



## Reviews

### **The Skuldelev Ships I: Topography, Archaeology, History, Conservation and Display** *(Ships and Boats of the North: 4.1)*

OLE CRUMLIN-PEDERSEN, OLAF OLSEN (Eds)  
Summaries in English, Danish and German

360 pp., 1000 illustrations many in colour, large format, hardback

The Viking Ship Museum in Roskilde, Vindsboder 12, Roskilde DK-4000, 2002, Dkr. 385/€52 + p&p  
ISBN 87-85180-467

This, the first part of the comprehensive publication of the five Viking-Age ships excavated in Roskilde Fjord 40 years ago, thoroughly justifies the long interval. The forthcoming second volume, *The Reborn Ships*, will cover the extensive experimental archaeological programme of building and testing full-size re-creations of the ships, the largest of which is currently under construction at Roskilde.

The discipline of ship archaeology owes a great debt to the pioneering duo, Ole Crumlin-Pedersen and Olaf Olsen, and their leadership and encouragement of a team of specialists and researchers. They were the authors of the original excavation reports which appeared commendably quickly in *Acta Archaeologica*, and, as they remark in the preface to the present volume ‘these five ships have both directly and indirectly accompanied us through most of our working lives’.

Much of the information will be familiar to readers of the succession of publications on the ships (listed in the extensive Bibliography). Some contain details, repetition of which would have weighed down this hefty volume further. What it does contain is a comprehensive and very concise overview elucidated by carefully juxtaposed tables, photographs and line drawings, many in colour. The text is easy to read and so well ordered that no index is provided—and has not been needed by this reviewer. Notes and captions are set within the wide margins. Large colour photographs are of superb quality.

The contents are arranged in six sections, the first of which, by Erling Bondeson, provides the geological and postglacial context for the development of Roskilde Fjord since the 9th millennium BC. By about 5700 BC sea level approached the present one and oysters colonized the narrows, their large banks surviving as obstructions. So far archaeological fieldwork in

the area has not provided conclusive evidence for precise sea levels in the Viking and Medieval periods but the level of nine of the Roskilde wrecks dated between AD 1025 and 1336 suggests a sea level up to 0.5 m higher than present.

In ‘Archaeological fieldwork’ written by the original excavators, the attitude and disposition of the five ships forming the Perberrenden barrier is described with greater emphasis on their context and function as a defensive barrier and the role played by groups of piles and other materials in its construction. Understandably ‘posts and fascines were not given a high priority’ in the hectic summer of 1962. When these were uncovered and sectioned during the last days of the excavation, photogrammetry was unavailable; subsequently field notes, excavation photos and post-excavation analysis have been interrogated to identify and phase the construction of the barrier. In Chapter 6.5 this is analysed in the context of barriers subsequently investigated elsewhere in the fjord and the absolute dates now obtained for the phases enable them to be set in the context of 11th-century defensive strategies.

The third section by Poul Jensen, Anette Hjelm Petersen and the Editors presents the all-important documentation, material analyses and dating of the timber. The dendrochronological research undertaken between 1988 and 1999 has succeeded in closely dating and provenancing the construction and repairs of the individual ships, two of which were built in Denmark, two in Norway and one in Ireland.

Chapter 4 contributed by Jensen, Hjelm Petersen and Kristiane Statkvern describes the physical environment of the recovered timber: the difficult task of conservation; the creation of a purpose-built museum on the beach at Roskilde; and the approach to re-assembly of the ships for display. Processes as well as results are portrayed. Of particular value for curators is evaluation of the durability of PEG-conserved timbers and the drawbacks of open-air display, ‘It is a paradox that the main threat to the ships in the exhibition is the exhibition itself’. To the visitor the sleek shapes of the ships on their metal supports belie assembly from thousands of fragments and painstaking adjustment and reshaping. The book takes us behind the scenes at every stage.

After this extensive briefing Ole Crumlin-Pedersen returns, in Chapter 5, to the excavation in order to describe and analyse each ship individually. Here the large format is used for double-page spreads of, for instance, 1:2 cross-sections of dendro-dated pine planks, and coloured strake diagrams to show woods

used, orientation within the parent tree, new wood, repairs and position of samples. Skuldelev 1 was the first hull to be reconstructed for display. Subsequently the use of cardboard models of the strakes was found invaluable in precise determination of the hull forms of the ships, a technique pioneered by Eric McKee for the Graveney ship reconstruction.

These models led to a number of discoveries, for instance, realization that the keel and garboards of Skuldelev 1 had been replaced at some time and that the cross-section of the hull had a kink around the 5th strake. The author is confident that the torso-drawing presented on p. 124 is correct to within a few centimetres. However, from experience with sailing hypotheses, he cautions that 'the shape and dimensions of the original would have been affected by the strain of the rigging . . . in the distribution of cargo or ballast and in the wave pattern'. Interpretation of fastenings and fragments is enhanced by his long familiarity with Viking technology. Thus proof of an advanced sailing technique is found in a block of lime wood confidently deduced to be a step for a spar which trimmed the forward end of the sail (p. 119).

The discovery that the very fragmentary longship, Skuldelev 2, was built in Ireland about 1042/43 and repaired in the Irish Sea region in the 1060s requires evaluation of finds of ship structure from Dublin and southern England together with iconographic evidence in order to determine if the ship was likely to have the broken sheerline of English ships depicted on the Bayeux Tapestry. Reconstruction of this ship has been the most difficult and the methodology employed to create its hypothetical lines is presented. It is the only ship for which Crumlin-Pedersen does not have experience of a full-size re-creation to draw upon; the *Roar Ege* project, for instance, triggered discovery of the measuring system used to build Skuldelev 3.

His final chapter dealing with the 'Historical background for the ships and the barrier' is a telling testament to the value of dendrochronology. While study of the plans enables the form and function of the vessels to be deduced, it is precise dating of construction, repairs and scuttling, together with known country of build and repair that enables these ships, together with the three phases of the defensive barrier in which they were used, to be set in a contemporary political and social context. Here Crumlin-Pedersen turns historian and provides a resumé of the context in which Skuldelev 6 was used first in western Norway for fishing and hunting, Skuldelev 5 was a *leidang* ship used in Danish coastal defence, Skuldelev 3 was a small Danish cargo ship and Skuldelev 1 a Norwegian cargo ship trading with Denmark probably in products such as soapstone bowls, iron, whetstones and pine masts and spars. The biggest surprise is Skuldelev 2, an Irish longship uncannily fitting the context of events after the Battle of Hastings when Harold's children fled to Dublin and then travelled to Roskilde on a diplomatic mission. Could this be the ship in which they sought

the help of their uncle, King Sven Estridsson? Alas, we shall never know.

VALERIE FENWICK

### Ill-starred Captains—Flinders and Baudin

ANTHONY J. BROWN

512 pp., 10 plates, maps & charts

Chatham Publishing, 61 Frith St, London W1D 3JL, 2001, £25, ISBN 1-86176-163-5

This book contains the story of two expeditions sent out nearly simultaneously in 1800–1801 to explore the Australian continent. The moment for such undertakings seems hardly favourable considering the political climate in Europe, but this is still the Age of Enlightenment. Authorities in England and France felt that the interests of science and discovery should prevail over military conflict. In France, Napoleon, First Consul at that time, took a personal interest, and had great admiration for Captain Cook. In England the advocate for further Australian exploration was Sir Joseph Banks president of the Royal Society and confidant of the King. Both protagonists were also willing to support the expedition of the state on the other side of the Channel: France issued a passport of safe conduct for the British expedition as Britain did for the French. The first to start was the French expedition on the ships *Galatée* and *Menaçante* of the French Navy renamed *Géographe* and *Naturaliste* under the command of Nicolas Baudin. Captain Baudin had made a series of voyages in Austrian service collecting animals and plants. The British expedition left a few months later on *Xenophon*, a North-country collier renamed HM Sloop *Investigator*, commanded by Matthew Flinders who had joined the Royal Navy as a fifteen-year-old midshipman and later learned navigation, surveying and charting in Asian and Pacific waters from Captain William Bligh. Anthony Brown has written the story of these two master mariners and their parallel enterprises based, in the first place, on the journals of the two expedition leaders.

Ill-starred captains indeed: Baudin died on the voyage home. Flinders spent six-and-a-half years as a prisoner of war on the then French island of Mauritius and died in England in 1814 from the consequences of a venereal disease picked up in Tahiti twenty years earlier.

Both expeditions suffered from overcrowded ships with large crews and a complement of scientists and artists who did not always mix very well. The French expedition had an additional problem with two very different ships one of which was a very slow sailer. Perhaps worse was the social antagonism between the expedition's leader *Citoyen* Baudin, a commoner and a

naval officer with a somewhat unusual career, and most of the officers and scientists who came from noble backgrounds. Because Baudin died before he could report on the results of his expedition his subordinates were able to claim the success and in the process destroy the reputation of their commander. This occasioned the fact that his journals have until now only been published in Australia in an English translation with, as a consequence, his nearly complete disappearance from the records of exploration. Flinders' reputation fared better because he survived and was able to publish a report upon his return to England.

Anthony Brown provides an admirable survey of the different cultural backgrounds of the two expeditions, their highly civilised behaviour towards each other in times of war culminating in their historic meeting at Port Jackson (Sydney) in 1802. Of additional interest is the description of the shipwreck of HM *Porpoise* and *Cato* on Wreck Reef Bank off the coast of Queensland witnessed on August 19 1803 by Flinders.

