

4. This is an outworking of number three in the effort of "progress" to perfect and control the imperfect and chaotic 'mystery' of things outside the self so that, by dominating them, it shall be proven that their existence did not arise from an intelligent source other than the human mind. Philosophical absurdity is allowed here in the interest of emotional revolt against the Creator . . . the absurdity that a chance, chaotic, meaningless environment could accidentally throw up a creature interested in ordering and rationalizing it and finding meaning for it. (Could this problem be the source of the speculation that we came to the earth from another world—where presumably evolution was not so chaotic?)

5. The final presupposition of science ruled early day science before it abandoned its roots in desacralized creation and entered in blind *hubris* and apostasy into a Creator-less reality. I refer to the understanding that the study of the created world gave glory to its Creator. The end of science in this model is "to think God's thoughts after Him." Now it is to impose whatever the imagination of man can conceive on a meaningless, random chaos. In its final outworking, this view leads to absurdity, nihilism, and gigantic *hubris*.

On the foundation of this presuppositional structure, we have a deep rift in the scientific community regarding goals and final ends or purposes. This rift exposes the valuing structure of all science for the law-abiding structure of the universe cannot exist in a structureless, chance-grounded understanding. There are two quite different understandings of ends possible as one faces the *same* basic data regarding the universe.

1. To make evolving man the Lord over both "nature" and the "unfortunate" ignorance of his more "backward" and "gentle" fellowmen . . . those who have not adopted the vicious no-holds-barred use of

science for tyranny. This dominance will be gained by constantly improving the functioning (*never* purposes) of the mechanical and human 'parts' in a grandly grinding ant-hill with no destiny but to be crushed to make way for a grander one. With this goal, it is assumed that life has only short-range gratification aims and there is no eternal *telos* for existence.

2. To understand the majestic wisdom of the Creator in His Creation and to live graciously within the contours of a fallen creation with thanksgiving to God for His proleptic deliverance in Jesus Christ from the Second Law of Thermodynamics. (The evolving man solution has no solution to the 2nd Law—in fact, the massive use of energy to improve function merely sets the world up for a gigantic collapse in which we are now beginning to participate.)

The final ends or *telos* of human existing on this planet take their foundations from this difference in *spiritual* attitude running right through the heart of the scientific enterprise. On the one hand, we have men whose spirit seeks to use science for power, greed, dominance, lust and who seek to glorify man and live with grand exploitation of 'nature' as though they were gods. This is interfering science.

On the other hand are those scientists of humility before the majesty of the Creator of the universe who understand by revelation what man's true condition is and that, at his best, he reaches nowhere near the glory of God. These scientists seek to glorify the Creator in their work and to live graciously before Him, manifesting the fruits of the Spirit, while they and all believers await the deliverance of the earth from the vanity of the Law of Entropy through the Personal Appearance of the Lord of the Universe, Jesus Christ, the Righteous. This is gracious science.

A CRITICAL LOOK AT PLATE TECTONICS AND CONTINENTAL DRIFT

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Years ago, at the University, I was asked to lead the negative side of a debate on continental drift. We won; not, I hasten to add, because of my leadership, but, I believe, on the strength of the arguments presented. Since then much new evidence has come to light, which can at least be interpreted in favor of drift and plate tectonics. Consequently, there has been a drift toward their acceptance. However, the head structural geologist at a university, with whom I discussed this, was not ready to adopt the theory. "Be not the first by whom the new is tried, nor yet the last to lay the old aside". He cited Wesson, who enumerated some 75 objections to the hypothesis, which as yet have not been answered.¹

Half a century ago Alfred Wegener put forth his hypothesis of continental drift. This idea arose from the fact, first noted by Sir Francis Bacon in the seventeenth century, that the outlines of the continents appear almost capable of being fitted together like pieces of a puzzle. Wegener proposed that the present continents are the separated parts of a vast, original land mass which was called Pangea.

In the modern theory Pangea is supposed to have begun to break up and its parts to drift apart about 200

million years ago. The northern part, called Laurasia, comprised what are now North America, Europe, and Asia. The southern part, called Gondwana, comprised the lands which became South America, Africa, India, Australia, and Antarctica. The various pieces are believed to have travelled thousands of miles to their present positions. The most astonishing journey proposed in this theory is that of India, which is assumed to have moved about 4,000 miles to bump into Asia proper and thrust up the Himalayan ranges and Tibetan plateau.

