

The Adam of Genesis and the Hominid Fossil Record

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"Given the explosion of extra-biblical evidence bearing on the antiquity and unity of the human race" in this century, "it is striking that these questions have received relatively little recent analysis within the evangelical community," wrote Davis A. Young, professor of geology at Calvin College, in a recent article in the Christian Scholar's Review. According to Young, "...theologians in particular seem poorly informed about the pertinent extra-biblical evidence and its implications for Christian theology."¹

A generation ago in his pioneering work, The Christian View of Science and Scripture (1954), the evangelical theologian Bernard Ramm wrestled with some of the theological challenges posed by the fossil hominid record as it was known at that time. Ramm realized that some traditional ways of understanding the early chapters of Genesis in relation to human origins and the antiquity of the human race were difficult to reconcile with the emerging fossil evidence. "The chief problem with an origin of man at 500,000 B.C. is the connection of Gen. 3 with Gen. 4," Ramm noted.² In Gen. 4, one generation from Adam, the text refers to evidences of Neolithic civilization such as farming and animal husbandry that date from approximately 8-10,000 years before the present, and yet the hominid fossil record seems to indicate a very ancient date for the origins of man. "It is problematic to interpret Adam as having been created at 200,000 B.C. or earlier," write Ramm, with civilization not coming into existence till say 8,000 B.C."³

A relatively limited number of evangelical scholars in disciplines other than theology have addressed the issues raised by Ramm.⁴ It is the purpose of this paper to present, after a brief review of the variety of evangelical responses in the past

century to the emerging fossil record, a proposal which addresses the issues raised by Ramm, and which takes seriously the new evidences from human paleontology while attempting to preserve and safeguard the essential biblical teachings concerning the historicity of the fall and the universality of original sin.⁵

Christian Faith and the Hominid Fossils: a Brief Historical Review

The calculations based on the genealogies in the fifth and eleventh chapters of the book of Genesis by Archbishop James Ussher (1581-1656), an Irish Protestant scholar, placing the date of creation at 4004 B.C., expressed the generally held outlook of educated and well-informed people in the seventeenth century.⁶ Given the available geological and paleontological data, there were no compelling reasons at the time to believe that either the earth or the human race were extremely old.

There were, however, even in the seventeenth century some who were beginning to envision a history of the human race that extended back in time for more than four or five thousand years. The French intellectual and diplomat Isaac de la Peyrère (1594-1676) was evidently the first to identify ancient stone hand-axes as human artifacts.⁷ These stone tools had been known from earlier times, but were thought to be "thunderbolts" or "petrified thunder" rather than the productions of ancient races of men.

In his 1656 book, Men Before Adam, Peyrère argued that Adam was not the first human, but rather the father of the Jewish people, having been preceded by ancient human populations that inhabited such distant parts of the globe as China and North America.⁸ He was evidently motivated both by his theological interests in the interpretation of Romans 5:12-21 and by a desire to incorporate into a Christian worldview the new awareness of non-European races and human cultures resulting from the voyages of discovery beginning with Columbus. Isaac de

la Peyrère's "Preadamite" hypothesis was roundly condemned in his own time by both Protestant and Roman Catholic scholars, but was to resurface significantly in the nineteenth and twentieth centuries in relation to theories of the evolutionary origins of modern humans from earlier hominid forms.

The eighteenth century saw the rise of the study of vertebrate paleontology. As early as the time of Peter the Great (c. 1728)) mastodon bones had been discovered in Siberia. They were not, however, at this time recognized as the remains of extinct animals, but were thought to be elephants destroyed by the Flood.⁹ It was not until about 1796 that the reality of species extinction was firmly established and generally recognized, largely due to the work of the great French comparative anatomist and paleontologist Georges Cuvier.¹⁰

When in 1856 fossilized human remains were discovered in the Neander River Valley in Germany they were not at the time recognized as evidence of an ancient humanity. Professor Mayer of the University of Bonn interpreted the skeletal remains as a "deserter from the Cossack army, with rickets."¹¹ It was not until the 1858 excavation of the Brixham cave in southwestern England, where unequivocal evidence of the coexistence of ancient human fossils and extinct animal remains were discovered, that the tide of scholarly opinion began to turn in favor of an old humanity as well as an old earth.¹²

The publication of Charles Darwin's Origin of Species in 1859 was, in the course of time, to revolutionize the way in which many modern people understood the natural order and the history of life on earth. Darwin's 1871 publication, The Descent of Man, addressed the question of human origins, an issue not directly addressed in his earlier work. In The Descent of Man Darwin argued that sexual selection accounted for much of human origin and variation. He hypothesized that Africa was the most likely place of man's origins, that bipedalism was prior to brain expansion, and that the chimpanzee was man's closest living

relative.¹³ Darwin's arguments were based largely on embryology and comparative anatomy rather than hominid fossil remains, which were few and fragmentary at the time of his writing. Modern studies based on a much broader base of fossil data and modern genetic research have tended to confirm Darwin's hypothesis.

