

THE 'FALL OF MAN' AND ANTHROPOLOGY

By Andrew Dickson White

[This is a chapter from the book A History of the Warfare of Science with Theology in Christendom. Volume: 1. Andrew Dickson White - author. Publisher: D. Appleton and Company. Place of Publication: New York. Publication Year: 1914. Page Number: 284. The book is available on Questia.com. Some of the text has been highlighted by the AI Islam eGazette Editor]

IN the previous chapters we have seen how science, especially within the eighteenth and nineteenth centuries, has thoroughly changed the intelligent thought of the world in regard to the antiquity of man upon our planet; and how the fabric built upon the chronological indications in our sacred books--first, by the early fathers of the Church, afterward by the medieval doctors, and finally by the reformers and modern orthodox chronologists--has virtually disappeared before an entirely different view forced upon us, especially by Egyptian and Assyrian studies, as well as by geology and archeology.

In this chapter I purpose to present some outlines of the work of Anthropology, especially as assisted by Ethnology, in showing what the evolution of human civilization has been.

Here, too, the change from the old theological view based upon the letter of our sacred books to the modern scientific view based upon evidence absolutely irrefragable is complete. Here, too, we are at the beginning of a vast change in the basis and modes of thought upon man--a change even more striking than that accomplished by Copernicus and Galileo, when they substituted for a universe in which sun and planets revolved about the earth a universe in which the earth is but the merest grain or atom revolving with other worlds, larger and smaller, about the sun; and all these forming but one among innumerable systems.

Ever since the beginning of man's effective thinking upon the great problems around him, two antagonistic views have existed regarding the life of the human race upon earth.

The first of these is the belief that man was created 'in the beginning' a perfect being, endowed with the highest moral and intellectual powers, but that there came a 'fall,' and, as its result, the entrance into the world of evil, toil, sorrow, and death.

Nothing could be more natural than such an explanation of the existence of evil, in times when men saw everywhere miracle and nowhere law. It is, under such circumstances, by far the most easy of explanations, for it is in accordance with the appearances of things: men adopted it just as naturally as they adopted the theory that the Almighty hangs up the stars as lights in the solid firmament above

the earth, or hides the sun behind a mountain at night, or wheels the planets around the earth, or flings comets as 'signs and wonders' to scare a wicked world, or allows evil spirits to control thunder, lightning, and storm, and to cause diseases of body and mind, or opens the 'windows of heaven' to let down 'the waters that be above the heavens,' and thus to give rain upon the earth. A belief, then, in a primeval period of innocence and perfection--moral, intellectual, and physical--from which men for some fault fell, is perfectly in accordance with what we should expect.

Among the earliest known records of our race we find this view taking shape in the Chaldean legends of war between the gods, and of a fall of man; both of which seemed necessary to explain the existence of evil.

In Greek mythology perhaps the best-known statement was made by Hesiod: to him it was revealed, regarding the men of the most ancient times, that they were at first 'a golden race,' that 'as gods they were wont to live, with a life void of care, without labor and trouble; nor was wretched old age at all impending; but ever did they delight themselves out of the reach of all ills, and they died as if overcome by sleep; all blessings were theirs: of its own will the fruitful field would bear them fruit, much and ample, and they gladly used to reap the labors of their hands in quietness along with many good things, being rich in flocks and true to the blessed gods.' But there came a 'fall,' caused by human curiosity. Pandora, the first woman created, received a vase which, by divine command, was to remain closed; but she was tempted to open it, and troubles, sorrow, and disease escaped into the world, hope alone remaining.

So, too, in Roman mythological poetry the well-known picture by Ovid is but one among the many exhibitions of this same belief in a primeval golden age--a Saturnian cycle; one of the constantly recurring attempts, so universal and so natural in the early history of man, to account for the existence of evil, care, and toil on earth by explanatory myths and legends.

This view, growing out of the myths, legends, and theologies of earlier peoples, we also find embodied in the sacred tradition of the Jews, and especially in one of the documents which form the impressive poem beginning the books attributed to Moses. As to the Christian Church, no word of its Blessed Founder indicates that it was committed by him to this theory, or that he even thought it worthy of his attention. How, like so many other dogmas never dreamed of by Jesus of Nazareth and those who knew him best, it was developed, it does not lie within the province of this chapter to point out; nor is it worth our while to dwell upon its evolution in the early Church, in the Middle Ages, at the Reformation, and in various branches of the Protestant Church: suffice it that, though among English-speaking nations by far the most important influence in its favor has come from Milton's inspiration rather than from that of older sacred books, no doctrine has been more universally accepted, 'always, everywhere, and by all,' from the earliest fathers of the Church down to the present hour.

