AN ANTHOLOGY OF MATTERS SIGNIFICANT TO CREATIONISM AND DILUVIOLOGY: REPORT I

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This report focuses on points of interest to Creationists and Diluvialists, gleaned primarily from the geological sciences.

The main topics mentioned include: biological evolution; the need of apologetics and consequences of a lack of apologetics; the lingering influence of Charles Lyell; examples and types of mixing of fossils in the geological time scale; the subjectivity of fossil species and genera; the artificiality of the geological column; evidences that many alleged ancient fossil reefs are in fact not reefs; critiques of uniformitarian claims about sedimentary environments; miscellaneous evidence against the validity of the geological column; and the way in which errors, similar to those in geology, can arise in archeology.

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VI. SOME EVIDENCES AGAINST THE VALIDITY OF THE GEOLOGICAL TIME SCALE.
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The scientific papers written by one individual are only a small fraction of what can be written about scientific tenets in an all encompassing paradigm such as the evolutionary-uniformitarian or the Creationist-Diluvialist paradigm. The active study of the professional scientific literature brings to light many such tenets.

It is useful for the tenets to be available to other workers even if they have not been studied to the point of writing separate works on them. This report is intended to be a collection of miscellaneous findings, primarily in the geological sciences, which are of especial significance in the negation of the evolutionary-uniformitarian paradigm and the establishment of the Creationist-Diluvialist paradigm.

The advantage of such a report is that it presents tenets in a more organized and more convenient form than scattering them over several CRS *Quarterlies* in the "Letters to the Editor" Column. Some of the tenets presented in this report go along with the findings of other Creationists and Diluvialists, others serve as sequels to topics covered in the 3 main works of the author published in the March 1978, September 1978, and September 1979 numbers of the *Quarterly*, while still others are brand new lines of evidence. All the findings can be used by other scholars to incorporate in their works on given topics, while others it is planned will be incorporated by the author in his future works.

I. SOME BRIEF NOTES ON BIOLOGICAL EVOLUTION

1. Hostility Towards Teleology

Woodfield[1] wrote: "Modern science is on the whole hostile to teleological explanations. That they are obscurantist and unemperical has been the dominant view among scientists since the Renaissance . . . The most common criticisms of teleology nowadays are either that they are animistic, i.e. they assume that the thing being explained has a mind, or that they tacitly invoke a supernatural being who directs the course of events."

Comment: Animism is a pagan view. If Woodfield's statement is correct, then a strongly atheistic value system dominates the sciences of origin. This is evident by the fact that postulating a supernatural becomes "obscurantist and unempirical" while the most tenuous and unobserved materialistic-mechanistic views are never recognized as being obscurantist and unempirical. It is high time that scientists recognize that a (however unempirical) teleological explanation can be as scientific as a (however unempirical) materialistic scenario for the unobservable past.

2. The Cambrian Explosion: An Enigma for Evolution

Towe[2] wrote: "One of the most striking and enigmatic aspects of paleontology has been the sudden appearance of advanced and diversified metazoan organisms in the early Cambrian. This subject has been the object of considerable research and speculation and numerous hypotheses have been proposed to explain the phenomenon."

Comment: This is yet another statement indicating the magnitude of difficulty that the Cambrian explosion holds for evolution.

3. Similar Environment An Insufficient Explanation for "Convergent Evolution"

In commenting on the claim that evolution to fit a similar environment actually explains "convergence", Riedl[3] said: "Parallel environmental factors may account for most of these but not very likely for all of them." He then proposed an evolutionary system that involves some kind of feedback mechanism.

Comment: Recognition of the difficulty for evolution caused by "convergence" has been discussed and documented by the author in his previous article[4] on Cephalopods. It is more reasonable to accept that the Creator used similar morphologies on otherwise very different forms of life rather than contend that similar forms arose twice independently.

4. Morphology of Carnivores Before the Fall and Curse

Salvadori and Florio[5] write: "Equipped with powerful jaws and long molar teeth typical of carnivores, the panda eats enormous quantities of fibrous bamboo

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shoots, although occasionally it hunts small mammals to complete its diet."

Comment: The panda helps explain what presently-carnivorous animals may have been partly like before the Fall and the Curse. It is commonly supposed that enormous morphological changes had been wrought on animals to make them carnivorous. The example of the panda suggests that morphological changes were not as great as behavioral changes. Cats, dogs, bears, etc. may have had long molar teeth as they have today since the Creation, but the sharp teeth may have been used on bamboo shoots instead of on the flesh of prey.

II. PHILOSOPHICAL ISSUES RELATED TO UNIFORMITARIAN VS. DILUVIOLOGICAL GEOLOGY

1. The Need for Effective Apologetics

In contrasting identifiers (those college students who practice the religion of their upbringing) with apostates (those college students who have totally rejected the religion of their upbringing), Caplovitz and Sherrow[6] note: "In every religion, the label 'intellectual' is substantially more popular with the apostates."

Comment: Herein lies the fruit of years of neglect by Christians of apologetics. The philosophy of atheistic evolutionary humanism has been allowed to so totally saturate the academic scene that it is considered unintellectual to be a believer. Solid presentation of apologetics and the defense of the Gospel and of Scriptures is long overdue. Happily, Creationism on campus has had a major impact, but much more is needed.

2. Fallacies in Claims of Repression of Scientific Inquiry

Lewis[7] writes: "As a result of intensive research since the beginning of the present century, the traditional image of the Middle Ages as an epoch of sterile subservience to the authority of the Church and of Aristotle in scientific matters has been destroyed. Instead, it is now recognized as a period during which scholars became capable of wide ranging and subtle, albeit habitually inconclusive, speculation upon topics commonly supposed to be the distinctive concern of early modern science."

Comment: Unbelievers frequently attack religious belief for allegedly having repressed scientific inquiry and having hindered the development of science. This statement of Lewis from a scientific journal (*Nature*), if accurate, indicates that there was substantial science in the Middle Ages and that the Church did not repress scientific inquiry.

3. Atheistic Consequences of Uniformitarian Geology

Writing in a geologic journal, Campbell[8] said: "Time was when hope of heaven and fear of hell exercised a major influence on man's thinking and conduct. Today, with the declining influence of revealed religion (a decline for which many hold science in general and geology in particular responsible) man seems to possess fewer or even no guides for his thoughts and actions. Thus it is philosophy that he must turn for help, for it is philosophy that seeks to define the underlying principles of the universe."

