Let the Oceans Speak

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Introduction

Creationists are certain that the Bible is accurate, authoritative and trustworthy in every field of knowledge, whether that be theological, historical, scientific or any other. The Bible contains a definite and precise chronological timetable that begins with the creation of this world and the first man, Adam, and covers the great historical events of the first 11,000 years of history.[1]

Actually, evidence in the secular record is not at all in disagreement with the sacred record, and the sacred record can be used to place the secular record in proper perspective. Because the Bible is true and accurate in its accounts of people, places and time, men can use it to distinguish between what is true and false about the secular viewpoints.

Data from the observable universe concerning the earth's past history is becoming increasingly available as men search out the secrets of the universe. But is the world far older than 13,000 years as deduced from Biblical evidence? Can creationists really expect to find correlation between the Biblical and secular records if they insist on the literal interpretation of the creation story and the flood account? Isn't the evidence for a world that is billions of years old so conclusive that it is hardly possible even to expect complete reconciliation between the Bible and true science?

A point must be emphasized. Because this world is under the bondage of decay, with much of the record confused and obliterated by storms, floods, decay, fire, pestilence, etc., modern man cannot expect to reconstruct the history of the world in a complete and detailed manner. But even so, some indication of the timetable of the past should be obtainable from the secular record.

Other books by Harold Camping

I Hope God Will Save Me

The End of the Church Age... and After

Time Has An End

We Are Almost There!

Wheat And Tares

The Oceans – A Key to the Past

In an earlier generation scientists suggested that the oceans might be of real help in determining the age of the earth. After all, the seas completely surround the land masses and thus receive the output of the rivers that flow into them. The rivers carry sediment and chemicals in solution which have eroded from the continents.

Scientists have assumed, therefore, that most of the chemical composition of ocean water is derived from the weathering of rocks. Sverdrup et al wrote: "According to present theories, most of the solid materials dissolved in the sea originated from the weathering of the crust of the earth."[2]

H. Kuenen wrote in 1965: "Apart from meteoric dust and gaseous matter, the ultimate sources of all sediments are igneous and metamorphic rocks."[3] And Kuenen continued:

> *Ground water containing dissolved material includes silica, calcium, sodium, iron, magnesium, phosphorus, humic acids, etc., reaches the sea by way of rivers, or directly by seepage along the shore. Apart from gases, including carbon dioxide, derived directly from the atmosphere, this is the main source of dissolved matter in the sea water . . . . A minor contribution comes from volcanic exhalations and from the expulsion of sea water trapped between the grains of the older marine sediments.*[4]

Thus today scientists expect that much of the history of the earth can be deduced from the chemical content of the oceans. For instance, the salt NaCl is the most abundant constituent of sea water, and both Na and Cl are present in the rocks.

Therefore scientists have supposed that a knowledge of the amount of NaCl in the sea, compared with the amount entering the seas each year by the weathering of the land, would give a close approximation of the age of the earth. An earth age of about 100 million years was estimated by earlier scientists by following this assumption.

But other dating methods have been developed. Based on radioactive decay analyses, scientists have decided that the earth must be approximately 4.5 billion years old. The age of millions of years deduced

from the ocean evidence was decisively rejected in favor of the longer radioactive ages.

Supposedly a much more acceptable timetable was gained for all of the developments imagined by evolutionists. Very little is heard today from researchers investigating the content of the sea waters as far as total earth dating is concerned.

But the oceans still exist. Since this world is presumably more than 4 billion years old, and since oceans as well as continents have existed continuously, certain relationships and equilibriums must exist between the continents and the oceans.

Contentions of earlier scientists about an earth-ocean time relationship should still be valid. Assuming that present natural phenomena are a key to the past, examination of the relationship of the materials of the continents to those of the oceans should result in some kind of a timetable for geological history.

Time Schedule Based on Ocean Water

As noted, geologists concluded that the chemical composition of sea water and the ocean floor sediments is principally a product of the weathering of continental rocks. If this weathering of rocks was a very short time phenomenon, then one would expect to find far different proportions of elements in sea water than are found within the average rocks of the continents.

