Prologue

"I should like to ask Professor Huxley, who is sitting by me, and is about to tear me to pieces when I have sat down, as to his belief in being descended from an ape. Is it on his grandfather’s or his grandmother’s side that the ape ancestry comes in?” And then taking a graver tone, he asserted, in a solemn peroration, that Darwin’s views were contrary to the revelation of God in the Scriptures. Professor Huxley was unwilling to respond; but he was called for, and spoke with his usual incisiveness and with some scorn: “I am here only in the interests of science,” he said, “and I have not heard anything which can prejudice the case of my august client.” Then after showing how little competent the Bishop was to enter upon the discussion, he touched on the question of Creation. “You say that development drives out the Creator; but you assert that God made you; and yet you know that you yourself were originally a little piece of matter, no bigger than the end of this gold pencil-case.” Lastly as to the descent from a monkey, he said: “I should feel it no shame to have risen from such an origin; but I should feel it a shame to have sprung from one who prostituted the gifts of culture and eloquence to the service of prejudice and of falsehood.” (Huxley 1900, 1, 200–201)

Stirring stuff. Samuel Wilberforce, bishop of Oxford, member of the House of Lords, leader of the Church of England, clashes with Thomas Henry Huxley, the sometime scholarship boy and then naval surgeon, now a morphologist and paleontologist and professor at the London School of Mines – a place whose educational rank with respect to Oxford may be likened to the status of the Salvation Army with respect to the Anglican Church. The champion of religion and the authority of the Bible, the leader of the “high church” movement, takes on the defender of science, the “bulldog,” speaking for the new theory of organic evolu-
tion. And the spokesman for tradition and power comes away with his nose well and truly bloodied!

I still remember, some forty years ago, my history master – a good old-fashioned rationalist he – keeping us enthralled with his reenactment of the great battle. The smarmy episcopal debating tricks shown mere tinsel and illusion by the cold hard logic of the man of integrity and science. It is little wonder that the Wilberforce/Huxley fight, at the annual meeting of the British Association for the Advancement of Science in Oxford in 1860, one year after Charles Darwin had published his On the Origin of Species, has become the stuff of legend. In the history of science it ranks right up there with Archimedes stepping into his bath and with the aged Galileo down on his knees, recanting his Copernicanism while defiantly whispering: “But it does move, after all!”

It is a grand story, this public clash between the titans of Church and Science back at the height of the Victorian era. Yet, there are also tales from the century just gone. Move the clock forward to the 1920s, and cross the Atlantic to the courthouse in Dayton, Tennessee. It is a hot day, so hot in fact that the judge has moved everyone outside: defendant John Thomas Scopes, a local schoolteacher accused of teaching Darwinian evolutionary theory in violation of state law; prosecuting attorney and self-proclaimed expert witness on the Bible, William Jennings Bryan, spell-binding orator and three-time former presidential candidate; and Clarence Darrow, deadly effective defence attorney and notorious agnostic.

Darrow picked up the Bible and began to read: “And the Lord God said unto the serpent, Because thou hast done this, thou art cursed above all cattle, and above every beast of the field; upon thy belly shalt thou go and dust shalt thou eat all the days of thy life.’ Do you think that is why the serpent is compelled to crawl upon its belly?”

“I believe that.”

“Have you any idea how the snake went before that time?”

“No sir.”

“Do you know whether he walked on his tail or not?”

“No, sir, I have no way to know.”

There was a howl of laughter from the crowd.

Suddenly Bryan’s voice rose, screaming, hysterical: “The only purpose Mr. Darrow has is to blur at the Bible. . . . I want the world to know that this man, who does not believe in a God, is trying to use a court in Tennessee – “
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"I object to your statement." Darrow was contemptuous. "I am examining you on your fool ideas that no intelligent Christian on earth believes."

