angles throughout and presents much original material. A translation into English would be welcome, as would a much-needed index.

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D. GRAHAM BURNETT, **Trying Leviathan: The Nineteenth-Century New York Court Case that Put the Whale on Trial and Challenged the Order of Nature.** Princeton: Princeton University Press, 2007. Pp. xiv + 266. ISBN 978-0-691-12950-1. £17.95 (hardback).
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In *Trying Leviathan*, D. Graham Burnett uses an 1818 court case over a New York statute requiring the inspection of fish oil in order to illuminate a range of problems concerning knowledge about the natural world, including detailed debates over classification and broader issues of whose knowledge counts as authoritative. At the same time, the book relates this particular case to a number of recent discussions among historians of science, to do with science in the courts, science in the early American republic and the relationship between the history and the philosophy of science.

As Burnett recounts, the seeds of the trial began when a candle-maker and oil merchant, Samuel Judd, refused to pay the fee required by an inspector, James Maurice, on the grounds that Judd's casks contained not fish oil but whale oil. Judd's stance was then debated by a range of witnesses brought for the jury's edification, from naturalists to whalers, each with different criteria regarding what makes something a fish, how to decide and who should decide. Central to Burnett's story are the respective parries of William Sampson, who represented Maurice, and the naturalist Samuel Latham Mitchill, who testified for the defence.

Aside from recounting what happened at the trial, Burnett aims, he explains, to use the case to illuminate three sets of issues. First, as an example of science in the early republic, the case illustrates the (often contested) status there of both 'philosophers' and natural history. Second, it offers material for a discussion of cetaceans as 'problems of knowledge' for which various distinct groups claimed to offer authoritative knowledge on quite different grounds. Finally, it serves 'as a window onto the contested territory of zoological classification in the late eighteenth and early nineteenth centuries' (p. 7). Here in particular Burnett is urging historians of science to reconsider common narratives. By examining a case where scientific specialists had to engage with each other and a wider public, Burnett reveals the limited kind of consensus classifiers could achieve, highlighting the wide range of citizens who could claim expertise about the natural world.

To draw this much material out of a two-day trial, Burnett takes the reader on a fascinating tour of the 'whale knowledge' of naturalists, sailors, whalemen, artisans, merchants and dealers, as well as 'everyone else' (or, in Sampson's words, 'those who neither fish, manufacture, nor philosophize' (p. 18)). Through detailed examination of a great variety of sources, including school primers, museum inventories and sailors' doggerel, Burnett builds up a thorough understanding of how people thought of whales in the early republic.

He also admirably draws out the implications of numerous authorities regarding whales and the ties to particular loyalties of class, geography and race. The demonstrated lack of consensus regarding 'what is a whale' and who should decide must, as Burnett says, call into question traditional histories of classification that portray either Linnaean taxonomy or Cuverian comparative anatomy as triumphing due to the constant march of scientific progress. The trial highlights the extraordinary lack of consensus among naturalists especially. Sampson ridiculed the naturalists' claim to authority, emphasizing successfully, as even the defence acknowledged, 'how little philosophers are agreed amongst themselves' (p. 205). Furthermore, the presence of numerous 'disintegrative interests' making claims regarding natural-history knowledge must

sharply qualify the thesis that natural history served as a unifying flag for nation-building. 'The nomenclature of nature could be held both to secrete and unmask conflicting identities', as Burnett puts it. 'Calling nature's nation into being with the incantations of natural history could be, when the curtain fell, a very uncertain affair' (p. 210). He offers the *Maurice* vs *Judd* case as an early example of subsequent challenges to the claims of expertise of patrician philosophers and naturalists by a new class of artisans and mechanics that had a major impact on the institutions and claims of science in the early republic. In Burnett's view, such contests should not be seen simply as unfortunate hiccups in the otherwise progressive development of American science but as fascinating sites of negotiation, of great interest in their own right, regarding how the natural world should be known and by whom.

In conclusion, Burnett makes the obvious (to historians) point that, in asking historical questions for the purpose of supporting normative, philosophical arguments, 'there is no substitute for actually *doing* the history'. As an example, he takes aim at John Dupré's work on 'the relationship between ordinary language classification of living creatures and their formal scientific arrangement' (p. 212; original emphasis), specifically the conjectural history offered by Dupré that greater scientific knowledge of whales, pure and simple, was all that mattered in the modern definition of whales as 'not fish'.

> A close look at how whales actually became non-fish in New York in the early nineteenth century has told a very different story: in fact what happened then and there was that scientific expertise took a terribly public bloody nose, and whales ceased to count as fish because of the behind-the-scenes legislative lobbying by a clique of oil merchants and chandlers … By the time it was over 'science' had been sent to the wings by all concerned. (p. 214)

At times some of the rather extensive commentaries in footnotes would have benefited from editorial culling to avoid such asides making the book read like a dissertation. And, as in any 'science at the bar' story, one sometimes wonders whether all the author claims really was at stake. Maybe the records simply illustrate an intelligent lawyer merely doing his job well? But Burnett makes a convincing argument that, whether Sampson personally saw anything grand at stake, he was drawing on the concerns, categories and even jokes of those around him. And by uncovering the contemporary debates and anxieties concerning the natural order, and who had the authority to define that order, Burnett offers readers a fascinating episode in the history of early American science, along the way raising questions about both the authority of professional naturalists and the historiography of modern (and especially American) science.

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Jamie Elwick, **Styles of Reasoning in the British Life Sciences: Shared Assumptions, 1820–1858.** London: Pickering & Chatto, 2007. Pp. x+233. ISBN 978-1-85196-920-3. £60.00, $99.00 (hardback).
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Jamie Elwick's aim in this important book is to characterize transformation in the life sciences in Britain in the period before the publication of Darwin's *Origin of Species*. It was a period that saw museums give way to zoos and aquaria, patronage displaced by meritocracy, and a whole research area overturned without having its central projects completed or even acknowledged. With that research area went a particular perspective on what it is to be a biological individual.

Elwick shows us all these changes interwoven as a shift in 'styles of reasoning'. These styles he takes – in the manner of Ian Hacking and others – to be methodological approaches which determine the appropriate questions to be asked and the right ways to go about answering them. The earlier, overturned style that concerns Elwick is what he calls the 'analytic:synthetic' style. A synchronic approach, favouring the use of dead specimens for dissection, it involved the