

BOOK REVIEW

Roland Jackson, *Scientific Advice to the Nineteenth-Century British State*

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Since the 1990s, a new orthodoxy has arisen about the making of the nineteenth-century British state. Gone are the debates of the 1960s and 1970s about whether the period witnessed a ‘revolution in government’, or the birth of a proto-collectivist, welfare state. Instead, historians have come to speak in terms of the contingent and contested emergence of a ‘liberal’ state, one that was riven by all sorts of patrician prejudices and anxieties about over-governing. Roland Jackson’s *Scientific Advice to the Nineteenth-Century British State* readily fits this interpretive mould. As he stresses throughout, the force and utility of scientific advice to policy makers was always ‘constrained’ by a broadly liberal commitment to the sanctity of private property, the utility of private capitalist enterprise and the relative autonomy of local government (especially pp. 5–6; 304–5). Yet, if the book leaves the overall revisionist orthodoxy intact, it significantly enriches it too, and in ways that will be hugely appreciated by scholars. Jackson, of course, is not the first to take up the subject of Victorian science and statecraft. One thinks above all of the wonderful work of Roy MacLeod, but no account matches the scope of Jackson’s intervention and one of its many virtues is that it helps us to see, for the first time, something like the landscape as a whole – the multiple and diverse policy-making arenas in which scientists specializing in chemistry, engineering and medicine had a role to play and the degree to which their authority and advice was acted on.

The main body of the book comprises seven parts, each containing two chapters. The first deals with what it calls ‘the rise of science’ from the seventeenth century, and the formation in particular of two key elite associations, the Royal Society (1660) and the British Association for the Advancement of Science (1831). The six parts that follow examine where the advice of scientists was sought: ‘Empire and war’ (II), ‘Food’ (III), ‘Infrastructure and transport’ (IV), ‘Industry’ (V), ‘Social conditions and public health’ (VI) and ‘Revenue and standards’ (VII). Revisionist historians have laboured hard to recover the intricate ideological admixtures and party-political manoeuvrings that preceded over (and frustrated) the growth of the nineteenth-century state. What these chapters recover is something like the technical analogue: the equally fraught working out of the intricate scientific and material details that determined how any given policy operated on the ground. The book teems with examples, from the further refinement of rifled guns in the wake of the Crimean War (pp. 72–6) and the development of smokeless cordite explosives in the 1880s (pp. 80–1) to the management of salmon fisheries from the 1860s (pp. 106–14) and the chemical analysis of adulterated beverages, foodstuffs and tobacco (pp. 265–75). As Jackson emphasizes, the science of these policy arenas could be just as

contentious as their implications for the rights of property holders and businessmen, and their claims on the public purse. Ostensibly minor technical matters, such as whether to use oil or gas for the illumination of lighthouses (pp. 160–2) or how to detect and measure the presence of potentially harmful organic matter in water (pp. 229–31), gave rise to fierce disputes and personal animosities. Experts were just as prone to dispute as the politicians they served, and in some cases – notably the mid-century ambition of recycling sewage and putting it to agricultural use – scientists failed to deliver any immediate practical solutions, birthing only a profusion of failed experiments (pp. 91–8, 226–33).

In this way, the account at once pluralizes ‘science’, bringing into relief its many and varied forms and applications, and demonstrates its mutability and fragility as a source of authority. Historians of the nineteenth-century state will appreciate both of these aspects of Jackson’s account, but they should welcome most of all the bird’s-eye view that the book affords of the networks and channels through which science operated and impacted on policy making. As Jackson argues, the absence of any kind of technocratic enthusiasm on the part of the governing elites, still less any strategic recognition of its importance as a policy-making resource, made for a patchwork of shifting institutions and lines of communication that evolved in a pragmatic, ad hoc fashion (pp. 314–19). Yet, as the account makes clear, there was also much that was peculiar to the nineteenth century, not least the novel density of the interconnections that emerged between science and the state.

For one thing, scientists inhabited a freshly complex, specialized network of institutions, military and civil. Chief among these were the established Royal Observatory, the Ordnance Survey and the Royal Artillery, as well as those formed in the Victorian period, such as the Museum of Economic Geology (1837), the Royal College of Chemistry (1845) and the Royal School of Mines (1851). Institutional footholds for scientists were also secured in the form of state-sponsored inspectorates (for instance, for mines in 1842 and alkali works in 1863) and experimental stations, such as the chemical laboratory of the Board of Excise established in 1842. At the same time, from the 1830s especially, two key conduits of policy input and consultation emerged in the shape of government-sponsored royal commissions of inquiry and parliamentary select committees. In other words, as science became more institutionally differentiated and technically specialized, so also did it become more entangled with the political work of ministers and MPs – a paradox that Jackson notes in his conclusion (pp. 312–13).

Ultimately, any kind of strategic state sponsorship of independent scientific research would have to wait until the dawn of the twentieth century, with the formation of the National Physical Laboratory in 1900 and institutions such as the Medical Research Council in 1913. It would be wrong, however, to see the nineteenth century as constituting the tentative, half-formed precursor to a more enlightened, technocratic age. The twentieth-century state, after all, was also considerably more democratic. Rather, as Jackson’s account indicates, the challenge is to grasp what emerged in the Victorian period on its own terms, and most of all in terms of the liberal scruples and patrician values that determined the limits of how science was used and the institutional authority it exercised.