



The evidence presented by the ancient maps appears to suggest the existence in remote times, before the rise of any of the known cultures, of a true civilization, of a comparatively advanced sort, which either was localized in one area but had worldwide commerce, or was, in a real sense, a *worldwide* culture. This culture, at least in some respects, may well have been more advanced than the civilizations of Egypt, Babylonia, Greece, and Rome. In astronomy, nautical science, mapmaking and possibly ship-building, it was perhaps more advanced than any state of culture before the 18th Century of the Christian Era. It was in the 18th Century that we first developed a practical means of finding longitude. It was in the 18th Century that we first accurately measured the circumference of the earth. Not until the 19th Century did we begin to send out ships for purposes of whaling or exploration into the Arctic or Antarctic Seas. The maps indicate that some ancient people may have done all these things.

Mapping on such a scale as this suggests both economic motivations and economic resources. Organized government is indicated. The mapping of a continent like Antarctica implies much organization, many exploring expeditions, many stages in the compilation of local observations and local maps into a general map, all under a central direction. Furthermore, it is unlikely that navigation and mapmaking were the only sciences developed by this people, or that the application of mathematics to cartography was the only practical application they made of their mathematical knowledge.

Whatever its attainments may have been, however, this civilization disappeared, perhaps suddenly, more likely by gradual stages. Its disappearance has implications we ought to consider seriously. If I may be permitted a little philosophizing, I would like to suggest that there are four principal conclusions to which we are led.

1. The idea of the simple linear development of society from the culture of the paleolithic (Old Stone Age) through the successive stages of the neolithic (New Stone Age), Bronze, and Iron Ages must be given up. Today we find primitive

cultures co-existing with advanced modern society on all the continents—the Bushmen of Australia, the Bushmen of South Africa, truly primitive peoples in South America, and in New Guinea; some tribal peoples in the United States. We shall now assume that, some 20,000 or more years ago, while paleolithic peoples held out in Europe, more advanced cultures existed elsewhere on the earth, and that we have inherited a part of what they once possessed, passed down from people to people.

2. Every culture contains the seeds of its own disintegration. At every moment forces of progress and of decay co-exist, building up or tearing down. All too evidently the destructive forces have often gained the upper hand; witness such known cases as the extinctions of the high cultures of ancient Crete, Troy, Babylon, Greece, and Rome, to which it would be easy to add twenty others. And, it is worth noting that Crete and Troy were long considered myths.

3. Every civilization seems eventually to develop a technology sufficient for its own destruction, and hitherto has made use of the same. There is nothing magical about this. As soon as men learned to build walls for defense, other men learned how to tear them down. The vaster the achievements of a civilization, the farther it spreads, the greater must be the engines of destruction; and so today, to counter the modern worldwide spread of civilization, we have atomic means to destroy all life on earth. Simple. Logical.

4. The more advanced the culture, the more easily it will be destroyed, and the less evidence will remain. Take New York. Suppose it was destroyed by a hydrogen bomb. After some 2,000 years, how much of its life could anthropologists reconstruct? Even if quite a few books survived, it would be quite impossible to reconstruct the mental life of New York.

When I was a youth I had a plain simple faith in progress. It seemed to me impossible that once man had passed a milestone of progress in one way that he could ever pass the same milestone again the *other* way. Once the telephone was invented it would stay invented. If past civilizations had faded away it was just because they had not learned the secret of progress. But Science meant *permanent* progress, with no going back, and each generation was pressing on further and further, rolling back the frontiers of the unknown. This process would go on forever.

