

# George Frederick Wright and the Harmony of Science and Revelation

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## Chapter I Science and Revelation

Surely the depth of the problem emerges only when the man of science and the man of faith are the same man, so that the two who have to walk together are but two elements in the total outlook of a single mind. Surely also that is the normal case.

—John Baillie<sup>1</sup>

George Frederick Wright was an Oberlin-educated theologian and self-taught geologist who lived from 1838 to 1921. He was among the most influential Christian interpreters of Darwinism as Americans began to debate the theory in the 1870s and 1880s. In his writings, Wright illustrated a method for reconciling evolutionary theory with Christianity. Wright himself was a Calvinist, and he argued that his own conservative theological tradition shared important characteristics with Darwinism.

At the turn of the century, however, Wright began to criticize both Darwinism in particular and evolutionary thought generally. A decade later, he was among the authors of a series of pamphlets entitled *The Fundamentals*, and thus a standard bearer for the conservative wing of American Protestantism that soon developed into the fundamentalist movement. Furthermore, one of the three articles he contributed to *The Fundamentals*, “The Passing of Evolution,” was a forceful attack on evolutionary thought.

Wright’s ideas about Darwinism and Christianity changed dramatically over the course of his life not only because he became more concerned about the place of “orthodox” Protestantism in modern America—although he certainly did—but also because evolutionary and theological thought themselves evolved. In 1880 Wright perceived a number of similarities between the Darwinian and Calvinist orthodoxies. By 1910 the roles of Darwinism in evolutionary theory and Calvinism in Protestant theology had diminished, and the common ground which Wright had staked out as his own field of study was disappearing.

This ground was seldom occupied by many others. Throughout his career, Wright worked as both a theologian and a scientist, occupying a place rare in American history. There was a long tradition of scientist-priests in England, where ordination in the Anglican Church was a virtual prerequisite for professors well into the nineteenth century.<sup>2</sup> In the United States, however, few ministers ever engaged in purely scientific work. Because he was the rare individual aware of developments in both disciplines, Wright’s role was that of a scientific ambassador to theology.

The idea that someone could be wholly devoted to both science and religion—as Wright was for much, though not all, of his life—poses a challenge to the model of interaction between the two magisteria that has dominated American discourse on the subject for over a century. This is the so-called “conflict thesis” that found its most influential expressions in two late nineteenth century histories.

In 1874, the chemist John William Draper (1811–1882), a professor at the University of the City of New York, published the *History of the Conflict between Religion and Science*, which focused its critique on Catholicism. Draper argued that “faith is in its nature unchangeable,

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1. Baillie, *Natural Science and the Spiritual Life* (1952), 6.

2. Ruse, *The Darwinian Revolution*, 20.

stationary; Science is in its nature progressive; and eventually a divergence between them, impossible to conceal, must take place.” Twenty-two years later Andrew Dickson White (1832–1918), a historian and the first president of Cornell University, published the more scholarly but no less provocatively titled *History of the Warfare of Science with Theology in Christendom*. The conflict White portrayed was narrower than Draper’s, “a struggle between Science and Dogmatic Theology” rather than religion. Nonetheless, his emphasis was on conflict, and White like Draper led many to think of science and religion in oppositional terms. Both books were widely read, and together they made a lasting impact on the American intellect.<sup>3</sup>

The conflict thesis may accurately describe some specific encounters between scientific and theological ideas, but it is an insufficient description. Since neither science nor religion is a monolithic or homogenous institution, the relationship between the two is historically contingent. Scientific and religious ideas sometimes conflict, but this phenomenon is not consistent from one time, place, and subject to another. In some situations, religious and metaphysical ideas have even contributed to the development of successful scientific theories. In the seventeenth century, for example, the astronomer Johannes Kepler, posited that planetary orbits were elliptical as part of the project of explaining the mystical relationship between music and astronomy.<sup>4</sup>

In a 1961 article, Walter Cannon argued that many of the elements of Darwinism were similarly peculiar to the Anglican theological and intellectual environment of Charles Darwin (1809–1882). Other scientists worked from a variety of metaphysical assumptions: Edward Forbes (1815–1854) from Platonism, Charles Lyell (1797–1875) from a theory of stasis, Jean-Baptiste Lamarck (1744–1829) from the Great Chain of Being. Each failed to develop a plausible account of organic diversity.<sup>5</sup>

Darwin was inspired by Lyell’s science, but he was equally inspired by the theology that surrounded him. Central to his scientific milieu were the ideas of the Anglican priests William Paley (1743–1805) and Thomas Malthus (1766–1834). From Paley’s *Natural Theology* Darwin adopted ideas about design in nature and adaptive purpose, as well as an empiricist rejection of the “vital forces” central to other evolutionary theories.<sup>6</sup> Even the historical nature of evolutionary theory was more consonant with a theology centered around the stories of the Bible than with, for example, the Platonic belief in eternal forms.<sup>7</sup> Although Darwin’s conclusions differed from those of his orthodox muses, the character of his theory was that of Anglican theology.

Cannon’s analysis of Darwinism focused on how ideas generated by individual theologians affected Charles Darwin. This contrasts with the work of Draper and White, who focused on the effects of religious institutions on science. The Scottish theologian John Baillie, quoted in the epigraph above, argued that relationships between science and religion are not fundamentally

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3. Draper, *History of the Conflict between Religion and Science*, vi; White, *A History of the Warfare of Science with Theology in Christendom*, 1:ix; Moore, *The Post-Darwinian Controversies*, 20–40.

4. Kepler, *The Harmony of the World*, 1.

5. Cannon, “The Bases of Darwin’s Achievement,” 111–122. Cannon noted that “Lamarck is remembered in connection with the inheritance of acquired characteristics not because this idea is the basis of his evolutionary system but because it is the only idea of the system that was even plausible thirty years after its publication” (p. 118). Lamarck’s conception of evolutionary history was one of unilinear development culminating in humans.

6. Moore, *The Post-Darwinian Controversies*, 308–310.

7. Cannon, “The Bases of Darwin’s Achievement,” 125.

between ideas in society, nor between scientists and theologians. “Science and faith,” he wrote, “represent not so much the outlooks of two different kinds of men as two elements that are together present, though in varying degrees, in the minds of most of us.”<sup>8</sup> This thesis, then, is a study of science and theology as two elements in the mind of George Frederick Wright.

Before delving into how Wright developed his ideas on science and theology, it is worth examining his role in two more ambitious histories of evolutionism and creationism. James Moore included Wright among the twenty-eight Christian evolutionists and antievolutionists he studied in *The Post-Darwinian Controversies*, an impressive 1979 survey of nineteenth century Protestant reactions to Darwinism. Moore tried to break the monopoly of the warfare model on Darwinian historiography by examining not only Christian anti-Darwinians, but also Christian Darwinians and Darwinists. He distinguished Darwinism and Darwinisticism by their faithfulness to Darwinian orthodoxy: Darwinians, Christian or not, believed more or less the same things about evolution as Darwin did, while Darwinists “either misunderstood, misinterpreted, or modified Darwin’s theory.”<sup>9</sup>

Wright was among only four Christian Darwinians described in Moore’s book.<sup>10</sup> Surprisingly, Moore concluded that while orthodox Protestants like Wright sometimes adopted orthodox Darwinism, liberal Protestants adopted Darwinisticism instead. He, like Wright, believed that there were elements of nineteenth century Darwinism which were particularly compatible with the conservative Protestant worldview. As one demonstration of this compatibility, Moore carefully analyzed Wright’s Christian Darwinism.<sup>11</sup>

Wright’s later thought fell outside the focus of Moore’s book on the years from 1870 to 1900, but he examined it nonetheless. His treatment of Wright’s final writings was unsympathetic and somewhat bewildering. On the one hand, Moore read “The Passing of Evolution” as “only a refutation of those atheistic and agnostic versions of evolutionary speculation which exclude teleology *a priori*” and explicitly denied that the article was anti-Darwinian. On the other, he concluded that in writing for *The Fundamentals* Wright “was somewhat exploited” and “placed his pen at the disposal of lesser men.” Although Moore considered Wright’s final essay on evolution and Christianity consistent with his earlier reconciliationism, he nonetheless termed it “an ignominious end.”<sup>12</sup>

In contrast, Ronald Numbers, America’s most prominent historian of creationism, did conclude that Wright’s final writings were antievolutionist. In a 1988 article which he later incorporated into his book *The Creationists*, Numbers placed Wright’s transition from innovator to dogmatist in the 1880s and 1890s, describing a number of experiences in his life that alienated him from both liberal Christianity and the scientific community. Wright’s transformation, Numbers argued, was a dramatic one downplayed by previous historians. Even though he counted Wright’s biographer William James Morison among these historians, it was in Morison’s words that Numbers found a compelling and sympathetic summary of Wright’s

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8. Baillie, *Natural Science and the Spiritual Life*, 6–9. See also Moore, *The Post-Darwinian Controversies*, 82.

9. Moore, *The Post-Darwinian Controversies*, 116–117.

10. The others were the Scottish theologian James Iverach, the English theologian Aubrey Lackington Moore, and the American botanist Asa Gray. Of these men, Wright interacted only with Gray, who will play a role in chapter two of this work.

11. Moore, *The Post-Darwinian Controversies*, 303, 280–298.

12. *Ibid.*, 72, 296.

metamorphosis. “As a young naturalist-minister,” Morison wrote, “Wright had sought to find within the Bible that which would conform to the dictates of modern science. That was the source of his Christian Darwinism. As a theologian-geologist in the final decades of a long life, he sought to find within science that which would conform to his faith in biblical dogma. That was the source of his Christian fundamentalism.” Numbers concluded that Wright had turned to an increasingly literalist interpretation of the Bible in opposition to the development of biblical criticism, which he believed threatened to undermine Christianity.<sup>13</sup>

Wright’s concern for the future of Christianity was rooted in his conservative theology. Throughout his life, Wright’s theological context was that of Calvinism first and Congregationalism second. It was defined by a tension within American Protestantism between traditional Calvinism and a new evangelical movement that began around 1800. This tension led to a schism—formally recognized in Presbyterianism, but less pronounced in Wright’s Congregationalism—between Old School and New School theology.<sup>14</sup>

Throughout the late eighteenth century, Congregationalists and Presbyterians had enjoyed a close relationship. In 1801, the two denominations agreed to a Plan of Union, allowing individual congregations to choose their ministers and governance practices from those of either denomination. Out of this alliance emerged New School evangelicalism, a movement characterized not only by the revivalist impulse of the Second Great Awakening but by a radical moralism that fueled temperance and abolitionist efforts.<sup>15</sup>

The New School was also characterized by adjustments to orthodox Calvinism which many Old School theologians regarded as heretical. Central among traditional Calvinist doctrines was “total depravity”: adherents believed that as a result of the fall of Adam, sinfulness extended throughout the entire being of every human. Each human was a terrible sinner deserving of punishment, and God’s grace lay in his decision to save some through self-sacrifice in his incarnation as Jesus. Humanity depended totally on God, because each individual had an inclination to turn from him so strong that he or she could develop the faith necessary for salvation only with his aid. This Calvinism was intensely theocentric: humans were supposed to live only to glorify God, and their selfishness in living for themselves instead was a manifestation of their incurably sinful nature.<sup>16</sup>

Calvinism was challenged by a greater trust in human reason that developed during the Enlightenment, and by an accompanying belief that a just God would act in ways that seem just to humans. The doctrine of total depravity was apparently incompatible with this faith in humanity. The belief that humans were virtuous enough to earn salvation independently became the basis for doctrines such as deism and Unitarianism.<sup>17</sup>

New School Calvinism was less radical. It was formulated in part to reconcile total depravity with the practice of evangelism. If people were unable to help themselves toward salvation, then an evangelist would be powerless to save them. In the New School, then, sin was conceptualized as a condition rather than an attribute of humanity. In 1880 Wright himself described this

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13. Numbers, “George Frederick Wright,” 631–637, 643–645; Morison, “George Frederick Wright,” 389.

14. Marsden, *The Evangelical Mind*, 60–66.

15. *Ibid.*, 11, 20.

16. Hirrel, *Children of Wrath*, 10–12.

17. *Ibid.*, 15–16, 23

doctrine, writing that “the New School party do not maintain that sin itself, or sinful qualities, are transmitted, but only that depraved conditions are transmitted to such extent that sin does infallibly occur in the soul which is the subject of these conditions.”<sup>18</sup> Old School Calvinists believed that humans were necessarily sinners, as if by definition; New School Calvinists believed that sin was inevitable but not logically necessary. Although this innovation may seem minute today, it had important ramifications for evangelism.

A related New School revision was the rationalist claim that people were capable of understanding and obeying divine moral laws. They were burdened with a bias against moral behavior, but they could nonetheless learn morality through reason. Adherents of the New School believed not only that morality and theology consisted of objective truths, but that these truths would triumph over unbelief if only properly demonstrated. The New School theology was a heterodox defense of orthodoxy that preserved most of traditional Calvinism intact. It used the same terminology as the Old School, but sometimes changed the meanings: depravity, for instance, now carried the connotation of immorality more than that of impiety.<sup>19</sup>

In an age when academic and religious institutions were often one and the same, the innovations of New School Calvinism developed in colleges and universities as much as in churches. Many can be attributed to Nathaniel William Taylor (1786–1858) and other members of the Yale College faculty, as well as to the Yale alumnus and evangelist Lyman Beecher (1775–1863).<sup>20</sup> The New School was also influential at Andover Theological Seminar in Massachusetts, which like Yale was a Congregationalist institution.

