, though it helps if the tightly written conclusion at the end of each chapter is assimilated before the chapter itself is tackled! But the difficulties of digestion should not be allowed to mask the richness of the meal. Much of the information is in microcosmic form, derived as it is from a multitude of case studies culled from the sources. These do not usually tell us much about the grand affairs of state, but they take us on individual and often quite intimate journeys which allow us to view the contemporary maritime world, and how it worked in practice, from the perspectives of those that inhabited it.

Chapter 1 opens with the Scottish royal navy at its apogee in 1513 on the eve of the battle of Flodden, with a significant capital fleet headed by the iconic *Michael*. Though that battle and consequent death of James IV severely curtailed naval development, formal Scottish sea power continued to be applied in home waters, particularly in the west. This maritime landscape of indented coastlines and scattered archipelagos had long been under the control of largely independent sea-peoples from the Dalriadan Gaels in the late 6th century to the kings of Norway until their expulsion in 1266 and the MacDonald Lords of the Isles from the mid 14th century to 1493. The introduction of gun-carrying sailing ships increasingly brought the

region under central control, throughout the 16th century and into the 17th, although the indigenous sailing galleys and *birlinn* (of 18–24 and 12–18 oars respectively) remained forces to be reckoned with for much of the period covered by the book.

The following chapters take us through the Union of the Crowns, the naval parsimony of the early Stuart kings, the impact of the Thirty Years' War, and the trauma of the Civil War with its complicated ramifications in Scotland. The Dutch wars add further subplots, as do the Restoration and Glorious Revolution in the second half of the 17th century, and the Union of the Parliaments in 1707.

Taken together, the evidence reveals a plethora of naval activity by Scottish ships, mainly private ones operating under the Lord Admiral's authority, which fully supports Murdoch's contention that this aspect of the country's history has been seriously undervalued by most historians (Nicholas Rodger being an honourable exception). Many of the sources, and the conclusions that emerge from them, are varied, fragmentary, and often unconventional from the standpoint of traditional naval historiography, but this makes them more rather than less significant. To these sources we might profitably add nautical archaeology. Two protected wreck sites in Scottish waters, both of which have been excavated, are relevant. The investigation of the Duart Point wreck of 1653 has suggested that she was a kind of Scottish 'super-galley', probably owned originally by the Marquis of Argyll on behalf of the Crown before being acquired by the Commonwealth navy. Professor Murdoch's arguments help to explain apparent anomalies that had arisen during a study of the wreck by this reviewer. The same is true of the nearby *Dartmouth* wreck which, though built by the Commonwealth at Portsmouth in 1655 and subsequently employed for many years by the British Royal Navy, had strong Scottish connections at the time of her loss in 1690.

The book is marred by a few editorial infelicities. There are unfortunate spelling mistakes, notably a frequent confusion between 'complement/compliment' and 'principal/principle'. This reflects not so much on the author as on slack copy-editing, which should have routinely spotted and corrected such basic howlers (one suspects an over-reliance on spell-checkers). For a distinguished academic house such sloppiness is jarring and inexcusable, especially when the eye-watering cover price is taken into account. The book's other weakness is in its short illustrations section (which has eight figures, not the advertised nine, the last 'figure' being the cover image). The context and date of the West Highland *birlinn* in Figure 1 is not given (it is from the tomb of Alexander MacLeod, dated 1528). Figure 2 is a modern and entirely fanciful painting of James IV's *Michael* returning to her home port of Newhaven, seen on the horizon complete with an anachronistic lighthouse. This is the iconographic equivalent of imbuing a passage of fiction with the

status of historical fact. The Letter of Marque reproduced in Figure 5 is virtually indecipherable because of its reduced scale and fuzzy reproduction, while the unattributed ‘Contemporary etching’ of the Bass Rock (Figure 7) is from John Slezer’s *Theatrum Scotiae* (1693). Finally, a few suitably annotated maps would have helped the reader to navigate through the frequently confusing waters of this complex historical narrative.

These minor pictorial glitches demonstrate only the author’s evident unfamiliarity with non-documentary sources. His grasp of the written material is magisterial and wide-ranging, and his interpretations clearly articulated, convincing, and original. This seminal book will change perceptions of maritime warfare during the early modern period, not only in Scottish seas but across much of north-western Europe. For nautical archaeologists who (like this reviewer) have worked on armed shipwrecks of this era and in these waters it is illuminating and essential reading.

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Nicolaes Witsen and Shipbuilding in the Dutch Golden Age

A. J. HOVING (translation Alan Lemmers)

310 pp., 313 b&w images (mostly drawings), 9 tables

Texas A & M University Press, College Station, TX 77843-4354, 2012, \$120 (hbk), ISBN 798-1603442862

This book by model-maker and ship historian A. J. Hoving, who is in charge of the restoration of historic models in the Navy Collection of the Rijksmuseum, Amsterdam, offers an enthralling reading of Dutch shipbuilding from the 17th century through his treatment of Nicolaes Witsen’s major publication of 1671, *Aeloude in Hedendaegsche Scheeps-bouw in Bestier* (‘Ancient and Modern Shipbuilding and Management’) with a second revised and expanded edition in 1690.

Let’s begin with Hoving, author of the work under review: teaching in a technical establishment before joining the prestigious Rijksmuseum, Hoving devoted a great part of his leisure to building ship-models and, in particular, to the construction of models of 17th-century Dutch vessels such as the *pinas* and the personal yacht (*jacht*, a Dutch invention). In point of authenticity and historical rigour, each model relied on original documentary sources which, in addition to shipbuilding contracts (*bestekken*) and shipwrights’ notes (*certers*), was above all Witsen’s treatise. Beyond creating as precise models as possible, Hoving also tried to reproduce in miniature experi-

ments in construction using the ‘shell-first’ technique found in the North Holland shipyards on the banks of the river Zaan and in Amsterdam. The model-maker’s research gave way to publications in various international journals such as *IJNA*, *Model Shipwright*, *Neptunia* etc. Chapter 3 of the new book entitled ‘Contracts as Historical Sources’ (pp. 205–216) is partly devoted to the presentation of historic model construction as a research method. In 1994, after many years of study and model-making, Hoving published the synthesis of his research on Witsen in Dutch. The much more difficult task of rendering it in English has fallen to Alan Lemmers, linguist and ship historian, with the title *Nicolaes Witsen and Shipbuilding in the Dutch Golden Age*, the subject of this review.

Let us now examine the central theme of this book: Nicolaes Witsen and his *Aeloude in Hedendaegsche Scheeps-bouw in Bestier*. In the first chapter, ‘Introduction’, Hoving gives an excellent description of Witsen the man and of his work. Nicolaes Corneliszoon Witsen (8 May 1641–10 August 1710) was from the Amsterdam upper-middle class. One of the original features of the first Dutch treatise on shipbuilding is that its author was entirely independent, directly or indirectly, of the technical and cultural background of the shipbuilders, in contrast to the second ‘great’ Dutch author of the 17th century, Cornelis van Yk, a master shipbuilder in Delfshaven (present-day Rotterdam). In 1697, in Amsterdam, Van Yk published his *De Nederlandse Scheeps-bouw-konst Open Gestelt* (‘Dutch Naval Architecture Unveiled’) in which he describes the ‘frame-first’ method of construction specific to the shipyards of South Holland. Witsen, trained in law, was 13 times burgomaster of Amsterdam. A diplomat and scholar with a strong humanist background he had various diplomatic responsibilities, including that of acting as guide to the Tsar of Russia, Peter the Great, during his visit to Holland in 1697.

Witsen’s knowledge of naval architecture came firstly from his reading (notably in the library in Leiden of the famous humanist Isaak Vossius), from the study of iconography (in particular the numismatic collection of his brother Johan), and finally from what we would call today ‘ethnographic research’—meetings and discussions with shipbuilders of his own region, among the most famous being Jan Jacobszoon Vijzelar of Harlingen. It is from these specialists that he collected the documentation of their ‘shell-first’ method of construction. In fact, only the lower part of the hull towards the bilge was built ‘shell-first’ by a method that was characterized by a provisional assembly of the bottom carvel planks with nailed cleats; then, by the introduction of floor timbers and ‘floating’ knees (without connection between them) and the disassembly of the wooden cleats, completed by filling the holes left by the nails with small pegs (the so-called *spijker-pennen*). Its presence there, moreover, acts as an

‘architectural footprint’ giving identity to a wreck during excavation.

It would be superfluous to make an issue of the fact that the ‘shell-first’ construction method in North Holland, described in detail by Witsen and further commented upon at length by Hoving, underlines that, without any plan, the overall design of the hull rests on certain rules of proportion drawn from practice and experiment. Here where the phases of design and construction are closely inter-dependent the Dutch shipbuilder ‘... started with a general mental image [only] of the vessel’ (p. 15). There are many more comments on ‘shell-first’ construction to quote but let us move on.

It is important to make clear that only the 200 pages of Witsen’s first edition (1671) devoted to North Holland shipbuilding have been translated and discussed by Hoving in his ch. 2 ‘How Ships are built in Holland today’ (originally the title of Witsen’s ch. 8). The ship taken as exemplar by Witsen is a *pinas* of 134-foot length, the 122 sequences of its construction being precisely and methodically described. Witsen chose this type of fast trading vessel of average tonnage from the middle of the 17th century as he regarded it as an ‘architectural reference model’, making it possible to build other trade and war ships while only varying a few architectural parameters and leaving the basic ‘global’ design of the *pinas* unmodified. The technicalities and plans reconstituted by Hoving are presented in an Appendix.

