

the work to its final form, again drawing on the mind of Dale Morgan for needed criticism. Sadly, Dale Morgan never lived to see it in print; he died suddenly on March 30, 1971. But even in death his influence remains, seldom faulted, always admonishing historians on the use of discriminating evaluation of evidence. While Morgan believed that the final product would be a success, his enthusiasm was dampened by the fear that too much would be claimed for the bibliography. "From here on it is going to be a basic tool, but other tools must join it in the chest before Mormon scholarship can be considered adequately equipped for its job. We badly need a bibliography of articles pertaining to Mormonism published in general American periodicals from early times." Thousands of volumes of county histories are also in need of careful evaluation, Morgan would plead. In addition newspapers from 1820 must be examined and Mormon materials extracted.

This suggestive introduction raises many interesting questions and merits careful study and reflection. Although Morgan's observations are of the highest caliber, he failed to note important research being carried out by Davis Bitton and others who have tried to answer his plea for excellence in historiographical research. Bitton's *Mormon Diaries and Autobiographies* was published in 1977 and favorably reviewed by this writer in *Dialogue* (Summer, 1978).

A man of quiet ways and gentle persua-

sion, Chad Flake worked from his position as special collections librarian at Brigham Young University to amass 12,000 entries from church, private and university libraries around the nation. Financial assistance, long needed by the study, finally came from the University of Utah Research Council. Guided by a sound historical approach, he pursued his destiny with the zeal and determination of a true believer. Although this massive work of painful erudition bears the trademark of the scholars mentioned, as well as Everett Cooley, Lyman Tyler and Norma Mikkelsen, director of the University of Utah Press, central credit must be given to Chad Flake. The extraordinary synthesis of so much widely dispersed information would have discouraged scholars of lesser determination. The editor has employed rigorous standards of accuracy, both in content and execution. Proofreading is uniformly careful, though human error could not be totally avoided in the finished product. The work is well organized and clearly written; its quality augurs well for successive publications.

While readers and historians together might be stunned by the high cost of this quality work, its sound scholarship, rich contents, skillful exposition, informative reading and first class contribution to Mormon history will more than balance its cost. I congratulate Chad Flake and his associates for this lasting gift to future generations of readers.

## *Natural Theology*

*Science and Religion in America, 1800-1860.* By Herbert Hovenkamp. Philadelphia: University of Pennsylvania Press, 1978. xii + 273 pp. \$16.00

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The birth of modern science in the seventeenth century fostered an intellectual climate which favored the growth of Natural Theology. Conditions were such during this period that scientific and religious views

complemented and supported mutual intellectual concerns. Indeed, as the noted Newtonian scholar Richard S. Westfall has argued, these developments have made it increasingly apparent that the relation of science to religion in the seventeenth century is the central question in the history of modern Western thought. As a study in rational religion, Natural Theology asserted that the Christian God created a universe in which laws, design, purpose and harmony were paramount, and that the scientist, being a Christian, could find justification for his religious convictions in his scientific

studies. The basic premise of Natural Theology holds that nature contains clear, compelling evidence of God's existence and perfection. In defending Christianity through the tenets of Natural Theology, Christian scientists (or "virtuosi," as they were called) prepared the ground for the deists of the Enlightenment. In time a radically different world-view emerged from their writings: the mechanical universe governed by immutable natural laws, the transcendent God removed and separated from his creation, the moral law which took the place of spiritual worship, the rational man able to discover the true religion without the aid of special revelation. Remove only the reverence for Christianity that the virtuosi maintained and deism, the religion of reason, steps full grown from their writings.

Fundamental to an understanding of the relation of science to religion was a problem first articulated fully in the works of these seventeenth-century virtuosi and transmitted to later generations. By supporting certain religious claims through means of scientific verification, they grounded essential aspects of their religious understanding on contemporary scientific views. Later generations inevitably saw these as being inadequate and misinformed, particularly as scientific understanding changed with new discoveries and the introduction of new explanatory theories. And by implication, religious convictions so grounded lost not only their rational underpinnings, but also their credibility, generally resulting in the retrenchment of prevailing religious dogma.

The study of Natural Theology, including these less obvious implications for organized religion, was transmitted to the emerging American intellectual community through the very fabric of modern science itself developed by the virtuosi and eighteenth-century philosophers. *Science and Religion in America* considers these problems and focuses on those individuals, regardless of religious denomination, who responded to important scientific issues of the day. Therefore, as the author notes, his book is more properly "organized as a history of science and not as a history of religion." Its contents will be of interest to historians of American religion who understand that the world view of the natural philosopher before Darwin was generally compatible with the Christian (Protestant) world, and that it

was not seen generally as an alternative, competitive enterprise to matters religious. In the first half of his book, Hovenkamp discusses the relationship of various philosophical and methodological views espoused chiefly by theologians and philosophers to the evolving character of American religion. In particular he considers Scottish Common-Sense Realism, Kantianism, German Idealism, and biblical criticism. Central to his discussion is the view that American religion before about mid-century was actively engaged in Natural Theology, and that therefore it sought to verify certain fundamental religious tenets within a scientific framework. As with many Christian clergy interested in science and Natural Theology, American scientists interpreted many of their religious convictions with a decidedly scientific slant. The problem central to these developments, as Hovenkamp argues, is that as long as Christianity "clung to religious tenets based on [scientific] verifiability it was doomed. Science would inevitably destroy the historical bases for those beliefs, and [Christians] . . . would have nothing left to defend." This is the key question which the author identifies as basic among Christians, both theologians and scientists, in the relationship of science to religion in nineteenth-century America.

