where necessary, across a much bigger area. Even so, V.O. insists, 'the imperial family was not constituted of different stuff and relations than any other family' (166).

This is the major wager of V.O. and one which is used to underwrite a theoretically ambitious, if at times a little self-indulgent, agenda (summarised in ch. 7). Occasionally, the reader stumbles across theoretical flourishes such as seeing the topic of storage as 'schizophrenic' (158) or a claim that the Roman Empire, of all places, was 'slowly eroding the taken-for-grantedness of stuff's equation with power and wealth' (173). Few people who have visited Rome could walk away with such an impression. Rarely in pre-industrial history did power amass so much physical matter. If the theoretical signalling occasionally strains credulity, the overall project is right on target. The Roman Empire never became an administratively standardised space. Roman bureaucracy was minuscule, governmental power a composite and authority dispersed across a jumble of overlapping networks of grand households. The result, as V.O. writes in this important and thought-provoking study, was a state edifice with plenty of cracks and a fragmented knowledge-scape.

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RICHARD P. SALLER, *PLINY'S ROMAN ECONOMY: NATURAL HISTORY, INNOVATION, AND GROWTH*. Princeton and Oxford: Princeton University Press, 2022. Pp. viii + 198. ISBN 9780691229546. £28.00.

This short, engaging but rather curious book rummages through the *Natural History* of the elder Pliny for examples of his economic observations and reasoning in order to see what they reveal about Roman attitudes to innovation and economic growth. A brief Introduction helpfully outlines the structure and argument of the book, which has three salient points. Since proxy data, Richard Saller argues, are not capable of replacing the lack of direct data to measure economic performance in the Roman world, we need to revisit the economic attitudes expressed in surviving authors. By performance, he means sustained growth due to continuing innovation, not a one-off boom due to increased trade resulting from the unification and pacification of Rome's empire, which is what he thinks the archaeological evidence does attest. He picks Pliny's *Natural History* because of its size and content — 400,000 words on 20,000 'worthwhile facts' (35) — and avowed aim of 'usefulness' (*utilitas*), which he compares to eighteenth-century encyclopaedias.

S. discusses in ch. 2 the purpose and intended audience of Pliny's *Natural History*. Pliny's claim of 'usefulness' to farmers and artisans is, as other scholars have noted, a literary trope; his real aim was a comprehensive compilation — achieved through obsessive note-taking — to preserve past knowledge of the natural world for an educated elite audience. If indeed, adds S., they could find what they wanted in his thirty-seven volumes, noting in an excursus that Pliny records sixty remedies for rabies scattered over ten books. Ch. 3 observes, following Beagon, that while Pliny occasionally recognises that the discovery of and trade in new resources brought by Roman imperialism has 'improved life' (50), his overriding view is that nature is divine and is being abused through human greed, a Stoic idea with contemporary resonance (138). S.'s principal addition to study of the *Natural History* is his review in chs 4 and 5 of passages where Pliny mentions innovations and their impact or makes economic observations. Again, while Pliny occasionally laments the scarcity of Roman innovations, which he, like some modern scholars, attributes to the absence of competitor states (70–7), he only offers a hotchpotch of technical tips to do with agriculture and a few economic observations about commerce and markets, almost all derivative and banal. What Pliny prizes is knowledge; commerce and innovation he tends to associate with greed. In ch. 6, S. notes that Pliny was only cited as an authority in Late Antiquity to the Renaissance, and he outlines the difference, with an excursus on fulling, between Pliny's work and the 'dictionaries ... of Arts and Sciences' of John Harris (1704–10) and Ephraim Chambers (1728) which explicitly aimed to promulgate new discoveries that could improve the human condition.

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S. claims in his first chapter that proxy data, from shipwreck statistics to Greenland ice cores, remain inconclusive for assessing sustained growth, even if bundled into an Economic Complexity Index (see Kevin Ennis' excursus on Morgantina at 25–31). The case, however, is patchy and superficial, and needs to be made properly elsewhere. It would have sufficed here to say that mentality still matters for assessing sustained growth, and for mentality we still need to read ancient authors. Disappointingly, however, S.'s Conclusion is an inconclusive as his proxy data: Pliny occasionally shows awareness of the value of innovation and laments its (supposed) absence at Rome, but overall shows no positive interest in it. So which was the real Pliny? Like other writings of the Neronian age about the natural world and its marvels, the *Natural History*, published under Titus but begun under Nero, was meant to be read to diners for entertainment, just as Pliny had had his sources read to him while dining (33). Pliny was not really different from Cicero nor more 'practical' (133–4); the *Natural History* records mainly Greek knowledge and is imbued with a hostility to profit ('greed') adopted from Greek tradition. No elite Roman, as far as we know, compiled useful knowledge about 'Arts and Sciences' like Harris and Chambers (not themselves of elite origin). There were, however, many Roman technical, commercial and financial innovations conducive to sustained growth (some noted dismissively at 78) which somehow did get disseminated. The *Periplus Maris Erythraei* ('Voyage round the Red Sea'), for instance, is a rare survival of a practical treatise by a non-elite author, which happens to be contemporary with Pliny, whose own description (6.101) of the Red Sea route fails to mention the important new Roman-period port of Myos Hormos. It is unclear whether Pliny's apparent disinterest in Roman innovations was more literary than real; maybe reading and writing in the Greek literary tradition did make the Roman elite less disposed to take an interest in the innovations being made around them and to invest in their development and application.

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EDMUND STEWART, EDWARD HARRIS and DAVID LEWIS (EDS), *SKILLED LABOUR AND PROFESSIONALISM IN ANCIENT GREECE AND ROME*. Cambridge: Cambridge University Press, 2020. Pp. xvii + 393, illus. ISBN 9781108839471. £75.00.

In Diocletian's Price Edict of 301 C.E., the maximum daily wages of a figure painter were set at six times those of an agricultural labourer. Skills could be profitable, and some at least maximised that profit by moving to wherever their skills were most in demand. Already in the world of Homer (*Od.* 17.386), foreign artisans, seers, doctors and singers were to be welcomed, and by the sixth century B.C.E. a doctor like Democedes was able to move from his home in Croton to work in Aegina, Athens and Samos, increasing both his profit and prestige with each move (Hdt. 3.131). In Classical and Hellenistic Greece, city-states would actively advertise economic opportunities in public building, or invite particular architects or sculptors to work on projects within their *poleis*. Into the Roman period, cities continued to compete for the best doctors, philosophers, architects, artists and artisans. Skills were highly prized and in demand.

This edited collection, which has its origins in a 2016 conference held in Nottingham, explores the nature of what it terms 'skilled labour and professionalism' in the ancient world. It opens with an introduction by Stewart (with contributions by the other two editors, Harris and Lewis) discussing the somewhat slippery concepts denoted by this terminology. While 'professional' and 'professionalism' are not always easy to define even in a modern context, they are typically linked with institutionalised training and expertise, and very often with the regulation of a craft, sometimes by an organisation of which membership is a prerequisite. Despite the lack of institutionalised training and organisations that controlled access, Stewart argues that the presence of specialised skilled labour, and the prestige that could be generated by such skills, makes the concept of professionalism relevant to the ancient world.

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