Darwin's evolutionary paradigm received a broad variety of responses from orthodox Christian scholars in the latter part of the nineteenth and early twentieth centuries. Some, like Charles Hodge of Princeton, saw Darwinism as utterly antithetical to a purposeful creation and a biblical concept of divine providence.¹⁴ Other orthodox Christians, however, saw no final incompatibility between evolution and the Bible; natural selection was merely God's method of creation.¹⁵ Benjamin B. Warfield, one of the primary architects of the "Old Princeton" defense of the inerrancy of scripture, was open to the possibility of the origins of the human body through a process of theistic evolution: "If under the directing hand of God a human body is formed at a leap by propagation from brutish parents, it would be quite consonant with the fitness of things that it should be provided by His creative energy with a truly human soul."¹⁶

"I have already made the admission that there is no necessary antagonism between theism and a doctrine of organic evolution as such," wrote the Scottish evangelical theologian James Orr in 1905. "That species could have arisen by a method of derivation from some primeval germ rather than by unrelated creations, is not only not inconceivable, but may even commend itself as a higher and more worthy conception of the divine working than the older hypothesis."¹⁷

In 1907 the evangelical Baptist theologian A. H. Strong could write that evolution "...does not make the idea of a Creator superfluous, because evolution is only the method of God." Strong believed that it was perfectly consistent with a biblical doctrine of creation that "...man should emerge at the proper time, governed by different laws from the brute creation yet growing out of the brute."¹⁸

The Scopes trial of 1925 proved to be a watershed in the ongoing struggle of evangelicals to come to grips with the challenge of Darwinism. In the context of the theological and ecclesiastical polarizations produced by the Modernist-Fundamentalist controversies, the degree of openness to evolution as God's method of creation that had characterized a significant portion of earlier evangelical scholarship was substantially diminished in the aftermath of the "monkey trial" in Dayton, Tennessee.

The 1961 publication of The Genesis Flood by John C. Whitcomb, Jr. and Henry Morris, almost a generation after the Scopes trial, marked the birth of the modern young-earth, flood geology, "creation-science" movement.¹⁹ Whitcomb and Morris, building on the work of earlier Protestant fundamentalists such as Harry Rimmer and George McCready Price, mounted a militant defense of a literal six-day creation, a young earth, a global flood that accounted for the globe's major geological features and rejected all attempts by theistic evolutionists to accommodate the Bible to Darwinism.²⁰

Throughout the 1970s and 1980s the "creation science" movement and its anti-evolutionary polemic appeared to be having a substantial and growing impact in conservative Protestant circles, especially among the laity. Defenses of theistic evolution were not lacking in this period, however. Members of the American Scientific Affiliation and other capable evangelical scholars continued to argue for theistic evolution as a viable model for human origins, continuing an honorable and well-recognized tradition rooted in some of the finest nineteenth and early twentieth century evangelical scholarship.²¹

The Biblical Adam and the Hominid Fossils: a Theological Proposal

It is here proposed that the biblical Adam be understood as a "redemptive-historical model."²² In this conception the term historical calls attention to the fact that the creation, temptation, and fall of the first humans are understood as historical events, rather than timeless dimensions of universal human experience expressed in mythical form. The term redemptive is chosen to signify a judgment that the primary purpose of the Genesis narrative is redemptive or soteriological in nature, rather than scientific in the modern sense.

The term model links the present discussion with recent work in philosophy of science and philosophy of religion. In the sciences "models" are conceptual frameworks that present simplified depictions of complex realities.²³ For example, the Bohr planetary model of the hydrogen atom is a simplified picture of a more complicated physical reality that can only be adequately described in terms of the mathematical equations of quantum mechanics.²⁴

Models in science may be either "replica" or "analogue" models.²⁵ Replica models are "literal," small-scaled versions of the realities they represent, e.g., a ship in a bottle or a small model aircraft to be tested in a wind tunnel. Analogue models are not literal pictures of the realities they represent, but reflect through mathematical equations, computer simulations, or other means selected features of the object being studied. A computer simulation of the behavior of the American economy or the human brain would be a model of this latter sort.

To propose that the Adam of Genesis²⁶ be understood as a "redemptive-historical model" is to suggest that the biblical narrative is more like an analogue than a replica model, in the sense of these terms defined above. The biblical narrative of Gen. 2:4-4:26 "models" the flow of historical events surrounding the creation, temptation, and fall of the first humans, and the early development of human culture, but not necessarily in a literal, pictorial sense.²⁷

Such an approach to the biblical narrative of the creation and fall of man is in keeping with trends in modern biblical scholarship that interpret Genesis in the context of the literary genres and popular thought forms of ancient Near Eastern cultures.²⁸ In a significant statement that reflected over a half century of Roman Catholic biblical scholarship, the Secretary of the Pontifical Biblical Commission declared in 1948 that the early chapters of Genesis "...relate in simple and figurative language, adapted to the understanding of a less developed people, the fundamental truths presupposed for the economy of salvation, as well as the popular description of the origin of the human race and of the chosen people."²⁹

Some twenty years later Eugene H Maly in an introduction to Genesis in The Jerome Biblical Commentary reflected the scholarly Roman Catholic exegetical consensus when he stated that these early chapters reported history "analogously," noting that "...the need to popularize the presentation and make it comprehensible to an unsophisticated audience has resulted in an individualization of the 'typical events'." In the biblical narrative of Adam in paradise "...one man is presented as doing what many men did; the story of one particular catastrophe is used to illustrate and explain all such catastrophes."³⁰

Conservative Protestant interpreters of Genesis have increasingly seen the text in the light of its ancient Near Eastern milieu. Gordon Wenham has noted that the historical and scientific questions that loom large in the modern reader's mind were at best secondary to the biblical writer's theological purpose. In Wenham's view, Genesis 1-11 is "an inspired retelling of ancient oriental traditions about the origins of the world," whose major purpose is to contrast the one, true omnipotent righteous God with the weak, fallible, and capricious deities who populated the ancient world.³¹

Henri Blocher has called attention to the fact that the language of scripture abounds in examples of mixed genre. Scripture can recount historical realities in

the categories of parable or allegory and express historical facts through images and symbols.³²