Most people still feel this way, even in spite of two world wars, and the threat of universal annihilation in a third. The two world wars shook the faith of many in progress, but even without the very sad story of the century we live in, there never was any good basis for the belief that progress is an automatic process. Progress or decline in civilization is just a balance sheet between what the human race creates in a given period and what it destroys. Sometimes for a while our race creates more than it destroys, and there is "progress"; then for a while it destroys more effectively—more scientifically, let us say—than it creates, and we

have decline. Compare, for example, the time it took for saturation bombing by the American and British Air Forces in World War II to destroy most of the cities of Germany, including golden Dresden, and its priceless heritage of medieval architecture, with the time it took to build those cities. Think of the destruction, in one instant, by American bombers, of the oldest monastery in the West, the Abbey of Monte Cassino.

But the sad story of destruction, whereby man destroys almost as much as he creates (even in the best of times), does not begin with the 20th Century. Consider the question of libraries. There is something particularly upsetting about the burning of a library. Somehow it symbolizes the whole process. The ancient world of Rome and Greece had many libraries. The most famous of these was the Library of Alexandria, founded in Egypt by Alexander the Great three centuries before the Christian Era. Five hundred years later it is said to have contained about one million volumes, and into it was gathered the entire knowledge of the ancient western world—the technology, the science, the literature, and the historical records.

This library, the heritage of untold ages, was burned. The details are not very well known, but we think there were at least three burnings. The first happened when Julius Caesar captured Alexandria. The citizens resisted him, and in the battle about a third of the Library was destroyed. Caesar is said to have called a public meeting of the citizens and lectured them, sadistically accusing them of being guilty of the destruction—because they had resisted him! In his view Rome had a perfect right to conquer Egypt, and so the Alexandrians were guilty of misconduct in resisting him. This is the way people still think today.

There is evidence that most of the library—restored and enormously enlarged after the time of Julius Caesar—was destroyed by a Christian mob, inflamed by the preaching of a fanatical bishop, who pointed out to them—rightly, of course—that the library was no more than a repository of heathen teachings, and therefore a veritable timebomb, ticking away, preparing an explosion that could wreck the Christian world. But how can we afford to point the finger at the ignorant mob? We have had our book-burnings in the 20th Century. And I don't refer only to Hitler's infamous Burning of the Books. The libraries of America are combed relentlessly by gimlet-eyed agents of various self-appointed saviors of morality and religion. The books just disappear off the shelves! Thousands of them, every year! And, of course, American libraries have recently been the particular objects of anti-American mobs in several countries. (59, 100, 159, 189, 205)

The final chapter in the destruction of the Library of Alexandria was a burning carried out by the Arabs after their conquest of Egypt in the 7th Century. There are two stories. According to one, the conquering Caliph said, on being asked what to do with the library, that anything in it contrary to Islamic teaching should be destroyed, and everything else was in the Koran already. The library was therefore entirely destroyed (100:95-97). The other version is that the hot,

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dusty, dirty Arab legions, just out of the desert, found the enormous Roman baths of the capital city ready for use, but out of fuel for heating the water, and that the parchments from the library furnished the fuel. Sad as this reason for the destruction was, it was at least morally more justifiable than the others.

The Romans were guilty of another destruction of a library, which is important for our story. In the year 146 B.C. they burned the great city of Carthage, their ancient enemy and their incalculable superior in everything relating to science. The library of Carthage is said to have contained about 500,000 volumes, and these no doubt dealt with the history and the sciences of Phoenicia as a whole.

If the reader asks, how much of the total of ancient knowledge was lost by these and innumerable other acts of destruction, we will say 90 per cent or more. A few facts may give him a general idea. The most famous scientist of ancient times was Aristotle; his thought dominated the world for fifteen hundred years. He wrote many works, and it might be thought that these works, at least, would have been preserved from destruction. Not so. Only one work of his survives, the *Constitution of Athens*. All his other so-called "works" are only edited and re-edited versions of his students' notes. As I think of the kind of notes most of my students take in lectures, I shudder through and through, and wonder how much of Aristotle's real thought really does survive. Furthermore, Aristotle wrote many literary works that were considered marvels of style. All of these are lost.