It was into this context, in 1838, that Wright was born in Whitehall, New York, between the searing revivalism of western New York’s “burned-over district” and the orthodox piety of New England.<sup>21</sup> The Wright family was decidedly Congregationalist, but their small church was often without a preacher. When Wright decided to assent to the creed of his church at the age of twelve, the ceremony was officiated by a Presbyterian minister. George’s father Walter was a New School partisan and abolitionist, and the family read newspapers like the *Oberlin Evangelist* and *The Emancipator*.<sup>22</sup>

The Wrights were particularly sympathetic to the theology of the New York revivalist Charles Grandison Finney (1792–1875), who became a professor at Ohio’s Oberlin Collegiate Institute in 1835 and its president in 1850. Finney had practiced law until he experienced a conversion that led him to become a minister and develop an original evangelical style characterized by persuasion through emotional pressure and logical argument. Finney “always aimed in his preaching to convince the reason,” recalled Wright decades later, “so that his appeals could not be resisted except by willful disobedience.”<sup>23</sup>

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18. Marsden, *The Evangelical Mind*, 46–47; Wright, “Some Analogies between Calvinism and Darwinism,” 58.

19. Hirrel, *Children of Wrath*, 28–37.

20. *Ibid.*, 26.

21. In his book *The Burned-over District*, Whitney Cross defined the region as “that portion of New York lying west of the Catskill and Adirondack Mountains” (p. 4). Charles Finney had used the term similarly. Whitehall is further east, on the Vermont border.

22. Wright, *Story of My Life and Work*, 30–31, 36.

23. Fletcher, *A History of Oberlin College*, 1:175–178, 2:703; Hirrel, *Children of Wrath*, 45–47; Wright, *Story of My Life and Work*, 55–56.

As a result of Finney's focus on persuasion and conversion, natural theology held an important role in Oberlin theology. Although the evangelist's ultimate goal was for converts to have pure faith in the Gospel, arguments for the truth of Christianity from observable phenomena fostered a limited belief from which this could develop. Finney believed that the benevolence and omniscience of God were perceivable in the workings of natural systems which he had designed. God's purpose, Finney claimed, was "the good of being in general," and even those aspects of nature which seem harmful actually served this end. In the case of animal predation, for example, Finney concluded that "in this way a greater amount of animal life, and consequently of bestial happiness, can be secured that would be otherwise possible."<sup>24</sup>

More conservative Calvinists who trusted solely in the Holy Spirit to persuade converts objected to Finney's emphasis on persuasion, which they argued made the skill of the evangelist himself responsible for the salvation of souls. Finney was often identified as a particularly radical figure—even Beecher sometimes considered him a heretic—but Wright regarded him as a moderate leader of the New School. This was perhaps because Wright, like each of his siblings, attended Oberlin College rather than Yale or Andover. When Wright himself arrived at Oberlin in 1855 Finney had already retired from teaching, but Wright was deeply inspired by his sermons, later writing that "his preaching never failed to pierce my heart to the very center."<sup>25</sup>

Wright became Finney's first biographer and a prominent apologist for his theology. In 1876 he published an article in which he defended Finney from an attack by Charles Hodge (1797–1878), a prominent Old School theologian and Princeton Theological Seminary professor.<sup>26</sup> He addressed specifically the concern that Finney excluded the divine from the process of salvation, writing that "no man emphasizes the dependence upon the Holy Spirit in the work of conversion more." Wright consistently argued that the differences between Finney's theology and orthodoxy were small, and that Finney's opponents had generally misunderstood him. Because he believed that Finney had been less innovative than most thought, Wright's rhetoric was less partisan than that of his contemporaries. Despite his admiration for Finney, he never took a Finneyite stance against an orthodox alternative, but merely argued that Finney's positions were theologically legitimate. Even in his defense against Hodge, Wright claimed that he was not defending Finney's theology itself, but only correcting Hodge's misrepresentations.<sup>27</sup>

Finney was not the only professor at Oberlin to influence the young Wright. In his autobiography Wright described several, paying particular attention to James Harris Fairchild (1817–1902), who taught throughout the curriculum and would later become an important friend and supporter. Although his education at Oberlin focused on languages, mathematics, philosophy and the humanities, Wright had two professors who taught natural science: James Dascomb (1808–1880) was Professor of Chemistry, Botany, and Physiology, and George N. Allen (1812–1877) of Sacred Music, Geology, and Natural History. Wright described his laboratory education as "adequate," but curiously wrote nothing in his autobiography about Allen as a geologist

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24. McGiffert, "Christian Darwinism," 82–83, 85; Finney, *Skeletons of a Course of Theological Lectures*, 81, quoted in Wright, *Charles Grandison Finney*, 198–199.

25. Hirrel, *Children of Wrath*, 46–47; Wright, *Story of My Life and Work*, 42–43, 54–55.

26. Noll and Livingstone, introduction to Hodge, *What Is Darwinism?*, 17; Hirrel, *Children of Wrath*, 43.

27. Wright, "Dr. Hodge's Misrepresentations of President Finney's System of Theology," 383, 388.

except that “his love of natural history [was] ardent.” Wright graduated from college in 1859 and from the attached Oberlin Theological Seminary in 1862.<sup>28</sup>

During his college years, Wright twice brushed against the developments of the Civil War. The first time involved the Oberlin-Wellington Rescue of 1858. Two slave-catchers came to Oberlin and kidnapped an escaped slave named John Price, taking him to a railroad station in the nearby town of Wellington. When a group of Oberlinians hurried to rescue Price, Wright was at first among them, but gave up his place on a wagon to a stronger student. In 1861, while Wright was a seminarian, he enlisted in the Army along with many other Oberlin students. The company captain was his roommate Giles Waldo Shurtleff (1831–1904), who eventually became a brigadier general. Before seeing battle or even receiving his rifle, however, Wright contracted pneumonia and returned to Oberlin.<sup>29</sup>

Wright’s education at Oberlin was in New School Congregationalism, but his connection with New England traditionalism was also strong. Oberlin was founded in Ohio to aid western missionary efforts, but Wright travelled east after graduating from its seminary. The first church in which he served as minister was in Bakersfield, Vermont.<sup>30</sup>

During his ten years in Bakersfield, Wright continued his education. Drawing on Wright’s autobiography, James Moore emphasized the uniqueness of his scholarly accomplishments. “Wright was probably the only minister on either side of the Atlantic,” he wrote, “who, while fulfilling his clerical duties, read the Bible through in the original languages, translated Kant’s *Critique of Pure Reason*, studied the philosophical works of Mill, Hamilton, and Noah Porter, and read appreciatively the *Origin of Species* and Lyell’s *Antiquity of Man*. And doubtless he was the only minister anywhere who found the time, while engaged in such pursuits, to become an authority on the glacial geology of the region.” Wright attributed his interest in geology to his low salary. “I had to make a virtue of necessity,” he later wrote, “and dispense with expensive vacations, and get my recreation in studying the topography and geology of the interesting region in the vicinity.”<sup>31</sup>

In 1871 Wright published his first article, “The Ground of Confidence in Inductive Reasoning,” in the *New Englander*, a Congregationalist journal. He incorporated his interests in religion and natural history into the article, but focused on philosophy, arguing that earlier philosophers had been wrong in claiming that inductive logic—reasoning from instances to general laws—works because of the uniformity of nature. He referred explicitly to Darwinism, writing that “both the Darwinians and their opponents admit that nature is not uniform in her products, but works on a plan of development.”<sup>32</sup>

Wright then provided a new justification for induction. In doing so, he focused on final causes, or purposes, and argued that three metaphysical assumptions underlie inductive logic.

- 1st. The ‘good of being’ is the absolute final cause of all things....
- 2nd. God’s benevolence and wisdom are the only absolute uniformities, except time and space....

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28. Wright, *Story of My Life and Work*, 60–61, 65–67, 44.

29. *Ibid.*, 90–91, 96–100.

30. *Ibid.*, 107.

31. Moore, *The Post-Darwinian Controversies*, 281; Wright, *Story of My Life and Work*, 115–116, 123.

32. Wright, “The Ground of Confidence in Inductive Reasoning,” 606.

3d. We assume that the universe is a “Solidarity”—that nothing is made in vain—that every part is a complement to every other part.<sup>33</sup>

Wright’s natural theology was similar not only to Finney’s, but also to that of the German philosopher and mathematician Gottfried Leibniz, who famously concluded in his 1709 *Theodicy* that this must be the best of all possible worlds. Wright too believed that the universe was optimized, but added that this general design was beyond the understanding of humans. People tend to associate objects with a single purpose, wrote Wright, but “the real final cause of any contrivance in nature is the sum of all the uses to which it is ever to be put.”<sup>34</sup>

Wright also believed that much was adapted to the moral rather than the material needs of humanity. Even an adaptation as mundane as human teeth could have moral purposes; indeed, Wright deemed it uncertain “whether they were chiefly designed to assist the stomach in digestion, or for purposes of moral discipline through their liability to disease and decay.”<sup>35</sup> It was in this spirit of moral adaptation that Wright added a fourth assumption: God will provide humans with opportunities to fulfill their needs for both uniformity and inconsistency in nature. Since we need consistency in order to develop morality and uncertainty in order to develop judgment, Wright reasoned that a wise and loving God would supply both.<sup>36</sup>

Wright’s theory made induction “only another word for *interpretation*—interpretation of the ideas of God as they are revealed in the whole realm of creation.” It made the “good of being” the final cause of everything, and all other causes proximate, the realm of science rather than theology. This in turn made the Darwinian controversy something “to fight out on purely scientific grounds,” while also indicating a point of similarity between science and religion. “The evidences of Christianity are inductive like those of science,” Wright concluded.<sup>37</sup>

Such common ground between science and Christian theology became central to Wright’s thought. When he criticized Draper’s *History of the Conflict between Religion and Science* in 1876, he argued that “modern science has found its true development in the soil prepared by the Christian church... and the majority of its ablest investigators have been believers in the infallibility of the Bible.” Wright believed that historically natural science had been a product of Christian thought, and that this indicated an ultimate compatibility between the two domains. Wright also believed that religion had positive social consequences: he disagreed with Draper’s “overweening confidence” in science as a source of progress, writing that the “present degree of prosperity” was due also to “a well-regulated belief in the supernatural.”<sup>38</sup>

In 1878 Wright published his most direct essay on science and religion, entitled “The Proper Attitude of Religious Teachers towards Scientific Experts,” in *The New Englander*. He argued

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33. *Ibid.*, 609.

34. Murray, “Leibniz on the Problem of Evil”; Wright, “The Ground of Confidence in Inductive Reasoning,” 607.

35. Wright, *Studies in Science and Religion*, 13. This phrase, from a revised version of Wright’s essay on induction, was better written than a parallel phrase in the original (p. 608). In his *Natural Theology*, Paley had found teeth a more straightforward example of divine benevolence. “Evil, no doubt, exists,” he wrote, “but is never, that we can perceive, the *object* of contrivance. Teeth are contrived to eat, not to ache; their aching now and then is incidental to the contrivance, perhaps inseparable from it: or even, if you will, let it be called a defect in the contrivance; but it is not the object of it.” (p. 401.) See also McGiffert, “Christian Darwinism,” 187.

36. Wright, “The Ground of Confidence in Inductive Reasoning,” 611–612.

37. *Ibid.*, 614–615.

38. Wright, Review of *History of the Conflict between Religion and Science*, 585.

that science and theology each have a proper domain, but that the boundary between them is legitimately contested. Natural science deals with the physical and theology with the mental, he wrote, but “these boundaries between mental and physical science are not yet accurately marked off.”<sup>39</sup> Finding the border between mind and matter was as great a task for the intellectual as developing the science of either.

Wright cautioned his fellow ministers not to engage in scientific debates, both because the expertise of scientists was beyond their grasp and because the reputation of the clergy—and thus of Christianity—could be damaged if churches took the losing side of a scientific conflict. “No one is justified,” he wrote, “in hazarding the religious interests of mankind in doubtful speculations upon obscure questions.” Furthermore, the true threat to faith came not from science but from secular philosophy. “The worst foes of Christianity have always been metaphysicians,” wrote Wright. “Hume is infinitely more dangerous than Darwin.”<sup>40</sup>

Wright believed that science and theology dealt respectively with the non-overlapping domains of physical and mental phenomena. Philosophy, however, lay with theology in the mental domain, and could cause more mischief for theologians. The comparison of David Hume and Charles Darwin was apt: Darwin may have challenged the idea of design in nature with an evolutionary alternative to special creation, but Hume endeavored to undermine natural theology entirely.<sup>41</sup> Although in his writing Wright concerned himself more with the statements of scientists than with those of philosophers, he continued to believe throughout his life that the latter represented the greater threat.

