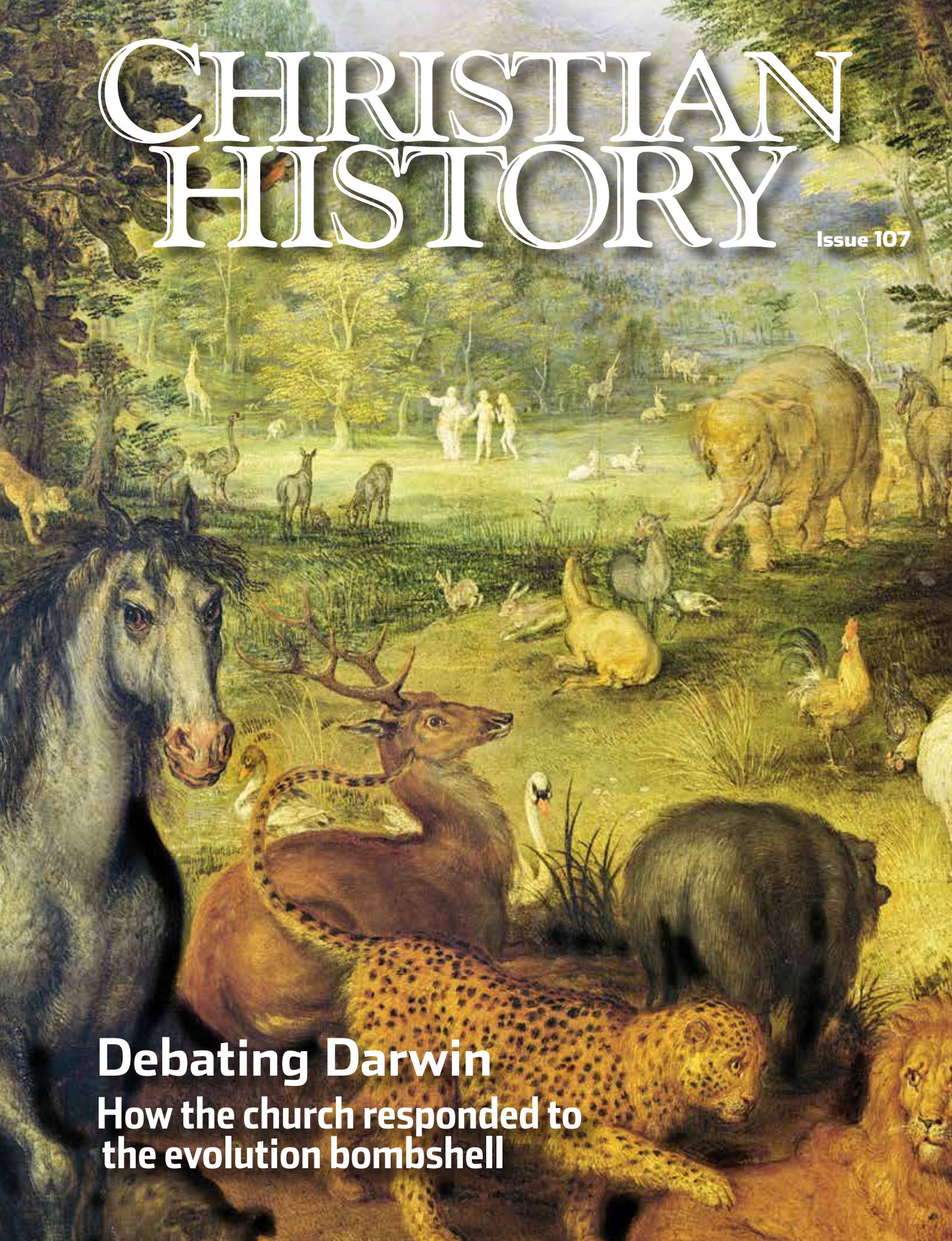


# CHRISTIAN HISTORY

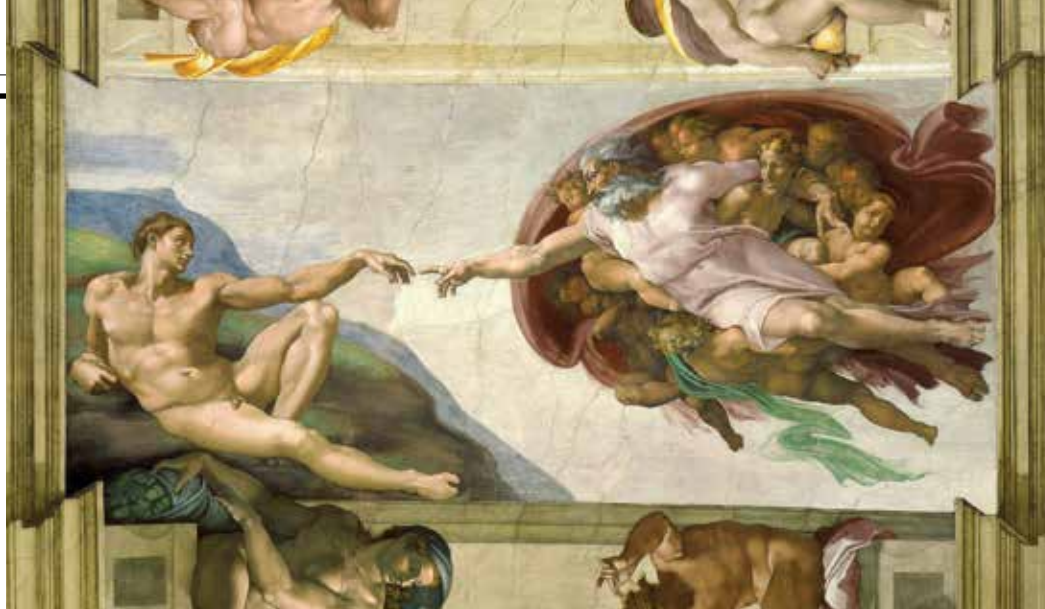
Issue 107

## Debating Darwin

How the church responded to the evolution bombshell







**THE DOCTRINE AT STAKE** *Left:* Michelangelo famously painted God creating humans in the divine image.

**THE BOMBSHELL EXPLODES** *Below:* In this notebook, Darwin first diagrammed his theory of evolutionary descent through natural selection.

# Did you know?

MUCH MORE THAN MONKEY BUSINESS

## DARWIN ALMOST MISSED THE BOAT

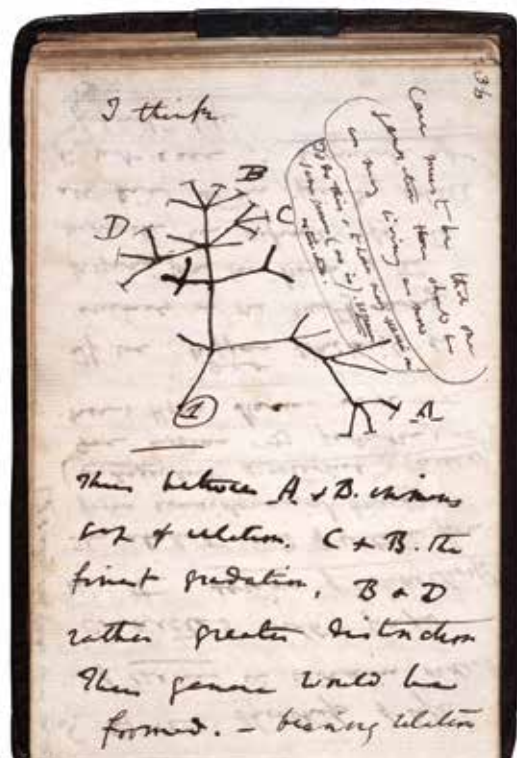
Among the careers Darwin considered before making his fateful *Beagle* voyage was medicine (his father's choice). But his attempt to become a doctor was foiled by his inability to stand the sight of blood. When the voyage was proposed, he was not the first choice, and when he was offered a position, his father turned it down on his behalf. When Darwin finally *did* make it onto the boat, he was seasick for most of the voyage—one of the reasons he spent so much time off the boat collecting specimens on solid ground.

## FAVORED RACES

The full title of Darwin's book was *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. Darwin did not argue there that humans descended from nonhuman ancestors. That book came a little over a decade later, in 1871: *The Descent of Man and Selection in Relation to Sex*. Much of the controversy over Darwin's theories followed this later book. During Darwin's own lifetime, neither sold as well as his last book—on earthworms.

## LIVING IN A MATERIAL WORLD

In 1984 pop star Madonna crooned about being a material girl in a material world, but was she aware of the intellectual roots of the word? Philosophically “materialism” means that “matter” is the only thing in the universe—that thoughts, feelings, and even the soul are ultimately reducible to aspects of physical reality. This was an intellectual trend in the eighteenth and nineteenth centuries, and some Christians thought Darwin fit right in—that his theory was “godless materialism” that explained existence without any reference to spiritual realities.



## DIFFERENT STROKES

Scientists responded differently to Darwin in different places. There were many questions in New Zealand about whether its original inhabitants should have land rights, or whether they had been proven “unfit” in the struggle with white settlers. So scientists there seized on struggle as the fundamental principle in Darwin's theory. But half a world away, most Russian naturalists conducted their field work in Siberia, where populations were not dense and cooperation was crucial for a group's survival. Their version of Darwin's theory replaced the struggle element with cooperation.



**PROMISING SEVEN-YEAR-OLD?** Above: Darwin's father accused him of caring only for "shooting, dogs, and rat-catching."

**WHERE'S THE COURT?** Left: In the 1920s Darwinism was so associated with monkeys that performing chimpanzee Joe Mendi showed up at the Scopes Trial.

**FAVORED FOLKS?** Below: Darwin's theory was used to trumpet the virtues of the "fit."

## DARWIN DEBATES HIMSELF

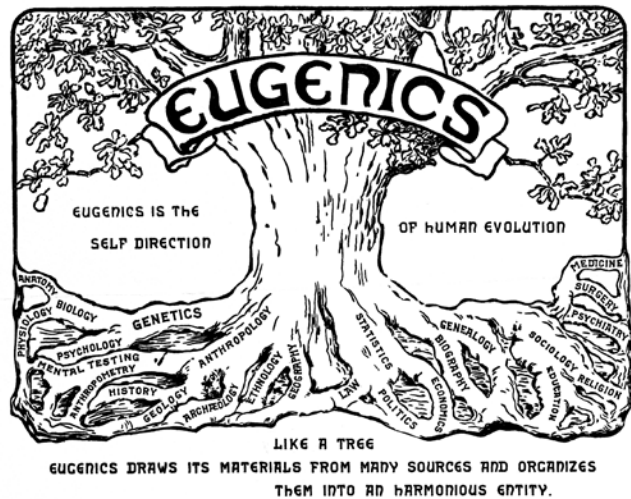
In a note jotted down while single, Darwin cited as reasons for marrying: "Children — (if it Please God) — Constant companion, (& friend in old age) who will feel interested in one, — object to be beloved & played with. — better than a dog anyhow. — Home, & someone to take care of house — Charms of music & female chit-chat. — These things good for one's health. — Forced to visit & receive relations but terrible loss of time."


Reasons for not marrying included "Freedom to go where one liked — choice of Society & little of it. — Conversation of clever men at clubs — Not forced to visit relatives, & to bend in every trifle. — to have the expense & anxiety of children — perhaps quarrelling — Loss of time. — cannot read in the Evenings — fatness & idleness — Anxiety & responsibility — less money for books &c — if many children forced to gain one's bread. — (But then it is very bad for ones health to work too much)."

"Marry" won out. He married his first cousin Emma Wedgwood (granddaughter of famous potter Josiah Wedgwood); their union lasted 43 years and produced 10 children. They played two games of backgammon every night, and he kept score, priding himself at one point on having won "2,795 games to her piddling 2,490."

## "THINGS WHICH CANNOT BE PROVED"

Shortly after their marriage, Emma (devoutly religious her whole life) wrote Charles a letter expressing concern about his changing views on religion: "May not the habit in scientific pursuits of believing nothing till it is proved, influence your mind too much in other



things which cannot be proved in the same way . . . I should say also that there is a danger in giving up revelation which does not exist on the other side, that is the fear of ingratitude in casting off what has been done for your benefit as well as for that of all the world." 

Portions of this text come from an interview with historian David Livingstone. "Darwin debates himself," and "Things which cannot be proved" are taken from The Complete Work of Charles Darwin Online.



# Editor's note

IN 1925 the Scopes "Monkey" Trial galvanized the nation. It alerted intellectual elites to fundamentalism for the first time and, in the same blow, led them to think (erroneously) that fundamentalism had been humiliated forever.

One of the most memorable moments in the Scopes courtroom made its way, virtually unaltered, into *Inherit the Wind*, the fictionalized 1950s drama based on the trial. The play and subsequent film were as much about attacking the anti-Communist tactics of 1950s senator Joseph McCarthy as they were about the actual trial. Like so many other teenagers of the 1970s and 1980s, I first encountered the drama in high school.

The memorable exchange of which I speak comes when, in the course of attempting to humiliate prosecuting attorney William Jennings Bryan by quizzing him on his views about the Bible, defense attorney Clarence Darrow repeatedly pressed Bryan on the age of the earth. The resulting exchange is reminiscent of Abbott and Costello's "Who's on First?" routine:

*Darrow:* What do you think?

*Bryan:* I do not think about things I don't think about.

*Darrow:* Do you think about things you do think about?

*Bryan:* Well, sometimes.

## SURPRISING RESPONSES

Some months ago our senior editor, Chris Armstrong, suggested we devote an issue to the intersection of Christianity and science; specifically, to the Christian response to Charles Darwin after the British naturalist published his *On the Origin of Species* in 1859. Or, more properly, the Christian responses, because they varied widely. I took on the project with trepidation, knowing well how the topic evokes many emotions.

As we prepared this issue, I read many of those responses—from Christians along the whole theological spectrum, from scientists of all Christian persuasions and of no faith persuasion at all, and

from authors who found in Darwin the ammunition they were looking for to attack Christianity. And that exchange from the Scopes Trial has been echoing in my head.

There were so many things I thought I knew as a lifelong Christian and as a historian of American religion: about Darwin, about nineteenth-century Christianity, about nineteenth-century science, and about who took up which positions and why. Even about Scopes, Bryan, and Darrow. Nearly all of those things turned out to be more complicated than I thought. History usually does.

On this contentious issue, many of us don't think about things that, perhaps, we should think about. At least sometimes. I invite you to read the articles in this issue from that perspective. You too may find something new here to think about.

One of the things that did *not* make it into *Inherit the Wind* is the closing speech Bryan never got to make at the Scopes Trial. Unlike its fictional counterpart, the trial closed with neither side making a summation. Bryan planned to open by remarking, "Science is a magnificent force, but it is not a teacher of morals. It can perfect machinery, but it adds no moral restraints to protect society from the misuse of the machine."



Christians, though, do have something to say about how to manage the machinery, then and now. It starts, I think, with these words: "In the beginning God..."

Jennifer Woodruff Tait  
Managing editor

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# CHRISTIAN HISTORY

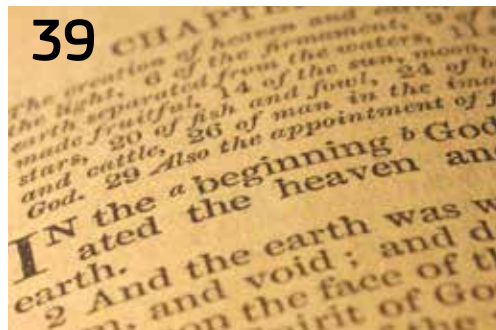
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# Origin of conflict

DARWIN'S "STAGGERING" THEORY WOULD HAVE FAR-REACHING IMPLICATIONS

*John Hedley Brooke*

"GOD KNOWS what the public will think," wrote Charles Darwin to fellow naturalist Alfred Russel Wallace in November 1859. Darwin's celebrated work *On the Origin of Species* had just been published, and he was resigned to the fact that his case for biological evolution would be controversial.

It would certainly make famous the young man who had once set out for Edinburgh to become a doctor, then had gone to Cambridge, where his revised plan was to become an Anglican priest. Instead, from 1831 to 1836, he traveled the world on HMS *Beagle* as companion to Robert Fitzroy, the ship's captain, who wanted to have a naturalist on board. From those voyages would one day come his book.

The main idea in Darwin's book, that species might be transformed over time, was not itself original. It had been proposed by Darwin's own grandfather, Erasmus Darwin, half a century earlier and by the French naturalist Jean-Baptiste Lamarck. Even the idea that humans had an animal ancestry had already been the subject of intense public debate in Britain owing to *Vestiges of the Natural History of*

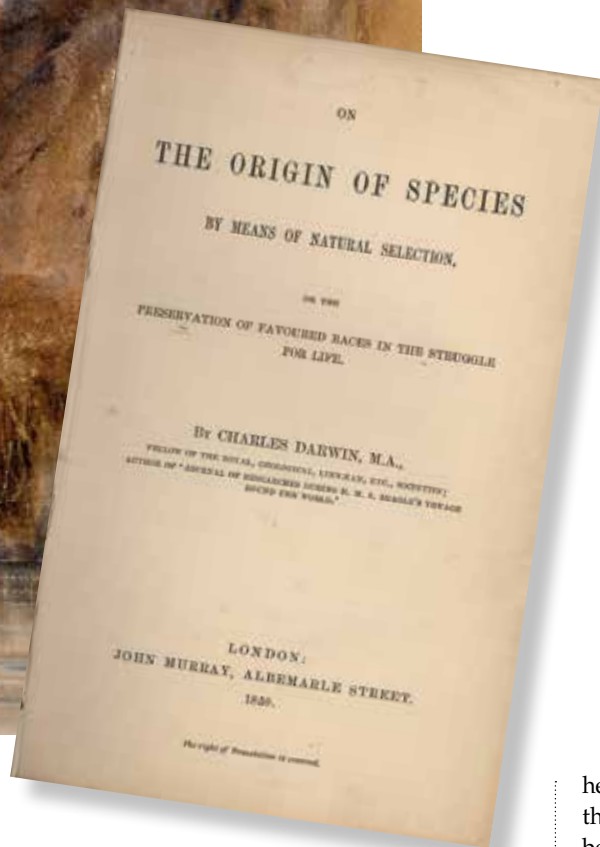
**THE BOAT ...***Above:* Greeted by curious natives, HMS *Beagle* arrives at Tierra del Fuego in what is now called "Beagle Channel."

**...AND THE BOOK** *Right:* The original title page of *On the Origin of Species* shows "struggle" in the forefront of Darwin's thoughts.

*Creation* (1844), a work anonymously published by Scottish popular-science writer Robert Chambers. Even while condemned as pseudo-science and "base materialism," *Vestiges* sold like hot cakes. But Darwin is the one we remember.

Why? Because *Origin of Species* argued that evolution was scientifically credible. It introduced the concept of "natural selection" as the key to understanding how new species could derive from pre-existing forms. Darwin wrote that given variation, however small, among the individual members of a species, those members whose variations had a competitive advantage in the struggle for existence would tend to leave more offspring than those who were less advantaged. Over countless generations, Darwin argued, the continual action of this selective process could lead to gradual modification and the emergence of a new species. Accordingly he proposed that all living things, diverging from their ancestors,





**BIRDS OF DIFFERENT FEATHERS** Above right: Darwin studied finches on the Galapagos Islands.

**WHAT DID HE SEE?** Right: Darwin's microscope.

had ultimately evolved from a few, or perhaps only one, original life form.