This is a beautifully researched book and evidently the product of a prolonged labour of love.

BAS KIST

## **Facing the Ocean. The Atlantic and its Peoples, 8000 BC–AD 1500**

BARRY CUNLIFFE

600 pp., 352 illustrations and maps, mostly in colour

Oxford University Press, Great Clarendon Street,  
Oxford OX2 6DP, 2001, £25 hdbk,  
ISBN 0-19-924019-1

This is a breathtaking book which defies superlatives and the normal conventions of academic review. Above all it is a labour of love. In his opening sentence Professor Cunliffe describes it as a book he has 'wanted to write for a lifetime', though this ambition is modestly tempered by the revealing caveat 'without realising it'. That lifetime, still happily in its productive prime, has been spent as an outstandingly active and perceptive field archaeologist, prolific author, and synthesizing historian with a clear and handsomely acknowledged debt to Fernand Braudel's concept of the *longue durée*. But unlike Braudel, who viewed the Mediterranean primarily from the perspective of a documentary historian, Cunliffe deploys both historical and archaeological approaches in this original and sweeping study of Atlantic Europe's maritime cultures through time.

Enthusiasm and at times barely restrained passion run through his pages as he leads the reader, apparently without effort, through ten millennia and across millions of square kilometres of oceans and

maritime landscapes to discover the peoples who inhabited them and moved about on their waters. The numerous illustrations and maps are essential complements to the text, with which they are co-ordinated to form an integrated whole. Author and publisher are to be congratulated for achieving what amounts to a multi-media production.

As a coffee-table book of the best kind, aimed at a discerning general readership, this eye-catching volume cannot be faulted. It will inform a wide public, among them taxpayers and policy makers, about the historical importance of the sea to the peoples of Atlantic Europe and the vital role of archaeology in elucidating it. This can do our discipline nothing but good. But *Facing the Ocean* is much more than that. Though it wears its scholarship lightly the work is underpinned by a formidable body of research. It has been second nature for this author to establish his facts by identifying, critically reviewing, analysing, and synthesizing a wide and disparate corpus of evidence relevant to the gargantuan task he has set himself. Over the past generation this corpus has grown immeasurably in volume and balance. A century ago few scholars seriously considered the sea and its influences on human affairs other than from particularistic and mutually exclusive technical, economic, or naval perspectives, seeing salt water as little more than a blank space on maps which inconveniently separated the *terrae firmae* which historians inhabited and wrote about.

It was terrestrial archaeologists who first began to break this biased and introspective mould. In 1912 O. G. S. Crawford recognized that artefact distributions unequivocally demonstrated sea contacts between the Continent and western Britain in the early Bronze Age, and this strand of maritime consciousness informed the work of other pioneers such as Cyril Fox, Gordon Childe, and Glyn Daniel. Shortly before his death in 1976 Mortimer Wheeler, whose own work frequently reveals an astute understanding of the maritime dimension, observed to a gathering of nautical archaeologists that the sea would provide the next generation of scholars with unimaginable opportunities and challenges.

In spite of its comprehensiveness and logic this is a very personal book, in which the perceptions and emotions of its author at times intermingle with those of its subjects. This is inevitable and appropriate, because the sea is an environment which provides unique opportunities for practical human endeavour and exploitation while retaining an awesome, unpredictable, mysterious and ever-present capacity for change or catastrophe. The book opens with an essay on humankind's perceptions of the ocean from antiquity to the recent past, which leads to a stimulating and important discussion about the interaction between land and sea, establishing concepts of maritime landscape which inform and drive the rest of the study.

A chapter on ships and sailors, much influenced by the work of scholars such as Sean McGrail (for some years Cunliffe's colleague at Oxford), explores the timeless realities of seafaring. The chapters which follow are chronological and thematic, ranging from the hunting-gathering cultures of the Mesolithic through the ritual landscapes of the Neolithic to the expanding networks of communication and contact during later prehistory in which trade (to use the term in its widest sense) and enterprise flourished along the Atlantic seaboard.

Although the book focuses primarily on the Atlantic, the Mediterranean world is not ignored, and relationships between the two zones are perceptively examined. The impact of Rome is refreshingly considered as a component in the march of wider historical processes and not, as is so often the case, as a slightly anomalous episode which sits uncomfortably between classical studies and the 'real' history of western Europe.

Chapters on Dark Age migrations and Norse expansion examine the shadowy antecedents of state formation in early medieval Europe, again emphasizing and explaining their maritime components. The closing section takes us into the later medieval period, with the beginnings of oceanic exploration and the shift of centres and peripheries within an expanding world. It ends, appropriately, with the discovery of America.

This is one of those rare books destined to become a classic. It is not definitive—no individual work can be—nor are its contents beyond controversy and debate. That they are likely to stimulate both is one of its many virtues. But no student of the past whose studies touch upon Atlantic Europe in whatever guise can afford to ignore it. For nautical archaeologists especially, it will provide a rich source of pointers to connections and associations which may help us make better sense of our often highly focused and particularistic investigations into the material aspects of shipping and seafaring. It will also serve to remind us that 'terrestrial' and 'maritime' are not mutually exclusive concepts or fields of study, but indivisibly connected ones.

COLIN MARTIN

**Archaeology and Seafaring: the Indian Ocean in the Ancient Period**  
*(ICHR Monograph 1)*

HAMINSHU PRABHA RAY

352+viii pp., numerous figs, plates, maps, tables

The Indian Council for Historical Research,  
Pragati Publications, Delhi, 1999, Rs 795,  
ISBN 81-7307-060-1

This volume is a pioneer in its field being the first in which an attempt has been made to include research on

the archaeology of the Indian Ocean from various related disciplines: archaeobotany; maritime ethnography and numismatics. It comprises eight articles and an appendix that is in reality a review article.

In her Preamble, the editor, Himanshu Prabha Ray, sets the scene with a masterly overview of the history of Indian Ocean maritime trade and an analysis of new methodological constructs. In addition Ray points to the almost total neglect to date of the history of fishing and sailing communities and argues for a review of their role in the evolution of coastal society and settlement. This latter theme is carried further in her review article 'The Legacy of Childe and the Archaeology of Coastal Sites' which appears in the volume as an appendix.

The Preamble is full of meaty arguments and merits close attention by all interested in the archaeology of a maritime region. Apart from the Preamble this general comment can be applied to all the contributions and I feel a strong sense of frustration that I can only glide across the surface of a collection of articles of such depth and richness.

In his article 'The Ethnoarchaeology of Fishing in a Baluch Village' William Belcher makes a striking and convincing argument for the historical continuity of fishing industries. It is an argument that finds a resonance in the contribution of Tom Vosmer on 'Maritime Archaeology, Ethnography and History in the Indian Ocean: An Emerging Partnership' in which he explores the evolution of shipping technology in Oman.

In contrast to the ethnographic approach of Belcher and Vosmer, R. T. J. Cappers focuses on the archaeology of the Red Sea port of Berenike seeking archaeobotanical evidence of Roman trade with India with particular reference to pepper, teak, rice and some exotic commodities.

Monique Kervran, Sandrine Gill, Dionisius Albertus Agius and Angela Schottenhammer focus on the archaeology of ports: Kervran on multiple port sites at the mouth of the Indus; Gill on the ancient riverine port of Mahasthangarh in Bangladesh; Agius on medieval Qalhat and Schottenhammer on Quanzhou (Zaitan). Kervran discusses the problems of locating sites on the Indus delta; Gill outlines the possible port functions of a riverine site yet to be fully explored; Agius draws on both literary and modern archaeological sources to construct a picture of the workings and history of a Middle Eastern port; whilst Schottenhammer relates the history of Quanzhou to the economic cycles of imperial China.

Jan Wisseman Christie draws on a much broader canvas than the other contributors (apart from Himanshu Ray) and explores the convergence of regional sea-trade cycles between the 10th and 13th centuries that impacted so profoundly upon the economic history of Java and Bali as well as upon patterns of coastal settlement and port activity.

Looking back on what I have written my sense of frustration mounts. All of the articles are much more than the bare bones I have outlined. Each presents a summation of our knowledge to date but more importantly each presents critical arguments and new approaches to improve our understanding of the history of seafaring across the Indian Ocean.

Whilst this volume is a major contribution to the field of maritime archaeology with respect to the Indian Ocean it does not quite live up to the claims of its editor that it will attempt to address the absence of studies on seafaring communities. All of the contributors in part address this issue in the margins but only Christie takes the issue on as a central theme. Also, I would have thought that the volume needed an article on East Africa (although the editor does attempt gamely to provide some coverage of this missing area) and a specific study on a sailing community as well as a contribution on shipping technology. But perhaps this is simply greed on my part.

All my carping aside this volume is impressive in its content, its production and its presentation and provides the best introduction to date that we have of the archaeology of seafaring in the pre-modern Indian Ocean world.