Almost a generation ago in his book Fundamentalism and the Word of God, J. I. Packer made the valuable observation that evangelical interpreters must draw distinctions between "...the subjects about which scripture speaks and the terms in which it speaks of them." The biblical writers spoke about the natural order in a language common to themselves and their contemporaries. Their concern is not primarily the inner structure of the physical world and men, but the relationship of both to God. In matters that transcend our ordinary human experience, such as the nature of human life before the fall, it is difficult to draw hard and fast lines between the literal and symbolic elements of the biblical narrative in Genesis 2 and 3.³³

In his 1967 commentary on Genesis Derek Kidner, at the time Warden of Tyndale House in Cambridge, suggested that the events surrounding the origins of the human race are described in scripture "in simplified pictorial form ...or are landmarks punctuating an immense tract of time."³⁴

The text of Genesis, in Kidner's view, does not preclude the possibility that God "...initially shaped man by a process of evolution" and that "a considerable stock of near-humans preceded the first true man."³⁵

In his 1970 commentary on Genesis Meredith Kline strongly insisted on the historical character of the events described in Gen. 1-11. He also drew attention to features of the narrative style of Genesis, such as the "...frequently topical rather than chronological arrangement of materials," the recognition of which can lead to fruitful approaches to questions of science and scripture such as the nature of the "days" in Genesis one.³⁶ Kline's "framework hypothesis," that the creation week of Genesis 1 is a literary framework for God's creative work, displaying a topical rather than chronological arrangement of the days, could be seen as consistent with the

hermeneutical approach of a "redemptive-historical model" being presented in this paper.³⁷

In a later statement of the "framework hypothesis" Kline has noted that such a hermeneutical approach "...does not discountenance the theory of the evolutionary origin of man."³⁸ Kline, while being open to theistic evolution as a possibility, insists on a historical Adam as the covenant head and ancestor of the human race.³⁹

The Proposal Specified

A more specific form of the "Adam as redemptive-historical model" hypothesis could be stated as follows: about 40-35,000 years before the present the crucial event of "hominization" occurs.⁴⁰ The Spirit of God in a special, unprecedented, and sudden intervention into the natural order brings anatomically modern Homo sapiens across the threshold to behaviorally (and religiously) modern Homo sapiens.⁴¹ The first subject of this "hominization" (cf. Gen. 2:7, "the breath of life; man became a living being") is (identified as) the biblical Adam; the second subject as the biblical Eve. The process of hominization is then rapidly extended by God to the other anatomically modern humans alive at this time. Adam is designated by God as the covenantal head and representative of the entire human race, all members of the species Homo sapiens. The first man is tempted in time, the fall occurs as a historical event,⁴² and Adam's sin is imputed not only to all subsequent humans (as in the "standard" model) but also immediately to all his contemporaries-to all "co-Adamites." It is argued here that this hermeneutic of the "redemptive-historical model" and the "co-Adamite" hypothesis can provide a workable framework for relating the paleoanthropological data to theologically

contemporaries
to

essential doctrines such as the unity of the human race, the historicity of the fall, and the universality of original sin.

Such a proposal is not unprecedented in twentieth century evangelical scholarship. As previously noted above, Derek Kidner in his 1967 Genesis commentary had suggested that if "...God initially shaped man by a process of evolution, it would follow that a considerable stock of near-humans preceded the first true man." God could have conferred the divine image on Adam's collaterals. Adam's federal headship would have then extended outwards to his contemporaries as well as onwards to his offspring, his disobedience being imputed to both alike.⁴³ Adam's sin would be imputed "horizontally" (or, "synchronically") to contemporary "co-Adamites" as well as "vertically" ("diachronically") to all descendants, so that the federal headship would result in a universal imputation of original sin.

As noted earlier,⁴⁴ the idea of "pre-Adamites" or "co-Adamites" has been suggested by interpreters of Genesis at various times in church history. Perhaps the earliest suggestion of this sort is found in Augustine's City of God. Augustine is aware of the pagan criticism that it seems unlikely that Cain would have built a city (Gen. 4:17) when there were presumably only four people upon the earth. He replies by saying that such criticisms fail to take into account "...that the writer of the sacred history does not necessarily mention all the men who might be alive at that time, but only those whom the scope of his work required him to name."⁴⁵ Augustine's use of the phrase "the scope of his work" indicates his awareness that the biblical narrative may be selective in the features it reports, consistent with its theological and spiritual rather than scientific purpose. It is noteworthy that Augustine, whose influence on the shaping of the doctrine of original sin has been monumental in Western Christianity,⁴⁶ apparently saw little or no theological difficulty in such a "co-Adamite" reading of the early chapter of Genesis. His

interpretation of Gen. 4 at this point seems quite compatible with the notion of "redemptive-historical model" being presented here.

The question arises as to whether this "co-Adamite" hypothesis is consistent with the unity of the human race in Adam presupposed in scripture. In his Areopagus speech the Apostle Paul states that "from one (εξ ἑνὸς)⁴⁷ he made every nation of men, that they should inhabit the whole earth" (Acts 17:26). The "one" referred to is clearly the biblical Adam.⁴⁸ Paul is here challenging any imagined justification for the belief that Greeks were inherently superior to barbarians.⁴⁹ The unity of the human race in one common ancestor cuts the root of racial pride and ethnocentrism.

Anthropologists today are in agreement that all living humans are in fact members of the single species Homo sapiens. From a strictly anthropological standpoint, the unity of the human race is not in question.⁵⁰ In relation to the "co-Adamite" hypothesis being proposed here, subsequent mixing of the gene pool could result in the sharing by all individuals today of genetic material inherited from the "primal parents" of the Genesis model.⁵¹ The process of gene mixing would insure anthropological unity;⁵² the process of "synchronic" and "diachronic" imputation would insure the theological unity of the race as the subjects of original sin.