The reception of these early papers was generally positive. His paper on induction was approved for publication by Yale president Noah Porter (1811–1892), upon whose work it built.<sup>42</sup> When he read his article on ministers and scientific experts at a convention of ministers, the audience greeted it with applause and approval.<sup>43</sup> Also among Wright’s admirers was his Baptist counterpart Lewis E. Hicks (1839–1922), a minister and professor of geology at Denison University in Ohio, who wrote to “commend without reserve” the same article.<sup>44</sup> The sentiment that ministers should not risk the reputation of the church on scientific questions evidently cut across denominational boundaries, as did the negotiating role of the minister-geologist.

Wright’s role was nonetheless an unusual one in American history. As his views on science and religion continued to take shape during the 1870s and 1880s, the influence of Charles Finney and New School Calvinism would remain. His concern that theologians might damage the reputation of the church by taking positions on scientific questions also had a substantial effect on Wright’s work. In an analogue to his strangely ambivalent treatment of Finneyism, Wright would continue to claim that he was not a Darwinian even when his arguments formed a compelling apologetic for Darwinism.

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39. Wright, “The Proper Attitude of Religious Teachers towards Scientific Experts,” 785–786. Wright wrote the article in part as a veiled attack upon Joseph Cook (1838–1901), a preacher whom he and Gray debated in print (McGiffert, “Christian Darwinism,” 342).

40. *Ibid.*, 777, 786.

41. Brooke, “Natural Theology,” 168–169.

42. Wright, *Story of My Life and Work*, 116.

43. Wright to Gray, 8 April 1878, Historic Letters, Gray Herbarium Archives.

44. Hicks to Wright, 18 November 1878, Wright Papers. On Hicks, see McGiffert, “Christian Darwinism,” 131, 244 n. 2, 247 n. 1.

## Chapter II

### The Calvinistic Interpretation of Nature

If the men of science object to the petty criticisms, and narrow judgments, of those who have only a superficial acquaintance with the problems presented in nature; so may students of theology complain, if the system of thought to which the great body of Christendom has given its assent is set aside without being adequately understood. “We be brethren,” all of us, gathering pebbles along the shore of the same illimitable ocean.

—George Frederick Wright<sup>1</sup>

In the summer of 1872 Wright moved from Bakersfield to Andover, Massachusetts, where he became the pastor of the Free Church. The church was affiliated with both New School theology and Congregationalism, and most of its earlier ministers had also studied in Oberlin. Wright quickly became part of the intellectual communities of the Andover Theological Seminary and nearby Boston. He later attributed the direction of his career to his years in Andover, where, he wrote, he “was at once plunged into the midst of theological and scientific discussions that have given character to all my subsequent labors and investigations.”<sup>2</sup>

Wright’s relationship with Andover actually began a few months before his move, when Professor Edwards Amasa Park (1808–1900) of the seminary there asked him to review scientific books for the *Bibliotheca Sacra*, a conservative Congregationalist theological journal which he edited.<sup>3</sup> Wright published a review of books on prehistoric archaeology in Park’s journal in 1873 and an article on infant baptism in 1874. The journal soon became his outlet for an ambitious series of articles on Christianity and Darwinism.

Wright’s articles were influenced greatly by his friendship with the eminent Harvard botanist Asa Gray (1810–1888), a devout Presbyterian. Gray was also a longtime friend and collaborator of Charles Darwin, whom he first met while visiting London in 1839. In 1857 Gray became only the third naturalist with whom Darwin shared an outline of his ideas. When Alfred Russell Wallace (1823–1913) independently discovered natural selection in 1858, Darwin’s letter to Gray was among the evidence used to demonstrate his priority.<sup>4</sup>

Although Darwin published the *Origin of Species* in 1859, it was not until 1874 that controversy over Darwinism became truly heated among American Protestants. In the 1860s the attention of theologians had been consumed by the moral struggle of the Civil War and the scientific response to Darwinism had been mixed. The Swiss-American Harvard geologist Louis Agassiz (1807–1873), America’s most respected scientist, rejected Darwinism in favor of progressive creationism.<sup>5</sup> Agassiz was a catastrophist who believed that God periodically repopulated the earth with new organisms based on ideal designs. He denied that even the members of a single species shared a common ancestor, positioning his theory far not only from

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1. Wright, “Concerning the True Doctrine of Final Cause or Design in Nature” (1877), 385.

2. Morison, “George Frederick Wright,” 47–48; Wright, *Story of My Life and Work*, 128.

3. Morison, “George Frederick Wright,” 52; Wright, *Story of My Life and Work*, 136–137.

4. Dupree, *Asa Gray*, 119–120, 81–82; Desmond and Moore, *Darwin*, 466–470. Although he attended a Congregationalist church in Cambridge, Gray remained a Presbyterian (Dupree, *Asa Gray*, 221).

5. McGiffert, “Christian Darwinism,” 107–109; Ruse, *The Darwinian Revolution*, 97; Dupree, *Asa Gray*, 224.

evolutionism but from the account of creation in Genesis.<sup>6</sup> Nonetheless, Agassiz's antievolutionism helped to keep the debate within the domain of science during the 1860s.

American scientists generally sided with either Darwin or Agassiz on the question of origins. Agassiz died in 1873, though, and no scientist of similar stature rose as his successor. "There would still be debate about the processes of evolution," wrote historian Edward J. Pfeifer, "but evolution had clearly superseded special creation in American scientific thought." The next year Charles Hodge published the polemical *What Is Darwinism?* which famously concluded that it was a form of atheism and signaled the beginning of a theologically conservative response. Wright entered the Darwinian controversy at a critical moment.<sup>7</sup>

Gray, however, had already published a number of unsigned articles on Darwinism in the *American Journal of Science*, *Atlantic Monthly*, and *The Nation*, beginning with a review of the *Origin of Species* in 1860. Wright read them carefully and later wrote that their anonymous author had been "guiding my own thoughts and convictions concerning the readjustments in the arguments for natural theology and made necessary by recent scientific discoveries." In 1874 Gray anonymously reviewed *What Is Darwinism?* in *The Nation*. Wright wrote a letter to the reviewer, Gray replied, and the two began a correspondence.<sup>8</sup>

In the summer of 1875 Wright wrote a letter to Gray that revealed much about his thought at the time. He was concerned that the loudest voices in the Darwinian controversy were those of anti-Christian evolutionists and antievolutionist Christians, and that both sides depicted Christianity and Darwinism as incompatible. "The infidel class of Darwinian expositors have had the ear of the public entirely too much, and have needlessly added to the alarm of orthodox people," he wrote. "And such opponents as Hodge and Dawson have made matters still worse."<sup>9</sup>

Wright's inclusion of the distinguished Canadian geologist John William Dawson (1820–1899) as a dangerous opponent suggests that the conflict into which he was entering was not simply between scientists on the one hand and theologians on the other. Although Dawson was a devout Presbyterian who had considered becoming a minister and thought that Darwinism was "practically atheistic," his opposition stemmed as much from his philosophy as his theology. Darwinism, he said, was "*not a result of scientific induction, but a mere hypothesis*" based on analogies rather than proofs. To Wright the emphasis on hypothesis was precisely the attraction of Darwin's logic, but Dawson saw it as speculative and unscientific. Given the nature of Darwinism, Dawson saw no reason to compromise a literal reading of the Bible when reconciling science and religion.<sup>10</sup>

In his letter, Wright laid out two remedies to this perception that Christianity and Darwinism were opposed. First, he planned to write a series of four articles on the matter in the *Bibliotheca*

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6. Dupree, *Asa Gray*, 226–227. As one instance of this general theory, Agassiz believed that human races did not share ancestors. According to Wright, "his name was, on that account, a terror to orthodox interpreters of the Bible" ("The Divine Method of Producing Living Species," 454).

7. Pfeifer, "United States," 195; McGiffert, "Christian Darwinism," 109–110.

8. Morison, "George Frederick Wright," 54; McGiffert, "Christian Darwinism," 156; Wright, "Professor Asa Gray," *Advance* (February 9, 1888): 84, quoted in Morison, 55; Dupree, *Asa Gray*, 362–363.

9. Wright to Gray, 26 June 1875, Historic Letters, Gray Herbarium Archives.

10. Eakins and Eakins, "Dawson, Sir John William"; Moore, *The Post-Darwinian Controversies*, 205; Dawson, *The Story of the Earth and Man*, 6th ed. (1880), 348, quoted in *ibid.*, 380 n. 43; "Discussion on Darwinism and the Doctrine of Development," 320.

*Sacra*. Second, he asked Gray to republish his own articles in a collected edition. “If ministers could more easily secure your writings,” Wright wrote, “it would lead, I have no doubt, to a more reasonable consideration of the subject than now prevails.”<sup>11</sup>

Gray initially responded with some reluctance. He was busy with scientific research, he wrote, and preparing a book “would seriously interrupt the legitimate work which I have in hand.” In particular, he would feel compelled to write a new essay on Darwinian teleology, which he thought Wright might better address anyway. Gray also valued his anonymity and was hesitant to attach his name to the reconciliationist project. Nevertheless, he was willing to republish the articles if faced with “what you ministers recognize as *a call* for them,” and specifically if Park, editor of the *Bibliotheca Sacra*, agreed that they were needed. Within two weeks, Gray began looking for a publisher, and the book, entitled *Darwiniana*, was published in 1876. Wright contributed a table of contents, an index, and his aid in editing.<sup>12</sup>

It had been fourteen years since Gray had informed Darwin that he was “determined to baptize” *The Origin of Species*.<sup>13</sup> In the 1870s, Wright was equally determined to join him on the mission of formulating a Christian Darwinism. Between 1875 and 1880 the *Bibliotheca Sacra* became the primary outlet for Wright’s efforts, through five articles that ran under the series title “Recent Works Bearing upon the Relations of Science and Religion.”

The first was published in July 1875 and addressed “The Nature and Degree of Scientific Proof.” It was a review of a recent book, *The Principles of Science*, by the British logician and economist William Stanley Jevons (1835–1882). Wright included long excerpts from Jevons’ book, which he described as “of exceptional value,” but also wove in his own ideas about the relationship between science and religion. As in his earlier article on induction, Wright claimed that the two domains shared the method of inductive logic, noting more clearly this time that theology, like science, was thus probabilistic and uncertain.<sup>14</sup>

Wright believed that probabilistic thinking benefited theology, however. In a brief polemic against atheism, he argued that the existence of “the uniformities by which we live and move and have our being” would be infinitely improbable had it arisen by chance. Probability provided a new and better design argument: anyone believing that the world developed through chance rather than design was taking a position so absurd that “it is hardly worth while to reason with him.” The fact of design in nature was virtually certain, Wright concluded, but interpretations of this design—science—were uncertain.<sup>15</sup>

Wright also observed that scientific interpretations of nature were “rising above the mere enumeration of phenomena” favored by Francis Bacon. In searching for a scientific methodology, Jevons and Wright looked not to Bacon but to Isaac Newton, who synthesized his observations into general laws. In doing so, Wright argued, Newton and Newtonians like Darwin adopted the methods of theology, in particular argument from analogy.<sup>16</sup>

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11. Wright to Gray, 26 June 1875, Historic Letters, Gray Herbarium Archives.

12. Gray to Wright, 1 July 1875, 14 July 1875, 10 February 1876, Wright Papers; Wright to Gray, 14 March 1876, Historic Letters, Gray Herbarium Archives; Gray, *Darwiniana*, xxiv.

13. Gray to Darwin, 31 March 1862, in *Letters of Asa Gray*, 2:480.

14. Wright, “The Nature and Degree of Scientific Proof,” 538.

15. *Ibid.*, 547. Wright’s position can be read as a form of the anthropic principle, which states a relationship between the state of the universe and the existence of entities capable of observing it.

16. *Ibid.*, 548–549.

In a sense, however, the series truly began only with the second article, published in 1876. The final four articles formed a cohesive argument to which the first was related but not essential, and Wright excluded it alone both from the list he provided to Gray in 1875 and from republication in his 1882 book *Studies in Science and Religion*. Although Wright provided an outline of the series at the beginning of the second article, the outline he sent to Gray was ultimately a more accurate representation.

1<sup>st</sup> The Darwinian argument in the form in which those with a theological training and an ordinary amount of scientific knowledge, would be most likely to feel its force. 2<sup>nd</sup> The objections and modifications of the theory which have been suggested with the answers that would be considered pertinent.

3<sup>d</sup> The doctrine of final Causes as affected by Darwinism.

