

# THE CREATIONISTS

by Ronald L. Numbers

*Abstract.* As the crusade to outlaw the teaching of evolution changed to a battle for equal time for creationism, the ideological defenses of that doctrine also shifted from primarily biblical to more scientific grounds. This essay describes the historical development of "scientific creationism" from a variety of late-nineteenth- and early-twentieth-century creationist reactions to Charles Darwin's theory of evolution, through the Scopes trial and the 1960s revival of creationism, to the current spread of strict creationism around the world.

*Keywords:* creationism; evolutionism; fundamentalism; Henry M. Morris; scientific creationism; Scopes trial.

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Scarcely twenty years after the publication of Charles Darwin's *Origin of Species* in 1859 special creationists could name only two working naturalists in North America, John William Dawson (1820-99) of Montreal and Arnold Guyot (1806-84) of Princeton, who had not succumbed to some theory of organic evolution (Pfeifer 1974, 203; Gray 1963, 202-3). The situation in Great Britain looked equally bleak for creationists, and on both sides of the Atlantic liberal churchmen were beginning to follow their scientific colleagues into the evolutionist camp.<sup>1</sup> By the closing years of the nineteenth century evolution was infiltrating even the ranks of the evangelicals, and, in the opinion of many observers, belief in special creation seemed destined to go the

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way of the dinosaur. However, contrary to the hopes of liberals and the fears of conservatives, creationism did not become extinct. The majority of late-nineteenth-century Americans remained true to a traditional reading of Genesis, and as late as 1982 a public-opinion poll revealed that 44 percent of Americans, nearly a fourth of whom were college graduates, continued to believe that "God created man pretty much in his present form at one time within the last 10,000 years" ("Poll" 1982, 22).<sup>2</sup>

Such surveys failed, however, to disclose the great diversity of opinion among those professing to be creationists. Risking oversimplification, we can divide creationists into two main camps: "strict creationists," who interpret the days of Genesis literally, and "progressive creationists," who construe the Mosaic days to be immense periods of time. Yet, even within these camps substantial differences exist. Among strict creationists, for example, some believe that God created all terrestrial life—past and present—less than ten thousand years ago, while others postulate one or more creations prior to the seven days of Genesis. Similarly, some progressive creationists believe in numerous creative acts, while others limit God's intervention to the creation of life and perhaps the human soul. Since this last species of creationism is practically indistinguishable from theistic evolutionism, this essay focuses on the strict creationists and the more conservative of the progressive creationists, particularly on the small number who claimed scientific expertise. Drawing on their writings, it traces the ideological development of creationism from the crusade to outlaw the teaching of evolution in the 1920s to the current battle for equal time. During this period the leading apologists for special creation shifted from an openly biblical defense of their views to one based largely on science. At the same time they grew less tolerant of notions of an old earth and symbolic days of creation, common among creationists early in the century, and more doctrinaire in their insistence on a recent creation in six literal days and on a universal flood.

#### THE LOYAL MAJORITY

The general acceptance of organic evolution by the intellectual elite of the late Victorian era has often obscured the fact that the majority of Americans remained loyal to the doctrine of special creation (Dillenberger & Welch 1954, 227). In addition to the masses who said nothing, there were many people who vocally rejected kinship with the apes and other, more reflective, persons who concurred with the Princeton theologian Charles Hodge (1797-1878) that Darwinism was atheism. Among the most intransigent foes of organic evolution were the pre-millennialists, whose predictions of Christ's imminent return de-

pended on a literal reading of the Scriptures (Whalen 1972, 219-29; Numbers 1975, 18-23). Because of their conviction that one error in the Bible invalidated the entire book, they had little patience with scientists who, as described by the evangelist Dwight L. Moody (1837-99), "dug up old carcasses . . . to make them testify against God" (McLoughlin 1959, 213).

Such an attitude did not, however, prevent many biblical literalists from agreeing with geologists that the earth was far older than six thousand years. They did so by identifying two separate creations in the first chapter of Genesis: the first, "in the beginning," perhaps millions of years ago, and the second, in six actual days, approximately four thousand years before the birth of Christ. According to this so-called gap theory, most fossils were relics of the first creation, destroyed by God prior to the Adamic restoration (Numbers 1977, 89-90; Ramm 1954, 195-98). In 1909 the *Scofield Reference Bible*, the most authoritative biblical guide in fundamentalist circles, sanctioned this view.<sup>3</sup>

Scientists like Guyot and Dawson, the last of the reputable nineteenth-century creationists, went still further to accommodate science by interpreting the days of Genesis as ages and by correlating them with successive epochs in the natural history of the world (O'Brien 1971; Numbers 1977, 91-100). Although they believed in special creative acts, especially of the first humans, they tended to minimize the number of supernatural interventions and to maximize the operation of natural law. During the late nineteenth century their theory of progressive creation circulated widely in the colleges and seminaries of America.<sup>4</sup>

The early Darwinian debate focused largely on the implications of evolution for natural theology (Moore 1979); and so long as these discussions remained confined to scholarly circles, those who objected to evolution on biblical grounds saw little reason to participate. However, when the debate spilled over into the public arena during the 1880s and 1890s, creationists grew alarmed. "When these vague speculations, scattered to the four winds by the million-tongued press, are caught up by ignorant and untrained men," declared one premillennialist in 1889, "it is time for earnest Christian men to call a halt" (Hastings 1889).

The questionable scientific status of Darwinism undoubtedly encouraged such critics to speak up ("Evolutionism in the Pulpit" 1910-15; Bowler 1983). Although the overwhelming majority of scientists after 1880 accepted a long earth history and some form of organic evolution, many in the late nineteenth century were expressing serious reservations about the ability of Darwin's particular theory of natural

selection to account for the origin of species. Their published criticisms of Darwinism led creationists mistakenly to conclude that scientists were in the midst of discarding evolution. The appearance of books with such titles as *The Collapse of Evolution* and *At the Death Bed of Darwinism* bolstered this belief and convinced anti-evolutionists that liberal Christians had capitulated to evolution too quickly. In view of this turn of events it seemed likely that those who had “abandoned the stronghold of faith out of sheer fright will soon be found scurrying back to the old and impregnable citadel, when they learn that ‘the enemy is in full retreat’” (Young 1909, 41).

For the time being, however, those conservative Christians who would soon call themselves fundamentalists perceived a greater threat to orthodox faith than evolution—higher criticism, which treated the Bible more as a historical document than as God’s inspired Word. Their relative apathy toward evolution is evident in *The Fundamentals*, a mass-produced series of twelve booklets published between 1910 and 1915 to revitalize and reform Christianity around the world. Although one contributor identified evolution as the principal cause of disbelief in the Scriptures and another traced the roots of higher criticism to Darwin, the collection as a whole lacked the strident anti-evolutionism that would characterize the fundamentalist movement of the 1920s (Mauro 1910-15; Reeve 1910-15).

This is particularly true of the writings of George Frederick Wright (1838-1921), a Congregational minister and amateur geologist of international repute (Wright 1916). At first glance his selection to represent the fundamentalist point of view seems anomalous. As a prominent Christian Darwinist in the 1870s he had argued that the intended purpose of Genesis was to protest polytheism, not teach science (Wright 1898). By the 1890s, however, he had come to espouse the progressive creationism of Guyot and Dawson, partly, it seems, in reaction to the claims of higher critics regarding the accuracy of the Pentateuch (Wright 1902). Because of his standing as a scientific authority and his conservative view of the Scriptures, the editors of *The Fundamentals* selected him to address the question of the relationship between evolution and the Christian faith.