This claim is examined in detail in the last half of his book where the author considers in successive chapters the "exciting scientific issues of the day": geology (including the age and the method of creation of the earth), biblical chronology, physical anthropology and the origin of man, comparative philology, and pre-Darwinian evolution. He shows that these various natural and social sciences exacerbated tensions between organized religion and Natural Theology to the point that by the second half of the nineteenth century, most theologians and scientists avoided attempts to verify biblical claims scientifically.

Hovenkamp's thesis is neither original nor startling. C.C. Gillispie, in his excellent *Genesis and Geology*, has examined the parallel case among the British of the impact of scientific discoveries upon religious beliefs in the half-century before Darwin. Both authors provide impressive evidence of the fundamental importance which geology came to play in concerns central to Natural Theology during this period. Indeed, as

Hovenkamp shows, the first natural science to threaten American Protestantism was geology. Historians of science will recognize, however, that Hovenkamp's understanding of the French paleontologist Georges Cuvier, who was central to the developments in geology and paleontology at this time, is misinformed. Through various treatises, Cuvier had a significant impact on geology, both American and European. Cuvier espoused a "cyclical" theory of geological revolutions, often called "catastrophism," whereas uniformitarian views became increasingly influential only after his death in 1832. He rarely used the word "catastrophism" to describe his non-uniformist views, however, because its overtones of disaster were largely extraneous to his conceptions of regular and natural processes. Even more, he avoided the term "creationism" for its biblical implications and because it suggested a world-view which he absolutely rejected. Differences in the meanings of the words "cyclical," "revolution," "catastrophism" and "creationism" were altogether ignored, however, in the English edition of his seminal *Essay on the Theory of the Earth* (1812) translated by the Scottish geologist Robert Jameson in 1813. Jameson explicitly interpreted Cuvier's "revolutions" in terms of his own creationist views. And since most English-speaking scientists learned of Cuvier's theory of revolutions through Jameson's editions, it is hardly surprising that Cuvier was assumed to be supporting arguments in favor of the truths of religion based upon the findings of science. Hovenkamp consistently interprets Cuvierian science according to Jameson *vis-a-vis* Cuvier himself. Since American geology was based less directly on Cuvierian paleontology and geology than on Jameson's creationist geology, however, the impact of Hovenkamp's misunderstanding is somewhat mitigated.

Aside from numerous historical and religious events considered in *Science and Religion in America* which invite thoughtful comparison with developments of the Restoration, there is much within the Mormon world-view itself which should compel students of Mormon history and theology to examine its contents. For many Mormons in the latter quarter of the twentieth century, as for Protestants during the first half of the nineteenth, issues involving the age and creation of the earth, biblical and new world

chronology, the origin of man and evolutionary hypotheses remain central concerns which demand attention. For instance, in recent times the highly polemicized conflict regarding the historicity of the *Book of Mormon* has led to serious attempts to establish a literal archeological meaning to its content. As an example of Natural Theology, *Dialogue* readers are probably aware of the potential pitfalls of such endeavors (see, for instance, volume VIII(2), pp. 40-55 and more recently volume XI(3), pp. 92-94). Hovenkamp has shown that historically the scientific verification of religious and theological assertions grounded on current theories and trends in science will almost inevitably lead to bitter results. This is particularly unfortunate if, in the process of supporting theological convictions using techniques and the body of knowledge available from science, strictly theological claims were to become less credible by association with potentially outdated scientific concepts and ideas.

There are numerous Mormon theological assertions, however, which have suggested a context of (scientific) verifiability implicit within Mormon dogma. Few contemporary Christian religions have so adamantly asserted the unity of faith and reason. Such claims as "all blessings are predicated on laws properly understood" and "spirit is merely a more refined form of matter" suggest that Mormonism embraces a full-fledged philosophical realism. Moreover, it has been construed often from statements such as "the glory of God is intelligence" and "knowledge and intelligence gained in this life will be to one's advantage in the next" that perhaps God's "science" is only more "refined" or "advanced" than ours. How are these various concerns to be understood? Are they to be taken literally, and if so will Mormons be compelled to repeat the mistakes of their Christian brethren chronicled in the long and torturous history of Natural Theology? Should we rather understand such assertions metaphorically, and interpret our scriptural revelations as a process of historical conditioning? Perhaps resolution and unity can be achieved by attention to techniques of linguistic analysis. Words like "spirit," "light," "truth," "intelligence" and "law" may otherwise invite confusion, particularly if one views religion in the context of Natural Theology.