Darwin once said that to understand his theory one had to be “staggered”—that is, shocked into seeing the world in a new way—by the picture it presented of successive appearance, displacement, and disappearance of living forms on a massive scale, under ever-changing conditions and over immense periods of time.

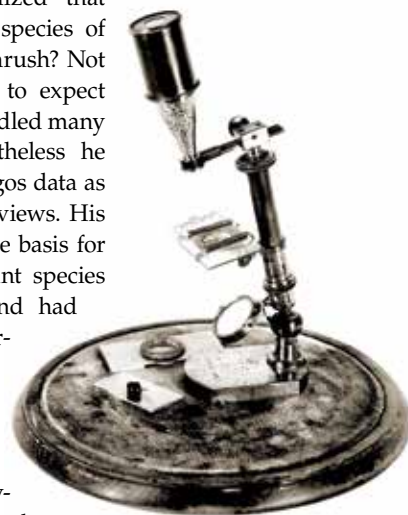
Early in life there had been much to stagger Darwin as he journeyed around the world on HMS *Beagle*. In South America his love of natural history was reinforced by the sublime beauty of the Brazilian rain forest. Fascinated by the fossils there, he had the stunning realization that large numbers of species were now extinct. The remarkable similarity between living forms and the extinct species like them—which he particularly observed in the case of armadillos—raised tantalizing questions about the relationship between them.

Although Darwin did not develop a confident belief in what he called “the transmutation of species” until he returned home, he was enthralled by the geographical distribution of the species he observed. For example

he noticed that island species most closely resembled those found on the nearest mainland. This was true both in the Cape Verde Islands, where the resemblance was to African species, and in the Galapagos archipelago, where the resemblance was to those of South America.

Did Darwin have a “Eureka” moment on the Galapagos when he realized that each island had its own species of finch, mockingbird, and thrush? Not really—having no reason to expect such a pattern, he had muddled many of his specimens. Nevertheless he later described the Galapagos data as the foundation for all his views. His observations there were the basis for his hypothesis that migrant species from the nearest mainland had modified differently on various islands as a result of isolation and the effect of different islands’ unique ecologies.

During the *Beagle* voyage, Darwin was astonished too by the “struggle for existence” he saw in the natural world. In the Andes he witnessed nature in the raw as giant condors preyed on young cattle. He encountered a colonial struggle between the forces of General Rosas (future dictator of Argentina) and native Indians. He also experienced the devastating consequences of an earthquake in Concepcion, describing





its destroyed cathedral as “the greatest pile of ruins I ever saw.” Frequently he came face to face with instability in environments less hospitable than the “happy world” described by widely read Christian philosopher William Paley in his *Natural Theology* (1802).

Darwin was staggered again when he visited Tierra del Fuego, where he wrote that the natives—called Fuegians—had a wretched existence in the least hospitable of places. Their behavior and appearance prompted his question: “Were our ancestors men like these?”

On board *Beagle* were some Fuegians who, having earlier been taken by Fitzroy to England, had been educated and prepared to evangelize their own people. Accompanied by a missionary, they were now coming home. But the experiment ended in disaster; they quickly reverted to the norms of their primitive society, and the missionary fled for his life.

Darwin was left to ponder how thin the veneer of civilization could be. And, in one other respect, the Fuegians and their experience made a lasting impact on his views about religion. His cousin Hensleigh Wedgwood had assured Darwin that humans differed fundamentally from animals in having an innate sense of God. Yet in the Fuegians and among Australian

**THROUGH EUROPEAN EYES** *Left:* Darwin called native Fuegians “savages” and “scarcely... articulate” in comparison with the westernized group on board *Beagle*, sketched here by Fitzroy.

Aborigines, Darwin detected little evidence of this innate sensibility. He wrote that the Fuegians had no word for “God” and no ritual worship.

In his autobiography Darwin later recalled a key moment in the autumn of 1838 when he read an essay on population by political philosopher Thomas Robert Malthus (1766–1834). Attacking rationalist dreams of the era when humans would one day reach a social utopia, Malthus insisted there were natural constraints to unlimited progress. Famously he argued that, in the absence of checks, human populations would tend to increase far faster than the food supply could be increased to sustain them.

The argument acquired a high political profile when used to question whether the poor should receive charity that would only encourage them to breed more prolifically. Malthus used his own argument to advocate sexual restraint and the desirability of marrying late.

For Darwin the effect was to trigger a realization that there was something inexorable about the competitive struggle for existence that the voyage had already prepared him to appreciate: “It at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The result of this would be the formation of new species. Here, then, I had at last got a theory by which to work.”

## NATURE'S FACE IS BUT A MASK

Calling this process “natural selection” was, however, not without problems since the description of nature selecting was clearly metaphorical. Darwin drew an analogy between what seemingly happened in nature and the activity of breeders—like pigeon fanciers—who artificially accentuated chosen features of domestic animals and birds by selecting promising pairs for reproduction. Darwin was struck by the enormous diversity of form that had been produced in this way.

The analogy between natural and artificial selection became crucial when he presented his theory to the public. In *Origin of Species*, he observed that even a well-trained ornithologist (expert on birds) would be inclined to regard the many fancy varieties of pigeon as separate species if he did not already know they were all derived from the common rock pigeon. If so much transformation could be achieved by artificial selection in a short time frame, how much more might natural selection have achieved during what many nineteenth-century naturalists acknowledged was the vast age of the earth?





Some of Darwin's readers supposed that because human intelligence intervened in the deliberate choices of the breeders, his account of the transmutation of species implied the direct mediation of divine intelligence in shaping living forms. When he wrote *Origin of Species*, Darwin still believed in a creator who had designed the laws of nature. But he did not believe that such a creator had micromanaged every detail of the evolutionary process. He had rejected Christianity several years earlier and in later years would describe himself as an agnostic.

Was Darwin's departure from Christian orthodoxy a direct consequence of his science? In 1839 when he married his cousin Emma Wedgwood, she expressed concern that the high standards of evidence required in the practice of science might adversely affect his attitude to the Bible (see "Did you know?" inside front cover).

He had doubts about miracle stories in Scripture, later declaring that "the more we know of the fixed laws of nature the more incredible miracles become." His twin ideas of "descent with modification" and natural selection themselves departed from conventional Christian teaching.

And his projection of a long, tortuous struggle onto nature—an expansion of what he had read about in Thomas Malthus—could certainly corrode a simple faith in the harmony of creation. "The contented face of nature is but a mask," he declared in his writings, as he reflected on predators and their prey, death, and the sheer extent of extinction.

But, by Darwin's own account, these were not the main reasons why he renounced Christianity. Like

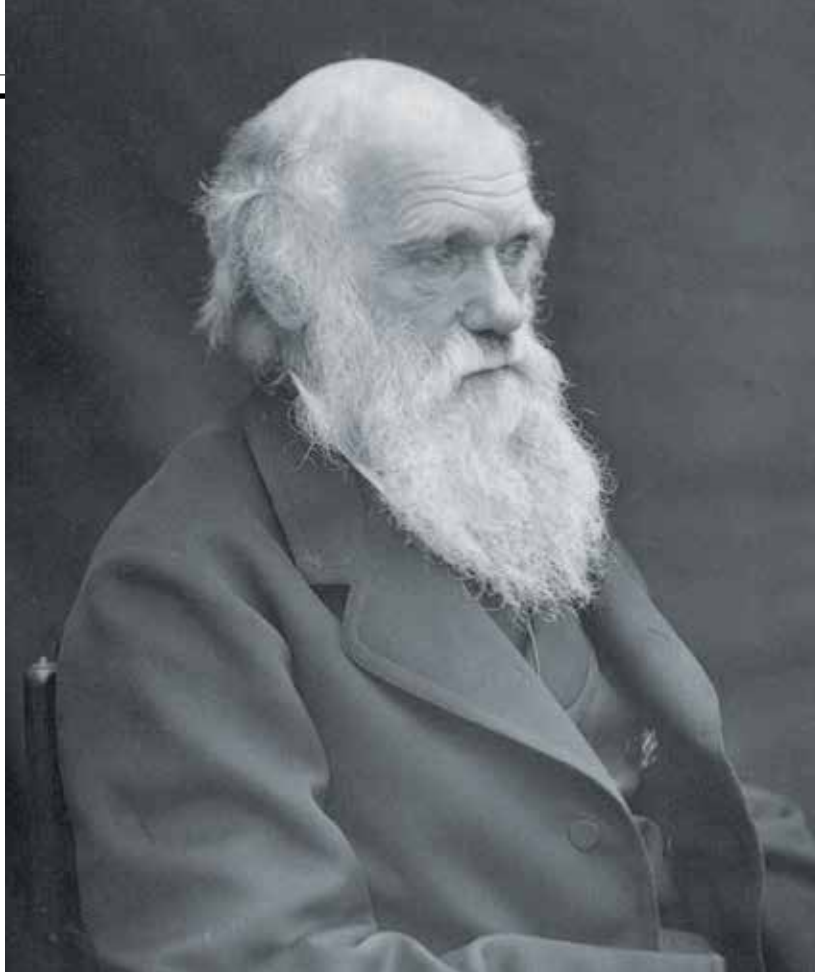


**BUSY FATHER** Above left: Charles Darwin holds his oldest son, William, one of his 10 children.

**KISSING COUSINS** Above right: Emma Wedgwood Darwin loved and debated her husband for 43 years.

**BELOVED DAUGHTER** Above: Annie Darwin's death at age 10 profoundly affected her father.

many other Victorian intellectuals, Darwin developed a deep-seated moral objection to the doctrine of eternal damnation for the unrepentant as it was preached in his day. He felt this was a "damnable doctrine," not least because it would have condemned his freethinking father and brother to hell for eternity. On this issue he could not see why anyone could wish Christianity to be true.



**STRUGGLE FOR SURVIVAL** Charles Darwin had ill health most of his life.

But this did not mean that the laws of nature were not designed. Darwin confessed to an “inward conviction” that “this beautiful Universe” is not the result of chance. But with Darwin there was always a nuance or qualification. Should he trust his own convictions? Perhaps not, he thought, for “the horrid doubt always arises whether the convictions of man’s mind, which has been developed from the mind of the lower animals, are of any value or trustworthy.”

### DEBATE AND DEFIANCE

Despite his agnosticism, Darwin never doubted that religious beliefs and practices had contributed to the evolution of humanity’s moral sense. Unlike both his most determined champions and detractors today, he did not believe that his theories implied atheism, considering it “absurd” to suppose that one could not believe in both God and evolution.

He was confident of this because among his earliest converts were Christian clergymen. In England these included novelist and Christian socialist Charles Kingsley and future archbishop of Canterbury Frederick Temple. Both affirmed that a God who could make all things make themselves was more admirable to them than a God who periodically intervened to conjure new species into existence. In the United States, Asa Gray at Harvard and James McCosh at Princeton, both Presbyterians, combined Darwinian evolution with Christian commitment.

But Darwin posed a difficult challenge to others. In England the bishop of Oxford, Samuel Wilberforce, proclaimed that Christ’s redemptive mission conferred a dignity on humankind that Darwin effectively destroyed. In the United States, Princeton theologian Charles Hodge declared in his book *What Is Darwinism?* (1874) not that evolution itself was necessarily atheistic but that Darwin’s distinctive mechanism of natural selection, heavily dependent on random variation, was effectively so.

And so the great controversy began. ¶

*John Hedley Brooke has been Andreas Idreos Professor of Science and Religion at the University of Oxford, Fellow of Harris Manchester College, and director of the Ian Ramsey Centre. He is the author of Science and Religion: Some Historical Perspectives and other books on the history of science.*

A second reason he expressed was the difficulty of reconciling suffering in the world with a loving God. For Darwin the question had deep personal significance. He himself experienced recurrent ill health. Early in 1851 he observed the suffering and death of his daughter Annie at the age of 10, a bitter blow.

Those around him sometimes rationalized suffering as conducive to moral improvement. But Darwin wrote in his autobiography that even if this justification worked for humans, it did not for the “sufferings of millions of the lower animals throughout almost endless time.” Here his scientific and religious reflections came together in his argument that “the presence of so much suffering agrees well with the view that all organic beings have been developed through variation and natural selection.”

To reject Christianity need not make one an atheist. Darwin claimed he had never been an atheist in the sense of denying the existence of God. Corresponding with Harvard botanist Asa Gray in 1860, he said he was inclined to see living things as the result of designed laws with the details left to chance. It is often noted that Darwin’s account of evolution undermined the celebrated arguments of Paley, who saw in the beautiful contrivances and adaptations of living organisms unassailable evidence of design. The action of natural selection as described by Darwin offered an alternative explanation.





## GOD THE GEOMETER

Many early 19th-c. Christians believed passionately that science could discover God's designs in Creation.

eventually produce a greater good. "Natural theology," which looked to scientific exploration of nature to explain God's attributes, flourished in the early 1800s. One significant evangelical natural theologian, Scottish Presbyterian Thomas Chalmers (1780–1847), reminded his compatriots that God was not only benevolent but also a stern judge of human wickedness. Human suffering could be traced back to his judgments.

Both Paley and Chalmers were influenced by economist Thomas Malthus, who wrote that human popula-

# Divine designs

CONSERVATIVE CHRISTIANS MOVED FROM CAUTIOUS CONSIDERATION OF DARWIN TO OUTRIGHT REJECTION

*Edwin Woodruff Tait*

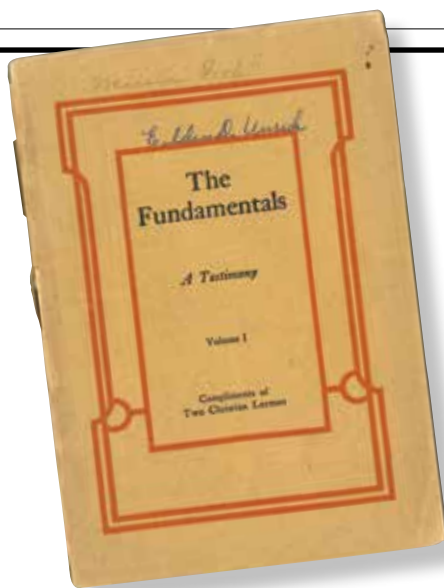
**IN THE EARLY DECADES** of the nineteenth century, evangelical Christians had reason for confidence. A wave of revivals had breathed new life into Protestantism. The rationalistic moralism of the Enlightenment had been swept away by passionate faith in Christ and in the Scriptures as the Word of God. Eighteenth-century challenges to belief had been answered—by making the very kind of appeals to nature and reason the Enlightenment had valued. Popular author William Paley argued for God's existence based on the design and order found in creation. Paley pointed out that if you found a watch on a beach, you would assume someone made it. Similarly, the complexity and beauty of creation pointed to a creator.

Growth in scientific knowledge was seen as one more sign of the progress of divine truth. Even darkness and tragedy were part of the divine plan and would

tion, given favorable conditions, would quickly outstrip the capacity of the earth to provide food. As a pastor in Glasgow, Chalmers took this dismal prediction as a challenge. He sought to replace government poor relief with a system by which the local parish discriminated between "deserving" and "undeserving" poor.

In this optimistic era, many people discussed the relationship between science and the Bible. Theories of evolution were prevalent, particularly the view propounded by Jean-Baptiste Lamarck (1744–1829). But that optimism would soon be challenged. At approximately the same time that Chalmers was thinking about the undeserving poor, Charles Darwin was searching for an explanation of what he had observed on HMS *Beagle*.

Lamarck imagined that evolution naturally moved toward greater perfection—that it had an ultimate purpose. But Darwin thought that the decisive factor in evolutionary change was the better chances of survival certain adaptations provided. He did not have an explanation for how the changes happened in the first place. Nor did he think everything was getting better and better. The most challenging aspect of Darwin's theory to his contemporaries was that stated absence



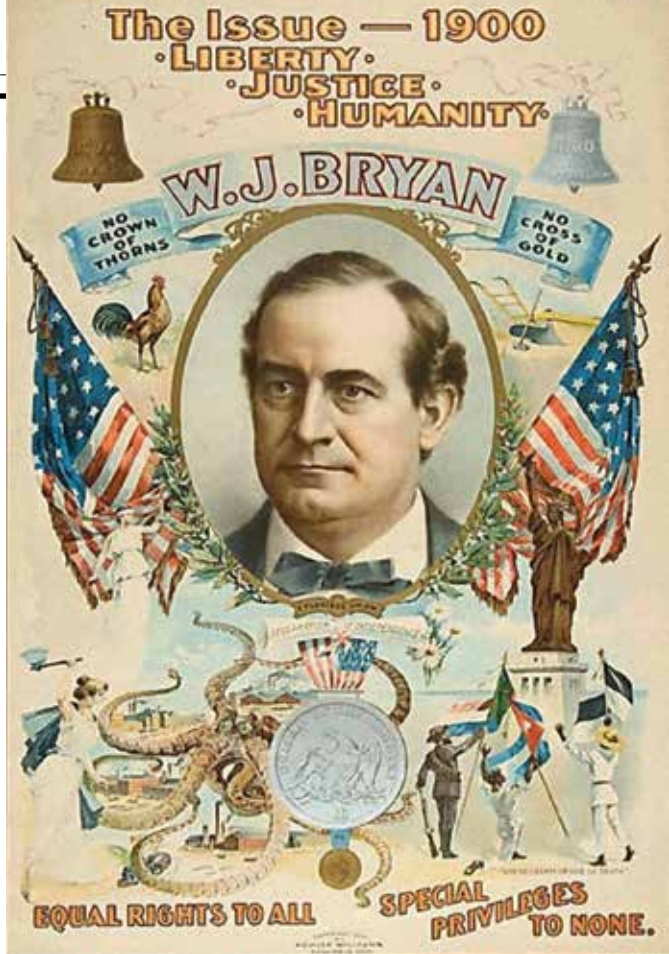
of any ultimate purpose. The major question for evangelical interpreters of Darwin was whether Darwinism automatically eliminated divine supervision from nature. Was the watchmaker still behind the watch?

The most famous evangelical answer to this question was the great Presbyterian theologian Charles Hodge's succinct judgment: "What is Darwinism? It is Atheism." The Princeton professor clarified, "This does not mean . . . that Mr. Darwin himself and all who adopt his views are atheists; but it means that his theory is atheistic; that the exclusion of design from nature is . . . tantamount to atheism."

Almost all Christian opponents of evolution in the nineteenth century, Hodge included, accepted the claim that the earth was very old and that species had appeared gradually. His scriptural objections to evolution were not based on a consistently literal reading of Genesis, even though Hodge was one of the major architects of the modern theory of biblical inerrancy. Hodge believed Scripture taught that God created species separately. But he did not dismiss as unorthodox or ungodly those Christians who differed with him. It was enough if they agreed on the much more important point that nature showed evidence of divine design—that the watch had a watchmaker.

And Hodge did not speak for all evangelicals. One he did not speak for was Asa Gray (1810–1888), the most prominent American botanist of his day, a Harvard faculty member, and a committed Christian at a time when most Harvard faculty were Unitarians.

Gray became a personal friend of Darwin and one of the few people with whom Darwin shared the details of his emerging theory before his book came out. Gray believed that divine design was quite compatible with evolution and endeavored to convince Darwin of this. He also carried on a long-running argument, defending evolution against the racially segregationist creation



**DEFENDING THE "UNFIT"** Above: William Jennings Bryan's presidential campaigns put his support for the poor front and center.