Despite Witsen’s choice to make as clear and complete as possible the ‘shell-first’ construction of the *pinas*, his text tends sometimes to digress from the subject to other naval construction topics to return some lines later. Reading Witsen’s text therefore presents certain difficulties. To make comprehension easier, Hoving chooses to re-organize the original text and to gather together only those passages describing the 122 construction sequences and eliminating all the interesting digressions. Hoving discusses each of Witsen’s paragraphs, the most important of which compare the ‘shell-first’ construction method of North Holland shipyards and the ‘frame-first’ system described by Van Yk. Hoving adds to this study by drawing on the research involved in his own model-making. To avoid any confusion between the various reading levels, extracts from Witsen’s book are printed in the old typography while Hoving’s modern commentary on Dutch ship construction in Witsen’s day is printed in modern type. Furthermore, the discussion specific to the 134-foot-long *pinas* is presented in a ‘box’ insert.

It is necessary to underline the importance of the illustrations; an essential complement to the text. Witsen’s original illustrations are systematically matched with the words, the precise captions in full. In addition, some of Witsen’s figures are clarified by Hoving’s own drawings. The principal sequences of ‘shell-first’ construction especially are illustrated by very beautiful

and accurate drawings by Gerald de Weerd and by Anton v. D. Heuvel. The only criticism of the illustrations is of the ‘very average’ reproduction quality of the research model photographs of the *jacht* (figs 3.3 to 3.11) and of the *de Brak* (figs 3.15 to 3.21).

A particularly interesting addition to Hoving’s study is the Appendix (pp. 237–249) by Deiderick Wildeman ‘Variants in the Two Editions (1671, 1690) of Witsen’s Treatise of Shipbuilding’. A very useful and comprehensive glossary is included with the Notes gathered at the end of the book giving the Dutch terms used by Witsen in neat and precise definitions.

In conclusion and above all must be emphasized the essential contribution this book makes to the history of 17th-century Dutch naval architecture. This a history that goes well beyond the boundaries of the Netherlands since Dutch shipyards and Dutch shipbuilders contributed massively to the fleets of the maritime nations of the time and notably that of France. It is important to realize that from the end of the 17th century Witsen’s treatise had a strong echo in France and was the inspiration of two works published in French, the *Dictionnaire de marine* (‘Dictionary of the Navy’) by Nicolas Aubin published in Amsterdam in 1701, and *L’art de bâtir les vaisseaux et d’en perfectionner la construction* (‘The Art of building ships and how to improve construction’) by David Mortier and also published in Amsterdam, 1719.

From now on, thanks to the erudite mediation of model-maker-become-historian A. J. Hoving, no nautical archeologist or maritime historian of 17th-century shipbuilding can be unaware of the 122 construction sequences of a Dutch *pinas* built ‘shell-first’, nor misunderstand the technical subtleties of the native Dutch shipbuilders of Amsterdam and the Zaan river.

ERIC RIETH

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L’Eglise de Dives-sur-Mer et ses Graffiti Marins

VINCENT CARPENTIER

190 pp., 178 colour and 368 b&w copies in graffiti catalogue

Editions Cahiers du Temps, 29 rue du Caporal Chassignol, 14390 Cabourg, France, 2011, €29 (hbk), ISBN 978-2355070396

The gothic church of Notre-Dame in the small town of Dives-sur-Mer is an impressive building. It is situated on a hill overlooking the town and estuary best known as the place where the Conqueror set sail for England. The volume under review is mainly

concerned with the graffiti found on the walls of the building. They are numerous, 369 in all, the majority depicting ships.

After a short introduction, Chapter 2 describes the church and looks at the activities in the estuary. Here fishing-boats and merchant ships have anchored, giving life to a busy harbour for centuries. The chapter also describes the various fishing activities in detail. The chapter is well illustrated, using old and new photos, drawings and illustrations from early books on fishery.

Chapter 3, filling about a third of the book, discusses the graffiti, dating them by inscriptions, and comparison with old ship pictures, many of them taken from various French treatises on ships and shipping. In addition to the 268 ships, we find signatures and dates, human figures and unusual motifs such as birds, fish and high-heeled shoes seen in profile. The ships can be dated between the late medieval period and the beginning of the 20th century. The chapter is supplemented with a catalogue of 369 graffiti, all illustrated.

The author points out that many of the ships are placed on the south wall, traditionally the male side of the church. They seem to be the work of grown-up people, not children, and the author suggests that 'they may have had an *ex voto*' function, from people who could not afford to donate a painting or a ship piece of sculpture to the church, so they were carved by pious sailors. It is interesting that so many of them depict small vessels, not the big and impressive three-masted vessels of the navy and merchant marine.

This church is not alone with respect to maritime graffiti, and there seems to be an active group of people searching for graffiti and documenting them. The trend started about 1950 with the work of Henri Cahingt. The author gives a survey of similar documentation work done in other churches in Normandy. It is stressed that it is necessary to document the graffiti, as they are vulnerable to erosion, and also to repair-work, when stones are replaced.

The main value of the book is the documentation to a high standard of so many fine ship graffiti. A corpus like this will be a valuable basis for further work. Let us hope that more of the material documented in France will be published to the same high standards as this book.

An English summary would have been a valuable addition. The outlook of the volume is very French. Of the 245 works listed in the bibliography, 235 are in French, one in Provençal, one in Latin and eight in English. From the references, it seems that ship graffiti in France are mainly found in churches. This is in contrast to the Scandinavian material, which is divided between churches and secular buildings, probably indicating that they are an expression of a 'male sphere of interest', secular as well as religious.

ARNE EMIL CHRISTENSEN
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Fighting at Sea in the Eighteenth Century: the art of sailing warfare

SAM WILLIS (maps by Jane Way)

254 pp., 22 b&w illustrations 9 maps

Boydell Press, PO Box 9, Woodbridge, Suffolk, IP12 3DF, UK, 2010, £30/\$50 (hbk), ISBN 978-1843833673

The sailing warship of the 18th century represents one of the most iconic items of our maritime past. Ships, sailors, officers, fleet battles and single-ship actions continue to be the focus of a huge corpus of academic and popular literature, both factual and fictional, within all of the countries that maintained significant naval fleets during the 18th century. Much of the academic tradition that incorporates this period is well established within wider related fields, such as maritime archaeology and history. With this in mind, it is intriguing to encounter a work that consciously challenges some of the accepted ways of thinking about how warfare was conducted at sea, under sail, during the 18th century. This is exactly what Sam Willis sets out to do when tackling the complex subject of how a fleet of sailing warships gave chase, manoeuvred, communicated and ultimately engaged the enemy in close action.

In challenging the accepted wisdom, Willis acknowledges the great body of expert work that precedes his own contribution to the subject and is quick to highlight the depth of this material and the range of work on the many aspects of 18th-century sailing warfare that have made his own work possible: ship construction, gunnery, rigging, etc. Despite this, Willis contends that we do not understand the finer points of fleet engagement under sail quite as well as perhaps we think we do. His position rests upon the need fully to appreciate the practical aspects of sailing and fighting a ship first-hand, rather than simply relying only upon the evidence contained in contemporary historical documents such as the various admiralty fighting instructions and contemporary treatises on naval tactics. Willis claims that such sources have formed the mainstay of historical evidence until now even though they are often quite divorced from the action that they were intended to relate to. In this regard Willis' approach is refreshing, in that he places the seamanship, or occasional lack of seamanship, of the admirals, captains, officers and sailors at the centre of his investigation and explanation of why sailing warfare happened as it did. For a discipline such as archaeology, which by nature has the study of human action at its heart, taking people as the focus of the subject represents an approach that is easy to relate to. Willis' work could be considered as an account of sailing warfare written from the bottom-up, rather than from the top-down, grand strategy view, that is perhaps the norm. It is weatherliness and wind-shifts that dictate how sailors seized the weather-gauge

in Willis' vision, rather than the pre-ordained diagrammatic manoeuvres of armchair tacticians.

The structure of the book has been the subject of further thought in this regard and is set out to replicate the process of a fleet engagement, from first sighting and identification, through a chase, leading to resolution through battle. Along the way, the overall narrative is interspersed with chapters on the complexities of communication between ships, the structure and chain of command within fleets and the various tactics that were used in different situations. To this may also be added chapters on station-keeping and the mitigation and repair of damage. Willis' account revolves around the explanation and discussion of this wide variety of scenarios and the emphasis is firmly on giving the reader an understanding of the practical side of every situation. This is at its best when Willis' own thoughts are illuminated by historical material drawn from the pages of logbooks, diaries and official documents such as a court martial accounts. In this way the reader is able to relate directly some of the realities of the subject to some of the historical material that has made it such an enduringly fascinating topic.

The book is well illustrated, with a series of well-drawn and informative diagrams to explain most of the major points of discussion. Added to this are an attractive set of maps at the start of the volume which allow the various ports, harbours, battle sites, etc., to be placed in their geographical context. An extremely useful Appendix contains a concise summary of all the major fleet engagements fought by the Royal Navy between 1688 and 1815. Some critics may feel that this section is too brief; however, its purpose is not to analyse every battle, merely to familiarize the reader with the key facets. In this regard it succeeds well. The Appendix of fleet battles is worth dwelling on a little further as it neatly highlights the often inconclusive outcome of large-scale naval engagements during the period. While popular history likes to focus on the crushing victories, it is worth remembering that many actions were in fact indecisive; understanding the practical considerations that Willis discusses, offers some insight into why this was the case.