KENNETH MCPHERSON

## The Sea in Antiquity

(*BAR International Series 899*)

G. J. OLIVER, R. BROCK, T. J. CORNELL,  
S. HODKINSON (Eds)

180 pp., 54 b&w figures

BAR via Hadrian Books Ltd, 122 Banbury Road,  
Oxford OX2 7BP, 2000, £37, ISBN 1-84171-160-8

The study of the role of the sea and maritime activities in the economic and social realms of the ancient world includes not only the study of shipwrecks and traded objects or resources, but also the impact of those activities within ancient societies. A series of papers presented between 1996 and 1999 in the Transpennine Research Seminar at Universities of Leeds, Liverpool, and Manchester focus on topics ranging from the exploitation of sea resources and sea travel to the development and deployment of fleets. The individual contributions incorporate a geographical focus primarily on the Aegean and eastern Mediterranean seas from the Bronze Age to the fifth century AD, but also include Rome's activities in Britain and the administration of Saite watercraft on the Nile.

The papers are arranged thematically to touch on varied attitudes about, and uses of, the sea in the ancient world. First, the idea of the sea is considered through literary approaches (R. J. Clare on Homer), letters (E. Marshall on Synesius of late antiquity), and

hagiography; this last written by K. Adshead with reference to women in particular but exemplary in its treatment and analysis of historical documents in general. Next, trade—the use of seafaring as the means of efficient, inexpensive movement facilitating cultural interaction—is considered by examining a multi-period tell (settlement mound) at the far corner of the north-eastern Mediterranean, sponsored seaside settlements such as Miletus, and the importance of maintaining exchange that fostered the development of political power, particularly with respect to A. Keen's re-evaluation of his arguments about the role of grain in Athenian foreign policy. This last leads directly to the third theme, that of the establishment and deployment of sea power in Phoenician (A. Millard), Saite (A. Lloyd), Archaic Greek (L. Scott) and the Roman fleet (G. Milne), including discussions of iconography (A. Tilley) and sea-raiding (A. Jackson). Thirteen chapters and an introduction provide stimulating reading for archaeologists, classicists, historians, and lovers of the sea.

Of particular interest to readers of *IJNA* is the presentation of terrestrial archaeological sites within a maritime cultural context. At Kinet Höyük, T. Hodos presents evidence for shifting cultural affinities at this port site in the north-eastern Mediterranean. The stratified site offers unusual diachronic perspectives on the long-term use of a trade-dependent and trade-facilitating settlement that Hodos suggests was a nexus between the Greek world and the Near East. A. Greaves combines geographical and environmental evidence with results of recent archaeological work at Miletos, a coastal site when founded in the Bronze Age, but now some distance from the sea. A particular focus on trade routes and resources for both ship construction and trade and the role of Miletos in linking the Aegean and Anatolia with the Black Sea and southern Mediterranean (illustrated through the founding of colonies) is demonstrated by this synthetic approach to a port-city that, like Kinet, also demonstrates shifting cultural affinities through time. Whether port sites may be more vulnerable to such shifts, as being 'vanguards of fashion' through their role as entry points is not discussed by either author.

N. Rauh, *et al.*, contributes an archaeologically-based examination of the pirates of Pamphylia in southern Turkey, again combining an historical perspective with a land survey that has already identified several fortified hill sites, a kiln, and small-scale urban centres. The region is one that was well known for piracy in the early Republican period, and the authors' approach is particularly impressive as it combines broader questions about peripheral cities and their support with explicit archaeological paradigms for defining control over the substantial resources (timber and maritime supplies, in this case) naturally available in the area.

A few problems with Turkish characters (ş and ç) result in mangled site names in several chapters, and

copy editing is a bit uneven, but figure reproduction is of reasonable quality. This volume is truly interdisciplinary in its approach, and offers reminders to us all about the vital importance of approaching the past through such integrated research designs. Its appeal is primarily to a scholarly audience, but it is stimulating rather than challenging to digest.

CHERYL WARD

### Lost Warships: an archaeological tour of war at sea

JAMES P. DELGADO

190 pp., 200 colour and b&w illustrations, 9 wreck maps

Conway Maritime Press, 10 Blenheim Court, Brewery Road, London N7 9NY, 2002, £25 hdbk, ISBN 0-85177-904-1

This ‘three-thousand year tour of that great, rarely-visited museum on the ocean floor’ is, says the author, ‘intended for divers, students of the past and those interested in the saga of war at sea’. Unfortunately it is likely to satisfy none of these, for it has no theory or point of view on the ‘saga’, and only secondhand, often over-brief, information about the ‘ocean-floor museum’. The first half of the book covers the beginnings of war at sea up to the 17th century, and contains a number of errors; the illustrations are often irrelevant, and not always of top quality (those supplied by Colin Martin being an honourable exception). The second half, which goes right up to the Nuclear Age, is more lively, and the illustrations, whether of warships while still afloat or of wrecks, are better; so, too, is the text, which, dealing with later sites such as *Hamilton* and *Scourge*, benefits from a more immediate narrative treatment which comes closer to recreating the atmosphere of the sites. The author rightly emphasizes the immediacy to be had from encountering the actual remains of early submarines, but, where he attempts generalizing conclusions about technological history or the nature of warfare, his arguments become more shaky. The text throughout has been treated to an annoying personalization, so that nothing is ever discovered or considered in the passive voice, but we have to be told that ‘archaeologist George F. Bass’ or ‘British scholar A. J. Parker’ hit on some fact or other; on the other hand, the condensed historical sections, for example on China, make rather leaden reading.

There is a useful list of internet resources and a good bibliography, and it is to these, rather than the main body of the book, to which students of the past should turn for reliable documentation of the archaeology of war at sea.

A. J. PARKER

### ‘A ship cast away about Alderney’ — Investigation of an Elizabethan shipwreck

JASON MONAGHAN and MENSUN BOUND (Eds) with numerous contributors

180 pp., 94 b&w figures, 14 tables

Alderney Maritime Trust, St Anne’s House, Queen Elizabeth II St, Alderney, Channel Islands, GY9 3AA, 2001, £34, ISBN 0-954195-0-0

This large format and intriguingly titled paperback marks the culmination of several seasons work on a late 16th to early 17th century wreck off Alderney in the Channel Islands, a number of reports on which have already appeared (for instance Bound, 1995; Smith, 1997; McElvogue, 1998). The publication is described by the editors in the preface as a book designed to collate ‘... the known information about the ship’, presenting this information ‘warts and all’. The core of the publication is the catalogue of recovered finds, compiled by Mensun Bound and Ann Smith, comprising *c.* 135 of the 180 pages in three sections. The remaining two sections of the publication are a history and description of the site investigation; and a number of historical essays and discussion papers including one on the over-promoted document of 1592 relating ‘... a ship cast away about Alderney’, whence the book gets its title.

The catalogue order which, by the editors’ own admission, is arbitrary, is confined to associated finds; these are grouped under ‘The ship’ in which both ‘guns’ and ‘shot’ appear, ‘Military Equipment’ and ‘Other Finds’. Specialist reports are included in some cases, which, with the authority of the individual authors, add considerably to the publication. In some instances, the specialists seem also to be responsible for the associated section of the catalogue — as appears to be the case for the (small entry) on footwear (p. 143). The catalogue text is profusely illustrated with clear archaeological drawings of high standard.

Where specialist reports are included there are comparative illustrations from contemporary sources to accompany the text. This makes the data easily accessible and gives added worth to the publication. The use and presentation of specialist reports, however, is uneven and not well balanced. For this the editors are responsible and not the individual contributors. For example, there is a great deal on the assemblage of arms and armour, as well as on the firearms, and also on the rudder; but there is little on the animal bones, only a quick summary and two basic lists. The significance of the butchery and the burn marks on the bones is not discussed; there actually appear to be three burnt bones in the record though the text only mentions one that is ‘charred’. Treatment of the pottery also seems skimmed in comparison with other artefact groups and the unusual mixture that it represents. Whilst colourful facts are highlighted—such as the likely presence of a

surgeon onboard from a number of used glazed jars among the assemblage—there are no specialist reports with supporting contemporary illustrations or comparisons with material from other sites to accompany the text. A distribution plot for the pottery and legend for the colouring on the Albarelli might have been helpful. Also, some of the research presented is out-of-date, an inevitable consequence of the delay in publication. For example, the name ‘De Bource’ (spelt either ‘De Bovrce’ or ‘De Bource’), has now been traced (Debrabandère, 1993), and further comments have been made on the cannon (Brown, 2000).

The historical essays are nicely written with each being able to be read on its own. There are sections on the mobilization of troops across the Channel in 1592; notes on the London Fleet; maritime incidents around Alderney at this period and vessels operating there. A feature is the transcription of Sir John Norrey’s letter mentioning ‘a shypp cast away about Alderney’. The historically-led essays appear to be structured so as to prove that the vessel was an Elizabethan merchantman from the early 1590s (p. 171); this is unproven. Therefore, though of great interest, the essays add little to the archaeology.

In conclusion, the worth of this publication lies in the presentation of the raw archaeological data and specialist reports. The cost of the publication (£34) and style of binding (stapled and taped) does it a disservice, however.