**FROM ACCEPTANCE TO ATTACK** Left: *The Fundamentals* contained varied views on evolution.

account of the famous scientist Louis Agassiz. Agassiz insisted that God had created the races of humanity separately. Transgressing these bounds—especially by intermarriage between races—was a sin. Agassiz was a Unitarian, and his view was hard to reconcile with the biblical account of Adam and Eve.

## PALEY, NEW AND IMPROVED

Hodge's legacy at Princeton Seminary was continued for a time by his son Archibald Alexander Hodge and his successors Benjamin Warfield and J. Gresham Machen. These younger Princeton evangelicals, while staunch defenders of biblical inerrancy, were far more open to Darwin. A. A. Hodge at first defended his father's anti-Darwinism, but moved to a more accepting position. Benjamin Warfield agreed with Princeton University president James McCosh that Darwin's theory helped explain how God had designed creation. For McCosh, Darwin was the new and improved Paley: evolution simply showed how the watchmaker had accomplished his astounding feat.



Other evangelical intellectuals fell at various points on the spectrum between enthusiastic acceptance of Darwin and complete rejection. There was no one stance. Few if any maintained a “young-earth” position. And even those who opposed evolution, like Hodge, were willing to say that their opponents were still Christians. But, in the early twentieth century, this situation changed rapidly.

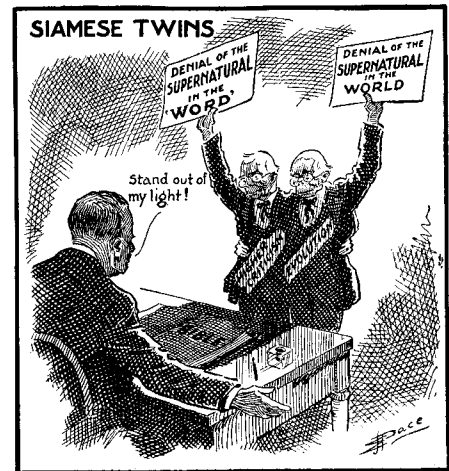
The multivolume *Fundamentals*, published between 1909 and 1915 to defend conservative Protestant theology against the rising tide of “modernism,” gave “fundamentalists” the name they have borne ever since. Early volumes contained a range of positions, from an outright defense of evolution by George Frederick Wright, to a more cautious endorsement from James Orr, to two full-on attacks. One, an anonymous essay on “Evolutionism in the Pulpit,” claimed that any Christian who accepted evolution was embracing a “half-truth” and flatly contradicting Scripture.

By the 1920s this last voice dominated among conservatives. They were rapidly losing power within major American Protestant denominations, at least in the North. Meanwhile science had increasingly become the domain of “professionals,” with no place for the gifted amateurs who had dominated a century earlier. A rapidly expanding gulf arose between science and conservative Christianity.

Many fundamentalists had also adopted dispensationalist theology, which taught that the end of the “church age” was approaching and apostasy with it. Efforts to make society better were pointless at best or deceptions of the Antichrist at worst. Evolutionary theories based on God’s gradual working seemed tainted and unbiblical, at odds with reality. World War I, communist revolution in Russia, and rising secularism in the West seemed ready evidence of impending doom.

## THE UNDESERVING POOR

The most famous anti-evolution spokesman of the 1920s was populist politician William Jennings Bryan. Bryan has been caricatured—including by the media in his own day—as a naïve biblical literalist. In fact, while he worked with early “young-earth creationists” such as George McCready Price, Bryan had no problem with an old earth or with evolution of nonhuman living things.



**TERRIBLE TWINS** Above: Opponents thought both evolution and higher biblical criticism denied divine designs.

**JESUS VS. DARWIN** Left: Billy Sunday was one of many 20th-c. evangelical preachers who opposed evolution.

For Bryan, the real debate was about the “undeserving poor” Chalmers had dismissed a century earlier. Bryan identified evolutionary theory with social Darwinism, calling it a godless philosophy of the strong oppressing the weak in the name of natural selection. Bryan’s concerns were well-founded. During this same period, some Protestants were accepting eugenics and advocating measures such as the sterilization of the “unfit.” Bryan’s career was built on championing the poor, a championship rooted in his deep Christian faith. He opposed evolution because evolution opposed the “unfit.”

By 1925 liberals in positions of cultural power were confident that history was going in the right direction. The belief in social progress that enabled so many nineteenth-century evangelicals to accept a form of evolution had sparked some of the greatest social reforms in Western history. But by the 1920s, it was clear that progress had its dark side.

As conservative Protestants passed from cultural power, they sometimes showed ferocious separatism and anti-intellectualism. But at other times, as in the case of William Jennings Bryan, they showed empathy with those left behind in the struggle for survival who found it hard to adapt and whom evolution seemed to abandon to the scrap-heap of the universe. The theory of evolution was never merely a scientific theory. It was, from the beginning, a conversation about whether there was a watchmaker—and how much the watchmaker cared about the watch. **Q**

*Edwin Woodruff Tait is a contributing editor at Christian History.*



# The church and the soul

CATHOLICS WERE ALL OVER THE MAP IN THEIR REACTIONS TO DARWIN

*David Mislin*

**FOR NINETEENTH-CENTURY** American Catholics, discussions of religion and science summoned the specter of one man: Galileo. Critics of Christianity frequently invoked the Catholic Church's persecution of Galileo as evidence that science and Christianity did not mix.

Such reminders frustrated late nineteenth-century Catholics. Now middle class and eager to leave the poor, immigrant communities in which they were raised, they wanted to play a larger role in the political and intellectual life of the United States and knew that this depended on Protestant Americans setting aside negative stereotypes of Catholicism.

One of those stereotypes was that Catholics were anti-science. So Catholic intellectuals were quick to remind American audiences that the Galileo case was the only instance when Catholic ecclesiastical authorities had condemned a true scientific theory.

Catholics also insisted that their church actively encouraged scientific investigation. One proponent of this view was priest John Augustine Zahm (1851–1921), an Ohio native. Zahm rose quickly from a rural log schoolhouse and became codirector of the science department at Notre Dame at age 23.

In addition to his keen intellect, Zahm had a penchant for self-promotion. He emerged as the leader of a

**HAUNTED BY GALILEO** American Protestant critics often observed that Catholics were the ones who had charged Galileo with heresy.

group arguing that Catholicism allowed “perfect freedom of investigation according to the principles and methods of science” without interference from “petty dogmatism.” Zahm and his colleagues knew they had to address the theory of evolution head-on.

Catholics actually had an easier time with the subject than some Protestants did. Because Protestants saw the Bible as the sole source of religious authority, apparent contradictions between science and Scripture could easily become a source of angst. By contrast, Catholics took solace in holding that the church was the final arbiter of truth.

Throughout the nineteenth century, evidence from geology repeatedly challenged a straightforward reading of the biblical creation story. These discoveries suggested that the earth was far older than the 6,000 years accounted for in Scripture and that plant and animal life seemed to have developed more gradually than in six days. Long-standing precedent existed in Catholic tradition for viewing the days described in Genesis not as 24 hours, but as long, indefinite periods of time.

This response to geological discoveries at first provided a template for Catholic engagement with theories





of evolution. Even if Darwin's theory appeared inconsistent with the Bible, American Catholics believed the church's teaching would bridge the gap. Because the Vatican initially refused to take a position, many Catholics felt they had little to fear.

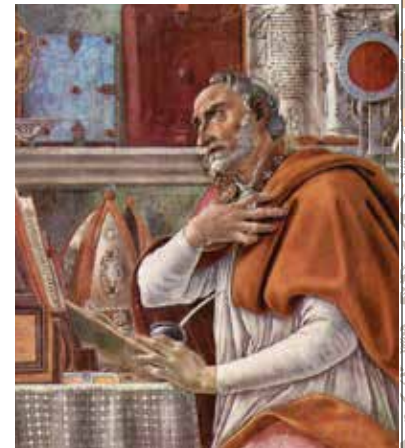
Virtually all Catholics agreed that humans were specially created, though they disagreed about the development of lower species. Additionally, few Catholics had any patience with theories that expanded evolution beyond biology and into the realm of society (see "Survival of the [social] fittest," pp. 19–21).

## THE LITERAL MEANING OF GENESIS?

Otherwise, American Catholics never divided into clearly defined camps. Some thought evolution best explained the development of all species except humans. Others found the science inconclusive. Still others conceded that the Vatican had issued no statement denying the compatibility of Catholicism with biological evolution. Yet even those who remained most skeptical about the theory saw little conflict between it and Catholic teaching. One skeptical author nevertheless thought that, if evolution were proved, it would be highly useful to the church in possibly clarifying "ambiguous points in the scriptural account of human origins."

Catholics who accepted the theory had strong grounds for thinking the church would not object. Beginning in the 1880s, Catholic intellectuals began to highlight passages from the writings of Augustine of Hippo (354–430), such as *The Literal Meaning of Genesis*, where Augustine advanced a model of the natural world that some thought resembled modern understandings of evolution. Catholic scientist John Gmeiner went so far as to call Darwin Augustine's "disciple." Given Catholic emphasis on the authority of historical church teaching, this suggestion added considerable weight for many.

By the 1890s the leading Catholic proponent of evolutionary theory was without a doubt the well-published Zahm. In his 1896 *Evolution and Dogma*, Zahm championed it with rhetorical zeal: "Evolution, as taught by St. Augustine and St. Thomas Aquinas, is the most reasonable view, and the one most in harmony with the explicit declarations of the narrative of creation." Zahm went further than other Catholics in saying the creation



**FIGHTING OVER FATHERS** Fr. John Zahm (*far left*) thought Aquinas and Augustine (*above, left to right*) taught a form of evolution. Others disagreed.

of the human body (though not the soul) through evolution was "quite in harmony" with the teachings of these Catholic giants.

This was a step too far for many. It meant that the body was somehow distinct from the soul. But Catholics had long believed in the unity of body and soul, a position advanced most forcefully by none other than Aquinas. Zahm was challenging beliefs about human nature that had been dominant in Catholicism for centuries.

This all coincided with larger debates about Catholic faith and modern thought. Some Catholic critics thought Zahm was more serious about evidence from natural science than about long-standing church teaching. And many American Catholic leaders who supported his efforts were standard bearers in an overall "Americanization" of Catholicism—a trend that displeased the Vatican.

For instance, one of Zahm's most outspoken supporters, blustery archbishop John Ireland—"the consecrated blizzard of the northwest"—barnstormed his way across the United States championing the separation of church and state, public school attendance for Catholic children, and a host of other positions that more conservative Catholics found unpalatable.

In the end Zahm's work could not escape its association with modern thought. The Congregation of the Index banned *Evolution and Dogma* and ordered Zahm to withdraw it. In exchange for his agreement to end publication, the Congregation agreed not to publish the ban. It would be nearly a half-century before the Catholic Church once again actively encouraged efforts to reconcile faith and modern science. ☐

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# Theology, reconstructed

LIBERAL PROTESTANTS HOPED TO ACCOMMODATE EVOLUTION AND CHRISTIANITY

Jon H. Roberts

**LESS THAN TWO YEARS** after the publication of Darwin's *Origin of Species* in 1859, W. C. Wilson reviewed the book in the *Methodist Quarterly Review*: "Perhaps no scientific work has ever been at once so extensively read, not only by the scientific few, but by the reading masses generally; and certainly no one has ever produced such a commotion."

Much of that commotion stemmed from concern about the theological implications of Darwin's ideas. The English naturalist had carefully avoided discussion of life's origin and had credited God with responsibility for having "impressed on matter" the laws of nature. But the fact remained that he attributed the numerous species that had appeared during the course of the earth's history to a capricious, wasteful, sometimes even cruel process that seemed to require neither divine intervention nor even a divine plan.

And, although Darwin did not explicitly include humans in his theory until 1871, theological commentators recognized much earlier that the logic of his argument extended there. It was also immediately apparent that Darwin's theory challenged not only the "plain sense" meaning of the scriptural creation narrative, but also many theological doctrines central to most Christians' understanding of faith.

**THE CREATION OF ADAM** Some liberals argued that the theory of evolution still allowed for God to have made humans in his image.

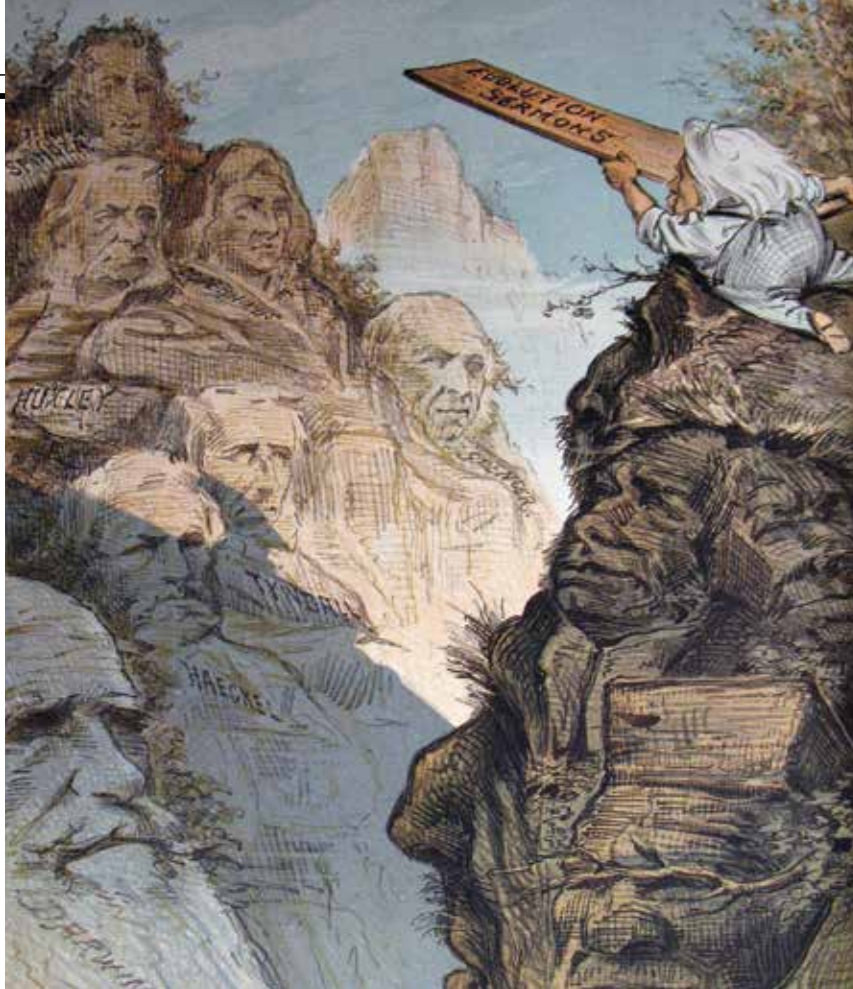
It was not until most natural historians endorsed the theory of evolution in the 1870s that American Protestants changed focus from objecting to it on scientific grounds to considering its theological implications. Many liberal Protestants in mainline denominations, convinced that scientists were the most able expositors of God's activities in nature, agreed that if natural historians were on board with the theory, Christian believers needed to "reconstruct" theology to bring it into accord.

## COMING TO GRIPS

First, liberals recognized that they needed to come to grips with whether one could still believe in God in the face of evolution. Some held, as Unitarian James Bixby wrote, that an evolutionary process characterized by ever "higher variations and more perfect organization" should be ascribed to the work of the divine Mind rather than to the contingencies of trial and error.

Others took a page from the book of Harvard botanist Asa Gray, saying that the most plausible explanation for the survival of the fittest was divine





**GOD EVER-PRESENT** Above: Methodist pastor and philosopher B. F. Cocker was one of many arguing that God's "will and his power are the only real forces in nature."

**EVOLUTION SERMONS** Left: Main-line pastor Henry Ward Beecher tries to reach the "Mt. Rushmore" of science while standing on the hill of faith.

design. Still others argued that the very fact that the cosmos was intelligible served as compelling enough evidence for the existence of a rational and benevolent deity.

But shoring up the credibility of God's existence was not enough. Liberals recognized that substituting evolution for God's periodic intervention in the natural order to create new species undermined God's ongoing interaction with the world. They began to emphasize God's immanent presence in all things. From this perspective, the evolutionary development of new species simply constituted additional evidence of what natural historian Joseph LeConte called "the ever-present, all-pervading, ever-acting energy of Deity."

This perspective came to color liberal Protestants' view of divine revelation. They came to believe that not only the Bible but all aspects of human experience should be seen as sources of revelation. In addition recognizing that the evolutionary hypothesis could not be reconciled with a "plain sense" reading of the Bible prompted them to reject the notion that the biblical text was infallible. They asserted that it could best be understood, as prominent clergyman Lyman Abbott put it, as a historical record "of the growth of man's consciousness of God."

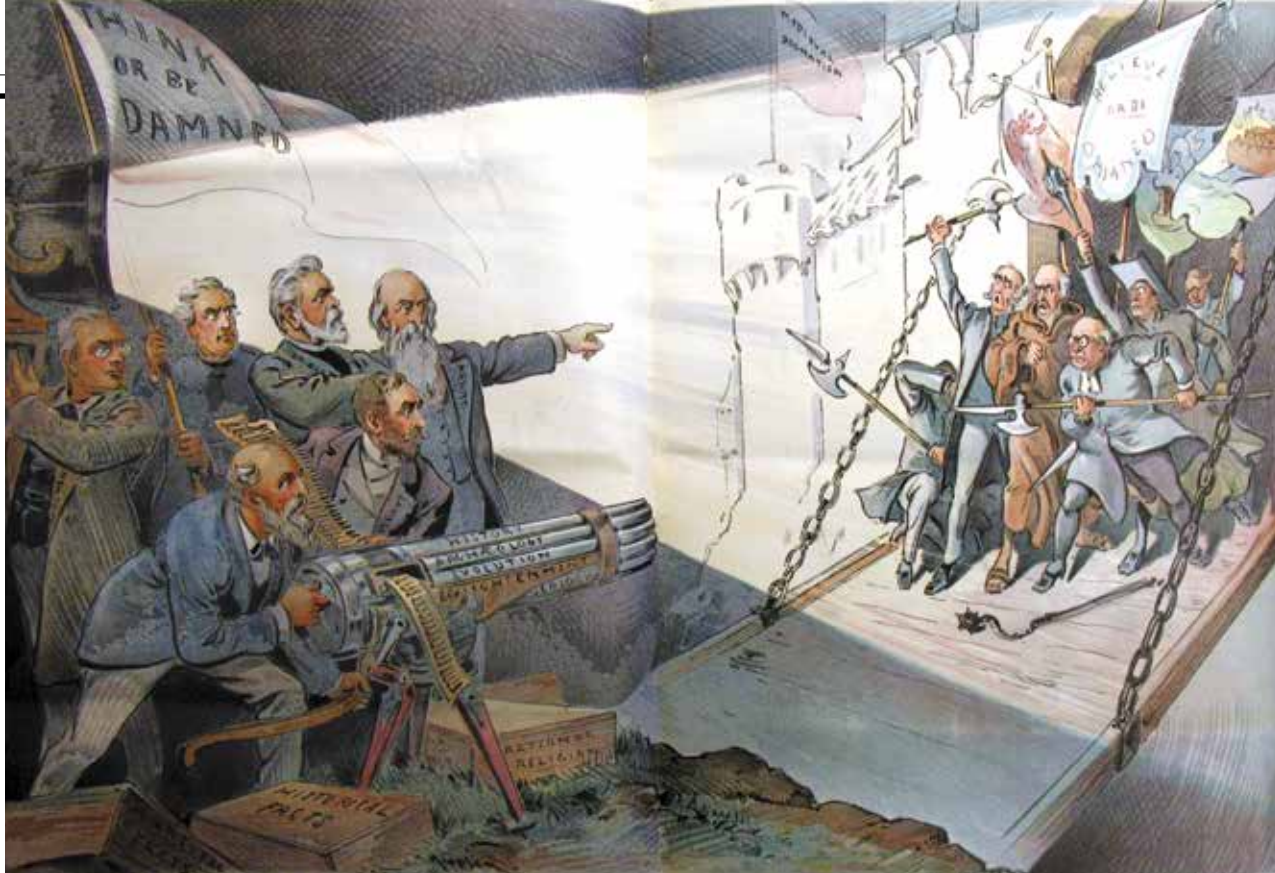
But, at the same time, they recognized that some biblical doctrines were so central to the Christian worldview that they simply could not be abandoned. Of

particular importance was the claim that human beings had been created in God's image. Liberals argued that the process by which the human species arrived on the planet was irrelevant to the question of the nature of that species. It was therefore quite acceptable to regard humans as different in kind from all other species, because their endowments of mind and spirit distinguished them as bearers of God's image.