Plato is an equally famous figure in the history of civilization. His dialogues, including his great *Republic*, have survived. But how many know that these were only his *popular* works? Every one of those he regarded as his serious scientific and technical works has been lost. With the great Greek tragedians, Aeschylus, Euripides, Sophocles, the story is the same. We possess only a handful—about 10 per cent—of the plays they wrote.

What we have, then, of ancient cultural products is only a sample and not necessarily a representative sample either. On the contrary, whole aspects of ancient culture have been consigned to oblivion. What fragments we have come from books considered of value to the people who dominated the Church and State in the centuries after the dissolution of the ancient civilization. The churchmen were interested in moral questions; the educated laymen—mostly aristocrats—continued to devote themselves to the great classics of arts and literature. Science, however, was neglected.

But if it is true that we have lost so much, still we have preserved much more than some people suppose. When I began this work I was aware of no definite evidence for the existence of an ancient advanced world civilization, though I was aware that others believed it had existed. Now that I have found, in the maps, evidence I accept as decisive in answering this question in the affirmative, I see additional evidence on every hand.

The reader will quite naturally wonder how, if once a great civilization existed over most of the earth, it could disappear leaving no traces except these maps?

For an answer to this we must cite one of the best known principles of human psychology: *We find what we look for*. I do not mean by this that we never find anything by accident. But rather, we usually overlook, neglect, and pass by facts unless we have a motive to notice them. It was Darwin who said that to make new discoveries one had to have a theory (not a fixed dogmatic theory, of course, but an *experimental* hypothesis). With the theory of evolution people began to look in new directions, and they found new facts, by the thousands, which supported and verified the theory. The same thing had happened a half-century before with the geological theory of Sir Charles Lyell. It happened in the beginning of modern astronomy, when Copernicus proposed a new theory of the solar system. Hitherto people have not seriously believed that an advanced civilization could have preceded the civilizations now known to us. The evidences have been, therefore, neglected.

But if we take a glance at the history of archaeological research in the 19th Century we see that it consists mainly of the rediscovery of lost civilizations. Jaquetta Hawkes, in her fascinating anthology of the writings of some of the principal archaeologists of all periods (86), devotes a section to "Lost Civilizations."

The story begins in Mesopotamia, about 1811, when Claudius Rich began the rediscovery of Babylon. It continued with Paul Emile Botta, Henry Layard, and Henry Rawlinson who brought Assyria back into history. Egypt came back into history after Champollion solved the problem of Egyptian hieroglyphics, and in the fourth quarter of the century, Schliemann brought Troy out of the mists of legend, and Sir Arthur Evans gave substance to the myths of Crete. More recently still an advanced culture, with strangely modern luxuries, that flourished on the banks of the Indus River 5,000 years ago has joined the ranks of lost civilizations rediscovered.

But is this all? Is the process at an end? Are no more lost civilizations waiting to be discovered? It would be contrary to history itself if this were the case. Unimaginative people made fun of all these discoveries in turn and often hounded the discoverers. The same sort of person today accepts all that has been discovered in the past, but denies there is anything more to be discovered.

Let us start our review of the evidences with Egypt. Scholars are in disagreement about the particular achievements of the Egyptians in science, but they are in good agreement about some particular aspects of them. Egyptian knowledge of astronomy and geometry as early as the Fourth Dynasty has been shown to be remarkable. The Egyptians had a double calendar which has been described as "the most scientific combination of calendars that has yet been used by man" (77:7). This calendar system may have been in use as early as 4241 B.C. One historian of science writes:

It may be, as some indeed suspect, that the science we see at the dawn of recorded history was not science at its dawn but represents the remnants of the science of some great and as yet untraced civilization. (77:12)



Some of the scientific knowledge possessed by ancient peoples can hardly be accounted for in view of the crudeness of the scientific instruments they are supposed to have possessed. The Mayans, for example, are supposed to have measured the length of the tropical year with incredible precision. Their figure was 365.2420 days, as against our figure of 365.2423 days. They are also supposed to have measured the length of a lunation, with an error of less than .0004 of a day (10:150). How did they achieve these results?