D. M. McELVOGUE

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## Archeologisch onderzoek in het tracé van Willemsspoortunnel te Rotterdam. Sluizen en schepen in de dam van de Rotte

(BOORbalans 4, 2 vols)

M. van TRIERUM, A. CARMIGGELT,  
A. J. GUIRAN (Eds)

207 pp., 100 in-text illustrations, 7 boxed plans

BOOR Ceintuurban 213B, 3051 KC Rotterdam, The Netherlands, 2001, €27.50 ISBN 90-800264-4-1

Urban archaeology in Rotterdam, along the right-of-way of a new motorway tunnel called the

Willemsspoort (William Gate), has brought to light a wooden world of medieval sluices and harbour craft. The tunnel bisects the oldest dam built across the mouth of the Rotte, in the later 13th century, with its sluices allowing the river to empty at low tide and keeping the sea from flowing upstream into the town at high and storm tides. This century in Dutch history also witnessed a catastrophic storm that ruptured an offshore bar, fracturing it into the island chain we know today, flooding coastal areas and driving many to emigrate. It was paradoxically also a time when Dutch cities, fuelled by a booming seaborne trade, were taking shape in precarious rivermouth environments. Their long-term survival depended on the technology of dams and sluices, detailed here at a critical moment in history.

In the first of the four articles that make up this volume, A. J. Guiran describes two wooden sluices lying near the site of the Sint-Laurens church. The sluices were part of a series of ten such structures (half of which are still in use) that have been documented at the former mouth of the Rotte. Built in the 1270s, they are believed to date from the dams’ first construction. Appearing like long, open-ended shoe-boxes, the sluices are characterized by a heavy transversal structure of squared timbers, and, an exterior cladding of longitudinal planks. Inside each sluice, near the downstream end, is a hinged door that was alternately pushed open by the river’s force and driven shut by the rising tide. In one case, the door is hinged at the bottom and the river water spilled over it during the tidal run; in the other sluice, the door is hinged on the side and the water passed around it. Named *uitwateringsluizen*, ‘out-watering sluices’, these structures are an inherent part of Dutch national lore and technical knowledge, to which learned treatises have been devoted since the 16th century.

In two further articles, the Rotterdam sluices are studied in their historical context. A. Carmiggelt has documented their structural history in the medieval and modern periods. Carmiggelt and Guiran have also collaborated on a larger synthesis of the Rotterdam *uitwateringsluizen* up to the 19th century. Richly illustrated with coloured architectural draughts, this article documents the gradual transition from wooden to brick and stone construction.

The remains of four craft were also identified. A. F. L. van Holk shows that the two sluices were in fact partially built from old ship’s timbers. The longitudinal planks forming the bottom of the sluices were directly transferred from the floor of a large cargo ship without changing their order. In addition, the sides of the sluices corresponded to the flanks of the hull. Where the sluices’ floor and sides joined enough evidence survived to indicate that the carpenters had simply modified the ship’s turn of the bilge, transforming the chine from an oblique to a right angle. Treenails had fixed the planks to the ships’ frames. The side planks were dowelled edge-to-edge in one

ship/sluice—a significant finding—and lapstraked in the other. Dendrochronology has dated their construction to about 1245 and 1270 respectively.

The floor of a third vessel, a medium-sized, lapstraked harbour craft, was preserved over a distance of 3.5 m. Weighted down with bricks, this keeled vessel built about 1260 had perhaps been sunk intentionally to stabilize an eroding section of the inner dike wall.

Finally, a spectacular discovery was a nearly complete punt-like craft dating to about 1270. The flat bottom contained three edge-lain strakes and the sides were made of two lapped strakes. Measuring 4.37 m long and 72 cm wide, the craft had flaring sides and a raked stem and sternpost. Carefully conceived, its floor is rockered, and its freeboard at the bow and stern was raised for greater navigability. The craft is being conserved in public view at the Rotterdam Maritime Museum.

Well researched, the book is also pleasing from a technical point of view. Colour illustrations abound and this reviewer especially appreciated a number of high-quality black-and-white photos from 1942 when Allied bombing craters exposed the sluices. A second volume of boxed drawings includes a complete rendering of the sluice and ships' timbers.

BRAD LOEWEN

## Schutz des Kulturerbes unter Wasser

(IKUWA conference 1999 proceedings)

CHRISTOPHER BÖRKER *et al.* (Eds)

623 pp., Numerous illustrations some in colour

Archaeologisches Landesmuseum  
Mecklenburg-Vorpommern, Schloss Wiligrad,  
Lubstorf 19069, Germany, 2000, NPG, hdbk,  
ISSN 0138-1479

This handsomely produced tome constitutes the proceedings of an international conference held in Sassnitz and Rügen in early 1999. It is published as volume 35 of *Beiträge zur- und Frühgeschichte Mecklenburg-Vorpommern*. Of the 96 contributions, 51 are in German, 40 in English, three in French and two in Italian; there are English summaries of those articles not in that language. The given title, 'Protection of the Underwater Cultural Heritage', is not really appropriate for this volume, but can readily be applied to the conference discussions, a transcription of which is published towards the end of the book. These lengthy discussions—here, 20 pages of small print—were mainly concerned with the legal protection of wreck sites, including the draft UNESCO convention on the matter.

The contents of the volume are more nearly encapsulated in its subtitle, 'Changes in European cultural life due to river and sea trade'. The 42 main papers (12

of them short ones) are presented in three chronological groups: 'Prehistory'; 'Classical Mediterranean'; and 'Middle Ages and Modern'. The remaining 54 papers are based on poster displays at the conference, and deal with a wide variety of topics, from current research, education and exhibitions to descriptions of institutions and organizations.

The main papers also vary greatly in their subject matter: ranging, for example, from the possible Mesolithic use of sledges on frozen rivers and of skis for long-distance trade between the Baltic and the Urals (Burou, Ukraine); to a 14th-century southern-Baltic wreck with clinker inner planking and flush-laid, non-edge-fastened, outer planking (Förster, Germany); and on to a 16th-century (possibly Venetian) wreck off the Greek island Zakythos (Delaporta, Greece). It is impossible to review all the papers in this kaleidoscopic collection, but merely note a selection which will undoubtedly reflect this reviewer's interests.

The importance of river and lake transport is stressed by several authors: in Late Bronze Age north-west Germany (Hockman, Germany); in late-1st millennium BC south-west Germany (Wieland, Germany); in Classical times in the region north of the Black Sea (Kryzhytskyy & Nazarov, Ukraine); and in the medieval Rhinelands (Runde, Germany). Hakelberg (Germany) discusses 14th- to 16th-century flat-bottomed boats of Lake Constance in southern Germany, thereby adding to earlier work by Ellmers and Arnold on these 'Rhine barges'.

Overseas trade and voyages are dealt with in a number of papers. Walter (Germany) discusses the fifth millennium BC transport of obsidian from the islands of Sardinia, Lipari, Palmarola and Pantelleria to Italy and France. Other authors describe early maritime environments and trade routes, and evaluate the evidence (mostly representational) for seagoing vessels in the Early Bronze Age Aegean (Agouridis, Greece), and in Final Bronze Age Sardinia (Calcagno, USA). Underwater surveys of the Yemeni port of Bir'ali ('Kane' of the *Periplus*) have revealed evidence for trade in Mediterranean pottery with Arabia and India, during the early centuries AD (Davidde & Petriaggi, Italy). Hornig (Germany) discusses the overseas transport of elephants, camels and lions in the Classical Mediterranean. The paper by Parker (Britain) is also focused on the Mediterranean. He gives his mature reflections on overseas trade during the Roman Empire based on the data in his 1992 *magnum opus* and recent evidence.

Of the poster-based papers I would draw attention to: Balayan (Armenia) on early logboats of Lake Sevan, and three papers by German authors, Gülland on the building and trials of a reconstruction of the 10th-century Ralswick boat; Hartz and Lubke on Mesolithic paddles from northern Germany; and Janke and Lampe on sea level changes in the southern Baltic.

There should be at least one paper in this collection of interest to all maritime archaeologists and



historians. The volume should earn its place on library shelves.

SEÁN McGRAIL

## Costruzione navale antica

PIERO DELL'AMICO

2008 pp., 75 illustrations

Edizione del Defino Moro, Albenga, Italy, 2002,  
NPG

This book presents a clear and well-organized look at shipbuilding as an art as well as a technical trade. The author starts by pointing out that it is seldom possible to visualize the total construction career of an old vessel from its conception to its launching. Ethnographic, documental, and archaeological evidences are generally scarce or incomplete. Also it is difficult to study all aspects of this construction sequence, starting from the conception of a certain type of ship—as a solution for a particular need—and following it through the construction, fitting, and performance, in terms of durability, sturdiness and nautical characteristics.

The book is divided into six parts. In the first part the author proposes a mental grid as basis for a systematic study of all shipbuilding aspects, which he bundles into six separate matters: principles, phases, shape definition, construction method, fastening and assemblage techniques. Principles are defined as the essential qualities of a vessel, such as solidity, imperviousness, and durability, as well as its nautical qualities, such as stability, speed, steering ability and comfort. Phases are defined as the (mental) conception and the (practical) construction components of the shipbuilding process.

Shape definition encompasses all the methods of ship design, from simple oral tradition to modern projects with line drawings. The construction method considers the basic, generally accepted, division between shell- and skeleton-based hulls, from the viewpoints of both the construction sequence and the structural resistance. Finally, the fastening and assemblage techniques deal with the European records of the many ways in which timbers are united in a ship's hull.

The following five parts of this book describe each one of the technical or conceptual aspects listed above, pertaining to the different phases and levels of the construction process.