Comment: Uniformitarianism and the denial of God and his works go together. This was discussed in detail by the author in his work[9] on cyclic sedimentation. The drift towards meaninglessness and to man-centered humanistic philosophy follow as a consequence.

4. Charles Lyell on Catastrophism

Long ago, the pioneer uniformitarian geologist Lyell[10] said "Never was there a dogma more calculated to foster indolence, and to blunt the keen edge of curiosity than this assumption of the discordance between the ancient and existing causes of change."

Comment: From his own experience with dozens of geology professors, the author can definitely conclude that never has a dogma fostered more uninquisitiveness, narrow-mindedness, and even some hostility than the dogma of uniformitarianism. When asked of catastrophism on a more than local scale but not mentioning the Flood or the geological time scale, one professor said: "Let's stick with modern facies analysis . . . They work. Why drag in catastrophism?" Another said "When are you going to start thinking like a scientist?" (He has since moderated, and respects the author and his works). Another said and still says curtly: "Worldwide Flood . . Hah! . . . are you bringing that _____ up again?' Still another said: "Diluvialism is like the plogiston theory . . . gone forever . . . no finds could ever bring it back." (This is fallacious. While the author knows of no chemist who upholds the plogiston theory and who would write a paper supporting it, we all know dozens of professional geologists who are Diluvialists and many who have written scientific papers supporting that position.)

5. Persistence of Lyellian Influence on Modern Geology

In a review of a recent book B.J.S.[11] said: " . . . when we realize that so many of our accepted and frequently unquestioned beliefs descend directly from observations made by Lyell."

Comment: Mentioning Lyell is not only of historical interest. Psychology may have outgrown Freud, but in many instances geology has not yet outgrown Lyell.

6.The Interpretative Nature of Geological Sciences

Von Herzen[70] said: "Where many physical variables are relevant over a broad range of time and space scales as for most earth science hyptheses, formal 'proof' becomes difficult or impossible. The validity of an hypotheses then becomes a subjective judgement, either individually or by many persons, and is frequently dependent on the way the original hypothesis is framed."

Comment: The oft-repeated uniformitarian claim that their's is the only valid and scientific way of looking at earth history is therefore presumptuous, especially when it is realized that uniformitarianism rests upon rationalistic premises.

7. Present Uniformitarian Attitudes Towards Catastrophic Processes

Kumar and Sanders[74] wrote: "Moreover, as the geologic philosophy of what might be called *uniformitarianist catastrophism* continues to gain adherents and respectability, the study of storm deposits in the geologic record is losing much of its former 'instant stigma'." Uniformitarianist catastrophism describes the kind of thought expressed by Lyell (1830); it refers to the effects of catastrophic storms within the context of a uniform-

itarian view of geologic history." (italics theirs)

Comment: It is evident that there long has been (and to some extent still is) resistance towards the acceptance of *any* catastrophic processs. Where tolerated, catastrophic processes are admitted only as numerous, local in nature, fitting within the geologic time scale, and having occurred only within the context of ancient analogs of modern sedimentary environments.

8. A Case of Reversed Cause-Effect

Dietrich[12] wrote: "The quest for knowledge about geological history began when man first wondered about his environment. Some historians think the biblical story about the Great Flood may even have been framed in answer to questions dealing with man's finding fossil seashells on high and dry land."

Comment: This is like saying that heavy perspiration causes hot weather. He proposed that fossils caused the Flood (belief in the Flood.) Actually, it was the Flood which caused fossils. Ancient post-Diluvian man may have been aware of the Flood as the cause of fossils to a greater extent than has been supposed.

9. A Principle True for Both Uniformitarianism and Diluvialism.

Glikson[13] said: "In dealing with rocks formed when the world was less than half of its present age, a strict adherence to the doctrine of uniformitarianism is considered unjustified."

Comment: He is, of course, saying that conditions on the earth for the first 2.2 billion years may have been substantially different from the last 2.2 billion years. This principal amazingly also applies in the Creationist-Diluvialist paradigm. The earth was half its present age at about the time of Moses. Uniformitarianism has applied only since then, again only for the last half of time of the earth's existence.

III. OVERLAP OF FOSSILS IN THE GEOLOGIC RECORD

1. Increased Stratigraphic Ranges for Vertebrate Fossils

Wills[14] wrote: "... Period names ... are losing much of their old significance through the repeated discovery of fossils which overlap the old boundaries ... 'Carboniferous' amphibia now range right through the Permian and well up into the Trias. Many 'Triassic' reptiles range up into the Jurassic; and some also downwards even to low in the Permian. Recently a tortoise carapace not hitherto known below the Eocene (or one remarkable similar) turned up in Triassic rocks."

Comment: It is obvious that many fossil groups are found to have longer stratigraphic ranges than had been earlier supposed. In his cephalopod[15] paper, the author documented some long-ranging cephalopod taxons.

2. Mammalian Footprints in Carboniferous Rock?

Sarjeant[71] wrote: "Barkas considered it 'not improbable' that the former tracks were those of a 'small, broad, four-legged mammal' ... they figure as footprints of uncertain systematic character ... the tracks described by Barkas have received no subsequent attention, nor have any others been reported from Northumberland."

Comment: The possibility of mammalian tracks in Carboniferous rocks is radical because "primitive" mammals are not supposed to have appeared until Late Triassic-100 million years later. "Advanced" mammals are not supposed to have appeared until early Tertiary-200 million years later.

3. Horse Hoofprints in Devonian Rock?

Sarjeant[72] also wrote: "His illustration shows circular impressions with a raised central region, indeed rather like horse hoofmarks but quite *unlike* the footprints of any animal likely to have been in existence in the Devonian." (italics his)

Comment: Horses are not supposed to have appeared until the Tertiary, 300 million years after the Devonian. The effect of preconceived notions about stratigraphic ranges is obvious in the above statements by Sarjeant. While isolated footprint evidence is tenuous, it is admitted that the prints from the Old Red Sandstone do look like horse hoofprints.

4. A Possible Drastic Increase in the Stratigraphic Range of Frogs

Cameron and Estes[16] discussed the riddle of fossil "tadpole nests." They believe that they are poorly preserved. But the main argument they advance for these structures not being tadpole nests is the fact that these structures are found in Silurian rock while the earliest frogs are Jurassic. They also consider no other vertebrate in existence in Silurian times to be capable of having made such structure.

