

# SUMMER FOR THE GODS

— The Scopes Trial —

— and America's —

— Continuing Debate —

— Over Science —

— and Religion —

EDWARD J. LARSON



A Member of the Perseus Books Group  
New York



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# Table of Contents

[Praise](#)

[Title Page](#)

[Dedication](#)

[PREFACE](#)

[Introduction](#)

## [PART I - BEFORE ...](#)

[—CHAPTER ONE— - DIGGING UP CONTROVERSY](#)

[—CHAPTER TWO— - GOVERNMENT BY THE PEOPLE](#)

[—CHAPTER THREE— - IN DEFENSE OF INDIVIDUAL LIBERTY](#)

## [PART II - ... DURING ...](#)

[—CHAPTER FOUR— - CHOOSING SIDES](#)

[—CHAPTER FIVE— - JOCKEYING FOR POSITION](#)

[—CHAPTER SIX— - PRELIMINARY ROUNDS](#)

[—CHAPTER SEVEN— - THE TRIAL OF THE CENTURY](#)

## [PART III - ... AND AFTER](#)

[—CHAPTER EIGHT— - THE END OF AN ERA](#)

[—CHAPTER NINE— - RETELLING THE TALE](#)

[—CHAPTER TEN— - DISTANT ECHOES](#)

[—AFTERWORD—](#)

[NOTES](#)

[- INDEX -](#)

[Copyright Page](#)

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## Praise for *Summer for the Gods*

“Edward Larson ... tells the Scopes story with clarity and energy.... His book may be among the best one-volume primers on an American intellectual twilight.”

—*Boston Globe*

“Larson’s work is a thoroughly researched, thoroughly readable retelling of the tale. It leaves no subplot or character untouched. And when one considers how powerful the tensions underlying even 72 years ago remain today, Larson deserves hearty thanks. He’s reintroducing us to vital history that too quickly transformed into fiction and myth.... The Scopes trial is still with us. Larson has elevated its presence from simplified myth to illuminating fact.”

—*Christian Science Monitor*

“Larson’s account is an unusually balanced and readable treatment of the Scopes trial and its complexities.... Even better is Larson’s ability to humanize the trial and make it a tale of human folly.... The book is a good read about an important and often misunderstood subject. For his achievement, Larson deserves high praise.”

—D. G. HART, *American Historical Review*

“Masterly ... The strength of this book lies in Larson’s careful construction of the trial’s timeline, his expert treatment of the case’s legal dimensions, and his painstaking analysis of how the Scopes legend grew.... These achievements fully justify the prizes this volume has received.”

—Mark NOLL, *Isis*

“Forget the Lindberg kidnapping trial, the Manson trial, or even the O.J. trial. The real trial of the century was the Scopes Trial, and, although much has been written about it, nothing comes close to the definitive history written by Edward J. Larson.”

—*Skeptic*

“Edward Larson tells the true story of the Scopes trial brilliantly, and the truth is a lot more interesting than the myth that was presented to the public in *Inherit the Wind*”

—PHILIP JOHNSON, University of California-Berkeley and author of *Darwin on Trial*

“Experts will learn much about the background and details of the Scopes trial; the general reader will be drawn into the trial as never before. *Inherit the Wind*, step aside!”

—WILL PROVINE, Cornell University

“A marvelous remake of the drama in Dayton. *Summer for the Gods* accomplishes the extraordinary feat of teaching us a good deal that is new about the trial and its significance, including the behind-the-scenes strategizing of the lawyers, the civil liberties stakes in the outcome, and the realities of its impact on the teaching of evolution in the United States.”

—DANIEL J. KEVLES, author of *The Physicists: The History of a Scientific Community in Modern America*

“*Summer for the Gods* is, quite simply, the best book ever written on the Scopes trial and its place in American history and myth. The tone is balanced; the research, meticulous; the prose, sparkling.”

—RONALD L. NUMBERS, University of Wisconsin-Madison and author, *The Creationists*

“Larson ... gracefully documents the history of Darwinism, the theory of evolution and the fits and starts through which evolution became pitted against the Bible and fundamentalist religion.... Bryan and Darrow’s ghosts still haunt us, and the Scopes trial still holds resonance, as we continue to litigate the role of religion in public life and the power of the state to prescribe what shall be taught in public schools.”

—*New York Times*

“Larson brings understanding and perspective to a thorny issue.”