Part two of this book deals with the determination of hull shape and timber scantlings. It considers three basic families for the definition of hull shapes: oral tradition, direct methods, and indirect methods. According to this author, oral tradition encompasses the sets of rules learned by younger shipwrights from their seniors. It refers to the 'oral projects' of ships—in

other words, to sets of rules only applicable in the practical sphere of a particular shipbuilding tradition. Indirect methods include the rules of proportion that allowed the shipwright to deduce all the basic measurements of his ship from a single or small number of basic variables, such as the keel length, the maximum beam on the main deck, certain offsets or a given number of frames. Included also are non-graphic methods to determine the narrowing and rising of the ends of the floor timbers (the turn of the bilge of the frames), forming the central bottom of the hull in certain Mediterranean shipbuilding traditions. This section ends with a brief discussion of half-models, used to generate the final mould of each frame or station. Finally, direct methods are defined as all whole-moulding methods of designing hulls that directly generate the shapes of frames or stations. This chapter provides a clear, complete, and well-illustrated overview, showing methods of designing frames with one to five moulds.

The third part discusses construction methods in terms of the relative contribution of the frames and planking to the final structural sturdiness of a hull. The author stresses the generally accepted distinction between the expressions 'shell-based' which refers to a hull the strength of which depends primarily on its hull planking; and 'shell-first' which refers to a hull in which the hull planking is assembled first, before the frames are set in place. A series of possible variations are listed in this section, which points out the fact that many ships are constructed in a combined or alternate way, using both frames and planking for control of the shape of the hull during its construction, and for structural soundness.

Part four describes the diverse ways in which timbers can be assembled to form a ship's hull. It is divided into two sections, the first consisting of an inventory of fastening techniques—nails, treenails, rivets, staples, lacing, mortise-and-tenon joinery, and dovetail joints—and the second consisting of a description of several possible assembly solutions between two timbers. These include clinker or carvel hull planking, simple joinery, and scarfs.

Part five proposes a systematic table to present technical characteristics of any ship's hull: identification, basic bibliography, type of construction, construction sequence, fastenings, hull design, joinery, structure, planking, upper works, timber identification, and other characteristics. Even though all lists are arbitrary by definition, and can always be improved, this one is simple and complete as far as the author's points of view are concerned. There follows a technical description of over 80 hulls, divided into Mediterranean craft and Northern European craft, and presented in chronological order.

In part six, the author presents his conclusions, beginning by warning against the limitations of studying each aspect of shipbuilding in isolation. A comprehensive discussion of the evolution of shipbuilding in

the Mediterranean and North Atlantic follows, and finally a reflection on the primary structural elements of a ship's hull.

An addendum and a bibliography complete the book. The addendum presents a summary of three books relevant to this study that were published between the completion of this book and its respective publication. Although a number of tables and drawings supply clear definitions for most of the technical vocabulary used throughout the book, these only compensate partially for the lack of a glossary.

Presenting a fairly exhaustive and actual overview of the most important theories on the evolution of shipbuilding in the Mediterranean and North Atlantic coasts of Europe, this book is a great contribution to the study of the history of shipbuilding and an important complement to J. Richard Steffy's classic *Wooden Shipbuilding and the Interpretation of Shipwrecks* and a 'must' in the private library of every nautical archaeology student.

FILIPE CASTRO

### **The Voyages of the *Discovery*: the illustrated history of Scott's ship**

ANN SAVOURS abridged by Margaret Slythe

160 pp., 15 colour/100 b&w illustrations, 10 maps

Chatham Publishing, 61 Frith Street,  
London W1V 5TA, 2001, £20 hdbk/£9.99 sftbk  
ISBN 1-86176-149-X and 1-86176-171-6

For more than 40 years, before moving to her present location in Dundee, the subject of this richly-illustrated study was a familiar sight on London's Victoria Embankment. In 1979 the Ministry of Defence, custodian of the vessel since 1954, decided to terminate her role as the flagship of the Admiral Commanding Reserves, and she passed into the ownership of the Maritime Trust. Following a refit at Sheerness, *Discovery* was berthed at St. Katharine's Dock for public exhibition, and the Trust enlisted the partnership of the National Maritime Museum in researching her history and mounting displays on board. As Curator of the Museum's Arctic Gallery, Ann Savours set about tracing the survivors among those who had served in *Discovery*. Thanks to her earlier career at the Scott Polar Research Institute in Cambridge, she was able to trace old 'Discoverers' all over the world and to collect their reminiscences. Several came to Greenwich to contribute in person to two symposia organized for that purpose.

Five years after Ann Savours left the Museum, Virgin published in 1992 her definitive account of the ship's several careers, with a perceptive assessment of *Discovery*'s substantial contribution to our knowledge of marine ecology. Scott himself had recorded some

anxiety at the threat to the survival of elephant seals represented by his expedition's need for winter meat. The author's reminder of the vessel's contributions, in the course of several research voyages in the Southern Ocean, to our appreciation of krill's crucial role in the ocean food chain are even more pertinent today than they were in 1992. The expedition of British, Australian and New Zealand scientists which took *Discovery* to Antarctica in 1929–1931 was probably as productive of new information as the better-known expeditions under Scott before the Great War.

With the Virgin hardback now hard to find, Chatham Publishing undertook a fresh edition, greatly expanding the range of illustrations. Compression of some of the maps has left some of the detail barely legible, although colour reproductions maintain Chatham's usual high standard. Margaret Slythe undertook the unenviable task of abridging the original text for Chatham. For this reviewer, the abridgment fails to maintain the balance and fluency of the original. Detailed statistics of cargoes carried and ports visited, diligently transcribed from the ship's logs, are retained here, but in the process of excising more than 50% of the earlier text, some important details are lost. An account of *Discovery*'s wartime voyage carrying munitions to Archangel and returning with wood alcohol mentions a violent storm in which 'the brave little *Morning* was lost', omitting the reminder in the earlier edition that *Morning* had played an important role in releasing *Discovery* from Antarctic ice in February 1904. But the new version adds an account of her restoration in Dundee since 1986, and will add much to the appreciation of her history among those who visit her there and acquire the book as a consequence.

Few people know more than Ann Savours about the history of this remarkable purpose-built research vessel, and the decision to jettison some of her information in this abridgment is debatable, as is the omission of the substantial reading-list that graced the Virgin version. Cherish the earlier text if you have one. For a wider audience, the abridged version offers many new and unfamiliar illustrations but with some textual and stylistic impoverishment.

JOHN ROBINSON

### **Chicago Maritime: An Illustrated History**

DAVID M. YOUNG

260 pp., 116 b&w illustrations, 9 maps, 11 tables

Northern Illinois University Press, Dekalb, Illinois  
60115, 2001, \$39.95 (hdbk) ISBN 0-87580-282-6

In *Chicago Maritime: An Illustrated History*, David M. Young covers a lot of information in a short space. The information he presents within this book is intended for a general audience but can be appreciated on two

levels. First, as a pictorial history it is interesting and easily appreciated by a broad general audience. Second, the scope and the quality of the research necessary to put this book together make it good source of general information for professional researchers and scholars and it is referenced and indexed. Young, a retired journalist, draws his research primarily from history, but also supplements this data with geography, cultural anthropology, ethnography, and archaeology, synthesizing them into a coherent series of stories.

Although the title implies that this book focuses on the city of Chicago, it is really about the shifting changes to the transportation network of the Midwest. From the beginning of Native American occupation of this region, waterborne transportation and communication played an important role in the economic activities of the Adena, Hopewell, and Mississippian cultures. Later European explorers and early traders to the region were equally reliant upon these waterborne networks for exploration and trade with native cultures.

Initially, French *voyageurs* used small native vessels (13-to-16-ft long) to explore and trade. But as the fur trade intensified they adopted the 24-to-28-ft long *canot du nord* (canoe of the north), and eventually the 33-to-36-ft long *canot du maître* in the fur trade. Other craft used by the early European inhabitants of the region reflected the modifications of other native vessel forms such as the logboat into the *pirogue* and the *bateau*. Just as these indigenous watercraft reflected the shallow water environments in which they operated, European boats also reflected their operational environment and function. Flatboats, barges, paddlewheel steamboats, and screw propelled steamboats were all technological adaptations to local environment, culture and material availability. From the simple bark canoes developed by the local indigenous inhabitants, to the 1000-ft.-long giant cargo ships that now operate the Great Lakes, this book describes the adaptation and evolution of vessels into economically efficient forms suited to the needs of their builders.

The book consists of three main sections, each of which is divided into stand-alone chapters that present the story of Midwest waterways. Each chapter is thematic and presented in a roughly chronological order. The topics addressed within the book overlap one another significantly. In the first section 'From canoes to schooners', six chapters describe the early Native American use of Midwest waterways, the introduction of riverboats, the development of steamboats on the Great Lakes and rivers, canal construction, and the development of inland ports. In this section Young draws most of his data from historical sources with supplemental data from some archaeological and ethnographic sources.

'Life and death on the waters' includes travelogues by such notables as Charles Dickens, Samuel Clemens, Abraham Lincoln, and Rudyard Kipling, all of whom give accounts of working or travelling on the

Great Lakes, rivers, and canals of the Midwest. Their accounts provide the audience with a descriptive narrative that effectively enables the reader to visualize the experiences of life on the water. The other chapters discuss the dangers associated with river navigation, and the 'unreliability' of new technology such as the high-pressure steam engine.