The Appendix is accompanied by an equally useful Glossary to ensure that the uninitiated can get fully up to speed on the language of the sea. Meanwhile, the bibliographic notes to the in-text citations are ordered by chapter as well as including a guide to the pages that they relate to. The user-friendly orderliness of the book is rounded off with a bibliography that many will find useful, as well as an index for those who wish to dip in and out of the book.

Overall, Willis succeeds in creating an informative vision of the realities of operating a large sailing warship in a fleet context during the 18th century. The book is at its strongest when Willis combines practical explanation with first-hand accounts from the officers and sailors themselves. Many readers will perhaps be surprised by the relative lack of uniformity in the

way that the Royal Navy, along with its allies and opponents, conducted warfare at sea during the period. When the difficulty of effective ship-to-ship communication and station-keeping is married to the often opaque system of orders and signals, before being thrown into the mix with the vagaries of wind, wave and weather, it can seem surprising that any fleets managed to engage each other at all. The range of factors that had to be balanced before a single cannon could be fired in anger serves to emphasize what is perhaps the key point, returned to again and again; that the means to overcome almost any situation lay in the seamanship of those who crewed and commanded the vessels in question. In this regard it is easy, and exciting, to dwell on famous single incidents, such as the Battle of Quiberon Bay in 1759. As maritime archaeologists, we would perhaps do better simply to consider the seamanship and human effort required to coordinate several hundred men in the everyday operation of tacking a ship-of-the-line from one course to another. Willis provides a welcome opportunity to begin to appreciate such necessary seamanship from the level of the deck rather than the diagram. The explanatory clarity brought to processes and practice that are often obscure for non-sailors means that at times it seems he is stating the obvious, whereas in reality it is just the necessary, being stated obviously. The focus on such topics, coupled with the supporting information presented, ensures that this volume will become widely read by students and academics of the subject, in addition to those who are fascinated by the literary world of Hornblower or Aubrey.

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The Naval Mutinies of 1797: unity and perseverance

ANN VERONICA COATS and PHILIP MACDOUGALL (eds) with 8 Contributors

316 pages; 13 b&w illustrations, 14 tables

Boydell Press, PO Box 9, Woodbridge, IP12 3DF, 2011, £60/\$99 (hbk), ISBN 978-1843836698

The naval mutinies of 1797 have recently enjoyed something of an academic renaissance, inspiring much scholarly discussion and debate. For those interested in subjects as diverse as the ship-board life of 18th-century sailors, political activism among the lower orders, and interactions between naval history, national identity and political consciousness, the events at Spithead and the Nore provide interesting sources and unique insights.

The mutinies that broke out in 1797 were unprecedented in their scale and profoundly worrying (or impressive, depending on one's perspective) in their

level of organization. The unrest affected more than 100 ships in at least five different anchorages. And it had ramifications much further afield: in the Mediterranean Sea and Atlantic and Indian Oceans. At the height of a major war, the Royal Navy, Britain's traditional bulwark and the country's last line of defence, was paralysed by the actions of its seamen, the very men Britain relied on to preserve it from invasion. Crews on board a majority of ships of the Royal Navy's fleet in home waters, with invasion expected at any time, disobeyed orders and refused to sail until their demands were met. The implications could hardly have been more serious.

The Spithead Mutiny began in February 1797 when seamen in the Channel Fleet moored at Spithead in the Solent sent 11 anonymous petitions seeking a pay increase to Admiral Richard Howe, their nominal commander. His flawed comprehension of events was further exacerbated by the Admiralty. A series of miscommunications followed until the seamen refused to sail on 16 April 1797. Thirty-two delegates from 16 ships-of-the-line met in the cabin of the *Queen Charlotte* that evening and drew up rules to govern their future behaviour. Ironically, Howe acknowledged the justice of their position and was instrumental in resolving the Spithead Mutiny, but this did not prevent similar occurrences at the Nore and elsewhere.

Notwithstanding the recent upsurge in interest in these events, they have not always been well served by historians. As the editors of this collection point out in their preface, with a few notable exceptions, these events, which occurred at a crucial point in the war with revolutionary France and her allies, have not featured in naval histories as much as one might expect. Conrad Gill's definitive work was published almost a century ago, in 1913. This was followed by George Ernest Manwaring and Bonamy Dobree's *The Floating Republic: An Account of the Mutinies at Spithead and the Nore in 1797*, which first appeared in 1935. And, in 1966, James Dugan published *The Great Mutiny*. This volume does not attempt to replace any of these works. However, that is not to say that it is not the product of considerable effort and thought. The editors have been considering this subject for quite some time. The collection is partially the result of conferences held to mark the bicentenary of the mutinies at the Royal Naval Museum, Portsmouth, and Chatham Historic Dockyard Chapel in 1997, as well as the 'Reactions to Revolution' conference held at Caen University, France, in December of that year.

Taken as a whole, the collection sets out to answer a series of specific questions: Were the mutinies a struggle over 'arrears of pay' or a 'revolutionary movement'? Were there one, four or more mutinies? Is 'mutiny' the correct word for these events—were there, in fact, a range of 'mutinies', from what we might term strike action today to more 'traditional' definitions? In engaging with these questions, the chapters focus on

particular events and ships, as well as tackling some broader themes. For example, contributions range from analysis of incidents on HMS *London* and HMS *Trent*, to chapters considering themes such as conspiracy theories inspired by the mutinies, the reporting of the events in the provincial press, sailors' petitions on the conduct of officers, and lower-deck life in the Revolutionary Wars.

In many respects, the strength of the collection lies in this focused approach. As the editors contend, the volume poses new answers to old questions. In doing so it can dispel some lingering myths that have little basis in fact: that sailors did not know how to rebel; that naval crews were unheedingly obedient to their superiors; or that the mutinies were the product of some Irish republican plot. In their place, *The Naval Mutinies of 1797* suggests that 'self-determination' can be a powerful tool in exploring the motivations of the sailors involved in these events.

Of course, this sort of approach can also be a drawback too. Chronologically, the collection does not stray beyond the first decade of the 19th century. Indeed, apart from a final chapter on the influence of the events of 1797 upon the *Nereide* Mutiny of 1809, there is relatively little to say about the legacy of 1797 in the Royal Navy. While there is much more work to be done, this collection can provide the basis for future scholarship. More consideration of muster books, for instance, might provide information and more 'subtle understanding', as the editors put it (p. 9), 'of those who led the mutinies or crewed particular vessels which espoused, resisted or drove mutiny forward'. Similarly, much remains to be done on issues such as the long-term impact of the mutinies on naval administration, conditions and discipline, as well as the wider cultural impacts and legacies of such potentially cataclysmic events on the national, as well as the naval, psyche.

In an article in *The Saturday Review* of June 1891, David Hannay remarked that he doubted whether the mutinies of 1797 'have ever received the attention which they deserve'. *The Naval Mutinies of 1797* goes some way to rectifying that situation.

JOHN McALEER

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The Emergence of Britain's Global Naval Supremacy: the war of 1739–48

RICHARD HARDING

392 pp., 8 b&w plates, 11 figures, 15 maps, 27 tables

Boydell Press, PO Box 9, Woodbridge IP12 3DF, UK, 2012, £65/\$115 (hbk), ISBN 978-1843835806

The war of 1739–1748 has long been the Cinderella of Britain's 18th-century conflicts, and an inconclusive precursor to the glories of 1756–1763. Richard

Harding's important new book has changed that perspective. It brings together critical naval, imperial, European and political issues, benefiting from extensive archival research and the fruits of modern scholarship. Harding creates a sophisticated analysis of this paired conflict, emphasizing the Continental and domestic dimensions as the background to naval disasters and political change. At heart this is a study of the making of policy; the interface between strategy and politics, where naval and military failure impacted on politics, and *vice versa*. British ambition and self-confidence took a serious knock in the West Indies, the Mediterranean and the Low Countries.

By 1739 sea power had become a core concept for the opposition 'Patriots' in the newly made United Kingdom. It offered an alternative to the costly continental commitment of 1689–1713, a 'British' policy that avoided pandering to the interests of Hanover, the King's German electorate. Sea power was linked to the aggressive commercial aims of the City of London, motor of the post-1690 economic miracle that had transformed the Stuart kingdom into a Great Power. The 'Patriot' programme was attractive for those seeking more trade; in a mercantilist world where trade was thought to be limited this meant taking markets by force. The obvious target was Spanish America. Elizabethan fables and glories were revived to fuel the illusion that Spanish America was little more than a mountain of silver, ringed by wealthy ports anxious for British goods. Even the salutary shock of the 'South Sea Bubble' did nothing to blunt the ambition and avarice of the commercial classes, and their taxes paid for the fleet. Pushed by the 'Patriot' opposition and the City, Sir Robert Walpole's Government reluctantly entered a war with Spain in 1739, relying on a limited strategy of cutting Spanish sea communications to secure peace. The sea lanes that tied Spain to America and Asia were vulnerable, but the Royal Navy was not ready for the task. Admiral Vernon took Porto Bello and George Anson eventually took the Manila Galleon, but elsewhere the fruits of sea power were thin. The Navy was unable to concentrate on Spain, as France hovered on the margins and a major war broke out in Europe. Manpower shortages and other administrative problems further weakened the effort. Vernon was beaten off at Cartagena de las Indias, and the strategy began to unravel as Europe took centre stage, reviving the core concern of English/British strategy since the Middle Ages. To prevent the Low Countries being used as a staging post for an invasion, the British had to change focus. Disillusionment with sea power and the lack of obvious success broke Walpole's ministry and its successor: botched battles on land and sea cost ministers their posts. By the middle of the war the older generation of naval leaders was making way for new blood, led by George Anson. Using his fame and fortune Anson joined the political elite by marrying the Lord

Chancellor's daughter, took a seat at the Admiralty Board, and won a significant battle off Cape Finisterre. This last restored the service's lustre, just as the war in Europe reached a disastrous conclusion.