—*Pittsburg Post-Gazette*

“Skillfully interweaves the historical with the legal ... A superbly balanced account, both in narrative as well as analysis.... *Summer for the Gods* provides a thoughtful, reasoned approach comprehending a deep-rooted culture clash, which, although it might change with each generation, shows little sign of disappearing.”

—*Journal of Southern History*

“Larson unlocks the past and renders it gracefully accessible in a narrative style that is easy to follow despite the complexity of the intellectual currents and counter-currents of his theme.”

—*Los Angeles Times*

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“Larson’s narrative manages to convey the complexity of the legal issues as well as the drama of the event in a fluid and focused manner.”

—*Journal of American History*

“The real story of the Scopes trial, it turns out, is more interesting, more mischievous, and more perverse than the complacent received wisdom. A historian of science and a lawyer, Professor Larson has written a devastatingly good book.”

—*Michigan Law Review*

“Larson has done a wonderful job of writing an engaging yet scholarly account of the issue surrounding this trial.”

—*Choice*

“Larson writes with clarity, insight, and poignancy for our times as well as for this past history.”

—*Library Journal*

“Much more than a lively, informative piece of historical reconstruction and criticism: It is relevant to present controversies as it would have been in the 1920s.... a scholarly, extremely well documented, engrossing narrative that is accessible to a general audience.”

—*Bioscience*

“Magnificent reconstruction of the Scopes trial and its significance.”

—*Church History*

“A gripping narrative.”

—*Books & Culture*

“An engagingly written book that not only sets the record straight about the Scopes trial and the events surrounding it, but also shows how one of the most famous cases in U.S. judicial history became an enduring legend.”

—*America*



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“Larson’s style will capture readers and pull them into the story.”

—*Church History*

“*Summer for the Gods* is a remarkable retelling of the trial and the events leading up to it, positive that truth is stranger than science.”

—[Amazon.com](#)

“Larson both challenges and enables history teachers to rethink their teaching of the Scopes trial, McCarthyism, and the role of popular culture in shaping perceptions of historical events.”

—*History Teacher*

“‘The most widely publicized misdemeanor case in American history.’ That is Edward J. Larson’s description of the ‘monkey trial’ in his 1997 Pulitzer Prize-winning *Summer for the Gods: The Scopes Trial and America’s Continuing Debate Over Science and Religion*. With that debate again at a rolling boil, that book by Larson, professor of history and law at the University of Georgia, demonstrates that the trial pitted a modernism with unpleasant dimensions against a religious fundamentalism that believed, not without reason, that it was faithful to progressive values.”

—*Newsweek*

“Edward Larson’s training both in legal history and in the history of science serves him well in *Summer for the Gods*.... Larson unlocks the past and renders it gracefully accessible in a narrative style that is easy to follow, despite the complexity of the intellectual currents and counter-currents of his theme.”

—*The Los Angeles Times Book Review*

“Careful and evenhanded analysis dispels the mythologies and caricatures in film and stage versions of the trial, leaving us with a far clearer picture of the cultural warfare that still periodically erupts in our classes and courts.”

—*Booklist*

“The originality of his book arises in large part from its thoughtful, evenhanded treatment of both sides in the confrontation—and the seriousness with which he takes the opposing convictions about religion, science, and their relationship to the law that clashed in Dayton ... Larson’s account of the

trial and the legal issues involved in it [are] particularly illuminating ... [He] provides a fascinating account of how the trial became the legend that was eventually passed on by *Inherit the Wind* ... [This is an] excellent book.”

—*The New York Review of Books*

“A Spencer Tracy film, *Inherit the Wind*, was based on the [John Scopes Trial] and has shaped popular memories of it. But, as Edward J. Larson shows in this Pulitzer Prize-winning book, the film’s sinister mood is misleading ... Larson artfully separates myths from realities to tell a more complicated and convincing story. He also summarizes the continuing efforts of Tennessee and other southern states to keep creationism on the curriculum and evolution off it.”

—PATRICK ALLITT, *Times Literary Supplement*

“This book has already won a Pulitzer Prize, but it’s worth calling attention to again... Larson ... finds new things to say about the famous “monkey trial” of 1925 and says them well. Among other things he shows how the trial helped to break down the longstanding intellectual accommodation between Darwinism and Protestant theology, highlights the tensions between celebrity lawyer Clarence Darrow and the rest of John Scopes’s defense team, and demonstrates how the enormously influential drama *Inherit the Wind* significantly warped the trial and its aftermath.”

