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ALTRUISM AND THE ADMINISTRATION OF THE UNIVERSE: KIRTLEY FLETCHER MATHER ON SCIENCE AND VALUES

by Edward B. Davis

Abstract. Few American scientists have devoted as much attention to religion and science as Harvard geologist Kirtley Fletcher Mather (1888–1978). Responding to antievolutionism during the 1920s, he taught Sunday School classes, assisted in defending John Scopes, and wrote *Science in Search of God* (1928). Over the next 40 years, Mather explored the place of humanity in the universe and the presence of values in light of what he often called “the administration of the universe,” a term and concept he borrowed from his former teacher, geologist Thomas Chrowder Chamberlin. Human values, including cooperation and altruism, had emerged in such a context: “the administrative directive toward orderly organization of increasingly complex systems transcends the urge for survival.” He was also active in the early years of the Institute on Religion in an Age of Science, an organization created by his good friends Ralph Wendell Burhoe and Harlow Shapley.

From the unconscious minerals of Pre-Cambrian time there emerged the brute consciousness of the lower animals. The geologic eras succeeded each other for untold millions of years before there emerged from brute consciousness the self-conscious human being; but in a comparatively brief interval of time, self-consciousness is beginning to give place to an emerging world-consciousness such that men are daring to look all their fellows in the face with the eyes of a brother, and to act as if all men everywhere, regardless of color or intellect or nationality, are members of a single family. In this emerging ideal of brotherhood rests the hope for the world. It is the present high-water mark of the flood of evolution (Mather 1928a, 66).

That the administration of the universe is going forward according to a consistent plan, is a conclusion reached alike by the man of religion and the man of science (Mather 1918b, 36).

The Christian has assumed that Jesus of Nazareth displayed the true character of the Administration of the Universe (Mather 1928b, 118).

Recent events in the United States have reminded us of the importance of questions about how scientific knowledge relates to religious knowledge. Can nature, or the science of nature, give us moral values? What does science have to say to religion about the origin of values such as altruism? What image of science and its relation to morality and religion ought scientists cultivate and promote? Many American scientists have offered answers to such questions, but few have devoted as much time and effort as geologist Kirtley Fletcher Mather (1888–1978), whose activities and writings over a period of six decades advanced the mutual relevance of religion and science for the modern age.

EDUCATION: MODERN SCIENCE AND MODERNIST RELIGION

A direct descendent of Richard Mather (the father of Increase Mather and grandfather of Cotton Mather) and the son of a ticket agent for the Michigan Central Railroad, Kirtley Fletcher Mather was born in Chicago on February 18, 1888 (Bork 1994; Mather 1977). Growing up in the Windsor Park neighborhood, more than ten miles south of the Loop on the shores of Lake Michigan, the young Kirtley delivered milk and produce from their small family farm while attending multiethnic and interracial public schools. Upon graduation from South Chicago High School in June 1904, Mather was awarded a full scholarship for his first year at the University of Chicago, which had been founded only a dozen years earlier but was already regarded as a first-rate academic institution. Although his grandfather, a Baptist deacon, considered the university to be (in Kirtley’s words) “a Godless institution . . . , where the professors were tearing down the very foundations of the Christian faith by their teachings about the Bible,” Kirtley enrolled at Chicago that fall but continued to live at home (Mather 1977, 24). In his sophomore year, he took a geology course taught by Wallace W. Atwood, a physical geographer who later taught at Harvard before becoming the president of Clark University. The next summer, he went on a field course with Atwood to Wisconsin, sleeping in his own tent to save money and developing his own photographs to include with his report; his highly enthusiastic, almost rapturous memories of the experience 70 years later are evidence of its significance at the time (Mather 1977, 20). Despite his growing interest in geology and the influence of Atwood, Mather found student life at Chicago decidedly lacking in at least one respect: contact with

coeds was limited. Mainly for that reason, he transferred in the fall of 1907 to Denison University, a Baptist liberal arts college in Granville, Ohio, that his older brother Asher was already attending. There he fell under the spell of Frank Carney, an outstanding teacher who was completing a doctorate in geology at Cornell. Carney got Mather involved in a project to explain the geological history of the Black Hand Gorge, a scenic, steep-sided sandstone canyon on the Licking River about 20 miles from Granville. Mather's findings, presented at the Ohio Academy of Science, resulted in his first publication (1909). An even more important benefit of his 2 years at Denison, which fully justified leaving Chicago, occurred when he met Marie Porter, a physics and music student, in a mathematics class. They married after a long courtship, in June 1912.