4<sup>th</sup> The adjustment of Darwinism to the place in theology which Calvinism has prepared for it.<sup>17</sup>

The first of these articles—and the second of the broader series—was “The Divine Method of Producing Living Species.” As promised, it presented Darwinism as theologically inoffensive. As Darwin had in the *Origin of Species*, Wright surveyed evidence from geographical distribution, the fossil record, homologous and rudimentary organs, and embryology. He built also on Gray’s nominalism concerning species. “Our practical conclusions about them,” Gray had written, “are not *facts* but *judgments*, and largely fallible judgments.”<sup>18</sup> As Gray argued, and Wright too believed, species as scientists understood them were concepts representing groups of related organisms. The difficulty of classifying organisms into distinct species suggested that species themselves were interrelated and that, as Wright wrote, “life is a web.”<sup>19</sup>

Wright presented theories of origins as a spectrum ranging from Agassiz’s numerous instances of creation per species to the Darwinian view that—in Wright’s words—“the Creator first breathed life into one, or, more probably, four or five, distinct forms.” The judgment at hand concerned not whether organisms had developed by creation or evolution, but the relative roles of the two processes. “To the theologian,” wrote Wright, “the question concerns the mode of the divine operations in nature. Darwin’s law of ‘Natural Selection’ only furnished a natural bond for what Agassiz calls the ideas of God that were realized in innumerable special creations.” If organisms had evolved, Wright argued, this was only the method by which God had created them. Wright sent Darwin himself a copy of the article and received a letter in return in which Darwin thanked him for an article “powerfully written and most clear” and asked for a copy of his next one, which presented scientific objections to Darwinism.<sup>20</sup>

Although Wright wrote in this next article that he was not “a disciple of Mr. Darwin” or “a champion of his theory,” he met most of the objections he described with compelling counter-

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17. Wright to Gray, 26 June 1875, Historic Letters, Gray Herbarium Archives.

18. Gray, in *Silliman’s Journal of Science* (March, 1860), 168–169, quoted in Wright, “The Divine Method of Producing Living Species,” 461. When Wright wrote his article, Gray had recently reiterated this point in a letter to him (10 November 1875, in *Letters of Asa Gray*, 2:657–658).

19. Wright, “The Divine Method of Producing Living Species,” 475.

20. *Ibid.*, 464–465, 492, 489; Darwin to Wright, quoted in Wright, *Story of My Life and Work*, 138; Wright to Gray, 25 September 1876, Historic Letters, Gray Herbarium Archives. The letter from Darwin is not in either the Wright Papers or the Darwin Correspondence Online Database, which encompasses all known Darwin letters.

arguments. There was an important exception, however, involving evidence against human evolution. Because humans were uniquely made in the image of God, Wright argued, it would not undermine Darwinism generally to conclude that the creation of humanity had involved a miracle. Miracles were by definition such exceptions to the ordinary laws of nature for divine purposes, he pointed out, but their supposed existence did not negate those laws.<sup>21</sup>

In his next article, “Concerning the True Doctrine of Final Cause or Design in Nature,” Wright maintained that Darwinism did not undermine natural theology. Here he based his arguments on those of Gray, whom he had already assisted with *Darwiniana*’s final chapter on teleology. In one of his earlier *Darwiniana* essays, written in 1860, Gray had argued that evolution was simply a gradual form of creation. “Indirection and succession do not invalidate design,” he had claimed.<sup>22</sup>

In his own article, Wright agreed, arguing that an evolutionary natural theology could support belief in God just as well as one based on special creation. “In any case of secondary causation,” he wrote, “we do not care, so far as the argument for the existence of an intelligent designer is concerned, at how many, or at what points, the various elements of design entered.”<sup>23</sup> Darwin only made the work of the designer more distant; he did nothing to weaken William Paley’s argument that design in nature provides evidence for the existence of God.

As Wright pointed out, Paley’s most famous argument used the analogy of a watch. If one found a watch, one would conclude based on its complexity and function that it had a designer. If the watch were capable of producing more watches, as an organism is capable of reproducing, one would conclude not that there was no designer, but that the designer of the first watch in the lineage was surpassingly clever. Here Wright extended Paley’s argument. The proper analogue to an evolving organism, he proposed, was a watch “whose immediate descendants produced better watches, and whose remote descendants gave birth to a chronometer and a town clock.” Darwinism suggested not a world without design, but a world designed with great foresight. The fact that life on earth had survived wild geological and climatic changes, argued Wright, “makes a demand for a Contriver who is omniscient as well as omnipotent.”<sup>24</sup> These were, of course, two characteristics of God prominent in Calvinist theology.

Wright further emphasized this Calvinist conception of God by returning to his theme of general design from “The Ground of Confidence in Inductive Reasoning.” He cited again the concept of the “good of being” as the ultimate end of God’s actions, repeating almost word for word his claim that for any object “the final cause of its creation is the sum of all the uses to which it is ever to be put.”<sup>25</sup> The true doctrine of final causes according to Wright was a holistic one, in which the purpose of every object—including every organ of every organism—was linked to the purpose of the universe as a whole.

Among the many ends of the universe was its comprehensibility to humans, its reasoning inhabitants. Wright argued that the greatest good of all—“the larger part of the final cause of

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21. Wright, “Objections to Darwinism, and the Rejoinders of Its Advocates,” 692, 660.

22. Gray to Wright, 10 February 1876, 30 March 1876, Wright Papers; Gray, *Darwiniana*, 70. See also McGiffert, “Christian Darwinism,” 218–220.

23. Wright, “Concerning the True Doctrine of Final Cause or Design in Nature,” 359.

24. Paley, *Natural Theology*, 5–6, 11; Wright, “Concerning the True Doctrine of Final Cause or Design in Nature,” 360–363, 366.

25. Wright, “Concerning the True Doctrine of Final Cause or Design in Nature,” 374.

creation”—was “the good which may come from being able to discover the truth in the works of God and to enlarge our conceptions of his plans.” Discovering truth in God’s works, wrote Wright, was the goal of both scientists and theologians.<sup>26</sup>

Wright’s Calvinism came to the forefront in his fifth article in the series, “Some Analogies between Calvinism and Darwinism,” which was also his most original contribution to the reconciliationist project. In it, Wright maintained not only that Darwinism and Calvinism were compatible, but that they were similar. More specifically, he argued that the grounds for objecting to Darwinism were the same as those for objecting to Calvinism, and thus that the Darwinian “may shelter himself behind Calvinism from charges of infidelity.”<sup>27</sup>

Wright drew five analogies between the two doctrines. First, he pointed out that neither Calvinism nor Darwinism was universally progressive. Darwinism allowed for degradation; organs or behaviors once useful to organisms could become liabilities if their environments changed. Calvinism posited a comparable spiritual regression in the fall of Adam and Eve. Sin, Wright argued, “may be considered a maladjustment of the soul,” as may conscience in a species of sinners.<sup>28</sup>

The observation that Darwinism was not strictly progressive—that “this theory comprehends *extinction* of species and organs as well as their production, and *degradation* as well as advancement”—was important because other theories of evolution were. Indeed, many liberal Christians believed that evolution guaranteed the progressive development of humanity. The Congregationalist-turned-Unitarian minister Minot J. Savage (1841–1918), for example, wrote that “evolution teaches us the *ascent of man*; that the perfect Adam is ahead of us, not behind.”<sup>29</sup> Wright demonstrated that this belief was heretical not only theologically but scientifically, because it conflicted with orthodox Darwinism as well as Calvinism.

Second, Wright argued that Calvinism and Darwinism shared the concepts of heredity and common human ancestors. “Corruption was transmitted from Adam to all his descendants,” wrote Wright. “The Calvinist cannot regard mankind as a loose aggregation of individuals, with nothing but an ideal bond of connection.”<sup>30</sup> Here Wright implicitly contrasted Darwinism with Agassiz’s view of origins, which he had found incompatible with Christianity.

Wright also drew a parallel between the creation of species and that of souls. In 1880, the word *creationism* usually referred to the belief that individual human souls were supernaturally created by God. The opposing view, traducianism, stated that ensoulment involves transmission of the soul from parents to their child. Traducianism “pushes the original problem respecting transmitted sin a little farther back and out of sight,” wrote Wright, in the same manner as evolutionism pushed back creation. No less an authority than Augustine had concluded that belief in traducianism was acceptable because the Bible left “the *mode* of the formation” of souls

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26. Ibid., 375, 383.

27. Wright, “Some Analogies between Calvinism and Darwinism,” 54.

28. Ibid., 54–56.

29. Ibid., 55; Savage, *Evolution and Religion from the Standpoint of One Who Believes in Both* (Philadelphia: 1886), 43, quoted in McGiffert, “Christian Darwinism,” 273. See also Roberts, *Darwinism and the Divine in America*, 194–195.

30. Wright, “Some Analogies between Calvinism and Darwinism,” 57.

open to question. The problems of the origin of species and the origin of souls, Wright concluded, were “nearly identical,” and both open to speculative solutions.<sup>31</sup>

Third, Wright argued that both doctrines included tenets that were apparently contradictory and required reconciliation: “fore-ordination and free-will” in Calvinism, the “system of evolution” and “manifest design in nature” in Darwinism. The central difficulty of Calvinism for Wright was avoiding the conclusion that human free will is “strangled” by divine omniscience, as the central difficulty of Darwinism was avoiding the conclusion that the theory had undermined teleology. Many Darwinians believed that Darwin *had* strangled teleology; the biologist Thomas Henry Huxley (1825–1895)—who not coincidentally coined the word *agnostic*—wrote in 1864 that “Teleology, as commonly understood, had received the deathblow [at] Mr. Darwin’s hands.” In his own article on final causes, Wright had reconciled evolution and teleology through reference to the “good of being”; in his article on Calvinism and Darwinism he pointed out that theologians used this same principle to reconcile the power and knowledge of God with the free will and sin of humanity.<sup>32</sup>

For his fourth point, Wright returned to his theme of the inductive nature of both Darwinian logic and systematic theology. “They both accept the humble *role* of the interpreter of God’s revealed systems,” he wrote. Given the overwhelming evidence for common origins, Wright argued, Darwin’s conclusions were not overambitious. Indeed, “if these facts do not point to community of descent in the species connected, then, so far as the revelation of the divine purpose is concerned, the universe seems unskilfully made.” The idea of a God who made it appear that evolution had occurred when it had not was no more appealing to Wright than to Darwin himself, who had written in the *Origin of Species*—as Wright quoted—that “it makes the works of God a mere mockery and deception.”<sup>33</sup> The importance of humility for scientists, and Darwin’s exemplary modesty in inducing no more from the facts than was reasonable, would become a major theme in Wright’s later writing.

Finally, Wright observed that both Darwinism and Calvinism involved “the reign of law.” Darwinians believed that species developed through natural processes rather than miracles. Similarly, Calvinists like Wright believed that “the revelation of God in the Bible is progressive, and in general is by means of natural instrumentalities, with only occasional miracles.” God had revealed himself more and more throughout biblical history, and had depended on humans, rather than miracles, to disseminate religion. “It is no more inconsistent with the goodness of God that he did not interfere with organic life by special creation for many million years before the appearance of man,” wrote Wright, “than that he has interfered so little by miraculous manifestations with the spread of the gospel.”<sup>34</sup>

Many of the analogies Wright drew between Darwinism and Calvinism represented objections to liberal Christianity as well as orthodox antievolutionism. “If Calvinism is a foe to sentimentalism in theology,” he wrote, “so is Darwinism in natural history.” Sentimental liberal

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31. Numbers, *Darwinism Comes to America*, 50; Wright, “Some Analogies between Calvinism and Darwinism,” 58, 60; Augustine, *De Anima*, Lib. i c. 22, quoted in *ibid.*, 60.

32. Wright, “Some Analogies between Calvinism and Darwinism,” 61–62; Huxley, *Darwiniana* (London: Macmillan, 1893), 82, quoted in Ruse, *Darwin and Design*, 138–139.

33. Wright, “Some Analogies between Calvinism and Darwinism,” 73; Darwin, *Origin of Species*, 140, quoted in *ibid.*, 74.

34. Wright, “Some Analogies between Calvinism and Darwinism,” 74, 76.

Christianity and secularism would eventually become the main targets of Wright's criticism, but for now they were mentioned explicitly only in passing; Wright's primary mission was to reconcile the orthodox audience of the *Bibliotheca Sacra* to Darwinism. "We may conclude," wrote Wright, "that, not improperly, Darwinism has been styled the 'Calvinistic interpretation of nature.'"<sup>35</sup>

In 1882, Wright republished his four essays on Darwinism, as well as his *New Englander* article on induction and additional essays on prehistoric humanity and the relationship between science and the Bible, in a book entitled *Studies in Science and Religion*. Together with his 1880 primer on natural theology, *The Logic of Christian Evidences*, the two books formed a cohesive description of what Wright termed "The Unity of Method in Science and Religion."<sup>36</sup>

Although Wright's analogical argument may have marked a theological high point in Calvinist Darwinism, it was little appreciated. A book reviewer for *The Atlantic Monthly* described the chapter on Calvinism and Darwinism only as "curious." A Methodist reviewer wrote that, while his analogies were "ingenious," Wright was "clearer in his reconciliation of Darwinism with theism and with Calvinism than with Genesis." Many Protestants were concerned less with systematic theology than with the Bible. As the Methodist added, "the difficulty is less theological than exegetical."<sup>37</sup>

In his new chapter on the Bible in *Studies in Science and Religion*, Wright addressed this concern by arguing that scripture was not always infallible. Both the Westminster Confession of Faith and Charles Hodge, he wrote, maintained that the writers of the Bible had been infallible only when teaching knowledge necessary for salvation, not when writing of science or history. The story of the special creation of humanity offered no great difficulty for the exegete, Wright added, because the soul could have been created even if the body had evolved.<sup>38</sup>

In 1880, James Harris Fairchild, now president of Oberlin College, wrote Wright to offer him a professorship in New Testament language and literature. Other offers of chairs in biology, theology, and geology at institutions in Pennsylvania, Maine, and Colorado soon followed. At first Wright rejected all four offers, but a year later he decided to accept Fairchild's. He left for Oberlin just as a split developed among the Andover Theological Seminary faculty, many of whom adopted a more liberal theology than the seminary traditionally espoused. As a result of this "New Departure" from orthodoxy at Andover, the conservative *Bibliotheca Sacra* moved to Oberlin when Edwards A. Park retired as editor. In 1883 Wright became a member of the editorial board that succeeded Park, and in 1900 the journal's sole editor.<sup>39</sup>

When Wright returned to Oberlin, he intended to devote his time to theology, but he soon found more opportunities for geological research. Much of his work involved tracing the glacial boundary of the ice age. When the glacier began to melt it deposited debris, forming a terminal moraine at its southern extreme, as well as other debris formations further north. In 1875 Wright traced gravel ridges in New England and concluded that they were formed by glaciation, rather

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35. *Ibid.*, 76.