The hermeneutical approach being proposed here must also take into account New Testament texts which refer to the chronological priority of Adam over Eve in the Genesis narrative. In the context of instructions for the proper ordering of worship in Ephesus, the Apostle Paul⁵³ writes that women should learn in a quiet and submissive manner, "For Adam was formed first, then Eve" (I Tim. 2:13), an obvious allusion to Gen. 2:7,22. In addressing similar issues in Corinth, Paul writes that it is appropriate for a woman to have her head covered during public

worship.⁵⁴ He appeals to the creation account, noting that "man did not come from woman, but woman from man" (I Cor. 11:8), an allusion to Gen. 2:21-23.

One possible approach to the question of chronological priority would be to construe I. Tim. 2:13 and I Cor. 11:8 merely as references to the narrative features of Genesis as a literary text, with no assertions intended concerning extra-textual realities. This hermeneutical approach is not advocated here. In Romans 5:12-21 it is clearly presupposed by the apostle Paul that Adam is a real historical individual like Moses and Christ.⁵⁵ Rather, it is proposed that the divinely directed process of "hominization" occurring within the "primal population," bringing anatomically modern Homo sapiens across the threshold to behaviorally (and religiously) modern Homo sapiens, first occurred with a "primal male" ("Adam"), and then with a "primal female" ("Eve"). God's creative act of "hominization" confers the image of God on anatomically modern humans. The chronological priority of the first man over the first woman asserted in Gen. 2., I Tim. 2:13, and I Cor. 11:8 is thus understood to have extra-textual reference to actual historical individuals.⁵⁶ The "redemptive-historical model" hermeneutic could be construed as a "neo-traditional" reading of the Genesis text.

In the hermeneutical model proposed here, the creation of Eve from the "rib" (or, "side"⁵⁷ of Adam is understood to be a metaphorical expression of the biblical ideal of marriage as a relationship characterized by harmony and intimacy between husband and wife. The woman is created to be man's counterpart, and not merely his property or a breeder of children, as in much of ancient Near Eastern culture.

This understanding of Gen. 2:21-23 is shared by a number of recent commentators. According to Gordon Wenham, "the whole account of women's creation has a poetic flavor: it is certainly mistaken to read it as an account of a clinical operation or as an attempt to explain some feature of man's anatomy."⁵⁸ Its

purpose is to depict the relationship of husband and wife as one of partnership and harmony.

The Jewish commentator U. Cassuto sees the account as "...an allegory of the relationship of the woman to her husband." The good wife stands at her husband's side to be his helper-counterpart, "and her soul is bound up with his."⁵⁹ Similarly, Nahum Sarna writes that the intimacy between husband and wife and the wife's indispensable role in her husband's life "...are symbolically described in terms of her creation out of his body." The "rib" taken from the man's side connotes physical union and companionship.⁶⁰

Such metaphorical understandings of Gen. 2:21-23 have some continuity with premodern Christian interpretation. As one would expect in a premodern era when relating Genesis to hominid fossils was not an issue, patristic commentators take the references to the "rib" literally. However, they do commonly see metaphorical or typological meanings in these references. Theophilus of Antioch sees in such a reference the divine intent that Adam and Eve's "mutual affection might be greater."⁶¹ Methodius of Olympus (260-312) suggests that Eve's creation from the side of Adam foreshadows the rapturous embraces of marital love.⁶² Tertullian writes that just as Adam was a type of Christ, so Adam's sleep is a type of the death of Christ, and Eve a type of the church.⁶³

In Augustine's earlier commentary on Genesis he allows that the reference to the "rib" may be figurative. If they were said or done figuratively, however, they have mystical and sacramental meanings.⁶⁴ In his later interpretation he takes the references to be literal, but with mystical meaning as well.⁶⁵

A larger issue raised by the present approach to the Genesis narrative might be called the question of the "domino effect." Would a modification of the traditional interpretation of Gen. 2-3 eventually lead, for example, to a weakening in the church's confidence in the historicity of the resurrection of Jesus? If the biblical

Adam is understood in terms of a "redemptive-historical model," why not Christ and his bodily resurrection? Such consequences do not follow, however, for the cases are quite dissimilar. In the case of the early chapters of Genesis, new empirical discoveries in astronomy and geology have forced believers to reconsider traditional ways of understanding the biblical text. Those who reject the bodily resurrection of Christ, so clearly attested in the New Testament (e.g., I Cor. 15:1-19) are, on the other hand, generally motivated to do so because of an a priori, metaphysical judgment that miracles do not occur. Church history demonstrates that the church has been able to incorporate new scientific information into its biblical interpretation on such matters as a heliocentric solar system, the "days" of Genesis 1, and the age of the earth without compromising its fundamental doctrines. These historical precedents would indicate that the church can also be successful in incorporating evidences from the hominid fossil record into its understanding of the biblical account of human origins.

Finally, it might be observed that the conceptuality of the "redemptive-historical model" differs from the original conceptual framework of the biblical writers. "Surely," it might be observed, "the apostle Paul did not think in terms of an Adam 30,000 years before the present who was part of a "primal population group."

At this point a distinction made by Charles Hodge in reference to the Copernican controversy is pertinent to present discussions concerning the antiquity and unity of the human race. We must distinguish, Hodge observed, "...between what the sacred writers themselves thought or believed, and what they teach. They may have believed that the sun moves round the earth, but they do not so teach."⁶⁶ As Hodge noted, the language of scripture is based on common-sense, observational language rather than abstract scientific description. The personal beliefs of the biblical writers on matters of cosmology or the natural world must be distinguished

from the theological teaching or substance that is the primary focus of such biblical references to natural matters. Biblical writers may presuppose and refer to the common cosmological notions of the day, but such references are incidental to their primary theological purpose. The concern of the biblical writers is, as J. I. Packer has noted, not with the inner structures of the world per se but with the relationship of such structures to God.⁶⁷

In the matter at hand, it is argued that the purpose of scripture is not to give an absolute chronology for the antiquity of the human race, or a scientific description of the physical processes involved in human origins, but rather to give a theological account, rooted in history, of man's relationship to God.