Great expenditure of energy surely would be required to move continents; and the British geologist, Arthur Holmes, tried to account for the motive power needed

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by suggesting the existence of convection currents in the earth's outer mantle. Solid and fluid substances when warmed tend to expand and become less dense. This lighter substance then rises through the overlying cooler, denser material, producing a rising, spreading current called a convection current. Supposedly such currents moving in the mantle beneath the continents carried the continental blocks with them, producing continental drift.

Some years ago this writer participated on the negative side of a debate on continental drift. The negative side won, not because of my presence, but because prevailing scientific opinion at the time was that the available data fell short of being compelling evidence. Now the situation has changed quite rapidly as a result of much new observational data and the development of the theory of plate tectonics. In this interpretation, the continents are not considered to be the moving units, but rather ten or twelve comparatively rigid plates comprising the earth's crust. The movement of these plates is away from midocean ridges where new rock is being extruded from the mantle, while at the leading edges where plates collide, one plate descends under the other, being subducted into the mantle again. At the boundaries of plates relative motions produce earthquakes, volcanoes, geothermal areas, mountain belts, and zones of mineralization.

Many earth scientists believe that plate tectonics is a major scientific breakthrough, the answer to more problems and mysteries in geology than any other recent discovery. Some observational data both old and new have been correlated with the new interpretation. On the other hand, there are earth scientists who either are skeptical or reject the theory because of contradictory data which they cite.

Paleomagnetism and Ocean Spreading

The most important underlying support for plate tectonic theory is derived from comparatively recently discovered evidence that the ocean floors are spreading away from the sides of the 40,000 miles of midocean ridges which circle the globe. The most critical data in connection with this observation are measurements of paleomagnetism in the rocks of the ocean floor. This magnetization is supposed to have been impressed on the rocks by the earth's magnetic field, when they were originally formed. Strips, magnetized in opposite directions, can be found; and it is supposed that the earth's field reversed in direction between the times when these successive strips were formed. So this is interpreted as evidence that the earth's magnetic field has reversed many times in the past. Similar evidence of such reversals is also adduced from measurements of paleomagnetism in rocks on the continents. Assuming that the earth poles of rotation correspond fairly well with the magnetic poles, these field data are interpreted as evidence that the poles have wandered over the earth or that continents have wandered, splitting from the original Pangea and rearranging to produce the present geography. As mentioned earlier, this is supposed to have occurred over the past 200 million years. Spreading rates of from one to five centimeters per year

would account for the present width of the Atlantic Ocean.

Important criticisms have been leveled at the paleomagnetic data, however. The data are said to be very scattered and loosely grouped, resulting in low levels of confidence for the conclusions. Unknown sources of error appear to produce contradictions in some of the results. For example, pole wandering paths conflict when they are based on different sets of paleomagnetic data. Furthermore, it has been shown in the laboratory that initial magnetization of a rock can on occasion be the reverse of the surrounding field and that rocks can undergo self-reversal of their magnetization due to stresses. Besides, reversal of the earth's magnetic field is considered by some to be impossible, in view of the massive energy transformations that would be required.

San Andreas Fault

Movement along this notorious crack in the earth's crust is given as an example of what is meant by differential movement along plate boundaries. The section or plate west of the fault is moving northward, a right-lateral fault, translating the city of Los Angeles northwest about 2½ inches per year. The rocks on the two sides of the fault are elastically deformed by this movement, storing up energy like a stretched rubber band. When slipping finally takes place it is sudden, and an earthquake results. During the 1906 San Francisco quake the movement was about 21 feet. Movement along the Garlock fault, a branch of the San Andreas, was about 6 inches at the time of the San Fernando earthquake in 1971. The San Andreas fault is a strike-slip fault or what is now called in the terminology of plate tectonics, a transform fault.

Drift and Fossils

Fossil evidence is adduced in support of plate tectonic theory. Paleontologists claim that the same or very similar fossils are found on both sides of the Atlantic, in Brazil and Africa, for example. Thus there must have been a former land connection. It is said that in the Mesozoic Era land animals were similar all over the world, but in the Cenozoic Era divergence set in because of isolation of the continents. The Mesozoic reptiles seemed to be everywhere, similar. Such data fit the theory. On the other hand, the Indian and South American reptiles were similar even though India supposedly set adrift from Pangea in the Triassic period. If the two land masses were separated so early, how does one explain the similarity of the two groups of fossil reptiles?

