CHAPTER TWENTY FOUR
Earth Upheavals

If the ancient people of this planet believed in great cycles of time, and if those cycles brought on cataclysmic upheavals, does the geophysical record of our planet support those beliefs? Did cataclysms take place? What was the nature of those events? When did they occur?

Evidence accumulated over the past two centuries shows that our earth did, indeed, experience great upheavals in ages past. Geologists are now agreed that the continents were one vast land mass billions of years ago but that the continents have slowly drifted apart and continue to move ever so minutely as the millennia roll on[SA-219]. Furthermore, the crust of the earth experienced great cataclysms in which the mighty mountain ranges were formed. Those events took place long before man appeared upon the face of the earth. But the myth stories say that great events took place within the memory of man. The events were associated with judgments upon the earth.

ANTHROPOMORPHIC EVIDENCE

According to recent scientific evidence man has been active as a social creature for more than a million years. Olduvai Gorge east of Lake Victoria in Africa was formed in relatively recent geological times by tectonic uplift and shearing of earth crustal plates. Erosion produced by this action exposed layers of deposit some 300 feet high, accumulated over the past two million years. A number of manlike skeletal remains in these deposits date from 600,000 years ago, or older. Tools of quartzite and lava were found as well as a tool of bone that apparently was used as a scraper of leather or skin. A circular stone structure, or "fort," was found, composed of a few hundred stones large enough to house a family[NG-123]. The evidence shows that early man was working not only in space but also in time. He was able to think ahead and to prepare for the future. Other evidence shows this remote age with intelligent creatures using fire and tools[NAT-294]. These ancestors of the human race skinned animals, presumably for the same uses as stone age peoples living in modern times[NAT-298].

Prior to the discoveries in Africa von Koenigswald reviewed evidence for cultural man from other sites around the world. These included fossils from Java and China. Most of these finds were of small creatures, similar to those found in Africa. However, some fossils from China indicated huge creatures, much larger than modern man, estimated to be perhaps ten feet tall, were also present[EOM].

More recent work shows that creatures walking upright with feet like modern man date to even earlier times[SC-208]. Although the fossil remains are rare evolutionists do not hesitate to derive complex human family trees. But debate among researchers rages around the meaning of the finds[SC-203,SC-219,NAT-278].

The myths portray early man as primitive, requiring instructions from the "gods." If he was descended from near relatives of simian stock we should not be surprised if he lived in nests in the trees. The "Fire-Driller Lords" may have instructed early man in the use of fire. And the first human creature, based on the finds in Africa, Java and China, can rightly be classified as a dwarf. The modern Negritos of the Malayan archipelago and the Philippines might be evolutionary reminders of those early people. The myths reflect an accurate description of early man, remembering both dwarfs and giants.

From these early periods until about 100,000 years ago little fossil evidence is available. It is not possible to reliably trace the development of man.

As we come closer to modern man we encounter more abundant skeletal remains. They are mostly of Neanderthal man dating from about 100,000 to about 35,000 years ago. Remains have been found from England and Spain to the area of the Black Sea, to Palestine, and as far away as the Kasakh hills of southern Russia. Early notions of his apelike posture were based on one arthritic skeleton with a deformed jaw from an old man. With many more finds this view is now dramatically altered. Although his brow was low, his brain was slightly larger than ours. His great muscular power does not imply differences in intellectual or behavioral capacities from modern man[SA-241].

The slow development but rapid disappearance of Neanderthal is a puzzle to anthropologists. The evidence is a thorn in the side of evolutionists who seek diligently for contrary results[NAT-301]. He began to appear about 100,000 years ago, persisted for nearly 70,000 years, and then abruptly disappeared about 35,000 years ago.

Two interpretations are given for this phenomenon. The first view proposes that he evolved quickly into anatomically modern man. The second view ascribes the disappearance to an invasion of new people with modern skeletal form. Remains of modern man, decidedly different from Neanderthal, have been found as far away as Australia dating to 35,000 years ago while others have been found in sub-Sahara Africa[NAT-309,NAT-301]. If these anatomically modern skeletons derived from one group they spread rapidly over the face of the earth and could easily have replaced Neanderthal everywhere.

Neanderthal was a cultured creature. Although most of his remains have been found in caves, where they are protected from decay, some evidence has been found in open sites. He probably lived in tents, used animal skins for clothing, cooked his meat, and used flint tools. It would be unwarranted to conclude that his way of life differed radically from the hunter cultures of our own times.

In summary, the little evidence we have available shows no essential difference in the activities of man of long ago, down to and including aboriginal Australians and American Indians in modern times. Stone-age cultures do not indicate that man was less rational or possessed weaker conceptual abilities. They merely

indicate a way of life that viewed the earth differently from modern godless man. Spiritual relationships are not determined by material refinement nor technological power.