These responses have informed the views of liberal Protestants ever since. Reacting to Darwin's theory was not the only reason these Christians engaged in theological reformulation. At the same time, they were also grappling with new developments in biblical criticism that seemed to downplay the accuracy of the biblical text, new theories of how history operated, and new challenges associated with greater interactions with other world religions.

Nevertheless their conviction that it was both necessary and possible to place the theory of evolution within a recognizably Christian framework proved decisive in creating what many described as a "New Theology." However the twentieth century would soon show that its interaction with the "old theology" was far from over. □

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# The great war

HOW DARWINISM LED TO A BATTLE BETWEEN SCIENCE AND FAITH

George Marsden

**WHY DID** Darwinism become the symbol of “warfare” between natural science and biblical Christianity, a war in which many people saw the spoils as nothing less than the future of civilization? One might imagine the battle taking place elsewhere. Biological evolution might have been regarded as merely one among a number of modern scientific challenges to biblical faith, and most biblicist Christian believers might have allowed differences among themselves as to how best to respond, rather than making rejection of biological evolution a test of allegiance to a crusade. Instead, Darwinism emerged as the preeminent stronghold of forces of secularism, battling Christianity for the future of humanity.

## DARWIN’S BULLDOG

It was, in fact, the secularists who first popularized the metaphor of warfare, using Darwin’s new theory to champion their cause. As early as 1860, T. H. Huxley, the British scientist who became known as “Darwin’s Bulldog,” declared, “Every philosophical thinker hails [Darwinism] as a veritable Whitworth gun in the armoury of liberalism.” Huxley, who coined the term “agnostic” to describe the open-mindedness he attrib-

uted to his party, later proclaimed, “Warfare has been my business and duty.”

In America, chemist and historian John William Draper popularized the warfare metaphor in his *History of the Conflict between Religion and Science* (1874). Andrew Dixon White, the president of Cornell University, made the same theme the centerpiece of his own scholarship, culminating in *History of the Warfare of Science with Theology in Christendom* (1896). Both works attempted to portray the church as having a long record of making war against free scientific inquiry. Draper and White thought they testified for a civilization liberated from the superstitions and restraints of churches and guided rather by intelligence shaped by free scientific inquiry.

The issue was represented most directly in higher education. Leading English universities had Anglican religious requirements for faculty positions until 1871. In the United States, Protestant domination over most of higher education was more complex but just as intimidating. Prior to the Civil War, even many state universities had clergymen as presidents. Most schools expected that faculty members would be practicing Protestants. In the decades after the Civil War,



**FIRING THE FIRST VOLLEY** Left: Secularists first popularized the “warfare” metaphor for debates over Darwin.

**NEW DAWN?** Right: Darwin’s defenders showed him as the “sun” chasing away “clouds” of popes, priests, pastors, and Bibles.

**“DARWIN’S BULLDOG”** Below: In this letter to Darwin, Huxley sketched himself as acolyte to Darwin’s bishop.



university reformers, such as White, campaigned against this dominance. For such purposes, Darwinism had come on the scene at just the right time and could serve as a formidable weapon.

Darwinism helped the secularist party in a larger campaign: defining natural science as the study of natural phenomena alone—with no reference to belief in God. Darwinism was useful because, for the first time, it made it intellectually plausible to explain even the highest forms of natural life, humans themselves, without reference to design by a higher intelligence.

If everything could be explained by the blind chance of natural forces alone, bringing God into the mix was wholly optional. Secularist reformers were so enthusiastic about Darwin’s rejection of design that many were ready to dogmatically proclaim biological evolution as fixed truth even before there was much evidence to show how natural selection might work.

In the meantime, most conservative and evangelical Protestants did not yet think of themselves as at



war with biological evolution. Some reacted strongly, but for 50 years or so after the publication of *Origin of Species* (1859), responses were decidedly mixed. These Protestants had a long record of adapting themselves to the latest scientific findings, including nineteenth-century geological discoveries that pointed to the earth being far older than the Bible seemed to indicate.

By the mid-nineteenth century, most biblicist Protestant leaders had found ways to reconcile Genesis and geology, suggesting that the “days” of creation might represent long periods of time. More broadly, they were confident that, since God was the author both of nature and of Scripture, true science and true Christianity would harmonize.

## LOOKING FOR FUNDAMENTALS

American fundamentalists would in the 1920s make strict opposition to biological evolution one of the principal fronts in their war to preserve biblical faith and Bible-based civilization. Yet, in the preceding era, even among the forerunners of fundamentalism, there was still room for debate.

B. B. Warfield, Princeton theologian known for championing the doctrine of inerrancy (that Scripture is totally free from error of any kind), allowed for biological evolution of animals, although he insisted that divine intervention had created humans.

Even *The Fundamentals*, the series of defenses of conservative faith published from 1909 to 1915 that gave its name to the movement as a whole, did not demand strict opposition to every sort of biological evolution as a test of true faith. Evangelical scientist George Frederick Wright contributed an essay to *The Fundamentals* critical of extravagant claims made by supporters of Darwin’s theory. Yet Wright was also a theistic evolutionist who



held that biological processes could be reconciled with God's guidance and intervention.

All that would soon change. World War I, and the accompanying sense of cultural crisis, prompted some conservative Christians to regard Darwinism as heralding the decline of civilization. William Jennings Bryan blamed the horrendous conflict on the spread of "a materialist Darwinian might-makes-right philosophy," especially in Germany.

Once America entered the war in 1917, overblown denunciations of German corruption became commonplace. Evangelist Billy Sunday proclaimed: "If you turn Hell upside down, you will find 'Made in Germany' stamped on the bottom." After the war, the rapid changes in public morality associated with "the roaring twenties" made it evident that America too was becoming materialistic.

Bryan lectured widely on the Bible as the basis for civilization. He thought biological evolution undermined human dignity, led to moral relativism, and was one of the most widespread secularist weapons against the Bible. Many fundamentalists took up Bryan's cause, joining their concerns for the Bible with their concerns for American morals. Indeed, they correctly observed that American culture was increasingly secular, materialistic, and morally permissive in the 1920s.

Those changes had many causes, but it was also true that respect for the Bible as an authority in public life was on the decline and evolutionary views were on the rise—trends seen especially in intellectual culture and higher education. Naturalistic evolutionary models characterized almost all areas of thought, including

**A DEAD END?** Darwin's detractors pointed out a different path, where "the wisdom of the world" would lead to the death of faith.

newly formed sciences: psychology, sociology, and economics. Such models were even applied to the study of religion and of the Bible itself.

More liberal Protestants generally adapted themselves, adopting less literal readings of Scripture and countering the culture's pure materialism by continuing to attribute higher ideals and moral teachings to divine guidance. They retained a respected role in higher education, supplementing the culture's materialist explanations with Christian truths.

However, more strictly biblicist Protestants found themselves largely on the outside of the nation's intellectual life. This was due in part to their own neglect. One of their greatest strengths had always been their ability to popularize their form of Christianity through revivalism. But the weakness of that approach was that it tended to be anti-intellectual and to thrive on simple either-or choices.

## RALLYING AROUND THE FLAG

As allegiance to higher biblical criticism grew in America's intellectual communities, revivalists reacted by becoming increasingly insistent on interpretations that were as literalistic as possible. Between 1860 and 1920, the gap between revivalist culture and American mainstream culture widened immensely. So when William Jennings Bryan or Billy Sunday proclaimed that the root of all America's evils was biological evolution and that the authority of the Bible and the future of civilization were at stake, many conservative believers were ready to rally around the flag of holy warfare, "The Bible versus Darwin," and mount a massive counterattack.

Secularizers had first popularized the warfare metaphor trying to free natural science and intellectual life from religious restraint. Now they had firmly secured the territory they desired in intellectual life, and they continued to use an emphasis on biological evolution to discredit traditional Christian belief.

Biological evolution had become the symbolic fortress of naturalistic secularism, and it had come to symbolize so many other issues as well: the existence of God, the Bible's authority, the nature of the universe, human nature, morality, and the future of civilization. Thus it became the major battleground. So many on both sides viewed the matter through the metaphor of warfare that the shouts of battle often drowned out the voices of those who argued for alternative approaches. ■

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# Survival of the [social] fittest

SOME OF THE CONTROVERSY OVER DARWIN CAME FROM HOW HIS IDEAS WERE APPLIED TO ECONOMICS AND RACE

**Matt Forster**

IN 1918 pastor Rev. N. Oscar Montan wrote to *The Lutheran Companion* in response to an essay that argued for the “social necessity” of war: “This teaching is pure Social Darwinism. *O tempora! O mores!* Yesterday the Lutheran Church and its press fought Darwinism with claws and nails; to-day Darwinism (refined and sugared) is openly proclaimed by leading Lutherans. . . . Is it not time that the Lutheran Church says something officially whether social Darwinism shall be taught in its press or not? Which shall it be: Christ or Darwin?”

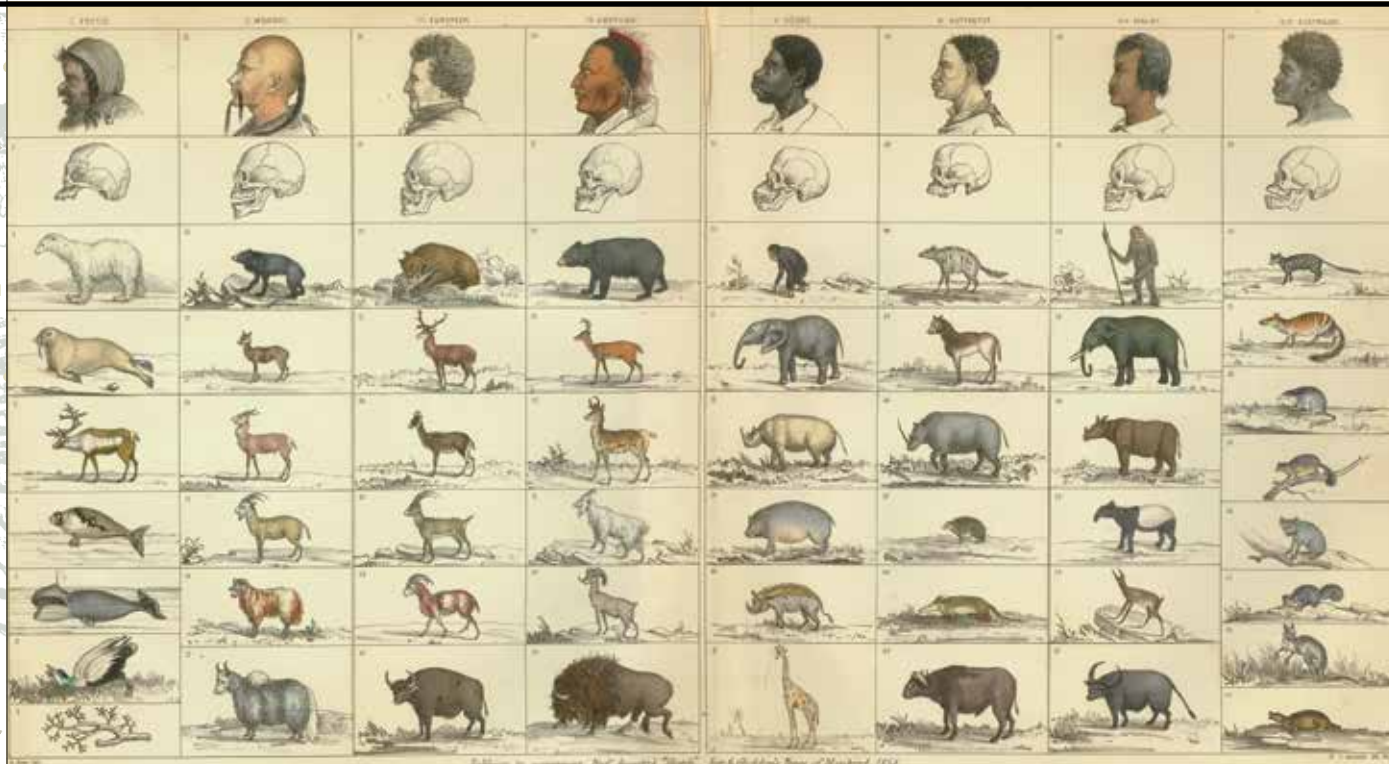
## COMPETING FOR REWARDS

What was social Darwinism? And what was its relationship to Darwin’s theory? The term was first used in 1877 in, of all places, a book titled *The History of Landholding in Ireland*. Between that first coining in 1877 and Montan’s opinion piece in 1918, it experienced an evolution of its own. The label was affixed to innumerable thinkers, many of whom rejected it.

**“THE VERY POOR AND RECKLESS”** Social Darwinists generally believed that poverty was a sign of failing in the struggle for existence.

In its essence the term represents a complex set of social theories with one essential feature: the belief that the competition for resources Darwin described happening in the natural world can explain how *human* societies develop. The farther history moved from the publication of Darwin’s chief works, the more his work merged in the public mind with the work of others. By 1918 it was not surprising that the good reverend would equate Darwin himself with the way social Darwinists had developed their theories.

But social Darwinism was much more complex than Darwin’s theory alone. Under this wide umbrella were thinkers as diverse as Karl Marx and Benjamin Kidd. The former described religion as the opiate of the people; the latter claimed religion was one of the highest achievements of society. Some who held these ideas predated or were contemporaries of Darwin. And some



later thinkers used natural selection to justify the most horrific atrocities of the twentieth century. However no one ever claimed to be a social Darwinist. Instead the term was used as an insult by social theorists against the views of their opponents.

### ONLY THE STRONG SURVIVE

In 1838 Charles Darwin read *An Essay on the Principle of Population* by Robert Malthus, a British scholar and minister. Written in the waning years of the eighteenth century, the essay argued that, if population grew unchecked, it would inevitably outgrow society's ability to produce enough food to sustain itself. Darwin took this idea of a struggle for survival in the context of limited resources and applied it to biology. This spark helped ignite his theory of natural selection.

Malthus died 25 years before *Origin of Species* was published, but his work was a precursor to what was called "social Darwinism." He was often lampooned for the apparent hard line his theory took. Britain's poor laws should be repealed, he argued, because they weakened the poor and enfeebled society as a whole. It is said that Charles Dickens had Malthus in mind when he imagined Ebenezer Scrooge in *A Christmas Carol*—though to be fair, Malthus complained only of public funds being used to uplift the poor; he supported private charity.

Another precursor, Herbert Spencer (1820–1903), wrote about biological evolution before Charles Darwin did. After reading *Origin of Species*, he coined the term "survival of the fittest" in his *Principles of Biology* (1864).

**A TELLING ILLUSTRATION** Louis Agassiz's 800-page book *Types of Mankind* spread controversial racial theories to a popular audience.

Darwin liked the term so well he used it in the fifth edition of *Origin*, and it became popular shorthand for Darwin's theory.

Much like Malthus, Spencer believed that helping the poor interfered with natural selection. People needed to compete for resources if society was to advance. Unlike Malthus, though, he had a sense of optimism about the future of the human race.

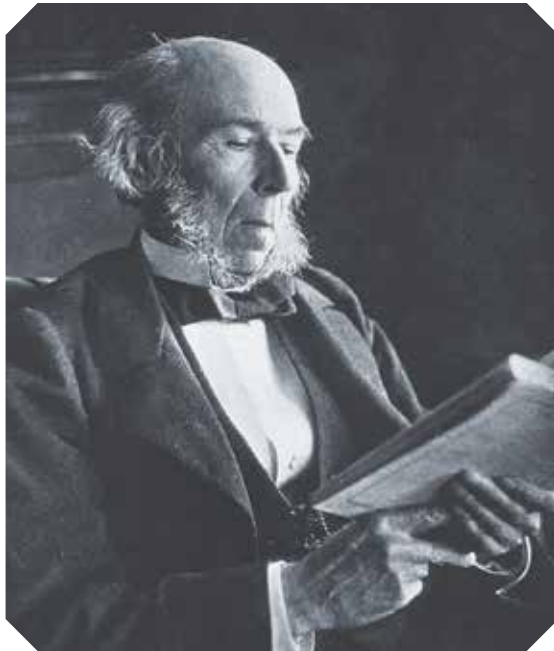
Taking the theory of natural selection and applying it to a broader context, evolutionary theory was often used to justify existing class structures and, quite often, the subjugation of other races. The most pressing social issue of Darwin's day was the abolishment of slavery. Some of his scientific motivation came from a desire to prove the common ancestry of man and give the abolitionist argument a sound scientific foundation.

But for many other scholars, especially those already inclined to support slavery, the principle of "survival of the fittest" meant that those weak enough to be enslaved were not fit for survival. One Southern essayist, Louisa McCord, suggested that slavery was a blessing from God instituted to protect inferior Africans from the fate of Native Americans, who were destined for extinction. In a competition for resources, they were fated to lose.

When Swiss scientist Louis Agassiz first encountered African Americans in Philadelphia in 1846, he



**NO WEAKNESS ALLOWED** *Right:* Robert Malthus may have inspired the character of Ebenezer Scrooge. *Below:* Herbert Spencer originated the term “survival of the fittest.”



was so viscerally shocked that he simply could not accept the idea that he shared with them common ancestors.

To his mother he wrote: “Their lot inspired compassion in me in thinking that they were really men. Nonetheless, it is impossible for me to repress the feeling that they are not of the same blood as us. . . . What unhappiness for the white race to have tied their existence so closely with that of Negroes in certain countries! God preserve us from such a contact.”

While he continued to maintain the spiritual equality of all men before God, he endorsed a scientific theory called “polygenism,” the idea that God created the different races at different times in different parts of the world. Rejecting Darwin’s theory of evolution as materialism, his own theory sought both scientifically and philosophically to reconcile the fossil record with a theory of creation.


This kind of thinking goaded Darwin on as he published *The Descent of Man*—a sequel, of sorts, to *Origin of Species*. In this application of evolutionary theory to human origins, Darwin argued for a single ancestor for all the races. He saw Agassiz’s racial theories as flawed and irrational.