Comment: Although somewhat tenuous, this may be an evidence for increasing the stratigraphic range of frogs from Jurassic-Recent to Silurian-Recent. The profound gap between the first appearance of body fossils and first appearance of trace fossils would be an evidence against geologic time; the gap favoring a short or nonexistent time difference between Silurian and Jurassic rocks.

5. Progressive Increase in Stratigraphic Ranges is a Rule

Raup[17] testified that it is much more probable as a result of continued fossil collecting to increase the stratigraphic range of a known taxon rather than discover a new short-range taxon.

Comment: It is therefore clear that the instances cited above are far from isolated. The fact that extension of stratigraphic ranges with further collecting is the major trend indicates that the entire fossil record is becoming more random with time; that overlap of all fossils is continually increasing.

6. Stratigraphic Range Extension Of Conodonts Ascribed To "Time Warps"

Sandberg[18] reported finding typically Middle Devonian conodonts in Early Devonian rock, and Ordovician conodonts in Late Devonian rock. These were called "nearly perfect heterochronous heteromorphs" and were not considered to be simple extensions of stratigraphic ranges nor reworkings but "time warps." When conodonts are found in rocks "younger" than they are "supposed" to be, this is supposed to be evolutionary atavism (genetic throwbacks to earlier forms). By contrast, when conodonts appear in much older rock than is "proper" for them, then this is supposed to be a case of them being precursors of evolutionary change

("anticipation" of forms that will appear in the distant future).

Comment: This "time warp" concept illustrates the absurd lengths to which rationalizations for "out of place" fossils will go.

7. "Reworking" An Alleged Cause for Mixed Paleofloral Remains

Vanguestaine[19] said: 'Siegenian and Emsian acritarchs in the Synclinorium of Dinant originate from redistributed Silurian and Ordovician sediments . . . On the southern flank Silurian and Ordovician are mixed in some localities."

Comment: "Reworking" is a common rationalization for fossils found where they are not "supposed" to be. In his article on cyclic sedimentation[20], as well as in the one on cephalopods,[21] the author gave several other examples of alleged reworking.

8. Expected State of Preservation Reversed in Alleged Reworking

Mildenhall and Wilson[22] wrote: "Abundant well-preserved Cretaceous pollen and spores occur in all samples studied . . . Rare Pliocene pollen and spores occur . . . "

Comment: If there is found a difference in state of preservation of fossils considered to have been reworked versus those formed penecontemporaneously with sedimentation, then it is expected that reworked fossils will be in a worse state of preservation than the others because the former were transported in the reworking. This case is interesting because the allegedly reworked fossils are in a better state of preservation than the others which give the "true" age of sediment! "Reworking" rationalizations for mixed fossils are plastic.

9. Subjectivity of Fossil Species and Genera

North[23] said: "Except in standard sections, more fossils are identified wrongly than rightly."

Comment: The fact that geologists routinely "misidentify" index fossils should be an excellent indicator of the subjectivity of fossil species and genera.

10. Disparity Between Morphologic and Evolutionary Genera

In discussing genera within the Bivalve Family Lucinidae, Bretsky[24] wrote: " . . . the major phenetic clusters showed little similarity to the genera recognized on phylogenetic grounds. Some of the major clusters represented only part of one genus, others combined two or more genera, and others were an assortment of species from several genera."

Comment: Such artificiality of phylogenetic genera shows that evolution is fantasy.

Furthermore, all claims of stratigraphic ranges rest upon the taxonomy of the fossils involved. The statements by North and by Bretsky illustrate the subjectivity of fossil species and genera; a point made by the author in his work on cephalopods.[25] North was speaking about fossil cephalopods (ammonoids used in biostratigraphy) whereas Bretsky's statement shows that it applies also to Bivalves.

11. Circularity in the Geologic Time Scale

North[26] wrote: "The paleontological time-scale rests squarely on the law of superposition, independent of any theory or assumption. From this unassailable foundation; the paleontologist became for more than a century the arbiter of all stratigraphic organization. But for geologists, the law of superposition presupposes the existence of decipherable geological sections, and every geological section must have a top and a base. The paleontological succession was pieced together from hundreds of such sections, the tops and bases of which had been established by geologists on the ground. The paleontologists' wheel of authority turned full circle when he puts this process into reverse and used his fossils to determine tops and bottoms for himself. In the course of time he came to rule upon stratigraphic order, and gaps within it, on a world-wide basis."

Comment: A certain degree of circularity is evident here. The Law of Superposition can only apply if there are objective sections which can be superposed, and sections exist only if there are tops and bottoms delineated for them. But tops and bottoms can be set only if there is an order of fossils. The order of fossils is determined by the superposition of sections, and the superposition of sections is determined by their tops and bottoms which are deduced by the order of fossils.

12. Circularity in Delineation of Biostratigraphic Ranges

Bond and Bromley[73] said: "On the basis of these field relations, the Gokwe Formation is significantly younger than the Stormberg Basalts of the Karroo System, but older than the Kalahari Beds. Thus it is younger than the early part of the Jurassic and older than the Mid-Tertiary. This is a wide bracket which by paleontological means may be narrowed considerably. The presence of remains of dinosaurs rules out any age later than the end of the Mesozoic."

Comment: Circular reasoning is evident here. Dinosaurs are known to be Mesozoic because they are only found in Mesozoic rocks, and rocks are Mesozoic if they contain dinosaurian remains.

13. Patchwork in Formation of the Geologic Column

Krassilov[27] said: "The field geologist is seldom so lucky as to find out the sequential relations of all rocks in his area without reference to adjacent areas or more distant regions." He also said: "The regional stratigrapher is supposed to define existing divisions of rocks and then to relate them to the international scale which stands for standard reference. Thus, regional classification can be conceived as natural and the international scale as artificial at least outside the stratotype area."[28]

Comment: This illustrates how the geologic column is conceptual. Regional stratigraphy is not left to itself but is put together into a worldwide "onion skin" system of geologic ages. But the geologic column is admittedly artificial as applied to any one single area on earth. The geologic column is not as much read from the rock as it is read *into* rock.

IV. SOME GEOLOGICAL RAMIFICATIONS OF THE CREATION AND THE FLOOD

1. The Creation of the Earth and Differentiation of the Crust

Johnston[29] said: "Pillow lavas . . . are common in many parts of the Canadian Shield."