On the other hand appeared at an early period the opposite view--that mankind, instead of having fallen from a high intellectual, moral, and religious condition, has slowly risen from low and brutal beginnings. In Greece, among the philosophers contemporary with Socrates, we find Critias depicting a rise of man, from a time when he was beastlike and lawless, through a period when laws were developed, to a time when morality received enforcement from religion; but among all the statements of this theory the most noteworthy is that given by Lucretius in his great poem on *The Nature of Things of Things*. Despite its errors, it remains among the most remarkable examples of prophetic insight in the history of our race. The inspiration of Lucretius gave him almost miraculous glimpses of truth; his view of the development of civilization from the rudest beginnings to the height of its achievements is a wonderful growth, rooted in observation and thought, branching forth into a multitude of striking facts and fancies; and among these is the statement regarding the sequence of inventions:

'Man's earliest arms were fingers, teeth, and nails,
And stones and fragments from the branching woods;
Then copper next; and last, as latest traced,
The tyrant, iron.'

Thus did the poet prophesy one of the most fruitful achievements of modern science: the discovery of that series of epochs which has been so carefully studied in our century.

Very striking, also, is the statement of Horace, though his idea is evidently derived from Lucretius. He dwells upon man's first condition on earth as low and bestial, and pictures him lurking in caves, progressing from the use of his fists and nails, first to clubs, then to arms which he had learned to forge, and, finally, to the invention of the names of things, to literature, and to laws.¹

¹ For the passage in Hesiod, as given, see the *Works and Days*, lines 109-120, in Banks's translation. As to Horace, see the *Satires*, i, 3, 99. As to the relation of the poetic account of the Fall in Genesis to Chaldean myths, see Smith, *Chaldean Account of Genesis*, pp. 13, 17. For a very instructive separation of the Jehovistic and Elohist parts of Genesis, with the account of the 'Fall' as given in the former, see Lenormant, *La Génèse*, Paris, 1883, pp. 166-168; also Bacon, *Genesis of Genesis*. Of the lines of Lucretius--

*'Arma antiqua, manus, unguis, dentesque fuerunt,
Et lapides, et item sylvarum fragmina rami,
Posterius ferri vis est, aerisque reperta,
Sed prior aeris erat, quam ferri cognitus'--*

the translation given is that of Good. For a more exact prose translation, see Munro's *Lucretius*, fourth edition, which is much more careful, at least in the proof-reading, than the first edition. As regards Lucretius's prophetic insight into some of the greatest conclusions of modern science, see Munro translation and notes, fourth edition, book v, notes ii, p. 335. On the relation of several passages in Horace to the ideas of Lucretius, see Munro as above. For the passage from Luther, see the *Table Talk*, Hazlitt translation, p. 242.

During the medieval ages of faith this view was almost entirely obscured, and at the Reformation it seemed likely to remain so. Typical of the simplicity of belief in 'the Fall' cherished among the Reformers is Luther's declaration regarding Adam and Eve. He tells us, 'they entered into the garden about noon, and having a desire to eat, she took the apple; then came the fall--according to our account at about two o'clock.' But in the revival of learning the old eclipsed truth reappeared, and in the first part of the seventeenth century we find that, among the crimes for which Vanini was sentenced at Toulouse to have his tongue torn out and to be burned alive, was his belief that there is a gradation extending upward from the lowest to the highest form of created beings.

Yet, in the same century, the writings of Bodin, Bacon, Descartes, and Pascal were evidently undermining the old idea of 'the Fall.' Bodin especially, brilliant as were his services to orthodoxy, argued lucidly against the doctrine of general human deterioration.

Early in the eighteenth century Vico presented the philosophy of history as an upward movement of man out of animalism and barbarism. This idea took firm hold upon human thought, and in the following centuries such men as Lessing and Turgot gave new force to it.