## WAS DARWIN A SOCIAL DARWINIST?

Darwin never applied his theory of natural selection to society in a comprehensive manner, though he came close in several of his works.

For instance, in *Descent* he tried to explain why there were so many poor people: “The very poor and reckless, who are often degraded by vice, almost invariably marry early, whilst the careful and frugal, who are generally otherwise virtuous, marry late in life, so that they may be able to support themselves and their children in comfort. Those who marry early produce . . . many more children. . . . Thus the reckless, degraded, and often vicious members of society, tend to increase at a quicker rate than the provident and generally virtuous members.”

In 1883 Darwin’s half-cousin, Francis Galton, took the theory to the next level. His book, *Inquiries into Human Faculty and Its Development*, coined the term *eugenics* (from the Greek for “well born”), a philosophy stating that those with favorable characteristics should be encouraged to marry and have children, while the weak and infirm should be discouraged from reproducing. Galton saw in his cousin’s theory a tool that could be used to improve the quality of society.

But some later thinkers and writers developed harsher views about applying Darwinism to social problems, and social Darwinism in these forms undergirded fascism, Nazism, and forms of imperialism—such as the views on the necessity of war that led Montan to pose his still-echoing question: “Christ or Darwin?” 

*Matt Forster is a freelance writer and editor from Clarkston, Michigan.*



# Debating Darwin

## What did they say?

**We talked about evolution, or “survival of the fittest,” before Charles Darwin came on the scene. •**

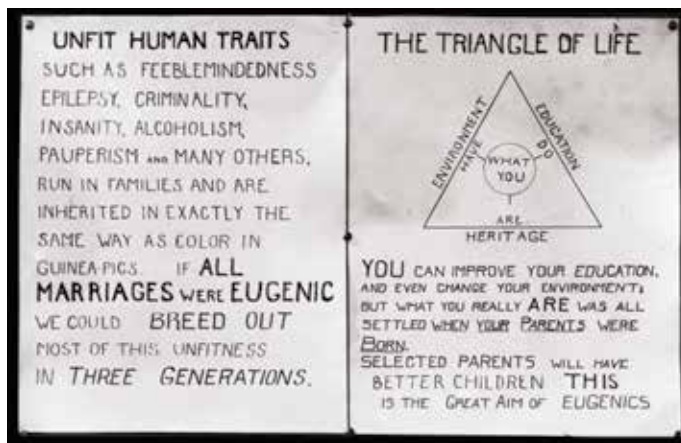
Erasmus Darwin (1731–1802), British philosopher and Charles Darwin's grandfather •

Jean-Baptiste Lamarck (1744–1829), zoologist •

Robert Malthus (1766–1834), British scholar and Anglican clergyman •

Robert Chambers (1802–1871), British publisher and author of *Vestiges of the Natural History of Creation* (1844) •

Herbert Spencer (1820–1903), British philosopher •



• **Darwin inspired me to develop my scientific theories.**

• Francis Galton (1822–1911), Darwin's cousin, British scientist, and promoter of eugenics

**We believe science and religion are eternally opposed to each other, and Darwin proves it. •**

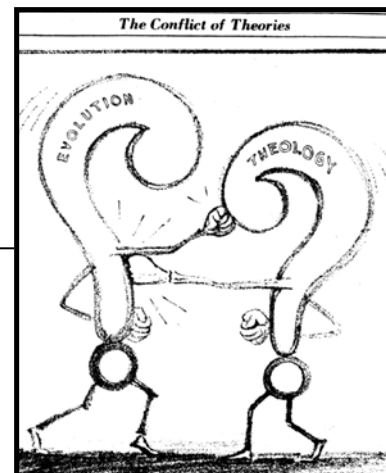
John William Draper (1811–1882), American scientist and author of *History of the Conflict between Religion and Science* (1874) •

Thomas Henry Huxley (1825–1895), British biologist, often called “Darwin's Bulldog” •

Andrew Dixon White (1832–1918), president of Cornell University, author of *History of the Warfare of Science with Theology in Christendom* (1896) •

Wilhelm Herrmann (1846–1922), German theologian •

Anonymous author of essay on “Evolutionism in the Pulpit” in *The Fundamentals* •





**In the nineteenth and early twentieth centuries, people responded to Darwin's ideas in many different ways. Here are several of the most common positions, showing where the thinkers featured in this issue fit in.**

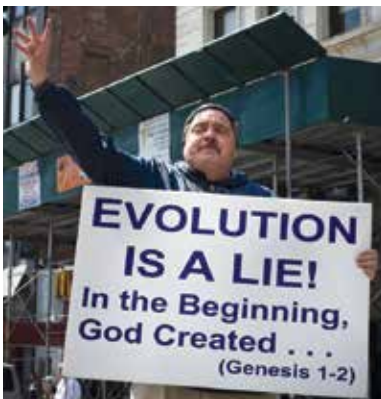
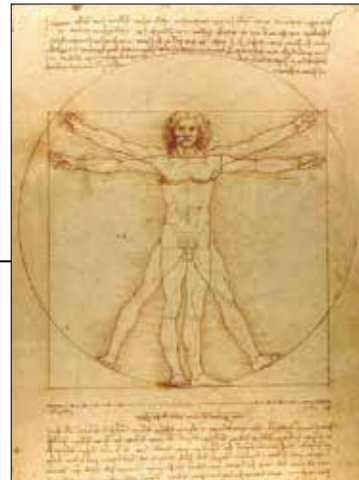


• **Darwin poses challenges to Christianity, but we can revise our theology to deal with them—perhaps radically.**

- Asa Gray (1810–1888), American botanist
- James McCosh (1811–1894), president of Princeton University
- Frederick Temple (1821–1902), archbishop of Canterbury
- Joseph LeConte (1823–1901), American chemist and geologist
- Alexander Winchell (1824–1891), American geologist
- James Woodrow (1827–1907), American theologian
- Lyman Abbott (1835–1922), American theologian
- George Frederick Wright (1838–1929), American geologist and contributor of an essay on evolution to *The Fundamentals*
- John Augustine Zahm (1851–1921), American Catholic priest

**Darwin poses challenges to Christianity, but we believe other theories of evolution do not.**

- Arnold Guyot (1807–1884), Swiss geographer and geologist
- George Campbell, 8<sup>th</sup> Duke of Argyll (1823–1900), British politician and scientific writer
- Rudolf Schmid (1828–1907), German theologian
- James Orr (1844–1913), American Presbyterian theologian and contributor of an essay on evolution to *The Fundamentals*
- Benjamin (B. B.) Warfield (1851–1921), American theologian
- R. A. Torrey (1856–1928), American evangelist and editor of *The Fundamentals*



• **Darwin poses challenges to Christianity, so we need to show that he is wrong—either in his theology or his science.**

- Charles Hodge (1797–1878), American theologian and head of Princeton Theological Seminary, author of *What Is Darwinism?*
- Samuel Wilberforce (1805–1873), bishop in the Church of England
- Louis Agassiz (1807–1873), Swiss scientist and professor at Harvard
- Ellen G. White (1827–1915), founder of Seventh-day Adventism
- Otto Zöckler (1833–1906), German theologian
- William Jennings Bryan (1860–1925), American politician and prosecuting lawyer at the Scopes Trial
- George McCready Price (1870–1963), American Seventh-day Adventist author and promoter of flood geology



# Wrestling with doubt

HOW OFTEN DID THE ENCOUNTER WITH DARWINISM CAUSE A SPIRITUAL CRISIS?

Ronald L. Numbers

**NO ASPECT OF DARWINISM** distressed Christians more than Charles Darwin's indelicate announcement in *The Descent of Man* (1871) that humans had "descended from a hairy quadruped, furnished with a tail and pointed ears." Darwinism, complained one critic, "tears the crown from our heads; it treats us as bastards and not sons, and reveals the degrading fact that man in his best estate—even Mr. Darwin—is but a civilized, dressed up, educated monkey, who has lost his tail."

There is no evidence to suggest, however, that many early creationists took the prospect of human evolution seriously enough to be more than rhetorically distressed. Surprisingly evolution became implicated relatively infrequently in the loss of religious faith. A number of years ago, sociologist Susan Budd studied 150 British secularists and freethinkers who lived between 1850 and 1950 seeking to discover whether encountering Darwinism and higher biblical criticism had been "especially responsible for weakening belief in the literal truth of scriptural religion for some, and for forcing others to abandon belief in God altogether."

**DIVERSE AND DELICATE CREATION** This 19th-c. painting depicts Noah's Ark.

She found that only two of her subjects "mentioned having read Darwin or Huxley before their loss of faith." Darwin himself rejected Christianity less because of his scientific discoveries than because he found the idea of punishing unbelievers forever "a damnable doctrine."

## FROM PRAYING TO FARMING

Some writers left personal testimonies about the corrosive effects of evolution on their religious beliefs. But in many cases, their encounters with Darwin's theory came as part of a larger journey away from faith.

Victorian writer Samuel Butler supposedly told a friend that *Origin of Species* had completely destroyed his belief in a personal God. But one of his biographers noted, "He had . . . already quarreled with his father [a minister], refused to be ordained, thrown up his Cambridge prospects, and emigrated to New Zealand as a sheep-farmer before Darwin's book came out." He quit praying the night before he left for the Antipodes to start farming.





Few of Darwin's contemporaries left evidence of experiencing such spiritual crises. One who did was naturalist Joseph LeConte. Arguably the most influential American harmonizer of evolution and religion in the late 1800s, he took great pride in showing that "evolution is entirely consistent with a rational theism." But this did not come without a struggle.

The traumatic death of LeConte's two-year-old daughter in 1861 left him clinging tenaciously to the doctrine of immortality. LeConte repeatedly alluded to his "distress and doubt" as "one who has all his life sought with passionate ardor the truth revealed in the one book [nature], but who clings no less passionately to the hopes revealed in the other [the Bible]." He wrote of his struggle with faith in his book *Religion and Science, a Series of Sunday Lectures*:

He wrote of his struggle: "During my whole active life, I have stood just where the current runs swift-est. . . . I have struggled almost in despair with this swift current. I confess I have sometimes wrestled in an agony with this fearful doubt, with this demon of materialism, with this cold philosophy whose icy breath withers all the beautiful flowers and blasts all the growing fruit of humanity. This dreadful doubt has haunted me like a spectre, which would not always down at my bidding."

By the late 1870s he had evolved into a "thorough and enthusiastic," if somewhat unorthodox, evolutionist. He insisted that there was "not a single philosophical question connected with our highest and dearest religious and spiritual interests that is fundamentally affected, or even put in any new light, by the theory of evolution."

Actually, it is difficult now to sort out which orthodox doctrines he ditched because of evolution and which ones he abandoned for other reasons. But, by the last decade of his life, he had come to reject the idea of a transcendent God, the notion of the Bible as "a



**STRUGGLING WITH DESPAIR** Scientist Joseph LeConte (*at left, and lecturing above*) came to believe that evolution and belief in God were "consistent."

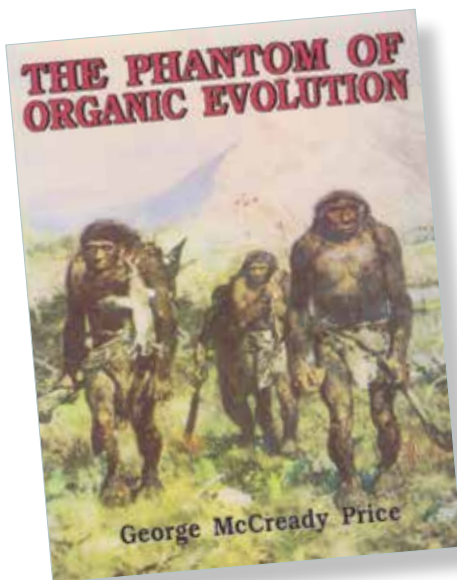
direct revelation," the divinity of Christ, the existence of heaven and of the devil, the power of intercessory prayer, the special creation and fall of humans, and the plan of salvation. Only an imminent, pantheistic God and personal immortality survived. Yet, despite toying with leaving organized religion, LeConte continued to attend a Presbyterian church.

## NOW AND THEN GOD COMES IN

George Frederick Wright was another who traveled this path. Wright, a seminary-trained Congregationalist minister and amateur geologist, emerged in the 1870s as a leader of the so-called Christian Darwinists and a recognized expert on the Ice Age in North America. As a young minister, he read Darwin's *Origin* and Charles Lyell's *Geological Evidences of the Antiquity of Man* (1863).

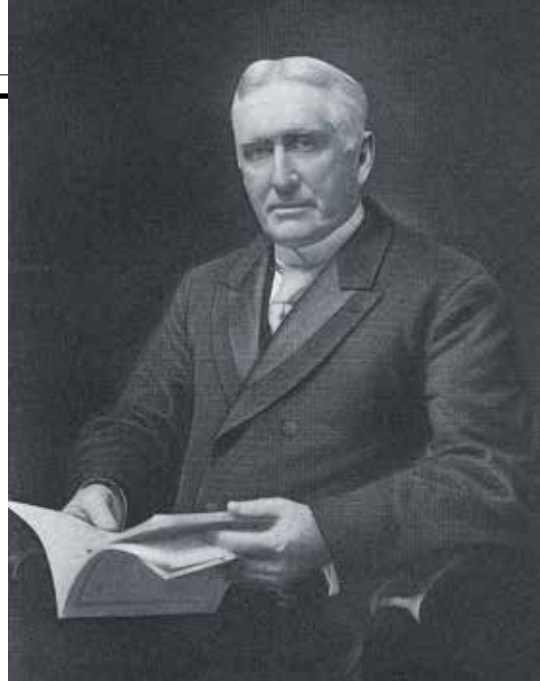
These clashed with views he had been taught, but his autobiographical writings do not reveal whether or not the clash precipitated a crisis of faith. His writings indicate that he found in Harvard botanist Asa Gray's writings a compromise—one that allowed him simultaneously to embrace organic evolution and to retain his belief in a divinely designed and controlled universe. Gray wrote that events in the world in general came simply from "forces communicated at the first," but "now and then, and only now and then, the Deity puts his hand directly to the work."

This view of God's relationship to the natural world appealed to Wright as an ideal solution to reconciling



**SAVED FROM DARWIN'S LURE** *Left:* George Price wrote many books arguing for "flood geology" and against Darwinism.

**VIOLENT SHOCK** *Right:* George Frederick Wright accepted a theistic form of evolution, but higher criticism of the Bible was too much for him to bear.



science and Scripture. He blunted the possible psychological shock of Darwin's theory by arguing that a theistic interpretation "makes room for miracles, and leaves us free whenever necessary, as in . . . the special endowments of man's moral nature, to supplement natural selection with the direct interference of the Creator." He also repeatedly used language that seemed to restrict natural selection to the lower end of the taxonomic scale while attributing kingdoms and broader taxonomic groupings to special creation.

### ROBBED OF ITS STING?

Like Gray, Wright derived great comfort from Darwin's inability to explain the origin of the variations preserved by natural selection. This limitation seemed to open the door for divine intervention. It "rob[bed] Darwinism of its sting," "left God's hands as free as could be desired for contrivances of whatever sort he pleased," and preserved a "reverent interpretation of the Bible."

Wright *did* experience a serious crisis of faith in the 1890s, but it came from encountering higher criticism of the Bible, not evolution. "So violent has been the shock," he candidly reported, "that . . . I have found it necessary to turn a little aside from my main studies to examine anew the foundations of my faith." Wright emerged from his soul-searching convinced more firmly than ever in the Mosaic authorship of the Pentateuch and in a supernatural view of history, and he turned sharply to the theological right. By the second decade of the twentieth century, he had joined the fundamentalist awakening, contributing an essay on "The Passing of Evolution" to *The Fundamentals*.

Few fellow fundamentalists at that time took evolution seriously enough to spend time refuting it scientifically. A significant exception was Canadian George McCready Price, who at the age of 14 joined the Seventh-day Adventist Church. Adventists

commemorated a literal six-day creation by celebrating Sabbath on the seventh day and accepted as authoritative the visions and testimonies of their founder, Ellen G. White.

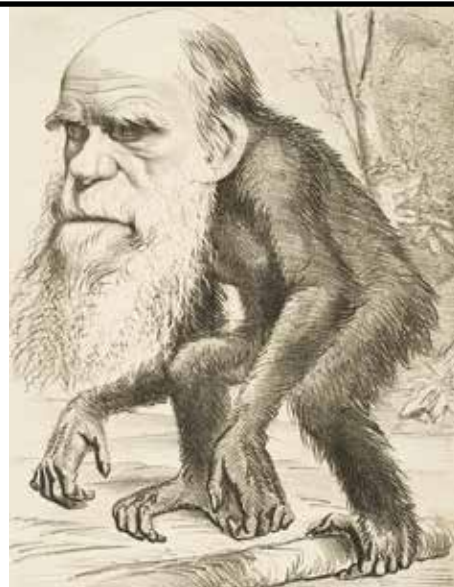
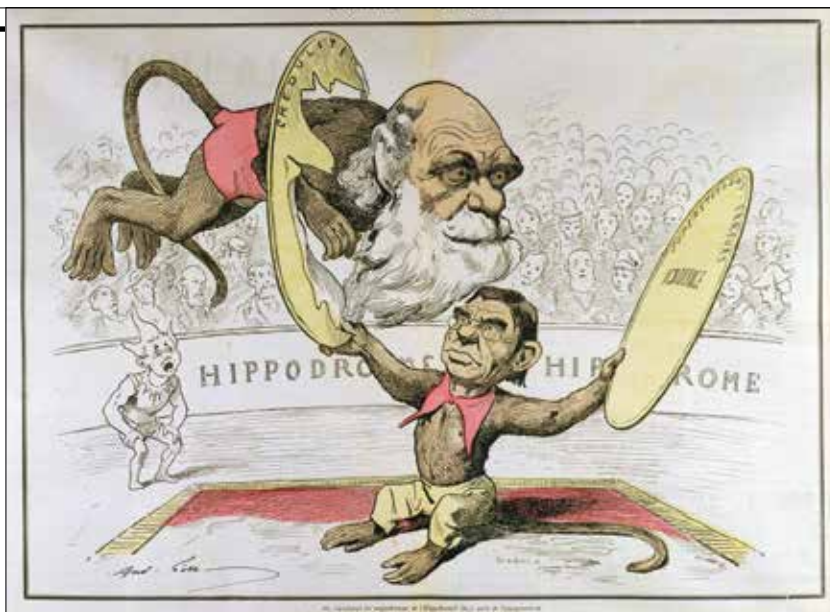
On one occasion she claimed to be "carried back to the creation and was shown that the first week, in which God performed the work of creation in six days and rested on the seventh day, was just like every other week." White also endorsed the then largely discarded view of Noah's flood as a worldwide catastrophe that had buried the fossils and reshaped the earth's surface.

During the early 1890s, Price read for the first time about the fossil evidence for evolution. On at least three occasions, he later recalled, he nearly succumbed to the lure of evolution, or at least what he always considered evolution's basic tenet: the progressive nature of the fossil record. Each time he was saved by sessions of intense prayer—and by reading White's "revealing word pictures" of earth history.