Comment: Since pillow lavas form underwater, this implies that there was a great deal of water during formation of the Shield areas. The Shield areas, being composed primarily of igneous and metamorphic rocks, and (with few exceptions) unfossiliferous, probably were formed during Creation Week. The formation of pillow lavas in Shield regions suggest the process of Creation whereby God differentiated the waters from the land (Genesis 1:9-10). Since most of the Shield is composed of granitic rocks, and granitic magma contains as much as 20% dissolved water, it is not difficult to envision the differentiation being first of all the driving off of waters from the formless crust so that it could crystallize. Much water would still be available during associated volcanism, enabling pillow lavas to form. Finally, the waters drained off the Shield areas to form permanent, dry land.

2. Impact Craters or Unusual Volcanism During Creation Week?

Nininger[30] commented: "The majority of impact craters are old—too old for the material that made them to be preserved in recognizable form; but coesite, stishovite, impactite, shatter-cones and shock metamorphoses are more durable, and they are not common products of vulcanism."

Comment: The fact that meteoritic material is not preserved at or near alleged meteoritic craters in the Precambrian may be an evidence against such a mode of origin, especially in the context of a proven young earth. Because the process of formation of the earth and its crust took God only the first few days of Creation Week, some action may have involved an explosive transfer of material from one part of earth into another via "autobombardment." The process of formation of impact craters may have been volcanism so intense that large chunks were injected into suborbital, ballistic trajectories. The craters thus formed indirectly from volcanism; the petrology and minerology reflecting the impact whereas the absence of meteoric material indicates that it was terrestrial, not extra-terrestrial, material that formed the craters.

3. Primacy of Submarine Volcanism During the Flood

Moore[31] said: "Pillow lavas, produced as fluid lava cools underwater, is the most abundant volcanic rock on earth . . . "

Comment: The significance of submarine volcanism during the Creation Week has already been discussed. Noteworthy is the fact that submarine volcanism was also predominant during the Flood; water being everywhere and lava usually coming into contact with it during eruptions.

4. Tectonics and Metamorphism During the Flood

Sawkins *et. al.*[32] wrote: "Geologists who study metamorphic rocks have long realized that enormous amounts of thermal energy are required to convert sediments and volcanics of regional extent from their original condition into high-grade metamorphic assemblages. Clearly, the requisite heat must be supplied from below, but by what physical means was it delivered to the site of metamorphism? The conduction of heat through rock is so slow that the thermal conduction of heat from deeper regions is simply inadequte to account for the geometry of many metamorphic belts.

Comment: The authors are proposing that heat from plutonism helped cause metamorphic belts; having noted that geothermal heating is insufficient. Metamorphic rocks find an easy explanation in a Diluviological context. Mountains being built in months instead of tens of millions of years would have trapped tremendous amounts of heat from tectonomagnetism. The heat would have metamorphosed the rocks; having been incapable of dissipating quickly because so much was generated in such a short time.

5. More Evidence For Catacylsmic Deposition

Milici *et. al.*[33] write: "Figure 24 shows a tree that was buried to a depth of 4.6m (15 ft.) Because the tree is in growth position and shows no root regeneration, it probably was buried very quickly, certainly before it could decay."

Comment: This is yet another example of a tree trunk being buried upright over many feet of sediment, demonstrating very rapid burial. Similar examples and other lines of evidence for cataclysmic burial have been discussed by the author in his works as well as by other Diluvialists. The finding of evidences for a young earth is crucial in showing that one, not many, cataclysms formed these deposits.

6. Disturbance of Marine Ecology During the Flood

McKerrow[34] wrote: "It can be concluded from the above discussion that Mesozoic, Tertiary, and modern bottom-dwelling communities are more intimately linked with sediment type than those in the Paleozoic (except for some early Palaeozoic communities which were dominated by the deposit-feeding trilobites.")

Comment: This find is very amenable to a Diluvian interpretation. The poor connection between fossils and lithology may be an evidence that they were not *in situ* seas but Flood deposits. The Paleozoic thus represents early Flood deposition with catastrophic mixing of marine fossils with sediment. By the time the rocks labeled Mesozoic were being deposited, the Flood was receding, sedimentation was slower, and more organisms could find habitat in regions of energy appropriate for them.

V. CRITIQUE OF "ANCIENT SEDIMENTARY ENVIRONMENTS": EMPHASIS ON REEFS AND DELTAS

1. Evidence Against Evaporitic Origins of Salts

Meynen[35] wrote: "Paradoxical as it appears, it is at times difficult to judge the aridity and humidity of a climate from the fossil plants. This is because the buried plants are mainly those growing near or in the basins. For example, the Kazanian flora . . . contains only mosses, ferns and sphenopsids . . . i.e. obviously hydrophyllic forms. However, the flora-bearing beds alternate in this section with rocks indicative of an arid climate (gypsums, dolomites).

Comment: This interbedding of evaporites (so-called) with plants may be an evidence against these salts having arisen from evaporation of drying-out seas over immense periods of time.

2. Uniformitarian Presuppositions and "Ancient Reefs"

Braithwaite[36] said: "The spur to recognize fossil reefs came initially from their investigation in modern seas and, at the time their study first began, the simple presence of corals was felt to be evidence of 'a reef.' "

Comment: This illustrates how the "present is the key to the past" dogma of uniformitarianism causes a natural tendency to attribute ancient rocks to present processes. In particular, it illustrates how fossiliferous limestone can be attributed to ancient reefs by reading reefs into the rock because reefs exist today. The whole issue of alleged "ancient reefs" has been discussed by Austin[37] (former pseudonym Nevins).

3. Plasticity and Accommodation of Alleged Reef Characteristics

Rigby[38] said: "Any model for recognition of reefs in the geologic record must allow for considerable variation in relief, size, shape, biological composition, and facies relations."

Comment: It is evident from the statement that all of the criteria for recognition of reefs are quite plastic. It thus becomes facile to take characteristics of limestones and attribute a reef environment to the rocks. The great variation in criteria that have been used may indicate that reefs have been read into, not out of, the rocks.

4. Difficulty of Proving "Ancient Reefs."

Philcox[39] wrote: Wave resistance is used in many definitions as a criterion for 'reef.' It is therefore important to clarify what wave resistance means, whether it can be recognized in ancient reefs, and what effect the use of this criterion has on our thinking . . . Diagnosis of the wave-resistance capacity of ancient buildups is difficult."

Comment: Most definitions of a reef include wave-resistance caused by the binding action of organisms that grow there. This indicates that it is very difficult to prove that ancient rock was one a wave-resistant sediment, and—by implication—a reef.