The investigations of the last forty years have shown that Lucretius and Horace were inspired prophets: what they saw by the exercise of reason illumined by poetic genius, has been now thoroughly based upon facts carefully ascertained and arranged--until **Thomsen and Nilsson, the northern archaeologists, have brought these prophecies to evident fulfillment, by presenting a scientific classification dividing the age of prehistoric man in various parts of the world between an old stone period, a new stone period, a period of beaten copper, a period of bronze, and a period of iron, and arraying vast masses of facts from all parts of the world, fitting thoroughly into each other, strengthening each other, and showing beyond a doubt that, instead of a fall, there has been a rise of man, from the earliest indications in the Quaternary, or even, possibly, in the Tertiary period.**²

The first blow at the fully developed doctrine of 'the Fall' came, as we have seen, from geology. According to that doctrine, as held quite generally from its beginnings among the fathers and doctors of the primitive Church down to its culmination in the minds of great Protestants like John Wesley, the statement in

² For Vanini, see Topinard, *Éléments d'Anthropologie*, p. 52. For a brief and careful summary of the agency of Eccard in Germany, Goguet in France, Hoare in England, and others in various parts of Europe, as regards this development of the scientific view during the eighteenth century, see Mortillet, *Le Préhistorique*, Paris, 1885, chap. i. For the agency of Bodin, Bacon, Descartes, and Pascal, see Flint, *Philosophy of History*, introduction, pp. 28*et seq.* For a shorter summary, see Lubbock, *Prehistoric Man*. For the statements by the northern archaeologists, see Nilsson, Worsaae, and the other main works cited in this article. For a generous statement regarding the great services of the Danish archæologists in this field, see Quatrefages, introduction to Cartailhac, *Les Ages Préhistoriques de l'Espagne et du Portugal*.

our sacred books that 'death entered the world by sin' was taken as a historic fact, necessitating the conclusion that, before the serpent persuaded Eve to eat of the forbidden fruit, death on our planet was unknown. Naturally, when geology revealed, in the strata of a period long before the coming of man on earth, a vast multitude of carnivorous tribes fitted to destroy their fellow--creatures on land and sea, and within the fossilized skeletons of many of these the partially digested remains of animals, this doctrine was too heavy to be carried, and it was quietly dropped.

But about the middle of the nineteenth century the doctrine of the rise of man as opposed to the doctrine of his 'fall' received a great accession of strength from a source most unexpected. As we saw in the last chapter, the facts proving the great antiquity of man foreshadowed a new and even more remarkable idea regarding him. We saw, it is true, that the opponents of Boucher de Perthes, while they could not deny his discovery of human implements in the drift, were successful in securing a verdict of 'Not proven' as regarded his discovery of human bones; but their triumph was short-lived. Many previous discoveries, little thought of up to that time, began to be studied, and others were added which resulted not merely in confirming the truth regarding the antiquity of man, but in establishing another doctrine which the opponents of science regarded with vastly greater dislike--the doctrine that **man has not fallen from an original high estate in which he was created about six thousand years ago, but that, from a period vastly earlier than any warranted by the sacred chronologists, he has been, in spite of lapses and deteriorations, rising.**

A brief review of this new growth of truth may be useful. As early as 1835 Prof. Jaeger had brought out from a quantity of Quaternary remains dug up long before at Cannstadt, near Stuttgart, a portion of a human skull, apparently of very low type. A battle raged about it for a time, but this finally subsided, owing to uncertainties arising from the circumstances of the discovery.

In 1856, in the Neanderthal, near Düsseldorf, among Quaternary remains gathered on the floor of a grotto, another skull was found bearing the same evidence of a low human type. As in the case of the Cannstadt skull, this again was fiercely debated, and finally the questions regarding it were allowed to remain in suspense. But new discoveries were made: at Eguisheim, at Brux, at Spy, and elsewhere, human skulls were found of a similarly low type; and, while each of the earlier discoveries was open to debate, and either, had no other been discovered, might have been considered an abnormal specimen, the combination of all these showed conclusively that not only had a race of men existed at that remote period, but that it was of a type as low as the lowest, perhaps below the lowest, now known.

Research was now redoubled, and, as a result, human skulls and complete skeletons of various types began to be discovered in the ancient deposits of

many other parts of the world, and especially in France, Belgium, Germany, the Caucasus, Africa, and North and South America.

