

## Book Reviews

importance of understanding local conditions, and the problems which arise by omitting to do so: the papers by William Bynum and David Bradley clearly illustrate this crucial point.

The editors are to be congratulated on producing a volume of conference papers which coheres around a complicated theme.

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**Jacques Roger**, *Pour une histoire des sciences à part entière*, Paris, Albin Michel, 1995, pp. 475, no price given (2-226-07649-2).

Jacques Roger (1920–1990) was one of the leading French historians of science of the twentieth century, noted for the definitive studies of his countryman Buffon. As professor at the Sorbonne and Director of the *École des Hautes Études en Sciences Sociales*, the *Centre Internationale de Synthèse*, and the *Centre Alexandre Koyré*, Roger was unquestionably a force to be reckoned with amongst French historians of science. According to his publication list, appended to this selection of his writings, he was author of three books, editor of three series, editor of eight scholarly editions, and author of 139 papers, eight dictionary articles, and fifty-eight reviews. The selection of his writings offered here consists of nineteen papers, mostly in their original French, but some translated from English or Italian. There is also a most useful introductory essay on Roger's views on historiography and other matters, by his former student Claude Blanckaert; and an illuminating 'postface' by Jean Gayon, entitled 'De la philosophie biologique dans l'oeuvre historique de Jacques Roger'. An index should have been provided, however.

The central landmark for Roger's work was, of course, Buffon, on whom he was the acknowledged authority. It is remarkable indeed how an academic "empire" can be constructed by using one major figure as the focus of one's work and reputation. It has been done by others of course (for example Drake

with Galileo, Whiteside with Newton). But in such cases there has nearly always been more to it than that (e.g. Drake's experimentalism, Whiteside's mathematical expertise). For Roger and Buffon, the success seems to have flowed from his use of Buffon as a means to get a grip on the whole of the life sciences (and medicine) and the earth sciences of the eighteenth century, also extending backward and forward in time so as to embrace such Renaissance figures as Jean Fernal, and nineteenth-century topics such as eugenics. Moreover, Roger developed general ideas about the way history of science should be written. His ideas on this are stated in his paper 'Pour une histoire historique des sciences', part of the present collection.

The underlying theme of this essay is the establishment of a clear distinction between the work of the "scientist-historian" and the "historian of science". As may be imagined, Roger's sympathies lay with the latter, and he takes the reader through what are today standard arguments for the avoidance of whiggism and historiographic anachronism. In this essay, and others in the anthology, one can clearly see the French tradition of history of science—stemming from the likes of Duhem, Metzger, and Koyré—firmly underpinning Roger's writing. In fact, his work has a strong "history of ideas" character, though not overtly Lovejoyian in character, being without the "unit idea" doctrine. Even so, it was *ideas* (in people's heads), and the way in which they developed and influenced others, that were of paramount significance for Roger. Often the ideas that interested him were as much philosophical as scientific, though he did not count himself a philosopher.

However, as Blanckaert and Gayon explain in their very useful introduction and postscript, which summarize Roger's thought in a synoptic way that has not, I think, previously been available in the literature, there was a somewhat curious aspect to Roger's crusade against historiographical anachronism. Supposedly there were certain recurring "thèmes fondamentales" in history of science—perhaps analogous to what Holton

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has called “themata”; or more distantly Kuhn’s paradigms. And, for Roger, it should be the task of the historian of science to force concepts to “reveal themselves” during the course of the history of science. So it was that he sought to show how concepts like “biology”, “heredity”, “transformism”, or “earth history” were able to be “constructed”, or the intellectual foundations laid for them, *before* such terms actually made their appearance in the literature. Thus, while eschewing anachronism and precursoritis Roger was willing to discuss ideas “in embryo”, so to speak, well before they were actually “born”. In consequence, he was quite prepared, as Gayon puts it, to engage in “l’anachronisme lexical” when it suited his purpose.

But what of Buffon as a central figure for understanding Enlightenment thought, and eighteenth-century “biology”, and as one who made possible the emergence of nineteenth-century transformism? According to Roger, and the general consensus of historians, preformation theory was a “natural” outcome of the mechanical philosophy. God had to set the atoms of the “germs” in their appropriate forms and endow them with suitable motions so that viable creatures could emerge in the course of time without exercise of free-will or further divine action. But by mid-eighteenth century, this notion was becoming ragged at the edges, being incompatible with all sorts of empirical facts, such as those of microscopy, teratology, hybridization, generation by cuttings, and so forth. But taking the Leibnizian idea of the myriad of monads, all working out their destinies in concert with one another, one could begin to think of their having a kind of “dynamic history”, albeit one of degeneration; for Buffon’s theory of the earth envisaged degeneration rather than progress. However, Buffon’s natural history also led him to think of a complex network of relationships between different species. His idea of “internal moulds”, derived from Leibniz via Bourguet, could emerge later as the “sentiment intérieur” of Lamarck. And with Lamarck, the pieces of the transformist jig-saw

could be put together, with materialism, vitalism, creationism, time, and the “network” of beings rearranged in their former pattern of a chain, all serving as ingredients. Thus did Roger seek to show the preconditions for transformism, and the manner in which the intellectual ingredients, once available, could be rearranged so as to produce a new pattern.

