

an account of the contents, would surpass the limits of this brief review. The overall title summarizes the scope. A distinguishing feature throughout is the author's comprehension of the intimacy of the relationship between the functioning of institutions and the content and style of the science their members produced. The unofficial practice of British and the official practice of French science are shown, in some instances tacitly, in others expressly, to complement each other nicely. Among the pieces I most enjoyed are the study of the relationships between the Académie Royale des Sciences and the Royal Society in the eighteenth century and those on topics about which I knew little, such as seventeenth- and eighteenth-century laboratories and the difficult beginnings of experimental science in nineteenth-century Oxford. Other readers will have different preferences. Suffice it to say that these volumes represent not the culmination of Crossland's prolific career, but its scholarly momentum.

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JOHN CARSON, *The Measure of Merit: Talent, Intelligence, and Inequality in the French and American Republics, 1750–1940*. Princeton: Princeton University Press, 2007. Pp. xvii + 401. ISBN 0-691-01715-8. £26.95 (hardback).
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The revolutionary leaders of the separate republican experiments launched in the late eighteenth century in thirteen British colonies of North America and in France needed new language to explain, and legitimate, the fact that although their new political orders claimed allegiance to equality of opportunity, social inequality would continue to be a fundamental reality. They hoped that 'talent', 'merit' and 'virtue' would supplant lineage and aristocratic patronage as determinants of status in enlightened societies with equal rights for citizens. But market economies generated new forms of inequality. At the same time, middle-class male citizens denied the capacity of women and ethnic minorities to negotiate the rigours of an open society.

Much of the historical literature on the United States and France since their revolutions has been devoted to critiques of the contradictions between republican rhetoric and the persistence of social injustice. John Carson's *Measure of Merit* does not spare the Founding Fathers a vigorous assessment of their faults. But after careful examination of the very different meritocracies constructed by the new elites of these great republics, he concludes that the republican philosophers, politicians and social scientists who developed the bureaucracies and disciplines to manage social opportunity – and to care for the deviant and the dependent – muddled through by developing new technologies of social management and new academic disciplines to police their service intellectuals.

In France, republicans looked to the national government to provide a comprehensive system of universal education. Merit would be defined by the ability to pass the examinations that served as gateways to the higher tiers of schooling, employment and privilege. In the United States, the educational system remained under the control of local governments and private interests, but the new academic discipline of psychology would teach Americans to privilege 'intelligence', which could be measured by new indices such as the intelligence quotient (IQ) and the Scholastic Aptitude Test (SAT). Ironically the inventor of the intelligence test was the Frenchman Alfred Binet, who, like Sigmund Freud, would win fame with the help of ambitious Americans who found meaning in his work that he did not originally intend.

Carson is at his best in his careful account of the history of intelligence testing in the United States and its relationship to the profound social changes that accompanied the emergence of mass society. Many scholars have examined the skilful exploitation by American psychologists of the national emergency presented by mobilization for the First World War, but Carson provides

the most nuanced and comprehensive account of the initiatives by such professional leaders as Robert Yerkes and Lewis Terman to use the US army mental testing programme as a catalyst for bringing mass intelligence testing into all levels of the education system. This self-conscious attempt to build a national meritocracy upon a deterministic version of intelligence met fierce resistance, but the Galtonian testers succeeded in associating merit with success on their tests, while their critics managed to preserve some less deterministic approaches to the rationing of educational opportunity. The First World War provided no opening for French mental testers because France maintained a large army and an officer corps familiar with their conscripts. There was simply no perceived need for new technologies to sort out men. Mental tests remained part of a range of diagnostic tools that physicians and educators might use to test troubled individuals who could not function in school or society. High courts in both France and the United States would rule in 2003 that their respective educational meritocracies needed ‘affirmative action’ to redress the claims of groups that had grievances against these two very different, but also surprisingly similar, establishments.

Historians have not neglected the history of meritocracy and intelligence testing in either the United States or France. Carson provides an excellent account of this literature without letting other scholars shape his comparative perspective. For anyone new to this topic, I would recommend *The Measure of Merit* and one work of fiction, Michael Young’s *The Rise of the Meritocracy* (London, 1958) before turning to Carson’s sources. But, as Carson observes in his excellent epilogue on the renewed IQ controversy that continued into the twenty-first century, ‘There has not been, and likely never will be, any firm resolution of these issues, either in popular or scientific discourse’ (p. 279). Carson’s book merits a long shelf-life.

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RALPH O’CONNOR, *The Earth on Show: Fossils and the Poetics of Popular Science, 1802–1856*. Chicago and London: University of Chicago Press, 2007. Pp. xiii + 541. ISBN 978-0-226-61668-1. £23.50 (hardback).

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During the heyday of the two-cultures discourse, historians of science contributed to bridging the gap between science and the arts by teaching courses on science as literature, discussing parts of classic scientific texts not just for their content but for their literary form. By and large, however, this approach never amounted to much and certainly never caught on in professional circles of the history of science. Of course, science *in* literature, as opposed to science *as* literature, has been a popular topic, with fine studies of, for example, geology in the works of Romantic poets such as Coleridge or in those of Victorians such as Tennyson. Moreover, among scholars of English literature, the influence of Darwin on George Eliot, Conrad, Hardy and other novelists has been a not uncommon topic of study. Gillian Beer, in a classic of the kind, *Darwin’s Plots* (Cambridge, 1983), included Darwin’s own writing in an analysis of evolutionary narrative in nineteenth-century fiction. More comprehensively, another scholar of English, David Locke, in *Science as Writing* (New Haven, CT, 1992), also looked with the eyes of a literary critic at the writings of Galileo, Newton, Darwin, Einstein and other scientists, arguing that attention to the literary qualities of scientific texts adds to understanding of how science operates. One *modus operandi*, stressed by several authors, is the use of rhetoric by scientists in arguing their stances.

Now another scholar of language and literature joins the field by examining *as* literature the science of geology from the first half of the nineteenth century, when a new imagination of the past was formed to compete with the Book of Genesis and with Milton’s *Paradise Lost*. Ralph