But soon began to emerge from all these discoveries a fact of enormous importance. The skulls and bones found at Cro Magnon, Solutée, Furfooz, Grenelle, and elsewhere, were compared, and it was thus made certain, that various races had already appeared and lived in various grades of civilization, even in those exceedingly remote epochs; that even then there were various strata of humanity ranging from races of a very low to those of a very high type; and that upon any theory--certainly upon the theory of the origin of mankind from a single pair--two things were evident: first, that long, slow processes during vast periods of time must have been required for the differentiation of these races, and for the evolution of man up to the point where the better specimens show him, certainly in the early Quaternary and perhaps in the Tertiary period; and, secondly, that there had been from the first appearance of man, of which we have any traces, an *upward* tendency.³

This second conclusion, the upward tendency of man from low beginnings, was made more and more clear by bringing into relations with these remains of human bodies and of extinct animals the remains of human handiwork. As stated in the last chapter, the river drift and bone caves in Great Britain, France, and other parts of the world, revealed a progression, even in the various divisions of the earliest Stone period; for, beginning at the very lowest strata of these remains, on the floors of the caverns, associated mainly with the bones of extinct animals, such as the cave bear, the hairy elephant, and the like, were the rudest implements; then, in strata above these, sealed in the stalagmite of the cavern floors, lying with the bones of animals extinct but more recent, stone implements were found, still rude, but, as a rule, of an improved type; and, finally, in a still higher stratum, associated with bones of animals like the reindeer and bison, which, though not extinct, have departed to other climates, were rude stone implements, on the whole of a still better workmanship. Such was the foreshadowing, even at that early rude Stone period, of the proofs that the tendency of man has been from his earliest epoch and in all parts of the world, as a rule, upward.

³ For Wesley's statement of the amazing consequences of the entrance of death into the world by sin, see citations from his sermon on *The Fall of Man* in the chapter on Geology. For Boucher de Perthes, see his *Life by Ledieu*, especially chapters v and xix; also letters in the appendix; also *Les Antiquités Celtiques et Antédiluviennes*, as cited in previous chapters of this work. For an account of the Neanderthal man and other remains mentioned, see *Quatrefages, Human Species*, chap. xxvi; also *Mortillet, Le Préhistorique*, Paris, 1885, pp. 232 et seq.: also other writers cited in this chapter. For the other discoveries mentioned, see the same sources. For an engraving of the skull and the restored human face of the Neanderthal man, see *Reinach, Antiquités Nationales*, etc., vol. i, p. 138. For the vast regions over which that early race spread, see *Quatrefages* as above, p. 307. See also the same author, *Histoire Générale des Races Humaines*, in the *Bibliothèque Ethnologique*, Paris, 1887, p. 4. In the vast mass of literature bearing on this subject, see *Quatrefages, Dupont, Reinach, Joly, Mortillet, Tylor, and Lubbock*, in works cited through these chapters.

But this rule was to be much further exemplified. About 1850, while the French and English geologists were working more especially among the relics of the drift and cave periods, noted archeologists of the North--Forchammer, Steenstrup, and Worsø--were devoting themselves to the investigation of certain remains upon the Danish Peninsula. These remains were of two kinds: first, there were vast shell-heaps or accumulations of shells and other refuse cast aside by rude tribes which at some unknown age in the past lived on the shores of the Baltic, principally on shellfish. That these shell-heaps were very ancient was evident: the shells of oysters and the like found in them were far larger than any now found on those coasts; their size, so far from being like that of the corresponding varieties which now exist in the brackish waters of the Baltic, was in every case like that of those varieties which only thrive in the waters of the open salt sea. Here was a clear indication that at the time when man formed these shell-heaps those coasts were in far more direct communication with the salt sea than at present, and that sufficient time must have elapsed since that period to have wrought enormous changes in sea and land throughout those regions.

Scattered through these heaps were found indications of a grade of civilization when man still used implements of stone, but implements and weapons which, though still rude, showed a progress from those of the drift and early cave period, some of them being of polished stone. With these were other evidences that civilization had progressed. With implements rude enough to have survived from early periods, other implements never known in the drift and bone caves began to appear, and, though there were few if any bones of other domestic animals, the remains of dogs were found; everything showed that there had been a progress in civilization between the former Stone epoch and this.

The second series of discoveries in Scandinavia was made in the peat-beds: these were generally formed in hollows or bowls varying in depth from ten to thirty feet, and a section of them, like a section of the deposits in the bone caverns, showed a gradual evolution of human culture. The lower strata in these great bowls were found to be made up chiefly of mosses and various plants matted together with the trunks of fallen trees, sometimes of very large diameter; and the botanical examination of the lowest layer of these trees and plants in the various bowls revealed a most important fact: for this layer, the first in point of time, was always of the Scotch fir--which now grows nowhere in the Danish islands, and can not be made to grow anywhere in them--and of plants which are now extinct in these regions, but have retreated within the arctic circle. Coming up from the bottom of these great bowls there was found above the first layer a second, in which were matted together masses of oak trees of different varieties; these, too, were relics of a bygone epoch, since the oak has almost entirely disappeared from Denmark. Above these came a third stratum made up of fallen beech trees; and the beech is now, and has been since the beginning of recorded history, the most common tree of the Danish Peninsula.