In an essay misleadingly titled “The Passing of Evolution” Wright attempted to steer a middle course between the theistic evolution of his early days and the traditional views of some special creationists. On the one hand, he argued that the Bible itself taught evolution, “an orderly progress from lower to higher forms of matter and life.” On the other hand, he limited evolution to the origin of species, pointing out that even Darwin had postulated the supernatural creation of several forms of plants and animals, endowed by the Creator with a “marvelous

capacity for variation.” Furthermore, he argued that, despite the physical similarity between human beings and the higher animals, the former “came into existence as the Bible represents, by the special creation of a single pair, from whom all the varieties of the race have sprung” (Wright 1910-15).<sup>5</sup>

Although Wright represented the left wing of fundamentalism, his moderate views on evolution contributed to the conciliatory tone that prevailed during the years leading up to World War I. Fundamentalists may not have liked evolution, but few, if any, at this time saw the necessity or desirability of launching a crusade to eradicate it from the schools and churches in America.

#### THE ANTI-EVOLUTION CRUSADE

Early in 1922 William Jennings Bryan (1860-1925), Presbyterian layman and thrice-defeated Democratic candidate for the presidency of the United States, heard of an effort in Kentucky to ban the teaching of evolution in public schools. “The movement will sweep the country,” he predicted hopefully, “and we will drive Darwinism from our schools” (Levine 1965, 277). His prophecy proved overly optimistic, but before the end of the decade more than twenty state legislatures did debate anti-evolution laws, and four—Oklahoma, Tennessee, Mississippi, and Arkansas—banned the teaching of evolution in public schools (Shipley 1927; 1930). At times the controversy became so tumultuous that it looked to some as though “America might go mad” (Nelson 1964, 319). Many persons shared responsibility for these events, but none more than Bryan. His entry into the fray had a catalytic effect (Szasz 1982, 107-16) and gave anti-evolutionists what they needed most: “a spokesman with a national reputation, immense prestige, and a loyal following” (Levine 1965, 272).

The development of Bryan’s own attitude toward evolution closely paralleled that of the fundamentalist movement. Since early in the century he had occasionally alluded to the silliness of believing in monkey ancestors and to the ethical dangers of thinking that might makes right, but until the outbreak of World War I he saw little reason to quarrel with those who disagreed. The war, however, exposed the darkest side of human nature and shattered his illusions about the future of Christian society. Obviously something had gone awry, and Bryan soon traced the source of the trouble to the paralyzing influence of Darwinism on the human conscience. By substituting the law of the jungle for the teaching of Christ, it threatened the principles he valued most: democracy and Christianity. Two books in particular confirmed his suspicion. The first, Vernon Kellogg’s *Headquarters Nights* in 1917, recounted firsthand conversations with German officers that revealed

the role Darwin's biology had played in persuading the Germans to declare war. The second, Benjamin Kidd's *Science of Power* in 1918, purported to demonstrate the historical and philosophical links between Darwinism and German militarism (Levine 1965, 261-65).

About the time that Bryan discovered the Darwinian origins of the war, he also became aware, to his great distress, of unsettling effects the theory of evolution was having on America's own young people. From frequent visits to college campuses and from talks with parents, pastors, and Sunday school teachers, he heard about an epidemic of unbelief that was sweeping the country. Upon investigating the cause, his wife reported, "he became convinced that the teaching of Evolution as a fact instead of a theory caused the students to lose faith in the Bible, first, in the story of creation, and later in other doctrines, which underlie the Christian religion" (Williams 1936, 448). Again Bryan found confirming evidence in a recently published book, *Belief in God and Immortality*, authored in 1916 by the Bryn Mawr psychologist James H. Leuba, who demonstrated statistically that college attendance endangered traditional religious beliefs (Levine 1965, 266-67).

Armed with this information about the cause of the world's and the nation's moral decay, Bryan launched a nationwide crusade against the offending doctrine. In one of his most popular and influential lectures, "The Menace of Darwinism," he summed up his case against evolution, arguing that it was both un-Christian and unscientific. Darwinism, he declared, was nothing but "guesses strung together," and poor guesses at that. Borrowing from a turn-of-the-century tract, he illustrated how the evolutionist explained the origin of the eye:

The evolutionist guesses that there was a time when eyes were unknown—that is a necessary part of the hypothesis. . . . a piece of pigment, or, as some say, a freckle appeared upon the skin of an animal that had no eyes. This piece of pigment or freckle converged the rays of the sun upon that spot and when the little animal felt the heat on that spot it turned the spot to the sun to get more heat. The increased heat irritated the skin—so the evolutionists guess, and a nerve came there and out of the nerve came the eye! (Bryan 1922, 94, 97-98).<sup>6</sup>

"Can you beat it?" he asked incredulously—and that it happened not once but twice? As for himself, he would take one verse in Genesis over all that Darwin wrote.

Throughout his political career Bryan had placed his faith in the common people, and he resented the attempt of a few thousand scientists "to establish an oligarchy over the forty million American Christians," to dictate what should be taught in the schools (Coletta 1969, 230). To a democrat like Bryan it seemed preposterous that this "scientific soviet" (Levine 1965, 289) would not only demand to teach its insidious philosophy but impudently insist that society pay its salaries.

Confident that nine-tenths of the Christian citizens agreed with him, he decided to appeal directly to them, as he had done so successfully in fighting the liquor interests.<sup>7</sup> “Commit your case to the people,” he advised creationists. “Forget, if need be, the highbrows both in the political and college world, and carry this cause to the people. They are the final and efficiently corrective power” (“Progress” 1929, 13).

Who were the people who joined Bryan’s crusade? As recent studies have shown, they came from all walks of life and from every region of the country. They lived in New York, Chicago, and Los Angeles as well as in small towns and in the country. Few possessed advanced degrees, but many were not without education. Nevertheless, Bryan undeniably found his staunchest supporters and won his greatest victories in the conservative and still largely rural South, described hyperbolically by one fundamentalist journal as “the last stronghold of orthodoxy on the North American continent,” a region where the “masses of the people in all denominations ‘believe the Bible from lid to lid’” (“Fighting Evolution” 1925, 5).<sup>8</sup>

The strength of Bryan’s following within the churches is perhaps more difficult to determine, because not all fundamentalists were creationists and many creationists refused to participate in the crusade against evolution. However, a 1929 survey of the theological beliefs of seven hundred Protestant ministers provides some valuable clues (Betts 1929, 26, 44). The question “Do you believe that the creation of the world occurred in the manner and time recorded in Genesis?” elicited the following positive responses:

Lutheran	89%
Baptist	63%
Evangelical	62%
Presbyterian	35%
Methodist	24%
Congregational	12%
Episcopalian	11%
Other	60%

Unfortunately, these statistics tell us nothing about the various ways respondents may have interpreted the phrase “in the manner and time recorded in Genesis,” nor do they reveal anything about the level of political involvement in the campaign against evolution. Lutherans, for example, despite their overwhelming rejection of evolution, generally preferred education to legislation and tended to view legal action against evolution as “a dangerous mingling of church and state” (Rudnick 1966, 88-90; Szasz 1969, 279). Similarly, premillennialists, who saw the spread of evolution as one more sign of the world’s impending end,

sometimes lacked incentive to correct the evils around them (Sandeem 1971, 266-68).<sup>9</sup>

Baptists and Presbyterians, who dominated the fundamentalist movement, participated actively in the campaign against evolution. The Southern Baptist Convention, spiritual home of some of the most outspoken foes of evolution, lent encouragement to the creationist crusaders by voting unanimously in 1926 that "this Convention accepts Genesis as teaching that man was the special creation of God, and rejects every theory, evolution or other, which teaches that man originated in, or came by way of, a lower animal ancestry" (Clark 1952, 154; Thompson 1975-76). The Presbyterian Church contributed Bryan and other leaders to the creationist cause but, as the above survey indicates, also harbored many evolutionists. In 1923 the General Assembly turned back an attempt by Bryan and his fundamentalist cohorts to cut off funds to any church school found teaching human evolution, approving instead a compromise measure that condemned only materialistic evolution (Loetscher 1954, 111). The other major Protestant bodies paid relatively little attention to the debate over evolution; and Catholics, though divided on the question of evolution, seldom favored restrictive legislation (Morrison 1953).<sup>10</sup>