This proposal for viewing the early chapters of Genesis as "redemptive-historical model" is presented as an attempt to take seriously the accumulating empirical data of the hominid fossil record while preserving the fundamental biblical teachings concerning the historicity of the first parents of the human race, the historical nature of the fall, the universality of original sin, and the unity of the race. The reader is invited to test its empirical and theological adequacy.

This model is proposed with the conviction that the church never need fear new scientific discoveries, God being the author of both the book of nature and the book of scripture. It was with such a spirit of confidence and openness that Charles Hodge observed over a century ago, "It may cost the church a severe struggle to give up one interpretation and adopt another, as it did in the seventeenth century, but no real evil need be apprehended. The Bible has stood and still stands in the presence of the whole scientific world with its claims unshaken."⁶⁸

¹Davis A. Young, "The Antiquity and the Unity of the Human Race Revisited," Christian Scholar's Review 24:4 (1995) 380-396 at 381.

²Bernard Ramm, The Christian View of Science and Scripture (Grand Rapids: Eerdmans, 1954), p. 228.

³Ibid.

⁴See, for example, James M. Murk, "Evidence For a Late Pleistocene Creation of Man," Journal of the American Scientific Affiliation 17 (1965) 37-49; James O. Buswell, III, "Genesis, the Neolithic Age, and the Antiquity of Adam," Faith and Thought 96:1 (1967) 1-23; E. K. Victor Pearce, Who Was Adam? (Exeter, England: Paternoster, 1970), and "Proto-neolithic Adam and Recent Anthropology," Journal of the American Scientific Affiliation 23 (1971) 130-139; Paul H. Seely, "Adam and Anthropology: a Proposed Solution," Journal of the American Scientific Affiliation 22 (1970) 88-90.

⁵It is beyond the scope of this paper to review all the hominid fossil evidence. The empirical data is competently presented in works such as Michael H. Day, Guide to Fossil Man, 4th ed. (Chicago: University of Chicago Press, 1986); Richard G. Klein, The Human Career: Human Biological and Cultural Origins (Chicago: University of Chicago Press, 1989); Roger Lewin, Human Evolution: an Illustrated Introduction, 3rd ed. (Boston: Blackwell Scientific Publications, 1993); Ian Tattersall, The Fossil Trail (New York: Oxford University Press, 1995); John Reader, Missing Links: the Hunt for Earliest Man (New York: Penguin Books, 1988).

⁶Over two centuries later William Henry Green, Professor of Old Testament at Princeton Theological Seminary, in his classic article "Primeval Chronology," Bibliotheca Sacra 47 (1890) 285-303, argued convincingly that the genealogies of Genesis were not intended to be used and could not properly be used to construct a chronology, given their selective and abridged nature. Green's article was quite influential in enabling conservative interpreters to accommodate the book of Genesis to the educated consensus of an old earth that had become predominant since the publication of Charles Lyell's Principles of Geology (1830-33).

⁷Tattersall, op. cit., p. 8.

⁸On the work of de la Peyrère and the subsequent history of the "Preadamite" theory, see the valuable article by David N. Livingstone, "Preadamites: the History of an Idea From Heresy to Orthodoxy," Scottish Journal of Theology 40 (1987) 41-66.

⁹John C. Greene, The Death of Adam: Evolution and Its Impact on Western Thought (New York: Mentor, 1961), p. 99.

¹⁰The work of Cuvier, the "Father of vertebrate paleontology," culminated in his 1812 publication, Researches on the Fossil Bones of Quadrupeds; Donald K. Grayson, The Establishment of Human Antiquity (New York: Academic Press, 1983), p. 46. Grayson presents a definitive history of the series of events and discoveries that led to a consensus by 1860 among the educated in England and western Europe that humanity was very old.

¹¹Tattersall, op. cit., p. 13. The term "Neanderthal" (Homo neanderthalensis) was not coined until 1864, by the geologist William King.

¹²Grayson, op. cit., p. 182. Grayson points out that the scholarly acceptance of an "old humanity" was already under way prior to the 1859 publication of Darwin's Origin of Species and was not dependent on the acceptance of evolutionary theory: p. 211.

¹³Paul A. Erickson, The Origins of Physical Anthropology (Ann Arbor, MI: University Microfilms, 1974), p. 34. Erickson's study is a valuable treatment of the history of the development of scholarly thinking on matters of race and human origins in the nineteenth century.

¹⁴Charles Hodge, What is Darwinism? (New York: Scribner, Armstrong and Co., 1874).

¹⁵The openness of many orthodox evangelicals in the nineteenth century to the evolutionary paradigm has been well documented in James R. Moore, The Post-Darwinian Controversies (Cambridge: Cambridge University Press, 1979), and David N. Livingstone, Darwin's Forgotten Defenders: the Encounter Between Evangelical Theology and Evolutionary Thought (Grand Rapids: Eerdmans, 1987).

¹⁶Warfield, Review of God's Image in Man (1905), by James Orr, in Princeton Theological Review 4 (1906) 555-558 at 557. In his important article of 1911, "On the Antiquity and the Unity of the Human Race," Princeton Theological Review 9 (1911) 1-25 at 1, Warfield observed that "...'evolution' cannot act as a substitute for creation, but at best can supply a theory of the method of the Divine providence."