—LUTHER SPOEHR, *Providence Journal-Bulletin*



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In memory of my father, Rex Larson, a Darrowlike criminal lawyer

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and

William H. Ellis, Jr., a Bryanesque attorney-politician

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## PREFACE

THE SCOPES TRIAL has dogged me for more than a decade, ever since I wrote my first book on the American controversy over creation and evolution. The trial only constituted one brief episode in the earlier book, yet people who knew of my work asked me more about that one event than everything else in the book combined—and they would tell me about the Scopes trial and what it meant to them. Over the years, their questions and comments led me to reflect on the so-called trial of the century. Finally, one of my colleagues, Peter Hoffer, suggested that I write a separate book solely about the trial and its place in American history. The idea made immediate sense. As a historical event and topic of legend, the trial had taken on a life and meaning of its own independent of the overall creation-evolution controversy. Indeed, this book is different from my earlier one in that the chronicle remarkably separate stories. Both are tales worth telling as stories of our time. Furthermore, no historian had examined the Scopes trial as a separate study in decades. I had access to a wealth of new archival material about the trial not available to earlier historians, and the benefit of additional hindsight.

Many helped me to conceptualize, research, and write this book. A few also assisted me with my first book, particularly my former teachers and current friends Ronald Numbers and David Lindbergh. Some I met in the course of my earlier work, such as Bruce Chapman, Richard Cornelius, Edward Davis, Gerald Gunther, Phillip Johnson, William Provine, George Webb, and John West. Others were my colleagues at the University of Georgia, including Betty Jean Craige, Thomas Lessl, Theodore Lewis, William McFeely, Bryant Simon, Phinizy Spalding, Lester Stephens, and Emory Thomas. Finally, I benefited immensely from ongoing advice and encouragement from my editors at Basic Books, Juliana Nocker, Steven Fraser, and Michael Wilde. My thanks go to all of them.

Numerous institutions assisted me by providing research materials and support for this project. Among the sources for research material, I particularly want to acknowledge my debt to the American Civil Liberties Union, Bryan College, the Library of Congress, Princeton University Libraries, the Tennessee State Archives, the University of Tennessee Libraries, and Vanderbilt University Libraries. I owe a special debt to Carolyn Agger for allowing me access to the Fortas Papers. Early and ongoing support came from sources within the University of Georgia, including two Senior Faculty Research Grants from the Vice President for Research; a Humanities Center fellowship; summer support from my dean at the law school, Edward Spurgeon; and travel support from the chair of the history department, David Roberts. The Discovery Institute and the Templeton Foundation provided forums to discuss the ideas that went into this book. Finally, I especially enjoyed an opportunity to work on the project at the Rockefeller Foundation's Bellagio Study Center. This book would not have been possible without such support.

*E. L.*  
*Bellagio, Italy*  
*November 1996*

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# INTRODUCTION

IT STARTED OFF civilly enough. Darrow began by asking his world-famous expert witness, “You have given considerable study to the Bible, haven’t you, Mr. Bryan?”

“Yes, sir, I have tried to,” came the cautious reply.

“Well, we all know you have, we are not going to dispute that at all,” Darrow continued. “But you have written and published articles almost weekly, and sometimes have made interpretations of various things?”

Bryan apparently saw the trap. If he assented to having interpreted some biblical passages, then he could scarcely object to others giving an evolutionary interpretation to the Genesis account of human creation. “I would not say interpretations, Mr. Darrow, but comments on the lesson.”

The lawyerly game of cat and mouse had begun, but one in which the cat sought to kill his prey and the mouse had nowhere to hide. At 68, Clarence Darrow stood at the height of his powers, America’s greatest criminal defense lawyer and champion of anticlericalism. Three years his junior, the former Boy Orator of the Platte—once the nation’s youngest major-party presidential nominee and now leader of a fundamentalist crusade against teaching evolution in public schools—William Jennings Bryan remained a formidable stump speaker, although he lacked the quick wit to best Darrow in debate. This was no debate, however; it was a courtroom interrogation in which Darrow enjoyed all the advantages of an attorney questioning a hostile witness. Although it would become the most famous scene in American legal history, it did not occur in a courtroom. Fears that the huge crowd would collapse the floor forced the judge to move the afternoon’s proceedings onto the courthouse lawn, with the antagonists on a crude wooden platform before a sea of spectators, much like Punch and Judy puppets performing at an outdoor festival. Enterprising youngsters passed through the crowd hawking refreshments as Darrow began to question Bryan about various Old Testament miracles.