36. Wright, *Studies in Science and Religion*, v.

37. Review of *Studies in Science and Religion*; review of *Logic of Christian Evidences*, *Methodist Quarterly Review*, 4th series, 32 (April 1880): 394, quoted in McGiffert, "Christian Darwinism," 291.

38. Wright, *Studies in Science and Religion*, 351–352, 370.

39. Morison, "George Frederick Wright," 131–137, 152; Wright, *Story of My Life and Work*, 392–395.

than by the ocean as previously thought. Five years later, he and two colleagues followed the terminal moraine across New Jersey. After accepting the professorship at Oberlin in 1881, Wright spent his summers tracing the moraine further west to the Mississippi River, which he reached in 1884. The United States Geological Survey supported Wright in his research, and in 1890 he published a report on the glacial boundary in the form of a USGS bulletin. Wright also travelled to Alaska to study the Muir Glacier in 1886, and three years later published the first of six editions of his largest tome, *The Ice Age in North America*.<sup>40</sup>

In 1892 Wright became the beneficiary of an endowed chair in the Harmony of Science and Revelation.<sup>41</sup> The chair allowed Wright to spend half of each year traveling and the other teaching; as a result Wright eventually expanded his geological studies to Europe, Greenland, and Asia. The same year, Wright published *Man and the Glacial Period*, a more accessible presentation of his geological findings. At a time when most experts believed that humans had arrived in North America since the retreat of the glaciers, Wright argued from archeological evidence that there had been “glacial man.” Wright also maintained, along with some other geologists, that there had been only a single ice age. Thomas C. Chamberlin (1843–1928), the head of the USGS glacial division, had long objected to Wright’s belief in a unitary ice age and reprimanded him for writing and lecturing about research commissioned by the USGS.<sup>42</sup>

When Wright published *Man and the Glacial Period*, Chamberlin and his fellow USGS geologist W. J. McGee (1853–1912) began a campaign of criticism against him. In his most famous of several reviews, McGee described Wright as a “betinseled charlatan” and accused him—wrongly, according to William James Morison—of plagiarism and lying about his credentials. He took offense at the foray of a theologian into science, referring pointedly to “the Reverend Professor Wright,” who was “a professor of theology in a theologic seminary, yet lays claim withal to geologic skill, which serves to render his writing the more specious.”<sup>43</sup> McGee also attacked the content of Wright’s book with a tone best conveyed by his own summary.

In brief, the introductory chapter of “Man and the glacial period” is absurdly fallacious; the chapter on existing glaciers is redeemed by quotations, but the chapter on “glacial motion” is damned by error and specious misrepresentation; the chapter on “past glaciation” is crude, unjust, egotistic and a generation behind modern science; the fifth, sixth, and seventh chapters contain a large body of information which would be useful if properly arranged, but the arrangement is unscientific, unfair to American geologists, and misleading to readers; the eighth chapter purports to prove that man existed during the glacial period, but the evidence is inconclusive, and only proves, *first*, that the author is incompetent to deal with geologic phenomena, and, *second*, that his conception of geologic

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40. Wright, *Story of My Life and Work*, 146–147, 155; Morison “George Frederick Wright,” 196–228.

41. Morison, “George Frederick Wright,” 313–314. The title was originally the Professorship of the *Relation between Science and Revelation*, but this less assertive description seems to have been seldom used.

42. Wright, *Story of My Life and Work*, x–xiii; Morison, “George Frederick Wright,” 252, 249, 257–263; Wright, *Man and the Glacial Period*, 242.

43. Morison, “George Frederick Wright,” 268–269, 277–278; McGee, “Man and the Glacial Period,” 95, 90, 88, 86.

history is feeble and hazy; while of the concluding chapters it must be said, tritely yet truly, that nothing that is true is new, and nothing that is new is true.<sup>44</sup>

Many scientists rallied to Wright's defense. James Dwight Dana (1813–1895), perhaps the most respected American geologist of his day, wrote to Wright that McGee's attack "is a warfare befitting only the dark ages & Andrew White should put it into his series."<sup>45</sup> Despite this support, Wright began to develop a cynicism about the institution of science which would pervade his later works. In 1914 he wrote that "White's 'History of the Warfare of Science with Theology in Christendom' could be easily matched with a history of the civil wars of scientific men."<sup>46</sup>

This was not the only incident that contributed to Wright's divorce from the scientific establishment. In 1888, when Wright was at the height of his geological success, his friend Asa Gray died. Wright published a eulogy on "The Debt of the Church to Asa Gray" in the *Bibliotheca Sacra*, returning to the topic of reconciliation. Quoting liberally from Gray's letters and essays, Wright concluded that "to the late lovable, devout, and profoundly philosophical botanist of Harvard College the church owes more than it yet appreciates for its deliverance from such another mistake as was made in the time of Galileo. The world even yet is slow to learn that we may find out *how* God does a thing without shaking our faith in the fact *that* he does it."<sup>47</sup>

With the deaths of Darwin in 1882 and Gray in 1888, and the rising influence of agnostic evolutionists like Huxley, evolutionism became less rooted in its orthodox past. In the 1890s, Wright, rejected by the most powerful institution in his scientific field, finally devoted his efforts as much to theology as geology. As his absolute devotion to both science and religion became less tenable, Wright adopted a different reconciliationist role.

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44. McGee, "Man and the Glacial Period," 94–95.

45. Dana to Wright, 22 January 1893, Wright Papers. See also Morison, "George Frederick Wright," 270–283. White, previously described as a begetter of the conflict thesis, published a number of articles on "New Chapters in the Warfare of Science" in *Popular Science Monthly* before the publication of the *History of the Warfare of Science with Theology in Christendom* in 1896 (Numbers, "Science and Religion," 60).

46. Wright, "Present Aspects of the Relations between Science and Revelation," 522.

47. Wright, "The Debt of the Church to Asa Gray," 530.

## Chapter III

### The Passing of Evolution

An orderly development in the natural world is denied by few. None are more urgent in maintaining it than are those who believe that in the beginning God created the heavens and the earth, and that subsequently he has been ever active in maintaining and directing its movements. But unfortunately there has crept into the word “evolution” an atheistic significance, which has led to much misunderstanding and confusion of thought.

—George Frederick Wright<sup>1</sup>

During the early twentieth century Wright’s ideas about evolution changed dramatically. His intellectual transformation culminated in 1912, when he contributed an article on “The Passing of Evolution” to *The Fundamentals*, a series of tracts expressing the conservative evangelical theology that later developed into fundamentalism. Wright’s article—in which he wrote that “the widely current doctrine of evolution which we are now compelled to combat is one which practically eliminates God from the whole creative process”—was widely interpreted as antievolutionist in its day and has continued to be since.<sup>2</sup> Its antievolutionism is complex, however, both because Wright developed its arguments from his earlier, more moderate writings, and because he continued to avow belief in evolution in other fora.

Wright began to criticize evolutionism over a decade earlier, when he returned to writing about it in the *Bibliotheca Sacra* with an article on “The Evolutionary Fad” in 1900. The target of most of his criticism was not Darwinism, however, but the evolutionary philosophy of the British polymath Herbert Spencer (1820–1903). Wright’s use of the word *evolutionary* to characterize Spencerism may seem strange now that it is so closely associated with Darwin, but it was in fact Spencer who popularized *evolution* to denote a progressive process. Though Spencerism was quickly forgotten in the following decades, its popularity was comparable to that of Darwinism at the turn of the century. “The theory of evolution which is coming to prevail in the magazines and lighter literature of the period, and which is so seriously affecting theological thought,” wrote Wright, “is of the Spencerian variety, whose proof depends upon deduction, rather than induction.”<sup>3</sup>

Spencer believed that biological evolution was just one instance of a universal evolutionary process “during which the matter passes from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity.” The world started, in other words, as a uniform mass, but over time matter and energy developed into more specific and complex forms. Spencer’s model was the development of an embryo, but he argued that not only biological development but all natural processes follow a progression from the general to the specific. In his nine-volume *System of Synthetic Philosophy*, published between 1862 and 1893, Spencer applied this model to biology, psychology, sociology, and ethics. His theory of biological evolution was more Lamarckian than Darwinian—he believed that organisms had evolved primarily through the inheritance of acquired characteristics—but Spencer was publicly perceived as an ally of Darwin. He also

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1. Wright, “Present Aspects of the Relations between Science and Revelation” (1914), 526.
  2. Wright, “The Passing of Evolution,” 5.
  3. Bowler, *Evolution*, 225; Wright, “The Evolutionary Fad,” 305.

believed that “evolution has an impassible limit” and that every system reaches an inevitable state of equilibrium. For society, “evolution can end only in the establishment of the greatest perfection and the most complete happiness.”<sup>4</sup>

Wright disagreed with almost every element of Spencer’s philosophy. He had always objected to the idea of inevitable human progress on theological grounds; his criticism of John William Draper twenty-four years earlier had involved an attack on his confidence in progress. Now Wright objected to the Spencerian idea of evolutionary progress in human history. “If there is anything which history teaches,” he wrote, “it is that man, left to himself, degenerates; that the light which is shining brighter and brighter in our advancing civilization is borrowed light.” Wright believed that the natural forces of human history brought about “the wrecks of civilizations which have risen to flourish but for a day,” and that true progress depended on the “supernatural force” of Christianity.<sup>5</sup>

In evolutionary philosophy Wright also perceived a romantic reverence for the natural, which he thought incompatible with the Christian reverence for the supernatural.<sup>6</sup> He believed that evolutionism entailed a trust in natural processes that threatened to sabotage not only science and philosophy but even missionary work and government. Following Charles Finney, Wright believed in persuading the masses, not in leaving them to develop opinions on their own. “What we need in this nation is statesmen who shall lead public sentiment, and not merely try to follow it,” Wright wrote. “What we need in the church is preachers who shall convert men, and not merely trust to the development of the natural instinct of their hearers.”<sup>7</sup>

The deepest flaw in Spencer’s theory, according to Wright, was its dependence on deduction. This was fitting, for deduction is a form of logic that proceeds, like Spencer’s evolutionary processes, from the general to the specific. In 1875, Asa Gray had referred Wright to an article in *The Nation* by the philosopher of science Chauncey Wright (1830–1875) “in which he points out clearly the essential difference between *Darwinism*—which is scientific, & *Spencerism*, which is ‘philosophical’—save the mark!”<sup>8</sup> G. F. Wright did, adopting the philosopher’s dichotomy. Spencer’s philosophy, he thought, was based purely on abstract ideas, rather than on observation of the natural world. “Its web is like that of the spider,” wrote Wright, “which he spins wholly from his own bowels.” In other articles, Wright cited Charles Darwin, who wrote that “if he [Spencer] had trained himself to observe more, even if at the expense, by the law of balancement, of some loss of thinking power, he would have been a wonderful man.”<sup>9</sup>

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4. Herbert Spencer, *First Principles*, quoted in Wright, “The Evolutionary Fad,” 303; Bowler, *Evolution*, 225; Sweet, “Herbert Spencer”; Spencer, *First Principles*, 4th American ed. (1900), 496, 530, quoted in Hofstadter, *Social Darwinism in American Thought*, 37.

5. Wright, Review of *History of the Conflict between Religion and Science*, 585; Wright, “The Evolutionary Fad,” 314–315.

6. Darwinistic often involved this union of romanticism and Darwinian thought. The neologism is in fact a fusion of *Darwinism* and *romanticism* (Moore, *The Post-Darwinian Controversies*, 15).

7. Wright, “The Evolutionary Fad,” 316.

8. Gray to Wright, 14 September 1875, Wright Papers. The article was C. Wright, “German Darwinism,” 168–169. See also De Groot, “Chauncey Wright.”

9. Wright, “The Evolutionary Fad,” 305; Charles Darwin to Joseph Hooker, 1866, quoted in Wright, “Darwin on Herbert Spencer,” 182, and again in Wright, “The Mistakes of Darwin and His Would-Be Followers,” 338–339.