As a result of this experience, he decided on a career championing what he called "flood geology" and what decades later came to be known as young-earth (or scientific) creationism. Price's influence among non-Adventists grew rapidly. By the mid-1920s, the editor of *Science* described him as "the principal scientific authority of the Fundamentalists," and Price's byline was appearing with increasing frequency in many magazines. In the end, his thoroughgoing rejection of evolution gave direction to his life and served as the foundation of a rewarding career. ■

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# Chance or the dance?

MANY CHRISTIANS IN EUROPEAN COUNTRIES FOUND DARWIN'S IDEAS CHALLENGING

*Frederick Gregory*

**SURPRISINGLY, DARWIN'S THEORY** of evolution was barely a blip on the radar of many of Europe's leading nineteenth-century Christian thinkers. Famous conservative German theologian Adolf Schlatter made a name for himself as an enemy of German theological liberalism. Yet in so doing, he and his compatriots rarely even mentioned the name of Charles Darwin.

Others, though, were conscious of the widespread public attention showered on *Origin of Species*, which was out in no fewer than six editions by 1872. Those on either end of the theological spectrum denounced the theory out of hand or jumped onto its bandwagon. But, for the majority of thoughtful European Christians, the decision was not at all simple.

The natural sciences had made enormous strides in the nineteenth century. Scientific issues increasingly appeared in newspapers and magazines. By the waning decades of the century, educated people felt that they had to pay attention to the claims of these new "scientists." Previously known as "natural philosophy," the word "science" was now making its way into the English language. And scientific discoveries were making their way into everyday discussions.

Darwin made things more difficult than evolutionary theorists who had gone before him. Christians were used to hearing about fossils of extinct beasts that had roamed the earth many ages ago. They knew of claims that the earth was millions of years old and that living things had supposedly evolved from more primitive forms.

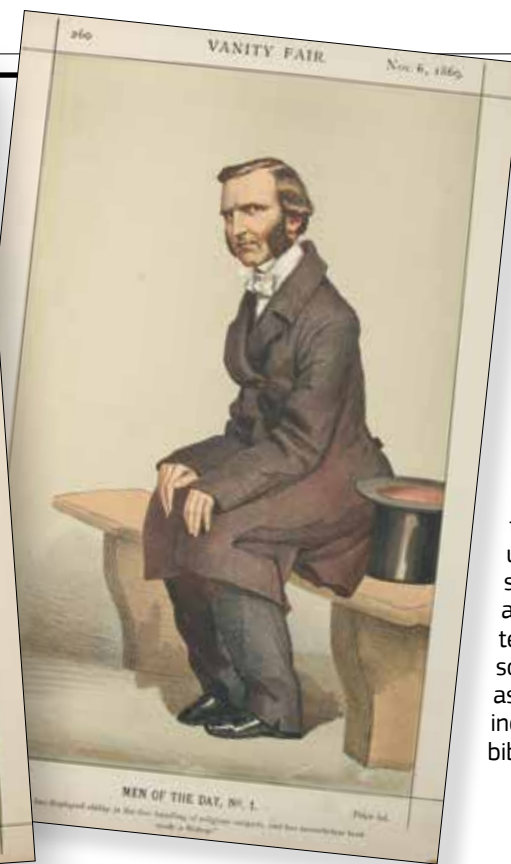
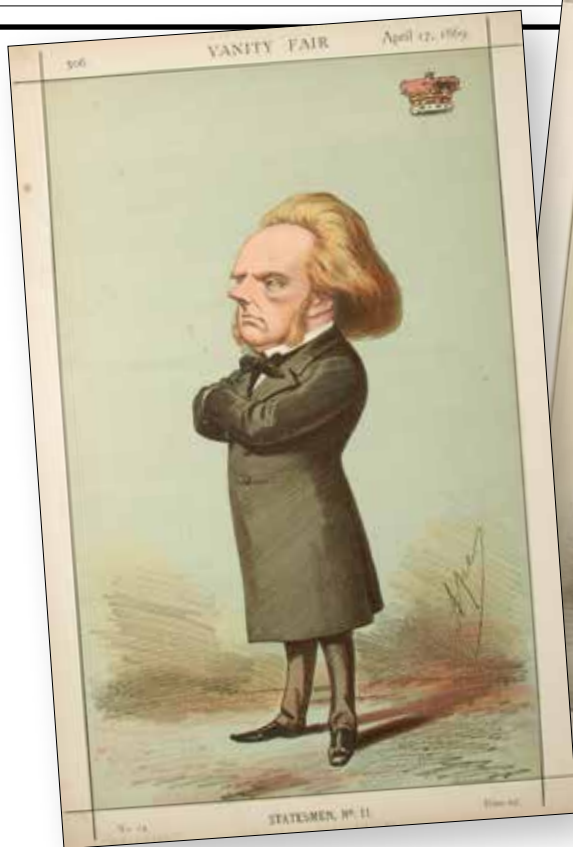
**MONKEY PICTURES** Darwin as an ape was a common cartoon theme. One French cartoon (*left*) supported Darwin, showing him bursting through "gullibility" and "ignorance." A British one called him "a venerable orang-outang."

But prior to Darwin, it was easier to dismiss or ignore such assertions because the overwhelming majority of people, including those who would come to be known as scientists, rejected them as unsubstantiated speculation. Where was the proof? How could one even imagine proving evolution since it took place over such a long time and did not lend itself to repeated experiment?

## HERE WE GO AGAIN

Many Catholics in France regarded the Darwinian hoopla as nothing new. They assumed it was just the same old wild speculation they had heard for decades. Back in 1802 their countryman Jean-Baptiste Lamarck had published his well-known assertion that God had imposed laws on nature that had caused living things to appear and to evolve into the forms we know today. But that kind of God, removed from the daily lives of living things, seemed to be no real God at all. Churchgoers and natural philosophers alike dismissed Lamarck's theory at the time as pseudo-science.

But, as a result of the debates over Darwin's theory, more people than ever became convinced that evolution had in fact occurred. That did not mean, however, that they agreed with Darwin's explanation of how it had happened. By the late nineteenth century, numerous problems with Darwin's theory of natural selection



**THE POLITICIAN AND THE BISHOP** Political caricatures of the Duke of Argyll (*far left*) and Archbishop Frederick Temple. Both believed a form of evolution could be reconciled with Christianity. Argyll thought that evolution was under God's direct supervision; Temple argued that in teaching evolution, science had not yet asserted anything inconsistent with biblical revelation.

had been identified, so many that the number of scientists completely loyal to Darwin was small compared to those who explained the now popular theory of evolution by other means.

### WHEN DOCTORS DISAGREE

It would have been easier for Christians had there been general agreement. By now, science had grown in popularity and social status, and many people were turning to scientists instead of churches for the final word about the workings of nature. But scientists appeared to be substantially divided. If they could not agree, where did that leave the honest layperson? European Christians tended to be either conservative, liberal, or radical on the issue, and in many ways these responses have survived the test of time.

Conservatives insisted that the Bible formed the basis for their scientific view of the world. But what constituted that view? Some were strict literalists who maintained that evolution had not occurred. Others allowed a freer interpretation and accepted evolution as the means God chose to produce the variety of living things. But, for all of these conservatives, God was in direct and immediate control of the process. Furthermore none of them was comfortable with natural selection. As a result, they all rejected Darwin's theory.

German theologian Otto Zöckler represented this position at its best. In 1861 he wrote one of the earliest post-*Origin* treatments of the species question by a theologian. His nuanced and informed work showed an impressive mastery of history and a careful and

thorough chapter-by-chapter exposition of *Origin of Species*. He called Darwin's scientific achievement "epoch-making," and carefully explained the details and the power of Darwin's theory.

But in the end, Zöckler declared that it came down to where one started. If one believed God existed and controlled the natural world, then a system that relied on the pure chance of natural selection was incompatible with a biblical view.

In spite of being thoroughly familiar with the work of Darwin, Lyell, and others, Zöckler rejected their estimates of the rate of geological development and pointed to the lack of consensus about the meaning of so-called human fossils. He himself saw no reason to date the creation of the human race farther back than around 6,000 years.

More liberal Christians felt themselves free of a need to stay close to the letter of Scripture. They had little trouble accepting evolution. But they did balk at accepting Darwin's version, specifically the selection of chance variations. Darwin had conceded in *Origin of Species* that the laws governing the production of variations were as yet unknown. In 1867 George Douglas Campbell, eighth Duke of Argyll (a Scottish politician and writer on scientific topics), argued that when these laws were found, people would see that they were *not* blind chance but expressed God's intent for creation.

On the European continent, theologian Rudolf Schmid likewise accepted evolution as compatible with belief in God, but rejected the element of chance in Darwin's theory because it was incompatible with





his Christian understanding of God's relationship to nature and humanity, God's ultimate creation. Otherwise "The quintessence of religious life...the certainty of being a child of God—would be illusory when there should no longer be a difference of value between man and animal, animal and plant, plant and stone."

## WE CAN WORK IT OUT

Bishop of Exeter and later archbishop of Canterbury Frederick Temple noted in an 1884 lecture—as the Duke of Argyll had before him—that Darwin's theory would remain incomplete until humans learned the laws governing variations. Unlike the duke, Temple ignored the challenge presented by the role of chance in natural selection. He thought that God acted by programming history perfectly so that there was no need for God to intervene to correct it.

By the end of the century, other liberal theologians, like the 11 Anglican clergymen who contributed to the volume *Lux Mundi* (1889), harmonized Christianity and evolution by declaring that Christianity was itself but a phase of a great evolutionary law. Here again the emphasis lay on the evolutionary process alone, almost as if one could ignore the means Darwin had said governed it.

Finally, radical theologians declared that neither science nor religion could provide final knowledge of the natural world. It was the scientist's responsibility to uncover workable theories that helped humans to manipulate nature. But people must not mistake these theories for the final truth of nature.

German theologian Wilhelm Herrmann, a professor at Marburg University, wrote that metaphysical declarations about nature's truth had no place in either natural science or religion. People of faith must give scientists the freedom to investigate nature with whatever theory they wished, while religion concerned itself with ethics and morality.

Herrmann focused on an encounter with Christ that would make human life truly authentic—as he wrote in *The Communion of the Christian with God* (1906): "The basis of faith can only be what produces faith as the inward experience of pure trust... the vision of that Personal


**A NATIONAL FIGURE** Above: Darwin graces the English 10-pound note, where he has appeared since 2000, although he is due soon to be replaced by Jane Austen.

**THREE VIEWS** Right: Wilhelm Herrmann (top) thought science and religion did not mix; Jean-Baptiste Lamarck (middle) proposed a theory of evolution many called "pseudo-science." Otto Zöckler (bottom) rejected Darwin as unbiblical.



Life which alone can fill him with perfect confidence."

Even though Darwin's theory appeared to force the question about whether nature had a purpose, according to Herrmann neither the scientist nor the person of faith could declare that they knew the answer. To do so would presume they somehow knew the mind of God. But human thought, by definition, was restricted by space and time from understanding such matters. Any such declaration either by a scientist or a person of faith was a matter of belief, not knowledge.

Herrmann was the forerunner of many in decades to come, including a whole generation of theologians who thought the best way to deal with science and religion was to let them each go their own separate ways. But others would continue to argue that the experience of faith included either facing Darwin—or facing him down. 

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**PRINCETON PREACHER** Left: Charles Hodge thought Darwinism ignored religious convictions, “the most dangerous for any class of men to disregard or ignore.”

**BELIEVING BOTANIST** Below: Asa Gray disagreed with his friend Darwin on the subject of religion.



because the origins of life could not be observed scientifically.

Hodge’s rejection of Darwinism contrasted with Princeton University’s president James McCosh’s (president, 1868–1888) beliefs that the theory would be someday proven and Christians needed to adapt their thinking to it. Until the seminary took a modernist turn in 1929, American Presbyterians received two intellectual lineages from their flagship educational institutions. The university advanced the idea that evolution was God’s way of working in nature, while the seminary taught that faith in biblical inerrancy necessitated rejection of Darwin.

### ASA GRAY (1810–1888)

In an 1879 letter, Charles Darwin wrote, “It seems to me absurd to doubt that a man may be an ardent theist & an evolutionist.” Darwin knew these beliefs could be compatible because both were held by his longtime friend and champion Asa Gray.

Gray, a noted botanist, taught at Harvard alongside Louis Agassiz. He met Darwin at Kew Gardens in London in 1838 and began correspondence with him in 1855. Gray had developed similar ideas on his own and was immediately convinced by Darwin’s theory. He even arranged for the American publication of *Origin of Species*.

But Gray disagreed with his English friend on the subject of religion, repeatedly trying to convince Darwin that his system left room for God’s design and occasional intervention. Darwin demurred. Nonetheless, Gray included his theistic synthesis when he promoted Darwin’s ideas—efforts that greatly aided the acceptance of evolution in America.

# “What is Darwinism?”

A SAMPLING OF OPINIONS FROM VARIOUS THEOLOGIAN AND SCIENTISTS

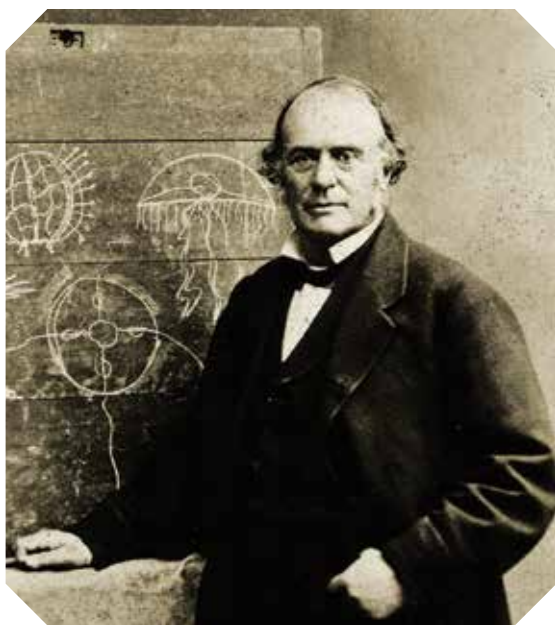
*Elesha Coffman and the editors*

### CHARLES HODGE (1797–1878)

In his *Systematic Theology* (1871–1873), Hodge, professor of Oriental and biblical literature at Princeton, made four arguments for why Darwinism was untrue and unacceptable for Christians.

One, it offended humans’ common sense to be taught that “the whale and the humming-bird, man the mosquito, are derived from the same source.” Two, the theory posed that the complexity of nature could arise without an intelligence directing it. Three, the theory utterly discounted religious convictions. Four, the theory could not be proven,





### LOUIS AGASSIZ (1807–1873)

Louis Agassiz's career illustrates key differences between nineteenth-century and modern science. Born in Switzerland, the son and grandson of Protestant preachers, Agassiz studied botany, medicine, geology, zoology, and other subfields of what was then known as "natural history."

His first publications cataloged freshwater fish; next he moved on to glaciers and became the first scientist to argue for an Ice Age. After this, he completed a comprehensive, annotated list of the botanical genera and group names for all known animals. Invited to Boston in 1846 to deliver a lecture series on "The Plan of Creation as Shown in the Animal Kingdom," he decided to stay, becoming a professor at Harvard.

Agassiz's wide-ranging expertise—his subsequent lecture series ranged from "Comparative Embryology" to "Deep Sea Dredging"—contrasts with twenty-first-century academic specialization. His centrality to the American scientific enterprise cannot be matched now. A generation of scientists worked with him.

Agassiz was one of the last scientists of international repute to deny Darwinism. He rejected the theory on both scientific and philosophical grounds, maintaining until his death that different species were separate, special creations of God.

### B. B. WARFIELD (1851–1921)

Warfield, another Princeton Seminary theologian, occupied a middle ground between McCosh and Hodge. In 1916 he recalled his days as a Princeton University student: "[McCosh] did not make me a Darwinian, as it was his pride to believe he ordinarily made his pupils. But that was doubtless because I was

**SCIENTIST OF SPECIAL CREATION** *Left:* Louis Agassiz diagrams corals and jellyfish for his students.

**THOUGHTFUL THEOLOGIAN** *Below:* Benjamin Warfield was concerned that evolution had cost Darwin his faith.

already a Darwinian of the purest water before I came into his hands....

"In later years I fell away from this, his orthodoxy. He was a little nettled about it and used to inform me with some vigor—I am speaking of a time 30 years ago!—that all biologists under 30 years of age were Darwinians. I was never quite sure that he understood what I was driving at when I replied that I was the last man in the world to wonder at that, since I was about that old myself before I outgrew it."

What Warfield "outgrew" was a purely naturalistic version of Darwinism with no supernatural design or intervention. He was concerned that evolution had cost Charles Darwin his Christian faith. But Warfield did not think all Christians must suffer that fate. He left the question of his own views slightly open, stating, "I do not think that there is any general statement in the Bible or any part of the account of creation . . . that need be opposed to evolution."



### GEORGE MCCREADY PRICE (1870–1963)

The course of this pugnacious Canadian's life was set when, after the 1882 death of his father, his mother joined the Seventh-day Adventists. The church had arisen some decades earlier under the leadership of visionary Ellen G. White (1827–1915).

Adventists worshiped on Saturday, considering it the biblical Sabbath, and were known for their emphasis on health and diet. White strenuously opposed evolution: "There is no ground for the supposition that man was evolved by slow degrees of development from the lower forms of animal or vegetable life. Such teaching lowers the great work of the Creator to the level of man's narrow, earthly conceptions." Her visions emphasized a literal seven-day creation, and she argued that due to the flood, "Geology cannot tell us the age of . . . fossils; only the Bible can."

Price became a leading interpreter of White's views to outsiders, writing many articles and over 30 books. He taught at Adventist colleges and spent four



**ENTHUSIASTIC EVOLUTIONIST** Left: Joseph LeConte displays quartz crystals.

**GENTLE GEOGRAPHER** Below: Arnold Guyot mapped and measured mountains. His weather stations led to modern storm warnings.



years in Britain, where he debated British rationalist Joseph McCabe in 1925 in an exchange inspired by the Scopes Trial. Price maintained that “true” inductive science would keep facts and theories distinct and that evolution remained an unproven theory.

### JOSEPH LECONTE (1823–1901)

Chemist and geologist Joseph LeConte began life as a solid son of the South. Born on a Georgia plantation, he helped manufacture medicines and nitre for the Confederacy, then left his teaching post at the University of South Carolina in part to escape Reconstruction. Upon landing at the University of California, he began to model his own theory of “continuous and progressive change.”

LeConte described himself as “an evolutionist, thorough and enthusiastic . . . not only because it is true, and all truth is the image of God in the human reason, but also because of all the laws of nature it is . . . the most in accord with religious philosophic thought. It is, indeed, glad tidings of great joy which shall be to all peoples.”

At the urging of famed preacher Henry Ward Beecher, LeConte published his perspective on Darwinism in *Evolution: Its History, its Evidences, and its Relation to Religious Thought* (1888). LeConte’s perspective on Christianity is harder to discern. He noted in his autobiography, “So far as churches are concerned, I could never take a very active part in any, because it seems to me that they are all too narrow in their views. But recognizing as I do that they

represent the most important of all human interests, I have always very cordially supported them all.”

### ARNOLD GUYOT (1807–1884)

Like his friend Agassiz, Guyot was born in Switzerland, studied widely at a number of European universities, and examined Alpine glaciers. Eventually, political revolutions caused Guyot to follow Agassiz to the United States, where he set up weather stations and revised geography curricula before securing a faculty position at Princeton University in 1854.