“Do you believe Joshua made the sun stand still?” Darrow asked at one point, regarding the biblical passage that speaks of a miraculously lengthened day.

“I believe what the Bible says. I suppose you mean that the earth stood still?” Bryan replied, anticipating the standard gibe against biblical literalism under a Copernican cosmology.

Darrow feigned innocence. “I don’t know. I am talking about the Bible now.”

“I accept the Bible absolutely,” Bryan affirmed. “I believe it was inspired by the Almighty, and He may have used language that could be understood at that time instead of using language that could not be understood until Darrow was born.”

This rejoinder evoked laughter and applause from the partisan Tennessee audience, yet Darrow had struck a blow; even a biblical literalist such as Bryan recognized the need to interpret some scriptural passages. Darrow drove the point home with further questions. “If the day was lengthened by stopping either the earth or the sun, it must have been the earth?”

“Well, I should say so,” an exasperated Bryan sighed, and in so doing fell into another trap.



Darrow snapped it shut by asking, “Now, Mr. Bryan, have you ever pondered what would have happened to the earth if it had stood still?”

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“No.”

“You have not?” Darrow asked with mock incredulity.

Bryan fell back on faith. “No; the God I believe in could have taken care of that, Mr. Darrow.” No the assembled reporters from across the country smiled among themselves.

“Don’t you know it would have been converted into a molten mass of matter?” Darrow asked rhetorically. In giving ground on biblical literalism to accommodate a heliocentric solar system, Bryan fell headlong into problems with terrestrial geology and physics. If he gave any more ground, how then could he hold the line on Genesis? If he had given any less ground, he would have sounded supremely foolish. Yet he had conceded the critical point that scripture required interpretation in light of modern science, and he would do so again with the days of creation and the age of the universe. There were no good answers to these questions from Bryan’s perspective.

The chief prosecutor had heard more than enough. For the third time, he tried to stop the exchange. “This is not competent evidence,” he objected. But Bryan, serving as special counsel for the state and supposedly assisting the prosecutor, stubbornly clung to the simple wooden chair that served as a makeshift witness stand for the outdoor session. Defense counsel “did not come here to try this case,” Bryan shouted back. “They came to try revealed religion. I am here to defend it, and they can ask me any question they please.”

The crowd roared its approval. “Great applause from the bleachers,” Darrow noted for the record.

“From those whom you call ‘yokels,’ ” Bryan thundered. “Those are the people whom you insult.”

Glaring at his adversary, Darrow shot back, “You insult every man of science and learning in the world because he does not believe in your fool religion.”

“This has gone beyond the pale of a lawsuit, your honor,” the prosecutor pleaded. “I have a public duty to perform, under my oath and I ask the court to stop it.” But Bryan would not budge.

The judge deferred to the distinguished witness. “To stop it now would not be just to Mr. Bryan,” he ruled. And so it continued, with Darrow inquiring about Noah and the Flood, ancient civilization, comparative religion, and the age of the earth. Bryan sank deeper into confusion as he struggled to answer the barrage of questions. He affirmed his belief in a worldwide flood that killed all life outside the ark (except perhaps the fish, he tried to joke), but interpreted the six days of creation to symbolize vast periods of time. Yet Darrow never asked about evolution or the special creation of humans in the image of God, questions that Bryan surely would answer with well-honed remarks about the so-called missing link in scientific evidence for human evolution and the profound impact of evolutionary naturalism on public morality and private faith. Like any good trial lawyer—and he was the best—Darrow kept the focus on topics that served his purpose, which did not include giving Bryan a soapbox for his speeches.

As the inquiry departed ever further from any apparent connection to the Tennessee law against teaching evolution supposedly at issue in the trial, the prosecutor objected, “What is the purpose of this examination?”