Leadership of the anti-evolution movement came not from the organized churches of America but from individuals like Bryan and interdenominational organizations such as the World's Christian Fundamentals Association, a predominantly premillennialist body founded in 1919 by William Bell Riley (1861-1947), pastor of the First Baptist Church in Minneapolis.<sup>11</sup> Riley became active as an anti-evolutionist after discovering, to his apparent surprise, that evolutionists were teaching their views at the University of Minnesota. The early twentieth century witnessed an unprecedented expansion of public education; enrollment in public high schools nearly doubled between 1920 and 1930 (Bailey 1964, 72-73). Fundamentalists like Riley and Bryan wanted to make sure that students attending these institutions would not lose their faith. Thus they resolved to drive every evolutionist from the public school payroll. Those who lost their jobs as a result deserved little sympathy, for, as one rabble-rousing creationist put it, the German soldiers who killed Belgian and French children with poisoned candy were angels compared with the teachers and textbook writers who corrupted the souls of children and thereby sentenced them to eternal death (Martin 1923, 164-65).

The creationists, we should remember, did not always act without provocation. In many instances their opponents displayed equal intolerance and insensitivity. In fact, one contemporary observer blamed the creation-evolution controversy in part on the "intellectual flap-



perism” of irresponsible and poorly informed teachers who delighted in shocking naive students with unsupportable statements about evolution. It was understandable, wrote an Englishman, that American parents would resent sending their sons and daughters to public institutions that exposed them to “a multiple assault upon traditional faiths” (Beale 1936, 249-51).

#### CREATIONIST SCIENCE AND SCIENTISTS

In 1922 Riley outlined the reasons why fundamentalists opposed the teaching of evolution. “The first and most important reason for its elimination,” he explained, “is the unquestioned fact that evolution is not a science; it is a hypothesis only, a speculation” ([Riley] 1922, 5). Bryan often made the same point, defining true science as “classified knowledge . . . the explanation of facts” (Bryan 1922, 94). Although creationists had far more compelling reasons for rejecting evolution than its alleged unscientific status, their insistence on this point was not merely an obscurantist ploy. Rather it stemmed from their commitment to a once-respected tradition, associated with the English philosopher Sir Francis Bacon (1561-1626), that emphasized the factual, nontheoretical nature of science (Marsden 1977, 214-15). By identifying with the Baconian tradition, creationists could label evolution as false science, could claim equality with scientific authorities in comprehending facts, and could deny the charge of being anti-science. “It is not ‘science’ that orthodox Christians oppose,” a fundamentalist editor insisted defensively. “No! no! a thousand times, No! They are opposed only to the theory of evolution, which has not yet been proved, and therefore is not to be called by the sacred name of *science*” (K[eyser] 1925, 413).

Because of their conviction that evolution was unscientific, creationists assured themselves that the world’s best scientists agreed with them. They received an important boost at the beginning of their campaign from an address by the distinguished British biologist William Bateson (1861-1926) in 1921, in which he declared that scientists had *not* discovered “the actual mode and process of evolution” (Bateson 1922).<sup>12</sup> Although he warned creationists against misinterpreting his statement as a rejection of evolution, they paid no more attention to that caveat than they did to the numerous pro-evolution resolutions passed by scientific societies (Shipley 1927, 384).

Unfortunately for the creationists, they could claim few legitimate scientists of their own: a couple of self-made men of science, one or two physicians, and a handful of teachers who, as one evolutionist described them, were “trying to hold down, not a chair, but a whole settee, of ‘Natural Science’ in some little institution.”<sup>13</sup> Of this group the most

influential were Harry Rimmer (1890-1952) and George McCready Price (1870-1963).

Rimmer, Presbyterian minister and self-styled "research scientist," obtained his limited exposure to science during a term or two at San Francisco's Hahnemann Medical College, a small homeopathic institution that required no more than a high school diploma for admission. As a medical student he picked up a vocabulary of "double-jointed, twelve cylinder, knee-action words" that later served to impress the uninitiated (Rimmer 1945, 14). After his brief stint in medical school he attended Whittier College and the Bible Institute of Los Angeles for a year each before entering full-time evangelistic work. About 1919 he settled in Los Angeles, where he set up a small laboratory at the rear of his house to conduct experiments in embryology and related sciences. Within a year or two he established the Research Science Bureau "to prove through findings in biology, paleontology, and anthropology that science and the literal Bible were not contradictory." The bureau staff—that is, Rimmer—apparently used income from the sale of memberships to finance anthropological field trips in the western United States, but Rimmer's dream of visiting Africa to prove the dissimilarity of gorillas and humans failed to materialize. By the late 1920s the bureau lay dormant, and Rimmer signed on with Riley's World's Christian Fundamentals Associations as a field secretary.<sup>14</sup>

Besides engaging in research, Rimmer delivered thousands of lectures, primarily to student groups, on the scientific accuracy of the Bible. Posing as a scientist, he attacked Darwinism and poked fun at the credulity of evolutionists. To attract attention, he repeatedly offered one hundred dollars to anyone who could discover a scientific error in the Scriptures; not surprisingly, the offer never cost him a dollar ("World Religious Digest" 1939, 215). He also, by his own reckoning, never lost a public debate. Following one encounter with an evolutionist in Philadelphia, he wrote home gleefully that "the debate was a simple walkover, a massacre—murder pure and simple. The eminent professor was simply scared stiff to advance any of the common arguments of the evolutionists, and he fizzled like a wet fire-cracker" (Edmondson 1969, 329-30, 333-34).

Price, a Seventh-Day Adventist geologist, was less skilled at debating than Rimmer but more influential scientifically. As a young man Price attended an Adventist college in Michigan for two years and later completed a teacher training course at the provincial normal school in his native New Brunswick. The turn of the century found him serving as principal of a small high school in an isolated part of eastern Canada, where one of his few companions was a local physician. During their many conversations, the doctor almost converted his fundamentalist

friend to evolution, but each time Price wavered, he was saved by prayer and by reading the works of the Seventh-Day Adventist prophetess Ellen G. White (1827-1915), who claimed divine inspiration for her view that Noah's flood accounted for the fossil record on which evolutionists based their theory. As a result of these experiences, Price vowed to devote his life to promoting creationism of the strictest kind.<sup>15</sup>

By 1906 he was working as a handyman at an Adventist sanitarium in southern California. That year he published a slim volume entitled *Illogical Geology: The Weakest Point in the Evolution Theory*, in which he brashly offered one thousand dollars "to any one who will, in the face of the facts here presented, show me how to prove that one kind of fossil is older than another." (Like Rimmer, he never had to pay.) According to Price's argument, Darwinism rested "logically and historically on the succession of life idea as taught by geology" and "if this succession of life is not an actual scientific fact, then Darwinism . . . is a most gigantic hoax" (Price 1906, 9).<sup>16</sup>

Although a few fundamentalists praised Price's polemic, David Starr Jordan (1851-1931), president of Stanford University and an authority on fossil fishes, warned him that he should not expect "any geologist to take [his work] seriously." Jordan conceded that the unknown author had written "a very clever book" but described it as "a sort of lawyer's plea, based on scattering mistakes, omissions and exceptions against general truths that anybody familiar with the facts in a general way cannot possibly dispute. It would be just as easy and just as plausible and just as convincing if one should take the facts of European history and attempt to show that all the various events were simultaneous."<sup>17</sup> As Jordan recognized, Price lacked any formal training or field experience in geology. He was, however, a voracious reader of geological literature, an armchair scientist who self-consciously minimized the importance of field experience.