Now came a second fact of the utmost importance as connected with the first. Scattered, as a rule, through the lower of these deposits, that of the extinct fir trees and plants, were found implements and weapons of smooth stone; in the layer of oak trees were found implements of bronze; and among the layer of beeches were found implements and weapons of iron.

The general result of these investigations in these two sources, the shell mounds and the peat deposits, was the same: the first civilization evidenced in them was marked by the use of stone implements more or less smooth, showing a progress from the earlier rude Stone period made known by the bone caves; then came a later progress to a higher civilization, marked by the use of bronze implements; and, finally, a still higher development when iron began to be used.

The labors of the Danish archaeologists have resulted in the formation of a great museum at Copenhagen, and on the specimens they have found, coupled with those of the drift and bone caves, is based the classification between the main periods or divisions in the evolution of the human race above referred to.

It was not merely in Scandinavian lands that these results were reached; substantially the same discoveries were made in Ireland and France, in Sardinia and Portugal, in Japan and in Brazil, in Cuba and in the United States; in fact, as a rule, in nearly every part of the world which was thoroughly examined.⁴

But from another quarter came a yet more striking indication of this same evolution. As far back as the year 1829 there were discovered, in the Lake of Zurich, piles and other antiquities indicating a former existence of human dwellings, standing in the water at some distance from the shore; but the usual mixture of thoughtlessness and dread of new ideas seems to have prevailed, and nothing was done until about 1853, when new discoveries of the same kind were followed up vigorously, and Rüttimeyer, Keller, Troy on, and others showed not only in the Lake of Zurich, but in many other lakes in Switzerland, remains of former habitations, and, in the midst of these, great numbers of relics, exhibiting the grade of civilization which those lake-dwellers had attained.

⁴ For the general subject, see Mortillet, *Le Périhistorique*, p. 498, *et passim*. For examples of the rude stone implements, improving as we go from earlier to later layers in the bone caves, see Boyd Dawkins, *Early Man in Britain*, chap. vii, p. 186; also Quatrefages, *Human Species*, New York, 1879, pp. 305 *et seq.* An interesting gleam of light is thrown on the subject in De Baye, *Grottes Préhistoriques de la Marne*, pp. 31 *et seq.*; also Evans, as cited in the previous chapter. For the more recent investigations in the Danish shell-heaps, see Boyd Dawkins, *Early Man in Britain*, pp. 303, 304. For these evidences of advanced civilization in the shell-heaps, see Mortillet, p. 498. He, like Nilsson, says that only the bones of the dog were found; but compare Dawkins, p. 305. For the very full list of these discoveries, with their bearing on each other, see Mortillet, p. 499. As to those in Scandinavian countries, see Nilsson, *The Primitive Inhabitants of Scandinavia*, third edition, with Introduction by Lubbock, London, 1868; also the *Pre-History of the North*, by Worsaae, English translation, London, 1886. For shell-mounds and their contents in the Spanish Peninsula, see Cartailhac's greater work already cited. For summary of such discoveries throughout the world, see Mortillet, *Le Préhistorique*, pp. 497 *et seq.*

Here, too, were accumulated proofs of the upward tendency of the human race. Implements of polished stone, bone, leather, pottery of various grades, woven cloth, bones of several kinds of domestic animals, various sorts of grain, bread which had been preserved by charring, and a multitude of evidences of progress never found among the earlier, ruder relics of civilization, showed yet more strongly that man had arrived here at a still higher stage than his predecessor of the drift, cave, and shell-heap periods, and had gone on from better to better.

Very striking evidences of this upward tendency were found in each class of implements. As by comparing the chipped flint implements of the lower and earlier strata in the cave period with those of the later and upper strata we saw progress, so, in each of the periods of polished stone, bronze, and iron, we see, by similar comparisons, a steady progress from rude to perfected implements; and especially is this true in the remains of the various lake-dwellings, for among these can be traced out constant increase in the variety of animals domesticated, and gradual improvements in means of subsistence and in ways of living.

Incidentally, too, a fact, at first sight of small account, but on reflection exceedingly important, was revealed. The earlier bronze implements were frequently found to imitate in various minor respects implements of stone; in other words, forms were at first given to bronze implements natural in working stone, but not natural in working bronze. This showed the *direction* of the development--that it was upward from stone to bronze, not downward from bronze to stone; that it was progress rather than decline.