Darrow answered honestly. “We have the purpose of preventing bigots and ignoramuses from

controlling the education of the United States,” he declared, “and that is all.” That was more than enough, for it justified his efforts to publicly debunk fundamentalist reliance on scripture as a source of knowledge about nature suitable for setting education standards. Darrow had gone to tiny Dayton, Tennessee, for precisely this purpose, with Bryan as his target. Bryan had come to defend the power of local majorities to enact a law—his law—to ban teaching about human evolution in public schools. Two hundred reporters had followed to record the epic encounter. They billed it as “the trial of the century” before it even began. No one cared about the defendant, John Scopes, who had volunteered to test the nation’s first antievolution statute. The aged warriors had sparred at a distance for over a week without delivering any decisive blows. Now they went head to head, when Bryan vainly accepted Darrow’s challenge to testify to his faith on the witness stand as a Bible expert.

By the end of his two-hour-long ordeal, Bryan seemed intent mainly on redeeming his dignity. “The reason I am answering is not for the benefit of the superior court. It is to keep these gentlemen from saying I was afraid to meet them and let them question me.”<sup>1</sup> Yet Bryan knew better than to place himself and his faith in such a vulnerable position. Three years earlier, at the outset of the antievolution crusade, Darrow had asked him similar questions in an open letter to the press. Bryan had ignored them. “Anyone can ask questions, but not every question can be answered. If I am to discuss creation with an atheist, it will be on the condition that we [both] ask questions,” he had written about that time. “He may ask the first one if he wishes, but he shall not ask a second one unless he answers my first.”<sup>2</sup>

Bryan had a long list of ready questions for Darrow and other evolutionists. Chief among them, he would ask about the missing links in the fossil record. “True science is classified knowledge, and nothing therefore can be scientific unless it is true,” Bryan was prepared to say in his closing argument, which he planned to give that very day before being waylaid by Darrow. “Evolution is not truth; it is merely a hypothesis—it is millions of guesses strung together. It had not been proven in the days of Darwin; he expressed astonishment that with two or three million species it had been impossible to trace any species to any other species.”<sup>3</sup> Where are the missing links? “If evolution is true, they have not found a single link,” Bryan had told a Nashville audience while campaigning for the Tennessee antievolution law. More critically, he stressed the missing links between humans and their supposed simian relatives, because the challenged statute only pertained to the teaching of human evolution.<sup>4</sup>

At the time, the popular debate over the status of evolution as science centered largely on the interpretation of fossils. Various types of scientific evidence supported the theory, but short of actually observing the development of new kinds of plants or animals, intermediate fossils linking related species offered the most persuasive “proof” of evolution. Proponents particularly relied on the remarkably complete collection of fossils tracing the development of the American horse over three million years, while opponents harped on the “missing links,” especially between humans and other primates. For example, Bryan’s chief adversary in the creation-evolution controversy from the scientific viewpoint, American Museum of Natural History president Henry Fairfield Osborn regularly referred to the equine fossils in his many popular articles, books, and lectures countering the antievolution crusade. “It would not be true to say that the evolution of man rests upon evidence as complete as that of the horse,” he conceded in a 1922 exchange with Bryan, but “the very recent discovery of Tertiary man ... constitutes the most convincing answer to Mr. Bryan’s call for more evidence.” Tracing humanity’s family tree, Osborn added, “Nearer to us is the Piltdown man, four

[in] England; still nearer in geologic time is the Heidelberg man, found on the Neckar River; still nearer is the Neanderthal man, whom we know all about.... This chain of human ancestors was totally unknown to Darwin. He could not have even dreamed of such a flood of proof and truth.”<sup>5</sup>

The expert witnesses summoned by Darrow to Dayton brought this evidence with them, complete with models of the hominid fossils. In the scientific affidavits prepared for the defense, for example, anthropologist Fay-Cooper Cole, geologist Kirtley F. Mather, and zoologist H. H. Newman detailed hominid development through fossils from Java, Piltdown, Heidelberg, and elsewhere. Although Piltdown man later lost his place in the human family tree, Cole added a new find, “made only a few months ago in Bechuanaland of South Africa,” purportedly of a being intermediate between human and anthropoids. “There is nothing peculiar or exceptional about the fossil record of man. It is considerably less complete than that of the horse, ... but it is far more complete than that of birds,” Newman asserted. “Much has been said by the antievolutionists about the fragmentary nature of the fossil record of man, but many other animals have left traces far less readily deciphered and reconstructed.”<sup>6</sup>

Yet Bryan expressed concern only about the teaching of human evolution. “The import of the Tennessee trial is in the presence of Mr. Bryan there,” the *Chicago Tribune* warned at the time. “What he wants is that his ideas, his interpretations and beliefs should be made mandatory. When Mr. Darrow talks of bigotry he talks of that. Bigotry seeks to make opinions and beliefs mandatory. Bryan’s beliefs did not reject all science, or even all evolutionary theory. “Hands off one thing and one thing alone,” the *Tribune* observed, “the divine creation of man, the human being with a soul. You may not teach that the Piltdown man reveals any relationship to the anthropoid ape.”<sup>7</sup> Given the preoccupation of both sides with scientific evidence of humanity’s anthropoidal ancestry, I begin the story here.