This seems logical since some rocks erode more easily than others, and therefore easily erodable chemicals should be most abundant in sea water. Differences in relative chemical proportions would also be due to other variables, such as the fact that some elements are not as readily transportable by rivers and ocean currents as others, and some are less soluble in water than others.

Nevertheless, if the duration of erosion was long enough, elements in the sea water and on the sea floor should quite accurately coincide with the chemical content of continental masses. Even the hardest of rocks would be eroded, and even the least transportable of materials would ultimately be carried by the rivers to the sea.

Thus when scientists talk about millions of years, on a world-wide basis, the proportion of one element in the sea water and on the sea floor to all other elements in the same environment should be approximately the same radio as that element to all other elements in the

continental masses, for in a very general way all the mass must somehow be conserved. For example, if the percentage of silicon in the continental masses is 27.5%, then if the oceans were old enough, the total of all the silicon in the ocean water and on the ocean floor should be 27.5%, approximately.

Furthermore, if the total quantities of various elements in the seas and sea floor and the approximate rate of world-wide erosion could be known, then the length of time required to bring present elements into the ocean could be estimated. In turn, the approximate age for the earth might be deduced.

Fortunately, scientists have determined rather accurately the chemical composition of both the sea water and the land masses. Sverdrup et al prepared a table (Table I)[5] showing the amounts of various chemicals that should have entered the oceans during a period of 260 millions of years. This is the estimated length of time which would be required to provide the present quantity of salt in the ocean water, assuming uniform weathering throughout this period of time.

He mentions an estimate by Goldschmidt in 1933 that accumulation of the present concentration of salt (NaCl) in solution would have required weathering of 600 grams of rock for each kilogram of water in the ocean. Thus according to Table I, 17,000 mg. (17 gr.) of sodium were released and 165,000 mg. (165 gr.) of silicon were likewise released for accumulation in the oceans for each 600 grams of rock weathered.

With this estimate of potential elements available, one wonders what is the actual quantity of elements in the sea water. An estimate for each element is given in the second column of Table I.

For example, in a kilogram of sea water there is on the average about .5 mg. of aluminum in solution. This is only .001% of the estimated 53,000 mg. expected if weathering had continued for as long as 260 million years, the estimated time required to provide the observed amount of salt.

In fact, after close examination of all the elements listed in Table I, one concludes there is a total lack of relationship between the chemicals in the oceans and the continents. For example, chlorine is 67 times too prevalent in sea water, nickel is 500,000 times too scarce. Silicon, which is one of the most common constituents of rocks, should be 50,000 times more plentiful in ocean water if it were in proportion to that in continental rocks.

TABLE I
Elements in Sea Water and in the Earth's Crust

Element	Sea Water	Potential "supply" in 600 gr. of rock (mg/kg of sea water)	Percentage in solution
Silicon	4	165,000	0.002
Aluminum	0.5	53,000	0.001
Iron	0.002	31,000	0.0001
Calcium	408	22,000	1.9
Sodium	10,769	17,000	65
Potassium	387	15,000	2.6
Magnesium	1,297	13,000	10
Titanium	—	3,800	?
Manganese	0.01	560	0.002
Phosphorus	0.01	470	0.02
Carbon	28	300	9
Sulphur	901	300	300
Chlorine	19,353	290	6,700
Strontium	13	250	5
Barium	0.05	230	0.02
Rubidium	0.02	190	0.1
Fluorine	1.4	160	0.9
Chromium	p	120	?
Zirconium	—	120	?
Copper	0.01	60	0.02
Nickel	0.0001	60	0.0002
Vanadium	0.0003	60	0.0005
Tungsten	—	41	?
Lithium	0.1	39	0.2
Cerium	0.0004	26	0.002
Cobalt	p	24	?
Tin	p	24	?
Zinc	0.005	24	0.02
Yttrium	0.0003	19	0.002
Lanthanum	0.0003	11	0.003
Lead	0.004	10	0.04
Molybdenum	0.0005	9	0.005
Thorium	0.0005	6	0.01
Cesium	0.002	4	0.05
Arsenic	0.02	3	0.7
Scandium	0.00004	3	0.001
Bromine	66	3	2,000
Boron	4.7	2	240
Uranium	0.015	2	0.8
Selenium	0.004	0.4	1
Cadmium	p	0.3	?
Mercury	0.00003	0.3	0.001
Iodine	0.05	0.2	25
Silver	0.0003	0.06	0.5
Gold	0.056	0.003	0.3
Radium	0.093	0.066	0.05