¹⁷James Orr, God's Image in Man and Its Defacement in the Light of Modern Denials (1905), reprinted (Grand Rapids: Eerdmans, 1948), pp. 95,96.

¹⁸A. H. Strong, Systematic Theology (Valley Forge, PA: Judson Press, 1907), p. 466.

¹⁹John C. Whitcomb, Jr. and Henry M. Morris, The Genesis Flood (Philadelphia: Presbyterian and Reformed, 1961).

²⁰For a definitive scholarly study of the origins and development of the "creation science" movement, see Ronald L. Numbers, The Creationists: the Evolution of Scientific Creationism (Berkeley, CA: University of California Press, 1992).

²¹See, for example, James M. Houston, "The Origin of Man," Journal of the American Scientific Affiliation 34:1 (1982) 1-5. For a history of the debates within the American Scientific Affiliation on creation and evolution, see Mark A. Kalthoff, ed., Creation and Evolution in the Early American Scientific Affiliation (New York: Garland Publishing, 1995). See also Jan Lever, Creation and Evolution, tr. from the Dutch by Peter Berkhout (Grand Rapids: Eerdmans, 1958), and Richard T. Wright, Biology Through the Eyes of Faith (San Francisco: Harper and Row, 1989).

²²The present discussion represents a revision of and further development of the writer's earlier essay, "Genesis, Inerrancy, and the Antiquity of Man," in Roger R. Nicole and J. Ramsey Michaels, eds., Inerrancy and Common Sense (Grand Rapids: Baker Book House, 1980), pp. 137-159.

²³Mary Hesse, "Models and Analogy in Science," Encyclopedia of Philosophy 5 (1967), pp. 354-358.

²⁴For a brief sketch of how physicists' models of the atom have changed over time, see Timothy Biel, "The Changing Picture of the Atom," in Atoms: Building Blocks of Matter (San Diego: Lucent Books, 1990), p. 47.

²⁵Hesse, op. cit., p. 354.

²⁶The focus in this essay is the biblical Adam in relation to the hominid fossil record. In a larger sense, Gen. 1-11 as a whole might arguably be considered under the rubric of a "redemptive-historical model.

²⁷For recent discussions of the concept of models in philosophy of religion see Ian G. Barbour, Myths, Models and Paradigms: a Comparative Study in Science and Religion (New York: Harper and Row, 1974), and Ian T. Ramsey, Models and Mystery (London: Oxford University Press, 1964). See also

Charles E. Hummel, The Galileo Connection: Resolving Conflicts Between Science and the Bible (Downers Grove, IL: Intervarsity Press, 1986), pp. 167,168.

²⁸For a concise review of recent biblical scholarship on Genesis 1-11, see J. Rogerson, Genesis 1-11 (Sheffield, England: Sheffield Academic Press, 1991), especially pp. 41-45, "Genesis 1-11 and Ancient Near Eastern Texts."

²⁹James M. Vosté, "A Response of the Biblical Commission," Catholic Biblical Quarterly 10 (1948) 321-323.

³⁰Eugene H. Maly, "Genesis," The Jerome Biblical Commentary (Englewood Cliffs, NJ: Prentice-Hall, 1968), p. 8. For other Roman Catholic scholarship on these Genesis narratives see also John L. McKenzie, "The Literary Characteristics of Genesis 2-3," Theological Studies 15 (1954) 541-572 [Gen. 1-11 as historical events presented in the form of "folklore" or "popular tradition"]; Henricus Renckens, Israel's Concept at the Beginning: the Theology of Genesis 1-3, tr. Charles Napier (New York: Herder and Herder, 1964 ["in him (Adam) the sacred author makes concrete...all that is most characteristic of the race as a whole. In this man, everything that man has ever been is as it were 'concentrated'", p. 258]; Bruce Vawter, On Genesis: a New Reading (Garden City, NY: Doubleday, 1977). For a review of Roman Catholic attempts to relate the biblical Adam and the doctrine of original sin to issues raised by the theory of evolution and the hominid fossil record see Zoltan Alszeghi, "Development in the Doctrinal Formulations of the Church Concerning the Theory of Evolution," Concilium 6:3 (1967) 14-17; Karl Rahner, "Evolution and Original Sin," Concilium 6:3 (1967) 30-35, and especially Karl Rahner, "Theological Reflections on Monogenism," in Theological Investigations, v. I, tr. Cornelius Ernst (Baltimore: Helicon Press, 1961), pp. 229-296. After reviewing church teaching, especially the 1950 papal encyclical Houmani Generis, Rahner concludes on p. 296 that "...a moderate theory of anthropological evolution, maintained simultaneously with monogenism" [the derivation of humanity from a single original human pair] does not theologically compromise the doctrine of original sin.

³¹Gordon J. Wenham, Genesis 1-15 (Waco, TX: Word Books, 1987), p. liii. On pp. xlvi-xlvii Wenham presents an extensive bibliography on the relationship of Gen. 1-11 to ancient Near Eastern literature.

³²Henri Blocher, In the Beginning: the Opening Chapter of Genesis, tr. David G. Preston (Downers Grove, IL: InterVarsity Press, 1984), p. 37. Blocher remains noncommittal on the question of relating the biblical Adam to the hominid fossil record: "When exactly ...mankind became mankind-the-image-of-God" seems to be a question "for which we at the moment have far too little scientific evidence to make any statement," p. 230.

³³J. I. Packer, Fundamentalism and the Word of God (London: InterVarsity Fellowship, 1958), pp. 96-98.

³⁴Derek Kidner, Genesis: an Introduction and Commentary (Chicago: InterVarsity Press, 1967), p. 27.