George Rawlinson, in a discussion of Babylonian science, made the statement: "The exact length of the Chaldean year is said to have been 365 days, 6 hours, and 11 minutes, which is an excess of two seconds only over the true length of the sidereal year" (173:II,576). He also remarked, "There is said to be distinct evidence that they [the Chaldeans] observed the four satellites of Jupiter and strong reason to believe that they were acquainted likewise with the seven satellites of Saturn. . . ." (173:II,577)

This knowledge may, of course, have been derived by the Mayans, the Babylonians, the Egyptians by the use of instruments or methods of which we know nothing. But it is at least possible that such knowledge came to them as a heritage from the same ancient unknown people who made our maps.

The fact that vast areas of ancient science have remained unknown to us has recently been revealed in startling fashion by the discovery of a computer designed and built in ancient times. It was found by divers in 1901 in the wreck of a Greek galley that had been sunk off the Greek island of Antikythera in the 1st Century B.C. Transported to the National Museum at Athens, and carefully cleaned over a long period of time, it was finally examined by Professor Derek de Solla Price of Yale. He found it to be a planetarium, a machine to show the risings and settings of the known planets, and therefore very complicated. But what was particularly astonishing about it was the sophistication of the gearing system, which, Dr. Price said, was essentially modern.

It is obvious, of course, that if this great tradition of technical and mechanical knowledge was lost to history, the same could well have happened to geographical and cartographical knowledge possessed by the Greeks, whether discovered by them or inherited from older peoples.

Perhaps it should be noted here in passing that the loss of ancient scientific knowledge was not confined to the period of the fall of ancient civilization. The Arabs preserved much of it, and much of it was undoubtedly passed on to medieval Europe. Perhaps we hear echoes of some of it in the remarkable mechanical ideas of the medieval monk Roger Bacon, or even in some of the ideas of Leonardo da Vinci. A considerable loss seems to have occurred in the Renaissance itself. This was partly because of the invention of printing. The printing presses in the 15th and 16th Centuries were monopolized by two classes of books: religious tracts (Catholic and Protestant), and humanist books dealing with arts and letters. Science was of very little interest at the time, and scientific manuscripts just lay

about and were allowed to rot away. Lord Francis Bacon is supposed to have drawn attention to this deplorable neglect of scientific documents.

I am aware of a good many other indications of this kind, scattered all over the world, suggesting the ancient tradition of an advanced culture, but as yet their investigation is so incomplete that there is no point in mentioning them.<sup>1</sup> There is one matter, however, which I cannot forbear to mention, despite its rather controversial character, because I did investigate it myself.

Just outside Mexico City there is a round step pyramid, which, long ago, was swamped by lava from a volcano not far off. This is the pyramid of Cuicuilco. The pyramid is not a mere mound, but a complex stone structure reflecting a comparatively advanced society. The lava flow swirled around three sides of the pyramid and covered about sixty square miles of territory to a depth of from five to thirty feet. The layer of volcanic rock thus formed is called the Pedrigal.

Geologists who examined the Pedrigal and tried to estimate, by the condition of its surface and the amount of loose sediment accumulated over it, how long ago it was formed, came up with a figure of about 7,000 years. This would have meant that the Mexican pyramid was older by far than the pyramids of Egypt, the oldest of which date back about 5,000 years. Archaeologists could not accept this, and generally took the view that the pyramid probably dated no earlier than the 7th or 8th Centuries A.D. The development of the new technique of radiocarbon dating after World War II threw new light on this question.

