

4319 Commonwealth Avenue
La Canada, Ca. 91011
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Dear Mr. Herrmann and others of the
Geology Staff:

I am the recipient of a number of letters from you, most of which I have not had the time to answer. Today, at year's end, Roman reckoning, I will take the time to send a few comments regarding some very significant facts -- especially generated by the article in December Scientific American. I appreciate your immediate comment on this article. We have all read it here. You commented that the article is "sufficient incentive to order a tombstone for our former teaching that man came in at the same time as Angiosperms and Mammals."

The article is indeed extremely valuable -- and I find no fault with the general premise of the author. But what does it actually prove? Before we conclude a tombstone is in order, it is imperative that we totally reevaluate the logic underlying intercontinental Tertiary correlations. (Pardon my summarizing some matters that we all think we understand.) Geology, as a science, did not exist prior to Hutton. It was created during the period from 1775 to 1825 -- like many other birthright opportunities. Geology grew up in a prevailing atmosphere of (non-Biblical) catastrophism. The new direction geology took was that of uniformitarianism -- the premise that earth history can be explained in terms of natural forces still observable as acting today. Junked were the suppositions that the earth had gone through a series of partial or universal catastrophes. The latter idea, though it may have appealed to theologians, was not fundamentally Biblically based, but based on conclusions from observations, and that without any evidence from archeology.

Whether we like to face it or not, the conclusions of geology, as well as those of history and archaeology, are essentially "art" and "judgment" -- however much science may seem to play a role in the evaluation of individual facts. The present state of geology, with the emergence of plate tectonics, is evidence of this fact. We must never forget that the assumption of uniformity precedes the inductive reasoning of geologists. Or, the assumption of uniformity must precede the demonstration of uniformity. Now we do not deny the uniformity of the laws of nature as far as they operate in time. Theologians who willingly cast aside the known forces of nature are fools and opposed to Christ's teaching of the permanence of natural law. But uniformity cannot be used to deny the fact of divine intervention -- or the intervention (or abuse) by Satan in a world over which he was given rule. We understand, though, that God appears to have revealed all fundamental interventions in the Biblical record. We do not have to invent them, as did the early catastrophists.

The next point is that correlation with respect to time is fundamentally dependent on the assumption that evolutionary development of life forms has occurred -- and that the consequent fossils provide a valid time scheme. Stated in other terms, geology has become dependent on paleontology or perhaps imprisoned by paleontology.

Of course, the early geologists did not understand evolution in the biological sense -- but they did think in terms of a long, gradual development. It is this view of geology that underlies Darwinian biological thinking.

What we must ask ourselves is whether all, some, or any Tertiary stratigraphic units are sequential. What role does migration play? Or temperature and depth -- in marine Tertiary deposits? Are we unscrambling evolutionary sequences or ecological facies? Clearly the latter!

An interesting feature of the Tertiary is that mammals do not play the fundamental role -- and flora never have -- in determining the traditional time-stratigraphic sequences. The usual basis is a foraminiferal sequence. The interfingering of continental with marine deposits is, in numerous areas of the Old World, the only way a time sequence is determined. But where is the proof of the assumed evolutionary sequence of Tertiary foraminifera species on which the Tertiary sequence depends? Foraminifera of the Great Central Valley of California assigned to the Pliocene are all assignable to living species. Many zones are not other than depth zones -- and not guides to relative age. By their own admission evolutionary geologists recognize that few if any worldwide marine Cenozoic stages are yet valid. Cenozoic intercontinental marine correlations have proved exceptionally difficult. The difficulties are magnified if correlations involving nonmarine mammals are taken into account. Grave problems have arisen between upper Cretaceous guide fossils and lowest Paleocene guide fossils. Lacunas are very significant in constructing columns of the Tertiary. These are generalized statements -- but they do reflect the need of our reevaluating the labeling of the Tertiary in "ages" and their assumed worldwide sequence. Time is indeed a factor in directly observed stratigraphy. But is it a time-evolutionary sequence to be equated world-wide -- or is it a time-ecological (temperature-depth-migration) relationship with no worldwide onion-coat sequence?