During the next fifteen years Price occupied scientific settees in several Seventh-Day Adventist schools and authored six more books attacking evolution, particularly its geological foundation. Although not unknown outside his own church before the early 1920s, he did not attract national attention until then. Shortly after Bryan declared war on evolution, Price published in 1923 *The New Geology*, the most systematic and comprehensive of his many books. Uninhibited by false modesty, he presented his "great law of conformable stratigraphic sequences . . . by all odds the most important law ever formulated with reference to the order in which the strata occur." This law stated that "any kind of fossiliferous beds whatever, 'young' or 'old,' may be found occurring conformably on any other fossiliferous beds, 'older' or 'younger'" (Price 1923, 637-38).<sup>18</sup> To Price, so-called deceptive conformities (where strata

seem to be missing) and thrust faults (where the strata are apparently in the wrong order) proved that there was no natural order to the fossil-bearing rocks, all of which he attributed to the Genesis flood.

A Yale geologist reviewing the book for *Science* accused Price of “harboring a geological nightmare” (Schuchert 1924). Despite such criticism from the scientific establishment—and the fact that his theory contradicted both the day-age and gap interpretations of Genesis—Price’s reputation among fundamentalists rose dramatically. Rimmer, for example, hailed *The New Geology* as “a masterpiece of REAL science [that] explodes in a convincing manner some of the ancient fallacies of science ‘falsely so called’” (Rimmer 1925, 28). By the mid-1920s Price’s byline was appearing with increasing frequency in a broad spectrum of conservative religious periodicals, and the editor of *Science* could accurately describe him as “the principal scientific authority of the Fundamentalists” (*Science* 1926).

#### THE SCOPES TRIAL AND BEYOND

In the spring of 1925 John Thomas Scopes, a high school teacher in the small town of Dayton, Tennessee, confessed to having violated the state’s recently passed law banning the teaching of human evolution in public schools. His subsequent trial focused international attention on the anti-evolution crusade and brought William Jennings Bryan to Dayton to assist the prosecution. In anticipation of arguing the scientific merits of evolution, Bryan sought out the best scientific minds in the creationist camp to serve as expert witnesses. The response to his inquiries could only have disappointed the aging crusader. Price, then teaching in England, sent his regrets—along with advice for Bryan to stay away from scientific topics (Numbers 1979, 24). Howard A. Kelly, a prominent Johns Hopkins physician who had contributed to *The Fundamentals*, confessed that, except for Adam and Eve, he believed in evolution. Louis T. More, a physicist who had just written a book in 1925 on *The Dogma of Evolution*, replied that he accepted evolution as a working hypothesis. Alfred W. McCann, author in 1922 of *God—or Gorilla*, took the opportunity to chide Bryan for supporting prohibition in the past and for now trying “to bottle-up the tendencies of men to think for themselves.”<sup>19</sup>

At the trial itself things scarcely went better. When Bryan could name only Price and the deceased Wright as scientists for whom he had respect, the caustic Clarence Darrow (1857-1938), attorney for the defense, scoffed: “You mentioned Price because he is the only human being in the world so far as you know that signs his name as a geologist that believes like you do. . . . every scientist in this country knows [he] is a mountebank and a pretender and not a geologist at all.” Eventually

Bryan conceded that the world was indeed far more than six thousand years old and that the six days of creation had probably been longer than twenty-four hours each—concessions that may have harmonized with the progressive creationism of Wright but hardly with the strict creationism of Price (Numbers 1979, 24; Levine 1965, 349).

Though one could scarcely have guessed it from some of his public pronouncements, Bryan had long been a progressive creationist. In fact, his beliefs regarding evolution diverged considerably from those of his more conservative supporters. Shortly before his trial he had confided to Dr. Kelly that he, too, had no objection to “evolution before man but for the fact that a concession as to the truth of evolution up to man furnishes our opponents with an argument which they are quick to use, namely, if evolution accounts for all the species up to man, does it not raise a presumption in behalf of evolution to include man?” Until biologists could actually demonstrate the evolution of one species into another, he thought it best to keep them on the defensive.<sup>20</sup>

Bryan’s admission at Dayton spotlighted a serious and long-standing problem among anti-evolutionists: their failure to agree on a theory of creation. Even the most visible leaders could not reach a consensus. Riley, for example, followed Guyot and Dawson (and Bryan) in viewing the days of Genesis as ages, believing that the testimony of geology necessitated this interpretation. Rimmer favored the gap theory, which involved two separate creations, in part because his scientific mind could not fathom how, given Riley’s scheme, plants created on the third day could have survived thousands of years without sunshine, until the sun appeared on the fourth. According to the testimony of acquaintances, he also believed that the Bible taught a local rather than a universal flood (Culver 1955, 7). Price, who cared not a whit about the opinion of geologists, insisted on nothing less than a recent creation in six literal days and a worldwide deluge. He regarded the day-age theory as “the devil’s counterfeit” and the gap theory as only slightly more acceptable (Price 1902, 125-27; 1954, 39). Rimmer and Riley, who preferred to minimize the differences among creationists, attempted the logically impossible, if ecumenically desirable, task of incorporating Price’s “new geology” into their own schemes (Riley & Rimmer n.d.; Riley 1930, 45).

Although the court in Dayton found Scopes guilty as charged, creationists had little cause for rejoicing. The press had not treated them kindly, and the taxing ordeal no doubt contributed to Bryan’s death a few days after the end of the trial. Nevertheless, the anti-evolutionists continued their crusade, winning victories in Mississippi in 1926 and in Arkansas two years later (Shipley 1930, 330-32). By the end of the decade, however, their legislative campaign had lost its

steam. The presidential election of 1928, pitting a Protestant against a Catholic, offered fundamentalists a new cause, and the onset of the depression in 1929 further diverted their attention (Szasz 1981, 117-25).

Contrary to appearances, the creationists were simply changing tactics, not giving up. Instead of lobbying state legislatures, they shifted their attack to local communities, where they engaged in what one critic described as “the emasculation of textbooks, the ‘purging’ of libraries, and above all the continued hounding of teachers” (Shipley 1930, 330). Their new approach attracted less attention but paid off handsomely, as school boards, textbook publishers, and teachers in both urban and rural areas, North and South, bowed to their pressure. Darwinism virtually disappeared from high school texts, and for years many American teachers feared being identified as evolutionists (Beale 1936, 228-37; Gatewood 1969, 39; Grabiner & Miller 1974; Laba & Gross 1950).

#### CREATIONISM UNDERGROUND

During the heady days of the 1920s, when their activities made front-page headlines, creationists dreamed of converting the world; a decade later, forgotten and rejected by the establishment, they turned their energies inward and began creating an institutional base of their own. Deprived of the popular press and frustrated by their inability to publish their views in organs controlled by orthodox scientists, they determined to organize their own societies and edit their own journals (Carpenter 1980).<sup>21</sup> Their early efforts, however, encountered two problems: the absence of a critical mass of scientifically trained creationists and lack of internal agreement.