THE GEOPHYSICAL RECORD

During the past million years the earth has experienced physical cycles known as the ice ages. These ages are associated with a general cooling of the surface of the planet. Although debate still rages among geologists and climatologists, a consensus gives four major ice periods. In North America they are known as the Nebraskan, Kansan, Illinoisan and Wisconsin. Corresponding periods in Europe are known as the Gunz, Mindel, Riss and Wurm. Between each was a relatively warm period, comparable to our present one, although uncertainty attaches to the true conditions of the last ice age[SC-212].

Radio-carbon dating techniques have revolutionized our understanding of the recent planetary past, but reliable dating is limited to approximately 40,000 years. Other dating techniques are now in use but extrapolation of dates beyond 40,000 years is still beset with uncertainty. A summary of recent knowledge is given by Flint[GQG] and also described by Dunbar[HG]. Dates assigned for the onset of the cold periods (before present) are:

Nebraskan-Gunz: Greater than 260,000 years
Kansan-Mindel: 200,000 - 170,000
Illinoisan-Riss: 130,000 - 100,000
Wisconsin-Wurm: 70,000 - 10,000

The glacial recession during the Wisconsin-Wurm is also divided into two subperiods, the first from 70,000 years to 50,000. The second period would be approximately from 35,000 to 10,000.

Although many geologists prefer to view the changes as taking place gradually, from warm to cold and back again, various geophysical phenomena, such as depression of the earth crust beneath the continental glaciers, point to sudden and dramatic upheavals during the transition intervals[NAT-301]. These sudden changes are denoted also by the sharp boundaries between deposits in front of rock shelters[HG], sudden occupancy and abandonment of caves[ARSI,SUM], and marine sediments intercalated with alluvium in river deltas[GQG]. Fractures in the earth crust with associated cliff formation, as illustrated by Olduvai Gorge, also shows sudden upheavals.

Many hypotheses have been offered to explain the temperature changes associated with these abrupt geological breaks. These include variations in earth elliptical orbit with respect to the sun, variations in sun radiation, great dust clouds in space, inclination of the pole axes, and so on. None are accepted universally by scientists.

The evidence of four major geophysical periods tied to warm and cold twin segments, with abrupt transitions, suggest the old folk memories of four (or five) world ages, with cataclysmic events, may be more than mythological invention. This tie between old folk memory and the geophysical record certainly deserves

detailed scrutiny. In order to illustrate the relationship between folk tradition and geophysical events we shall now consider another passage from Plato and show how it correlates with scientific evidence on one specific event in recent geologic time.

THE PLATO ATLANTIS EVENT

In his *Critias* Plato described how people from outside the Pillar of Hercules (Gibraltar) invaded the lands of the very ancient Greeks.

> Let me begin by observing first of all that nine thousand was the sum of years which had elapsed since the war which was said to have taken place between those who dwelt outside the Pillar of Hercules and all who dwelt within them. This war I am going to describe. Of the combatants on the one side, the city of Athens was reported to have been the leader and to have fought out the war; the combatants on the other side were commanded by the kings of Atlantis, which, as I was saying, was an island greater in extent than Libya and Asia, and when afterwards sunk by an earthquake, became an impassable barrier of mud to voyagers sailing from hence to any part of the ocean.

As far as we know Plato was the first to mention Atlantis.

He started a fascination on that mythical land that has followed the generations since his time. Many thousands of books have been written around that myth[ATAW]. The significant factors in Plato's description are the date, the location, and the geophysical mechanism.

Plato lived around 400 BC. According to his date the sinking of Atlantis took place about 9000 years before his time, or 11,500 years ago. This date is unique in recent geological epochs. It is the time geologists identify with the final recession of the last great ice age (Late Quaternary). As mentioned above, this present geophysical age began about 30,000 years ago, grew colder for 12 or 13,000 years, warmed slowly from 17,000 years ago and then went into the great recession about 9,500 BC. The recession is indicated by numerous data, including submerged land benches, beaches, bars, deltas, and other shore features, by relict sediments, submerged stream valleys and alluvium, submerged eolian sand, submerged fossil marine and terrestrial organisms, and breaks in radiometric dates[GQG].

As the last ice cap began to melt the oceans gradually rose from a level about 300 feet lower than today. North America extended into the Atlantic some 200 miles beyond the present shore line; the Persian Gulf did not exist; the Baltic Sea was an inland lake; the North Sea was practically nonexistent; the Greater Sunda Islands were part of Asia; New Guinea was connected to Australia; Alaska and Siberia were one great landmass; Japan was linked to the Asiatic continent; and so on, based on present depths. The lowered oceans permitted animals to migrate from one land area to another, bringing a distribution among species

that are isolated today. As the water levels rose the shore lines receded, restricting animal movements. During this period the shores of the world saw the growth of flora and fauna in regions now covered by water. Mastodons, mammoths, horses, tapirs, giant moose, musk-ox, and numerous other species roamed beyond the present outlets of the Hudson river and the Delaware and Chesapeake bays along a broad coastal plain on what is now the continental shelf. Freshwater peat, tree stumps and even standing trunks are now found from shelf areas off various coasts. Much of this organic material is radiocarbon dated back to the vicinity of 11,000 years ago, and beyond[SC-156,SC-158].