To come to specifics: What is the fossil evidence for mammals in the Tertiary and Quaternary? Most American mammalian deposits are in the interior western states, far from marine fossil-bearing sediments. What time relationship do they bear to Eurasia and Africa? How do we know apart from a Biblical parallel? That there is a sequence in North America geologists assume. But what time relationship is there between the unique fossil mammals in North America and those of the Old World? Do Paleocene, Eocene, Oligocene, Miocene fossils all follow one another in N.A. absolutely? Mammals assigned to Paleocene appear in "Fort Union" beds and adjacent areas. Lower Eocene faunas are present in the Bighorn and Wind River basins in Wyoming. Upper Eocene fossils are in the Uinta basin in northeastern Utah. How do we know these are in sequence -- apart from the assumption of evolution? What stratigraphic evidence correlates these different regions? Why should they not have been, in fact, contemporary, and differing only in ecological makeup? The White River series are attributed to the Oligocene. But what is the stratigraphic proof that they are later than Eocene? We have known for years that, for the Tertiary, paleontologists like to assign different periods to fossils, not because they succeed one another stratigraphically, but in spite of the fact that they do not follow one another sequentially!

Now look at Africa. No Paleocene mammals. A few Miocene sites in East Africa. Pliocene is very poorly known in Africa except for a few finds in the East African highlands. In principle, mammals did not make an appearance in Africa until the end of the Pliocene -- that is, until the transition to the Pleistocene. And almost from the beginning of the Pleistocene there is a presence of worked stone. I am of the conviction that the worked stone was non-cultural. That is, non-human in origin. Usually one finds random striking of stone with no consciousness of pattern by homo(sic!) erectus in the earliest Pleistocene -- before the arrival of homo sapiens. So from the point of view of Africa and Palestine I find no problem with correlating our previous understanding with the new finds on the Mediterranean desert. It would seem to have been a late stage in the world before the waters covered the land (Genesis 1:2). The deluge referred to in the Scientific American article would appear to have been the final inundation prior to creation week. But this does not tell us anything about time relationships with North America. What is the proof that the late Miocene desert in the Mediterranean is time related to the mammal finds customarily parallel or placed earlier in North America? Are we to use an evolutionary foraminiferal sequence -- or what? I would use Scripture

For Asia we note that the typical periods of the Tertiary are even more widely displaced than are the scatter patterns in the New World. Paleocene: Gashto, Mongolia. Later periods: different areas of Mongolia. But you must go to the Siwalik Hills of India for the Miocene impact. And how do we know that the immense mammal remains of the Siwalik are Miocene? Because of what we think we know of Europe! Not because of any proof in India. In other words, if we were to use the Bible as the guide, and reject the assumptions of evolution as not valid because they are assumptions, nothing more, then we would have no problem. The appearance of life as we know it since the week of recreation should be described in geographical terms in Africa and Asia and western Asia; not in terms of "ages." The Siwalik hills in the earliest years after recreation did bury immense numbers of mammals -- before the arrival of man. But these burials were not contemporary with the Mediterranean desert, which is stratigraphically earlier than the appearance of mammals in Africa and Western Asia. We have the clear sequence of the Nile basin as proof. What is not understood is the fact that Miocene does not consistently = Miocene. As to North America and the Mediterranean desert, we have no valid way to correlate in time once we acknowledge that evolution is unproved. No way, that is, if we do not use the Bible. But if we do, then there is only one conclusion -- that early Tertiary mammal deposits in North America should be correlated with Africa and Asia during the late Tertiary and early Quaternary. (The Siwaliks in India are usually associated with late Miocene, Pliocene and early Pleistocene.)

Since the European sequence is usually equated with India, we need to reexamine the assumption that Miocene = Miocene everywhere in Europe. Europe north of the Alps has no direct correlation with the Mediterranean apart from evolutionary assumptions. The Pikermi deposits in the Aegean area are actually Pliocene -- and agree with what we know of the Nile sequence. The Pontian mammal finds are equally satisfactory (though the French define them as late Miocene). I conclude that many early Tertiary deposits are those formed when the ancient world ended, when the Spirit moved over the waters, during creation week, and afterward, during the earliest curses for Adam's sin. To determine specifically the time we must examine the characteristics

of the deposits.

I would like to quote a small section from The Negev The Challenge of a Desert, by Michael Evenari, Leslie Shanan and Naphtali Tadmor, copyrighted 1971 by the President and Fellows of Harvard College. From pages 86-89:

"The Cenozoic era is initiated by the deposition of greenish crumbly shales and gypsiferous limestones rich in iron sulfides, for example, pyrite concretions.

"The Eocene sediments form a marine series and the major transgression of the sea took place in the Middle Eocene. Even the most elevated structures of the Negev were covered by the ocean. The sediments deposited during the Eocene are: chalk and limestone interbedded with platy chert concretions, soft chalk, and marl, massive, well-stratified limestone, and atop the high structures, hard, crystalline algal limestone with abundant nummulites. The flat, perturbed shells of these fossil unicellular animals weather easily out of the Eocene limestone...