In 1935 Price, along with Dudley Joseph Whitney, a farm journalist, and L. Allen Higley, a Wheaton College science professor, formed a Religion and Science Association to create “a united front against the theory of evolution.” Among those invited to participate in the association’s first—and only—convention were representatives of the three major creationist parties, including Price himself, Rimmer, and one of Dawson’s sons, who, like his father, advocated the day-age theory.<sup>22</sup> But as soon as the Price faction discovered that its associates had no intention of agreeing on a short earth history, it bolted the organization, leaving it a shambles.<sup>23</sup>

Shortly thereafter, in 1938, Price and some Seventh-Day Adventist friends in the Los Angeles area, several of them physicians associated with the College of Medical Evangelists (now part of Loma Linda University), organized their own Deluge Geology Society and, between 1941 and 1945, published a *Bulletin of Deluge Geology and Related Science*. As described by Price, the group consisted of “a very eminent set of

men. . . . In no other part of this round globe could anything like the number of scientifically educated believers in Creation and opponents of evolution be assembled, as here in Southern California" (Numbers 1979, 26). Perhaps the society's most notable achievement was its sponsorship in the early 1940s of a hush-hush project to study giant fossil footprints, believed to be human, discovered in rocks far older than the theory of evolution would allow. This find, the society announced excitedly, thus demolished that theory "at a single stroke" and promised to "*astound the scientific world!*" Yet despite such activity and the group's religious homogeneity, it, too, soon foundered—on "the same rock," complained a disappointed member, that wrecked the Religion and Science Association, that is "*pre-Genesis time for the earth.*"<sup>24</sup>

By this time creationists were also beginning to face a new problem: the presence within their own ranks of young university-trained scientists who wanted to bring evangelical Christianity more into line with mainstream science. The encounter between the two generations often proved traumatic, as is illustrated by the case of Harold W. Clark (b. 1891). A former student of Price's, he had gone on to earn a master's degree in biology from the University of California and taken a position at a small Adventist college in northern California. By 1940 his training and field experience had convinced him that Price's *New Geology* was "entirely out of date and inadequate" as a text, especially in its rejection of the geological column. When Price learned of this, he angrily accused his former disciple of suffering from "the modern mental disease of university-itis" and of currying the favor of "tobacco-smoking, Sabbath-breaking, God-defying" evolutionists. Despite Clark's protests that he still believed in a literal six-day creation and universal flood, Price kept up his attack for the better part of a decade, at one point addressing a vitriolic pamphlet, *Theores of Satanic Origin*, to his erstwhile friend and fellow creationist (Numbers 1979, 25).

The inroads of secular scientific training also became apparent in the American Scientific Affiliation (ASA), created by evangelical scientists in 1941.<sup>25</sup> Although the society took no official stand on creation, strict creationists found the atmosphere congenial during the early years of the society. In the late 1940s, however, some of the more progressive members, led by J. Laurence Kulp, a young geochemist on the faculty of Columbia University, began criticizing Price and his followers for their allegedly unscientific effort to squeeze earth history into less than ten thousand years. Kulp, a Wheaton alumnus and member of the Plymouth Brethren, had acquired a doctorate in physical chemistry from Princeton University and gone on to complete all the requirements, except a dissertation, for a Ph.D. in geology. Although initially

suspicious of the conclusions of geology regarding the history and antiquity of the earth, he had come to accept them. As one of the first evangelicals professionally trained in geology, he felt a responsibility to warn his colleagues in the ASA about Price's work, which, he believed, had "infiltrated the greater portion of fundamental Christianity in America primarily due to the absence of trained Christian geologists." In what was apparently the first systematic critique of the "new geology" Kulp concluded that the "major propositions of the theory are contraindicated by established physical and chemical laws" (Kulp 1950).<sup>26</sup> Conservatives within the ASA not unreasonably suspected that Kulp's exposure to "the orthodox geological viewpoint" had severely undermined his faith in a literal interpretation of the Bible ("Comment" 1950, 2).

Before long it became evident that a growing number of ASA members, like Kulp, were drifting from strict to progressive creationism and sometimes on to theistic evolutionism. The transition for many involved immense personal stress, as revealed in the autobiographical testimony of another Wheaton alumnus, J. Frank Cassel:

First to be overcome was the onus of dealing with a "verboden" term and in a "non-existent" area. Then, as each made an honest and objective consideration of the data, he was struck with the validity and undeniability of datum after datum. As he strove to incorporate each of these facts into his Biblico-scientific frame of reference, he found that—while the frame became more complete and satisfying—he began to question first the feasibility and then the desirability of an effort to refute the total evolutionary concept, and finally he became impressed by its impossibility on the basis of existing data. This has been a heart-rending, soul-searching experience for the committed Christian as he has seen what he had long considered the *raison d'être* of God's call for his life endeavor fade away, and as he has struggled to release strongly held convictions as to the close limitations of Creationism.

Cassel went on to note that the struggle was "made no easier by the lack of approbation (much less acceptance) of some of his less well-informed colleagues, some of whom seem to question motives or even to imply heresy" (Cassel 1959, 26-27).<sup>27</sup> Strict creationists, who suffered their own agonies, found it difficult not to conclude that their liberal colleagues were simply taking the easy way out. To both parties a split seemed inevitable.

#### CREATIONISM ABROAD

During the decades immediately following the crusade of the 1920s American anti-evolutionists were buoyed by reports of a creationist revival in Europe, especially in England, where creationism was thought to be all but dead. The Victoria Institute in London, a haven for English creationists in the nineteenth century, had by the 1920s become a



stronghold of theistic evolution. When Price visited the institute in 1925 to receive its Langhorne-Orchard Prize for an essay on "Revelation and Evolution," several members protested his attempt to export the fundamentalist controversy to England. Even evangelicals refused to get caught up in the turmoil that engulfed the United States. As historian George Marsden has explained, English evangelicals, always a minority, had developed a stronger tradition of theological toleration than revivalist Americans, who until the twentieth century had never experienced minority status. Thus, while the displaced Americans fought to recover their lost position, English evangelicals adopted a nonmilitant live-and-let-live philosophy that stressed personal piety (Numbers 1975, 25; Marsden 1977; 1980, 222-26).

The sudden appearance of a small but vocal group of British creationists in the early 1930s caught nearly everyone by surprise. The central figure in this movement was Douglas Dewar (1875-1957), a Cambridge graduate and amateur ornithologist, who had served for decades as a lawyer in the Indian Civil Service. Originally an evolutionist, he had gradually become convinced of the necessity of adopting "a provisional hypothesis of special creation . . . supplemented by a theory of evolution." This allowed him to accept unlimited development within biological families. His published views, unlike those of most American creationists, betrayed little biblical influence (Dewar 1931, 158; Lunn 1947, 1, 154; *Evolution Protest* 1965). His greatest intellectual debt was not to Moses but to a French zoologist, Louis Vialleton (1859-1929), who had attracted considerable attention in the 1920s for suggesting a theory of discontinuous evolution, which anti-evolutionists eagerly—but erroneously—equated with special creation (Paul 1979, 99-100).

Soon after announcing his conversion to creationism in 1931, Dewar submitted a short paper on mammalian fossils to the Zoological Society of London, of which he was a member. The secretary of the society subsequently rejected the piece, noting that a competent referee thought Dewar's evidence "led to no valuable conclusion." Such treatment infuriated Dewar and convinced him that evolution had become "a scientific creed." Those who questioned scientific orthodoxy, he complained, "are deemed unfit to hold scientific offices; their articles are rejected by newspapers or journals; their contributions are refused by scientific societies, and publishers decline to publish their books except at the author's expense. Thus the independents are today pretty effectually muzzled" (Dewar 1932, 142). Because of such experiences Dewar and other British dissidents in 1932 organized the Evolution Protest Movement, which after two decades claimed a membership of two hundred ("EPM" 1972).