Harding's key conclusion is that Britain went to war with Spain in 1739 under the influence of an unrealistic and overly 'naval' strategic concept. Key decision-makers were convinced—with little basis in experience—that a potent navy alone would be enough to defeat the rambling Spanish Empire and secure additional trade to boost the economy and refund the costs of war. Success against Spain would give Britain a powerful platform to influence the European state system and address the underlying vulnerability to invasion from the Low Countries and the linked threat of a Jacobite rising. The experience of war between 1740 and 1745 provided a salutary lesson. The Royal Navy, for all its ships and stores, was not ready for the challenge of a global war: new base facilities and ship designs, a professional officer corps, and improved organization were needed. The Navy that went to war in 1739 lacked the dedication, experience and, above all, the killer instinct to make sea power truly effective. A succession of Court Martials, including the execution of one unfortunate officer, and a new leadership that included Anson, made a difference. By 1747 the French navy had been swept from the seas, and French prizes were beginning to transform the quality of British ship design. At the same time the problem of Europe remained. Once France and Austria went to war, British imperial aims became less significant. While the opposition called for a maritime war, in reality Britain was bound to Europe by the threat of invasion. This became all too clear when Antwerp was captured by a French army in May 1746.

This war proved that sea power took time to be effective, it was fortunate that those effects were becoming clear to the French. Sea power worked better as a counter-attacking strategy, using economic warfare, colonial conquests and local action to block attempts to invade, while steadily degrading the enemy's resources. In this respect Britain's key asset was financial: the post-1688 political settlement gave the government long-term access to low-cost capital, and tied the commercial classes ever more closely to the state and the dynasty. It was no accident that the interest rates on government securities were essentially unchanged throughout the conflict, despite defeats and political strife. Britain could not defeat France in Europe, but it could easily outlast France in any long war. When peace came in 1748 the British had to trade in most of their overseas success (notably the capture of Louisbourg), and the destruction of French shipping to get the French out of the Austrian Netherlands, modern Belgium. This last, rather than the King's German electorate of Hanover was the reason why Britain had to be a mixed power, and not a pure sea power. As the war had demonstrated, if the French had

an army in the Netherlands they could mount a serious invasion. Therefore Britain had to find allies and strategies that would keep the French out of Belgium; that meant preventing France becoming a hegemonic power. Putting the Austrians back in charge of Belgium and balancing the European state system would be essential before Britain could make effective use of sea power. In the next war, which began in the Americas in 1754 spreading to Europe in 1756, Belgium was neutralized and Holland neutral. This meant that fighting in Germany did not threaten British national security, and more effort could be devoted to the Imperial conflict. In this war the hard-won lessons of 1739–48 and many of the key players of that salutary conflict created a global empire, but, as Harding shows, they were building on the foundations of the preceding conflict. This is a work of the first importance, which will become the standard text on the British side of the war. It is a pleasure to see the footnotes in their proper place, in a well-set text with good illustrations. Unfortunately a number of literals have crept through the editing process, including one in the last sentence.

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The Archaeology and History of the Flower of Ugie, Wrecked 1852 in the Eastern Solent

(HWTMA monograph No 11/BAR British series 551)

JULIAN WHITEWRIGHT and JULIE SATCHELL (eds), with 7 Contributors

112 pp., 59 figs. some colour, 17 tables

BAR via Archaeopress, Gordon House, 276 Banbury Road, Oxford OX2 7ED, 2011, £29 (sbk), ISBN 978-14073088890

The late Professor J. Richard Steffy, ancient ship specialist and author of *Wooden Ship Building and the Interpretation of Shipwrecks*, often reminded his students that even the most meagre of ship remains have something to tell us about the past. For him, the measure of good maritime archaeologists was in how much information they could extract from a collection of fragmentary hull remains. The only limits, he said, are imagination and motivation. BAR British Series 551, *The Archaeology and History of the Flower of Ugie*, makes an excellent case in point, for the research team on this project has accomplished much with a limited amount of ship structure and a very modest collection of artefacts.

The wreck that is the subject of this monograph was first brought to the attention of the Hampshire and Wight Trust for Marine Archaeology (HWTMA) in

2003 as that organization was commencing a major survey of submerged cultural resources on the eastern side of the historic Solent waterway on England's south coast. A fisherman working off the Horse Tail Sands had snagged his nets on an unknown bottom feature in 12 m of water, an obstruction that divers subsequently identified as pieces of a wooden vessel. When compared with the two most famous wrecks to be discovered and excavated in the Solent, the warships *Mary Rose* and *Invincible*, this new find was not very impressive. It consisted of two relatively small sections of hull separated by a scatter of debris; it was not even possible to determine which end of each section was forward and which was aft. It was readily apparent to the HWTMA group, however, that the site warranted further investigation, for earlier commercial aggregate-dredging operations had created a sink in the nearby bottom topography that was drawing down the sediments that had once covered and protected the wreck. Between 2004 and 2011 the organization spent seven dive seasons (no work took place in 2007) recording the structure and debris field, collecting artefacts as well as samples of wood and metal for analysis, and amassing data on the hydrology, geomorphology, and biology of the wreck site and surrounding sea bottom.

The results of the HWTMA efforts are covered in 98 pages of fairly dense text; although well-written, this is emphatically a scientific report and not a publication intended for readers with only a mild interest in the subject. The monograph's seven chapters cover the project background and site context; archaeological remains; a discussion of the history of the vessel believed to be the wreck; a chapter devoted to the context and interpretation of the vessel and the sea-bed remains; and a review of issues surrounding both site management and the dissemination of the project results (the latter included the preparation of teaching materials for secondary-school students that use the site as a case study in scientific research). The text is supported by numerous data tables and profusely illustrated with colour and b&w photos, site plans and artefact drawings, maps, and ship and rigging diagrams.

While all parts of the monograph contain useful descriptions and analyses, some sections particularly stand out. The analysis of the metal fastenings by Peter Northover of the University of Oxford's Department of Materials Science is one of them. Certain features of the wreck (its copper fastenings and sheathing, iron hanging and lodging knees, and a cast-iron carronade) allowed the HWTMA team to tentatively date the wreck to the late 18th or 19th centuries. Northover's identification of samples containing different ratios of copper and other metals allowed the researchers to place the wreck with some certainty in the second quarter of the 19th century, when earlier types of cupreous sheathing and fasteners were being replaced by new copper-zinc alloys patented by George Muntz

in 1832 and entering widespread use by the 1840s. Evidence of both types in the hull suggested the vessel's career spanned these decades. The identification of timber samples by Nigel Nayling of the University of Wales also proved very useful in the process of identifying the wreck.

Julian Whitewright's summary of the monograph's archaeological chapter is a textbook example of making good use of disparate physical and comparative evidence as well as deductive logic to determine the approximate date and vessel type from the archaeological finds. His conclusions are then applied in the subsequent chapter to narrowing the list of known wrecks in the area to the most likely candidate; the 350-ton (old measure) bark *Flower of Ugie* (pronounced *you-gee*), a vessel built at Sunderland in 1838 and lost off the Horse Tail Sands in a storm in 1852. The construction of this vessel, described in considerable detail in a Lloyd's survey report prepared at the time it entered service, matched a number of the hull features and wood species identified on the wreck. This kind of documentary corroboration is something that most shipwreck archaeologists working on wrecks from earlier centuries can only dream of.

Whitewright's discussion of the *Flower of Ugie's* 14-year career, derived mostly from *Lloyd's List* daily shipping reports and from arrival and departure notices in various newspapers, makes clear just how representative this vessel was of its time and place. The bark made multiple voyages between Liverpool and Calcutta, with side trips to Mauritius, Penang, and at least one trip to China at the time of the 1842 Opium War; during later voyages *Flower of Ugie* sailed from English ports to the eastern Mediterranean, the Black Sea, the Baltic, and across the North Atlantic to New York and Quebec. On its last voyage the now-elderly bark was carrying coal from Sunderland to Cartagena in Spain when it was overtaken by the storm that ultimately caused it to break up on the Horse Tail Sands. The narrative history is followed by the excellent 'Contextualization and Interpretation' chapter that looks at the ship both as an element in the worldwide trade system of its day, and also as a seafaring machine made up of many parts, built at a time when scientific discoveries and engineering advances were changing the nature of ship design and construction.

The Archaeology and History of the Flower of Ugie makes a strong case for the importance of studying and preserving 19th-century wrecks, a subject near and dear to this reviewer's heart. The scale and complexity of maritime enterprises and the technology of building and operating ships both underwent massive changes in that 100-year span. Despite the richness of the documentary record, there is so much more to be discovered when we combine this with research on shipwrecks of this era.