"After the Mid-Eocene transgression of the sea, a moderate uplift caused recession and the emergence of a rather level plain. A network of rivers developed on this surface. Emergence continued during most of the Oligocene and lower Miocene, during which period the relief was planed down to a gently undulating landform that developed an over-all soil cover. Broad and shallow river valleys reached probably far into Transjordan. The tectonic events [end of page 86, begin p. 88] of the Miocene are clearly imprinted into today's landscape. The rivers incised themselves deeply into their formerly shallow valleys and transported the eroded material into the lower parts of their valleys, where it was deposited to form new sediments. This erosive process was slowed down by a great Middle Miocene transgression of the sea, which flooded the bays and river channels, arrested the seaward transport of the erosional debris, and left marine deposits that are found today at elevations as high as 400 meters.At the same time large areas of the central and northern Negev became covered by sweet-water lakes which during the peak of the Miocene transgression were mutually connected.... The Mid-Miocene transgression was followed by a steady drop of sea level continuing into the Quarternary.... [continuing on page 89]

"Sometime during the Pliocene a land barrier in the valley of Esdraelon (in the north of Israel) collapsed and the Mediterranean, at that time about 200 meters higher than today, flooded the Jordan valley and the Dead Sea area." A description of Pleistocene follows.

I quoted this material to illustrate how much of the Tertiary could conceivably be attributed to Genesis 1:2, prior to the week of recreation, and how much apparent time could elapse that conceivably was the divine work of a few days in preparing the earth with form, soil, life & drainage patterns for man. The algal limestone is worth noting in connection with the Eocene of North America visited by our staff. What life forms from the sea may have survived into today's world from before creation week might be determined by careful observation. I am of the opinion that old forms ceased in general and were buried, and new forms or re-creation of old ones appeared on the fourth day. Are there many marine deposits without fossils because sea life was late in the sequence of creation?

As a reading list I recommend: Stratigraphic History of Africa South of the Sahara by S. H. Haughton, 1963 Oliver and Boyd, London. Geology of India by D.N. Wadia, Macmillan, 1966 edition. The Fabric of Geology, Claude C. Albritton, Jr., editor, Freeman, Cooper and Company, 1963. Vertebrate Paleontology by A. S. Romer, 1966 ed.

To get at the solution to the numerous questions you have raised in your previous letters, and those I have posed here and those others in Pasadena have posed, we need to consider these fundamentals. We should begin to describe what we read and what we are privileged to observe (beginning as early as the middle Cretaceous) in terms of geographic dimensions. Second we should note the characteristics of the deposits under consideration. We must also note the actual stratigraphic position above and below -- bearing in mind the impact of erosion. Erosion is not to be a convenient substitute for a lacuna. We must be aware to avoid the concept of "ages" which represent evolutionary concepts that have no basis in proved evidence. Possible time elements should be taken into serious consideration. We should not assume unwarranted shortening of time unless we have a clear revelation in Scripture that the causitive factors are outside nature.

If we are willing to work with sound principles and not with invalid assumptions, we should have a very clear picture of what really occurred in different areas of the world when our age began. We should, however, consider the possibility -- I do not say probability--that just as we find fish without and fish with scales, and two major characteristics among trees (and plantlife in general), so we may need to consider whether the mammalian world has creatures that were uniquely related to a world before Adam. I suspect the answer will be negative (except for lack of information in the twilight zone of miniature creatures in the Upper Cretaceous). The answer will become clear when once we begin to think in terms of geography instead of in terms of an artificial geological column.

Now in closing I need to bring us all up to date on the serious spiritual problems that have beset different areas of the work. I find that no small number of the Fresno "old timers" are drifting away. They are the ones we had doubts about all along, but not all. The same in editorial. We have had some serious cases of failure to to one's job, of becoming critical and bitter. Our foreign language department is looking for new leadership as the liberal swing continues to eat away the spiritual life of some. I say this because the geology department, just as much as any other, is under pressure from Satan. Liberalism is not the problem. But soundness of judgment is at stake. And our attitude toward others -- whether toward those interested in geology directly or toward others. I am persuaded that the impasse in the geology department is clearly the result of not maintaining that close personal relationship with God and of not maintaining a proper guard over ideas that want to enter the mind.

As I have a great deal of writing and editing to do, you will pardon me if I respond in one long letter, and even then not always commenting on your observations. Thank you for your communications -- a very critical need in many areas that has been sorely wanting.

'I he 'ofa faka-Kalisitiane
(Tongan for With Christian love),

Herman L. Hoeh

Herman L. Hoeh