Radiocarbon dating was developed by the nuclear scientist Willard F. Libby, of the University of Chicago. It was based on the discovery that a very small percentage of the carbon contained in the carbon dioxide of the atmosphere is radioactive, and, like all radioactive substances, loses mass at a measurable rate. Radioactive carbon (Carbon 14) radiates away half its mass in about 5,000 years. All living things taking carbon dioxide from the air will, during their lifetimes, contain the same percentage of radiocarbon as the atmosphere, but after their death any new supply from the atmosphere is cut off, while the amount already absorbed continues to decay. After a time the percentage of radiocarbon in the body of the plant or animal will be less than that in the atmosphere, and by accurately measuring the difference it becomes possible to determine the lapse of time since the death of the plant or animal. This gives us a method of "absolute dating" for archaeological and geological materials. Despite many complexities, it is regarded as generally dependable, within a certain margin of error, for the period of the last forty thousand years.

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<sup>1</sup> Two recent developments of great interest have provided new evidence of scientific achievements in what we refer to as the Stone Ages. One consists of evidence of the use of an advanced lunar calendar as far back as 35,000 years ago (133), and the other is the discovery, by the use of a computer, that the builders of Stonehenge were really good astronomers. (87-88)



The first radiocarbon date for the Cuicuilco Pyramid was found by Dr. Libby (124). He used a sample of charcoal found under the Pedrigal in direct association with pottery fragments similar in style to the pottery of the known "Archaic Period" of the Indian civilization of Mexico. The result was a finding of an age of 2,422 years, with a margin of error of 250 years either way. It appeared from this that the carbon came from a tree that died or was destroyed some time between 209 B.C. and 709 B.C. It was not certain, however, that this dated the lava flow, for the charcoal was not directly associated with the lava. The wood might have been burned by humans (perhaps for cooking) sometime before the lava flow. But the position of the charcoal directly under the lava suggested that no great period of time may have elapsed between the burning of the wood and the lava flow.

Additional radiocarbon dates subsequently amplified our information on Cuicuilco. Between 1957 and 1962 a number of samples of charcoal, collected from different depths beneath the Pedrigal, were dated in the radiocarbon laboratory of the University of Southern California (UCLA).<sup>2</sup> One of these samples was directly associated with the lava, and gave an age of about 414 A.D., but was considered by the archaeologists, in the light of other evidence, to be probably about 200 years older. The consensus of specialists was that the flow probably occurred about 200 A.D.

This would appear at first to demolish the claim that the pyramid was very old. It would appear that it might have been built by the same people who built the other pyramids near Mexico City. There is, however, another aspect of the matter which would appear to have been overlooked. It seems that the archaeologists who have discussed the date of Cuicuilco have not, in some cases, attentively read the text of the report made by the man who excavated the pyramid for the Government of Mexico in 1920. He was Byron S. Cummings, an American archaeologist.<sup>3</sup>

Cummings dug down through the Pedrigal, below which he found a stratum of earth with fragments of pottery and figurines of the Archaic culture. He then dug further. At the bottom of the Archaic layer he found a deposit of volcanic ash. He extended his excavation down through the ash, and below it found evidences of an entirely different culture, one that must have preceded the Archaic. He considered that the evidence of the pottery and figurines here showed a level of culture higher than the Archaic, but unconnected with it. As he sank his trenches

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<sup>2</sup> "Radiocarbon," Supplement of the American Journal of Science, Vol. 5, pp. 12-13, and Vol. 6, pp. 332-334.

<sup>3</sup> Cummings was assisted in his excavation of the pyramid by Dr. Manuel Gamio and by Jose Ortiz of the "Direccion de Anthropologia," the anthropology office of the Mexican Government. Funds were provided by the National Geographic Society of Washington, D.C. Cummings' report was published in 1933 by the University of Arizona Press, Tucson (56).

deeper, he came to the bottom of this layer, and to another layer of volcanic ash. He dug through this, and came upon another layer of artifacts—fragments of pottery and figurines. These resembled those in the second layer, but they were cruder. Finally, at a depth of eighteen feet, Cummings came upon a pavement that had surrounded the Pyramid of Cuicuilco and which had evidently been built when the pyramid was built.