He spent the rest of his career there, traveling during vacations to map and measure the Appalachian Mountains. Union forces used his maps during the Civil War. Two peaks along the Appalachian Trail bear his name, as does a mountain in Colorado.

Although Guyot insisted on the special creation of matter, life, and humans, he worked to harmonize the new science with his Christian faith in *Creation, or the Biblical Cosmogony in the Light of Modern Science* (1884). The plaque honoring Guyot at Princeton describes him as “a devout student of nature who loved to trace the wisdom and goodness of God in the works of creation.”

Guyot made his most lasting contribution in meteorology. His plan to arrange observation stations around the country to aid in predicting storms laid the foundation for the National Weather Service.





**CONTROVERSIAL CRITIC** *Above:* Alexander Winchell's views on race spelled trouble for him at Vanderbilt.

**PRESBYTERIAN PROFESSOR** *Right:* James Woodrow's endorsement of evolution cost him his job.

### ALEXANDER WINCHELL (1824–1891)

The founders of Vanderbilt University thought they had achieved a coup when in 1875 they offered a chair in geology, zoology, and botany to Alexander Winchell—scientist, author, speaker, and preeminent interpreter of science for the Methodist Episcopal Church.

Winchell cautiously embraced Darwinism, writing in *Sketches of Creation* (1870) that if the theory withstood scrutiny, it would be “the duty of the Christian world to embrace it and convert it to their own uses. To do otherwise is to earn the contempt of those who are really on the side of truth.”

Winchell thought that evidence of evolutionary development displayed the unity of nature and the design of its creator. This theistic evolution was fine at Vanderbilt, but Winchell's ideas about race were not. His theory that whites and African Americans descended from different Adams led to his 1878 dismissal. Winchell found many supporters in the North and finished his distinguished career at the University of Michigan.

### JAMES WOODROW (1827–1907)

“If Uncle J. [James Woodrow] is to be read out of the Seminary,” wrote a young Woodrow Wilson to



his sweetheart in 1884, “Dr. McCosh [president of Princeton University] ought to be driven out of the church, and all private members like myself ought to withdraw. . . . If the brethren of the Mississippi Valley have so precarious a hold upon their faith in God that they are afraid to have their sons hear aught of modern scientific belief, by all means let them drive Dr. Woodrow to the wall.”

The future president's uncle, a Presbyterian minister, served as Perkins Professor of Natural Sciences in Connexion with Revelation at Columbia Theological Seminary in South Carolina. In his 1861 inaugural lecture, he affirmed the literal truth of the Bible and assured his listeners that no scientific discoveries—including those of geologist Charles Lyell, but not yet Darwin, whose work was practically unknown in the American South—could contradict the Scriptures.

But by the 1870s, Woodrow had come to accept aspects of Darwinism. He decided that Adam's body had resulted from evolutionary processes, though Adam's soul and, curiously, Eve's body, were divine creations. This led to a series of investigations that ultimately forced Woodrow from his job. He continued to teach at the University of South Carolina, where Columbia students—with the permission of their home presbyteries—continued to take his classes. ■

*Elesha Coffman, former managing editor of Christian History, is assistant professor of church history at the University of Dubuque Theological Seminary.*



# Darwin on trial?

THE SCOPES TRIAL REVEALED DEVELOPING DIVISIONS OVER EVOLUTION

*David Goetz and the editors*

**"THE COURT WILL COME TO ORDER,"** said the Honorable John T. Raulston. "The Reverend Cartwright will please open the court with prayer."

It was Friday, July 10, 1925, 9:00 a.m., in the small rural community of Dayton, Tennessee. *The State of Tennessee v. John Thomas Scopes* should have been open-and-shut: did high school teacher Scopes teach evolution in class? If so, he was guilty of violating a new Tennessee law. But the case ballooned into a media event that revealed a widening chasm in American Christianity.

## MEDIA CIRCUS

In January 1925 the Tennessee legislature passed a bill that made it unlawful "to teach any theory that denies the story of the Divine Creation of man as taught in the Bible, and to teach instead that man has descended from a lower order of animals." Any teacher found guilty of the misdemeanor would be fined between \$100 and \$500. Consequently, the bill created a national buzz.

Immediately the American Civil Liberties Union (ACLU) advertised to pay the costs of testing the statute in court. A mining engineer in Dayton convinced John Scopes (1900–1970), a science teacher and coach who

**BACK TO NATURE** Darrow interrogates Bryan. By this point, the trial had moved outdoors because the courtroom was too hot.

had filled in briefly for the ill biology teacher, to become a test case. Nationally known lawyer Clarence Darrow (1857–1938) joined the defense team and William Jennings Bryan (1860–1925) the prosecution of the made-for-radio trial (the first to be broadcast nationwide).

Both men were in the twilight of their careers. Darrow, 69, was widely known as a defender of "radicals" and an outspoken agnostic. Bryan, 66, had been a three-time presidential candidate and secretary of state under Woodrow Wilson. A leading spokesman for the emerging movement called "fundamentalism," he had not practiced law in more than 30 years and now wrote a syndicated weekly column on the Bible.

When the trial began, over 100 journalists—including the sardonic H. L. Mencken—descended on tiny Dayton. Each side, aware of the media circus, played not only to a jury but also to a nation at attention.

On day one of the trial, people crammed into the courtroom, far exceeding the number of seats. In its opening statements, the defense argued that the trial represented not a conflict between secular humanists





**MR. BRYAN AND THE MONKEYS** Above and right: Cartoonists on both sides had a field day with the trial.

and Christians, but between tolerant, educated Christians and intolerant, backward-looking Christians.

The state, on the other hand, said the trial was about the immediate facts: did Scopes break the law? The county superintendent, Walter White, testified that Scopes had admitted to teaching from the textbook *Civic Biology*, that Scopes confessed he “could not teach that book without teaching evolution,” and that “the statute was unconstitutional.”

The next state’s witness was 14-year-old student Howard Morgan. Prosecuting attorney Tom Stewart asked Morgan how Scopes classified humans with reference to other animals. “The book and he,” replied Morgan, “both classified man along with cats and dogs, cows, horses, monkeys, lions, horses, and all that.”

During his cross-examination, Darrow asked Morgan, “He [Scopes] didn’t say a cat was the same as a man?” “No sir,” replied Morgan. “He said man had a reasoning power that these animals did not.”

Darrow quipped, “There is some doubt about that, but that is what he said, is it?” (Laughter).

After less than four hours, the prosecution rested.

## MAN AMONG THE PRIMATES

The defense wanted to argue that evolution was universally accepted among scientists and that it was not a contradiction for Christians to subscribe to the theory. So it brought in experts from world-class universities who, in many cases, were also Christians.

One was zoologist Maynard Metcalf of Johns Hopkins. (Due to defense objections, the jury never heard Metcalf’s testimony, but the judge did.) Metcalf testified to both academic credentials and his



membership in the United Church in Oberlin, Ohio, where he led Bible classes. He agreed with Darrow’s assertion that evolution was “taught in all the leading colleges of the world.”

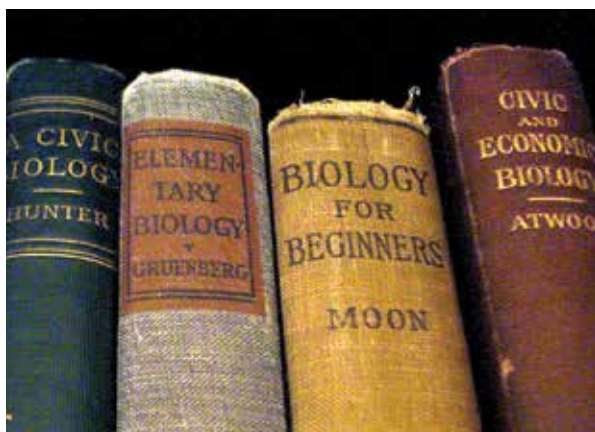
“Now in the classification of scientists, zoologists,” asked Darrow, “where does man come?”

“He is classed,” said Metcalf, “among the primates.”

On day five, the prosecution challenged the defense’s scientific testimony. Darrow rebutted, “We expect to show by men of science and learning . . . that any interpretation of the Bible that intelligent men could possibly make is not in conflict with any story of creation.”

Bryan rose to his feet for the first time in the trial. For the first four sweltering days, he had sat in his shirt-sleeves, fanning himself. This would be his only major speech. He read from the biology textbook Scopes had used: “He [Scopes] tells children to copy this [evolutionary tree] diagram, and take it home in their notebooks, to show their parents that you cannot find man! That is the great game to put in the public schools, to find man among animals, if you can.”

He added, “I suppose this distinguished scholar who came here shamed them all by his number of degrees. He did not shame me, for I have more than he has, but I can understand how my friends felt when



he unrolled degree after degree. . . . More of the jurors are experts on what the Bible is than any Bible expert who does not subscribe to [its] true spiritual influences."

"Amen," shouted voices in the audience.

"The facts are simple," Bryan concluded, "the case is plain, and if those gentlemen want to enter upon a larger field of educational work on the subject of evolution, let us get through with this case and then convene a mock court, for it will deserve the title 'mock court' if its purpose is to banish from the hearts of the people the Word of God as revealed." The courtroom swayed with applause.

Judge Raulston eventually allowed expert scientific testimony, but only in affidavits read into the court record. The jury would never see or hear it, but it might come into play in the inevitable appeal.

The defense read into the record comments from the governor: "It will be seen that this bill does not require any particular theory of interpretation of the Bible regarding man's creation to be taught in the public schools."

They also read a statement from Tennessee Episcopal priest Walter C. Whitaker: "As one who for 30 years has preached Jesus Christ as the Son of God and as 'the express image of the Father,' I am unable to see any contradiction between evolution and Christianity." They added similar statements from other theologians and scientists.

## SURPRISE MOVE

Then, in what proved to be the most effective strategy of the trial for the defense, defense attorney Arthur Hays called *Bryan* as an expert witness. Hays wanted to weaken the prosecution's case by making its star attorney look foolish. Over the objections of his own team members, Bryan took the stand.

Darrow asked his counterpart, "You have given considerable study to the Bible, haven't you, Mr. Bryan? . . . Do you claim that everything in the Bible should be literally interpreted?"



**ONE OF MANY** Left: Hunter's *Civic Biology* along with other textbooks of the 1910s and 1920s that taught evolution and eugenics.

**READ YOUR BIBLE** Above: Scopes (on the left) passes an anti-evolution banner with two of his lawyers.

"I believe everything in the Bible should be accepted as it is given there," Bryan said. "Some of the Bible is given illustratively. For instance, 'Ye are the salt of the earth.' I would not insist that man was actually salt."

Darrow questioned Bryan about the Book of Joshua: "Mr. Bryan, have you ever pondered what would have happened to the earth if it had stood still?"

"No," Bryan replied. "The God I believe in could have taken care of that, Mr. Darrow."

His antagonist turned to the date of the flood: "What do you think that the Bible, itself, says?"

"I never made a calculation."

Darrow: "What do you think?"

Bryan: "I do not think about things I don't think about."

"Do you think about things you do think about?" snapped Darrow.

"Well, sometimes." The court rippled with laughter.

Darrow: "Mr. Bryan, don't you know that there are many other religions that describe the flood?"

Bryan said he did not. But when he mentioned that he *had* studied Confucianism, Darrow asked if he knew how old Confucianism and Zoroastrianism were, persisting, "Do you know they are both more ancient than the Christian religion?"



## HELL AND THE HIGH SCHOOL

The Anti-Evolution League distributed a book describing “the teaching of evolution in tax-supported schools” as the “greatest curse that ever fell upon this earth.”

Bryan replied, “I am not willing to take the opinion of people who are trying to find excuses for rejecting the Christian religion.”

“You don’t care how old the earth is, how old man is, and how long the animals have been there?”

“I am not so much interested in that.”

But Darrow would not rest: “Would you say that the earth was only 4,000 years old?”

Bryan: “Oh, no; I think it is much older than that.”

Darrow soon asked, “Do you say whether the Bible itself says it is older than that?”

“I don’t think it is older or not.”

“Do you think the earth was made in six days?”

“Not six days of twenty-four hours.”

When prosecuting attorney Stewart complained, “What is the purpose of this examination?” Bryan exclaimed, “The purpose is to cast ridicule on everybody who believes in the Bible, and I am perfectly willing that the world shall know that these gentlemen have no other purpose than ridiculing every Christian who believes in the Bible.”

Darrow snapped, “We have the purpose of preventing bigots and ignoramuses from controlling the education of the United States and you know it; that is all.”

## HUNTING FOR CAIN’S WIFE

Questioning on Genesis continued. Bryan indicated that he believed in a literal Eve, made out of Adam’s rib. When Darrow asked, “Did you ever discover where Cain got his wife?” Bryan snapped, “No, sir. I leave the agnostics to hunt for her.”

Darrow kept pressing Bryan to admit the days of Genesis were literal, but Bryan resisted: “It would be just as easy for the kind of God we believe in to make the earth in six days as in six years or in 6,000,000 years or in 600,000,000 years. I do not think it important whether we believe one or the other. . . . I believe in creation as there told, and if I am not able to explain it, I will accept it. Then you can explain it to suit yourself.”

Finally Bryan snapped, “Read it!” and turned to the judge. “Your Honor, I think I can shorten this testimony. The only purpose Mr. Darrow has is to slur at the Bible.”



“I object to that,” replied Darrow. “I am examining you on your fool ideas that no intelligent Christian on earth believes!”

The next morning, the judge refused to let the questioning of Bryan continue; he believed Bryan’s testimony would “shed no light” on the trial. But to many, the exchange shed all too much light on fundamentalism. The *Christian Century* said that though there was a convincing argument for the conservative position, Bryan had “neither the mind nor the temper” to make it. The *Nation* was more sarcastic: “Among fundamentalist rank and file, profundity of intellect is not too prevalent.”

Other commentators criticized Darrow for his bad behavior at the trial, and the ACLU wanted to drop him from the appeal team. But Scopes insisted on keeping him. In time, and due in part to *Inherit the Wind*’s influence, it would be the attacks on Bryan and on small-town America that held America’s cultural attention. Darrow would come to symbolize clear-headed modernity at its finest; Bryan to represent tendentious Christianity at its worst. The truth was more complex than that.

Knowing the trial was a lost cause, Darrow on the eighth and final day asked the judge: “I think to save time we will ask the Court to . . . instruct the jury to find the defendant guilty.” After only eight minutes of deliberation, the jury did so. The judge fined Scopes \$100.

The trial did not end the debate that it revealed. Anti-evolution legislation continued to pass for some years, and statutes limiting the teaching of evolution still exist in the twenty-first century—including in Tennessee. ■

*David Goetz is an author and the former editor of Leadership Journal. This article is abridged and adapted from Christian History 55: The Monkey Trial and the Rise of Fundamentalism.*

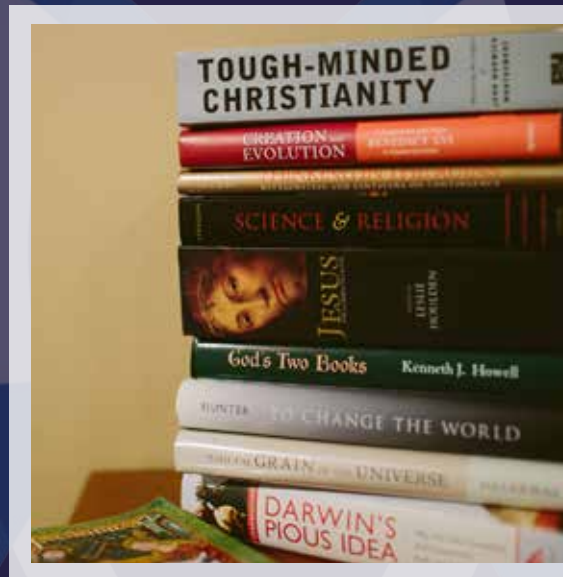
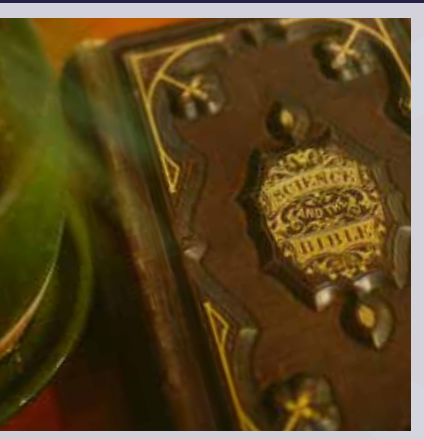
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# Darwin on tour

HOW YOU RESPONDED TO DARWIN IN MANY CASES DEPENDED ON WHERE YOU LIVED, AS DAVID LIVINGSTONE EXPLAINED IN AN INTERVIEW WITH *CHRISTIAN HISTORY*

**MOST PEOPLE THINK** that scientific theories move around the world in a uniform way. But the richness of local stories about how people responded to evolution shows that this was not a debate between pure science and pure theology. It was always an embodied encounter in a cultural context in particular political circumstances.

**CH:** Tell us some specific stories.

**DAVID:** In my research, I'm looking at Scots Presbyterians who settled in a number of key places across the globe—all subscribers to the *Westminster Confession of Faith*, all evangelical Presbyterians with a Calvinist theology, with a tradition going back to John Knox. But in different places, there were very different debates over Darwin because of local culture, local politics, local obsessions, and local events.

Darwin really hit the headlines in the 1870s, and in 1874 Charles Hodge, in Princeton, New Jersey, brought out *What Is Darwinism?* Hodge thought that Darwinism is atheism because it leaves out any notion of divine purpose. Everything comes into being by the ordinary, humdrum effects of natural law. Hodge thought this ruled out a creator and that the notion of there being a Christian Darwinian is incoherent. When Asa Gray

from Harvard claimed to be a serious Christian and a Darwinian, Hodge thought that just didn't make sense.

Now let's go across the Atlantic to Edinburgh in exactly the same year, 1874, to the opening of the new session of New College, Edinburgh, the home of the Free Church of Scotland. The principal of the college, Robert Rainy, delivered his inaugural lecture on the hottest scientific topic of the day: evolution. He was entirely happy to accept the transmutation of species; he was entirely happy to accept Darwin's theory of natural selection; and he said theologians have no interest in whether human beings emerged from prehuman ancestors. That sounds very different from Hodge.

Then move across the Irish Sea to my own city, Belfast. The principal of the Presbyterian theological college gave *his* inaugural lecture that same September, and he was very worried by Darwin's theory. Even more than Hodge was. He thought that Darwin's theory would bring about a collapse in society and a whole tide of godlessness would sweep across the intellectual world.

Why the difference? Let's take Belfast first. The president of the British Association for the Advancement of Science, John Tyndall, had just given an inflammatory speech as part of a campaign to take cultural authority away from clergy



and put it into the hands of professional scientists. He made it look like scientists were not interested in any cooperation with religion. Irish Presbyterians in fact organized a whole series of lectures that winter to combat Tyndall. I suppose in the long run, the scientists have won out in this. When there's a crisis in British society, people don't call for a day of prayer. They call in the technological experts.

At the other extreme, Edinburgh theologians had far bigger problems than Darwin. They were extremely worried about Biblical scholar William Robertson Smith. Smith was interested in the prehistoric origins of sacrifice and thought the Eucharist might be rooted in ancient cannibalism. With that on the horizon, Darwin seemed pretty tame. And a number of Scottish scientists had already long accepted an ancient earth history.