5. Most "Ancient Reefs" Admitted Not To Be Reefs

Wilson[40] said: "Organic framework construction is known to be important in the middle Paleozoic and in some situations from Jurassic to Holocene times. Most organic buildups in the geologic record are in no sense organic frame-built reefs."

Comment: Even by uniformitarian standards, much of what has been attributed to reefs isn't reef at all.

6. Silurian "Reefs" of US Midwest Are Not Reefs

Despite advocating a reef origin, Lowenstam[41] wrote: "Regarding the reef builders, unless the *Stromatactis*-like forms are algal, the sole reef builders were all coelenterates. Since bottom-cementing habits had not as yet been acquired in Niagaran times by Foraminifera, pelyecypods, gastropods, or barnacles, there was a noticeable lack of these accessory elements which today contribute to the strengthening of the framework constructed by the reef builders . . . Today the adnate tubes of polychaete worms form an important strengthening agent of the framework erected by the reef-builders. Though this habit among polychaetes was already developed in Niagaran times, as shown by *Spirorbis* in the inter-reef habitats (Lowenstam 1948), the niche range had not then been extended to reefs . . .

Among the reef dwellers, we miss altogether elements such as the calcareous algae, Foraminifera, and echinoids which today make up a major portion of, and occasionally the bulk of, the reef sands. The niche of *Halimeda* of today was, in Niagaran times, occupied by the similarly jointed crinoids, that of the pelecypods largely by brachiopods. Today reef crinoids are few and eluetherozoic in habit, as are all reef echinoderms; in the Niagaran the Pelmatozoa were exclusively sessile forms. This is further due to the fact that as of today we have no evidence of asteroid or holothuroid representation on the Niagaran reefs. . .

It is perhaps worth stressing that the enormous biomass of the Niagaran reefs was, as that of modern reefs, basically dependent upon a plant foundation. Yet so far, we have no definite records of this vital element of the Niagaran reefs."

Comment: The Niagaran (Middle Silurian) "Reefs" of the Great Lakes region are probably just as famous as the Permian Capitan Reef of Texas, discussed by Austin.[37] Upon close examination, the statements of Lowenstam render the reef interpretation untenable. It is evident that very many forms of life expected to be present on reefs are absent. The claim that these forms had not evolved to fit the reef niches by Silurian time may be viewed as a rationalization. The absence of so many reef organisms from the Silurian "reefs" is thus decisive evidence against them being reefs. Also noteworthy is the fact that Braithwaite[36] noted the problematic nature of *Stromatactic* and, based on his studies, concluded that *Stromatactis* was mud-based and could not have served as a framebuilder or former of a wave-resistant structure.

7. "Ancient Reefs" are Actually Flood Deposits

Wilson[42] wrote: "By analogy with present shelf depths, whose Holocene sediments much resemble ancient limestones, we can safely assume that in the geologic past, shelves and platforms hundreds of miles wide were covered with water only a few tens of meters deep. Again, by analogy with actualistic models, it is hardly conceivable that tidal currents and wave action in such widespread and shallow seas could have been very effective. Yet many deposits across the North American craton contain uniform sequences of rock types for hundreds of miles and such deposits commonly include beds of clean quartz sandstone and pelletoid or oolitic lime grainstones! These are clearly the result of wave and/or current activity and yet are widely distributed over thousands of square miles. On such flatbottomed, shallow seas not much wave energy can be generated and tidal effects are severely restricted (Keulegan and Krumbein, 1950). It is thus probable that such deposits were formed by shoreward progradation of shorelines and offshore oolitic bars."

Comment: Instead of being evidence for progradation and lateral migration of the environment, the presence of evidence for high energy deposition over wide areas may be evidence against the usual uniformitarian interpretation of ancient shallow seas. The Flood can easily account for the widespread presence of high-energy conditions of deposition.

8. Subjectivity in "Sedimentary Environment" Designations

Friedman and Sanders[43] said: "Although the test of a geologist's skill is the depth of perceptiveness and logic used in interpreting rocks in terms of their formative processes and environments of deposition, *even the most astute geologist commonly is unable to arrive at a unique interpretation of a given rock.* (italics theirs)

Comment: Such difficulty of "sedimentary environment" diagnosis is often attributed to complicating factors. An alternate view would be that difficulty is caused by the fundamentally erroneous presuppositions and methodology of uniformitarian geology which attributes all ancient rock to environments now in operation (as seas, rivers, deltas, etc.), when in actuality these are Flood deposits.

9. Sedimentary Structures From a Wide Variety of Hydrologic Conditions

Suttner[44] wrote: "Also, no longer are primary structures routinely directly associated with depositional environments in interpretation of facies motifs. Instead, there is broader recognition of the fact that sedimentary structures are products of processes and that processes overlap specific environments."

Comment: A wide variety of hydrologic conditions can produce given sedimentary structures. The uniformitarian claim that ancient sedimentary rock can be objectively and compellingly assigned to analogs of environments now in operation grows weaker as does the claim that only processes now in operation can uniquely explain sedimentary structures in ancient sedimentary rock.

10. Tenuous Basis For Many "Sedimentary Environment" Claims

Harbaugh[45] said: "All too commonly, geologists who study stratigraphic sequences attempt to interpret the depositional environments of the strata in terms of only one or two variables—such as water depth or wave energy."

Comment: Many "sedimentary environment" designations are weak even from a uniformitarian viewpoint. Variables such as water depth and wave energy easily dovetail with a Diluvian interpretation.

11. Contradictory "Sedimentary Environment" Designations

Adams and Patton[46] wrote: "Various interpretations— offshore bar, beach, eolian, and fluvial,—have been made for the depositional environment of the Lyons Formation. Although attempts have been made to apply a single environmental origin to the entire lateral exposure, it now seems probable that the formation was deposited in several closely related but distinct environments, and that these account for the observed lateral and vertical changes within the formation."

Comment: The fact that the whole gamut of sedimentary environments has been attributed to the Lyons Formation (a well-sorted, mature sandstone) may be an indicator of the fallaciousness of attributing ancient rock to sedimentary processes now in operation. The whole issue of "sedimentary environments" was discussed by the author in his work on cyclic sedimentation.[47] Contradictory designations may indicate that these rocks were not formed in analogs of present environments, but rather that Flood deposition simulated an assortment of environmental characteristics.