KEVIN J. CRISMAN
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The Hulks of Forton Lake, Gosport: the Forton Lake archaeological project 2006–9

(BAR British series 536, NAS Mono no 3)

MARK BEATTIE-EDWARDS and JULIE SATCHELL, with 8 Contributors

106 pages; 60 colour plates, 85 b&w figs, 16 tables

BAR via Archaeopress, Gordon House, 276 Banbury Road., Oxford OX2 7ED, or NAS, Fort Cumberland, Eastney, Portsmouth PO4 9LD, 2011, £30/£27 for members via NAS (sbk), ISBN 978-1407308135

In the UK, hulk assemblages can usually be classified into three main types, differing in terms of date of deposition and in types of craft represented. There is the 'Bank Reinforcement Assemblage' with vessels selected for a particular purpose, and therefore with a focus on robust, medium-to-large craft. While the core of the bank reinforcement or breach infill is likely to have been brought together at one time (but perhaps using vessels of differing dates), there may also be additional repairs to the flood defence incorporating later craft. A second type would be the 'Catastrophe Cemetery', representing the deposition or abandonment of all vessels at (more-or-less) one date, and a third type the 'Attrition Cemetery', in which the deposition of the craft might be spread over decades or even centuries. Since it is the least selective of such hulk assemblages, attrition cemeteries can lay claim to being more representative of the wider range of vessel types in a particular region. Consequently their research not only provides valuable information on particular aspects of vessel construction, but gives a window on a broader series of social, economic or political issues, of relevance to local, regional and national histories.

The survey of the large assemblage of more than 30 vessels from Forton Lake, Gosport in Hampshire is an excellent example of this type of research. The work was directed by the main authors, Mark Beattie-Edwards and Julie Satchell, as a joint NAS/Hampshire Wight Maritime Trust project; one that involved a large and enthusiastic team, as the published acknowledgments demonstrate. From 2006–9, a remarkable range of small, medium and larger vessels were recorded, representing ferries, lifeboats and fishing boats, as well as landing craft dating from the 1939–1945 War, all abandoned over a protracted period in a south-coast creek. The project therefore provided a most illuminating maritime history of this region. It is to the credit of the team that, in addition to this most useful report, an attractive booklet on *Forton's Forgotten Fleet* has also been published.

The more detailed monograph considered here presents the results of this community-archaeology project in a logical format. Introductory sections look at the

history and archaeology of the tidal inlet, and the background to the project, including the various sponsors (such as the Heritage Lottery Fund, Crown State and Gosport Borough Council) that supported the survey and its associated activities. The next sections catalogue some 30 craft, considered in five sub-groups. The first presents the evidence for two metal and three wooden barges: the latter, possibly the oldest vessels represented in the assemblage. This is followed by one of the most specialized working craft considered here, the Medina River Chain Ferry, and then the old Gosport ferry, *Vadne*. This section concludes with two ship's lifeboats, probably the first time such a vessel type has been subject to archaeological survey. Three wooden-hulled, motor-powered fishing vessels form the next section.

The largest section reports on a range of military and naval vessels, a rather poignant memorial to the WWII, the more so in relation to the 70th anniversary of that world-changing event. There was the Motor Minesweeper Class 1, no 293, an RAF bomb scow (used to ferry bombs and torpedoes to marine aircraft); two naval pinnaces or harbour launches, a possible gunboat, an RAF ferry and the remains of three wooden-hulled landing craft which would have carried armour plating when on active service, although this was often stripped off when such craft were converted into houseboats.

The study also surveyed associated slipways and a groyne, as well as considering the history of the local F. J. Watts boatyard, responsible for some of this most evocative collection. This monograph and its associated project are important for several reasons: a) it demonstrates admirably the value of looking in detail at hulk assemblages (before it is too late) and clearly shows how such studies illuminate a wider local history; b) the project is a first-rate example of what a coherent community-based archaeological programme should be, involving training, targeted fieldwork, outreach work, research and publication. The monograph includes a useful compendium of sources (published and otherwise), together with worksheets for school children and guidelines on working with the hulk-recording *proforma*, to help other groups wishing to set up their own projects; c) the monograph was published very promptly in 2011, just two years after the fieldwork was completed, a major achievement in itself.

Taken together, the Forton Lake project should galvanize groups to take a deeper interest in such hulk assemblages (and in intertidal archaeology in general). There is a real need for more of this type of work, all too often sitting outside the developer-led archaeological world. There is no need for 'amateur' groups to feel they are excluded from genuine fieldwork opportunities as community archaeology on the foreshore has a positive role to play. The Forton Lake project as described in this monograph provides an ideal model of how community archaeology

can make a real contribution to archaeological research.

GUSTAV MILNE
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USS *Monitor*: a historic ship completes its final voyage

(Ed Rachal Foundation Nautical Archaeology Series)

JOHN D. BROADWATER

239 pages, more than 100 b&w and colour illustrations including plans and drawings

Texas A&M University Press, 4354 TAMU, College Station, TX 77853-4354, 2012, \$39.95, (hbk) ISBN 978-1603444736

In this book John Broadwater presents a vivid and comprehensive account of the USS *Monitor* project. Not intended as the definitive academic publication, it gives a brief insight into this unique and iconic vessel, its history and technology and provides the reader with some understanding of the archaeology and complex engineering and diving feats that occurred in the course of the 40-year-long project. In exhibiting considerable skill as a story teller, John Broadwater succeeds admirably in presenting this work to a general readership.

He leads with the history and engineering behind USS *Monitor* and with the naval battle ethos of the contemporary American Civil War. He moves to the 20th century search for *Monitor* and follows the logic and remote-sensing method used in its eventual location in 1972. The found wreck becomes America's first National Marine Sanctuary—a model for all that followed under the auspices of the National Oceanic and Atmospheric Administration (NOAA). This covered the evolution of deep-water wreck diving and recording over the decades since 1972, and, the subsequent politics and processes surrounding the site's protection and management. There are insights into one of the greatest and most complex maritime archaeological feats so far attempted, including details of the partial excavations involved in the recovery and management of selected objects and remains and general site management before, during and after excavation, resulting in public presentations and exhibition plans. Permeating the whole operation is the career of one of the most acclaimed maritime archaeologists and ubiquitous flag-bearer for the United States' cultural-resource-management movement in the modern era, John D. Broadwater.

From the outset, Broadwater enters our consciousness along with those who worked on this innovative and iconic American vessel since the first but unsuccessful search in May 1950. He comes to us in an unapologetic first person, setting the scene and style for

all that is to come in the book: ‘. . . I twist my body to peer through the tiny viewport . . . as we descend to toward the seafloor. Huddled in a cramped aluminium cylinder I’m struggling to control my fear of close spaces.’

Presented with this initially alarming introduction, with personal fears and the inadequacies of his early equipment laid bare, I had to reassess my initial reactions and then accept, as Broadwater himself notes in the Preface: ‘I put aside. . . [the] archaeological and engineering report long enough to write this account of the *Monitor* story for a general audience [drawing] heavily on my personal knowledge and experience . . . in the hope that I can impart to readers a sense of the concerns, deliberations, decision making, excitement, and elation that I and others experienced.’ Once this is understood and once we accept (as both Broadwater, and then James P. Delgado in his *Forward*, take pains to emphasize) that this is not the archaeological report, we can better appreciate and understand what has happened to USS *Monitor* since the Stevens Brothers first presented their concept for a ‘steam-powered iron-armoured warship’ in 1841. Broadwater certainly achieves his aims via an attractive and well-written work that is primarily designed for general readership as it permeates the bookshops during the 150th anniversary years of the vessel’s launch and loss.

Along with CSS *H. L. Hunley*, USS *Monitor* has, for Americans, what Delgado characterizes as ‘mythical qualities’, with interest in it constantly propelled by a ‘national mania that continues 150 years later’. Ordinary Americans will certainly enjoy the work and Civil War buffs will find it entertaining and of value. A product of John Ericsson’s inventive genius, its armament, low freeboard and rotating turret (a breakthrough in naval conflict), *Monitor* has a global significance—along with its adversary CSS *Virginia*. It heralded in the new era of naval warfare that occurred during what is generally characterized as the ‘first modern war’. Naval historians will also pick up the book (even though there is no chapter on naval technology) and they will move on to the technological race between the Union and the Confederacy, followed by the spread of interest in the successful pioneering American ironclads around the globe.

Apart from the general interest in the *Monitor* story, this work is important for today’s practitioners and students of maritime archaeology, especially those working in the once remote field of deep-water survey and deep-water archaeological method—*Monitor* lies at 238 feet. It will also have much to say to those involved or interested in iron, steel and steamship archaeology generally. The de-concretion of the Dahlgren guns, the excavation of the turret and the management of the human remains and artefacts within it, provide a foil to a similar exercise earlier conducted upon *H. L. Hunley*. One of Keith Muckelroy’s observations, that the longevity of complex shipwreck excavations such as this is a distinct asset,

allowing, as Renfrew and Bahn have emphasized as essential, constant feedback, re-assessment and the cumulative adding of specialists to the core team in a continuum of necessity spanning many decades. Appropriate here is the image (p. 3) of a young Broadwater preparing for one of the early research dives complemented by a shot of him in recent years with two young colleagues and materials excavated from *Monitor*’s experimental turret (p. 197). This well illustrates how long the *Monitor* programme has been going for and is still going.

But where is the engine in all of this? Ensuing reports for the on-going deconcretion of *Monitor*’s complex 30-ton engine and its ancillary machinery (major excavations in themselves) are impatiently awaited by those active in steamship archaeology whether contemplating similar enterprises or with scientific, engineering or other reasons for interest in the process. It remains to be seen whether the combined archaeological-conservation team assembled at the laboratory at the Mariner’s Museum in Newport will succeed in dismantling Ericsson’s engine and, after re-assembly, be able to turn it over again. This was achieved with the SS *Xantho* engine, the final reports of which are now in preparation after more than a quarter of a century of work (*IJNA* 15:2 173–6; *IJNA* 17:4, 339–47, *IJNA* 33:2, 330–37). The *Xantho* experience shows that this phase will be many years, decades even for the *Monitor* machinery is very large and its de-concretion and dismantling will prove a daunting and, when completed, an extraordinary feat.