The Princeton Seminary case is more complicated because Hodge was not the only influential voice at Princeton. Just across the road at what became Princeton University was defender of Darwin, James McCosh. So Princeton, with several leading scientists who were also Christian believers, devised a very particular kind of purpose-driven evolution.

I'm looking at other areas as well. In the American South, Presbyterians were doubtful about what they called "unbelieving science" before Darwin came on the scene. They saw anthropology challenging Adam and Eve, and geology challenging the standard biblical chronology. Darwin was just another example of undermining the Bible.

Among Presbyterians in the South, the strongest defense of slavery was that slavery was entirely justified by a detailed literal reading of the Old and New Testaments. The only way defenders of slavery could hold on to that was to hold on to a pretty literal Bible.

Any Christian sympathetic to Darwin had to be somewhat metaphorical about certain passages

**BATTLES IN BELFAST** Above: John Tyndall claimed that religion had no role to play in scientific understanding at all.

**PEACE IN PRINCETON** Left: James McCosh became a leading Protestant defender of evolution.

in the Old Testament. But southern Presbyterians did not want to turn metaphorical to accommodate evolution because they needed a literal Bible to support slavery. Race never appeared as an issue in Princeton or in Belfast or in Edinburgh, but you can understand perfectly well why it should in the American South.

**CH:** *How is this still relevant today?*

**DAVID:** One temptation is to say that place and location don't really matter anymore, but I think that's mistaken. One example: creationism is flourishing in Islamic societies. So American Christians and Turkish Muslims, who might not talk otherwise, have gotten together over their common opposition to evolution.

Another example: a colleague of mine gave an address to an international society of paleontologists saying he suspected adaptation of species might be less important than Darwin thought it was. Scholars interacted with him very calmly. But when it appeared on the front page of *Science* magazine for a more popular audience, he received a torrent of abuse from hyper-Darwinians. You can say things in certain places that you cannot get away with saying in other places. ■

*David Livingstone is professor of geography and intellectual history at the Queen's University of Belfast. He is addressing this topic in the 2014 Gifford Lectures at the University of Aberdeen and in a forthcoming book, Dealing with Darwin.*





**THE GARDEN OF EDEN** Christians through the ages have read Genesis to learn about the creation and promised redemption of humanity.

*John Walton is professor of Old Testament at Wheaton College and the author of The Lost World of Genesis One. Jeff Schloss is distinguished professor of biology at Westmont College and senior scholar at the BioLogos Foundation.*

# What the Bible demands

CH SAT DOWN WITH BIBLICAL SCHOLAR JOHN WALTON AND SCIENTIST JEFF SCHLOSS TO TALK ABOUT SCIENCE, FAITH, THE BIBLE, AND DARWIN

**CH:** When you think about the relationship of the Bible to science and to human origins, what comes to mind?

**JOHN WALTON:** My first question is, do I know what the Bible claims? We have to read the Bible well with respect to the Hebrew texts, to genre, and to its ancient Near Eastern context.

**JEFF SCHLOSS:** I didn't grow up with the Bible. When I became a Christian, I asked first: what is the nature of humankind? What does science tell us about it? How does that square with Christian beliefs about human nature and our shared need for redemption? More recently, I've been thinking about arguments for design, the nature of divine action and providence, and the nature of conscience.

**JOHN:** I think the early chapters of Genesis address such questions. The image of God is the key unifying factor as we take account of the Bible's claims regarding the nature of humanity. Most people in Christian history have been trying to read Genesis in the context of relevance to their day. I want to talk about what is demanded by the biblical text. Lots of times the conversation between Bible and science is driven by people who think the Bible makes certain demands.

**JEFF:** If the Bible invites me to believe something, I'd best believe it. If it requires me to do something, I'd better do it. For those of us who view the Scriptures as reliable and trustworthy, if we find what looks like an error in a message that we also take to be central, then we have to wonder whether either the message isn't an error or it isn't a central message. Input from textual

scholars is crucial, but science may also contribute. It is an ancient and legitimate interpretive principle that we take God as author of Scripture and of nature, seeking an understanding of each in light of the capacity for reason he has given us.

**JOHN:** With the biblical text, having reached that point, you still have the question whether it is the intention of the author to say the earth is 10,000 years old, and whether that is secondary or central? For a long time people thought the Bible claimed the earth was flat or was the center of the universe. When science suggested that was not the case, the text was re-evaluated. People then say science is determining what the Bible says. I don't look at it that way. I think science, just like ancient Near Eastern documents, prompts us to new research, but in the end, it's got to be the Bible that makes the call.

**CH:** Do modern scientists still talk about Darwin?

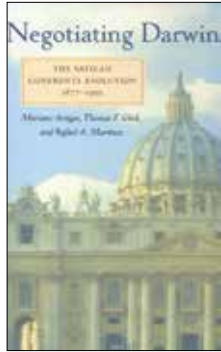
**JEFF:** Darwin's proposals are still crucial in biology. But today the hottest implications of evolutionary theory involve applications that Darwin envisioned but didn't really treat in depth. There are claims that the capacity for and general content of moral and religious beliefs can be explained by natural selection. And that raises the question of whether an evolutionary account of beliefs is incompatible with moral beliefs being true or justified. These are matters of vigorous debate. What I would like other believers to understand is that this isn't a debate between science and faith. Across disciplines people disagree over what those proposals mean philosophically. I would like to see more Christians thoughtfully involved in these issues. ☐

# Recommended resources

HERE ARE A FEW BOOKS, WEBSITES, AND PAST *CH* ISSUES RECOMMENDED BY CHI STAFF AND THIS ISSUE'S AUTHORS TO HELP YOU NAVIGATE HOW CHRISTIANS RESPONDED TO DARWIN BETWEEN THE PUBLICATION OF HIS BOOKS AND THE SCOPES TRIAL

## BOOKS

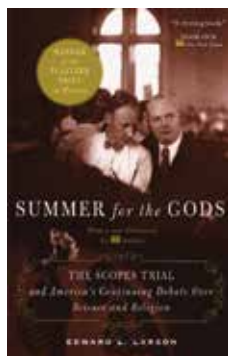
- Mariano Artigas, et al. *Negotiating Darwin: The Vatican Confronts Evolution, 1877–1902*. Explores how the Vatican dealt with several nineteenth-century attempts, including Fr. John Augustine Zahm's famous writings, to integrate evolution and Christian teaching.



- John Hedley Brooke, *Science and Religion: Some Historical Perspectives*. Looks at various moments when science seemed to threaten established religious authority, including events surrounding Copernicus and Galileo as well as Darwin.

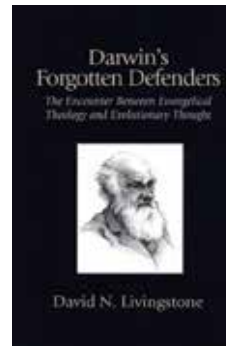
- Eve-Marie Engles and Thomas Glick, eds., *The Reception of Charles Darwin in Europe*. An extremely thorough study of how scientists and theologians responded to Darwin across a continent, from Russia to Finland to Italy to France to Spain.

- Frederick Gregory, *Nature Lost? Natural Science and the German Theological Traditions of the Nineteenth Century*. Discusses how, while many Christians remained curious about the relationship between natural science and theology, the German theological traditions that would later form the basis of much professional twentieth-century theology lost interest in the topic. But it was not lost to the majority of lay people or to the various theologians who spoke for them, from liberals to creationists.

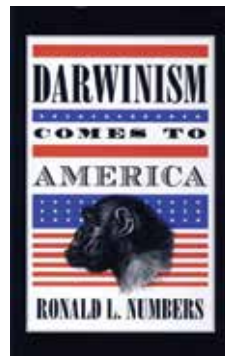


- Edward Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion*. Presents the real story of the Scopes Trial—not the one from *Inherit the Wind*—in a readable and detailed historic narrative.
- David C. Lindberg and Ronald L. Numbers, eds., *God and Nature: Historical Essays on the Encounter of Christianity with Science* and *When Science and Christianity Meet*. Companion books explore how Christianity and sci-

ence have related to each other from the early church to the present, including Galileo's trial, Newtonian physics, Noah's Ark and geological discoveries, and Freud's theories, as well as the debate over Darwin.



- David Livingstone, *Darwin's Forgotten Defenders: The Encounter between Evangelical Theology and Evolutionary Thought*. Examines how nineteenth-century evangelicals like Hodge, Gray, and Warfield responded to Darwin, and the changing landscape as battle lines were drawn in the early twentieth century.
- David Livingstone, D. G. Hart, and Mark Noll, eds., *Evangelicals and Science in Historical Perspective*. These essays on the encounters between evangelical Protestantism and science argue that questions of science have been central to the history of English-speaking evangelicalism.
- George Marsden, *Fundamentalism and American Culture*. A book we mentioned in the last issue of *CH* is back, this time because it discusses the roots of twentieth-century fundamentalism in nineteenth-century evangelical theology—discussing especially dispensationalism, evolution, and the Scopes Trial.



- Ronald L. Numbers, *Darwinism Comes to America* and *The Creationists: From Scientific Creationism to Intelligent Design*. The first book discusses broadly how Darwinism was received in America by Christians and unbelievers in fields ranging from science to literature to religion. The second gives a detailed account of the rise of the modern creationist movement in response to Darwin. See also his *Science and Christianity in Pulpit*



and Pew, which includes a discussion of the scientific issues (including Darwin) most troubling to Christian lay people of the past few centuries.

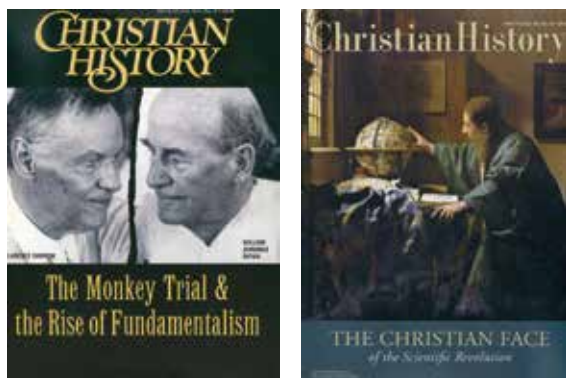
## MAGAZINE ISSUES

*Christian History* has two past issues dealing with encounters between science and religion:

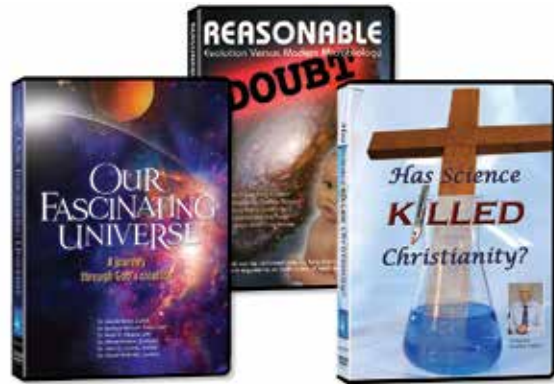
55: *The Monkey Trial and the Rise of Fundamentalism*

76: *The Christian Face of the Scientific Revolution*

Read back issues at [www.christianhistorymagazine.org](http://www.christianhistorymagazine.org) or purchase print copies of available issues at [www.christianhistoryinstitute.org/storefront](http://www.christianhistoryinstitute.org/storefront).



## RELATED DVDS



Vision Video has many videos dealing with these topics, including *Our Fascinating Universe*; *Philosophy, Science, and the God Debate*; *Reasonable Doubt*; and *Has Science Killed Christianity?* These are available at [www.visionvideo.com](http://www.visionvideo.com).

## WEBSITES

There is no shortage of websites dealing with creation and evolution. Here is a sampling.

- Darwin Online ([darwin-online.org.uk](http://darwin-online.org.uk)) contains all of Darwin's published and known unpublished writings, including *Origin of Species* and *Descent of Man*. The site also provides many reviews of and

reactions to Darwin's work from his own day, as well as a list of modern books about Darwin and his theories—everything from academic histories to articles in popular scientific and religious magazines.



- The Gifford Lectures ([www.giffordlectures.org](http://www.giffordlectures.org)) are a famous set of lectures occurring every year in Scotland and dealing with issues of religion, science, and theology. The website links to videos, books, and essays about the topics of the lectures.

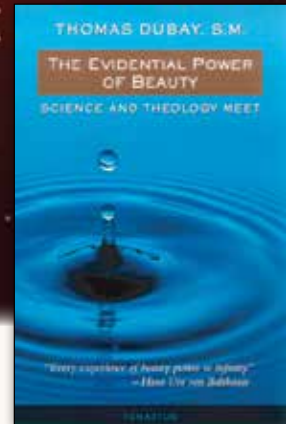
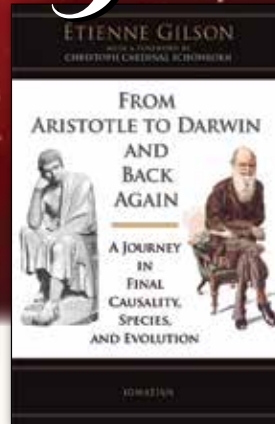
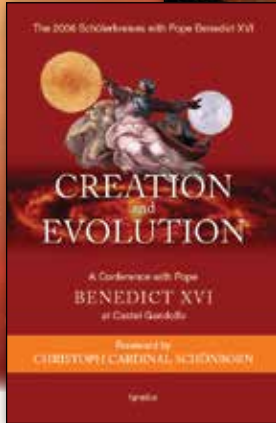
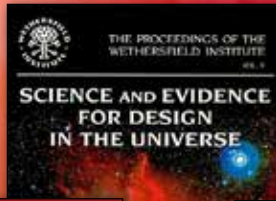
- The complete transcript of the Scopes Trial is online at [law2.umkc.edu/faculty/projects/ftrials/scopes/scopes.htm](http://law2.umkc.edu/faculty/projects/ftrials/scopes/scopes.htm) (as part of a "Famous Trials in American History" series), along with information about the trial and its major players, pictures, articles H. L. Mencken wrote about the trial, other press coverage, and even a discussion about differences between the actual trial and *Inherit the Wind*.

- The Ellen G. White Estate ([www.whiteestate.org](http://www.whiteestate.org)) has a searchable database of the writings of White, the founder of Seventh-day Adventism. Her visions of creation profoundly influenced famous Adventist creationist George McCready Price.

- In fact, most of the famous nineteenth- and early twentieth-century books mentioned in this issue, including (but not limited to!) *What Is Darwinism?*, *Evolution and Dogma*, *The Fundamentals*, Chalmers's *Vestiges of the Natural History of Creation*, LeConte's *Evolution*, Guyot's *Creation*, Paley's *Natural Theology*, and Price's *Illogical Geology* and *The Predicament of Evolution* are readable for free online through Google Books, Project Gutenberg, Internet Archive, and other sites.

- Modern Christian discussion of these issues occurs at a range of websites, all heirs to positions discussed in this issue—young-earth creationists at [answersingenesis.org](http://answersingenesis.org), old-earth creationists at [reasons.org](http://reasons.org), intelligent design proponents at [discovery.org/csc/](http://discovery.org/csc/), evolutionary creationists at [biologos.org](http://biologos.org), and sites like [colossianforum.org](http://colossianforum.org) devoted to bringing differing groups together.

# GOD, CREATION & SCIENCE



## ◆ CHANCE OR PURPOSE?

*Creation, Evolution, and a Rational Faith*  
**Christoph Cardinal Schönborn**  
Schönborn tackles the hard questions on this subject with a carefully reasoned "theology of creation". Can we speak intelligently of the world as "creation" and affirm the existence of the Creator, or is God a "delusion"? How should an informed believer read Genesis? If God exists, why is there so much suffering? Is everything a matter of chance or can we discern purpose in human existence? This is a frank dialogue that acknowledges the respective insights of the philosopher, the theologian and the scientist, but which calls on them to listen and to learn from each another.

CHAPUR-H... Sewn Hardcover, \$19.95

## ◆ CREATION AND EVOLUTION

*A Conference with Pope Benedict XVI*  
**Foreword by Cardinal Schönborn**

Schönborn wrote a guest editorial in *The New York Times* that sparked a worldwide debate about "Creation and Evolution". Pope Benedict XVI instructed the Cardinal to study more closely the debate between "evolutionism" and "creationism," and asked the yearly gathering of his former students to address these questions. The "study circle" meets once a year with Pope Benedict XVI for a conference, involving former Ratzinger students who have become acclaimed scholars, professors, writers, as well as high ranking Church prelates. This book documents the proceedings of the remarkable conference hosted by the Pope. It includes papers presented from the fields of natural science, philosophy and theology, with the subsequent discussion, in which Pope Benedict XVI himself participated.

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## ◆ FROM ARISTOTLE TO DARWIN AND BACK AGAIN

— Etienne Gilson

The great philosopher and historian of philosophy, Etienne Gilson, sets out to show that final causality or purposiveness and formal causality are principles for those who think hard and carefully about the world, including the world of biology. Gilson insists that a completely rational understanding of organisms and biological systems requires the philosophical notion of teleology, the idea that certain kinds of things exist and have ends or purposes the fulfillment of which are linked to their natures—in other words, formal and final causes. His approach relies on philosophical reflection on the facts of science, not upon theology or an appeal to religious authorities such as the Church or the Bible.

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## ◆ SCIENCE AND EVIDENCE FOR DESIGN IN THE UNIVERSE

**Michael Behe, William Dembski, and Stephen Meyer**

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tion of the origin of our universe. As mathematician, biochemist, and philosopher of science, they explore the possibility of developing a reliable method for detecting an intelligent cause and evidence for design at the origin of life. In the process, they present a strong case for opening and pursuing a fruitful exchange between science and theology. SEDU-P... Sewn Softcover, \$14.95

## ◆ THE EVIDENTIAL POWER OF BEAUTY — Science and Theology Meet

**Fr. Thomas Dubay, S.M.**

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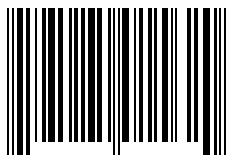
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# THE SCIENCE OF CREATION

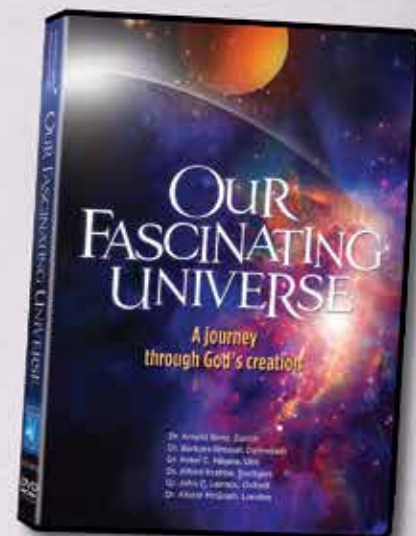
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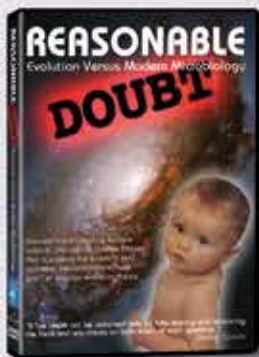
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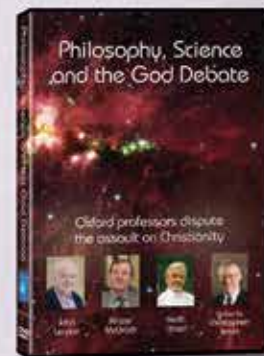
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