12. Differences Between Ancient and Modern Sedimentation

Lundegard *et. al.*[48] said: "The Brallier depositional sequence differs significantly from existing submarine-canyon-fan models in that it lacks large-scale radial dispersal patterns as well as canyon and channeled inner-fan facies. Rather than radial progradation, characteristic of a large, stable submarine fan, uniform progradation from multiple sources . . . In spite of the paucity of modern analogs for such a depositional system, the Brallier Formation and other ancient examples attest to the significance of turbidite sedimentation in deltaic settings."

Comment: This is a clear example of ancient sediments not quite resembling modern ones. Multiple-source progradation may be an evidence that the above-discussed sediment is not an ancient delta but a Flood deposit; torrents of water flowing from various regions and covering a large area. The prominence of turbidites is especially suggestive of large-scale Flood deposition.

13.Widespread, High-Energy Sedimentary Veneers Unlike Today's

Newell[49] wrote: " . . . most present configurations (topography, chemistry, circulation, climate,) are strikingly unlike those that must have prevailed when the Paleozoic and Mesozoic limestone seas spread over immense and incredibly flat areas of the world . . . Closely comparable epeiric seas probably do not exist today . . . Supratidal and intertidal mud flats are today much more restricted in area than they must have been at times of widespread Paleozoic and Mesozoic limestone seas."

Comment: The widespread sedimentary rock veneer on top of the cratonic basement may be an indicator that these rocks resulted not from shallow seas of which there are few presently, but from Flood deposition.

14. Disturbance of Modern Sedimentation

Swift *et. al.*[50] said "Thus, a palimpsest sediment is one which exhibits petrographic attributes of an earlier depositional environment and in addition, petrographic attributes of a later environment . . . Palimpsest sediments, like relict sediments on modern shelves, are more common in the rock record than is commonly realized."

Comment: The fact that an ancient sedimentary rock shows the attributes of more than one environment may be an indicator of the fallaciousness of attributing ancient sediments to analogs of modern environments. Rather, the mixing of environmental attributes indicates that the properties of flowing Floodwater simultaneously resembled processes taking place in several different modern environments.

15. Mixing of Trace Fossil Assemblages and Sediment Type

Chamberlain[51] said: " . . . *Chondrites* and *Zoophycus* are more extensive in deep-water deposits than previously thought." In speaking of sedimentary rock facies, Seilacher[52] wrote: "*Glossifungites* facies may oc-

cur in deeper and *Zoophycus* facies in shallower positions due to local channeling or restrictions, but *Nereites* facies seems always to be restricted to the deepest zone."

Comment: It is commonly taught that trace fossil assemblages show an ichnofacies zonation due to organisms having inhabited different regions of a sedimentary environment. Thus, the zonation from shallow, agitated waters to deep, tranquil waters is reflected by the zonation: *Skolithos*, *Glossifungites*, *Cruziana*, *Zoophycus*, and *Nereites*. The statements of Chamberlain and Seilacher indicate that the ichnofacies zonation is sometimes mixed. Such zonation therefore is not exact and need not imply the onetime presence of analogs of modern environments. The overlap and even mixing of ichnofacies may have resulted from organisms of different subenvironments having become mixed during Flood deposition.

VI. SOME EVIDENCES AGAINST THE VALIDITY OF THE GEOLOGIC TIME SCALE

1. The Vaunted Supremacy of the Geologic Column

After considering Archbishop Ussher's famous chronology as being a search for the limits of time, McLaughlin[53] commented: "Today we continue Archbishop Ussher's search, but we now use a far more accurate source of information than his Bible. From the beginning of its history, the earth has maintained a detailed geological journal . . . "

Comment: the items already presented in this report and especially those about to be presented in this section demonstrate the fallacy of McLaughlin's statement.

2. Significance of Paraconformities

After describing some trace fossils from Ordovician rocks near Sinat, Iraq, Seilacher[75] commented: "The Silurian is missing and the boundary to the overlying Devonian was for a long time arbitrary due to the sandy and unfossiliferous nature of the passage beds. A sudden shift in the trace fossil record from a *Nereites* to a *Skolithos* community has here proved to be a better boundary criterion than lithology and seemingly conformable relationship."

Besides listing several paraconformities, Newell[54] said: "The Devonian rests paraconformably on Cambrian rocks over much of Montana (Sloss and Laird 1947). Many geologists would term this a disconformity, but over large areas its recognition and evaluation depends solely on fossils. Every experienced biostratigrapher can cite other examples of such paraconformities."

Comment: Many Diluvialists (for example, Whitcomb and Morris[55]) have taken note of paraconformities. In the latter example cited above, the Ordovician and Silurian are "missing" and there is little or no evidence for the alleged 150 million years of nondeposition and erosion. The absence of geologic ages with no evidence of sedimentary discontinuity is thus evidence against the validity of the Phanerozoic geologic column. Noteworthy from the latter cited statement is the fact that such paraconformities are common.

3. Gross Disparity in Extrapolation of Sedimentation Rates

Wilson[56] wrote: "Considerable discrepancy exists when such rates obtained from deposition on modern tidal flats and reefs are applied to thicknesses of ancient neritic strata. For example, the Great Bahama Bank should have 35000-50000 m of post-Cretaceous sediment instead of 4500± (Goodell and Garman, 1969, p. 528). Since these rates do not jibe with the rates of deposition of even thickest known ancient carbonate deposits of comparable environment, we assume that the carbonate producing system operates intermittently and is very sensitive."

Comment: The fact that present sedimentation rate must be reduced by a factor of 10 in order to make it compatible with the amount of time supposed to have elapsed since the Cretaceous may instead by interpreted as evidence against the validity of geologic time and geologic ages. Even the amount that there is need not imply millions of years of formation, because sedimentation rate was magnitudes greater during the Flood than at present.

4. Near Absence of Major Placers in Pre-Tertiary Sedimentary Rock

" . . . most placer deposits of economic value are in rocks of Tertiary age or younger. . . "[57]

Comment: The paucity of placers in the geologic record is explained by claiming that they were in regions or erosion and therefore were not preserved. Alternatively, their near-absence may indicate that the fossil record is not the result of normal sedimentation, but of cataclysmic Flood sedimentation where not many igneous and metamorphic parent rocks are eroded to yield placers. Their abundance in Tertiary reflects post-Flood sedimentation, whereas Precambrian placers date back to the Creation.

5. Paucity of Ecological Relationships Among Ancient Life

Ansich and Gurrola[58] wrote: "Much of present day ecological study is concerned with biological interactions and relationships among organisms. Such interactions, e.g., commensalism, predation, parasitism, and competition for space, are rarely preserved and, at best, can only be inferred from the data available to the paleontologist."