Perhaps one reason for this total disproportion between the expected volumes of elements in the sea water and their actual occurrence is that sea water will hold in solution only a tiny bit of each element. In other words,
most of the silicon goes out of solution to the sea bottom either by precipitation or by the action of organisms. That sea water is not saturated with silicon is supported by F.A.J. Armstrong:

> *Sea water is undersaturated with respect to silica, although since reported values for its solubility are somewhat inconsistent, it is not possible to say how much.*[6]

And Kuenen has written:

> *Under normal conditions sea water is not supersaturated with any product, and circulation is automatically set up in areas of excess evaporation, preventing the formation of excessive concentrations.*[7]

Apparently, then, many elements are far too insufficient in ocean water as compared with the quantities that should be present if the oceans were millions of years old. And further, the sea water in general is not saturated with chemical elements.

Therefore the oceans could be very young, because if the oceans had existed long enough, those elements which are especially soluble would have reached a saturated condition in many parts of the world.

Using the unsaturated condition of the oceans, researchers should be able to measure the age of oceans since an estimate can be made of the average annual quantity of chemicals flowing into the ocean from the rivers. Dividing the total quantity of an element existing in an unsaturated condition in ocean solution by the quantity of the same element flowing into the ocean should result in some concept of the ocean's age.

This information is found in Table II.[8] Evidently 2.0×10^7 (20 million) years of continental weathering would have been required to supply all the lithium (Li) presently found in ocean solution. Presumably, sodium (Na) would have been accumulating for some 2.6×10^8 (260 million) years.

TABLE II

Residency Periods for Chemicals in Ocean Solution (in years)

Lithium	2.0×10^7	Silver	2.1×10^6
Beryllium	150	Gadolinium	5.0×10^5
Sodium	2.6×10^8	Tin	1.0×10^5
Magnesium	4.5×10^7	Antinomy	3.5×10^5
Aluminum	100	Cesium	4.0×10^4
Silicon	8.0×10^3	Barium	8.4×10^4
Potassium	1.1×10^7	Lanthanum	440
Calcium	8.0×10^6	Cerium	80
Scandium	5.6×10^3	Praseodymium	320
Titanium	160	Neodymium	270
Vanadium	1.0×10^4	Samarium	180
Chromium	350	Europium	300
Manganese	1400	Gladolinium	260
Iron	140	Dysprosium	460
Cobalt	1.8×10^4	Holmium	530
Nickel	1.8×10^4	Erbium	690
Copper	5.0×10^4	Thulium	1800
Zinc	1.8×10^5	Ytterbium	530
Gallium	1.4×10^3	Lutetium	450
Germanium	7.0×10^3	Tungsten	10^3
Rubidium	2.7×10^5	Gold	5.6×10^5
Strontium	1.9×10^7	Mercury	4.2×10^4
Yttrium	7.5×10^3	Lead	2.0×10^3
Niobium	300	Bismuth	4.5×10^4
Molybdenum	5.0×10^5	Uranium	5.0×10^5
		Thorium	350

Nevertheless, a very strange fact becomes evident upon careful study of Table II. Some of the elements are in very *short* supply in the oceans. Therefore only 100 years of continental weathering would have been required for accumulation of the tiny quantity of aluminum in ocean solution. In fact, nineteen of the elements could have accumulated in 1,000 years of continental weathering. Two conclusions are possible from this startling information:

1. The oceans must be very young because small quantities of many of the elements are in solution.

2. The oceans must be very young because of the wide discrepancy of residency periods of various chemicals.

Differential erosion over a relatively short period of time together with the variables, such as water transportability and solubility of elements, could account for this wide spread in residency times.