The Mediterranean

Oceanography is a rather new science which has uncovered startling facts about the bottoms of oceans. The Mediterranean Sea is no exception. We now know that it was once an inland sea like the Great Salt Lake or rather, like ancient Lake Bonneville. Both Lake Bonneville and the Mediterranean drained and dried up, for great deposits of evaporites, salt, and fresh water fossils were left behind. Excavations have unearthed a fossil, sunken Rhone River channel and gorge which were

formed when ocean waters were much lower, too low for the Atlantic to overflow into the Mediterranean. The Nile delta was at one time 5,000 feet deeper than the present one, and buried channels have been found 1,300 feet below present sea level. Sub-aerial canyons and buried channels have been found in Algeria, Israel, and southern France. All of these facts are good evidence of a pre-Flood world in which the oceans were thousands of feet shallower than today. Just when or why this inland sea dried up is not clear from geological evidence alone, but the Mediterranean is now 10,000 feet deep.

Pacific Basin

The Pacific Ocean basin is considered to be a more permanent earth feature than the Atlantic or Indian oceans. The ridge and rift valley in the Pacific is not centered in the middle as in the case of the Atlantic, but along the east side, that is, our Pacific Coast. From this line the floor is supposed to move westward and be subducted in the island arcs near the western side of the Pacific, traveling thousands of miles.

A Critique

Many scientists have thrown their lot with the theory of plate tectonics, but some conservative ones are still examining the evidence somewhat critically, as is a friend of mine, a structural geologist at the University of Arizona. There still appear to be important discrepancies and overall lack of compelling evidence.

From the point of view of Biblical creation, the theory is as currently held definitely a uniformitarian, long-ages geological concept which contradicts the chronology of Genesis. At the current rate of ocean bottom spreading deduced from paleomagnetic data and standard geological time scales, the Atlantic would not be much wider than the lower reaches of the Amazon River in the few thousand years usually assigned to the age of the earth by creationists on the basis of the Biblical record. The subject, therefore, is an important one.

The secular scientific critics of plate tectonics find many problems with the theory. Perhaps the most formidable one is the failure to discover motive power adequate to move such vast sections of the earth's crust over the great distances involved. Another incongruity arises from the idea that Pangea only began to split about 200 million years ago, which is after some 96 percent of the supposed 4.6 billion years of earth history have passed. The energy for the process surely must have been that from radioactive decay of uranium and thorium, yet there was more of that energy flowing early in earth history, rather than late. Why, then, did plate tectonics not start much earlier? Feeling, perhaps, the force of this objection, some propose that there were previous cycles of coalescing and splitting up of the continents; but they can offer very little supporting evidence.

A. A. and Howard Meyerhoff have summarized some of the difficulties which the proponents of plate tectonics must solve before the idea can be more than a working hypothesis.

All proposed models for 'New Global Tectonics' are

seriously in error. Paleoclimatic data distributions on continents and shelves of ancient evaporites, carbonate rocks, coals, tillites, can be explained only if present positions of rotational axis, continents and ocean basins have been constant for at least 1,000 million years. Also distribution of fossil invertebrates and tetrapod faunas and floras likewise indicate constancy of position of the rotational axis, continents and ocean basins for at least 570 million years, or since Proterozoic time. Space requirements for the continents do not permit east-west movements since Archean time of more than 100-200 Km in the northern hemisphere. The north-south movements of continents are limited to a few hundred kilometers on the basis of paleoclimatic and paleontological data. Ocean basin studies show island arc trench fills where subduction supposedly takes place undeformed. Probably there is no such thing as subduction. Sediment fills in fracture rifts crossing mid-ocean ridges are also undeformed. Joides drilling results have been hailed as a remarkable confirmation of plate tectonics predictions. The first dating of the 'basement' basalts of Joides coreholes indicates that the 'basement' beneath Mesozoic rocks is late Tertiary or younger.

Meyerhoff then declares that "No physical theory known can explain plate tectonics."²⁻⁶ He says that most plate tectonics people ignore the Lomnitz Law.^{7,8} He explains that the facts in geology indicate that India has been in its present location since Proterozoic time; further, that there is no evidence that the poles have wandered. The carbonates and evaporites are symmetrical with the present thermal equator.