Comment: These lacks are attributed to the nonpreservation as fossils of most organisms that lived. Another reason may be that fossils do not represent ancient *in situ* seas but Flood deposits, where ancient seas were stirred up and their contents deposited on land. Lack of solid ecological evidences from most fossil groups may thus be evidence against geologic periods and geologic time.

6. Unnatural Basis For Geologic Periods

Rodgers[59] said: "Detailed analysis of the 'fine structure' of the Taconic Orogeny combats the dogma that orogenies are sharp, discrete events punctuating the geologic record (separating periods and abruptly terminating geosynclinal sedimentation) and suggests instead that they reflect 'random walk' processes within the earth."

Comment: The fact that orogenic processes fail to show well-defined effects within geologic periods may be yet another evidence of the fallaciousness of uniformitarian historical geology. The fact that an orogeny may affect rocks of a geologic period and yet the same orogeny not effect rocks of the same period in the same general region may be an indicator of the non-existence of geologic periods.

7. Paleontological Difficulty Caused by Acceptance of Geologic Time

Hewitt and Hurst[60] described the cephalopod *Aegoceras* and the fact that its size increases going stratigraphically upward. It was considered that it is either an evolutionary growth rate increase or a temperature-induced increase in growth rate. If accepted as evolutionary, then the time required would necessitate the section having been deposited as a rate of only 5mm./1000 years, which is less than pelagic oozes and this is inferred to be an offshore shelf region where a sedimentation rate of 1mm/1yr. should be expected, unless 99% of time was occupied by unseen disconformities. For this reason an ecological, not evolutionary, explanation was favored for the stratigraphic size increase.

Comment: The impossibly low sedimentation rate that would have to be accepted if the *Aegoceras* progression were evolutionary is a *reductio ad absurdum* of claims of evolution in stratigraphic section.

8. Evidence Against Geologic Time From Fossil Diversity

Raup[61] said: "There are about 250,000 different species of fossil plants and animals known . . . In spite of this large quantity of information, it is but a tiny fraction of the diversity that actually lived in the past. There are well over a million species living today and known rates of evolutionary turnover make it possible to predict how many species *ought* to be in our fossil record. That number is at least 100 times the number we have found." (italics his)

Comment: This very small (relative to today) amount of fossil species is much more easily explained by the fossils representing mutually-contemporaneous life that was buried during the Noachian Deluge than by successive evolving populations over hundreds of millions of years. The paucity of fossil species indicates one population giving rise to all fossils, not countless populations.

9. Persistence of Drainage Patterns

Friedman and Sanders[62] wrote: "Two contrasting kinds of results have come from modern paleocurrent studies. On the one hand, slopes such as that which presently inclines southward toward the Gulf of Mexico from Minnesota, have maintained this orientation for at least several hundred million years. On the other hand, paleoslopes such as those inferred from the Cenozoic strata of the French Maritime Alps, have completely reversed inclination since the Pliocene Epoch. Presumably, such slope reversals have resulted from rapid subsidence to great depths of much of the Mediterranean Basin."

Comment: Owing to the ease of topographic changes on the earth, the lack of change of paleoslope over alleged several hundred million years in the continental interior of the US may be evidence favoring a very short period of deposition for these deposits rather than several hundred million years. Such constant paleocurrent direction is thus more in accord with a brief but global Flood than it is with geologic ages taking place on a constantly changing earth.

10. "Extra" Sections Within and Between Geologic Periods

Mintz[76] said: "The problem has always been complicated by the fact that the strata which are missing in the type area but found elsewhere are not part of the original definition of any of the units, and hence great arguments have arisen as to the time period to which they ought to be assigned. To this day geologists are still involved in the process of fixing the period boundaries."

Comment: Stratigraphic sections keep turning up which could theoretically be attributed to additional geologic periods between or within existing ones. However, Mintz[77] noted that geologic periods are arbitrary divisions of (supposed) geologic time, so the modern practice is to integrate these "extra" sections into existing geologic periods instead of erecting new ones. The appearance of "extra" sections indicates that stratigraphic order of fossils is more random than previously known, and that geologic periods are even less credible than before.

11. Significance of Alleged Overthrusts and "Wrong"-Order Strata

In a book on fossils, Spocyznska[78] wrote: "Certain fossils are found only in particular strata, and these latter are composed only of certain specific types of rock. These characteristic fossils are called 'indicator fossils' and, as this term implies, they act as pointers to a particular period of geologic time. It will be seen from this that if fossils A and B are fund only in beds of, say, Carboniferous age, should they turn up in combination with Permian rocks which date from a much later period, one must draw the conclusion that movements of the earth's crust have thrown these earlier beds up. The intrusion of Carboniferous fossils A and B among C and D which are found only in Permian strata is therefore a definite indicator of earth movements at some time or other."

Comment: This illustrates how overthrusts are assumed if fossil strata appears in "wrong" order. The statement about fossil mixing being a "definite indicator" of overthrust hints at lithologic and structural evidences being inconclusive; overthrusts accepted only because of "wrong" order. This point is made by many Creationists (for example, Read[79]).

12. Volcanic Evidence Against Geologic Time

In describing a situation from New South Wales, Australia, Dulhunty and McDougall[80] wrote: "In some places . . . the younger flows overlap the Garrawilla Lavas, making differentiation difficult . . . Petrographically, the lavas of the two age groups appear . . . to be remarkably similar, consisting of alkali olivine basalts, but the Mesozoic rocks tend to be somewhat altered."

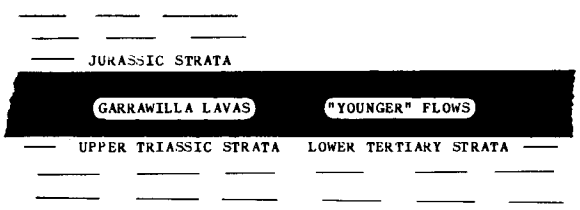

Figure 1. This diagram illustrates an excellent line of evidence against geologic time. Lower Jurassic lava flows (left) are nearly identical to nearby Tertiary flows (right). This suggests that both are really one contemporaneous extrusion of magma. The 120 million years of time which is supposed to separate Lower Jurassic from Tertiary is thus shown to be totally fictitious. (See Section VI, no. 12, for documentation.)

Comment: Two groups of lava flows, one Jurassic and the other Tertiary (see Figure 1) are nearly identical in composition. This argues for one lava flow only, drawing Jurassic and Tertiary into contemporaneity.