One other fact should be noted in this regard. Chlorine, sulphur, bromine and boron exist in much larger amounts (See Table I) than those which would be supplied while the elements, such as sodium, with which they are normally associated, were being weathered from rocks into the ocean waters. Therefore, a third conclusion is possible:

3. That salt (NaC1) and perhaps a number of other chemicals are in the oceans completely apart from normal rock weathering.

A Look at Sediments

But the question concerning the paucity of elements in sea water still persists. Because of the paucity of so many of the chemicals in the oceans, one might conclude that they must have been taken out of solution in some manner, even though sea water does not appear to be with many, if any, of the chemicals that enter it.

Now the mechanisms of solution in, and the removal from, sea water are rather complex. Scientists are busily engaged in attempting to understand them. But if the chemicals are not in the sea water, they must be on the sea floor.

Therefore, even though the chemicals in the water are not proportional quantitatively to those in the rocks, surely the remainder would be found on the sea floor, with the overall chemical content reflecting an ancient ocean. Such an expectation, however, cannot be supported by the facts.

Obviously much more work must be done before a complete analysis of the quantity and composition of the sea floor sediments can be known. However, many cores have been taken already, and there is much literature available concerning this question.

Present knowledge is summed up perhaps in the comment of H. Kuenen: "The differences in composition between oceanic and continental sediments, both as to major constituents and trace elements

are large."[9] In other words, whether the composition of sea water or the composition of the ocean sediments is studied, no data has been collected yet to substantiate a long time relationship between the oceans and the continents. Wilson sets forth these problems:

The failure to recover any rocks older than Creataceous from the ocean floors suggests that the ocean basins may be younger than the continents. It has also become evident that the petrology, sedimentations, and structural geology of ocean chasms are quite different from these of continents…the ocean basins and oceanic islands are dramatically different from continents in crustal thickness, age, composition, ore deposits, structures, magnetic anomalies, and in the patterns and characteristics of their active mountain belts and earthquakes. Several continents have rocks at least 3.2×10^9 years old, which is 20 times the age of the oldest oceanic island, dredging, or core.[10]

Thus, because of the tremendous chemical disproportions between the oceans and the continents, the most probable conclusion is that the oceans are very young.

Another Look at Sediments

But let us now examine the ocean sediments from another aspect. If the annual amount of sediments flowing by rivers into the ocean basins and some idea of the volume of sediments on the ocean floor are known, division of the second quantity by the first should result in an approximate age of the oceans. Or to put it another way, if the annual quantity of sediments flowing into the ocean is known, this figure could be multiplied by, say, 100 million years, 4.5 billion years, or any other length of time which supposedly approximates the age of the earth, and then the average thickness of sediments on the ocean floor could be estimated.

Let us compute the thickness of sediment that should be found if the oceans were 260 million years old as deduced in accordance with the salt content. Calculations of the quantities added to the oceans by the rivers of the world will be considered first.

Clarke[11] has estimated that the rivers contribute 2.73×10^{15} grams of dissolved solids to the sea each year. A total of 7.1×10^{23} grams of solids would have been dissolved in the 2.6×10^8 years required presumably for the present sodium to accumulate. Of this total, 5×10^{22} grams are presently in solution[12] in the ocean water.

Therefore $(71.0 \times 10^{22}) - (5 \times 10^{22})$, or 66.0×10^{22} grams, should

have gone out of solution and become part of ocean sediment. A small part of this may have been recycled due to ocean spray, etc., but the major part must still be present somewhere in the oceans.

This estimate of 66 x 10^{22} grams of sediment might be checked by approaching the question from another viewpoint. Sverdrup et al reported[13] some estimates by Goldschmidt. According to Goldschmidt, for the present concentration of salt (NaCl) to accumulate in ocean solution, a total of 600 grams of rock has been weathered for each kilogram of water in the ocean.

Since there are 278 kg. of water for each square centimeter of the earth's surface, and the area of the earth's surface is 5.1 x 10^{18} cm^2, the total weight of water equals 278 x 5.1 x 10^{18} kg. or 1.42 x 10^{21} kg.

Goldschmidt estimated further that for every 600 gr. of rock that have been weathered, 65% or 390 grams actually should have become available for solution in the oceans or as sediment on the ocean floor. This equals 390 x 1.42 x 10^{21} grams = 5.53 x 10^{23} grams.