In the fall of 1909, Mather returned to Chicago as a graduate student, assigned to work several hours each week for Atwood in exchange for his tuition. Once again living at home, he became heavily involved at Windsor Park Baptist Church, serving as superintendent of the Sunday School and also as president of the local Baptist Young Peoples Union, in which capacity he spoke at meetings all over the south side of Chicago (Mather 1977, 43). He audited a course with the great geologist Thomas Chrowder Chamberlin, who had recently proposed a novel theory of the planetary origin of the solar system with astronomer F. R. Moulton, challenging the nebular hypothesis of Pierre-Simon Laplace that had been generally accepted since the early nineteenth century; the following year, he took the same course for credit. Chamberlin influenced Mather profoundly—so much so, that a portrait of Chamberlin “is the only picture of any individual that hangs over my desk in my study at home,” Mather (1964, 6) said nearly 50 years later—but it was Atwood who took Mather with him several times on summer field trips to the Colorado Rockies and published jointly with him in the *Journal of Geology* (Atwood & Mather 1912). Mather interrupted his graduate studies to get married and earn money as an assistant professor at the University of Arkansas, but in the fall of 1914, he went back to Chicago with Marie and completed his doctorate the following summer.

Not long into his final year at Chicago, the Mathers found a new church home near the university: Hyde Park Baptist Church (now Hyde Park Union Church), where the pastor was Charles

Whitney Gilkey (father of the late Langdon Gilkey), one of the most highly regarded preachers in America at the time (Morrison 1925). Although they would soon leave Chicago permanently, they “started a warm friendship with [Gilkey] that continued throughout the rest of his life” (Mather 1977, 70). A large percentage of the church’s members were associated with the university, and at least a few, such as the famous intellectual historian Edwin Arthur Burt, were possibly not even theists of any sort (Davis 2009a, 176–78). Another prominent member was the radical theologian George Burman Foster, whose close friend Clarence Darrow delivered the eulogy at his funeral (Muray 2008, 42–43). It was an extraordinarily ecumenical church, almost an extension of the secular temple of learning a few blocks away, and Mather can only have thrived in their midst.

The proximity of the church to the university and its famous Divinity School was more than simply geographical. Hyde Park Baptist Church itself was one of the great centers of liberal theology in America. Members included the founding president of the university, William Rainey Harper, and some of the leading exponents of the “modernist” wing of American Protestantism, such as Foster, Gerald Birney Smith, and Shailer Mathews, who was dean of the Divinity School for a quarter century (Arnold 1974). The modernists deeply felt that Christian doctrine, including a classical understanding of God, had to be wholly accommodated to evolution, in order for the Christian faith to be credible in the modern age. Consequently, the modernists typically spoke of God as working always “within” nature and humanity, never “outside of” or “apart from” nature like the transcendent creator and redeemer of traditional Christian theology. Jesus for them was the supreme example of a morally upright person who had loved self-sacrificially, not the God who had literally taken on human form in order to save us from our sins. Indeed, salvation lay within ourselves, for God was understood to be immanent within us no less than in the rest of nature, and we could bring about the Kingdom of God on Earth by following Jesus and spreading God’s love to all. While the fundamentalists and other traditional Christians still understood God as being both immanent and transcendent, the modernists typically placed divine immanence at center stage, relegating divine transcendence to the periphery and sometimes all but writing it completely out of the play (Barbour 1966; Cauthen 1983; Dorrien 2003; Koss 1972; Muray

2008). As Ian Barbour has observed, “The modernists tended to deify the evolutionary process, making it the means of grace and the source of progress” (1966, 102).

In keeping with their emphasis on the divine spirit within us, for Mathews and his modernist colleagues, Christian social action and moral conduct—what was known as the “Social Gospel”—counted a great deal more than adherence to traditional doctrines. A Baptist minister, theologian Walter Rauschenbusch, had been instrumental in founding the Social Gospel movement, which had a particular emphasis on improving the quality of life for the urban poor. Mather must have encountered the Social Gospel as part of his involvement with the Baptists on the South Side of Chicago as well as in his undergraduate studies at Chicago. Mathews’ enthusiasm for the Social Gospel was unmistakable, and Mather took a Bible course from him. As he later said, Mathews was one of “my mother’s heroes. Occasionally he offered a special course on Sunday mornings, for students in the Arts and Sciences, on the study of the Bible. At Mother’s suggestion, I took that course during a quarter in 1906 or 1907. His approach was that of a ‘modernist’ rather than a ‘fundamentalist’ and I found it highly informative and fascinating” (1977, 23). After he transferred to Denison, he, his brother, and four other men banded together as a group of “Christians actuated by a desire to help men and themselves,” which suggests further involvement with the Social Gospel (Mather 1977, 30; cf. Bork 1994, 14). It was also at Denison that he became involved with the Young Men’s Christian Association, an organization serving the urban poor as a vital part of a broader religious ministry; Mather was active in the YMCA for the rest of his life, serving as president of the American branch after World War Two (Bork 1994, 5, 15, 183, 211, 258, 260).

Although the influence of the Social Gospel waned after World War One, it remained central to Mather’s understanding of Christianity, including his view of the relationship between science and religion. Mather’s writings on science and religion would be thoroughly modernist in this respect and would remain so long after the fundamentalist-modernist controversy of the 1920s had ended. In short, he combined a modernist understanding of God and the Social Gospel with a geologist’s understanding of natural history.