These investigations were supplemented by similar researches elsewhere. In many other parts of the world it was found that lake-dwellers had existed in different grades of civilization, but all within a certain range, intermediate between the cave-dwellers and the historic period. To explain this epoch of the lake-dwellers History came in with the account given by Herodotus of the lake-dwellings on Lake Prasias, which gave protection from the armies of Persia. Still more important, Comparative Ethnography showed that to-day, in various parts of the world, especially in New Guinea and West Africa, races of men are living in lake-dwellings built upon piles, and with a range of implements and weapons strikingly like many of those discovered in these ancient lake deposits of Switzerland.

In Great Britain, France, Germany, Italy, Ireland, Scotland, and other countries, remains of a different sort were also found, throwing light on this progress. The cromlechs, cranogs, mounds, and the like, though some of them indicate the work of weaker tribes pressed upon by stronger, show, as a rule, the same upward tendency.

At a very early period in the history of these discoveries, various attempts were made--nominally in the interest of religion, but really in the interest of sundry

creeds and catechisms framed when men knew little or nothing of natural laws--to break the force of such evidences of the progress and development of the human race from lower to higher. Out of all the earlier efforts two may be taken as fairly typical, for they exhibit the opposition to science as developed under two different schools of theology, each working in its own way. The first of these shows great ingenuity and learning, and is presented by Mr. Southall in his book, published in 1875, entitled *The Recent Origin of the World*. In this he grapples first of all with the difficulties presented by the early date of Egyptian civilization, and the keynote of his argument is the statement made by an eminent Egyptologist, at a period before modern archeological discoveries were well understood, that 'Egypt laughs the idea of a rude Stone age, a polished Stone age, a Bronze age, an Iron age, to scorn.'

Mr. Southall's method was substantially that of the late excellent Mr. Gosse in geology. Mr. Gosse, as the readers of this work may remember, felt obliged, in the supposed interest of Genesis, to urge that safety to men's souls might be found in believing that, six thousand years ago, the Almighty, for some inscrutable purpose, suddenly set Niagara pouring very near the spot where it is pouring now; laid the various strata, and sprinkled the fossils through them like plums through a pudding; scratched the glacial grooves upon the rocks, and did a vast multitude of things, subtle and cunning, little and great, in all parts of the world, required to delude geologists of modern times into the conviction that all these things were the result of a steady progress through long epochs. On a similar plan, Mr. Southall proposed, at the very beginning of his book, as a final solution of the problem, the declaration that Egypt, with its high civilization in the time of Mena, with its races, classes, institutions, arrangements, language, monuments--all indicating an evolution through a vast previous history--was a sudden creation which came fully made from the hands of the Creator. To use his own words, 'The Egyptians had no Stone age, and were, born civilized.'

There is an old story that once on a time a certain jovial King of France, making a progress through his kingdom, was received at the gates of a provincial town by the mayor's deputy, who began his speech on this wise: 'May it please your Majesty, there are just thirteen reasons why His Honor the Mayor can not be present to welcome you this morning. The first of these reasons is that he is dead.' On this the king graciously declared that this first reason was sufficient, and that he would not trouble the mayor's deputy for the twelve others.

So with Mr. Southall's argument: one simple result of scientific research out of many is all that it is needful to state, and this is, that in these later years we have a new and convincing evidence of the existence of prehistoric man in Egypt in his earliest, rudest beginnings; the very same evidence which we find in all other parts of the world which have been carefully examined. This evidence consists of stone implements and weapons which have been found in Egypt in such forms, at such points, and in such positions that when studied in connection with those found in all other parts of the world, from New Jersey to California, from France

to India, and from England to the Andaman Islands, they force upon us the conviction that civilization in Egypt, as in all other parts of the world, was developed by the same slow process of evolution from the rudest beginnings.