## HENRY M. MORRIS AND THE REVIVAL OF CREATIONISM

In 1964 one historian predicted that “a renaissance of the [creationist] movement is most unlikely” (Halliburton 1964, 283). And so it seemed. But even as these words were penned, a major revival was under way, led by a Texas engineer, Henry M. Morris (b. 1918). Raised a nominal Southern Baptist, and as such a believer in creation, Morris as a youth had drifted unthinkingly into evolutionism and religious indifference. A thorough study of the Bible following graduation from college convinced him of its absolute truth and prompted him to reevaluate his belief in evolution. After an intense period of soul-searching he concluded that creation had taken place in six literal days, because the Bible clearly said so and “God doesn’t lie.” Corroborating evidence came from the book of nature. While sitting in his office at Rice Institute, where he was teaching civil engineering, he would study the butterflies and wasps that flew in through the window; being familiar with structural design, he calculated the improbability of such complex creatures developing by chance. Nature as well as the Bible seemed to argue for creation.<sup>28</sup>

For assistance in answering the claims of evolutionists, he found little creationist literature of value apart from the writings of Rimmer and Price. Although he rejected Price’s peculiar theology, he took an immediate liking to the Adventist’s flood geology and in 1946 incorporated it into a little book, *That You Might Believe*, the first book, so far as he knew, “published since the Scopes trial in which a scientist from a secular university advocated recent special creation and a worldwide flood” (Morris 1978, 10). In the late 1940s he joined the American Scientific Affiliation—just in time to protest Kulp’s attack on Price’s geology. Yet his words fell largely on deaf ears. In 1953 when he presented some of his own views on the flood to the ASA, one of the few compliments came from a young theologian, John C. Whitcomb, Jr., who belonged to the Grace Brethren. The two subsequently became friends and decided to collaborate on a major defense of the Noachian flood. By the time they finished their project, Morris had earned a Ph.D. in hydraulic engineering from the University of Minnesota and was chairing the civil engineering department at Virginia Polytechnic Institute; Whitcomb was teaching Old Testament studies at Grace Theological Seminary in Indiana.<sup>29</sup>

In 1961 they brought out *The Genesis Flood*, the most impressive contribution to strict creationism since the publication of Price’s *New Geology* in 1923. In many respects their book appeared to be simply “a reissue of G. M. Price’s views, brought up to date,” as one reader described it. Beginning with a testimony to their belief in “the verbal inerrancy of Scripture,” Whitcomb and Morris went on to argue for a

recent creation of the entire universe, a Fall that triggered the second law of thermodynamics, and a worldwide flood that in one year laid down most of the geological strata. Given this history, they argued, “the last refuge of the case for evolution immediately vanishes away, and the record of the rocks becomes a tremendous witness . . . to the holiness and justice and power of the living God of Creation!” (Whitcomb & Morris 1961, xx, 451).

Despite the book’s lack of conceptual novelty, it provoked an intense debate among evangelicals. Progressive creationists denounced it as a travesty on geology that threatened to set back the cause of Christian science a generation, while strict creationists praised it for making biblical catastrophism intellectually respectable. Its appeal, suggested one critic, lay primarily in the fact that, unlike previous creationist works, it “looked *legitimate* as a scientific contribution,” accompanied as it was by footnotes and other scholarly appurtenances. In responding to their detractors, Whitcomb and Morris repeatedly refused to be drawn into a scientific debate, arguing that “the real issue is not the correctness of the interpretation of various details of the geological data, but simply what God has revealed in His Word concerning these matters” (Morris & Whitcomb 1964, 60).<sup>30</sup>

Whatever its merits, *The Genesis Flood* unquestionably “brought about a stunning renaissance of flood geology” (Young 1977, 7), symbolized by the establishment in 1963 of the Creation Research Society. Shortly before the publication of his book Morris had sent the manuscript to Walter E. Lammerts (b. 1904), a Missouri-Synod Lutheran with a doctorate in genetics from the University of California. As an undergraduate at Berkeley Lammerts had discovered Price’s *New Geology*, and during the early 1940s, while teaching at UCLA, he had worked with Price in the Creation-Deluge Society. After the mid-1940s, however, his interest in creationism had flagged—until awakened by reading the Whitcomb and Morris manuscript. Disgusted by the ASA’s flirtation with evolution, he organized in the early 1960s a correspondence network with Morris and eight other strict creationists, dubbed the “team of ten.” In 1963 seven of the ten met with a few other like-minded scientists at the home of a team member in Midland, Michigan, to form the Creation Research Society (CRS) (Lammerts 1974).

The society began with a carefully selected eighteen-man “inner-core steering committee,” which included the original team of ten. The composition of this committee reflected, albeit imperfectly, the denominational, regional, and professional bases of the creationist revival. There were six Missouri-Synod Lutherans, five Baptists, two Seventh-Day Adventists, and one each from the Reformed Presbyte-

rian Church, the Reformed Christian Church, the Church of the Brethren, and an independent Bible church. (Information about one member is not available.) Eleven lived in the Midwest, three in the South, and two in the Far West. The committee included six biologists but only one geologist, an independent consultant with a master's degree. Seven members taught in church-related colleges, five in state institutions; the others worked for industry or were self-employed.<sup>31</sup>

To avoid the creeping evolutionism that had infected the ASA and to ensure that the society remained loyal to the Price-Morris tradition, the CRS required members to sign a statement of belief accepting the inerrancy of the Bible, the special creation of "all basic types of living things," and a worldwide deluge (*Creation Research* 1964, [13]). It restricted membership to Christians only. (Although creationists liked to stress the scientific evidence for their position, one estimated that "only about five percent of evolutionists-turned-creationists did so on the basis of the overwhelming evidence for creation in the world of nature"; the remaining 95 percent became creationists because they believed in the Bible [Lang 1978, 2]).<sup>32</sup> To legitimate its claim to being a scientific society, the CRS published a quarterly journal and limited full membership to persons possessing a graduate degree in a scientific discipline.

At the end of its first decade the society claimed 450 regular members, plus 1,600 sustaining members, who failed to meet the scientific qualifications. Eschewing politics, the CRS devoted itself almost exclusively to education and research, funded "at very little expense, and . . . with no expenditure of public money" (Lammerts 1974, 63). CRS-related projects included expeditions to search for Noah's ark, studies of fossil human footprints and pollen grains found out of the predicted evolutionary order, experiments on radiation-produced mutations in plants, and theoretical studies in physics demonstrating a recent origin of the earth (Gish 1975). A number of members collaborated in preparing a biology textbook based on creationist principles (Moore & Slusher 1970). In view of the previous history of creation science, it was an auspicious beginning.

While the CRS catered to the needs of scientists, a second, predominantly lay organization carried creationism to the masses. Created in 1964 in the wake of interest generated by *The Genesis Flood*, the Bible-Science Association came to be identified by many with one man: Walter Lang, an ambitious Missouri-Synod pastor who self-consciously prized spiritual insight above scientific expertise. As editor of the widely circulated *Bible-Science Newsletter* he vigorously promoted the Price-Morris line—and occasionally provided a platform for individuals on the fringes of the creationist movement, such as those who

questioned the heliocentric theory and who believed that Albert Einstein's theory of relativity "was invented in order to circumvent the evidence that the earth is at rest." Needless to say, the pastor's broad-mindedness greatly embarrassed creationists seeking scientific respectability, who feared that such bizarre behavior would tarnish the entire movement (Lang 1977a, 4-5; 1977b, 2-3; 1978b, 1-3; Wheeler 1976, 101-2).

#### SCIENTIFIC CREATIONISM

The creationists revival of the 1960s attracted little public attention until late in the decade, when fundamentalists became aroused about the federally funded Biological Sciences Curriculum Study texts (Skoog 1979; "A Critique" 1966, 1), which featured evolution, and the California State Board of Education voted to require public school textbooks to include creation along with evolution. This decision resulted in large part from the efforts of two southern California housewives, Nell Segraves and Jean Sumrall, associates of both the Bible-Science Association and the CRS. In 1961 Segraves learned of the U.S. Supreme Court's ruling in the *Madalyn Murray* case protecting atheist students from required prayers in public schools. Murray's ability to shield her child from religious exposure suggested to Segraves that creationist parents like herself "were entitled to protect our children from the influence of beliefs that would be offensive to our religious beliefs." It was this line of argument that finally persuaded the Board of Education to grant creationists equal rights (Bates 1976, 58; "Fifteen Years" 1979, 2; Wade 1972; see also Moore 1974; and Nelkin 1982).

