

audience. “The question is rather how to know more about Creation, and therefore how to better revere the Creator” (p. 189). This theme of wonder leading to reverence permeates all physico-theological writers.

Physico-theology, even when not named as such, was also an active part of defenses against the early stages of biblical criticism (e.g., Spinoza and La Peyrère). Eric Jorink describes the detailed work of the Dutch author Willem Goeree, who used math and engineering to reconstruct a plausible Noah’s Ark. Jorink briefly mentions Kircher’s earlier attempt, but it would have been interesting to compare the two authors on that subject: a Dutch Calvinist and a German Jesuit. Did physico-theology join them or divide them? Antonio Vallisneri, a naturalist at the University of Padua, struggled to reconcile fossils, geological formations, and the Flood. Brendan Dooley shows that, at least in Vallisneri’s work, physico-theology was not always, even if predominantly, adulatory toward divine providence. Vallisneri was comfortable with unresolved questions of fossils and the Flood.

John Brooke, in his chapter “Was Physico-Theology Bad Theology and Bad Science?,” succumbs to the presentism he seeks to undermine with that provocative title. Regarding “bad science,” he judges that while the proponents of physico-theology were all leaders in their fields, they were unduly “anthropocentric” in their reading of nature. Yet, when he comes to answer the question of “bad theology,” he says it is a question that cannot be answered, since it is contingent on one’s theological stripe. Why, one may ask, did he not rate science by the same standard, admitting his own scientific prejudice against the “anthropocentrism” of divine design, as if it somehow reduced the quality of the science? Despite this bias, Brooke adds an important theological insight in that design arguments that highlight divine care tend to pass too quickly over sin and natural evil. Pascal, as noted above, was an exception to this rule.

Brian Ogilvie, looking at several authors doing “insecto-theology,” does not see the design theme as anthropocentrism, but rather that the attention of physico-theologians to function and design in insect morphology and behavior fostered genuine contributions to the field. Aesthetic values can be as much a part of what one brings to and takes away from physico-theology. Simona Boscani Leoni shows this happening as the perception of the Swiss Alps went from jagged and ugly to praiseworthy—a physico-theology of mountains moving in parallel with that

trajectory. A deeper look into a connection between physico-theology of the mountains and Albrecht von Haller’s poem *Die Alpen* (1732) would have been interesting here, especially given Haller’s Swiss Calvinism and active role in questions of natural philosophy and religion. In botany, as “form” comes to serve the interests of beauty more than function, physico-theology can become unnecessary, as Jonathan Sheehan shows in an investigation of studies of flowers during this time.

This volume presents the subject with excellent variety, yet editorially holds together well, serving as an introduction to the intellectual phenomenon of physico-theology. Chapters sometimes overlap in their discussion of key works of the period, but this happily serves to connect them together. Like the disciplinary boundary crossing which is physico-theology, this collection of papers, handling authors mostly writing in the period 1690–1740—neither really “Scientific Revolution” or “Enlightenment” in our usual historical categories—gives insight into a generation that might otherwise be undervalued because it does not easily fit into either. It is a liminal zone where interesting natural experiments can happen.

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SCIENCE, RELIGION, AND THE PROTESTANT TRADITION: Retracing the Origins of Conflict by James C. Ungureanu. Pittsburgh, PA: University of Pittsburgh Press, 2019. x + 358 pages. Hardcover; \$50.00. ISBN: 9780822945819.

Mythical understandings about historical intersections of Christianity and science have a long history, and persist in our own day. Two American writers are usually cited as the architects of the mythology of inevitable warfare between science and religion: John William Draper (1811–1882) and Andrew Dickson White (1832–1919). Draper was a medical doctor, chemist, and historian. White was an academic (like Draper), a professional historian, and first president of the nonsectarian Cornell University. Ungureanu’s objective is to show how Draper and White have been (mis)interpreted and (mis)used by secular critics of Christianity, liberal theists, and historians alike.

