

of managing this risk of violence. That sailors, however, saved the profits of merchants by subduing this violence should be seen in the context of their primary focus in facing these rebellions, which was saving their own lives. Beyond this basic instinct for self-preservation, the loyalties, attitudes and motivations of slave trade seamen have little, Christopher suggests, in common with the people who financed the voyages.

In seeing the relationship between enslaver and enslaved, perpetrator and victim, as not merely fixed but fluid, Christopher draws heavily on the work of people like Peter Lindbaugh and Marcus Rediker. The potential of seamen and slaves to be co-conspirators, colleagues and allies runs through the book. The story of someone like William Butterworth illustrates this point. Even in the use of language, the relationship between descriptions of enslavement in Africa and impressments in Britain is striking. Butterworth's account of falling 'easy prey to these dealers in human flesh' as a young man in Britain could just as easily have been written by an enslaved African describing his or her own experiences (p.32).

One of the most successful aspects of the book is in presenting the role of Africans not just as victims but as people who were actively involved in shaping their own destiny. As enslaved people, they consistently rebelled against their oppressors, frequently enlisting the support of disaffected European crew in the process. Far from being isolated and disconnected from the wider circulation of ideologies in the Atlantic world at this time, both slave-ship crews and slaves are at the heart of this exchange. So, for example, Governor Macaulay of Sierra Leone (a proponent of abolition) wrote to his gubernatorial colleague in Barbados, warning him of the 'mass of jacobinical infection' carried by slave ships (p.152). Similarly, Christopher analyses the role of seamen of African descent in transatlantic slavery, helping to demystify the story as one of black versus white. More than 1 in 20 seamen working out of Britain in the 1770s was of African origin, and more than a quarter of all men of African descent in London were sailors. In doing so, the agency of individuals is asserted as central to the wider and grander historical contexts.

This work provides an excellent account that fills glaring gaps in our historical understanding of the slave trade and the maritime experiences of all those who suffered at its hands. The author dislocates the story from simplistic categorisation and presents slave-ship crews as polyglot, multicultural groups of people whose relationship with the enslaved below deck was ambivalent and subject to constant change. Just as seaports around the Atlantic Ocean rim can be seen as 'loci of change', so too those people caught up in the cycle of the Atlantic maritime world were active agents of transformation and exchange. The global citizens of their day, their experiences spanned continents, united (and divided) individuals and

played a crucial role in the story of the Atlantic Ocean and its peoples.

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## Conservation Science: Heritage Materials

ERIC MAY and MARK JONES (eds)

xiv + 376 pp., 114 b&w and 29 colour figures, tables

Royal Society of Chemistry (RSC) Publishing, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK, 2006, £34.95 (hbk), ISBN 978-00854046591

Regardless of the path taken to become a maritime archaeologist, it is now incumbent on all practitioners to be increasingly conversant with the codes and practices of conservation which are intimately entwined with archaeological codes of conduct. A detailed read of this book provides new and interesting information even for a veteran conservator of shipwreck materials. Margaret Rule sets the scene with telling comments on the relevance of excavation of objects and how the stories emerging from conservation of the materials are essential if the public is to be fully informed about the history of a site or location. Textiles have a history of being poorly managed in marine archaeological contexts but after reading the chapter by Paul Garside and Paul Wyeth, the power of these inherently transitory elements to rise up and provide compelling stories of an island nation's heritage becomes very clear. The case-studies on the *Victory* sail, the Shackleton ensign and a fine tapestry the *Tree of Jesse* illustrate how the forensic skills of a conservator can make these objects come alive. No matter how massive the textile, as in the case of the *Victory* sail, or how fleetingly fragile the silk ensign, there is material of direct relevance for any practising maritime archaeologist.

Metallic objects, and their propensity to collapse spectacularly, provide the practitioner with unique challenges which Des Barker describes to very good effect. The deliberations on alloy compositions and how these variables impact on the fate of the shipwrecked metals is exemplary. He demystifies corrosion processes and demonstrates why first-aid for metal finds from recovery to final exhibition is an essential step in the preservation of the cultural values of the objects. The basic chemistry and methodology of de-concreting maritime archaeological metals and what is involved in stabilising them provides a workable path for the novice. The treatment programmes offered for large technological objects such as the submarine *Holland I* and the *M33* (formerly the First World War HMS

*Minerva*) provide a unique insight into the complexities of dealing with large objects and goes a long way to explaining the remarkable variability of corrosion that can be found on a single site or within a complete vessel. There are some salutary lessons learned through the discussion on treatment of massive cast-iron cannon in hydrogen reduction furnaces—the proof of a successful treatment is long-term stability. All conservation treatments involve compromise and the reader is allowed to make the final judgement on which is most efficacious.