It is true that men learned in Egyptology had discouraged the idea of an earlier Stone age in Egypt, and that among these were Lepsius and Brugsch; but these men were not trained in prehistoric archeology; their devotion to the study of the monuments of Egyptian civilization had evidently drawn them away from sympathy, and indeed from acquaintance, with the work of men like Boucher de Perthes, Lartet, Nilsson, Troyon, and Dawkins. But a new era was beginning. In 1867 Worsaae called attention to the prehistoric implements found on the borders of Egypt; two years later Arcelin discussed such stone implements found beneath the soil of Sakkara and Gizeh, the very focus of the earliest Egyptian civilization; in the same year Hamy and Lenormant found such implements washed out from the depths higher up the Nile at Thebes, near the tombs of the kings; and in the following year they exhibited more flint implements found at various other places. Coupled with these discoveries was the fact that Horner and Linant found a copper knife at twenty-four feet, and pottery at sixty feet, below the surface. In 1872 Dr. Reil, director of the baths at Helouan, near Cairo, discovered implements of chipped flint; and in 1877 Dr. Jukes Brown made similar discoveries in that region. In 1878 Oscar Fraas, summing up the question, showed that the stone implements were mainly such as are found in the prehistoric deposits of other countries, and that, Zittel having found them in the Libyan Desert, far from the oases, there was reason to suppose that these implements were used before the region became a desert and before Egypt was civilized. Two years later Dr. Mook, of Würzburg, published a work giving the results of his investigations, with careful drawings of the rude stone implements discovered by him in the upper Nile Valley, and it was evident that, while some of these implements differed slightly from those before known, the great mass of them were of the character so common in the prehistoric deposits of other parts of the world.

A yet more important contribution to this mass of facts was made by Prof. Henry Haynes, of Boston, who in the winter of 1877 and 1878 began a very thorough investigation of the subject, and discovered, a few miles east of Cairo, many flint implements. The significance of Haynes's discoveries was twofold: First, there were, among these, stone axes like those found in the French drift beds of St. Acheul, showing that the men who made or taught men how to make these in Egypt were passing through the same phase of savagery as that of Quaternary France; secondly, he found a workshop for making these implements, proving that these flint implements were not brought into Egypt by invaders, but were made to meet the necessities of the country. From this first field Prof. Haynes went to Helouan, north of Cairo, and there found, as Dr. Reil had done, various worked flints, some of them like those discovered by M. Rivière in the caves of southern France; thence he went up the Nile to Luxor, the site of ancient Thebes, began a thorough search in the Tertiary limestone hills,

and found multitudes of chipped stone implements, some of them, indeed, of original forms, but most of forms common in other parts of the world under similar circumstances, some of the chipped stone axes corresponding closely to those found in the drift beds of northern France.

All this seemed to show conclusively that, long ages before the earliest period of Egyptian civilization of which the monuments of the first dynasties give us any trace, mankind in the Nile Valley was going through the same slow progress from the period when, standing just above the brutes, he defended himself with implements of rudely chipped stone.

But in 1881 came discoveries which settled the question entirely. In that year General Pitt-Rivers, a Fellow of the Royal Society and President of the Anthropological Institute, and J. F. Campbell, Fellow of the Royal Geographical Society of England, found implements not only in alluvial deposits, associated with the bones of the zebra, hyena, and other animals which have since retreated farther south, but, at Djebel Assas, near Thebes, they found implements of chipped flint in the hard, stratified gravel, from six and a half to ten feet below the surface; relics evidently, as Mr. Campbell says, 'beyond calculation older than the oldest Egyptian temples and tombs.' They certainly proved that Egyptian civilization had not issued in its completeness, and all at once, from the hand of the Creator in the time of Mena. Nor was this all. Investigators of the highest character and ability--men like Hull and Flinders Petrie--revealed geological changes in Egypt requiring enormous periods of time, and traces of man's handiwork dating from a period when the waters in the Nile Valley extended hundreds of feet above the present level. Thus was ended the contention of Mr. Southall.

Still another attack upon the new scientific conclusions came from France, when in 1883 the Abbé Hamard, Priest of the Oratory, published his *Age of Stone and Primitive Man*. He had been especially vexed at the arrangement of prehistoric implements by periods at the Paris Exposition of 1878; he bitterly complains of this as having an anti-Christian tendency, and rails at science as 'the idol of the day.' He attacks Mortillet, one of the leaders in French archeology, with a great display of contempt; speaks of the 'venom' in books on prehistoric man generally; complains that the Church is too mild and gentle with such monstrous doctrines; bewails the concessions made to science by some eminent preachers; and foretells his own martyrdom at the hands of men of science.