In the report by Emery *et al* data are presented which permit water levels to be traced accurately with time. However, there is a sharp break, or anomaly, that occurs at the date given by Plato. According to the data the water levels dropped abruptly from a height somewhat above present ocean levels. But other data show the sea levels continuously rising from 17,000 before the present[GQG]. What, then, would cause the abrupt break in the data shown in the graphical figure below?

The figure is more easily understood when it is recognized that peat moss grows in both fresh and salt-water bogs and marshes close to the shoreline. This is illustrated by cranberry bogs in New England which now grow in the immediate vicinity of the ocean. If the sea levels rise slowly with time, a few feet per century, the peat moss will creep ahead of the rising water as it spreads inward over the continental shelf. Therefore the peat samples show the level of the ocean over many centuries. The radiocarbon dates of the peat show its age, while the depth at which found show the level of the ocean at that time. Thus one can measure the water level rise with time. The figure should show a smooth curve extending beyond 12,000 years ago but some event caused an abrupt change in level along the Atlantic seaboard. Some peat moss from 11,000 to 16,000 years ago moved above the present ocean levels although the oceans at that time were more than 250 feet below the present level. Local geographic regions pushed upwards to bring the peat to a level much higher than it was originally. At the same time other regions appear to have sunk below their original levels[SC-157].

Newman and March used the data to plot lines of equal height (isobars) along the North Atlantic seacoast and the continental shelf to show displacement from the expected heights. The displacements followed the line of the continental shelf[SC-160]. For regions north of Long Island the earth crust was thrust upward in altitude, while ocean regions east and south of Long Island and New England were thrust downward. This abrupt displacement of the earth's crust is called "tectonic deleveling." It is a change in relative altitudes of adjacent tectonic plates in the earth's crust. Newman and March suggested that the deleveling was centered around the edge of the continental shelf and was associated with a collapsing marginal or peripheral bulge in the tectonic plate that includes the northeastern portions of the United States and Canada. A large block of earth crust in the Atlantic Ocean south of Long Island fell while a continental block north of Long Island rose. They pointed out that the event was not associated merely with the weight of the water in those regions, since the Gulf of Mexico did not exhibit a

similar deleveling as the melting ice cap filled the oceans, but that it was associated with weight relief in the block of crust called the Canadian shield. As the continental glacier melted the ice load was relieved, permitting the Canadian shield to shift upward in relative altitude from the average earth surface level. In order to maintain isostatic equilibrium (earth average surface altitude at the same level), neighboring portions of the earth crust had to sink. Scotland and the Baltic Sea basin experienced similar abrupt vertical displacements during the same era[GQG].

Evidence for rising and sinking of sections of the earth's crust is found many places. The New Jersey Palisades along the Hudson river show crustal displacement with the western side higher than the eastern side. The Hudson river follows this rift in the earth's crust. The great San Andreas rift in California shows horizontal displacements over hundreds of miles. The susceptibility to earthquakes in that region is due to the relative ease with which the tectonic plates are still sliding past one another. The plates are of major size, covering continental and oceanic tectonic masses.

Major portions of the present continents were once under water, showing that large sections of the earth's surface have experienced alternate vertical displacement. No geologist will question that these displacements took place. Questions center around dates, exact sequence of events, causes, and the relative abruptness of the phenomena. That this process should continue through the ice ages down to modern times is not surprising. However, for man it can be frightening; if he lived through such abrupt cataclysms he might remember traumatic physical disturbances.