Hannelore Römich's chapter on 'Glass and Ceramics' provides a concise guide to the nature of the special forms of deterioration and waterlogging of glass and ceramic materials on shipwreck sites. The description of how composition variables in the body of the materials and the classification system for the diversity of glazes covering ceramic surfaces facilitate a ready comprehension of a vast body of knowledge in a readily-digestible form. The chapter provides an easily-understandable characterisation of the nature of glass and why it reacts with the marine environment and how the differences in using potash (potassium carbonate) or soda (sodium carbonate) can lead to widely different materials performance, which manifests itself in differing conservation problems for the archaeologists.

Readers of the book might wish to begin at Chapter 12 on *in situ* preservation and move on to the penultimate chapter on conservation of ancient timbers from the sea if maritime archaeological perspectives are to be best addressed. Mark Jones and Rod Eaton have written the most succinct and comprehensive review of the challenges associated with the management and preservation of waterlogged materials recovered from marine and estuarine sites. The combination of an in-depth understanding of the biology of the macro- and micro-organisms which cause bio-degradation of timber and the practical knowledge of a world-renowned conservator has produced the best guide for anybody contemplating recovery of waterlogged timbers. Important practical advice on how to store ship timbers to prevent ingress by land-based wood-boring organisms and to prevent further bio-deterioration are liberally distributed throughout the chapter. Recent research on the symbiotic relationships between micro-organisms and the wood-boring molluscs has provided fresh insights into the complex, interactive nature of degradation. The chapter concludes with practical advice on how to store and manage massive volumes of waterlogged wood, even down to which fish are best to keep down algae levels in storage tanks! The use of specialised metallised heat-sealable polyester to encapsulate waterlogged timbers and to sterilise them with gamma radiation is one of the best advances in conservation management of waterlogged archaeological timbers in the past 20 years. The detailed and enchanting description of the inner workings and structures of hardwoods and softwoods

provides the reader with an easy path through what is normally a mind-numbing exercise for even the most experienced practitioners.

The common catch-cry of economic rationalists is 'leave it alone' or 're-bury' exposed materials from archaeological sites. In order to make an informed decision on whether or not to recover materials and be exposed to the full cost of conserving, documenting, exhibiting and reporting on the sites, it is vital to read the chapter by David Gregory and Henning Matthiesen on *in situ* preservation of waterlogged sites (Chapter 12). The authors list the necessary steps involved in monitoring a site and assessing its suitability for the reburial of historic materials. They stress that reburial does not stop bio-deterioration and corrosion but it normally results in much lower rates of decay. The importance of setting up the dipwells and equipment which allow monitoring of the pore water, its redox potential and the pH of the micro-environment are clearly explained. The overall importance of this body of work is that it provides conservation-management options for those involved in managing the scarce fiscal and human resources devoted to heritage management.

Other chapters in the book are less relevant to readers of *IJNA* but they do provide a wonderful commentary on contemporary collection practices including materials such as leather, stone, plastics and wall paintings.

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### **Industrializing American Shipbuilding: The Transformation of Ship Design and Construction, 1820–1920**

WILLIAM H. THIESEN

305 pp., 25 b&w illustrations

University of Florida Press, 15 NW 15th Street,  
Gainesville, FL 32611-2079, USA, 2006, \$55.00, ISBN  
0-8130-2940-6

This richly-researched work sets out to show how American (that is, United States) shipbuilding changed in the course of a century from a craft in wood into a heavy industry in iron and steel. To this reviewer's knowledge, it breaks new ground in bringing together the influences of craft tradition, economics, the culture of the US, wars and the fluctuating demands for shipping and naval strength. The constant theme throughout the book is the search for ways to reduce the cost of labour and increase productivity, a drive so much more prominent in US culture generally than in the older societies of Europe.