

Book Reviews

alarmed. He was so alarmed that he sought the advice of the Secretary of State of the Home Department to see whether the Public Health Act of 1858 could be invoked to prevent the pollution and danger to public health he feared would inevitably follow. His earlier approaches to Vivian had been rebuffed with the riposte that no one else had complained. Jowett replied that no one dependent on him dared do so openly; “but apply the Ballot and then see how matters stand”.

At about the same time, George Price Lloyd was petitioning the same Secretary of State on behalf of the ratepayers of Bala for the sewerage, water, and lighting facilities available under the 1858 Local Government Act. In this he was opposed by R. W. Price, one of the richest landowners in Merioneth; “for”, said Mr Price, “there does not exist within the said Town any occasion for the said Act, owing to the poverty of the Inhabitants and the small amount of rateable Property.”

In the event, it was the quiet rural community and not the working class of industry which led the way in radical public health reform. Professor Jones, in these two interesting lectures, discusses the various forces that led to this apparently paradoxical result.

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ARTHUR DONOVAN and JOSEPH PRENTISS, *James Hutton's medical dissertation. (Transactions of the American Philosophical Society, vol. 70, pt. 6), Philadelphia, 1980, 4to, pp. 57, \$8.00 (paperback).*

In 1749, James Hutton submitted an inaugural dissertation, *De sanguine et circulatione microcosmi* for his medical doctorate at Leiden. Because it has never been translated, it has been almost unused by historians of the Scottish Enlightenment and historians of geology (an article by François Ellenberger being an honourable exception), though various historians have drawn attention to the fact that its title already seems to offer harbingers of Hutton's later interests in circulation, and in micro-macrocosm relations. From now there is no excuse for neglect, for Professors Donovan and Prentiss have produced a splendid edition, reprinting the dissertation in Latin, translating it into English (with necessary technical annotations) and providing an illuminating introduction.

At first sight it is surprising that the editorial introduction chooses to say almost nothing about the relations between this early dissertation and Hutton's later geological, chemical, physical, and metaphysical writings. It is, however, a subtle and wise decision. It might have been very tempting to try an entirely new interpretation of Hutton's geology predicated upon reading the geology back into the medical dissertation. But as the editors see, that would have proved almost wholly misleading. There are many intellectual chasms separating the Hutton of 1749 from the Hutton of the *Theory of the earth* (1795), not least the science and philosophy he was to pick up from Black, Smith, and Hume. Rather, what the editors have sensibly done, is to locate the dissertation in its contemporary contexts, principally Boerhaavian medicine, eclectic traditions of chemistry popularized by encyclopaedias and writers such as Peter Shaw, and the increasing anarchy amongst schismatic “Newtonians”. They use Hutton's dissertation as a lens through which to focus attention upon the

Book Reviews

incredible diversity of explanatory systems (some heuristic, others theoretic) dauntingly facing the young medical thinker or natural philosopher in the mid-eighteenth century. Thus Hutton opted for belief in five chemical principles (for Hutton principles were *ad hoc* labellings rather than ultimate constituents of Nature): salt, water, sulfur, earth, and air. It was as good a classification as any of the many other listings available.

It is possible that certain of Hutton's later traits of reasoning are already present in the dissertation. The dissertation operates within a highly explicit natural theological framework, in which the functions and final causes of the varied kinds of chemical principle are as important as their material and efficient causes (thus Hutton was already concerned with the role of air in the cycle of plant life, though of course – unlike later – he was not yet working within a phlogiston chemistry). And the very use of the concept of microcosm indicates that for Hutton throughout his career considerations of order and harmony were constitutive for his natural philosophy. This excellent edition will undoubtedly spark studies of the debt owed by the mature sage to Young Man Hutton.

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MARTIN S. STAUM, *Cabanis. Enlightenment and medical philosophy in the French Revolution*, Princeton, N.J., and Guildford, Surrey, Princeton University Press, 1980, pp. xi, 430, £15.10.

Martin Staum's study of the physician and philosopher Pierre-Jean-Georges Cabanis should prove to be a valuable resource for historians in a wide variety of specialties – including political historians, historians of philosophy, and not least, medical historians. Although portions of this work concerned with Cabanis's "Science of Man" have previously appeared in the *Journal of the History of the Behavioral Sciences* (1974) and *Studies in History of Biology* (1978), the present publication offers a comprehensive and well-documented interpretation of the many aspects of Cabanis's medical, philosophical, political, and administrative activities. This interpretation is characterized by two principal theses which Staum seeks to defend, the first concerning the relation between Cabanis's specifically medical ideas and his more general philosophical thought, and the second concerning the relation between Cabanis's intellectual position and his politics during the revolutionary period.

The first of Staum's theses is that Cabanis's philosophical monism was not a variety of mechanistic materialism, as so many nineteenth-century critics claimed, but was rather a "distinctively biomedical" conception, a "unique synthesis of disparate eighteenth-century ideas" of life and nature. This thesis is clearly articulated and forcefully argued by Staum, who devotes the first three chapters of his book to a survey of the various eighteenth-century intellectual currents, which he sees as being relevant to an understanding of Cabanis's work. At times this survey becomes a bit tedious, since its principle of coherence is not always clear to the reader; but Staum does attempt periodically to foreshadow the importance for Cabanis of the various doctrines under review. The detailed discussion of Cabanis's medical and philoso-