³⁵Ibid., p. 28. Kidner's language of historical events described in "simplified pictorial form" seems to be quite similar to the present writer's concept of a "redemptive-historical model."

³⁶Meredith G. Kline, "Genesis," The New Bible Commentary: Revised, D. Guthrie and J. A. Motyer, eds. (Grand Rapids: Eerdmans, 1970), p. 80.

³⁷Kline, "Space and Time in the Genesis Cosmogony," Perspectives on Science and Christian Faith (1995), forthcoming; p. 34, n. 47.

98:1 (1996) 2-15, n. 47.

³⁸Ibid.

³⁹Ibid.

⁴⁰This point in time marks the rapid, unprecedented "explosion" of art and symbolism associated with the Cro-Magnon level of culture. See Richard G. Klein, The Human Career: Human Biological and Cultural Origins (Chicago: University of Chicago Press, 1989), pp. 369-398; Ian Tattersall, The Human Odyssey (New York: Prentice-Hall, 1993), pp. 153-171; John Pfeiffer, The Creative Explosion (New York: Harper and Row, 1982); Randall White, Dark Caves, Bright Visions: Life in Ice Age Europe (New York: American Museum of Natural History, 1986).

⁴¹The paleoanthropological evidence appears to indicate that anatomically modern humans appeared (perhaps first in southern and east Africa) some 6,000 years before the behaviorally modern humans exemplified by the Cro-Magnons. See Klein, op. cit., and Tattersall, op. cit., n. 39 above.

⁴²This proposal attempts to preserve the historical nature of the fall, in contrast to Neo-orthodox understandings in this century, e.g., Karl Barth, Church Dogmatics III.1, The Doctrine of Creation (Edinburgh: T. & T. Clark, 1958), pp. 42ff. ("saga"); Emil Brunner, The Christian Doctrine of Creation and Redemption (Philadelphia: Westminster Press, 1952), pp. 46-88; Dietrich Bonhoeffer, Creation and Fall (New York: Macmillan, 1959); Reinhold Niebuhr, The Nature and Destiny of Man (New York: Charles Scribner's Sons, 1941), Vol. I, pp. 260ff.; Paul Tillich, Systematic Theology, Vol. II (Chicago: University of Chicago Press, 1967), pp. 39-44.

⁴³Kidner, op. cit., pp. 28,29.

⁴⁴See note 8 above.

⁴⁵Augustine, The City of God, tr. Marcus Dods (New York: Random House, 1950), xv. 8. While Augustine recognizes figurative meanings in the text of Genesis, he clearly understands Adam, Eve, Cain, Abel, and Seth as real historical individuals: The Literal Meaning of Genesis, tr. J. Taylor (New York: Newman Press, 1982), viii. 1.4. On the matter of "pre-Adamites," see also E. K. Victor Pearce, op. cit., note 4 above, and A. Rendle Short, The Bible and Modern Research, 2nd ed. (London: Marshall, Morgan & Scott, 1933), p. 33: "There might conceivably have been pre-Adamite creatures with the body and mind of a man, but not the spirit and capacity for God and eternity. If so, certain obscure references in Genesis become clearer. The old problem as to where Cain got his wife might be solved, also the strange references to the sons of God marrying the daughters of men (Gen. vi. 2)."

⁴⁶On the history of the doctrine of original sin, see N. P. Williams, The Ideas of the Fall and of Original Sin (London: Longmans, Green, and Co., 1927), esp. pp. 165-391, on the Augustinian view, and Henri Rondet, Original Sin: the Patristic and Theological Background, tr. Cajetan Finegan (Staten Island, NY: Alba House, 1972), pp. 25-132. For the history of interpretation of the biblical narrative of paradise and the fall see the valuable treatment of Joseph Feldmann, Paradies und Sündenfall (Münster: Aschendorffsche Verlagsbuchhandlung, 1913), pp. 501-605.

⁴⁷Some "Western" manuscripts (D, E, syriac, others) read "one blood" (), but the shorter reading is followed here. For discussion of the textual question see Bruce M. Metzger, A Textual Commentary on the Greek New Testament (United Bible Societies, 1971), p. 456.

⁴⁸There is general agreement among commentators on this point, e.g.: Hans Conzelmann, Acts of the Apostles, tr. James Limburg, et. al. (Philadelphia: Fortress Press, 1987), p. 142; R. P. C. Hanson, The

Acts (Oxford: Oxford University Press, 1967), 180; Ernst Haenchen, The Acts of the Apostles (Philadelphia: Westminster Press, 1971), p. 523.

⁴⁹F. F. Bruce writes in his commentary on this text, "The Athenians might pride themselves on being autochthonous-sprung from the soil of their native Attica-but this pride was ill founded...neither in nature nor in grace...is there any room for ideas of racial superiority": Commentary on the Book of Acts (Grand Rapids: Eerdmans, 1954), pp. 357,358. J. van Seters has noted that the Greek traditions "...do not derive all of mankind from a single source or common human pair at the beginning of time... The Greek tradition of origins...seems to focus more on the origins of particular states, tribes and peoples than on mankind in general": van Seters, "The Primeval Histories of Greece and Israel Compared," Zeitschrift fur die Alttestamentliche Wissenschaft 100 (1988) 1-22 at 2. See also W. K. C. Guthrie, In the Beginning: Some Greek Views on the Origins of Life and the Early State of Man (London: Methuen, 1957).

⁵⁰This has not always been the case. In the nineteenth century polygenism-the notion that existing races had separate origins rather than a single common ancestor-was quite popular. See Paul A Erickson, The Origins of Physical Anthropology (1974), note 13 above.