Ungureanu opens by critiquing conflict historians as misreading White and Draper. The conflict narrative emerged from arguments *within* Protestantism from the sixteenth through nineteenth centuries, and, as taken up by Draper and White, was intended *not* to annihilate religion but to *reconcile* religion

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with science. Consequently, the two were not the anti-religious originators of science-versus-religion historiography. Rather, the “warfare thesis” began among sixteenth- and seventeenth-century Protestant historians and theologians attacking both Roman Catholics and each other. By the early nineteenth century, the purpose of conflict polemics was not to crush religion in the name of science but to clear intellectual space for *preserving* a “purified” and “rational” religion *reconciled* to science. Widespread beliefs held by liberal Protestant men of science included “progressive” development or evolution in history and nature as found, for example, in books by Lamarck in France and Robert Chambers in Britain. For Draper, English chemist and Unitarian minister Joseph Priestley (1733–1804) was a model of faith without the burden of orthodoxy.

So conflict rhetoric arose not, as we’ve been taught before, in post-Darwinian controversies, but in contending narratives within generations of earlier Protestant reformers who substituted personal judgment for ecclesial authority. Victorian scientific naturalists and popularizers often rejected Christian theological beliefs in the name of a “natural” undogmatic “religion” (which could slip into varieties of Unitarianism, deism, agnosticism, or pantheism). In effect, the conflict was not between science and religion, but between orthodox Christian faith and progressive or heterodox Christian faith—a conflict between how each saw the relationship between Christian faith and science. Draper, White, and their allies still saw themselves as theists, even Protestant Christians, though as liberal theists calling for a “New Reformation.” Given past and present anti-Christian interpretations of these conflict historians with actual religious aims, this is ironic to say the least.

Ungureanu’s thesis shouldn’t be surprising. In the Introduction to his *History of the Warfare*, White had written:

My conviction is that Science, though it has evidently conquered Dogmatic Theology based on biblical texts and ancient modes of thought, will go hand in hand with Religion ... [i.e.] “a Power in the universe, not ourselves, which makes for righteousness” [quoting without attribution Matthew Arnold, who had actually written of an “eternal power”].

As science advanced, so would religion: “the love of God and of our neighbor will steadily grow stronger and stronger” throughout the world. After praising Micah and the Epistle of James, White looked forward “above all” to the growing practice

of “the precepts and ideals of the blessed Founder of Christianity himself” (vol. 1, p. xii). Ungureanu quotes White that the “most mistaken of all mistaken ideas” is the “conviction that religion and science are enemies” (p. 71).

This echoed both Draper’s belief that “true” religion was consistent with science, and T.H. Huxley’s 1859 lecture in which he affirmed that the so-called “antagonism of science and religion” was the “most mischievous” of “miserable superstitions.” Indeed, Huxley affirmed that, “true science and true religion are twin-sisters” (p. 191).

Chapter 1 locates Draper in his biographical, religious, and intellectual contexts: for example, the common belief in immutable natural laws; the “new” Protestant historiography expressed in the work of such scientists as Charles Lyell and William Whewell; and various species of evolutionism. Comte de Buffon, Jean Baptiste Lamarck, John Herschel, Thomas Dick, Robert Chambers, and Darwin are some of the many writers whose work Draper used.

Chapter 2 examines White’s intellectual development including his quest for “pure and undefiled” religion. He studied Merle d’Aubigné’s history of the Reformation (White’s personal library on the subject ran to thirty thousand items) and German scholars such as Lessing and Schleiermacher who cast doubt on biblical revelation and theological doctrines, in favor of a “true religion” based on “feeling” and an only-human Jesus. As he worked out his history of religion and science, White also absorbed the liberal theologies of William Ellery Channing, Horace Bushnell, Henry Ward Beecher, and Lyman Abbott, among others.

The resulting histories by Draper and White were providential, progressive, and presentist: providential in that God still “governed” (without interfering in) nature and human history; progressive, even teleological, in that faith was being purified while science grew ever closer to Truth; and presentist in that the superior knowledge of the present could judge the inferiority of the past, without considering historical context.