In focusing his wrath upon Spencerism, Wright left the door open for Darwin's own theory, which—with its narrow focus on biological diversity—“was not a theory of general evolution.” Indeed, Wright continued to think theologians misguided in their attacks on Darwinism. “Christian theists could have no well-grounded objections to that enlargement of the sphere of the action of secondary causes which was involved in the simple statement of the Darwinian theory,” he wrote.<sup>10</sup>

Wright had written about Darwin and Spencer before. In an 1889 “critical note” for the *Bibliotheca Sacra* regarding “Darwin on Herbert Spencer,” he criticized Spencer's deductivism and contrasted it with Darwin's “legitimate induction.” When he described Darwin's strengths as a scientific theorist, it was to set Spencer's wild speculations in deep relief. “In the main Mr. Darwin kept his theories within reasonable limits,” he wrote, “and when he ventured far away from his facts he did so with caution.”<sup>11</sup>

In 1889, then, Wright had been a loyal Darwinian attacking Spencer's rival theories. By 1900 his defense of Darwinism was no longer without exception. Despite his focus on Spencerism, Wright devoted several pages of “The Evolutionary Fad” to criticisms of Darwinism. It was these anti-Darwinian writings, not his anti-Spencerian ones, that later formed the basis for “The Passing of Evolution.”

Wright's central critique was of Darwin's gradualism. Darwin believed, as Wright wrote, “that the variations of which natural selection took advantage were extremely minute, rendering the process exceedingly slow, and demanding enormous lengths of time to effect visible results.”<sup>12</sup> Because he believed that natural selection was so gradual, Darwin's claim that it was the primary mechanism of organic evolution rested upon the work of the uniformitarian geologist Charles Lyell.<sup>13</sup> “He who can read Sir Charles Lyell's grand work on the Principles of Geology... yet does not admit how incomprehensibly vast have been the past periods of time,” wrote Darwin in the *Origin of Species*, “may at once close this volume.” Lyell stopped short of actually calculating the durations of geological developments, however, while Darwin did not. Wright believed that Darwin's uniformitarianism and resulting gradualism had weakened his theory. To expose its flaws, he reviewed Darwin's controversial calculations regarding “the denudation of the Weald.”<sup>14</sup>

In order to demonstrate the vastness of geological time, Darwin described in the first edition of the *Origin* the erosion of a valley in southern England. He termed his conclusion that it had taken over three hundred million years “some crude notion,” but it and the geological assumptions on

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10. Wright, “The Evolutionary Fad,” 303, 305–306.

11. Wright, “Darwin on Herbert Spencer,” 182, 184.

12. Wright, “The Evolutionary Fad,” 306.

13. *Uniformitarianism* was a term coined by the English scientist and polymath William Whewell (1795–1866) in the 1830s to describe a geological doctrine opposed to *catastrophism* (Ruse, *The Darwinian Revolution*, 36). Its adherents, of whom Charles Lyell was the most prominent, believed that geological phenomena in the past were similar to those today, and thus that geological change was slow and the earth's history long (*ibid.*, 40). Wright himself considered the term a misnomer, writing that “these distinguished authors emphasize not so much the uniformity of the past as the instability of the present” (“The Divine Method of Producing Living Species,” 490).

14. Darwin, *Origin of Species*, 232; Hallam, *Great Geological Controversies*, 106; Wright, “The Evolutionary Fad,” 306.

which Darwin based it were immediately criticized by other scientists, who thought that the erosion could have occurred much more quickly.<sup>15</sup> “He had fixed his attention upon the erosion around the circumference of the area to which the waves of the ocean could get access,” wrote Wright, “but had entirely forgotten the agencies at work over the entire land surface.” In the face of overwhelming scientific opposition, Darwin removed his passages about the Weald from future editions.<sup>16</sup>

Despite Darwin's retreat on the Weald, the popularity and controversy of the *Origin* continued to draw scientific attention to the age of the earth. Wright himself changed his mind as a result: in 1876 he had suggested that evolutionists could rely on a five hundred million year old earth “without much fear of contradiction,” but in his critique he depicted one much younger. As evidence, he cited astronomical studies by Charles Darwin's son George Darwin (1845–1912) and geological investigations by Alfred Russell Wallace. He also wrote that Lord Kelvin “narrowed the time available for geological purposes down to 25,000,000 years.”<sup>17</sup>

The eminent Irish physicist William Thomson (1824–1907)—better known after 1892 as Lord Kelvin—had begun investigating the age of the earth in the 1840s, but only began publishing articles on the subject after Darwin published the *Origin of Species*.<sup>18</sup> Thomson rejected both Darwin's uniformitarianism and his theory of natural selection, the former because he saw it as inconsistent with his own work on thermodynamics, and the latter because he believed that it entailed a rejection of design in nature. In 1876 Wright had written that Thomson's calculations involved so much uncertainty that they posed no great threat to Darwinism. By the time he wrote an article on “The Mistakes of Darwin and His Would-Be Followers” in 1909, however, his conclusions were approaching Thomson's. The younger age of the earth, wrote Wright, “necessitated a rapidity in the development of a species” which not only contradicted Darwin's gradualism but “would well accord with the theory of creation by divine intervention.”<sup>19</sup> While Wright didn't oppose Darwinism outright, he did question it.

This may have been partly because other scientists were no longer so sure about Darwinism. Although they virtually all believed in evolution, by the turn of the century many biologists turned to mechanisms other than natural selection, in particular neo-Lamarckism.<sup>20</sup> Darwin himself had believed in Lamarckism as a mechanism subordinate to natural selection, suggesting that the so-called “eclipse of Darwinism” was more a change in emphasis than in the fundamental content of evolutionary theory. Nonetheless, evolutionary rhetoric of this period

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15. Darwin, *Origin of Species*, 234–6; Gould, *The Structure of Evolutionary Theory*, 153; Herbert, *Charles Darwin, Geologist*, 351–353. According to Stephen Jay Gould, Darwin “overestimated the true duration by five times or more” (pp. 153–154).

16. Wright, “The Evolutionary Fad,” 307; Herbert, *Charles Darwin, Geologist*, 352.

17. Wright, “The Divine Method of Producing Living Species,” 490; Wright, “The Evolutionary Fad,” 308.

18. Hallam, *Great Geological Controversies*, 107; Herbert, *Charles Darwin, Geologist*, 353. See also Burchfield, *Lord Kelvin and the Age of the Earth*, 32. For consistency, from here on I will refer to Thomson by his birth name rather than his title.

19. Gould, *The Structure of Evolutionary Theory* 494–496; Burchfield, *Lord Kelvin and the Age of the Earth*, 33; Wright, “Objections to Darwinism, and the Rejoinders of Its Advocates,” 670; Wright, “The Mistakes of Darwin and His Would-Be Followers,” 335.

20. Bowler, *Evolution*, 233. Bowler's *Eclipse of Darwinism* is a detailed study of this topic.

was often accompanied by a dismissal of Darwinism. Many scientists also believed that the processes by which species evolved were much more rapid than those Darwin had proposed.

William Thomson was a key influence on such Darwin skeptics. Thomson marshaled a number of compelling arguments for a relatively young earth, including one based on the age of the sun and another involving the effect of tides on the earth's rotation. His most famous, however, involved a direct calculation of the age of the earth's crust based on the assumption that the earth was once molten and had cooled to its present temperature. Based on the available physical and geological data, Thomson concluded in the 1860s that the earth was probably about one hundred million years old, a number that most geologists and biologists found plausible and unproblematic. It wasn't until 1897, after several intermediate estimates, that Thomson reached the conclusion cited by Wright, that the earth's crust was about twenty-four million years old.<sup>21</sup>

In part because scientists were more skeptical of Darwinism, populist antievolutionist literature flourished during the first years of the twentieth century. Wright began to contribute to this literature, which was different in its rhetoric and readership from the academic theology of the *Bibliotheca Sacra*. In 1903 Alexander Patterson, a Presbyterian minister and friend of the prominent evangelist Dwight Moody (1837–1899), published an antievolutionist tract entitled *The Other Side of Evolution*. Patterson cited Wright several times as an authority on geology and evolution and thanked him for his advice. His book also included an introduction by Wright, who wrote that he appreciated Patterson's emphasis on the uncertainty of science and claim that "orderly succession does not necessarily imply evolution from resident forces." Nonetheless, his endorsement of Patterson's work came with reservations: "While not saying that all the points in this little book are well taken," he wrote in his introduction, "I can say that I disagree with fewer things in it than with those in almost any other on the subject."<sup>22</sup>

Wright's reservations may have stemmed from Patterson's absolute rejection of evolution, which diverged from his own more subtle position. Wright continued to see evolutionism as dominated by Spencerian totalism, but he maintained that the work of Charles Darwin was a valuable exception. In his introduction to Patterson's book, he again echoed Chauncey Wright in distinguishing the science of Darwinism from the philosophy of Spencerism.

The doctrine of Evolution as it is now becoming current in popular literature is one-tenth bad Science and nine-tenths bad Philosophy. Darwin was not strictly an Evolutionist, and rarely used the word. He endeavored simply to show that Species were enlarged varieties.... Herbert Spencer, however, came in with his sweeping philosophical theory of the Evolution of all things through natural processes, and took Darwin's work in a limited field as a demonstration of his philosophy.<sup>23</sup>

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21. Burchfield, *Lord Kelvin and the Age of the Earth*, 37–31, 34–36, 43; Gould, *The Structure of Evolutionary Theory*, 494. Darwin himself was much more committed to gradualism than any of his followers, and he alone was deeply disturbed by Thomson's early conclusions (Gould, *The Structure of Evolutionary Theory*, 69–70, 496–502).

22. Numbers, *The Creationists*, 16; Patterson, *The Other Side of Evolution*, xv; Wright, introduction to Patterson, xviii–xix.

23. *Ibid.*, xvii.

Another point on which Wright and Patterson differed was the relationship between evolution and the Bible. Their incompatibility was “the vital point in this discussion” for Patterson, who wrote that “the differences between these two accounts are obvious.” Furthermore, Patterson opposed the interpretation of Genesis as allegory or poetry, arguing that the Bible must be treated as a coherent, historically accurate whole. If the first few chapters of Genesis were taken as allegory, asked Patterson, “why has not the enemy of Christianity the same right to apply this reasoning to the accounts of the death and resurrection of Christ?” The creationist organization Answer in Genesis has a motto, “Upholding the Authority of the Bible from the Very First Verse,” that would have summarized Patterson’s agenda well.<sup>24</sup>

Wright brought his own analyses of evolutionism back to the *Bibliotheca Sacra* with two much more moderate articles in 1909. The first, published in April, was “The Mistakes of Darwin and His Would-Be Followers.” In the second, published in October, Wright returned to his favorite topic of “Calvinism and Darwinism” and concluded that evolutionists had tragically rejected “the sweetness of the Calvinistic doctrine of Divine Sovereignty” for fatalism. Wright published both articles without bylines, but his article on “The Mistakes of Darwin” was prefaced by an editorial note explaining that its author respected “the service which Darwin has rendered,” and had in fact received a letter from Darwin himself acclaiming his 1876 *Bibliotheca Sacra* article on natural selection. Since all of the articles on evolution that the journal published in 1876 were authored by Wright, his editorial note served not only to describe the author but to identify him to those who possessed back copies. Wright abandoned even a modicum of anonymity when he listed the articles in his published bibliography in 1916.<sup>25</sup>

The article on “The Mistakes of Darwin” demonstrates well the distance Wright had placed between himself and the theory of natural selection which he had once embraced. Although his strongest arguments again attacked Herbert Spencer’s extension “of evolution to sociological, historical, and theological questions,” Wright first described “two great mistakes” made by Darwin himself in the *Origin of Species*. The mistakes were essentially those regarding the span of geological time and “the minuteness of beneficial variations” about which he had written in 1900. Wright cited the same authorities and made the same arguments as before, but he focused his attention more on Darwin and less on other evolutionists, making his criticisms more acute.<sup>26</sup>

There had been one important change since 1900 which Wright did not acknowledge, though. By 1909 William Thomson’s criticisms of Darwin no longer represented cutting edge science. Thomson had been an authority on the age of the earth for decades, but in the early twentieth century the discovery that radioactive elements emit heat began to influence geochronology. Scientists discussed the possibility that both the earth and the sun might be heated by radioactivity and not merely by initial heat. The implications of this for Darwinism were of immediate interest to the scientists involved, and in 1904 the physicist Ernest Rutherford (1871–1937), then a professor at McGill University in Montreal, wrote that “the discovery of radioactive elements, which in their disintegration liberate enormous amounts of energy, thus

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24. Patterson, *The Other Side of Evolution*, 128, 121, 124; *Answer in Genesis*.

25. Wright, “Calvinism and Darwinism,” 691; Wright, “The Mistakes of Darwin and His Would-Be Followers,” 332; Wright, *Story of My Life and Work*, 456.