Judge Raulston put an end to the argument by adjourning the court. That night, at last, it rained. (Settle 1972, 108–9)

A wonderful story and, very thinly disguised, a wonderful film: Inherit the Wind. The Darrow figure (played by Spencer Tracey) vanquishes the Bryan figure (played by Frederick March), yet shows tolerance and understanding when, left alone at the end in the courtroom, he picks up the Bible and Darwin and thrusts both into his carrying bag. It is true that Scopes was found guilty and fined $100, although as a matter of fact this was overturned on a technicality on appeal. It is also true that the Tennessee law remained on the books for another forty years. But evolution had triumphed and Christianity had lost. Thanks particularly to the vitriolically funny reporting of H. L. Mencken of the Baltimore Sun, the world laughed at Tennessee and its antiquated beliefs: "degraded nonsense which country preachers are ramming and hammering into yokel skulls" (Ginger 1958, 129).

A third and final vignette. In 1957, during the depths of the cold war, the Russians scored a stunning triumph of technology when they put aloft a satellite known as sputnik. Even more than for what it was, the Russian achievement counted for what it was perceived to be. Above all, it became a triumph of propaganda. Reaching back to when I was a schoolboy, I can remember when the Russians described their second satellite as being so large that it was equal in size to that epitome of American success and opulence, a Cadillac. Desperately trying to regain ground, America poured money into science and technology. Included in that effort was science education, which in turn led to a series of wonderful textbooks, the biological representatives of which had full and detailed and enthusiastic discussions of evolution and its causes. At once conservative Christians swung into action, opposing evolution and promoting an alternative which became known as "creation science," something suspiciously like the early chapters of Genesis taken absolutely literally. And so, eventually, in 1981 in the state of Arkansas, there was another court trial, at which the American Civil Liberties Union – that organization determined to defend the integrity and authority of the U. S. Constitution – brought suit against a new law which insisted on the teaching of
creation science alongside evolution. Among the expert witnesses for the plaintiffs was a professor from Canada.

Q: Dr. Ruse, having examined the creationist literature at great length, do you have a professional opinion about whether creation science measures up to the standards and characteristics of science that you have just been describing?
A: Yes, I do. In my opinion, creation science does not have those attributes that distinguish science from other endeavours.

Q: Would you please explain why you think it does not.
A: Most importantly, creation science necessarily looks to the supernatural acts of a Creator. According to creation-science theory, the Creator has intervened in supernatural ways using supernatural forces.

Q: Do you think that creation science is testable?
A: Creation science is neither testable nor tentative. Indeed, an attribute of creation science that distinguishes it quite clearly from science is that it is absolutely certain about all of the answers. And considering the magnitude of the questions it addresses – the origins of man, life, the earth, and the universe – that certainty is all the more revealing. Whatever the contrary evidence, creation science never accepts that its theory is falsified. This is just the opposite of tentativeness and makes a mockery of testing.

Q: Do you find that creation science measures up to the methodological considerations of science?
A: Creation science is woefully lacking in this regard. Most regrettably, I have found innumerable instances of outright dishonesty, deception, and distortion used to advance creation-science arguments.

Q: Dr. Ruse, do you have an opinion to a reasonable degree of professional certainty about whether creation science is science?
A: Yes.

Q: What is your opinion?
A: In my opinion creation science is not science.

Q: What do you think it is?
A: As someone also trained in the philosophy of religion, in my opinion creation science is religion. (Ruse 1998a, 304–6)

Terrific testimony! Modesty must not stop me from putting myself in line: Thomas Henry Huxley, Clarence Darrow, and now Michael Ruse. Little wonder that the judge found definitively in favour of evolution, throwing creation science out of court and out of classroom with the enthusiasm and effectiveness of a bruiser at a nightclub. So much for the religious opposition to evolution. Three strikes and you’re out!

Would that life sometimes coincided with legend. I am sorry to have to
tell you that – probably as with Archimedes and Galileo both – not one of the three stories I have just told you is true. At least (for I do not want to make myself into a liar before I begin), not one of the stories is the triumph of light over darkness that popular history would have it. Take the Wilberforce/Huxley clash. For a start, there was certainly not the dramatic tension and stark opposition conveyed by the passage which I quoted at the beginning of this Prologue – a passage, incidentally, taken from Huxley’s Life and Letters as compiled by a dutiful son. Reports from the time suggest that everybody enjoyed himself immensely, and all went cheerfully off to dinner together afterwards. It was only later that the encounter was made into the ultimate fight for the soul of science, for the disinterested pursuit of truth no matter what the cost and what the opposition of vested interests (Lucas 1979; Jensen 1991).