THE INFLUENCE OF THOMAS C. CHAMBERLIN ON MATHER'S WORLDVIEW

The key element in Mather's understanding of God and nature came from Thomas C. Chamberlin, whose course on "Principles and Theories of Geology" Mather audited once more, during his final year of graduate work—the third time he had participated in that course, "and it was probably the most rewarding of the three." The elderly professor, reading his notes with a magnifying glass, "with his benign face only three or four inches away from the sheet of paper," was still of sound mind and sonorous voice. "It was during that year," Mather recalled—the same year in which he joined the Hyde Park Church and was immersed in a theologically sophisticated *milieu*—"that I began to comprehend more fully his rubric, 'The administration of the universe'—a term that I later used, with due acknowledgment to him" (1977, 68). In his final book, *The Permissive Universe* (published posthumously in 1986, with a foreword by Stephen Jay Gould), Mather said that he "heard these words drop casually from his lips at least a dozen times and came at last to some comprehension of their meaning in his vocabulary." I have not been able to find the term in Chamberlin's writings (though I have not seen all of them), but we have Mather's testimony that Chamberlin used it to mean "that the universe is under some kind of administrative regulation, whatever the administrative power may be. It implies only one thing about the nature of the administration: that it is unitary; *administration* not *administrations*. Significantly, administration is not spelled with a capital A in ordinary usage; nor is there any suggestion that *administrator* is an appropriate synonym." Such a conception, Mather added, "resounds with some of the most majestic verses in the Book of Psalms and is essentially the basis for the philosophical perplexities of Job" (Mather 1986, 98–99, his italics).

It was also "implicit" in the many discussions of natural law and the order we find in nature. Human values, including cooperation and altruism, had emerged in such a context, for "the administrative directive toward orderly organization of increasingly complex systems transcends the urge for survival" (Mather 1986, 114). "Judged in terms of the values which men customarily hold dear," Mather believed, "the conclusion seems clear that evolution has resulted in progress toward the attainment of 'the good, the true, and the beautiful'" (Mather

1986, 76). This is the closest he would come to affirming a grand teleology for the universe; he saw no geological evidence “that a blueprint for man had been drafted on any architect’s drawing board a half-billion years ago,” no hint even 50 million years ago “of any design to produce a creature precisely in the anatomical mold of man as he has emerged in glacial and post-glacial time” (Mather 1986, 72).

Despite his reluctance to speak of an “administrator,” Mather did not always decline to use the word “God” in that way. At an address on “Geology and God” at the Arlington Street Church (a Unitarian congregation) in Boston in 1960, Mather commented on this:

It is my personal belief that some of the things about the nature of the administration of the universe revealed by scientific research carry overtones that can best be connoted by the thought-provoking word “God.” Some of my scientific colleagues warn me not to use that word. They say it might be misunderstood to suggest an elderly gentleman on a throne somewhere up in the sky. I reply that they use the word “atom” even though a few years ago it denoted an invisible, unalterable, non-compressible [sic] unit of eternal matter. Theology, as well as geology and physics, has progressed greatly in recent years. (quoted in Bork 1994, 253)

On another occasion, he defined God as “a symbolic term used to designate those aspects of the administration of the universe that affect the spiritual life and well being of mankind.” God is “a creative and regulatory power operating within the natural order,” who “is immanent, permeating all of nature, unrestricted by space or time,” yet “transcendent only in that His spirit transcends every human spirit, possibly the sum total of all human spirits melded together. He is not supernatural in the sense of dwelling above, apart from, or beyond nature” (Mather 1986, 171–72).

Mather added a further gloss on his concept of administration in his pamphlet, *Is There Purpose in the Universe?* Citing the opening words to the Gospel of John, he noted that a person from “this age of science” could offer this paraphrase: “In the beginning were the fields (the electrodynamic field, the gravitational field, the spiritual field, and perhaps other still unknown force fields), and the fields were with the administration of the universe, and the fields are the administration of the universe” (Mather 1964,

11). Concerning life as a whole, “there seems to be a direction in which life has moved, whether in obedience to orders from the rear, or to enticements from out in front.” Either way, there is “an over-all direction,” resulting ultimately in “the emergence of an awareness of the non-material, the spiritual.” As for humanity, the purpose of human evolution “would seem to be the orderly organization of individuals . . . who possess a sufficient dynamic of good will” to cooperate with others and “to use the rich resources of the bountiful Earth for the welfare of the entire group” (Mather 1964, 10–12).

Given the influence that Chamberlin exerted upon Mather, some discussion of his views is appropriate. Interestingly, Mather himself (1971) is one of the principal sources of information about Chamberlin; six decades later, he would write the relevant article in the *Dictionary of Scientific Biography*. Son of a Methodist circuit rider who had left North Carolina because he hated slavery, Chamberlin grew up on a farm in Wisconsin and graduated from Beloit College in 1866. Following a year of graduate work under Alexander Winchell at the University of Michigan, he taught at the normal school in Whitewater, Wisconsin, before returning to Beloit in 1873 to teach geology and to carry out the state geological survey—while lecturing about science and religion to large audiences at the Second Congregational Church, just across the Rock River from the college. After a term as president of the University of Wisconsin from 1887 to 1892, he moved to Chicago to chair the geology department as the new university got under way.