26. Wright, “The Mistakes of Darwin and His Would-Be Followers,” 339, 333, 335.

increases the possible limit of the duration of life on the planet, and allows the time claimed by the geologist and biologist for the process of evolution.”<sup>27</sup>

Rutherford’s conclusions were controversial, in part because the idea that matter could continuously emit heat violated the principle of conservation of energy. The conversion of matter into energy involved in radioactivity was accounted for when Albert Einstein (1879–1955) published his special theory of relativity in 1905, but it was outside the range of phenomena a thermodynamicist like Thomson was prepared to accept. Thomson rejected it publicly, and although he later admitted that the discovery of radium should affect calculation concerning the age of the earth, he probably never did so in a forum accessible to Wright.<sup>28</sup>

In “The Mistakes of Darwin” Wright again cited Thomson’s former assistant George Darwin as an authority for a relatively young earth. While the younger Darwin had once supported Thomson’s calculations, he began to publicly express skepticism towards them in 1886 and quickly embraced the discovery of heat from radioactivity in the 1900s. Although he did not immediately address the possibility that radioactivity was heating the earth, he wrote as early as 1903 that “the amount of energy available is so great as to render it impossible to say how long the sun’s heat has already existed.”<sup>29</sup>

Geologists had a variety of reactions to the possibility of an older earth, ranging from fear that they had based decades of research on false premises to delight that they need no longer constrain their chronology. Although these reactions have not been vigorously studied, it appears that some geologists at first ignored the new evidence from physics.<sup>30</sup> By 1909, however, the debate about radioactivity had shifted from whether the earth was older than Thomson had believed to how much older it was. Wright’s implicit rejection of an older earth was particularly significant because of his role as a scientific ambassador to theologians.

The editorial note attached to the article reveals more of the tension in Wright’s thoughts about evolution. Because it is attributed to “Ed.,” while the article itself is unattributed, the average reader would not have been aware that they were actually the work of the same man. In the note, Wright wrote that the author “would by no means depreciate [*sic*] the service which Darwin has rendered in simplifying our conceptions of the movements of the forces involved in the origin of species, analogous to the work which Copernicus performed in simplifying our conception of the movements of the heavenly bodies. But this is so generally acknowledged that it would be needless here to dwell upon it.”<sup>31</sup> With these words, Wright acknowledged the value of Darwinism but committed himself only to analyzing its flaws. In referring to Darwin’s work as “generally acknowledged,” Wright overestimated sympathy for Darwinism, particularly among his own audience of evangelical Protestants.

Wright sent a copy of the April *Bibliotheca Sacra* to A. C. Dixon (1854–1925), the pastor of the Moody Church in Chicago, who read and appreciated “The Mistakes of Darwin.” In

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27. Rutherford, “The Radiation and Emanation of Radium, Pt. II,” *The Collected Papers of Lord Rutherford of Nelson*, vol. 1 (London: Allen and Unwin, 1962), 657, quoted in Burchfield, *Lord Kelvin and the Age of the Earth*, 164.

28. Burchfield, *Lord Kelvin and the Age of the Earth*, 165; Hallam, *Great Geological Controversies*, 124.

29. Burchfield, *Lord Kelvin and the Age of the Earth*, 166; G. Darwin, “Radio-Activity and the Age of the Sun,” *Nature* 68 (1903): 496, quoted in *ibid.*, 166.

30. Burchfield, *Lord Kelvin and the Age of the Earth*, 170–171.

31. Wright, “The Mistakes of Darwin and His Would-Be Followers,” 332.

November, Dixon asked Wright to contribute an essay on “The Testimony of the Monuments to the Truth of the Scriptures” to a book he was editing. Wright agreed to do so, and the essay, an overview of biblical archeology, was published in 1910 in the second volume of *The Fundamentals*.<sup>32</sup>

*The Fundamentals* are now best known as some of the earliest documents of the American fundamentalist movement that reached its height in the 1920s, but they represent an early stage of its development from conservative evangelicalism. The pamphlets were anti-modernist and often biblically literalist, but they differed in tone from later fundamentalist writings. “Although these volumes defended most of the same truths,” wrote historian Ernest Sandeen, “their moderate style contrasts strongly with the stridency of later years.” *The Fundamentals* depicted evangelicalism on the defensive against the popular success of biblical criticism and liberal theology: the most frequent topic of the articles was biblical inerrancy, and only five of the ninety dealt with science, which was to become a central concern for fundamentalists fifteen years later. Among the greatest curiosities of *The Fundamentals* was the role of Wright, who still held some loyalty to Darwin but was soon called upon by Dixon to write an article that would “make the matter so clear that the vagaries of Evolution shall be driven from the minds of thousands.”<sup>33</sup>

The article emerged from a correspondence concerning *The Other Side of Evolution*, which Dixon praised as “about the best thing I have been able to find on the subject in a small compass.” Dixon was interested in reprinting the best available antievolutionist book. What, he asked, were the reservations to which Wright had referred in his introduction to Patterson’s work? While Wright’s reply is lost, Dixon did eventually arrange for a revised 1912 edition of *The Other Side*.<sup>34</sup> Dixon also asked Wright in a letter for a six or seven thousand word article on evolution. He himself rejected the theory, writing that “I have been able to find no proofs which have convinced me that evolution was God’s method of creation.” He shared some common ground with Wright, however. “I agree with you,” he added, “that the main thing is to emphasize the theistic argument.”<sup>35</sup>

Dixon initiated the relationship between Wright and *The Fundamentals*, but he left before publishing Wright’s antievolutionist essay, resigning his editorship in 1911 in order to preach in London. Louis Meyer, the new editor, wrote to Wright that he wanted to publish the evolution article, but asked for a shorter text of between fifty-five hundred and six thousand words. Wright submitted a shorter manuscript almost immediately, and the article, entitled “The Passing of Evolution,” was finally published in the seventh volume of *The Fundamentals* in early 1912.<sup>36</sup>

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32. Dixon to Wright, 9 November 1909, Wright Papers; Wright, “The Testimony of the Monuments to the Truth of Scriptures.” For dating of the volumes of *The Fundamentals*, see Sandeen, *The Roots of Fundamentalism*, 197.

33. Sandeen, *The Roots of Fundamentalism*, 203–207; Dixon to Wright, 24 May 1910, Wright Papers.

34. Dixon to Wright, 5 May 1910, Wright Papers; Numbers, *The Creationists*, 16. There may have been multiple editions printed by The Bible Institute Colportage Association of Chicago; at least one carries the subtitle *Its Effects and Fallacy* in place of the more neutral first edition subtitle, *An Examination of its Evidences*.

35. Dixon to Wright, 16 May 1910, Wright Papers.

36. Dixon to Wright, 25 April 1911, Wright Papers; Meyer to Wright, 18 December 1911, 27 December 1911, Wright Papers. Meyer requested a shorter article on December 18 and thanked Wright “for the speedy return of your shortened ms” on December 27. The result is less coherent than Wright’s other writings, which may be a result of hurried editing, but I have been unable to find a longer draft with which to compare it.

As in his earlier essays, Wright began “The Passing of Evolution” by distinguishing Darwinism from evolutionism generally. It was more anti-Darwinian than the others, however. While Wright still both defended and attacked Darwin, his attacks became less restrained and his defenses more feeble. Indeed, the most positive thing he had to say about Darwin was that he had possessed a virtuous uncertainty which other evolutionists lacked. In addition, Wright mentioned Herbert Spencer only briefly, so the philosopher no longer drew fire from Darwin as he had before.

Wright remained a Darwin partisan, but he did so only through selective memory of the naturalist’s writings. His skepticism about universal common ancestry had evidently deepened, for example, so he claimed that Darwin hadn’t believed in it. He alluded to the final sentence of the *Origin*, in which Darwin wrote poetically that life was “originally breathed into a few forms or into one,” ignoring a passage pages earlier in which Darwin concluded that organisms probably descended from a single “primordial form.” Although Wright was correct that Darwin held his beliefs more tentatively than many Darwinians later did, his depiction of Darwin as a modest man interested only in demonstrating “that species may reasonably be supposed to be nothing more than enlarged or accentuated varieties” was an exaggeration.<sup>37</sup>

This characterization of Darwin was related to Wright’s criticisms of Darwin’s gradualism and estimates of the age of the earth, which he included in his *Fundamentals* article in an abbreviated form. Wright argued that even if evolutionary processes could account for speciation, they might not account for the more historically distant origins of higher taxa. It took, he wrote, “an indefinitely larger stretch of the imagination” to believe that families or orders originated by evolution than to believe that species did.<sup>38</sup> In denying the recursive extension of evolutionary theory to broader taxa, Wright denied Darwinism its historical depth.

Wright’s other attempts to ally himself with Darwin were similarly flawed. In a desperate attempt to contrast Darwin with the neo-Darwinians he himself opposed, Wright claimed that “Darwin denied the inheritance of acquired characteristics.” This was simply false; as Wright had himself written in 1898, “Darwin did not deny the importance of this principle, and was ready to admit that the effects of use were, to some extent, inheritable.” In his 1876 article on Hodge and Finney, Wright had concluded that Hodge probably based his attack on his own published critiques of Finney’s early works, ignoring the revisions Finney had since made and neglecting to reread his books.<sup>39</sup> Though his own bias was sometimes toward sympathy, Wright’s misrepresentation of Darwin suggests that he often relied only on his memory.

Like Hodge, however, Wright also read his own earlier writings. While Wright’s views on evolution changed over the years, his conclusions in “The Passing of Evolution” regarding intellectual threats to theology echoed almost word for word his 1878 article on “The Proper Attitude of Religious Teachers Towards Scientific Experts.” “The worst foes of Christianity are not physicists but metaphysicians,” wrote Wright. As before, he followed the statement with

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37. Darwin, *Origin of Species*, 400, 395; Wright, “The Passing of Evolution,” 8–9, 6.

38. Wright, “The Passing of Evolution,” 7.

39. *Ibid.*, 10; Wright, *Scientific Aspects of Christian Evidences*, 98; Wright, “Dr. Hodge’s Misrepresentations of President Finney’s System of Theology,” 392.

examples of “dreaded” philosophers and less dangerous scientists, many of them the same as those he had listed in 1878.<sup>40</sup>

Although Wright made many of the same arguments in “The Passing” that he had been making for over a decade, he wrote within the emerging discourse of fundamentalist antievolutionism rather than the academic theology of the *Bibliotheca Sacra*.<sup>41</sup> He continued to quote the great men of evolutionary theory, but also included a quotation attributed to Dr. Etheridge of the British Museum which was frequently cited in antievolutionist texts, and which Wright may have found in Patterson’s *Other Side of Evolution*. “In all this great museum,” Etheridge was said to have written, “there is not a particle of evidence of transmutation of species.” The Etheridge quotation is significant because Wright used it in the same way as many creationists. Apparently ignorant of Etheridge’s identity except for his affiliation with the prestigious British Museum, creationist authors uniformly omitted even his first name.<sup>42</sup>

Robert Etheridge, Jr. (1846–1920) was in fact a widely-published paleontologist who studied under Thomas Henry Huxley and became the curator of the Australian Museum in 1895.<sup>43</sup> He never earned a doctorate and moved to Australia in 1887, yet in 1912 Wright described him as “Dr. Etheride [*sic*] of the British Museum.” Wright’s awareness of Etheridge evidently came not from the discourse of geology, but from the writings of Patterson or the Methodist theologian Luther Townsend (1838–1922), who introduced his name into the creationist canon.<sup>44</sup> Despite his previous membership in the geological community, by 1912 Wright was writing within an antievolutionist discourse and drawing increasingly on antievolutionist sources.

Wright also introduced substantive new critiques into his *Fundamentals* article. He focused more on human evolution than he had in earlier versions, listing a number of qualitative differences between humans and animals which he—and, he added, Alfred Russel Wallace—believed “could not have originated through natural selection alone.” Wright concluded that humans, if not other organisms, “came into existence as the Bible represents, by the special creation of a single pair.” With regard to human evolution, perhaps the point of greatest concern for early antievolutionists, the Wright of *The Fundamentals* was undoubtedly a creationist.<sup>45</sup> This was not an abrupt shift, for Wright had reserved the possibility of a miraculous creation for

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40. Wright, “The Passing of Evolution,” 20. Wright also made identical statements in 1897 and 1898 (McGiffert, “Christian Darwinism,” 380 n. 2; Wright, *Scientific Aspects of Christian Evidences*, 60).

41. This was arguably *not* the same discourse that developed into flood geology and creation science in the late twentieth century. The belief that the earth was created in six literal days about 6000 years ago was seldom found in the early twentieth century outside of the works of George McCready Price (see pages 62–63 and Numbers, *The Creationists*, x–xi).

42. Wright, “The Passing of Evolution,” 11; Patterson, *The Other Side of Evolution*, 9; Numbers, *The Creationists*, 52; Numbers, *Darwinism Comes to America*, 127. So little information is typically connected to Etheridge’s name that one creationist author even asserted that he was a contemporary scientist in 1997 (Huse, *The Collapse of Evolution*, 158). See also “Etheridge and Fleischmann are Famous Contemporary Biologists Opposed to Evolution?” and Hopkins, “Quotations and Misquotations.”

43. Walsh, “Etheridge, Robert.” Ronald Numbers overlooked Etheridge’s later success in Australia, describing him as “a little-known assistant keeper of geology at the British Museum, who spent his last years in obscurity in Australia” (*Darwinism Comes to America*, 127).

44. Wright, “The Passing of Evolution,” 11; Numbers, *Darwinism Comes to America*, 127. On these authors’ uses of Etheridge, see also Numbers, *The Creationists*, 52.

45. *Ibid.*, 14, 17.

humanity even in his 1876 explication of Darwinism, but it did demonstrate a break with his geological work.