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# PART I

**BEFORE ...**

## DIGGING UP CONTROVERSY

AS THE SCIENTIFIC world prepared to celebrate the fiftieth anniversary of Charles Darwin's *Origin of Species* in 1909, an amateur English geologist named Charles Dawson made a momentous find thirty miles from Darwin's country home in southern England. From a laborer digging in a gravel pit on a farm near Piltdown Common, Sussex, Dawson received a small fragment of a human cranium's parietal bone. "It was not until some years later, in the autumn of 1911, on a visit to the spot, that I picked up, among the rain-washed spoilheaps of the gravel-pit, another and larger piece belonging to the frontal region of the same skull," Dawson later reported in an article that shook the scientific world. "As I had examined a cast of the Heidelberg jaw, it occurred to me that the proportions of this skull were similar to those of that specimen."<sup>1</sup> This caught his attention. At the time, the Heidelberg jaw represented one of the only two known fossil remains that scientists had attributed to hominid species ancestral to modern humans. Each of these known remains—the Heidelberg jawbone from near Heidelberg, Germany, and a skullcap, three teeth, and a thighbone discovered in Java—had been found during the preceding two decades and remained the subject of intense scientific controversy. The better-known Neanderthal (or Mousterian) "cave men" contributed little to the story of human evolution because they came from a later era, were fully human, and died out. The Piltdown skull, however, could provide the notorious "missing link" in human evolution.<sup>2</sup>

Dawson now began rummaging through the gravel pit in earnest. After uncovering flint tools and the fossil remains of various prehistoric animals, he took the lot to the paleontologist Arthur Smith Woodward of the British Museum in London. Soon Woodward was in Piltdown with Dawson conducting a systematic excavation of the site. During the summer of 1912, they found more fragments of the Piltdown skull, additional prehistoric animal fossils mixed with human tools, and a part of a jawbone with two intact molars. These pieces carried tremendous potential significance. Owing to its size and shape, the cranium clearly came from a hominid. The flint tools reinforced this conclusion. The animal remains and the geology of the site suggested that the skull dated from the Pleistocene epoch, at some point midway between the supposed date of the so-called ape-man of Java and the emergence of modern humans. The jaw, however, appeared to come from a type of ape never known to have lived in Europe, and the teeth were worn down in a human fashion. Pieced together by Woodward, the picture emerged of a new species of extinct hominid that he called *Eoanthropus dawsoni*, or the "dawn man" of Piltdown.

Dawson and Woodward unveiled their discovery on December 18, 1912, before a packed house of Britain's scientific elite at the Geological Society of London. "While the skull, indeed, is essentially human, and approaching the lower grade in certain characters of the brain," they explained at the time, "the mandible appears to be almost precisely that of an ape, with nothing human except the molar teeth." After describing their find in great detail and fitting it into the sequence of other known fossil remains, Dawson and Woodward concluded, "It tends to support the theory that Mousterian man was

degenerate offshoot of early man, and probably became extinct; while surviving man may have arisen directly from the primitive source of which the Piltdown skull provides the first discovered evidence.”<sup>3</sup> Sir Arthur Keith, one of the world’s leading experts on human antiquity and anatomy, attended the presentation by Dawson and Woodward, and generally concurred in their conclusions, as did the renowned neurologist Grafton Elliot Smith and the famed biologist Boyd Dawkins. Perhaps Dawkins best expressed the collective response of the learned audience when he declared during the discussion period, “The evidence was clear that this discovery revealed a missing link between man and the higher apes.”<sup>4</sup>