Flushed with victory, Segraves and her son Kelly in 1970 joined an effort to organize a Creation-Science Research Center (CSRC), affiliated with Christian Heritage College in San Diego, to prepare creationist literature suitable for adoption in public schools. Associated with them in this enterprise was Morris, who resigned his position at Virginia Polytechnic Institute to help establish a center for creation research. Because of differences in personalities and objectives, the Segraveses in 1972 left the college, taking the CSRC with them; Morris thereupon set up a new research division at the college, the Institute for Creation Research (ICR), which, he announced with obvious relief, would be "controlled and operated by scientists" and would engage in research and education, not political action. During the 1970s Morris added five scientists to his staff and, funded largely by small gifts and royalties from institute publications, turned the ICR into the world's leading center for the propagation of strict creationism (Morris 1972).<sup>33</sup> Meanwhile, the CSRC continued campaigning for the legal recognition of special creation, often citing a direct relationship be-

tween the acceptance of evolution and the breakdown of law and order. Its own research, the CSRC announced, proved that evolution fostered "the moral decay of spiritual values which contribute to the destruction of mental health and . . . [the prevalence of] divorce, abortion, and rampant venereal disease" (Segraves 1977, 17; "Fifteen Years" 1979, 2-3).

The 1970s witnessed a major shift in creationist tactics. Instead of trying to outlaw evolution, as they had done in the 1920s, anti-evolutionists now fought to give creation equal time. And instead of appealing to the authority of the Bible, as Morris and Whitcomb had done as recently as 1961, they consciously downplayed the Genesis story in favor of what they called "scientific creationism." Several factors no doubt contributed to this shift. One sociologist has suggested that creationists began stressing the scientific legitimacy of their enterprise because "their theological legitimation of reality was no longer sufficient for maintaining their world and passing on their world view to their children" (Bates 1976, 98). However, there were also practical considerations. In 1968 the U.S. Supreme Court declared the Arkansas anti-evolution law unconstitutional, giving creationists reason to suspect that legislation requiring the teaching of biblical creationism would meet a similar fate. They also feared that requiring the biblical account "would open the door to a wide variety of interpretations of Genesis" and produce demands for the inclusion of non-Christian versions of creation (Morris 1974a, 2; see also Larson 1984).

In view of such potential hazards, Morris recommended that creationists ask public schools to teach "only the scientific aspects of creationism" (Morris 1974a, 2), which in practice meant leaving out all references to the six days of Genesis and Noah's ark and focusing instead on evidence for a recent worldwide catastrophe and on arguments against evolution. Thus the product remained virtually the same; only the packaging changed. The 1974 ICR textbook *Scientific Creationism*, for example, came in two editions: one for public schools, containing no references to the Bible, and another for use in Christian schools that included a chapter on "Creation According to Scripture" (Morris 1974b).

In defending creation as a scientific alternative to evolution, creationists relied less on Francis Bacon and his conception of science and more on two new philosopher-heroes: Karl Popper and Thomas Kuhn. Popper required all scientific theories to be falsifiable; since evolution could not be falsified, reasoned the creationists, it was by definition not science. Kuhn described scientific progress in terms of competing models or paradigms rather than the accumulation of objective knowledge.<sup>34</sup> Thus creationists saw no reason why their flood-

geology model should not be allowed to compete on an equal scientific basis with the evolution model. In selling this two-model approach to school boards, creationists were advised: "Sell more SCIENCE. . . . Who can object to teaching more science? What is controversial about that? . . . do not use the word 'creationism.' Speak only of science. Explain that withholding scientific information contradicting evolution amounts to 'censorship' and smacks of getting into the province of religious dogma. . . . Use the 'censorship' label as one who is against censoring science. YOU are for science; anyone else who wants to censor scientific data is an old fogey and too doctrinaire to consider" (Leitch 1980, 2). This tactic proved extremely effective, at least initially. Two state legislatures, in Arkansas and Louisiana, and various school boards adopted the two-model approach, and an informal poll of school board members in 1980 showed that only 25 percent favored teaching nothing but evolution ("Finding" 1980, 52; Segraves 1977, 24). In 1982, however, a federal judge declared the Arkansas law, requiring a "balanced treatment" of creation and evolution, to be unconstitutional ("Creationism in Schools" 1982). Three years later a similar decision was reached regarding the Louisiana law.

Except for the battle to get scientific creationism into public schools, nothing brought more attention to the creationists than their public debates with prominent evolutionists, usually held on college campuses. During the 1970s the ICR staff alone participated in more than a hundred of these contests and, according to their own reckoning, never lost one. Although Morris preferred delivering straight lectures—and likened debates to the bloody confrontations between Christians and lions in ancient Rome—he recognized their value in carrying the creationist message to "more non-Christians and non-creationists than almost any other method" (Morris 1981, iii; 1974d, 2). Fortunately for him, an associate, Duane T. Gish, holder of a doctorate in biochemistry from the University of California, relished such confrontations. If the mild-mannered, professorial Morris was the Darwin of the creationist movement, then the bumptious Gish was its T. H. Huxley. He "hits the floor running" just like a bulldog, observed an admiring colleague; and "I go for the jugular vein," added Gish himself. Such enthusiasm helped draw crowds of up to five thousand.<sup>35</sup>

Early in 1981 the ICR announced the fulfillment of a recurring dream among creationists: a program offering graduate degrees in various creation-oriented sciences ("ICR Schedules" 1981). Besides hoping to fill an anticipated demand for teachers trained in scientific creationism, the ICR wished to provide an academic setting where creationist students would be free from discrimination. Over the years

a number of creationists had reportedly been kicked out of secular universities because of their heterodox views, prompting leaders to warn graduate students to keep silent, "because if you don't, in almost 99 percent of the cases you will be asked to leave." To avoid anticipated harassment, several graduate students took to using pseudonyms when writing for creationist publications.<sup>36</sup>

Creationists also feared—with good reason—the possibility of defections while their students studied under evolutionists. Since the late 1950s the Seventh-Day Adventist Church had invested hundreds of thousands of dollars to staff its Geoscience Research Institute with well-trained young scientists, only to discover that in several instances exposure to orthodox science had destroyed belief in strict creationism. To reduce the incidence of apostasy, the church established its own graduate programs at Loma Linda University, where Price had once taught (Numbers 1979, 27-28; Couperus 1980).

#### TO ALL THE WORLD

It is still too early to assess the full impact of the creationist revival sparked by Whitcomb and Morris, but its influence, especially among evangelical Christians, seems to have been immense. Not least, it has elevated the strict creationism of Price and Morris to a position of apparent orthodoxy. It has also endowed creationism with a measure of scientific respectability unknown since the deaths of Guyot and Dawson. Yet it is impossible to determine how much of the creationists' success stemmed from converting evolutionists as opposed to mobilizing the already converted, and how much it owed to widespread disillusionment with established science. A sociological survey of church members in northern California in 1963 revealed that over a fourth of those polled—30 percent of Protestants and 28 percent of Catholics—were already opposed to evolution which the creationist revival began (Bainbridge & Stark 1980, 20). Broken down by denomination, it showed:

Liberal Protestants (Congregationalists, Methodists, Episcopalians, Disciples)	11%
Moderate Protestants (Presbyterians, American Lutherans, American Baptists)	29%
Church of God	57%
Missouri-Synod Lutherans	64%
Southern Baptists	72%
Church of Christ	78%
Nazarenes	80%
Assemblies of God	91%
Seventh-Day Adventists	94%



Thus the creationists launched their crusade having a large reservoir of potential support.