And as with all legends, from Abraham to Princess Diana, there was a reason why this one took on the form and aura that it did. The second half of the nineteenth century, in Britain and elsewhere (Germany and America, particularly), was the time when the educated middle class were moving to make a full and recognized place for themselves in the new society, an urban industrialized society replacing the rural near-feudalism of the past. They wanted a civil service which was based on merit and not privilege; they wanted similar reformation of the professions and the military; they wanted education for all from the earliest years, and they wanted it to be secular, no longer under the thrall of an established church; they wanted respect for science and related areas like medicine; and they wanted the opportunity to make a lifetime career without need of inherited income or a rich patron. They wanted . . . They wanted all of these things and more, and were prepared to fight hard to realize their ends (Ruse 1996a). It is little wonder that they sought and found their myths and legends. As the tale of Moses leading his people from Egypt has bound together and inspired generations of Jews, as the story of Drake and the Spanish Armada has filled countless Britons with pride against the Catholic hordes of the continent, so the telling of Huxley’s destruction of the pompous prelate has drawn many a bright schoolchild away from the classics and into a life of science.

The Scopes Monkey Trial has assumed no less mythic proportions: the very name “Scopes Monkey Trial” should alert you to that. And again, as we start to dig into the real details its iconic status as a clash between science and religion, between Evolution and Christianity, starts to seem
rather less secure. For a start, it seems highly probable that the good
citizens of Dayton, Tennessee, themselves brought on the trial, not be-
cause they were appalled at the teaching of evolution – they really did not
care too much about that – but because they thought the publicity would
be good for business. Scopes himself was a respected and loved teacher,
who allowed himself to be put on the firing line and prosecuted – even
though there is some doubt as to whether he ever actually taught evolu-
tion in class at all! Although the judge did not permit them to testify in
court, ready to speak on Scopes's behalf were four ordained clergymen,
including Shailer Mathews, dean of the Divinity School at the University
of Chicago. William Jennings Bryan was anomalous, not only in being
prepared to act as expert witness as well as legal counsel for the prosecu-
tion but also in openly rejecting literal interpretations of the Bible. He
quipped that he took his stand on the Rock of Ages rather than the age of
rocks, but he never subscribed to a narrow reading of Genesis. And H. L.
Mencken? Well, he was a newspaperman, and his job was to tell good
stories and sell newspapers. (For details see Larson 1977; Numbers
1998.)

Finally, Arkansas in the early 1980s. This was a state that was starting
to awake from the slumber of the South, but only fitfully. The young and
energetic new governor, Bill Clinton, had overreached himself and been
thrown out of office after only one term. Chastened and contrite, Clinton
was to regain his post some two years later, but the interregnum was filled
by a man whose surprise at his election was equalled only by his inade-
quacy to the job. The bill which insisted on the teaching of creation
science in the biology classes of the state's schools was passed, one Friday
afternoon, after somewhat less than thirty minutes' debate, and signed
into law by the governor, who seems not to have realized quite what it all
meant. The real forces of power in the state, represented by the Junior
Chamber of Commerce, were absolutely appalled. They had been bend-
ing Heaven and Earth to persuade industry to invest in Arkansas and to
build factories – usually factories making or assembling high-technology
products like computer chips. In their quest to entice some bright young
electronics engineer, graduate of MIT, to leave the Boston area and
resettle with his wife and family in Little Rock, the last thing they needed
was some law ensuring that his children would be taught creationism in
science class. He would pick up his family and talents and move farther
west, to a state like Arizona, whose evangelical Christians subscribed to a decent and profitable hypocrisy, carefully separating faith and business.