Thomas Chamberlin’s father, John Chamberlin, held an Arminian theological position that gave humans a crucial role in participating with God in salvation and in acting redemptively in the world through morally upright conduct, thereby taking charge of their own destiny. Although Thomas came to accept a more impersonal notion of God, he fully embraced his father’s moral vision. As Herbert Winnik has stated, “[Thomas] Chamberlin’s concern about social issues and his belief that the scientific method was *the* way to solve society’s problems came from his high regard for man, in agreement with an Arminian conviction” (1970, 442). Even his challenge to Laplace’s theory, which predicted a dismal end for the solar system, can be seen in this light. According to Chamberlin’s planetesimal hypothesis, the Earth had developed progressively, forming an atmosphere and fostering the growth of organisms, including ourselves, which could continue to advance

in the future. In his view, science held out the possibility “that man’s future career is chiefly a matter of his own making. We may, then, rationally regard the study of the Earth’s existing resources, as well as the development of man’s capacities to use them in making the most of himself, as one of the potential factors in his own destiny” (Chamberlin 1924, 135).

In keeping with his optimism about the future of humanity, Chamberlin held that the universe was purposeful: it looked that way, and we ought to believe it. “My fundamental theological prepossession is that whoever made the cosmic system was honest about it,” he told an interviewer near the end of his life. “That is, we could not have evolved for billions of years or so in a factitious way; we evolved on sound lines in general. . . . We are all full of shortages and mistakes and all that, but fundamentally the thing is as we see it.” The universe made sense because a “Universal Doer” lay behind it (Winnick 1970, 447 note 27, 451). The title of one of his unpublished papers sums it up nicely: “The Importance of a Belief in the Divine Immanence at the Present Crisis of Intellectual Development” (quoted in Winnick 1970, 452). Humans and other animals were products of evolution, but not of a fully Darwinian kind; nature was ultimately a harmonious order imbued with moral purpose, not an aimless struggle for existence.

Nowhere is this clearer than in a fascinating essay on “The Problem of Suffering” that Chamberlin wrote in 1896 for *The Biblical World*, a semisolarly journal founded and edited by William Rainey Harper, the first president of the University of Chicago. (Shailer Mathews became the editor in 1913.) Reflecting on the troubling theodicy presented in the book of Job, Chamberlin observed that, “A sincere questioning of the ways of the Almighty, however faulty the inquiry may be, . . . may yet lead to an appropriate reward, because it is an earnest striving for the higher truth.” In that spirit, he asked what geology reveals about suffering. First, he dealt summarily with death before the fall—the old problem raised by the acceptance of an ancient Earth in the late eighteenth and early nineteenth centuries. Much suffering preceded our appearance on the Earth. Indeed, the same forms of suffering experienced by Job—loss of possessions and offspring, plus bodily pain—all existed before we arrived. Birds lost their nests, animals lost their young, and “thousands of creatures living millions of years before the appearance of man, suffered bodily pain; as well from disease

as from accident and attack, and this suffering reached all degrees of intensity possible to them, not even being limited, as in the case of Job, to the sparing of life.” Therefore, “nothing connected with human action was the cause of the primal introduction of suffering.” Any successful theodicy has to look much earlier for a solution, “for the origin is far back, and the purpose [of suffering] is connected with the beginnings of life on the globe, if indeed its origin does not lie even farther back in the very nature of the organization of the universe.” There had once been “long eras when no sentient creature” existed on the Earth, and even now many organisms and plants appear to lack sensation. Among animals, however, “suffering was introduced at an extremely early date and has increased through the ages,” as animals have multiplied in number and “have increased their individual capacities for suffering and their liabilities to suffering” (Chamberlin 1896, 186–88).

The crucial question for theodicy, as Chamberlin saw it, was as follows: “Did this increase of suffering go hand in hand with a decadence of the organisms as though it were the result, or the punishment, of degeneration or did it go hand in hand with an advancement and improvement of the organisms?” For Chamberlin, it was the latter: as organisms had adapted to their environments, “there was a constant endeavor to escape suffering,” with organisms developing various forms of protection. Nevertheless, the preservation of the species was always the uppermost, and sometimes the suffering and even the death of individuals helped the species survive. Chamberlin found evidence in “the testimony of the rock layers” that both the ability to feel pain and the ability to protect against it had developed side by side, so that we may “safely assume that both represent a good.” However,

the system of superior sensitiveness with superior liability to pain, and, with little doubt, greater actual experience of pain, has markedly gained in dominance. Not only have the organisms in which this system has its best expression risen into the places of leadership and rulership, but types that once possessed the armor system in high development have abandoned it and adopted the other, and this *change of system* is one of the most significant facts of life history. The cephalopods [molluscs] present an excellent source of illustration, for they have lived through the whole known life history of the globe.