Efforts like this accomplished little, and a more legitimate attempt was made to resist the conclusions of archaeology by showing that knives of stone were used in obedience to a sacred ritual in Egypt for embalming, and in Judea for circumcision, and that these flint knives might have had this later origin. But the argument against the conclusions drawn from this view was triple: First, as we have seen, not only stone knives, but axes and other implements of stone similar to those of a prehistoric period in western Europe were discovered;

secondly, these implements were discovered in the hard gravel drift of a period evidently far earlier than that of Mena; and, thirdly, the use of stone implements in Egyptian and Jewish sacred functions within the historic period, so far from weakening the force of the arguments for the long and slow development of Egyptian civilization from the men who used rude flint implements to the men who built and adorned the great temples of the early dynasties, is really an argument in favor of that long evolution. A study of comparative ethnology has made it clear that the sacred stone knives and implements of the Egyptian and Jewish priestly ritual were natural survivals of that previous period. For sacrificial or ritual purposes, the knife of stone was considered more sacred than the knife of bronze or iron, simply because it was ancient; just as to-day, in India, Brahman priests kindle the sacred fire not with matches or flint and steel, but by a process found in the earliest, lowest stages of human culture--by violently boring a pointed stick into another piece of wood until a spark comes; and just as to-day, in Europe and America, the architecture of the Middle Ages survives as a special religious form in the erection of our most recent churches, and to such an extent that thousands on thousands of us feel that we can not worship fitly unless in the midst of windows, decorations, vessels, implements, vestments, and ornaments, no longer used for other purposes, but which have survived in sundry branches of the Christian Church, and derived a special sanctity from the fact that they are of ancient origin.

Taking, then, the whole mass of testimony together, even though a plausible or very strong argument against single evidences may be made here and there, the force of its combined mass remains, and leaves both the vast antiquity of man and the evolution of civilization from its lowest to its highest forms, as proved by the prehistoric remains of Egypt and so many other countries in all parts of the world, beyond a reasonable doubt. Most important of all, the recent discoveries in Assyria have thrown a new light upon the evolution of the dogma of 'the fall of man.' Reverent scholars like George Smith, Sayce, Delitzsch, Jensen, Schrader, and their compeers have found in the Ninevite records the undoubted source of that form of the fall legend which was adopted by the Hebrews and by them transmitted to Christianity.⁵

⁵ For Mr. Southall views, see his *Recent Origin of Man*, p. 20, and elsewhere. For Mr. Gosse views, see his *Omphalos* as cited in the chapter on Geology in this work. For a summary of the work of Arcelin, Hamy, Lenormant, Richard, Lubbock, Mook, and Haynes, see Mortillet, *Le Préhistorique*, passim. As to Zittel's discovery, see Oscar Fraas *Aus dem Orient*, Stuttgart, 1878. As to the striking similarities of the stone implements found in Egypt with those found in the drift and bone caves, see Mook's monograph, Würzburg, 1880, cited in the next chapter, especially Plates IX, XI, XII. For even more striking reproductions of photographs showing this remarkable similarity between Egyptian and European chipped stone remains, see H. W. Haynes, *Paleolithic Implements in Upper Egypt*, Boston, 1881. See also Evans, *Ancient Stone Implements*, chap. i, pp. 8, 9, 44, 102, 316, 329. As to stone implements used by priests of Jehovah, priests Baal, priests of Moloch, priests of Odin, and Egyptian priests, as religious survivals, see Cartailhac, as above, 6 and 7; also Lartet, in De Luynes, *Expedition to the Dead Sea*; also Nilsson, *Primitive Inhabitants of Scandinavia*, pp. 96, 97; also Sayce, *Herodotus*, p. 171, note. For the discoveries

by Pitt-Rivers, see the *Journal of the Anthropological Institute of Great Britain and Ireland* for 1882, vol. xi, pp. 382 et seq.; and for Campbell's decision regarding them, see *ibid.*, pp. 396, 397. For facts summed up in the words, 'It is most probable that Egypt at a remote period passed like many other countries through its stone period,' see Hilton Price, 'F. S. A., F. G. S.', paper in the *Journal of the Archaeological Institute of Great Britain and Ireland* for 1884, p. 56. Specimens of Paleolithic implements from Egypt --knives, arrowheads, spearheads, flakes, and the like, both of peculiar and ordinary forms--may be seen in various museums, but especially in that of Prof. Haynes, of Boston. Some interesting light is also thrown into the subject by the specimens obtained by General Wilson and deposited in the Smithsonian Institution at Washington. For the Abbé Hamard attack, see his *L'Age de la Pierre et l'Homme Primitif*, Paris, 1883--especially his preface. For the stone weapon found in the high drift behind Esneh, see Flinders Petrie, *History of Egypt*, chap. i. Of these discoveries by Pitt-Rivers and others Maspero appears to know nothing.