One dramatic example described by Young was the boiler explosion that occurred on the steamboat *Sultana*. The *Sultana*, travelling up the Mississippi River, was returning repatriated Union soldiers. The explosion resulted in the deaths of over 1500 Union soldiers. The other chapters in this section are probably among the strongest of the book. These chapters describe many of the rapid technological advancements of the 19th century including the development of the steam engine, the introduction of the screw propeller and the paddlewheel, and the introduction of the metal hull. Besides simply discussing these technologies, Young describes the context of each technology, its adoption, and finally its adaptation to meet local environmental and economic constraints. The final chapter of this section addresses the growth of the railroads, the decline of water transportation, and realignment of Chicago into an east-west transportation hub.

The final section of this book is titled 'The twentieth century' and describes the development of Chicago's final canals, the economic resurgence of canals after World War I, the overall decline of shipping and shipbuilding on the Great Lakes, and the decline of Chicago as a port. These factors have all served to transform Chicago's maritime landscape and its role as a transportation hub over the last century dramatically.

The best of this book is not the particular historical data presented but rather the emphasis that the author places on the interrelatedness of culture, economics, environment, geography and technology in creating the watercraft of a particular maritime landscape. The development of inland cities such as Chicago and St. Louis was ultimately dependent upon their waterways. These waterways extended the geographic and economic spheres of these cities hundreds of miles to the base of the Rocky Mountains, at the periphery of the nation.

JASON D. MOSER

## Deux siècles de constructions et chantiers navals (milieu XVIIIe–milieu XIXe)

*Proceedings of 124th Congrès des sociétés historiques et scientifiques, Nantes 1999)*

CHRISTIANE VILLAIN-GANDOSSI (Ed.)

308 pp., b&w figures, maps, tables

CTHS, 1, rue Descartes, Paris 75005, 2002, €30, ISBN 2-7355-0483-2

This conference volume is entirely based on documentary work, with only one on actual archaeology of

physical objects. Despite the title, papers range up to the mid-20th century.

J. Boudriot classifies major warships by decks and piercings for gunports, from 1650–1850. Nowhere does he directly mention the distance between them, which is the very starting point for the young F. Coulomb, writing a course of instruction in shipbuilding (for naval officers) in 1683. Rieth presents the full text of this document (shorn of figures, unfortunately), with an intriguing discussion of how it and similar materials came to be prepared (with questions that might profitably be asked of other collections): in summary, is the content of the document, ignoring the recent advent of draughting methods in design (alien to his father's generation), 'a paradox, or just curious'?

P. Lamandé discusses P. Bouguer's theory of ship movement; J. Y. Puyo the changing relations between the Navy and foresters, 1820–1860. P. Villiers and C. Borde each present papers touching on an unusual topic, that of the ships used by privateers. Villiers covers a wider period and more strategic vessels (with some dimensional specifications from the 1740s), while Borde concentrates on local production at Boulogne—mostly by the Sauvage dynasty around 1800—and revealing seasonal patterns in their construction. G. Boyer and J. L. Cortés both discuss clinker-built boats of the Channel coast.

M. L'Hour and E. Veyrat present the collection of wrecks at La Hougue (1692), promising, in time, a direct comparison of the bottom structures of five major warships built by four different masters in three French yards between 1665 and 1692.

There are six papers on technical aspects of the introduction of steam and metals into shipbuilding. All are of considerable interest, though basically confined to the French situation.

D. David's piece is an intriguing study of two developments both related to early submarines. The first is 'Roma bronze', popular for a while for mechanical fittings and hull construction. It is a study of a family of proprietary alloys that are actually brasses, modified by additions of aluminium and iron, most of which are not at all familiar today. It followed on from the use of copper in much earlier submarines, but was itself displaced by improved steels, which were cheaper and lighter. The second is the *Sabathé* cycle modifications to the original Diesel engines.

J. Prouvost contributes a study of early steam technology for boat propulsion, focussing on the transition to rotary motion. Hulls, Jouffroy, and others failed to make a practical steam boat because they used direct linear drives with ratchet mechanisms; though David cites much earlier examples of cranks. D. Brisou covers the introduction of steam and iron into France in two papers, and, while he collects some names and developments that are unfamiliar, any attempt to discuss steam and iron on the Seine and Loire without mention of Wilkinson, and Thompson is incomplete (even Manby is glossed over). One of his principal

sources is Montgéry, a fascinating text, and essential for Manby, but readers may find it more easily as a journal paper (*Annales de l'industrie nationale et étrangère*, 12, 1823) than as the 1824 version Brisou cites again here.

F. Guégan presents statistics and incidents for the transition to steam by the Compagnie Nantaise from 1882–1931; and O. Raveux traces the growth of Taylor & Fils who built both engines and ships at Marseille between 1835–56.

The final group of papers looks at language and the diffusion of maritime knowledge. Villain-Gandossi traces the evolution of maritime language from the mid-19th century, and its codification in French and multi-lingual maritime dictionaries over a longer period. H. Michéa considers the creation of a French vocabulary for steam navigation from roughly 1754–1830, focussed on the Jouffroy model in the title, but actually much wider; and D. Le Bris looks at Jal's view of Breton vocabulary in his *Glossaire*. V. Serna discusses the collection and presentation of materials in the Musée de la Marine 1943–71, basically sociological material.

This appears to be a handsome volume, yet there are too many inaccuracies for it to be a reliable reference work: legends telling of the terminal decline of steam about 1902: luggers of 60.1 m—surely 60 *pieds*, 10 *pouces* (*pouce* is Old French for inch); and, if dates can be mangled as conspicuously as 1983 for 1893, or 1890 for 1850, how many more?

RICHARD BARKER

### Submarine Researches by C. A. Deane (1836)

MICHAEL FARDELL & NIGEL PHILLIPS (Eds.)  
Introduced by JOHN BEVAN

50 pp., 19 plates with other b&w illustrations

Historical Diving Society, Little Gatton Lodge,  
25 Gatton Road, Reigate, Surrey RH2 0HB, 2001,  
£18+p&p, ISBN 1-900496-14-3

This is a facsimile edition, printed to a high standard, of a publication of drawings and text produced by Charles, one of the famous Deane brothers, who invented the 'hard hat' diving apparatus that was to become the 'Standard Diving Dress' for two centuries and found a global salvage diving industry. The full title was '*Submarine Researches on the wrecks of His Majesty's late ships Royal George, Boyne and others by C. A. Deane in his improved diving apparatus*' and had as its subscript 'Sketches under the Sea or Illustrations of Diving Operations performed by C. A. Deane Inventor'. To this work the Historical Diving Society has added an introduction, notes and apparatus by John Bevan that provide the necessary background for

the modern reader. The 19 plates are the core of the work and are of great importance since there is little visual evidence of the Deanes' original helmet and diving dress and the way they were used, and, the accuracy of scale and authentic detail suggest that these illustrations were, at the least, based on Charles Deane's own on-site sketches and notes. As such they are a rare if not unique archive, apart from the illustrations having considerable charm and flair as designs. The book shows in words and pictures how the Deanes used their apparatus to recover guns and other valuables from wrecks, to clear fouled anchors and to repair harbour works; and, several times, actually to raise entire vessels from the seabed.

Charles Deane and his younger brother John were the inventors of a safe diving system utilising a (copper) helmet and dress with air pumped down from the surface. In 1823 Charles patented a 'smoke helmet' for firefighters with a pumped-air supply and three windows. Within five years this had been adapted for underwater work and trials were completed by 1828. The brothers and their apparatus were soon in great demand and by 1835 put on show in a London exhibition their many valuable recoveries and range of underwater activities. *Submarine Researches* was put together in support of the exhibition.

Central to the exhibition was the presentation of the Deanes' staggering recoveries from the *Royal George* off Portsmouth which was making their name. Yet in Deane's accompanying book only plate 1 illustrates this deepwater project where the diver descends 72 feet on a rope ladder. To strengthen the *Royal George* coverage Deane includes two accounts by survivors of the sinking. This took place through shipping water through the open gunports while careening ship at sea to make a below-water repair. The accounts make lively reading. One sailor owed his life to clinging to a pig who could swim—as he could not.

This is a vintage volume from the Historical Diving Society and in a literal sense as well for the edition is limited to 750 numbered copies. All involved are to be congratulated on an excellent production which must have wide appeal to everyone with maritime interests.

ADRIAN BARAK

## Naval Guns: 500 years of Ship and Coastal Artillery

HANS MEHL

216 pp., 400 illustrations, including some colour

Chatham Publishing, 61 Frith Street, London W1D 3JL, 2003, £40 (hdbk) ISBN 186176-2011

This is a lavish and attractively produced collection of photographs and drawings of ship guns and coastal

artillery spanning five centuries. Some are reproductions of contemporary technical drawings and photographs, while others are modern photographs of museum pieces or of examples which survive *in situ* across the world. Many come from a private collection in Hamburg. Several of the earlier pieces are presented as detailed scale drawings by Rudolf Roth. Thirty-two plates are reproduced in colour, although for no apparent reason ten of these are duplicated in monochrome elsewhere in the volume.