Has belief in creationism increased since the early 1960s? The scanty evidence available suggests that it has. A nationwide Gallup poll in 1982, cited at the beginning of this paper, showed that nearly as many Americans (44 percent) believed in a recent special creation as accepted theistic (38 percent) or nontheistic (9 percent) evolution ("Poll" 1982, 22). These figures, when compared with the roughly 30 percent of northern California church members who opposed evolution in 1963, suggest, in a grossly imprecise way, a substantial gain in the actual number of American creationists. Bits and pieces of additional evidence lend credence to this conclusion. For example, in 1935 only 36 percent of the students at Brigham Young University, a Mormon school, rejected human evolution; in 1973 the percentage had climbed to 81 (Christensen & Cannon 1978). Also, during the 1970s both the Missouri-Synod Lutheran and Seventh-Day Adventist churches, traditional bastions of strict creationism, took strong measures to reverse a trend toward greater toleration of progressive creationism ("Return to Conservatism" 1973, 1; Numbers 1979, 27-28). In at least these instances, strict creationism did seem to be gaining ground.

Unlike the anti-evolution crusade of the 1920s, which remained confined mainly to North America, the revival of the 1960s rapidly spread overseas as American creationists and their books circled the globe. Partly as a result of stimulation from America, including the publication of a British edition of *The Genesis Flood* in 1969, the lethargic Evolution Protest Movement in Great Britain was revitalized; and two new creationist organizations, the Newton Scientific Association and the Biblical Creation Society, sprang into existence (Barker 1979; [Clark] 1972-73; 1977; "British Scientists" 1973; "EPM" 1972).<sup>37</sup> On the Continent the Dutch assumed the lead in promoting creationism, encouraged by the translation of books on flood geology and by visits from ICR scientists (Ouweneel 1978). Similar developments occurred elsewhere in Europe, as well as in Australia, Asia, and South America. By 1980 Morris's books alone had been translated into Chinese, Czech, Dutch, French, German, Japanese, Korean, Portuguese, Russian, and Spanish. Strict creationism had become an international phenomenon.<sup>38</sup>

#### NOTES

1. Michael Ruse (1979) argues that most British biologists were evolutionists by the mid-1860s, while David L. Hull, Peter D. Tesson, and Arthur M. Diamond (1978, 721) point out that more than a quarter of British scientists continued to reject the evolution of species as late as 1869. On the acceptance of evolution among religious leaders see, e.g., Frank Hugh Foster (1939, 38-58) and Owen Chadwick (1972, 23-24).

2. According to the poll, 9 percent of the respondents favored an evolutionary process in which God played no part, 38 percent believed God directed the evolutionary process, and 9 percent had no opinion.
3. On the influence of the *Scofield Reference Bible* see Ernest R. Sandeen (1971, 222).
4. On the popularity of the Guyot-Dawson view, also associated with the geologist James Dwight Dana, see William North Rice (1904, 101).
5. The Scottish theologian James Orr contributed an equally tolerant essay in *The Fundamentals* (Orr 1910-15).
6. "The Menace of Darwinism" appears in Bryan's book *In His Image* as chapter 4, "The Origin of Man." Bryan apparently borrowed his account of the evolution of the eye from Patterson (1902, 32-33).
7. Bryan gives the estimate of nine-tenths in a letter to W. A. McRae, 5 Apr. 1924 (Bryan Papers, box 29).
8. The best state histories of the anti-evolution crusade are Bailey (1950); Gatewood (1966); and Gray (1970). Szasz (1969, 351) stresses the urban dimension of the crusade.
9. For examples of prominent fundamentalists who stayed aloof from the anti-evolution controversy see Stonehouse (1954, 401-2) and Lewis (1963, 86-88).
10. Furness (1954) includes chapter-by-chapter surveys of seven denominations.
11. On Riley see Riley (1938, 101-2) and Szasz (1980, 89-91). Marsden (1980, 167-70) stresses the interdenominational character of the anti-evolution crusade.
12. The creationists' use of Bateson provoked the evolutionist Henry Fairfield Osborn into repudiating the British scientist (Osborn 1926, 29).
13. Heber D. Curtis to W. J. Bryan, 22 May 1923 (Bryan Papers, box 37). Two physicians, Arthur I. Brown of Vancouver and Howard A. Kelly of Johns Hopkins, achieved prominence in the fundamentalist movement, but Kelly leaned toward theistic evolution.
14. See Edmondson (1969, 276-336); Cole (1931, 264-65); B[oyer] (1939, 6-7); and "Two Great Field Secretaries" (1926, 17).
15. This and the following paragraphs on Price closely follow the account in Numbers (1979, 22-24).
16. Price's first anti-evolution book was published four years earlier (Price 1902).
17. David Star Jordan to G. M. Price, 5 May 1911 (Price Papers).
18. The discovery of Price's law was first announced in Price (1913, 119).
19. Howard A. Kelly to W. J. Bryan, 15 June 1925; Louis T. More to W. J. Bryan, 7 July 1925; and Alfred W. McCann to W. J. Bryan, 30 June 1925 (Bryan Papers, box 47).
20. W. J. Bryan to Howard A. Kelly, 22 June 1925 (Bryan Papers, box 47). In a letter to the editor of *The Forum*, Bryan (1923) asserted that he had never taught that the world was made in six literal days. I am indebted to Paul M. Waggoner for bringing this document to my attention.
21. For a typical statement of creationist frustration see Price (1935). The title for this section comes from Morris (1974, 13).
22. See "Announcement of the Religion and Science Association" (Price Papers); "The Religion and Science Association" (1936, 159-60); "Meeting of the Religion and Science Association" (1936, 209); Clark (1977, 168).
23. On the attitude of the Price faction see Harold W. Clark to G. M. Price, 12 Sept. 1937 (Price Papers).
24. Ben F. Allen to the Board of Directors of the Creation-Deluge Society, 12 Aug. 1945 (courtesy of Molleurus Couperus). Regarding the fossil footprints, see the *Newsletters* of the Creation-Deluge Society for 19 Aug. 1944 and 17 Feb. 1945.
25. On the early years of the American Scientific Affiliation see Everest (1951).
26. Kulp (1949, 20) mentions his initial skepticism of geology.
27. For a fuller discussion see Numbers (1984).
28. Interviews with Henry M. Morris, 26 Oct. 1980 and 6 Jan. 1981. See also the autobiographical material in Morris (1984).
29. Interviews with Morris.
30. The statement regarding the appearance of the book comes from Walter Hearn, quoted in Bates (1976, 52). See also Roberts (1964); Van de Fliert (1969); and Lammerts

(1964). Among Missouri-Synod Lutherans, John W. Klotz (1955) may have had an even greater influence than Morris and Whitcomb.

31. Names, academic fields, and institutional affiliations are given in *Creation Research Society Quarterly* (1964, [13]); for additional information I am indebted to Duane T. Gish, John N. Moore, Henry M. Morris, Harold Slusher, and William J. Tinkle.

32. Other creationists have disputed the 5 percent estimate.

33. Information also obtained from the interview with Morris, 6 Jan. 1981.

34. On Popper's influence see, e.g., Roth (1977). In a letter to the editor of *New Scientist*, Popper (1980) affirmed that the evolution of life on earth was testable and, therefore, scientific. On Kuhn's influence see, e.g., Roth (1975); Brand (1974); and Wheeler (1975, 192-210).

35. The reference to Gish comes from an interview with Harold Slusher and Duane T. Gish, 6 Jan. 1981.

36. Evidence for alleged discrimination and the use of pseudonyms comes from: "Grand Canyon Presents Problems for Long Ages" (1980); interview with Ervil D. Clark, 9 Jan. 1981; interview with Steven A. Austin, 6 Jan. 1981; and interview with Duane T. Gish, 26 Oct. 1980, the source of the quotation.

37. Barker greatly underestimates the size of the E.P.M. in 1966.

38. Notices regarding the spread of creationism overseas appeared frequently in *Bible-Science Newsletter* and *Acts & Facts*. On translations see "ICR Books Available in Many Languages" (1980, 2, 7).

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