If the Arkansas authorities had mixed feelings about their law, the same was no less true of the ACLU in attacking it: or if their feelings were not mixed they were certainly not pure. The law did violate the U.S. constitutional separation of church and state. There is no question about that. But the enthusiasm of the ACLU for attacking the law far exceeded the legal facts. The association had just come off a wrenching encounter when – entirely properly and honourably, I stress – it had felt obliged to defend the right of American Nazis to march through Skokie, a predominately Jewish suburb of Chicago. The ACLU had won, and the Nazis had marched. But, although as a norm Jews are some of the strongest supporters of the ACLU – they know only too well what happens when a constitution is violated and laws are perverted – here, in every sense of the word, was something too close to home. Contributions to the ACLU had plummeted and finances were just plain awful. Hence, the organization was desperate for a high-profile case, where it could clearly be seen to be doing good, on behalf of a cause and in a fashion with which its traditional supporters could sympathize. A law supposedly promoting the interests of rabid conservative Christians, in a perceived backward southern state, was manna from heaven, to use a phrase (Gilkey 1985; Ruse 1988a).

In recording the background to these celebrated clashes between Darwinian evolution and Christianity, it is not my intention simply to suggest that there are no genuine points of conflict between biological science and the most popular religion of the West. Anyone who has ever done serious historical research knows full well that people’s motives are rarely what they appear on the surface and never mere matters of logic and reason. But I do want to sensitize you to – make you cautious about – stirring tales of the opposition between Darwinism and Christianity. In intellectual matters as in the world of commerce: caveat emptor! If nothing else, you should be aware that there have been many enthusiasts for evolution, Darwinian evolution, who have been sincere Christians. They may be wrong, and those who think that there must inevitably and always be warfare between science and religion may be right, but Christian evolutionists have existed right down from the time of Darwin, and they command our respect if not agreement. Moreover, you should not think
that these people were apologetic, trying desperately to bring together their science and their religion but pulling back from any attempt at genuine integration. They have been happy and sincere in both Darwinism and Christianity, seeing them as reflections of a united whole.

One of the very first men to speak publically in favour of Darwinism was not just a Christian but an Anglican clergyman. The Reverend Baden Powell, Savilian Professor of Geometry at the University of Oxford (and father of the future founder of the scouting movement), wrote, even as Huxley was debating Wilberforce, of "Mr. Darwin's masterly volume on *The Origin of Species* by the law of 'natural selection,' — which now substantiates on undeniable grounds the very principle so long denounced by the first naturalists, — the origination of new species by natural causes: a work which must soon bring about an entire revolution of opinion in favour of the grand principle of the self-evolving powers of nature" (Powell 1860, 139).

In such sentiments as these Baden Powell was joined by others: on one side of the Atlantic by the Reverend Charles Kingsley, professor of modern history at the University of Cambridge, controversialist in debate with John Henry Newman, and author of *The Water Babies* (Kingsley 1895); on the other side of the Atlantic by the chief spokesman for the Darwinian cause in North America, the professor of botany at Harvard University and ardent evangelical Christian, Asa Gray (1860). Nor did people simply react and emote. They thought carefully about the implications of Darwinism for Christian faith. One of the most attractive and incisive of those who embraced both Darwinism and Christianity was the Oxonian Anglo-Catholic theologian Aubrey Moore. Explicitly, he saw science — particularly Darwin's science about organic origins — as something which brings God intimately and constantly into the picture, at all times and in all places. "Darwinism appeared, and, under the guise of a foe, did the work of a friend" (Moore 1890, 73). It shows us that either God is everywhere or He is nowhere. "We must frankly return to the Christian view of direct Divine agency, the immanence of Divine power from end to end, the belief in a God in Whom not only we, but all things have their being, or we must banish him altogether" (74).