In some respects the book achieves its modest goal, set out in the introduction, of 'providing a wealth of pictorial material' to complement the more specialised—and by implication less well-illustrated—literature already available. However, the content is too idiosyncratic to be comprehensive, and while the material is organised chronologically and thematically the book cries out for an explanatory text. Each illustration is presented in isolation with a short caption, in which random snippets of technical and historical information are given without any attempt to present the data in ways which might have provided links or allowed comparisons to be drawn.

Rudolf Roth's measured drawings are technically excellent, and undoubtedly of great accuracy, but they are marred by the inclusion of proportional scales which evidently refer to the drawings before reduction, and therefore have no meaning (and are indeed confusing) in their published form. It is possible to calculate from internal evidence, for example, that the iron 24-pounder on p. 31 is reproduced to a scale of 1:14.68 and not, as stated, 1:10. The rather fussy inclusion of numerous individual measurements within the drawing means that the true dimensions are recoverable, but a simple drawn scale would have been much more satisfactory. The shading of the mouldings, moreover, implies an unlikely combination of equally-weighted light sources from four directions, and gives a curiously unreal effect.

This is a translation of the original German edition, published in 2001. Of its 52 bibliographic citations only 15 are in English, which may reduce its value for users of the edition under review. Even Peter Padfield's magisterial *Guns at Sea* (London, 1973) is presented in its German form, *Waffen auf See* (Berlin, 1973), and not to have adjusted this citation back to its English progenitor smacks of editorial slackness. Those who require a comprehensive introduction to the wider subject can still do no better than consult Padfield in whichever language suits them. If they do, they may find *Naval Guns* a useful but by no means essential adjunct. For those whose concern is with the appearance and technicalities of naval and coastal artillery *per se*, however, the prospect of acquiring 400 varied and often interesting images of guns at ten pence a go may well be an attractive one.

COLIN MARTIN

## Lords of the East—the East India Company and its ships 1600–1874

JEAN SUTTON

160 pp., 100 b&w and 16 colour illustrations

Conway Maritime Press, 9 Blenheim Court, Brewery Road, London N7 9NT, 2000, £28, ISBN 0-85177-786-4

One rarely gets the opportunity to review a book nearly 20 years after it first appeared and it might be argued that a review of a book published nearly two decades ago serves no purpose. But I believe that by re-visiting *Lords of the East* it is possible to highlight how our views and knowledge of the subject matter have changed in that period.

This slim volume is a classic. It provides us with one of the best histories of English East India Company shipping. Its deficiencies are not those of poor scholarship, but rather reflect changes in focus and knowledge in the area of maritime history during the last 20 years.

Sutton examines the ownership of ships; the ships themselves; their officers, crews and cargoes; and the voyages undertaken, in 11 beautifully illustrated chapters. Each of the chapters is meticulously referenced with a leavening of appropriate quotations that breathe life into the golden period of British imperial and maritime history.

The only major criticism I would have had if I had reviewed the book in 1980 would have been its marked focus on European sources and the European experience. One of the outstanding features of the English East India Company compared with its Dutch and French rivals was its more vigorous pursuit of intra-Asian trade—the so-called ‘country trade’—which inserted the Company and British traders into the crevices of Asian maritime trade from the mid-17th century. In pursuit of profit the Company and associated private traders roamed from the Gulf to China laying the foundations for the massive expansion of British commerce in Asia in the 18th and 19th centuries. Sutton hints at this development but highlights the British end and glosses over developments in Asian markets.

Since *Lords of the East* first appeared our knowledge of the maritime history of the period has sharpened our awareness of the importance of many other groups in the triumph of British enterprise. We now know for example that a close working relationship between the British, Portuguese and indigenous commercial and ship-owning groups in the Indian sub-continent from the 17th century was critical to the success of the Company particularly across the Bay of Bengal into Southeast Asia and the markets of the South China Sea.

We now also have a keener insight into the relationship between the Company and private British merchants in contrast to the picture given by Sutton.

Whilst Sutton is correct in indicating that the Company was theoretically keen to keep private merchants under control, the reality was that the Company—unlike its rivals—recognised the advantages of coopting them into its mercantile system. Private merchants remitted their profits through the Company thereby adding to its working capital in Asia, and by the end of the 18th century it was seeking further profit from them when it established a free port at Penang that was intended as a magnet for European and Asiatic private traders.

In her account of the China trade Sutton posits it as a simple nexus between the export of Indian cloth to China in exchange for Chinese tea. Were it that simple! China imported sufficient cloth to pay for the Company’s tea exports. We now know that the Company solved this problem initially by riding on the backs of the private British merchant. The Company took advantage of the capital remittances of the frivolous though profitable ‘sing-song’ trade dominated by private British merchants. Sutton is correct in describing this trade as vexatious for the Company representatives given the greed and corruption of Chinese officials, but the reward for the Company was on-site bullion to pay for cargoes of tea. Similarly the sale of cloth and opium into Southeast Asia generated bullion that was despatched from Penang to the Company’s representatives in China to pay for more cargoes of tea.

Our knowledge of ships and shipbuilding has increased considerably since 1980 due largely to a flowering of nautical archaeology. In Australia for example there has been work on the Company ship *Cumberland* off the coast of Western Australia, and the India-built ships the *Valetta* and *Sydney Cove* on the east coast.

None of the points I have raised undermine the main thrust of Sutton’s book which remains the best study available on East India Company shipping. My comments are offered simply to flesh out some lacunae and to plead for a greater inclusion of the periphery in future histories of British maritime enterprise.

KENNETH McPHERSON

## CSS *Alabama*: Anatomy of a Confederate raider

ANDREW BOWCOCK

191 pp., many b&w drawings, plans, photos

Chatham Publishing, 61 Frith St, London W1D 3JL, 2002, £30 (hdbk) ISBN 1-86176-189-9

There are few more famous ships than the CSS *Alabama*, the legendary Birkenhead-built Confederate cruiser. In a career lasting only two years she sank a Union warship, and captured or destroyed

65 merchant ships, before being sunk in battle off Cherbourg in 1864. Her Captain, Raphael Semmes, became a romantic hero and the ship a Southern icon. However *Alabama* was a very British ship, designed and built for oceanic cruising. Although equipped with screw steam-machinery she cruised under sail, preying on sailing ships. Like many famous, but long lost artefacts the finer details of the *Alabama* have been obscured by the passage of time. Andrew Bowcock had worked in the old Laird shipyard, and began work on a project to build a replica at Birkenhead. This fell through, but his results deserve a wider audience.

Bowcock has carefully examined the provenance of the plans, photographs, models and written sources, before reaching his conclusions. These are presented in skilfully drawn plans and an incisive text. He also reproduces the full contract specification, which sets out the size, shape and species of timber to be used throughout. The book draws important evidence from the on-going archaeological examination that began in 1986. This has recovered a number of items, including her main armament, a 100-pounder Blakeley rifled cannon.

It will be interesting to compare Bowcock's work with any final report on the ship, as a case study in the non-archaeological recovery of information. As it stands there is no known or knowable detail of this ship that Bowcock has not recorded, drawn and prepared for replication. Surely someone in Alabama will take up the challenge?

ANDREW LAMBERT

## The extraordinary voyage of Pytheas the Greek

BARRY CUNLIFFE

184 pp., 15 pictorial maps

Penguin Books Ltd., The Strand, London  
WC2R 0RL, 2002, £6.99 (pbk), ISBN 0-140-297-847

This revised edition in paperback of Professor Cunliffe's popular account of the ancient explorer Pytheas, 'the man who discovered Britain', is a lively, enjoyable read. Unlike other recent popular subjects of this genre, there is not much to go on in reconstructing the voyages of Pytheas, who wrote a book 'On the Ocean' in about 320 BC, now lost, which is known only through some eighteen excerpts in other ancient authors. Much of the present work is, therefore, concerned with source criticism, though this is not boring.

However, in the Preface, the author explains that archaeology can be brought in to help where the ancient sources are wanting, and, indeed, he hopes the reader will 'experience something of the joy and fascination of being an archaeologist'. In fact, the archaeological references are often short and allusive, and the descriptions of sites such as Castle Dore (Cornwall) or Bu Broch (Orkney) which Pytheas might have visited, and which could give the reader a vivid sense of the cultural differences between the Greek explorer and the Iron Age natives, are brief and lacking in detail. There is no guidance on places to visit, and very scanty references for follow-up reading; moreover, the maps, while very artistic and spirited, are inadequate to understand the territories which Pytheas visited, or the length and difficulty of his voyages.

The really positive aspect of the book, as of the author's *Facing the Ocean*, is that it starts with the premise that travel by sea was a normal, essential occurrence in prehistoric times, and, as he says, the inferential evidence for this is 'well attested in the archaeological record'. Unfortunately, direct evidence of the sea craft which Pytheas might have used on the Atlantic is wanting. The author relies heavily on interpretation of the Broighter model as evidence for large, robust skin boats in the Iron Age, while disregarding the actual fact that there was a long-established tradition of stitched-plank boats in Britain and such boats could have carried out many of the passages which Pytheas made and for which there is archaeological evidence from his period or earlier. The issue of whether he got as far as Iceland, which would be easier to imagine in a skin boat, is another question. The author's reconstruction of nautical affairs in the fourth century BC tends to be centred on British and Irish evidence, and one misses a feeling for the extensive use of the coast in Scandinavian, and, indeed, circumpolar prehistory, which could render Pytheas' achievements rather less startling for the general reader. Likewise, the author gives the impression that only the Greeks had any idea of astronomy, but, as his Postscript added to the paperback edition emphasizes, archaeological discoveries and analyses increasingly show that a clear understanding of the celestial calendar lay at the heart of prehistoric life, even in cloudy northern latitudes. On this basis, it is easy to impute an adventurous, long-ranging 'maritime consciousness' to barbarians and Greeks alike. The promulgation of this viewpoint would be the worthwhile outcome of a wide readership for what is in any case a most enjoyable book.