Word of the discovery became front-page news throughout the United States, where prominent creationists still publicly denounced the Darwinian theory of human evolution. Relying on a special same-day cable transcript, the *New York Times* published a summary of Dawson and Woodward’s initial presentation within hours of the event. “Paleolithic Skull Is a Missing Link,” the *Times* headline proclaimed, “Bones Probably Those of a Direct Ancestor of Modern Man.”<sup>5</sup> A day later, the *Times* followed up with a telegraphic interview of Woodward. “Hitherto the nearest approach to a species from which we might have been said to descend that had been discovered was the cave-man,” Woodward observed in this interview, “but the authorities constantly asserted that we did not spring direct from the cave-man. Where, then, was the missing link in the chain of our evolution? To me, in any rate, the answer lies in the Piltdown skull, for we came directly from a species almost entirely ape.”<sup>6</sup> Other American newspapers carried similar reports.<sup>7</sup>

The *New York Times* concluded its coverage of the Piltdown discovery with an extended, page-long summary of the episode, appearing in its next Sunday edition. “Darwin Theory Is Proved True,” proclaimed the banner headline. “English Scientists Say the Skull Found in Sussex Establishes Human Descent from Apes.” This article reprinted Keith’s observation that the discovery “gives us a stage in the evolution of man which we have only imagined since Darwin propounded the theory.”<sup>8</sup> Yet another editorial entitled “Simian Man” appearing in that same Sunday edition cautioned readers, “Those who have read the cable dispatches to The Times describing the oldest human skull ... must not confuse this ancient man with the ‘missing link’ or with the ancestry of the present human race. Darwin thought that man was descended from apes, but he searched in vain for the half-man, half-ape. Although the British scientists quoted in those dispatches clearly saw the new fossil as filling the missing link in the record of human evolution, the *Times* editorial cites their classification of the Piltdown hominid as a distinct species to support the conclusion that ‘he was no forebear of our Adam.’”<sup>9</sup>

This peculiar editorial disavowing a scientific news report reflected the divided mind of the American public, during the years leading up to the Scopes trial, regarding the controversial topic of human evolution. Of course, no single fossil discovery could prove the Darwinian theory of human evolution. As the *New York Times* editorial suggested, evidence that a “simian man” walked the earth in the Pleistocene epoch does not conclusively establish a simian ancestry for modern humans. Yet it fit into a larger pattern. During the first quarter of the twentieth century, scientists in western Europe and the United States accumulated an increasingly persuasive body of evidence supporting the Darwinian view of human origins, and the American people began to take notice. These scientific developments helped set the stage in the early 1920s for a massive crusade by fundamentalists against teaching evolution in public schools, which culminated in the 1925 trial of John Scopes.

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The theory that current living species evolved from preexisting species had been around for a long time. More than a century earlier, a well-known French naturalist, the Chevalier de Lamarck, had proposed a theory of progressive evolutionary development based on vital forces within living things and the inheritance of acquired characteristics. Lamarck viewed the various biological species arranged in an ascending hierarchy from the simplest to the most complex, reflecting a historical pattern of development. Vital forces within living entities prompted their development, allowing each generation to progress beyond the level of complexity of its ancestors. The use or disuse of organs in response to changed environmental conditions further propelled evolutionary progress, according to Lamarck, as living entities passed their acquired characteristics on to their offspring. The giraffe's long neck remains the most famous example of this process. As vegetation became scarcer in their habitats, Lamarck hypothesized, the ancestors of the present-day giraffe stretched their necks to eat the remaining leaves high on trees. The next generation inherited the longer necks and stretched them still further, until a new species of long-neck giraffe evolved.

Although early nineteenth-century scientists generally did not accept Lamarck's ideas on evolution and held to the creationist concept that each biological species remained fixed over time, many of them did embrace the bold theories of Lamarck's rival, Georges Cuvier. As curator of vertebrate fossils at the prestigious French Museum of Natural History, Cuvier was the first Enlightenment-era naturalist forced to come to terms with the increasingly complex fossil record then being unearthed by scientific expeditions. This research drove him to acknowledge that the earth had a very long geological history, far longer than suggested by a literal interpretation of the account in Genesis, and that countless biological species had appeared and become extinct during that long history, despite the traditional scientific and religious view that all species continued over time. Sudden breaks then appeared in the fossil record in which one characteristic group abruptly replaced an earlier one with few transitional forms, coupled with a conviction that living species were too complex to evolve, led Cuvier to conclude that great catastrophes such as worldwide floods or ice ages punctuated geological history into a series of distinct epochs. Each catastrophe wiped out most or all living things, leaving the earth to repopulate through migration by the few survivors, as Cuvier at first supposed, or new creations of biological species, as later naturalists concluded after wider exploration found no ancient source for modern animals.