Now all this did not happen in some mysterious disembodied fashion. It was real people, thinking with real intellectual resources and with certain items of empirical information, in specific social situations, that produced the conceptual changes. It might involve intellectual turns, but not radical intellectual discontinuities, “ruptures”, or “epistemological breaks”. However, Roger was writing in France, the land of Bachelard, and in Paris, the domain of Foucault. What different stories Roger and Foucault told about the history of natural history and biology! For Foucault, there was no such thing as biology until the word made its appearance with Lamarck and a few of his contemporaries. For Roger, there was certainly a science of living bodies in the eighteenth century, which was gradually restructured in a comprehensible fashion so as to yield Lamarck’s biology. So— anachronistically in a sense, at least from a lexicographic point of view—one could look at pre-Lamarckian “biology”. I was not in Paris in the days of Roger and Foucault, but I imagine there must have been some pretty tussles between them. At any rate, Blanckaert brings out the intellectual tension between the two, and analyses its sources from Roger’s perspective. It must have been particularly galling to Roger that (we are told) Foucault utilized historical information about eighteenth-century natural history gathered by Roger and then deployed it to tell quite a different story. For Foucault, eighteenth-century natural history was all about classification in the fashion of Linnaeus, and Buffon’s natural history was largely glossed over. Doubtless Roger was not amused.

Yet although on the face of things the programmes of Foucault and Roger were at odds with one another, perhaps they were not

quite so different as readers of *Pour une histoire des sciences* might suppose. In his well-known paper on the role of Cuvier in the history of science, Foucault also sought to show the intellectual conditions necessary for the emergence of (Darwinian) transformism, with Cuvier the pivotal figure “making possible” the reconstruction of eighteenth-century natural history so as to yield nineteenth-century transformism. It is true, of course, that Foucault and Roger told quite different stories, with different actors in the drama. Yet in Foucault’s “Cuvier paper” it seems to me that he was doing something of which Roger might have approved, in principle at least, though the theoretical goals of the two scholars were not the same. So perhaps the debate was more about form than substance—as it now appears in retrospect.

But let me return to the question of lexicographic anachronism. I do not like it. Take the question of histories of the earth, for example. These began to emerge as the characteristic way of “doing geology” in the early nineteenth century, as stratigraphy assumed its modern form, working with fossils, and piecing together a history of the earth’s strata (and hence of the earth as a whole to some extent) on the basis of the study of rocks and strata in the field, somewhat as the historian works with the fragmentary documents that may be dug out of the archives.

Now as I see it, it is an entirely worthwhile exercise to endeavour to examine, as Roger did, the seventeenth- and eighteenth-century theories of the earth, establish what their general features were, and how they were gradually changed so as to yield nineteenth-century stratigraphic geology. But if the word “history” meant something radically different to those thinking about the earth in the nineteenth century and in previous times, I think it advisable to make the distinction in the historian’s vocabulary. For example, I have suggested elsewhere that it is helpful to distinguish between *histories* of the earth and the earlier *genetic* accounts of the earth’s past, which might, for example, be of a “preformationist” or *quasi*-Leibnizian

character. However, Roger’s lexicographic anachronism would not require such a distinction; or perhaps he would not have found it worthwhile.

Be that as it may, and whatever one may think about these rather general issues, there can be no doubt that historians will welcome this collection of Roger’s work, some of it (particularly that published in Italian) perhaps not well known to British and American historians. Aided by Blanckaert and Gayon, one may form a clear conspectus of Roger’s work, which does credit to the editor (Blanckaert) and offers appropriate homage to one of the most distinguished French historians of the present century—a devotee of *texts*, as was Koyré before him, and as all historians of science should be, even if they now turn to other things like illustrations, buildings, instruments, maps, or whatever. Roger would have no problem with all that. He wanted to know about mentalities; and (almost) anything—except epistemological breaks—was grist to his mill.

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Vivian Nutton and Roy Porter (eds), *The history of medical education in Britain*, Clio Medica, Amsterdam and Atlanta, Rodopi, 1995, pp. x, 379, Hfl. 160.00, \$100.00 (hardback 90–5183–571–X); Hfl. 50.00 \$31.00 (paperback 90–5183–611–2).

In the Introduction to this book, the editors rightly point to the lack of “real substance” in previous work on the history of British medical education. They deplore, in particular, the scattered nature of recent contributions that tend to cluster around a few institutions and periods, and describe the whole enterprise as a “peaceful backwater”. The present volume, we are told, is to have a “wider relevance” to underlying historical and pedagogical issues that “may throw light on some of our difficulties in the present.”