Cummings made an estimate of the time required to accumulate the eighteen feet of sediment between the underside of the Pedrigal and the temple pavement. He estimated, first, the age of the Pedrigal lava flow at 2,000 years, and here came very close to the truth. Then he measured the thickness of the sediments that have accumulated on the top of the Pedrigal since it was formed, and used this as a measuring stick to estimate the time required to accumulate the sediments below. He came to an estimate of 6,500 years for the time required to accumulate these eighteen feet of sediments.

In answer to the argument that the rate of accumulation of the sediments may have been different and more rapid in the period before the eruption of the volcano, Cummings pointed out that a great lapse of time was clearly indicated by the nature of the sediments themselves. The three culture layers are separated by two layers of volcanic ash, and over each layer of ash is a thick layer of sterile soil, with no indication of vegetation. In each case the development of a new layer of humus-rich top soil over the sterile layer probably took time on the order of centuries, and only after this process was completed did a new layer of artifacts appear. The evidence, according to Cummings, suggested that, first, the pyramid was abandoned, for some reason, by the people who built it; then, much later, a crude people with crude pots and tools occupied the region around the pyramid. After a lapse of time, an eruption of one or more of the neighboring volcanoes eliminated the occupation, depositing a layer of volcanic ash. A further considerable period elapsed, new top soil was formed, and the area was again occupied, this time by an advanced people whose artifacts suggested they were the descendants of the people preceding them. A process of cultural development would appear to have taken place in some other region perhaps nearby. Again, after a considerable time, another eruption of the volcanoes seems to have eliminated this advanced culture, and this time resulted in a complete culture break, for the third people to occupy the region, those of the Archaic culture, appear to have had no connection with their predecessors. Only after all these things had taken place was the Pedrigal formed.

A check on Cummings' estimate of 6,500 years, for the time required to accumulate all the sediments, is provided by the radiocarbon samples referred to above. They were taken at various depths below the Pedrigal, though at a distance of about 1,000 feet from the pyramid. They all consisted of charcoal. Arranged in the order of depth below the lava, their approximate dates were as follows:

Table A: Cuicuilco Radiocarbon Dates

<i>Sample Numbers</i>	<i>Depth (Approx.)</i>	<i>Age</i>	<i>Margin (± Yrs.)</i>
UCLA-228, Cuicuilco A-2	Associated with lava	414 A.D.	65
UCLA-205, Cuicuilco B-1	4 ft. 6 in.	160 A.D.	75
UCLA-206, Cuicuilco B-2	7 ft. 6 in.	15 A.D.	80
UCLA-602, Cuicuilco B-17	7 ft. 6 in.	240 B.C.*	80
UCLA-208, Cuicuilco B-4	7 ft. 8 in.	150 B.C.	150
UCLA-603, Cuicuilco B-18	7 ft. 11 in.	280 B.C.	80
UCLA-207, Cuicuilco B-3	8 ft. 1 in.	650 B.C.*	70
UCLA-209, Cuicuilco B-5	8 ft. 8 in.	350 B.C.	70
UCLA-594, Cuicuilco B-9	14 ft. 3 in.	610 B.C.	80
UCLA-210, Cuicuilco B-6	15 ft. 0 in.	2030 B.C.*	60
UCLA-595, Cuicuilco B-10	15 ft. 0 in.	540 B.C.	100
UCLA-596, Cuicuilco B-11	15 ft. 4 in.	610 B.C.	100
UCLA-597, Cuicuilco B-12	16 ft. 8 in.	1870 B.C.	100
UCLA-598, Cuicuilco B-13	16 ft. 8 in.	1870 B.C.	100
UCLA-211, Cuicuilco B-7	17 ft. 6 in.	4765 B.C.*	90
UCLA-212, Cuicuilco B-8	19 ft. 0 in.	2100 B.C.	75
UCLA-600, Cuicuilco B-15	20 ft. 8 in.	1980 B.C.	100
UCLA-599, Cuicuilco B-14	21 ft. 6 in.	1900 B.C.	200
UCLA-601, Cuicuilco B-16	21 ft. 6 in.	2160 B.C.	120

\* Samples UCLA-602, 207, 210, and 211 anomalous.

