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than the recent iconoclastic trends in the history of science. There is no comparable work in the history of medicine in English, though closest to it in form is S. F. Mason's more materialist *A history of the sciences*. A translation of Lain Entralgo's work would be welcome.

THEODORE DWIGHT BOZEMAN, *Protestants in an age of science. The Baconian ideal and antebellum American religious thought*, Chapel Hill, The University of North Carolina Press, 1977, 8vo, pp. xv, 243, \$14.95.

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The cultural debt of America to Scotland has proved a rich source for historians to mine. In *Protestants in an age of science* Theodore Bozeman has opened yet another seam and demonstrated how, for the Old School Presbyterians, Scottish thought provided a framework that stabilized for them the threatening intellectual turbulence of antebellum America. He reveals how the Common Sense philosophy served to validate both a fervent belief in science and a biblical fundamentalism.

During the Scottish Enlightenment the Common Sense philosophy of Thomas Reid was of far greater significance than the sceptical philosophy of David Hume. Only recently, following the trail of George Elder Davie, have scholars begun to appreciate the extent of its importance which extended to such distant areas as physics. The butt of its criticism was Locke's pernicious theory of ideas and its putative atheistical consequences. The capstone of its metaphysics was the inductive programme of Francis Bacon, who was virtually elevated to the realm of the infallible.

Among the Old School Presbyterians of evangelical and anti-intellectual Jacksonian America, belief in the moral rectitude of Bacon and the absolute veracity of his scientific method became almost articles of faith. The Old School were, in a sense, the carriers of the Enlightenment into the nineteenth century. Scientific and religious facts were in complete harmony, the guarantee of which was that "truth defined the providentially ordained aims of the cognitive process" (p. 70). The resulting scientific enterprise shows a curious, but superficial, analogy with that of seventeenth-century England. The theologians took an intense interest in the objects of natural history, particularly geology, and at the same time scoured the Bible for modern scientific knowledge which was, as the *Southern Presbyterian Review* put it, "perfectly familiar to Moses".

Since the Baconian method was the only sure road to knowledge, the Old School utilized it not only in their scientific researches but also in their biblical exegesis. The Bible was searched for evidence which, through induction, would support such practices as infant baptism. The motives for such an enterprise seem clear. It served to protect systematic theology and a truly learned tradition against the onslaught of religious fanatics, each one illuminated by his own inspirational light.

Bozeman has produced an impressive and sympathetic study of an important and neglected area of American history. The vein however is far from exhausted. A philosophy of science after all may not only be a description of an ideal method or

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a programme for action, it may sanction an interest in accounting for the natural order in some particular way. Such a strident claim as that of the Old School to a monopoly in the only method of acquiring all truth should certainly raise suspicions about what they were defending. Bozeman little more than hints at the opulent landed following of this variety of Calvinism. It would also be interesting to know about transatlantic exchanges in this period. The Scottish Church had, after all, rejected the "Moderates" who were the intellectual fathers of the old School. Yet the replacement was a General Assembly much more sympathetic to fundamentalism. The study of the relations of science and religion is becoming a familiar area in English history. Bozeman's work is an important delineation of the context from which scientific naturalism emerged in America.

**RICHARD W. BURKHARDT jr.**, *The spirit of system: Lamarck and evolutionary biology*, Cambridge, Mass., and London, Harvard University Press, 1977, 8vo, pp. [xii], 285, illus., £11.55.

Although Lamarck's is a familiar name, too often he is remembered simply as a forerunner of Darwin, or associated narrowly with a doctrine (the inheritance of acquired characteristics) which he never claimed to have originated. But Lamarck's voluminous writings are concerned with all aspects of nature from cosmology to psychology. It is to Burkhardt's credit that his monograph, while primarily addressing itself to Lamarck's evolutionary biology, never underestimates the breadth of Lamarck's philosophy of nature. Burkhardt patiently examines the development of his subject's thought against the background of eighteenth-century science, identifying those features which became integrated in Lamarck's systematic accounts of transformism, most notably in his *Philosophie zoologie* (1809). As Burkhardt shows, Lamarck was faced in the 1790s with the problematical relationship between fossil and living species of animals. He was unable to conceive a mechanism whereby species became extinct; rather it seemed to him that living species changed over time, as varying conditions and differing needs created in the species new habits and even, on occasion, new organs. Much of Lamarck's work was speculative and it failed to satisfy many of his contemporaries who preferred George Cuvier's rigorous and dogmatic pronouncements on the naturalist's proper methods.

Burkhardt's study is based principally on published writings; indeed, it is a measure of Lamarck's relative isolation, even in his own time, that so little manuscript material survives. Our knowledge of Lamarck's private life and personality is scanty, and his published work generally yields few clues as to what he was reading or discussing with colleagues and friends. But these are limitations of the historical record with which any historian has to contend. Burkhardt's achievement is to construct a full, sympathetic portrait of this most fertile of French naturalists.

**SIR J. WILLIAM DAWSON**, *Modern ideas of evolution*, New York, Science History Publications, 1977, 8vo, pp. xxv, 240 [facsimile], \$4.95 (paperback).

This useful reprint of Sir William Dawson's celebrated anti-Darwinian book (originally published in 1890) is edited by William R. Shea and John F. Cornell, and Shea contributes a critical introduction. Dawson (1820-1899) was an eminent