Also in 1912, Wright published his last scientific book, *Origin and Antiquity of Man*. In it he maintained his belief that life had developed in the last twenty-four million years, adding that humanity had arisen in the last hundred thousand. He concluded that “so far as his physical organism is concerned, man is genetically connected with the highest order of the Mammalia,” but that at some point, “through creative interference or creative prearrangement,” humanity had become qualitatively different from its animal ancestors.<sup>46</sup>

A few years later, a correspondent sent some evolutionist quotations from the book to A. C. Dixon, who wrote Wright to ask for clarification. “I must confess,” Dixon wrote of the excerpts he had seen, “that they are quite puzzling to me. Have you changed your views as to Darwinian Evolution, or will the context in your book so modify these quotations as to make them harmonise with your article in the ‘Fundamentals’?”<sup>47</sup> Once again Wright’s reply to Dixon is lost, but we can speculate on how he might have answered.

The idea that Wright simply presented different truths to different audiences seems at best an incomplete explanation for the behavior of a reconciliationist who believed that science and theology were ultimately consistent. Perhaps Wright himself would have maintained that his religious and scientific writings of 1912 were not truly contradictory, because both allowed that the physical form of humans could have developed through Darwinian evolution while the soul was specially created. In 1882 Wright had written that “we may distinguish between the physical nature of Adam and his mental or moral nature; and the spiritual nature may, for all science *can* ever show, be as direct a gift to the race in general as we believe it to be to every individual.”<sup>48</sup> Wright’s mind-body dualism thus provides a key to his otherwise puzzling views on human evolution. To some extent Wright *did* present different truths in different media—witness his use of the dissimilar phrases “special creation” and “creative interference”—but the divergence may not have risen to the level of self-contradiction. It was “The Passing of Evolution,” however, which was distributed to about two hundred fifty thousand Christian leaders and thus had the greater impact.<sup>49</sup>

In any case, Wright’s ideas about evolution remained more complex than those of many of his contemporaries. The next volume of *The Fundamentals* contained two more articles on evolution “following up your article,” as Meyer wrote to Wright. Although “The Passing of Evolution” looked radical in comparison to Wright’s earlier writings, it was moderate in comparison to the sensationalist “Evolutionism in the Pulpit” and “Decadence of Darwinism,” both written firmly within the antievolutionist discourse. The former, written by an anonymous “occupant of the pew” and first published in the *Herald and Presbyterian* of Cincinnati, included a Robert Etheridge quotation closely related to that in Wright’s article, demonstrating again their pervasive presence in antievolutionist literature.<sup>50</sup>

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46. Wright, *Origin and Antiquity of Man*, 6–9, 386–388. See also Numbers, “George Frederick Wright,” 641–642.

47. Dixon to Wright, 1 January 1915, Wright Papers.

48. Wright, *Studies in Science and Religion*, 370. The end of this phrase may refer to a preference for creationism over traducianism as a theory of ensoulment.

49. Sandeen, *The Roots of Fundamentalism*, 198.

50. Meyer to Wright, 16 April 1912, Wright Papers; Occupant of the Pew, “Evolutionism in the Pulpit,” 29.

Some historians have taken the fact that Wright was asked to write his article for *The Fundamentals* as evidence that the proto-fundamentalist attitude towards evolution was ambivalent. It was not conservative evangelicalism as a whole that asked Wright for the article, however, but Dixon, who edited the tracts more or less independently.<sup>51</sup> Dixon's letters suggest that he was simply unaware of Wright's earlier writings on evolution, and thus did not even realize that he was recruiting a founding Christian Darwinian. While Wright's role in *The Fundamentals*, like his life as a whole, demonstrated that an evolutionist could work within the discourse of conservative Protestantism, it did not prove the presence of any great tolerance for evolutionary thought in early twentieth century conservative evangelicalism. Indeed, the tone and content of Wright's article suggest that he wrote within an intellectual atmosphere of increasingly pervasive antievolutionism. Its presence in *The Fundamentals* demonstrates not that evangelical antievolutionism was tentative or uncertain, but that it was strong enough to compel even Wright to deny his evolutionism.

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51. Livingstone, *Darwin's Forgotten Defenders*, 148; Marsden, *Fundamentalism and American Culture*, 123; Sandeen, *The Roots of Fundamentalism*, 196–197.

## Chapter IV Liberalism and Fundamentalism

If single acts would evince design, how much more a vast universe, that by inherent laws gradually builded itself, and then created its own plants and animals, a universe so adjusted that it left by the way the poorest things, and steadily wrought toward more complex, ingenious, and beautiful results!

—Henry Ward Beecher<sup>1</sup>

This thesis has traced the development of Wright's ideas in his own mind over the course of several decades. Wright's ideas took hold in minds beyond his own, however. It may be informative to examine, however imprecisely, how Wright's work affected a few of his more famous contemporaries. Although forty years and their opposing positions separated them, Henry Ward Beecher and William Jennings Bryan each invoked Wright in support of their answers to the question of origins.

Henry Ward Beecher (1813–1887) was Lyman Beecher's son and perhaps the most popular preacher of the late nineteenth century. He was also an innovative liberal theologian who read *Studies in Science and Religion* soon after it was published in 1882. "From a copy owned by Henry Ward Beecher, which has fallen into my hands," wrote Wright in his autobiography, "I have found from his annotations that he had read the book carefully, and been duly influenced by it."<sup>2</sup> Wright didn't describe the nature of this influence, but Beecher's life provides some hints.

At one time, Beecher's views on evolutionism and Calvinism were diametrically opposed to Wright's: he became a Spencerian in the 1860s as he rejected his father's orthodoxy, believing that the new philosophy offered a replacement for the old theology. Although Beecher continued to reject Calvinism, renouncing it publicly in 1882, his evolutionism became more Darwinian in the early 1880s.<sup>3</sup> How much Beecher owed this transition to Wright would be hard to evaluate precisely, but his most Darwinian sermon bore a close resemblance to Wright's reconciliationist theology.

Beecher preached on "Divine Providence and Design" at Plymouth Church in Brooklyn on June 28, 1885. In his sermon, Beecher followed Wright to the view that God's design in nature was holistic rather than specific. "Design by wholesale," he said famously, "is grander than design by retail." Beecher also followed Wright away from his Spencerian belief in inevitable progress. He clearly accepted the dominant role of natural selection in evolutionary processes, and nearly quoted Wright's analogical argument when he preached that "the theory of Evolution is as much a theory of destruction and degradation as of development and building up."<sup>4</sup>

Wright's evident pride in having influenced Beecher comes at first as something of a surprise. If Beecher was a theological liberal, why was Wright honored by his attention? The answer might be that Wright believed his book had brought Beecher closer to orthodoxy. For Wright, the ideas about Darwinism that Beecher adopted in the last few years of his life were closely allied

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1. Beecher, *Evolution and Religion* (1886), 115.

2. Wright, *Story of My Life and Work*, 139. Although many of Wright's books were donated to the Oberlin College library, Beecher's annotated copy of *Studies* is neither there nor in the college's archives.

3. Applegate, *The Most Famous Man in America*, 355, 460.

4. Beecher, *Evolution and Religion*, 109, 115, 114.

with conservative theology. They may have been for Beecher as well. As he concluded his sermon, the preacher may have been speaking of his own conversion from Spencerism to Darwinism.

When men have gone out of the simple faith of childhood by the misinterpretation of the theory and philosophy of natural law, it ought to be to them a source of great joy and rejoicing that science itself, which misled them, has been appealed from—science not well informed, to science better informed.... So, brethren, be not in haste to cast away, on the instruction or the misinterpretation of science, yet crude in many of its parts, that faith of childhood, that faith of your fathers, that faith which is the joy and should be the courage of every right-minded man, the faith that God's eye is on you, and that he cares, he guides, he defends, and will bring you safely from earth to life eternal.<sup>5</sup>

Invoking a Calvinist conception of divine sovereignty despite his professed heterodoxy, Beecher concluded that evolutionism “better informed” was not reason to abandon “the faith of your fathers.” For many in the decades to come, however, conservative theology would provide reasons to reject evolutionism.

Almost forty years after Beecher, the tradition of fundamentalist antievolutionism—perhaps even that of fundamentalism itself—saw its most famous expression in the 1925 trial of John Scopes (1900–1970) for teaching human evolution in a public school. The populist politician William Jennings Bryan (1860–1925), who began an antievolutionist campaign after the science-fueled slaughter of World War I, aided the prosecutor at the trial in Dayton, Tennessee. He had become an evangelist in the last years of his life and, in the most celebrated episode of the trial, the defense called Bryan himself as an expert witness on the Bible. Bryan's counterpart Clarence Darrow (1857–1938), a famous defense attorney and secularist, questioned him on biblical history and theology, at one point asking him to name scientists who shared his beliefs. Bryan named two. One was George McCready Price (1870–1963), a Seventh-day Adventist who—unlike virtually all other participants in the Darwinian controversies until the 1960s, including Bryan himself—believed that the earth was created in six literal days about six thousand years ago.<sup>6</sup> The other was George Frederick Wright.

Bryan described him only as “a man named Wright, who taught at Oberlin.” Of Wright's ideas, Bryan recalled only—and incorrectly—that he believed “that man has appeared since the last glacial age.” In this exchange, as in most of his testimony, Bryan appeared ignorant of the subjects about which he spoke. In fact, he held little interest in either science or theology. Bryan became an evangelist without ordination and, despite his status as a fundamentalist icon, his pragmatic interest in religion as a source of morality overshadowed his belief in biblical literalism. His bare awareness of Wright fit the life of a man who didn't begin his second career as an evangelist until Wright died and may have never even read *The Fundamentals*. Indeed, Bryan probably would have disapproved of the beliefs Wright held for most of his life. “Theistic

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5. Ibid., 123–124.

6. Numbers, *The Creationists*, 41, 72–73, x–xi, 76. Price's work later became a basis for the young-earth creationist movement of the late twentieth century. In his own day, A. C. Dixon approved of Price's work, while Wright himself may have vetoed the publication of one of Price's essays in *Bible Student and Teacher* (ibid., 97).

evolution is an anesthetic,” he once proclaimed. “It deadens the pain while the Christian’s religion is being removed.”<sup>7</sup>

The examination was telling about more than Bryan’s ignorance, however. Darrow, in questioning Bryan, not only recognized Wright’s name but knew that “there are two Mr. Wrights, of Oberlin... both of them geologists.” He may have learned about the Wrights from the only scientist allowed to testify at the Scopes trial, zoologist Maynard M. Metcalf (1868–1940) of John Hopkins University.<sup>8</sup> Metcalf graduated from Oberlin College, where his mentor was the geologist Albert Allen Wright (1846–1905), in 1889, and chaired the zoology department there from 1906 to 1914.<sup>9</sup>

While Bryan publicly proclaimed his affinity for Wright, it was the defense who brought his message of reconciliationism into the Scopes trial. Wright’s habit of taking both science and theology seriously had become common among religious scientists. Metcalf, for example, was a Congregationalist who taught Bible study classes and believed that evolutionary theory could support his religion. “God’s growing revelation of Himself to the human soul,” he wrote, “cannot be realized without recognition of the evolutionary method he has chosen.” Among the defense witnesses permitted to give only written testimony was the Baptist geologist Kirtley F. Mather (1888–1978), of Harvard, who wrote that Christianity “deals with moral law and spiritual realities” while “natural science deals with physical laws and material realities.” Mather cited not Wright but Beecher as a religious authority, however.<sup>10</sup>

In Dayton, four years after his death, Wright was forgotten by liberals and barely remembered by fundamentalists. He had built on Calvinism, a theology which he believed was solid and enduring, but which had lost its influence even before his death. As the church historian Frank Hugh Foster (1851–1935), a friend and Oberlin colleague of Wright, wrote in 1906, “it had endured more than 150 years; it had become dominant in a great ecclesiastical denomination; it had founded every Congregational seminary; and, as it were, in a night, it perished from off the face of the earth.”<sup>11</sup> Wright’s Darwinism, reconciliationism, and religious conservatism all flourished in the next generation, but without the interconnecting framework of Calvinism none of his successors adopted his entire system. Theistic evolutionists like Metcalf and Mather cleaved closest to Wright’s vision of reconciliation, but rejected the biblical literalism and Calvinism that he held even more closely. It thus came to pass that they regarded liberals like Beecher as their antecedents, while only theologically conservative antievolutionists like Bryan looked to the Wright as an ally.

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7. *The World’s Most Famous Court Trial*, 297–298; Kazin, *A Godly Hero*, 262–265; Bryan, quoted in Cherny, *A Righteous Cause*, 173.

8. *The World’s Most Famous Court Trial*, 298; Larson, *Summer for the Gods*, 173–175. Several other experts prepared statements which were inserted into the written record, but did not testify (Larson, 174–185).

9. Budington, *Maynard Mayo Metcalf*, 75–76. Metcalf may or may not have taken courses from G. F. Wright. Metcalf’s letters to Wright, consisting only of requests for his geological writings and notes concerning a property dispute in Oberlin, suggest that their later contact was limited.

10. *The World’s Most Famous Court Trial*, 136; Metcalf, written testimony, in *The World’s Most Famous Court Trial*, 251; Mather, written testimony, in *The World’s Most Famous Court Trial*, 248, 251.

11. Foster, *A Genetic History of the New England Theology*, 543.

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