Notwithstanding the scale of the engine operation still to come, the *Monitor* project has been a massive undertaking: one of the world’s largest and greatest. Throughout the work the extent and complexity of the equipment, support vessels, service personnel and the size of funding attests to the importance of this wreck to the American people as a whole. They, not the practitioner or the archaeologist, are Broadwater’s target audience here as he makes very clear. Included therefore, in magazine style, are entertaining little snippets such as ‘Was *Monitor* discovered during world War II?’ and ‘Diving milestones—1977 and 1979’ and many others appear featured in information boxes scattered here and there through the text. These are mixed with equally eye-catching but much larger boxes providing informative details on subjects such as John Ericsson himself; a précis of the 42 site visits conducted between 1973 and 2009; and another attesting to the sheer magnitude of this ‘national’ project gives the number of service divers (142) deployed and the amount of dive-time accumulated by them in both a surface-supplied and saturation (bell) mode. The equipment used and the vessels deployed are similarly treated. There is a box on *Monitor*’s construction; on the submersibles used; letters home from Civil War combatants; the mixed-gas dive systems and other aspects of diving support and training including public awareness through recreational diving on the wreck; NOAA’s

National Marine Sanctuary programme; and conservation of iron and the artefacts. Last in this overview through 'asides', the work of JPAC (the Forces Central Identification Laboratory and its forensic teams) boasting an astounding 400 people. Taking time off from work identifying missing United States service personnel, these teams assisted in identifying the crew unexpectedly found in the ship's turret after it was excavated and raised.

Manager of the *Monitor* National Marine Sanctuary after April 1992, and one of the three first archaeologists to commence work on the site in 1979 and the only person to have maintained the essential continuous thread of professional involvement to this day, Broadwater is generous in his acknowledgement of the others pioneers: Gordon Watts who first brought the wreck to the attention of readers of this journal (*IJNA* 4:2, 1975, 301–28) is described as 'the leading expert on the ship and its current condition'. Hundreds of other names and many institutions are mentioned in a similarly generous way and by this means Broadwater solves the problem all of us face over how properly to credit those who have assisted, provided their expertise or proved valuable in so many ways to a complex archaeological programme. Now he and NOAA can concentrate on the archaeological report and catalogue – their duty to a myriad others done.

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Stalking the U-Boat: U.S. naval aviation in Europe during World War I

(New Perspectives on Maritime History and Nautical Archaeology series)

GEOFFREY L. ROSSANO

429 pp., 35 b&w photographs, 3 maps

University of Florida Press, 15 NW 15th St., Gainesville, FL32603, 2010, \$85 (hbk), ISBN 978-0813034881

Although the United States only entered the First World War in April 1917 it did so with ample warning, and with the benefit of access to a wealth of experience, largely through links with Britain and France. Nowhere were these connections more important than in the rapidly developing field of naval aviation. In April 1917 the United States Navy had less than 40 aircraft, and less than 100 aviators, by late 1918 it had more than 1600 pilots and a host of naval air stations in France, Britain and Italy, conducting a combination of anti-submarine patrols, convoy escort and offensive bombing missions against enemy naval bases at Bruges and Pola. This explosive growth, Rossano argues, would be the key to the post-war survival of independent American naval aviation.

In 1917 naval aviation meant flying-boats and float-planes, rising from and landing on water. The American Navy had no aircraft carriers, so any wheeled aircraft in the American inventory were the property of the separate Army Air Force. As a result the new American bases in Europe were built by the sea, or large lakes, and left behind the massive concrete slipways needed to get flying boats onto the water. From the far west of France and Killingholme on the Humber, to Cobh in Ireland and Porto Corsini in Italy, Rossano has examined these structures, linking bases with their local environments.

When the Americans arrived they used French, British and Italian aircraft, with mixed results. The over-stretched French industrial base had major problems meeting orders, while Italian Caproni bombers proved lethally unserviceable. By late 1918, British-built aircraft and American versions of the same design had become standard. Unfortunately the new American 'Liberty' engine had serious teething problems, while quality control in American factories left a lot to be desired. Most American flying-boats had to be completely rebuilt on arrival in Europe before they could be flown. Even when the aircraft were serviceable the work of the aviators was neither rewarding nor safe. Not a single U-boat was sunk by American aircraft, while human and aircraft casualties were heavy. Almost all losses were caused by flying accidents, or the mechanical and structural failures of these primitive machines.

The book is divided between four overview chapters, which deal with the organization and policy of the naval air effort in Europe, six dealing with specific regions (from the French Atlantic coast and Ireland, by way of Dunkirk, the British and Irish bases and Italy), one on the abortive lighter-than-air effort, and another on the Northern Bombing Group, which, with the Italian deployment, pioneered land-based strategic attacks on enemy naval bases. The central chapter examines the life of the new air bases which, then as now, quickly took on the character of 'back home', complete with American food, facilities and amenities.

While much of the book necessarily focuses on the building of bases, the problems of aircraft supply, and the inevitable, tragic loss of life in the pioneering aerial war effort, four chapters include air-to-air combat, the Dunkirk station was the busiest, only one located within artillery range of the enemy front line, and included considerable air-to-air combat with the formidable German float-planes based in Belgium. American aviators flying from British bases, often with British squadrons, took part in heavy fighting off the Belgian and Dutch coasts. The Northern Bombing Group based in France was just building up to be a land-based strike-force to attack the U-boat base at Bruges when the Germans retreated, while the Italian base, close to Venice, conducted raids on the main Austrian naval base at Pola, and engaged in air-to-air combat. In all these areas the advantages of lighter, land-based aircraft became obvious.

Just as the American effort was getting into its stride the war came to a sudden, largely unexpected end. Before they went home, the Americans took care to study every aspect of Britain's world-leading naval aviation, fledgling aircraft carriers, fleet operations, long-range flying-boats, strategic-bombing land-based fighter squadrons and much more. They were hugely impressed by Rolls-Royce engines, and Handley Page four engine bombers. They also visited Germany, where they ordered a Zeppelin. Within hours of the Armistice the programme went into reverse, and by April 1919 the men, machines and stores had been sent home, the structures dismantled or sold off to the locals, and the Navy was getting ready to fight for the budget on Capitol Hill. The massive expansion of air effort in 1917–18 equipped the service to fight off calls for an independent air force, like that adopted in Britain, which American naval observers soon realized had been a serious mistake. Over the next two years a bitter battle was waged with the Army Air Force over control and amalgamation. It would be resolved on 12 July 1921 when the Navy set up a Bureau of Aviation and committed itself to carrier aviation, with wheeled aircraft. Newsreel footage of American flying-boats hunting for U-boats was shown in every American cinema, making an entire nation aware of the naval air effort, beginning a relationship with the cinema that lasted down to *Top Gun*. As Rossano rightly stresses, the European naval air effort made that outcome possible, it gave the Navy a credible, battle-tested air force.

This fine book makes excellent use of the extensive official and private archives to build a rounded picture of a significant subject, linking the human insights of pilots and observers with higher-level policy discussions. It will join William Still Jr's *Crisis at Sea* (2006), examining the entire American naval effort in Europe, reviewed in *IJNA*, 37:1, 220–221, and John Abbatiello's *Anti-Submarine Warfare in World War One: British Naval Aviation and the Defeat of the Submarine* of 2006 as the essential texts on the nature and cost of naval aviation in the First World War.

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Cultural Heritage Conventions and Other Instruments: a compendium with commentaries

PATRICK J. O'KEEFE and LYNDEL PROTT

458 pp.

Institute of Art and Law, Pentre Moel, Cickendarn, Builth Wells LD2 3BX, Wales. Available via www.ial.uk.com, 2012, £39 (sbk), ISBN 978-1903987123

International Law and the Protection of Cultural Heritage

CRAIG FORREST

343 pp., 37 colour illustrations

Routledge, 2 Park Square, Milton Park, Abingdon OX14 4RN, 2011, £26 (sbk), ISBN 978-0415684170

These two books cover similar ground and are largely complementary. Both concern themselves with international law relating to cultural heritage across its breadth, rather than having a specifically marine focus, but both deal in detail with the UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001. The volumes are complementary because they each take a different approach. Forrest presents an analysis of five themes in international cultural heritage law—centred on five UNESCO cultural heritage conventions—and ties them together with an overall thesis on the development of an 'international law of co-operation' in the cultural heritage sphere. With the emphasis very much on the analysis, there is no room in Forrest's volume for the text of the conventions themselves. O'Keefe and Prott take the opposite tack. As its title suggests, this volume is made up predominantly of the texts of conventions and other international legal instruments, with only brief accompanying narratives. The coverage of O'Keefe and Prott is very much wider than Forrest, covering more than 30 instruments including conventions, recommendations and declarations and encompassing the Council of Europe and the European Union as well as the UN/UNESCO.