A. J. PARKER

***Trincomalee*—the last of Nelson’s frigates**

ANDREW LAMBERT

160 pp., 100 b&amp;w &amp; 12 colour illustrations.

Chatham Publishing, 61 Frith St, London W1V 5TA, 2002; £20, ISBN 1-86176-186-4

HMS *Trincomalee* was a frigate built by the English East India Company in Bombay for the Royal Navy and launched in October 1817. The vessel cost £23,642 and its building was supervised by the famous Parsi master-shipbuilder, Jamsetjee Bomanjee. The story shows some of the complications of building ships in the Indies: the plans for the ship, and that of her sister-ship *Amphitrite*, were lost on HMS *Java* when she was captured and destroyed by the USS *Constitution*—another set having to be sent out to India. On completion, the vessel was to have been ‘laid-up-in-ordinary’ in Asia, but, it was decided to return her to England. The *Trincomalee* then spent the next 25 years laid up in reserve, her remarkable preservation being largely due to the teak construction. As the naval designs of the time underwent change, the *Trincomalee* was no longer capable of carrying enough guns to be classed as a Fifth-rate; as a result she was cut down from a 42-gun frigate to a 26-gun corvette. These modifications reflected the problem the Navy had at that time with obsolescence, particularly with large numbers of old frigates—frigates of which Nelson once said ‘Was I to die this moment “want of frigates” would be found stamped on my heart’. Now, with changing technology, steam, and, more powerful guns with improved fire power, the *Trincomalee*’s 18-pounders and 32-pound carronades were completely obsolete. The Navy’s answer was, in 1845, to fit the vessel with two 56-pounders, six 42-pounders, six 8-inch shell-guns and twelve 32-pounders—a total of 26 guns. The vessel was commissioned in 1847—some 30 years after being built—and worked first on the North America and West Indies station, and, then, in 1852, she was given the Pacific station where she clocked up 110,000 miles, returning in 1857 to be paid off to join the Royal Naval Reserve as a sail-training ship. Finally, in 1897, she was sold for £1,323 to be broken up—but was saved at the last moment, refitted and renamed the *Foudroyant*. All this was funded by the philanthropist, Geoffrey Wheatley Cobb. One gets an idea of the significance of sail-training in those times when reading that, together with *Implacable* between 1932 and 1939, 10,000 young people were trained on these ships. After the 1939–45 war, the training-ship role continued until 1987, when she was moved to Hartlepool for restoration.

Lambert’s book is an entertaining insight into the life and times of this extraordinary vessel. He describes the historical background of the various settings that the *Trincomalee* lived in, or rather, survived. Remember, there was only 10 years of active service! When her fate was once again in the balance, the description of

the machinations of the Ministry of Defence and the Portsmouth Naval Heritage Project which ‘... did not want an unsightly hulk spoiling their carefully manicured location ...’ is sad if illuminating. In spite of these problems, the Foudroyant Trust soldiered on, and it is a credit to them that the vessel survived.

The book emphasises these and other aspects of the funding problem, highlighting the ‘Great Dilemma’ of ship restoration. Anyone who has anything to do with wooden ships knows that it is not easy to keep a wooden vessel afloat, but with imagination, dedication and good planning, projects such as these can be successful. The author eloquently describes the milieu of her new home: ‘On her arrival at West Hartlepool, the ship was tied up alongside the old coaling pier ... amidst an almost apocalyptic scene of post-industrial decline’. It is interesting that, as a result of the ‘... underwhelming response of the Naval Dockyard towns’ that had been canvassed for the future location of the restored *Trincomalee*, it was post-industrial Hartlepool rather than a Naval Dockyard that made the best offer.

The author goes on to describe the restoration process from 1990 to 2000, taking threequarters of a million man-hours and costing £10,500,000 of which £8 million was invested in the local economy (*pace* Portsmouth). Lambert is to be congratulated on this book. He is professor of Naval History at King’s College, London and his is the first British chair in naval history for more than half a century—yet another indicator of the lack (or demise) of British maritime entrepreneurship. One has the feeling that the *Trincomalee* was pursued by a fleet of grey bureaucrats intent on making unimaginative profit-orientated judgements on the fate of the last of the Nelsonic frigates, part of Britain’s past maritime heritage. It always surprises me that so little consideration is given in Britain for its maritime past. Is it that these things remind of the past power of the Royal Navy that once ruled the world but is now a faded memory? Where are the likes of Cobb today?

Cobb ‘... was determined to build on the naval heritage of the nation; his energy and his money saved the *Trincomalee* from the ship-breakers and kept her usefully employed for a generation’. At the dawn of the second millennium, it was the likes of the Lottery Fund (and others) that were the second saviours, and, its future lies with museum/interpretation facilities, the enhanced visitor experience and events such as the traditional ‘Indian Silver Nail Ceremony’ ... (In this, ‘... the nail having been crafted [in India] and presented to the wife of the Chairman ... she had the honour of driving it home ... while blessing was provided by a Zoroastrian priest [no less] accompanied by two chaplains from the Mission to Seamen.’ One might be a little cynical about all this but we live in the ‘Times of Economic Rationalism’, revenue-earning and ‘user pays’. Cobb managed to wreck the *Foudroyant* at Blackpool with six hands and 20 boys, before going on to save the *Trincomalee*. Let us hope the new guardians will be watchful for the economic perils that lie ahead.



The book is well illustrated and a reasonable buy for £20. My only criticism is that I would like to have heard more—particularly about the post-war period and the restoration. The book ends with the comment: ‘This is not just the story of a ship, it is also the story of the people who have made her a thing of life for 200 years. The future of HMS *Trincomalee* is bright.’ So there are good things in the world after all!

JEREMY GREEN

## Galleons and Galleys

(*Cassel's History of Warfare Series*)

JOHN F. GUIIMARTIN Jr.

224 pp., numerous colour and b&w illustrations,  
18 maps

Cassel & Co., Wellington House, 125 The Strand,  
London WC2 0BB, 2002, £25/\$29.95,  
ISBN 0-304-35363-2

The title of the book is a little bit misleading, because the main aim of the author is the relationship of the development of gunnery with naval shipbuilding and tactics. These topics are embedded into general historic remarks. For each period one or two typical battles are analysed, not only European ones, but also from the Far East. The battle of Sluys in 1340 is given as an example of warfare at sea before the introduction of gunpowder. After giving an overview of world trade and the emergence of maritime power, the author deals with the siege of Chioggia 1379–80 in which guns onboard vessels were used for the first time. In the chapter about the gunpowder revolution at sea and the development of naval ordnance several still existing types of guns are described. Though several of them are known from wrecks, only those from the Portuguese galleon *Santissimo Sacramento* sunk off Brazil in 1668 are discussed at length. For the rest the author relies on examples from former naval stores. As typical battles, those of Zonchio (1499) and that off the Malabar Coast in 1503 are given.

For showing the development of caravels and carracks the author uses iconographic evidence. Further European exploration and expansion as well as the rise of Swedish sea power between 1535 and 1570

are included in this discussion. A plan of a Swedish warship of 1559 is reproduced not realizing that it is actually a reconstruction from 1937 as can be read on the plan itself. Though the *Mary Rose* is mentioned several times, her actual remains are not presented as a typical example of her time. Instead the author prefers to show only the illustration of 1545 and even claims that her forecastle had been reduced at the time of sinking, because the archaeological evidence contradicts the pictorial ones.

The Mediterranean stands at the centre in explaining the evolution of the galley together with the strategy and tactics of warfare with oared ships. Apart from the advantages of the galley—its ability to proceed during calms or light head winds, and, the positioning of bow-chasers in line with the keel—there are distinct limitations: mainly, provisioning for the rowers and their need of rest. Galleys were not only used in the Anglo–French confrontation, but also in the struggle between Islamic and Christian states. The battles of Prevesa (1538), Lepanto (1571), Punta Delgada (1582) and the siege of Malta (1565) are regarded as typical by the author. In the chapter about the characteristics of a galleon, no photo or drawing of the *Wasa* or any other wreck is reproduced. The Anglo–Spanish rivalry, privateering and the Dutch revolt were the historical background for naval engagement at that time. The fate of the Spanish Armada in 1588 is discussed at great length, though it is difficult to accept it as a typical example for a naval battle, because hardly any vessels were lost during action. The battle of the Downs (1639) certainly better suits the topic. In the Far East during the battle in the Hansen Strait (1592) Korean turtle ships with their massive gunfire and total protection against boarding and hostile missiles could prove their sovereignty over the Japanese intruders.

In an appendix short biographies of the most important rulers and naval commanders mentioned in the text are given. There is no list of references, but two pages of commented titles for further reading. Generally the author has used monograph studies by historians, hardly any results from nautical archaeology. At the end there is an index of three pages. The book is well produced with many historic illustrations and aims more at a general readership than nautical archaeologists.

TIMM WESKI