In the north where the land separations between Europe and North America are least, there are close biological or at least faunal links; while faunal diversity is greatest in the Southern hemisphere. In the northern hemisphere fossils are zoned according to their relations to the north pole. Meyerhoff sums up his thesis by wondering if perhaps some plate tectonics advocates at times pick favorable data while ignoring unfavorable. Might one extend that question to include most of evolutionary science?

Certain Arguments Against Continental Drift and Plate Tectonics

1. The notion is essentially an evolutionary one, involving long ages. It could not apply to the reference in Genesis 10:25, which says briefly that in Peleg's days the earth was divided. If India, for instance, had travelled all the way from Antarctica to its present location in Peleg's days, the result would have been a catastrophe far greater than the Flood in Noah's days. Besides, where would all the motive power have been found? Here, as elsewhere, Creationist and evolutionary notions do not mix very well.

2. If Africa had really travelled westward, as had been suggested on the grounds of the nature of the eastern shore, is it supposed to have travelled eastward at the same time, to leave a gap and form the Atlantic Ocean?

3. It is claimed that continents fit together like fingers in a glove to form Pangea. However, it should be noted that in order to get this perfect fit, some small pieces of the continents have to be left out.

4. The Appalachian and Rocky Mountains are not parallel, as they should be according to the Pangea notion.

5. Whence came all the power to move the continents? From radioactive disintegration? But there should have been more radioactive material, and hence more disintegration, in earlier times, back to Precambrian. Why, then, was there no motion until (as is stated) Cretaceous times?

6. If the present Atlantic Ocean did not exist until Cretaceous and later geological times, why are Cambrian fossils found in the north Atlantic?

7. The Stromatolite fossils, to mention just one kind, indicate stable continents in the past, as Meyerhoff has shown.

8. The evidence shows that in the Permian age the North Pole was in essentially the same location as it now is.

9. The only driving mechanism proposed for continental drift seems to be convection currents in the mantle and crust of the earth. But Jeffreys, Knopoff, and Tozer, citing the Lomnitz Law^{7,8} question whether such currents are possible.

10. The convection notion would require that the continents be stacked at the equator or at the poles.

11. There is at present no evidence for the subduction crustal movements. Yet they would be an essential part of the crustal shortening, and so would seem necessarily to go along with the drift.

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- ⁸Jeffreys, Sir Harold, 1976. The earth, its origin, history, and physical constitution. Sixth edition. Cambridge University Press. See especially p. 491, also under "Lomnitz law" in the topical index.

CONTINENTAL TILT

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The continents are seen, to a large extent, to be tilted toward the Atlantic and Arctic Oceans, and to drain into them, the oceans being as it were catchbasins. It is suggested that that state of affairs dates to the conclusion of the Flood, when the continents were drained by being tilted thus. Other evidence, especially from the bottoms of the oceans and from the Arctic regions, points in the same direction.

Introduction

In Hebrew the first book of the Bible was called "In The Beginning". The Greeks translated this as "Genesis", by which name we still know the book. The testimony of Jesus Christ, who quoted many texts from Genesis, indicates that He considered the book as part of Holy Scripture, and authentic. It contains a sketch of the world's history covering many centuries. The early chapters cannot be placed in a historical setting, in the sense of correlating them with other historical accounts; for there are no others going back that far. So our only history of the antediluvian world is that written by Moses. Neither are there archaeological records (except possibly a few obscure and often disputed finds); only the mute testimony of the fossils, which is itself often obscure. We do have much geological testimony, written on the surfaces of the continents and on the ocean basins. It is the oceans, in particular, which can give us

much information about the great catastrophe which took place early in man's history.

What was this event? And what were the conditions on the surface of the Earth before and after?

A Catastrophe Widely Recognized

Oceanographic studies of the oceans, and geological studies of the continents, should tell us much about the changes which took place during the great catastrophe. For there was a catastrophe: one which changed the surface of the Earth from its antediluvian condition to that which we now see.

Let us consider a typical uniformitarian opinion about the occurrence of catastrophic (whether or not that word be used) changes in the past, and the condition of the Earth before they happened.¹

Today it is generally accepted that the relatively short span of the Pleistocene brought greater changes to the face of the earth than any that occurred during the previous seventy million years of the Cenozoic Era. The present boundaries between land and sea were established, the earth attained

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