

Erika Behrisch. *Discovery, Innovation, and the Victorian Admiralty: Paper Navigators*. Cham, Switzerland: Palgrave Macmillan, www.palgrave.com, 2022. xii+224 pp., illustrations, notes, bibliography, index. US \$119.99, hardback; ISBN 978-3-031-06748-8. (E-book available.)

Thanks to the prolific pens of disgruntled inventors, the Victorian-era British Admiralty has long suffered from a reputation of indifference, if not outright hostility, towards scientific exploration and technological innovation. In recent years, scholars such as Jane Camerini and Randolph Cock have pushed back against this image by citing examples of the Royal Navy's participation in scientific investigation during this period as proof of their engagement with the process of intellectual discovery. Yet Simon Naylor and others have cited other evidence pointing to a more ambivalent attitude than the redeemers of the Admiralty's degree of scientific investigation like to claim. So which interpretation is correct?

The answer that Erika Behrisch offers in this book is that both are valid. To resolve this seeming contradiction, she outlines the Admiralty Board's engagement with science during the middle of the nineteenth century by focusing on their interactions with three particular groups engaged in scientific discovery and technological development: Royal Navy employees undertaking scientific study as part of their duties, external scientific societies who worked with the Admiralty to collect data, and individuals in the private sector who proposed innovations and who sought remuneration for them. This she does by drawing upon Admiralty records, as well as other archival collections, to better discern the Board's perspective. What Behrisch finds amidst their assessments, debates, and judgments is a body that worked responsively to address innovation and to incorporate it into their operations. It was forced to do so, however, within the constraints of collaborative decision making and with typically conflicting mandates to serve as responsible dispensers of the public purse. What resulted may not have satisfied disappointed applicants, but as she demonstrates, it reflected the contrasting demands placed on the Royal Navy to explore and innovate within the confines of their other missions.

Nowhere does Behrisch make this conflict more apparent than in her examination of the famous Niger Expedition of 1841. What was proposed as a high-minded effort at humanitarian engagement, designed to establish treaties and promote Christianity among the peoples of West Africa, soon had directives for scientific exploration grafted onto it by various scientific societies. The requests to collect botanical samples, survey the river, and take magnetic measurements all came in addition to their existing duties on the expedition, yet without a commensurate increase in the size of the party or in their pay. While the crew were expected to undertake this extra work and the

risks involved out of their sense of duty, the expedition's commander, Harry Trotter, succeeded in negotiating pay raises at least for the officers involved in surveying, though his request for additional rations for the men was denied. As Behrisch demonstrates, the Admiralty was aware of the demands these duties posed and the conflicts that arose because of them but was constrained by the limited resources available to address them.

The scientific labours of the expedition were subsequently held up as the redeeming achievement in what proved to be otherwise, a disastrous mission. This reflected the growing popular appeal of scientific discovery, one that the Admiralty encouraged as the century wore on. Behrisch uses the 1849 publication of the *Manual of Scientific Enquiry* as an example of the importance the Royal Navy placed on scientific duties, though their achievements were narrowed by both the impulse to treat the data their crews collected as proprietary and the unwillingness to spend finite funds on purely scientific endeavors. Funding also proved a major limitation on their acknowledgement of the technological innovations with which the Admiralty were increasingly inundated. Here Behrisch argues that the Board took seriously all the inventions offered to them but were overwhelmed by the sheer number of proposals they received. A greater problem, however, was one of communication, as many engineers and other inventors took the dilatoriness of the investigations and the difficulty in obtaining adequate compensation as indifference or hostility towards innovation. This could not be further from the truth, although the Admiralty proved incapable of making this clear amid the onslaught of accusations leveled at them in the press and in Parliament.

Behrisch concludes her book by arguing that this "gross miscommunication" (195) is the story at the heart of it. This is perhaps too charitable a reading of the situation, given the ambitions, resentments, and jealousies that so often underlay the passions felt by many of those involved. Nevertheless, her conclusions are backed by a convincing amount of research and an incorporation of the latest scholarship on not just the Admiralty during this period, but of popular attitudes in Britain towards science more generally. This she employs effectively to make her case for the good intentions of the Admiralty Board and their underappreciated efforts to engage with science and technology in the mid-nineteenth century. From it emerges a tale of devoted officials doing their best to resolve the conflicting charges that they had been given. In its way, it is as inspiring an account as those of the more visible naval heroes of the era, as well as one of greater relevance to us today.

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