Since 5 x 10^{16} metric tons or 5 x 10^{22} grams are in solution, the amount that must have become sediment equals (55.3 x 10^{22}) or 50 x 10^{22} grams. This is very close to the 66 x 10^{22} grams based on Clarke's estimate of river sediments.

With the knowledge that there are presently an estimated 5 x 10^{22} grams of chemicals in ocean solution and at least another 50 x 10^{22} grams in sediments (based on an ocean age of 260 million years), let us determine what the ocean floor should look like. Sverdrup[14] estimated that, if the 5 x 10^{22} grams of chemicals, which are presently in ocean solution, could be extracted, then a layer of salts 45 meters thick over the entire earth would result. Since the oceans cover 70.8% of the earth's surface, this hypothetical layer would be 63.5 meters thick on the ocean floor.

Since sediments equal to a minimum of 50 x 10^{22} grams would accumulate in an ocean 260 million years old, then one could expect an average sediment depth of ten times 63.5 or 635 meters or 2,100 feet (with the ocean area the same), that is, if the continents had been weathering uniformly for 260 million years.

Since the continents presumably have been here far longer (minimum 3 billion years), one could expect logically that the sediments should be far deeper than 635 meters. In fact, in that time the oceans should have almost filled up, and the land should have pretty well been eroded to level plains.

Conceivably these figures would have been changed some by presumed mountain building some hundred million years ago, but the basic concept of the oceans filling with sediment as the land masses eroded should hold true.

Ocean Sediments Analyzed

Let us now examine the evidence as far as the ocean sediments are concerned. In 1949 Maurice Ewing wrote in the *National Geographic Magazine* concerning the exploration of the floor of the Atlantic Ocean. His comments were as follows:

> *In more than 300 places over vast areas of the Atlantic, we have now measured with sound echoes the depth of the sediment on top of the bed-rock of the ocean floor. These measurements clearly indicate thousands of feet of sediments on the foothills of the Ridge. Surprisingly, however, we have found that in the great flat basins on each side of the Ridge this sediment appears to be less than 100 feet thick, a fact so startling that it needs further checking.*[15]

Much of the Pacific floor, too, is covered by sediments under 100 meters in depth,[16] with some areas as thin as 20 meters.[17] The following statement relates to investigation of the East Pacific Rise:

> *A deep-towed magnetometer profile made across the East Pacific Rise crest shows sediment accumulation increases from less than 2 meters at the rise crest axis to about 20 meters at the western end and 10 meters at the eastern end of the profile.*[18]

Evidence from the oceans, it seems, may not be used automatically to support the view of a very old earth. In fact, the opposite conclusion seems to be better supported. Patrick M. Hurley wrote in the *Scientific American*:

> *The topography of the ocean floors has been rapidly revealed in the past two decades by the depth recorder .*

. . .It became a great puzzle how in the total span of earth's history only a thin veneer of sediment had been laid down. The deposition rate measured today would extend the process of sedimentation back to the Cretaceous times, or 100 to 200 million years, compared with a continental and oceanic history that goes back at least 3,000 million years. How could three-quarters of earth's surface be wiped clean of sediment in the last 5 percent of terrestrial time? Furthermore, why were all the oceanic islands and submerged volcanoes so young?[19]

Kuenen wrote:

Two great problems challenge earth sciences in this domain. The huge wedge of terrace sediment underlying the shelf off the east coast of the United States has been built up in little more than 10^8 years, that is, in less than 2 or 3 per cent of geological time. What has happened to the terraces that must have been produced earlier? Have they subsided into the mantle and been absorbed; have they been pushed under the continents; or have they been incorporated into mountain chains? The second problem is the discrepancy between the estimated thickness on the deep sea floor, and the values actually found. Various suggestions have been offered: (1) the layers below the unconsolidated sediment are mainly consolidated deposits; (2) the rate of sedimentation has been much slower than in recent times, especially in pre-tertiary times; (3) creep of the sea floor under the continental blocks under the influence of convection currents in the mantle; (4) the ocean floor is relatively young; (5) the sedimentary carpet has been invaded from below and metamorphosed so completely as to become basic rock."[20]

Here, then, is a great enigma. If the oceans are only hundreds of millions of years old, sediments averaging 600 or more meters (2,000 ft.) should be found all over the ocean floor. Instead, sediments are found normally to be far less than this, and in many cases the ocean floor

is almost bare of sediment. No idea, other than that of a very young ocean, has thus far been set forth that seems as plausible or direct; and if the age of the earth were billions of years, then the puzzle of the missing ocean sediments is increased enormously.