Both volumes are similar in that they will probably appeal to a range of audiences beyond those specializing in international cultural heritage law, which might be broadly characterized as archaeologists who are looking for an introduction to international law, and (international) lawyers who are looking for an introduction to cultural heritage. Naturally, I am going to take the point of view of an archaeologist, and a marine-oriented one at that. Both books cater for non-lawyers by including general introductions that explain some of the key concepts and issues. It is, I think, an advantage that neither book limits itself to 'marine' because these general introductions to international law and law-making are very helpful—essential if you are an archaeologist who wants to understand the character of these instruments having only a knowledge of domestic or national legislation. The law presented here is predominantly that concerning the actions of states, not the actions of individuals. The instruments have the capacity to set the parameters within which domestic law is introduced, and in some cases the international law is incorporated directly into domestic law, but issues of compliance can only be brought by one state in respect of another.

Forrest sets this all out clearly in a chapter on the international legal framework, which includes

sections on the interpretation of conventions and on international customary law. It might also have been helpful to include here an introduction to jurisdiction and its different forms and principles, to explain how states can seek to control activities beyond their borders, and how such capabilities are constrained. This matter is, of course, central to the UNESCO UCH Convention, but it is also relevant in any terrestrial case where a state is trying to control the behaviour towards cultural heritage of people who are not in that state, of which there are many permutations.

Both books encourage the marine reader to consider UCH in the context of the overall assemblage of international cultural heritage law. Certainly, many of the other instruments have a bearing on UCH either directly—where UCH falls within their scope explicitly or implicitly—or indirectly, because of the principles and approaches they set out. If you are only familiar with the 2001 UNESCO Convention on UCH, then either of these books would help provide a more rounded appreciation of the international legal landscape.

O’Keefe and Prott’s compendium is an especially useful volume if you want to be able to go back to the texts themselves to check precisely what they say. By collecting them all together into a handy volume, they will save repeated searches of the web or for saved pdfs. I would fully expect to see copies of this book festooned with sticky tabs and annotations being pulled out at meetings and in classrooms for years to come. The text of each instrument is accompanied by a list of States Parties as at 1 February 2011 and a short bibliography. The introductory commentaries to each instrument are brief, even abrupt, but they provide thoughtful opinions on the key aspects of their introduction, features and points of contention. The commentaries are certainly not anodyne and will undoubtedly prompt challenges and debate in future.

The inclusion of EU instruments—on the return of objects unlawfully removed from a country, and on export of cultural goods—is interesting. As O’Keefe and Prott explain, EU law can have a much more direct effect on individuals than the other instruments collected in their volume. On reflection, it seems surprising that O’Keefe and Prott did not also consider two other EU instruments, namely the Environmental Impact Assessment (EIA) Directive and the Strategic Environmental Assessment (SEA) Directive. These instruments make only passing reference to cultural heritage, but the requirement systematically to consider cultural heritage alongside other environmental concerns when assessing major development schemes and programmes is having a profound effect on the investigation and safeguarding of UCH in many European countries.

Forrest’s account involves a 40-page introduction to the 2001 Convention that is then addressed in only 30 pages. This imbalance might be a product of some brutal editing because there is not the analytical clarity

in the discussion of UCH that I anticipated. Even if much text has been lost, I cannot say the process has been effective; there are certainly sections that would have benefitted from further attention. There are typos as well—too many to overlook and in one example (p. 333) the application of the Convention is said to depend upon objects and sites etc. being ‘regarded as O’Keefe’, which is extraordinary. Although many interesting points are raised and Forrest maintains a readable and apparently authoritative narrative, the arguments are not always thoroughly developed and my confidence in the volume suffered as a result. My unease is difficult to illustrate in a short review, but there are often assertions and generalised appeals—‘clearly’, ‘it should be welcomed’, ‘there is no doubt’—where evidence or reason might have been expected.

A final impression from both volumes is that in most spheres of cultural heritage law, the states that make up the international community have sought to engage pro-actively in developing better ways of dealing with the wonders created by our predecessors for which we are presently responsible. International heritage law is grappling with a broader range of heritage and more diffuse constituencies, not necessarily with unanimity but at least with some degree of innovation. The sphere of underwater cultural heritage, however, remains bound by established—though not necessarily old—constructs of salvage, jurisdiction and sovereignty that are more of a hindrance than a help in resolving practical cases of underwater heritage management. As both these volumes demonstrate, international heritage law can be dynamic and progressive; by presenting UCH firmly within this overall context, both volumes surely raise the expectation that state attitudes to the past ought to transcend the land/sea boundary with equal creativity.

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Oceans Odyssey 2: underwater heritage management & deep-sea shipwrecks in the English Channel & Atlantic Ocean

GREG STEMM and SEAN KINGSLEY (eds), 13 Contributors

354 pp., 514 mostly colour illustrations, 5 maps, 20 tables, 5 ‘pie’ charts

Oxbow Books, 10 Hythe Bridge Street, Oxford OX1 2EW, 2010, £25 (hbk), ISBN 978-1842174425

Following the theme of its predecessor, this volume, to quote Stemm, CEO of Odyssey Marine Exploration, ‘continues the core objective’ of the company ‘to make its work accessible as widely as possible in a comprehensive and timely manner’. One would assume that there would thus be detailed archaeological analysis of

the work *Odyssey* does on the sea-bed using its array of highly advanced equipment. However, ch. 4 is devoted to the history of cannon casting in England at the time HMS *Victory* (1744) was outfitted and ch. 7 gives a background to the activity of privateering. While both of these are interesting in themselves, much of what they contain is not directly relevant to understanding the wrecks to which they refer—HMS *Victory* and *La Marquise de Tourny*.

Aspects of these wrecks are covered in chs 5 and 6. The former is a conservation report on two bronze cannon *Odyssey* raised from the wreck of HMS *Victory* with the permission of the British government. They have now been relocated to the Mary Rose Trust for ongoing treatment. The wreck of the *La Marquise de Tourny* is the subject of the sixth chapter. Found in 2008, this was identified primarily by its bell which ‘was recorded *in situ* and the surrounding sediments cleared to free it for recovery in a custom-fabricated box’. Words on the bell and its general construction enabled the wreck to be identified. Although records of this vessel are sparse, decoration on a swivel gun together with a glass *flacon*, both of which were raised, suggested French ownership. The gun was transferred to the conservation laboratory at the York Archaeological Trust.

There is a rather odd inclusion forming ch. 3—being a note on half a wooden carpenter’s rule from *Odyssey* shipwreck site 35 F. A form of slide rule, this is said to be the earliest example discovered on a shipwreck. Few details are provided of the wreck itself other than it has been badly disturbed by fishing and had a cargo of elephant tusks and *manilla* bracelets. (The latter have nothing to do with the Philippines, despite the apparent Spanish root to the word, but are associated with West Africa being penannular armbands typically of bronze that were often used as currency in the 18th century slave trade, hence ‘slave trade money’.)

Chapter 8 deals with what *Odyssey* calls the ‘Blue China’ wreck—that of a mid-19th-century American coastal schooner off Florida. Most of this chapter is devoted to a detailed analysis and study of the site: the nature and distribution of objects found and the impact on these of shrimp fishing. Trawl nets are said to have created ‘at least four parallel furrows cut across the eastern length of the site . . . These have cleared sterile paths through the cargo’. The latter part of the chapter discusses various storms that may have led to the wreck. Extracts from writings by passengers caught in storms of the period, while interesting, are hardly relevant. Chapters 9, 10 and 11 are devoted to more detailed study of the cargo of this schooner: ceramics, clay tobacco pipes and glass. Examples of these were raised for examination. The findings are placed within American trade and society of the time.

An interesting chapter is 12 which sets out the results of a survey done of six German U-boats sunk between June 1944 and May 1945 in the western English Channel and off the Cornish coast. The identity of these wrecks was ‘hitherto unidentified or vague’. Each

of the six sites was visited and studied. Coupled with historical data provided by a specialist in the field, this enabled the wrecks to be identified and the often inadequate records of the period updated.

Returning to the beginning of the volume, its first 38 pages are devoted to the politics of activities directed at underwater cultural heritage. This illustrates their importance to *Odyssey* Marine Exploration, its staff and advisers. The section begins with eight short papers relating to the Convention on the Protection of Underwater Cultural Heritage 2001.

A theme running through the papers is that the Convention was designed to combat treasure-hunting: ‘a reaction to past generations’ unbridled recovery of artifacts and structural remains’ (Kingsley, p. 1). It is alleged that ‘the traditional image of treasure hunting groups is no longer valid’ (Sinclair, p.18) and ‘[t]he bad old days of unrestricted large-scale plunder and the quarrying of high-value cargoes is a thing of the past’ (Kingsley, p. 21). Compare these statements with the activities of *Odyssey* itself. For example, *Odyssey* lifted 17 tons of coins from a wreck eventually held by American courts to be that of a Spanish vessel, the *Nuestra Señora de las Mercedes* although *Odyssey* suggested the coins came from a variety of other sources. The coins were raised from the floor of the Atlantic and flown out of Gibraltar to an undisclosed location in Florida. Spain commenced action in American courts alleging that *Odyssey* had interfered with a vessel entitled to sovereign immunity. *Odyssey* fought the proceedings right to the Supreme Court but was ordered to return the coins to Spain.