Chapters 3 and 4 situate Draper and White in wider historiographic/polemical Anglo-American contexts, from the sixteenth-century Reformation to the late nineteenth century. Protestant attacks on Roman Catholic moral and theological corruption were adapted to nineteenth-century histories of religion and science, with science as the solvent that cleansed

“true religion” of its irrational accretions. Ungureanu reviews other well-known Christian writers, including Edward Hitchcock, Asa Gray, Joseph Le Conte, and Minot Judson Savage, who sought to accommodate their religious beliefs to evolutionary theories and historical-critical approaches to the Bible.

Chapter 5 offers a fascinating portrait of Edward Livingston Youmans—the American editor with prominent publisher D. Appleton and *Popular Science Monthly*—and his role in promoting the conflict-reconciliation historiography of Draper and White and the scientific naturalism of Huxley, Herbert Spencer, and John Tyndall.

In chapter 6 and “Conclusions,” Ungureanu surveys critics of Draper’s and White’s work, although he neglects some important Roman Catholic responses. He also carefully analyzes the “liberal Protestant” and “progressive” writers who praised and popularized the Draper-White perspectives. Ungureanu is excellent at showing how later writers—atheists, secularists, and freethinkers—not only blurred distinctions between “religion” and “theology” but also appropriated historical conflict narratives as ideological weapons against any form of Christian belief, indeed any form of religion whatsoever. Ultimately, Ungureanu concludes, the conflict-thesis-leading-to-reconciliation narrative failed. The histories of Draper and White were widely, but wrongly, seen as emphatically demonstrating the triumph of science over theology and religious faith, rather than showing the compatibility of science with a refined and redefined Christianity, as was their actual intention.

Draper’s *History of the Conflict*, from the ancients to the moderns, suggested an impressive historical reading program, as did his publication of *A History of the Intellectual Development of Europe* (rev. ed., 2 vols., 1875 [1863]). But one looks in vain for footnotes and bibliographies to support his controversial claims. White’s two-volume study, however, landed with full scholarly apparatus, including copious footnotes documenting his vivid accounts of science conquering theological belief across the centuries. What Ungureanu doesn’t discuss is how shoddy White’s scholarship could be: he cherrypicked and misread his primary and secondary sources. His citations were not always accurate, and his accounts were sometimes pure fiction. Despite Ungureanu’s recovery of German sources behind White’s understanding of history and religion, he does not cite Otto Zöckler’s *Geschichte der Beziehungen zwischen Theologie und Naturwissenschaft* (2 vols., 1877–1879), which, as Bernard Ramm noted in *The Christian View*

of *Science and Scripture* (1954), served as “a corrective” to White’s history.

Ungureanu certainly knows, and refers to some of, the primary sources in the large literature of natural theology. I think he underplays the roles of Victorian natural theologies and theologies of nature in reflecting, mediating, criticizing, and rejecting conflict narratives. Ungureanu seems to assume readers’ familiarity with the classic warfare historians. He could have provided more flavor and content by reproducing some of Draper’s and White’s melodramatic and misleading examples of good scientists supposedly conquering bad theologians. (One of my favorite overwrought quotations is from White, vol. 1, p. 70: “Darwin’s *Origin of Species* had come into the theological world like a plough into an ant-hill. Everywhere those thus rudely awakened ... swarmed forth angry and confused.”)

Ungureanu’s is relevant history. Nineteenth-century myth-laden histories of the “warfare between Christianity and science” provide the intellectual framework for influential twenty-first century “scientific” atheists who have built houses on sand, on misunderstandings of the long, complex and continuing relations between faith/practice/theology and the sciences.

This is fine scholarship, dense, detailed, and documented—with thirty-seven pages of endnotes and a select bibliography of fifty pages. It is also well written, with frequent pauses to review arguments and conclusions, and persuasive. Required reading for historians, this work should also interest non-specialists curious about the complex origins of the infamous conflict thesis, its ideological uses, and the value of the history of religion for historians of science.

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SCIENCE AND FAITH: Student Questions Explored by Hannah Eagleson, ed. Peabody, MA: Hendrickson Publishers, 2019. 116 pages. Paperback; \$14.95. ISBN: 9781683072362.

Despite the many introductory books on science and religion that have been published in recent years, *Science & Faith: Student Questions Explored* is a worthwhile addition to the library of educators and clergy who help young adults think more critically about