If we disregard the samples out of chronological order (UCLA-602, 207, 210, 211), which suggest disturbances in the sediments through digging operations (or other causes) in ancient times, and compare the accumulation of sediments with the lapse of time between each pair of consecutive samples, we find there are very wide variations in the rate of accumulation.

**Table B: Rate of Sedimentation**

<i>Sample Numbers</i>	<i>Accumulation</i>	<i>Time</i>	<i>Rate (Approx.)</i>
UCLA-228, 205	4 ft. 6 in.	254 yrs.	1':56 yrs.
UCLA-205, 206	3 ft. 0 in.	145 yrs.	1':48 yrs.
UCLA-206, 208	0 ft. 2 in.	165 yrs.	1':990 yrs.
UCLA-208, 603	0 ft. 3 in.	130 yrs.	1':520 yrs.
UCLA-603, 209	0 ft. 9 in.	70 yrs.	1':93 yrs.
UCLA-209, 594	5 ft. 7 in.	260 yrs.	1':48 yrs.
UCLA-594, 596	1 ft. 1 in.	00	0:00
UCLA-596, 597	1 ft. 4 in.	1,260 yrs.	1':948 yrs.
UCLA-597, 212	2 ft. 4 in.	230 yrs.	1':100 yrs.
UCLA-212, 601	2 ft. 6 in.	60 yrs.	1':25 yrs.

If we accept the dates of 414 A.D. and 2160 B.C. for the top and bottom of our column of sediments (Table A), we can suppose that 21½ feet of sediment accumulated in 2,574 years before the eruption of the Pedrigal, at an average rate of a foot in 119 years. The variations in the rate may mean simply that the sediments were much disturbed in ancient times, or they may reflect changes in the rate of accumulation related to periods of volcanic eruption, when the rate would have been rapid, and to periods following eruptions when there was no human occupation and very little vegetation, when it would be very slow. The samples were all taken from a human occupation site, that is, from mounds under the Pedrigal containing the ruins of buildings, where the rate of accumulation of sediment would naturally have been faster. The essential point is that while the radiocarbon samples taken near the pyramid give us approximate dates for various phases of the Archaic or Pre-Classical cultures in the area, they have not, so far, dated the pyramid. No excavation appears to have been made below the pavement mentioned by Cummings as surrounding the pyramid. It appears from the evidence that the structures near the pyramid under the Pedrigal, that have now been dated, were probably the work of people who occupied the region after the abandonment of the pyramid.

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If this is the case, we have the date of 2160 B.C. as a minimum date for the abandonment of the pyramid. This does not date its construction. Cummings gives reasons to believe (see Note 19) that the structure was in use for a long period of time. Since its scale and advanced construction imply an advanced people possibly flourishing in Mexico four or five thousand years ago, we may have here a relic of the people who navigated the whole earth, and possessed the advanced sciences necessary to make our ancient maps.

A word of caution. I am not expecting that these remarks regarding the Pyramid of Cuicuilco will be regarded as final in a scientific sense. I mean to suggest only a possibility. I would suggest that there should now be a re-examination of that pyramid, and of several other sites in Mexico and in South America, to determine whether, in fact, they may not be related to the ancient civilization which the maps so strongly indicate must once have existed, and which must have been worldwide, at least so far as exploration and mapmaking were concerned. Repeatedly, during the last hundred years, discoveries have been made, which were claimed by the discoverers to indicate the existence of an ancient advanced civilization. These alleged discoveries were disregarded or discredited by archaeologists as the products of sheer imagination or fakery. The task of disinterring and re-examining these old and perhaps mistakenly rejected discoveries will be a long one; that of finding new evidence in the field has not yet been begun. The research project is one for many hands, many years, and much money.