Further examples of this phenomenon were fishes, which used

to be much more heavily armored, and human beings, who represent “the culmination of the sensory system with its possibilities and actualities of suffering.” In the final analysis, then, “the highest and best adaptation to the environment is that which utilizes pain as a protection.” Therefore, “mental and physical sufferings are fundamentally protective,” contributing to “the salvation of the organism” and belonging “to the category of the good and not of the evil.” Like the suffering of Job, the suffering of creatures in a law-abiding universe ultimately brings about good (Chamberlin 1896, 188–89, 192–94, his italics). This was part of what Mather meant by “the administration of the universe.”

ALTRUISM, CREATIVE EVOLUTION, AND THE ADMINISTRATION OF THE UNIVERSE

Just two years after completing his doctorate, Mather got his first opportunity to reach a large audience with his views on science and religion, when the *Atlantic Monthly* paid him one hundred dollars for an essay about the meaning of natural history. Mather wrote this essay amidst the horrors of World War One, which American biologist Vernon Kellogg had already linked with the teaching of Darwinism in Germany, in a book from the same publishing house the previous year (Kellogg 1917; cf. Kellogg 1916). Some fundamentalists were already blaming Germany for both evolution and higher biblical criticism, and Kellogg’s book profoundly influenced William Jennings Bryan, leading him after the war to campaign against the teaching of evolution in American schools (Davis 2008; Gould 1987). It is, therefore, highly ironic that Mather took a fundamentally different route. To be sure, he saw the same problem that Kellogg had seen, and he understood its religious implications. “Underneath the ancient warfare between theology and science,” he wrote, “lurking in the distrust of the ‘higher criticism,’ there is an unvoiced, but very real, fear that in the last analysis the doctrine of the survival of the fittest in the struggle for existence is diametrically opposed to the conception of the brotherhood of man; that evolution according to Darwin and [Hugo] Devries and [August] Weissmann is the antithesis of Christianity according to Christ and John and Paul” (Mather 1918b, 35). Undoubtedly alarmed, Mather set out (as he later remembered) “to show that the evolutionary principle of the survival of the fittest in the struggle for existence is not, in reality, opposed to the Christian doctrine of the brotherhood of man and the supremacy of

brotherly love. It was a theme with which I was concerned throughout many decades thereafter” (Mather 1977, 84). One’s first impression might be that eons of Earth history amounted to nothing more than “the death- struggle of the trilobites” followed by the great reptiles, “nature’s grandest experiment at producing a master race by development along the line of brute strength and massive bulk.” One might very well conclude “that no good thing could ever come from out this welter of selfishness and greed, of worldly lusts and brute rivalry.” Once the higher mammals appeared, however, the game was changed. “The triumph of intelligence, agility, and brainpower over brute strength, massive bulk, and sluggish mentality was complete” (Mather 1918b, 38–39).

Mather’s optimism in this instance derived partly from the French philosopher Henri Bergson, author of *Creative Evolution*, a work that was widely influential at the time. Borrowing Bergson’s words, Mather pointed out that “in the evolution of life, just as in the evolution of human societies and of individual destinies, the greatest successes have been for those who have accepted the heaviest risks” (Mather 1918b, 39, quoting Bergson 1911, 132). Evolutionary progress had often come only when organisms had discarded apparent advantages. “Instinct must give place to reason; brute-consciousness must develop into self-consciousness.” Ultimately, humans evolved from the anthropoids, a transition made possible by three new traits: “the habit of cooperation, the use of implements, and the knowledge of fire. Without all three of these no man-like creature could have survived” (Mather 1918b, 41–42). The emergence of our species had depended on social instincts, and “the experience of the past is the only key to unlock the future.” In order to take “the next great upward step in the progress of life,” the step up to “the Psychozoic era,” another term that Mather borrowed from Chamberlin (Chamberlin & Salisbury 1909, 942), we must develop “race-consciousness and love. The type of the new variety

of the human species was presented to us nineteen hundred years ago,” an unambiguous reference to Jesus (Mather 1918b, 43).

On the eve of World War Two, Mather was still saying similar things in an address he delivered at Crozer Theological Seminary in Upland, Pennsylvania (now subsumed into the Colgate Rochester Crozer Divinity School), on June 5, 1939, under the catchy title, “The Natural History of Righteousness.” Nodding in the direction of natural theology, he noted that scientific advances revealed “the fundamental unity of the universe,” and ultimately lead us to “discover some essential part of the underlying administrative reality.” Turning our attention specifically to the instinct for self-preservation in animals and humans, “From the point of view of natural history, righteousness is that conduct or behavior which is conducive to the maintenance of existence for the particular kind of creature” in question. There may be more to righteousness, but this is “the only part with which natural science can deal and at the least it is obviously an important part of the whole.” It is “worthy of the highest commendation” when individuals contribute to “the long-continuing existence of human beings.. .” How long might that turn out to be? Once again, I am struck by the magnitude of Mather’s optimism. Just as geology showed the vastness of Earth history, so “all available data” show that Earth as we know it will remain for “many millions of years,” so that “the time available for man in which to work out his destiny is practically limitless.” Granted, our ability to survive as a species in many different environments depends on certain key nonrenewable resources, such as petroleum, coal, and iron. Considering known reserves and population trends, Mather was convinced that “the data now available point unmistakably” to the following conclusion: “There is enough and to spare to provide every human being likely to appear on the face of the Earth with all that is required to make life comfortable, at least for several thousand years to come” (Mather 1939, 285–88). He elaborated on these themes, supported by quantitative data, in his book, *Enough and To Spare* (Mather 1944).