Odyssey is currently at the centre of a controversy over HMS *Victory* (1744) involving both the British government and various non-governmental bodies. *Odyssey* has a contract with the Maritime Heritage Foundation (UK) to conduct work on the site. That contract and *Odyssey*’s activities have been strongly criticized by the major archaeological organizations and media for failure to comply with Annex A of the Convention on Protection of the Underwater Cultural Heritage 2001. *Odyssey* argues that it can conduct high-level archaeology on deep-sea wrecks using its remote-access technology. This may be so, but its activities in relation to the *Nuestra Señora de las Mercedes* and HMS *Victory* create a perception that it is no different from those earlier treasure hunters it seeks to relegate to the past. If it wishes to be taken seriously as a reputable body in marine archaeology, *Odyssey* and others will have to alter that perception of their activities. Part of this will involve less talk of vast quantities of gold and silver to be found on these wrecks: for example, up to £500 million worth has been stated to have been on board HMS *Victory* although many doubt it is the case. Dobson and Kingsley, in ch. 9 of the first volume, speculate as to the value of the bullion HMS *Victory* may have been carrying, including possibly four tons of gold coins. While this may inspire investors and be newsworthy, it too creates a perception of obsession

with treasure. Proof of this is the references to *Odyssey* as a ‘treasure hunter’ in newspapers and on the internet.

The principle of *in situ* preservation is once again seen as a major flaw in the Convention, in spite of repeated attempts by others to explain that this is a first option only and not even a preferred option. But that option must actually be considered and reasons given for not adopting it. This may well explain why there is so much antipathy against it. In-depth analysis of a particular situation may well show that it is indeed the best option.

The prohibition against commercial exploitation is also seen as a major defect in the Convention. For example, Stemm refers to it as a ‘bizarre’ prohibition. However, that precise phrase has been used in international instruments since at least 1987 when the Council of American Maritime Museums adopted a by-law to the effect that member institutions ‘shall not knowingly acquire or exhibit artefacts . . . removed from commercially exploited archaeological or historic sites in recent times’.

Chapter 2 puts forward a proposal by Stemm and Bederman for the sale of part of museum collections to private collectors subject to strict conditions of accountability, conservation and maintenance. Collectors would be required to keep the museum informed of any transfer of ownership and any change in the condition of the object. This is designed to provide an answer to the very real problems many museums face of shortages of space and lack of necessary funding for storage, maintenance and conservation. However, the proposal relies on a very organized system of relationships and meticulous record-keeping—something for which historically the museum community has not been noted and which many developing countries do not have the ability to provide at present. It is also based on aspects of American law which may not be found in other legal systems.

Finally, throughout the book there is reference to the damage being done to wreck sites by the fishing industry. This was also noted in the first volume on *Odyssey*’s work. The company has spent many years exploring the ocean floor and should have an extensive and unique record of the damage this industry is causing. Although it is a private body, *Odyssey* could well take the lead in organizing an international effort to reduce or eliminate this cause of damage.

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The Man Who Thought Like a Ship

(Ed Rachal Foundation Nautical Archaeology Series)

LOREN C. STEFFY

196 pp, 56 b&w photographs

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This is a delightful and important book. No nautical archaeologist worth his or her salt will be unaware of the late Professor J. Richard Steffy’s ground-breaking work at Texas A&M University’s Institute of Nautical Archaeology (INA), and many have been inspired and guided by his wholly original approach to recording, analysing and reconstructing ancient ships from their often fragmentary wrecked remains. But he was a private and very modest person, and while his scholarly achievements are manifest in his research, teaching, and publications, and by the honours he has won (most notably the prestigious MacArthur Foundation ‘genius’ award which supported his later work), throughout his life Dick the man was known only to a small circle of close colleagues and family. Few are therefore in a position to write a personal biography, and of those few his younger son, now a distinguished journalist, is uniquely well-qualified. Loren Steffy has produced a gripping and very human story of endeavour, setbacks, and achievement, and in the process has made an important contribution to the history of our discipline.

He had rich sources on which to draw. His mother Lucille had filed Dick’s early papers with rigorous efficiency, while INA’s archives were similarly comprehensive and complete. But it was from within his close-knit family that the most telling insights come. With his elder brother David he had accompanied his mother and father to Cyprus in 1972, where Dick was to begin an association with the Kyrenia ship reconstruction project which would continue for the rest of his life. Although George Bass has already chronicled the early history of INA and its establishment at Texas A&M, Loren’s account sheds new light on the uncertainty of those early days, and the enormous risks and leaps of faith that were taken by George, Dick, Fred van Doorninck and Michael Katzev in establishing the discipline and setting up the now internationally renowned centres in Texas and Turkey. Loren saw much of this through the eyes of an impressionable youngster, and later was able to interview many of the key players both as biographer and family friend.

This is the story of a remarkable and largely self-taught man who from childhood was fascinated by how ships were shaped and put together, and who explored the principles involved first through building paper-and-paste models, and later with more elaborate wooden constructions. But this was only a hobby. To earn a living he ran an electrical business in the landlocked town of Denver, Pennsylvania, and the need to support a growing family left scant time for nautical interests. How his momentous change of direction came about has been described by George Bass, but Loren adds fascinating detail from a family perspective. This insider view seen by a boy as he grows to manhood follows Dick’s subsequent rise to academic prominence, culminating in his promotion to a full professorship at Texas A&M, a remarkable achievement for someone without formal academic qualifications, and of great

credit to a university astute enough to recognize a pioneer of outstanding ability and brave enough to buck academic convention by appointing him.

As a biography the book will appeal to a wide readership, because Dick's story is unusual, interesting, heart-warming and inspiring, and Loren tells it with panache and good humour. But there is a deeper message for nautical archaeologists. Until Dick's first tentative contact with George Bass in 1963 the discipline's early practitioners, headed by Bass himself, had not fully appreciated the potential of the usually fragmentary hull timbers that often lay flattened beneath the mounds of amphoras or other cargo which characterized many wrecks. True, these remains were meticulously plotted, recovered, conserved and recorded, and general conclusions drawn from them about the dimensions and constructional make-up of the original ship. But no one had seriously thought that such analyses could lead to reliable three-dimensional reconstructions, far less that a collapsed and disintegrated hull might one day be put together like a gigantic jigsaw puzzle. Dick believed passionately that these things were possible, and that establishing through practical experiment a methodology with which to achieve them was nautical archaeology's key challenge.

The Cyprus days of the early 1970s were crucial to the development of what has since become known as the 'Steffy Method' for the study of ship remains. Dick had already been associated with Bass in the application of modelling techniques to the interpretation of the Byzantine wreck at Yassiada but the discovery of the 4th-century-BC Greek wreck off Kyrenia, and its excavation by Michael and Susan Katsev, provided an opportunity for a full-scale reconstruction of the real thing. Though crushed and partly dislocated by the ship's cargo of amphoras and grindstones, about three quarters of the original hull remained. Moreover the timbers had been carefully recorded *in situ* by the Katsevs and their team, recovered in sequence, and conserved in a large cellar below Kyrenia Castle. The ship-remains, the archaeological database, and the facilities were in place. All that was needed now was someone like Dick. Susan Katsev has made a fundamental contribution to this section of the book and has provided most of the on-site photos.

The triumphant outcome of the Kyrenia reconstruction is archaeological history, but the detailed story of how it was achieved is told here for the first time. The reader is left in awe by the sheer tenacity, skill, patience, intuition and self-criticism with which Dick reconstructed the fragments, sometimes undoing many weeks' work because a later stage revealed an earlier error of a few millimetres. It was during this process, Loren reveals, that Dick began to 'talk' to the ship—or, more accurately, to its builder, who he came to know as 'Aristides': no one ever knew of Dick's long-standing relationship with a 2,200-year-old Greek

shipwright until Loren discovered a reference in his father's notes. In tool-marks cut into the timbers' surfaces Dick was able to recognize the signatures of two craftsmen, one capable and sure-handed, the master-shipwright Aristides himself; the other cautious and less skilled—doubtless his co-worker and apprentice. On occasions it is evident that each craftsman had worked on the same part of the structure at opposite sides of the ship; on others, it appears that a botched job by the apprentice had been taken over and rectified by the master.

The conversations with Aristides were not flights of fancy, only his name was imaginary. Re-assembling timbers first put together more than two millennia earlier, and recognizing the significance of the builder's final tool-strokes on a component, is a very intimate form of dialogue. From it flows an ever-increasing understanding of the builder's intentions and methods, and ultimately of his thought-processes and philosophy. Aristides, like Steffy, turned out to be a perfectionist, and it is good to know that the two became friends.

The Steffy Method is based on an understanding of traditional techniques of wooden shipbuilding, and seeks to interpret vessels on their own terms rather than impose modern theoretical constructs upon them. Proportional 'rightness', curves defined by eye and the properties of wood are the guiding principles. By recognizing and adopting the original builder's mind-set a reconstructor seeks to understand not only the form but also the philosophy behind what he is seeking to replicate. For this reason Steffy eschewed the use of computer-based programs in hull reconstruction, though he had become increasingly aware of the value of computing for storing and managing the raw data on which reconstructions are based. As well as the restored original of the Kyrenia ship, two subsequent replicas have been built and sailed.

The Kyrenia ship dominates the book, as it did Dick Steffy's life. But Loren touches on other key projects, including the Athlit ram, the boats at Herculaneum and Kinneret (Israel), and nearer home the Brown's Ferry boat and Yorktown wrecks. Dick's own book, *Wooden Ship Building and the Interpretation of Shipwrecks* (College Station, 1994), reviewed in *IJNA* 23.3 and 31.1, remains a seminal text which will endure, though as he himself emphasizes much work still remains to be done on the vessels he has reconstructed and studied.

Future generations can count on the guidance of a wise and sympathetic mentor as they build on and further refine the Steffy Method, and this richly illustrated biography explains why. Through the ships he has reconstructed they can still talk to Dick—if they have the skill and patience to master his language.

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