Cuvier's theories quickly came to dominate the geological thinking of the day. Some secular scientists in that era of romanticism and transcendentalism attributed the successive new creations of species to a vital force within nature. Christian geologists, in contrast, saw the hand of God directly at work in these creative acts. Both groups, however, accepted a long geologic history and the progressive appearance of new life forms. For Christians, this posed a conflict with the account in Genesis, which declared that God formed the heavens, the earth, and all kinds of living things in six days, culminating in the creation of Adam and Eve as the forebears of all human beings. In the fifteenth century, the scholarly archbishop James Ussher used internal evidence within Genesis to fix the year of creation at 4004 B.C. Even if they did not adopt this precise year, many later Christians accepted a similar time frame for the creation. In America during the middle part of the nineteenth century, such leading geologists as Amherst College president Edward Hitchcock and Yale's James D. Dana reconciled contemporary geological opinion with their traditional religious beliefs by interpreting the biblical days of creation as symbolizing geologic ages or, alternatively, by positing

gap in the Genesis account.<sup>10</sup> Nineteenth-century Protestants, including many with decidedly conservative views of scriptural authority, readily accepted such accommodations of science and religion. Even the *Scofield Reference Bible*, which profoundly influenced the development of modern fundamentalism around the turn of the twentieth century, incorporated the “gap theory” into its explanation of Genesis and referred to the “day/age theory” in a footnote.<sup>11</sup>

The advent of Darwinism presented a far greater threat to Christians than simply a long geologic history and the progressive appearance of species. When Darwin’s *Origin of Species* first appeared in 1859, few scientists accepted the concept of organic evolution. Within two decades, however, even the most hostile church journal could identify only two working American naturalists who still opposed it. Darwin’s eloquent presentation of evidence for evolutionary development drawn from careful observation of nature certainly contributed to this turnabout, but he proposed also that a “survival of the fittest” process of natural selection drove evolutionary change rather than the benign process of individual adaptation envisioned by Lamarck. Although Darwin always maintained a place for Lamarckian-type mechanisms within his theory of evolution, his concept of natural selection became widely identified as the central feature of Darwinism.

The high school textbook at issue in the Scopes trial, George William Hunter’s *A Civic Biology*, summarized Darwin’s alternative evolutionary mechanism in a section entitled “Charles Darwin and Natural Selection.” Darwin observed that individual plants and animals tended to vary slightly from their ancestors, Hunter noted. “In nature, the variations which best fitted a plant or animal for life in its environment were the ones which were handed down because those having variations which were not fitted for life in that particular environment would die,” Hunter wrote. “Thus nature seized upon favorable variations and after a time, as the descendants of each of these individuals also tended to vary, a new species of plant or animal, fitted for the place it had to live in, would be gradually evolved.” In short, as Hunter explained, Darwin postulated new species “arising from very slight variations, continuing during long periods of years.”<sup>13</sup> This mechanism attributed these all-important variations to random individual differences inborn in the offspring rather than to Lamarckian vital forces or acquired characteristics. “Species have been modified, during a long course of descent,” Darwin concluded in the *Origin of Species*, “chiefly through the natural selection of numerous successive, slight, favorable variations.”<sup>14</sup>

Darwin’s account of random variations, coupled with his survival-of-the-fittest selection process, posed a critical problem for many Christians who retained a teleological view of nature. In 1860 Darwin anticipated this problem in an exchange with the Harvard botanist Asa Gray, a devoted Protestant. Christians long maintained that the harmonious structure of the physical universe and each living thing reflected intelligent design by a creator, and thereby contributed evidence of the existence and loving character of God. Gray, who had arranged the initial publication of the *Origin of Species* in the United States, asked Darwin about the book’s theological implications. “I had no intention to write atheistically,” Darwin replied. “But I own that I cannot see as plainly as others do, and as I should wish to do, evidence of design and beneficence on all sides of us. There seems to me too much misery in the world. I cannot persuade myself that a beneficent and omnipotent God would have designed to create the Ichneumonidae with the express intention of their feeding within the living bodies of Caterpillars, or that a cat should play with mice.”<sup>15</sup> For some conservative theologians and pio-



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