Ironically, Mather had written much more cautiously many years earlier, in a paper about climate change written long before most scientists were aware of it—although Chamberlin had been, and I think we can assume that Mather learned about it from him (Chamberlin 1906). Mather noted quite presciently, that “plans for racial progress [and] promotion of

economic welfare, all must be radically influenced by the knowledge— if we had it—that in ten thousand years the Barren Lands of the north could support a population of fifty to the square mile,” if the Earth grew increasingly warmer, or by the alternative possibility that the amount of arable land were halved, if the Earth grew colder and another glacial age came about. It all depended on the effects of burning coal in an industrial age (Mather 1918a, 219).

In the optimistic scenario he was presenting at Crozer, however, the crucial question was this: “how can two or three billion human beings be satisfactorily organized for the wise use and equitable distribution of resources which are abundant enough for all but are unevenly scattered over the face of the Earth?” The answer lay in “the attempt to live righteously, as righteousness is thus defined, puts one in harmony with the administration of the universe. For the very essence of administration is organization,” and as the latest step “in the history of creative evolution certain individuals have been organized into societies,” culminating in human society, “potentially the most glorious organization yet attempted.” Two very different forms of organization suggested themselves to Mather, a regimented society or a democratic society. If democracy is chosen—and we should keep in mind that Mather said this just three months before Hitler invaded Poland—then “the great mass of humankind must be trained for wise, self-determined cooperation. Precisely those qualities of mind and heart which have long been extolled in Christian doctrine must be developed to the fullest possible extent.” If so, “it becomes apparent that the ideal of Christian brotherhood is just as much an expression of the nature of the administration of the universe as is the law of gravitation” (Mather 1939, 288–90).

Given the emphasis that Mather placed on our ability to choose Christian brotherhood over social Darwinism, it becomes apparent that he entirely rejected a mechanistic view of humanity. Indeed, in the fall of 1929, he twice debated the atheist philosopher Bertrand Russell, on the question, “Is Man a Machine?” Russell said “yes,” while Mather argued that we are much more than mere machines (Bork 1994, 77). Human freedom in an orderly universe was central to Mather’s religion, and the development of personality in an impersonal universe was central to his understanding of natural theology. There was “no inherent reason why evolution should be progressive,” he told

readers of *The Christian Century*, the leading modernist magazine, in 1931, but “the fact is that it has been progressive. The emergence of creative personality is a triumph,” and “there are abundant reasons for concluding that Man is unique in time and space.” Although we were not *the* goal of nature, “the production of personality is one of the goals of nature. Further, I think we do well to estimate the personality-producing forces within the universe as the most valuable and respectable of all known cosmic forces” (Mather 1931a, 203–04). In a separate essay written around the same time, Mather all but divinized those forces. “The emergence of personality in the evolutionary process is an event of transcendent importance,” he wrote, and it could only have happened “in response to personality-producing forces in the universe. It is to these particular portions of cosmic energy that I would apply the term God.” Thus, for Mather, “God is the motive power which tends to produce a fine personality in a human being” (Mather 1931c, 9). The language here connects Mather yet again with modernist theological

views. A few years earlier, Shailer Mathews had told Chicago banker James

F. Porter, “As long as there are personalities resulting from evolution, there must be that within the process itself which is capable of producing it. It is quite impossible for any man to think that personality comes out from impersonality. The thorough-going mechanistic interpretation of evolution and nature itself simply denies the presence of anything approaching free will” (Mathews 1923). In a widely circulated pamphlet published around the same time, Mathews identified an immanent but “personal God” with personal “elements within the universe” that “account for” the “rational and purposeful activity which in the course of evolution results in personal life” (1922, 12–13).