⁵¹Interestingly, genetic studies of human mitochondrial DNA (transmitted only through the mother) in the 1980s were said to indicate that all modern humans could trace their ancestry to a woman who lived about 200,000 years ago, probably in Africa: an "African Eve": see Mark Stoneking and Rebecca L. Cann, "African Origin of Human Mitochondrial DNA," in Paul Mellars and Chris Stringer, eds., The Human Revolution: Behavioural and Biological Perspectives on the Origins of Modern Humans (Princeton: Princeton University Press, 1989), pp. 62-108, and Allan C. Wilson and Rebecca L. Cann, "The Recent African Genesis of Humans," Scientific American, April 1992, pp. 68-83. The presumed "African Eve" is understood to have been part of a larger population of perhaps 10,000 archaic humans: see Roger Lewin, "Mitochondrial Eve," Human Evolution: an Illustrated Introduction (1993), pp. 155-161 at 157.

⁵²The statement in Gen. 3:20 that "Eve...would become the mother of all the living" would be understood in a similar light. Through subsequent mixing of the gene pool, genes from the "primal mother" within the "primal population" ("co-Adamites") would actually come to be shared by all modern humans.

⁵³Pauline authorship is here assumed. It is beyond the scope of this paper to address questions concerning the ordination of women related to I Tim. 2:11-15. Recent evangelical discussion includes Richard and Catherine Kroeger, I Suffer Not a Woman (Grand Rapids: Baker, 1994) [egalitarian], and H. Scott Baldwin, et. al., eds., Women in the Church (Grand Rapids: Baker, 1995) [traditional].

⁵⁴On the matter of "head covering" in Corinth, see the helpful article by James B. Hurley, "Did Paul Require Veils or the Silence of Women? A Consideration of I Corinthians 11:2-16 and I Corinthians 14:33-36," Westminster Theological Journal 5 (Winter 1973) 190-220.

⁵⁵On the theological significance of the historicity of the biblical Adam, see D. A. Carson, "Adam in the Epistles of Paul," in N. M. de S. Cameron, ed., In the Beginning: a Symposium on the Bible and Creation (Glasgow: Biblical Creation Society, 1980), pp. 28-43, responding to C. K. Barrett, From First Adam to Last (London: Adam & Charles Black, 1962), and other recent literature. For treatments of the biblical Adam in later Jewish and Christian tradition, see John R. Levison, Portraits of Adam in Early Judaism: from Sirach to Z Baruch (Sheffield, England: Sheffield Academic Press, 1988), and Michael E. Stone, A History of the Literature of Adam and Eve (Atlanta: Scholars Press, 1992).

⁵⁶The Adam of Romans 5:12-21, I Tim. 2:13, and I Cor. 11:8 is understood as referring to an actual historical individual, and not merely to a "teaching model," as in H. M. Kuitert, Do You Understand What You Read? tr. Lewis B. Smedes (Grand Rapids: Eerdmans, 1970), pp. 40-43. For a critical analysis of Kuitert, see J. P. Versteeg, Is Adam a 'Teaching Model' in the New Testament? tr. Richard B. Gaffin, Jr. (Nutley, NJ: Presbyterian and Reformed, 1978).

⁵⁷Hamilton argues that "side" is a better translation of the Hebrew seta, citing its usage in Ex. 25:12,14; 37:3,5 (side or shell of the ark of the covenant); Ex. 26:20; 36:25 (side of a building); Ezek. 41:5-8 ("side chamber, arcade, cell"). "Gen. 2:21 is the only place in the OT where the modern versions render this word as 'rib': Victor P. Hamilton, The Book of Genesis: Chapters 1-17 (Grand Rapids: Eerdmans, 1990), p. 178.

⁵⁸Wenham, op. cit., p. 69. Derek Kidner, op. cit., notes that "the woman is presented wholly as his partner and counterpart; nothing is yet said of her as childbearer. She is valued for herself alone," p. 65.

⁵⁹U. Cassuto, A Commentary on the Book of Genesis, Part I (Jerusalem: Magnes Press, 1944; 1961), p. 134.

⁶⁰Nahum M. Sarna, The JPS Torah Commentary: Genesis (Philadelphia: Jewish Publication Society, 1989), p. 22.

⁶¹To Autolytus, xxviii. Theophilus is writing in the second century.

⁶²Banquet of the Ten Virgins, II.

⁶³Treatise on the Soul, xliii. Following in this tradition, Aquinas' answer to the question "Whether Woman Should Have Been Made From Man?" is that "by this is signified that the church takes her origin from Christ," Summa Theologica Pt. 1, Q. 92, Art. 2.

⁶⁴Genesis Defended Against the Manicheans [A.D. 389], 2,12,17.

⁶⁵Literal Interpretation of Genesis, 9,15,26. Cf. Homilies on John, 9,10: "Adam sleeps that Eve may be formed; Christ dies that the church may be formed." St. Ephrem the Syrian (309-373), Commentary on Genesis, sect. II, 12,13 and Chrysostom, Homilies on Genesis, Homily 15,11 also take the reference to "rib" to be literal.

⁶⁶Charles Hodge, Systematic Theology, vol. I (Grand Rapids: Eerdmans, 1975); 1871-73), p. 170. Hodge goes on to say that scripture "...was for ages understood and explained according to the Ptolemaic system of the universe; it is now explained without doing the least violence to its language, according to the Copernican system," p. 171. For a penetrating analysis of the hermeneutical issues in the Galileo controversy, see Richard J. Blackwell, Galileo, Bellarmine, and the Bible (Notre Dame, IN: University of Notre Dame Press, 1991).

⁶⁷Packer, op. cit., p. 97, n. 2.

⁶⁸Hodge, op. cit., p. 171.