Outside the archaeological field there are two areas in which there is worthwhile evidence of an ancient world civilization. There is, first, the problem of the origin of the principal families of speech and the various groups of languages. Some scholars have claimed that most languages betray evidences of an original common language, ancestral to all the groups of language (such as the Indo-European, etc.). One of these was Arnold D. Wadler, who spent a lifetime on the problem. I do not know whether his conclusions are valid, but his book (214) shows, it seems to me, a scientific approach. It is interesting that a tradition of a universal language seems to be common in ancient literature. In Genesis we read, of course, "And the whole earth was of one language and one speech." Lincoln Barnett, in his *Treasure of Our Tongue*, remarks, "The notion that at one time all men spoke a single language is by no means unique to Genesis. It found expression in ancient Egypt, in early Hindu and Buddhist writings and was seriously explored by several European philosophers during the 16th Century. . . ." (24:46)

The other line of research is comparative mythology. For some years, with my anthropology classes, I have been pursuing research in mythology, and one concept that has emerged from our studies, and with great clarity I may say, is the virtual identity of the great systems of mythology throughout the world. The same pattern, the same principal deities, appear everywhere—in Europe, in Asia, in North and South America, in Oceania. Table C below lists the Gods of the Four Elements—Air, Earth, Fire, Water—as they are found in mythologies all over the world.

There have been many theories of mythology. One of them attributed the similarities in the myths to a common origin in Egypt. This has been generally rejected, because the diffusion of Egyptian myths to America, India, China, and Oceania cannot be proved. If there was diffusion, the point of origin must lie farther back, in a culture earlier than Egypt. Another theory attributes the similarities to instinct. Its proponents argue that the myths derive from instincts that are the same in all men. This theory is weak because, in the first place, modern psychologists tend to doubt the existence of such instincts, and, secondly, insofar

Table C

## Gods of the Four Elements in Various Pantheons\*

	FIRE	AIR	EARTH	WATER
EGYPT	Re	Shu	Geb, Gea	Nu, Nunu†
BABYLONIA	Girru	Anu	Enlil	Ea
HEBREW	Gabriel	Raphael	Raashiel	Rediyas
PHOENICIA	Ouranos	Aura	Gea	Ashera
PERSIA‡	Atar	Ahura Mazda	Ameretet	Anahita
INDIA	Agni	Yayu	Prithivi	Varuna
CHINA	Mu-King	How-Chu	Yen-Lo-Wang	Mo-Hi-Hai
JAPAN	Ama-Terashu	Amida	Ohonamochi	Susa-No O
IRAN‡	Asha; Atar Oeshma	Vohu Manah Oka Manah	Spenta Armati Bushyasta	Hauvatet Apaosha
NORSE	Thor	Tyr	Odin	Njord
INCA	Manco-Capac	Supay	Pachacamac	Viracocha
AZTEC	Ometecutli	Tezcatlipoca	Omeciuatl	Tlaloc
MAYAN	Kulkulcan	Bacabs	Voltan	Itzamna
SLAV	Swa	Byelun	Raj	Peroun
FINNS	Fire-Girl	Ukko	Ilmatar	Kul Uasa

\* Prepared by the anthropology class at Keene State College.

† The gods of the four elements in Egypt were different in different periods.

‡ Persian and Iranian mythologies were not the same; in Iranian mythology the four gods of the elements have their opposites, representing the good and evil aspects.



as they may exist they can apply only to the most general themes, such as love, hate, mystical feeling, etc. The resemblances between the myths, as the table shows, are really too specific to be attributed to general instincts.

We have, then, a general conclusion. The evidence for an ancient worldwide civilization, or a civilization that for a considerable time must have dominated much of the world in a very remote period, is rather plentiful—at least potentially. We have manifold leads, which further research can hardly fail to develop.