MATHER’S MODERNIST GOD, THE SCOPES TRIAL, AND IRAS

When Mather’s former teacher Frank Carney quit his job at Denison University, Mather replaced him in the fall of 1918. It was a difficult time for any faculty member who wanted to teach evolution at Denison. A Jewish colleague, zoologist Sidney Isaac Kornhauser, was fired in April 1922—whether for being a Jew or for being an evolutionist, or for both, is not entirely clear—and Mather felt betrayed by Denison president

Clark W. Chamberlain (Bork 1994, 53–55). He spent the fall of 1923 as a visiting professor at Harvard, and the following year, he accepted a permanent appointment in Cambridge (USA). Before leaving Denison, however, he published at his own expense a detailed study guide, *Christian Fundamentals in Light of Modern Science*, for an adult class designed especially for Denison students at Granville Baptist Church, where he was on the Board of Trustees (Mather 1924). He later said that the title “was carefully worded to provoke the interest, if not the ire, of those sects in contemporary Protestantism who called themselves ‘Fundamentalists’ as opposed to ‘Modernists.’ The booklet was privately printed by the Granville Times Press and never had any widespread circulation, but I have always hoped it did some people some good” (1977, 172). A slim paperback with every other page left blank for taking notes, copies are very scarce today.

Two sections of this booklet interest us here, one on “Miracle” and the other on “Science and Religion”; in both, a strong modernist influence is evident. In the former section, Mather borrowed heavily from the book, *Christian Theology in Outline*, by William Adams Brown (1906), a modernist Presbyterian theologian at Union Theological Seminary (New York). Mather approached a miracle story in the Bible first by asking “the critical question, did the event actually happen as recorded?” Frequently, he thought it did not, offering the examples of Jonah’s fish and Joshua’s long day. If he judged an event authentic, the next step was to ask whether it was a genuine miracle that “cannot be explained by any known natural causes.” Mather thought it very likely that “the assured progress of

science will result ere long in the bringing under law of all the events once thought to be miracles” in this sense, but he offered no specific examples (Mather 1924, 61–62). It is unclear in which of the two categories Mather would have placed the resurrection of Jesus—an event that surely defies explanation in terms of known natural causes, if it actually happened—but I have seen nothing anywhere in his writings to indicate that he believed in the bodily resurrection at all; he seems to have thought of it only in spiritual terms, as an ongoing faith in the importance of Jesus’s teachings (Mather 1945 and 1946). Generally speaking, the modernist God was not in the miracle business, and Mather’s God does not seem to have been any different. Indeed, Mather adopted a standard modernist strategy,

when he said, following Brown,

Under the deistic view of God, “the religious value of an event is in direct proportion to its removal from the control of law or reason.” God has for a moment stepped down from His high plane to make an adjustment in the machinery. But under the theistic view of God, instead of seeing in miracle something contrary to nature, it is the revelation within nature of a higher law. Science recognizes no single miracle as miraculous from its standpoint, simply because all the world has become miraculous. Religion should welcome this conclusion, for the scientific insight that law is universal is matched by the higher insight that it is only in consciousness that we find law. Therefore, God is permanently present in His world. (Mather 1924, 62–63, with embedded quotation from Brown 1906)

The section on “Science and Religion,” a few pages later, opens with the functional definitions of science and religion from a joint statement of scientists and clergy, published by the *New York Times* in May 1923 and written by Caltech physicist Robert A. Millikan. The task of religion, according to Millikan, was “to develop the consciences, the ideals, and the aspirations of mankind” (Millikan 1923; cf. Davis 2009b, 261–62). Mather gave this statement “our heartiest approval and firm support,” not only for what it said but also for what it did *not* say—to wit, it made no reference to what Mather called “the outworn science, the archaic philosophy, the man-made creeds and dogmas of traditional Christianity” (1924, 79, 83). Religion for Mather was about who we are and what we do, not how we got here. As he wrote a few years later, “Science deals with the measurable transformations of matter and of energy,” but “the distinctive field of religion” is “the field of values” (1928b, 135–36, 139).

Once Mather had arrived at Harvard in 1924, he began teaching what became known famously as “the Mather class” at the Newton Centre Baptist Church, giving him a permanent place to bring modern academic knowledge into contact with Christian teachings—and a platform that brought thousands of people into contact with his very progressive vision of religion and science. Soon, it was attracting more than 100 people, and by 1930, the audience also included some members of the local

Congregational Church. Mather continued teaching it until 1955 (Bork 1994, 78–81).

In the summer of 1925, at the end of his first year at Harvard, the trial of John Scopes for teaching evolution in Dayton, Tennessee, put the 37-year-old Mather on the front pages of the newspapers. As he recalled many years later,

I knew that [Clarence] Darrow would demolish the case for literal infallibility of the Bible and the kind of religion that Bryan proclaimed, but who would be in Dayton to promote a religion that is respectable in the light of modern science? My immediate reaction was to write a letter to Roger Baldwin at the ACLU headquarters in New York. ... Its purpose was to suggest that at the forthcoming trial the ACLU include among its expert witnesses at least two or three men of science, in good standing in the community of scientists, as evidenced by their positions in academic or research institutions, who were also men of religion, as evidenced by their activities in a church belonging to one of the major denominations. Thus, there would be a demonstration of the fact, denied by Bryan, that one can believe “both in God and in evolution.” I don’t think I actually volunteered to be such a witness, but I was confident that Roger knew I filled those specifications. In any event, an invitation to join the defense in Dayton was soon forthcoming. (Mather 1977, 201)