Summary

The following truths summarize this study:

1. A great discrepancy exists between the three or four billion year age date derived from radioactive decay data and the evidence obtainable from the oceans. Either the ocean data is completely untrustworthy, or there is a question regarding the dependability of the radioactive dating.

2. If the accumulation of sodium by the weathering of continental rocks as a part of NaCl in the oceans is used as a guide for the age of the oceans, a number of unanswerable problems remain:

    a. Some chemicals, (Cl, Br, etc.), must have been a part of the oceans since the very beginning or must have been introduced apart from rock weathering.

    b. The sediments in the ocean should be much thicker than actually found.

    c. Almost all the other elements which supposedly weathered while the sodium was weathering are in far too short supply to allow for a weathering period of 260 million years, which is required to bring this amount of sodium into oceans. Therefore using NaCl as a standard results in an untenable solution.

3. If accumulation of the other major constituent of the ocean salts, chlorine, is used as a guide for age dating, then the following points would obtain:

    a. An accumulation period of about 2 to 3 billion years

would result. This is much closer to the radioactive age determination. The ocean can then be considered to have been devoid of chemicals in solution at one time in its history.

b. This would compound the sediment problem. In this long period of time, the oceans would have filled with sediment.

c. This also provides no answer for the short supply of many of the ocean chemicals. This, too, gives an untenable solution.

4. If the accumulation of the very smallest amounts of chemicals is used for age dating, the following would obtain:

   a. The apparent age of the ocean would be under 1,000 years.

   b. The ocean would have begun with essentially the present compliment of salt and several of the other chemicals. This solution is untenable on the basis of other histories.

5. Another conclusion remains as the only plausible one, both in the light of Biblical statements, as well as in the light of the evidence obtained from studies of the oceans. This conclusion may be supported by the following secular evidences:

   a. Elements in the ocean water are not found in a saturated condition. From this, one could deduce the flow of chemicals into the ocean was a short-time phenomenon.

   b. Proportions of elements found in the water or on the ocean floor are in no relationship whatsoever to the proportions found in the continents. Such variables are resistance to erosion, water transportability, solubility, and others, over a very short period of weathering accord with these extreme differences in chemical proportions. Again, the conclusion seems most logical that the oceans

are very young.

c. The fact that many of the chemicals in ocean solution are present in amounts that could have accumulated within the last 1,000 years or less, if all rocks were equally susceptible to erosion, can be used dramatically to support a 13,000 year age of the earth. For this is precisely what would be expected in view of the differences in erosion resistance, solubility, etc. of the continental rocks. Elements in excess of those expected within 13,000 years could have accumulated from easily eroded rocks, whereas far less than that expected in 13,000 years of history would have accumulated from very hard rocks.

d. The concept of a very young earth is supported also by existence of a thin layer of sediments on the ocean floor. This is especially true when consideration is given to the cataclysmic worldwide flood of Noah's day. That phenomenon alone could have caused erosion of enormous quantities of sediments for ocean solution and deposition. In fact, impact of a worldwide flood upon the oceans would have been so severe that no accurate estimate of time can ever be derived from ocean chemicals.

e. The fact that certain salts such as NaCl are in such abundance in ocean solution could be interpreted to mean that they have been present in essentially their present quantities from the very beginning.

The all-important conclusion remains, however, that even without considering the effect of the flood on the oceans, under no circumstance may the ocean evidence be used to deduce an age of millions of years. Then, when any recognition is given to the Noachian flood sediments which must be subtracted from the elements in the oceans, the contention for a very young ocean may be stated even more emphatically. The 13,000 year date of the Bible appears to be the only true alternative to popular concepts of a very old earth.

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