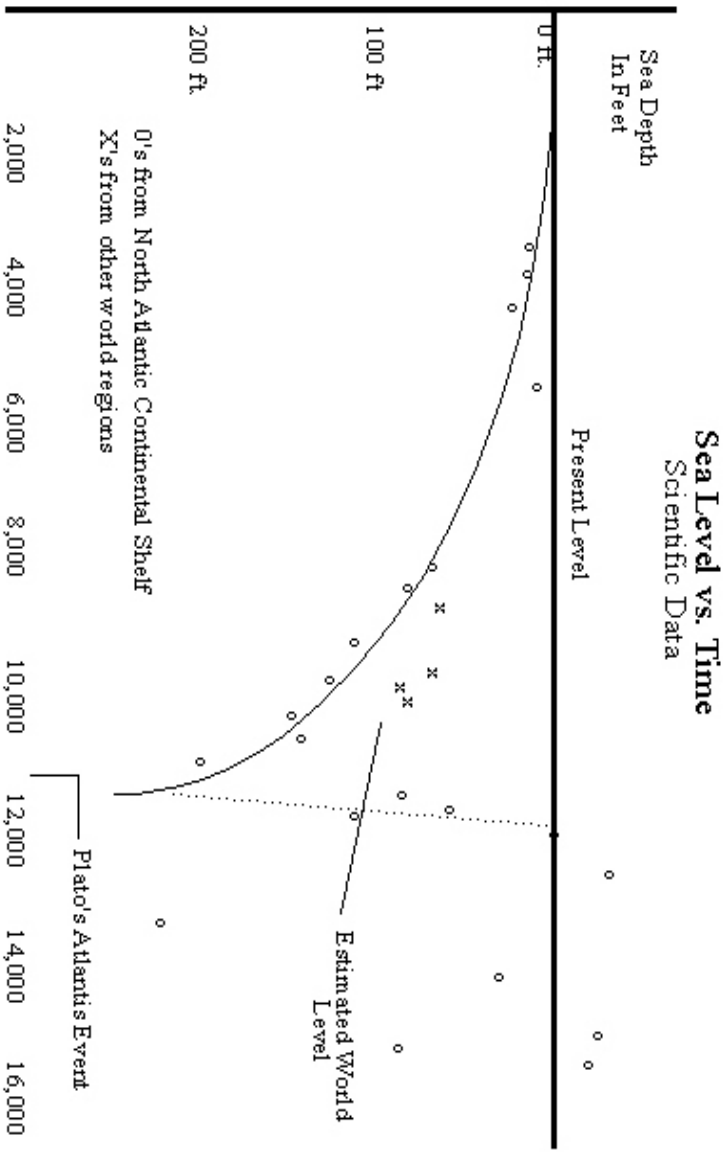
The intriguing question from Plato's account is how he would know about earth crustal events that took place 9,000 years before his time. How did he know about the events that took place in the Atlantic, a location we have now verified scientifically? How could he be so accurate on the date? Is it a mere coincidence? If it is coincidental why did he say it took place in the Atlantic Ocean? According to his story he thought it was immediately outside the Straights of Gibraltar. He does not place it far across the Atlantic Ocean. However he does say it caused a great barrier of mud which prevented ships from sailing in those districts. Did he mean the Sargasso Sea? Furthermore he described earthquakes, exactly what we should expect if there were abrupt changes in the relative altitudes of earth crustal tectonic plates. Together these elements of his story seem much more than mere coincidence. In summary we have:

Geological evidence :	**Historical evidence:**
Quantitative date, 9500 BC.	Quantitative date, 9500 BC.
Geographical location well defined.	Geographical location poorly defined.
Physical mechanism in crustal block movements.	Qualitative mechanism in earthquakes.

The time separating us from Plato is about 2300 years. During that period Plato's writings have been only partially preserved. We do not have his original documents, merely copies that were made in the intervening centuries. The time separating Plato from the events described is 9,000 years. If we have imperfectly preserved records dating less than 2500 years, how did Plato receive such reliable information over much longer spans of time? Our scholarly studies seem to show that writing existed only since about 3,000 BC. Therefore the Atlantean events must have been carried through oral tradition. But if so how could they maintain details that are so accurate over such long periods? It seems hardly possible. Either we have a most amazing coincidence, or we do not understand the history of man. It seems almost preferable to accept statements by the ancient Egyptians that they had records preserved from very ancient times[HER]. If such records existed Plato may have had access to them, (and did not want to betray his source), or he may have heard about these extraordinary earth transactions through other sources. Although one might question the exact location from the brief mention in Plato's account, the date and the mechanism are correct. The earth upheavals must have been worldwide. If large sections of earth crust were under displacement in the Atlantic Ocean, with the North American continent, Scotland, and Scandinavia moving, then lands elsewhere around the globe had experience similar disturbances.

Indeed other evidence confirms that a great earth event took place. Recent radiocarbon dating of finds in the Arctic regions shows that animal life, including the famous frozen mammoths of Siberia, were caught in a sudden catastrophic event at this time. The animals were literally frozen in their tracks with food unchewed in their mouths. The evidence has been a puzzle to both laymen and scientists alike. It does not seem possible events could happen so suddenly — a change from a relatively hospitable climate to one of deep freeze in a matter of hours. Some of the mammoths were found caught in fractures in the earth crust, showing that the earth was in upheaval everywhere.

The description by Plato is merely one example of information available to us. Other records exist.


Sea Level vs. Time
Scientific Data
Sea Depth
In Feet
Present Level
0 ft.
100 ft
200 ft.
Estimated World
Level
0's from North Atlantic Continental Shelf
X's from other world regions
Plato's Atlantis Event
2,000
4,000
6,000
8,000
10,000
12,000
14,000
16,000
Time in Years Before Present