Although Judge John Raulston would not allow him to read his statement about the age of the Earth to the jury (it was read into the record while the jury was not present), while in Dayton, he served as secretary of the Scopes Scholarship Fund, which collected some \$4,000 to enable the young teacher to undertake graduate work in geology at the University of Chicago. He also pretended to be William Jennings Bryan, helping Darrow prepare for his cross-examination of Bryan, and was surprised when he turned out to be wrong about most of what Bryan actually said on the stand. During Bryan’s testimony (which took place outside the courthouse owing to the overflow crowd), Mather sat on the ground near a group of locals and heard their disappointment when Bryan admitted that the “days” in Genesis might have been long periods of time. He remembered them vowing “to send a delegation to Mr. Bryan that evening to ask him to explain why he had let them down by deviating from the

strict literal belief in the Bible...” After the trial, Mather helped Darrow go through his mail, putting the most offensive letters in the rubbish (Mather 1977, 204–08). Later in that turbulent decade, Mather published *Science in Search of God*, a religious book of the Month Club selection for August 1928 that brought his modernist beliefs to a wide audience—including his views on “miracles and prayer in a law-abiding universe” (Mather 1928b, title of chapter 5). Similar ideas about the relationship between science and Christianity are found in a shirt-pocket-sized tract he wrote for the American Institute of Sacred Literature, an arm of the University of Chicago Divinity School that reached thousands of Protestant ministers in the United States and Canada. Entitled *The Religion of a Geologist*, it was the last of a series of 10 pamphlets on “Science and Religion” that were very widely distributed to clergy, scientists (especially elite scientists), and lay people in the years surrounding the *Scopes* trial (Davis 2008; Mather 1931b). Here, Mather offered tens of thousands of readers a God who does not perform miracles, cannot answer prayers without using human agents, and does not provide a strong hope of personal immortality.

After World War Two, Mather served as President of the American Association for the Advancement of Science in 1951 and President of the American Academy of Arts and Sciences from 1957 to 1961—positions that only increased his visibility and influence among scientifically educated Americans. Mather’s views on science and religion were very widely known, but they clearly posed no barriers then to holding high offices such as these. In fact, between 1925 (the year of the *Scopes* trial) and 1960 (about when evolution regained a high profile in high school biology courses), numerous presidents of the American Association for the Advancement of Science (AAAS) were active members of Christian churches (the precise number is not known to me), and some of the most accomplished were also markedly liberal theologically; physicists Robert Millikan and Arthur Compton, both Nobel Laureates, would certainly be in this group. According to a study of “scientific eminence and church membership” published in 1931, eminent scientists were far more likely to be Unitarians, Congregationalists, Quakers, or Universalists, while Baptists, Lutherans, and Roman Catholics were at the bottom—if the relative sizes of each religious group were taken into consideration. The authors of the study concluded that members of the former denominations had

“relative freedom in interpreting biblical pronouncements and flexibility in reacting to questions such as fundamentalism, the Virgin Birth, etc.” (Lehman and Witty 1931, 548). Even though Mather was a lifelong Baptist, his religious attitude fit this description to a tee.

No less significant was the role Mather played in the early years of the IRAS. IRAS, the organization that later published the journal *Zygon*, was created in 1954 by two of Mather’s best friends, the Unitarian scholar Ralph Wendell Burhoe and Harvard astronomer Harlow Shapley. Shapley and Burhoe held conceptions of God that were not much different from Mather’s “administrator.” Burhoe, who knew Mather from his job as the first executive officer of the American Academy of Arts and Sciences from 1947 to 1964, shared Mather’s views that evolution involves more than competition and that altruism is the crucial factor for the survival of humanity (Gilbert 1997, 273–95; Hefner 1997; Peters 1998). Mather was not a founder of IRAS himself, but he was a regular speaker at their Star Island summer conferences and also contributed articles to early issues of *Zygon* (Mather 1968a, 1968b, 1969a, 1969b, 1969c).

In this respect, Mather was a crucial figure in the modern history of religion and science: he functioned as a personal and intellectual bridge between the Protestant modernists of the early twentieth century and their spiritual descendants of the 1950s and 1960s—the same group of people who went on to create the modern “dialogue” of science and religion. Some secular scientists also respected him and appreciated what he was trying to do. No one did so more than the late Stephen Jay Gould, who (like Mather) also emphasized cooperation rather than competition in evolution. I sometimes wonder whether Gould’s “NOMA” view of science and religion, in which science respects the kind of religion that disavows miracles and defines its arena as the realm of values, reflects an influence from Mather. In any event, Gould once said that Mather was “perhaps the finest man I have ever known” (1983, 273) and described him as “one of those rare men ‘of enlarged curiosity’ (a description applied by Josiah Wedgewood to Charles Darwin) who grace our planet from time to time and who try to integrate the many compartments of our too-specialized world into a coherent vision of life worth living” (1986, x). In short, Mather was one of the pivotal figures in the history of religion and science in modern America.

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