Do not think, however, that it was only those people approaching the science/religion interface from the side of religion who were keen to integrate and harmonize. Near the top of anyone's list of the "ten greatest evolutionists since Darwin" will be the English statistician Ronald Fisher,
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author of *The Genetical Theory of Natural Selection* (1930), and the Russian-born American Theodosius Dobzhansky, author of *Genetics and the Origin of Species* (1937). Both were ardent Christians, Fisher in the Church of England of his childhood and Dobzhansky in the Russian Orthodox Church of his childhood (although in later life he tended to a more universalistic faith). Listen first to Fisher, from a sermon which he gave at his college at a Sunday evening service:

To the traditionally religious man, the essential novelty introduced by the theory of the evolution of organic life, is that creation was not all finished a long while ago, but is still in progress, in the midst of its incredible duration. In the language of Genesis we are living in the sixth day, probably rather early in the morning, and the Divine artist has not yet stood back from his work, and declared it to be "very good." Perhaps that can only be when God's very imperfect image has become more competent to manage the affairs of the planet of which he is in control. (Fisher 1947, 1001)

Evolution is not yet finished, and apparently the task set on us by God is that of seeing that it does not go astray through blind disregard for the stern laws of nature.

Now hear Dobzhansky likewise blending science and faith, in a letter to an eminent historian of science, also a practicing Christian:

I see no escape from thinking that God acts not in fits of miraculous interventions, but in all significant and insignificant, spectacular and humdrum events. . . . In evolution some organisms progressed and improved and stayed alive, others failed to do so and became extinct. Some adaptations are better than others — for the organisms having them; they are better for survival rather than for death. Yes, life is a value and a success, death is valueless and a failure. So, some evolutionary changes are better than others. Yes, life is trying to hang on and to produce more life. (Greene and Ruse 1996, 463)

But, you will say to me: Enough of the past! What of people's beliefs today? Surely it is the case that science and religion have now truly come apart and that, even if once they may have had a relationship, as we move into a new millennium Darwinism and Christianity are well and truly divorced? At the very least, to use a trendy term which one sees about, they must be incommensurable. At the very most, if you accept Darwinism then you must reject Christianity, and conversely. The two belief systems are contradictory.
Well, one thing I cannot deny is that there are those who think that this is precisely the case. Today’s most splendid polemicist for pure unadulterated Darwinism is the Oxford biologist of social behaviour Richard Dawkins. He is also a man who takes his atheism seriously, so much so that in contrast the great eighteenth-century Scottish philosopher David Hume (once memorably described as “God’s greatest gift to the infidel”) looks positively wet. Of those who would compromise or treat the opposition with respect, Dawkins sneers that a “cowardly flabbiness of the intellect afflicts otherwise rational people confronted with long-established religions” (Dawkins 1997b, 397). For him, no quarter is asked and none given. He will have nothing to do with accommodation. “A universe with a supernatural presence would be a fundamentally and qualitatively different kind of universe from one without” (399).

You are either with Dawkins or against him. A point of full agreement with those on the other side. Whatever the successes or failures in Arkansas, there is today an active opposition to all naturalistic claims about organic origins. If Thomas Henry Huxley was Darwin’s bulldog, Phillip Johnson, legal scholar and Berkeley faculty member, might well be called creationism’s terrier. He worries away at the evolutionists, grabbing and nipping at their ankles, regarding snarls and blows as friendly invitations to further combat. Johnson is as forthright as Dawkins: “Makeshift compromises between supernaturalism in religion and naturalism in science may satisfy individuals, but they have little standing in the intellectual world because they are recognized as a forced accommodation of conflicting lines of thought” (Johnson 1995, 212). Johnson is no mediator. He is a lawyer, for whom agreement means abject capitulation by the opposition. In his book, any compromise is “makeshift.”

Yet not everyone thinks this way. There are many who argue passionately that science and religion, Darwinism and Christianity, can coexist harmoniously. Stephen Jay Gould, a paleontologist who is as famous for his popular writings as is Dawkins, is one who sees no conflict between evolution and religion. Raised a secular Jew, he describes himself as an agnostic, but he has always struck me as being closer to God than many conventional believers. At least since the time when he appeared alongside me as an expert witness for the ACLU in Arkansas, Gould has argued repeatedly and vehemently that science and religion do not and (properly understood) cannot clash. “The lack of conflict between science and religion arises from a lack of overlap between their respective domains of