13. Possible Evidence Against Geomagnetic Reversals

The eminent British geophysicist Tarling[81] wrote: "It is now generally accepted that most of Europe and North America were contiguous from Devonian to Cretaceous-Tertiary times. On this basis, the paleomagnetic data of the two continents should also be consistent when the continents have been placed in their previous relationship. In fact there are serious, consistent differences between the paleomagnetic data on most acceptable reconstructions while reconstructions based on the paleomagnetic data alone do not result in viable continental reconstructions. Such observations suggest either that the paleomagnetic data still contain consistent errors, the geomagnetic model is wrong, or that the actual continental relationships were radically different to all extant models."

Comment: These grave difficulties in using paleomagnetic data may be evidence against the uniformitarian view that the earth's magnetic field has been constantly reversing itself and been in existence for millions of years over geologic ages. This would be in accordance with the work of Barnes[82], who proposed a short-lived non-reversing geomagnet and consequent young earth.

14. Skepticism Among Uniformitarian Geologists Towards Radiometric Dating

In a published discussion following their paper, Sabine and Watson[63] said: "Mr. Webster Smith . . . regarded the atomic dating method (except in respect to carbon) as still very tentative especially where the older rocks were concerned and where discordant and even absurd results were quite common. There were records of granites which atomically were older than other granites that they intruded . . . argon was all too prone to be either deficient, wholly absent, or even too high; in such cases the author 'adjusted' his figures."

Comment: There is some skepticism among uniformitarians towards radiometric dating; a point made and documented towards the end of the author's work[64] on radiometric geochronology.

15. Disregard For Radiometric Results Inconsistent With Others

Cahen and Snelling,[65] after discarding an anomalously old K-Ar result, said: " . . . the only reason for . . . rejecting the age . . . was that it was out of keeping with the three other apparent ages of biotites of the same Series . . . "

Comment: This illustrates how discrepant results in radiometric dating are conveniently disregarded. In his work,[64] the author extensively documented the fact that dates are disregarded not only when they are in conflict with some favored value(s), but also when they conflict with accepted values for biostratigraphic positions.

16. Selective Publication of Dating Results

Bath[66] said: "Unpublished work by the author on Silurian shales from Pembrokeshire and the Welsh Borderlands has shown that such rocks can define isochrons giving ages significantly younger than the time of deposition adduced from faunal evidence."

Comment: Besides indicating that Rb-Sr isochrons from shales are often anomalous, this also illustrates that discrepant results are often (or usually) not published; two points documented previously.[64]

17. Failure of Radiometric Dating in Precambrian Stratigraphic Studies

After describing one group of geologists who uncritically accepted radiometric dating, Salop[67] said: " . . . the other group, in the face of many discrepancies between radiometric and geological data, tended to reject this technique in stratigraphic studies, or accepted it with great caution."

Comment: The fact that Pre Cambrian Dating results are often very contradictory has been discussed towards the end of the author's work.[64] This statement by Salop illustrates the consequences of such erratic dates.

18. The K-Ar Isochron Method Has Its Own Problems

Shafiqullah and Damon[68] said: "The $^{40}Ar/^{36}Ar$ vs. $^{40}K/^{36}Ar$ isochrons are valid only when all samples of the system under consideration have the same non-radiogenic argon composition. If this condition does not hold, invalid ages and intercepts are obtained. Models 2-9 yield isochron ages that are too high, too low, or in the future, sometimes by orders of magnitude."

Comment: It is often claimed that the K-Ar isochron method is superior to the conventional K-Ar method because the former measures, not assumes, the initial $^{40}Ar/^{36}Ar$ ratio, and can overcome and "excess argon" problem. This statement indicates that isochrons can form that are discrepant and absurd, and—like conventional results—are subject to open-system rationalizations whenever discrepant and unwanted results are obtained. The Bourinot Group (volcanics; Cambrian, ref. 372) in Table 1 of the author's work[64] is an example of an isochron that is "too young," and this is attributed to thermally-induced argon loss with homogenization of the remainder during the alleged heating event on the rock.

VII. ARCHEOLOGY AND PREHISTORY

1. Fallacy in Dating of Prehistoric Man and His Alleged Cultural-Technical Evolution

Brown[69] said: "In archeology it is now realized, despite long resistance, that dating and classification by

means of technical typology, for example by stone tools, is no longer possible in many cases. The Acheulian stone industries of Africa are possibly as old as 1.4 Ma, but in Atlantic and Mecditerranean Europe they are rare until mid-way through the Brunhes Epoch."

Comment: This finding is very much in line with the work of Creationists who long insisted that technical typology is not an evolutionary stage in man but a progressive restoration of technology among Noah's immediate descendents in the first few centuries after the Flood. The difficulties in using technical typology for dating reflects the fallacious evolutionary premises that hold to human evolution.

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AG —American Association of Petroleum Geologists Bulletin
CA —Cambridge University Press
CR —Creation Research Society Quarterly
EC —Palaeogeogaphy, Palaeoclimatology, Palaeoecology
EL —Elsevier Scientific Publishing Company, Amsterdam, New York
ES —Earth Science Reviews
GA —Geological Society of America Abstracts with Programs
GL —Journal of Geological Society of London
JG —Journal of Geology
JP —Journal of Paleontology
LE —Lethaia
SP —Journal of Sedimentary Petrology
UN —Transactions of the American Geophysical Union

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(Continued on page 227)

Reversible Cooling

In practice, often crystallisation is brought about by cooling the solution. But, in order to investigate what happens about entropy, the cooling must be reversible.

That is no problem. Reversible cooling or heating are standard notions in thermodynamics. They are brought about by bringing the system—here the solution—into contact with a whole series of heat sinks or heat sources, differing infinitesimally in temperature, one after the other. In particular, to dissolve the crystal, heat would have to be supplied to the system; the entropy would increase. To cause crystallization, heat would be removed reversibly, and the entropy would decrease. So the conclusion is the same as that reached previously.

A Possible Objection

It might be objected that crystals form from molten lava, for instance, upon cooling. So they do; but that has nothing to do with the present point.

For the situation in which the crystals precipitate from the lava already represents a complex system. There is the lava, of a composition which will lead to crystals. It is at some high temperature. But handy to it is some heat sink at a lower temperature. And, in practice, there are barriers to hold the lava in suitable amounts; and the situation is such that the cooling will not proceed too quickly. In other words, to have the crystals form, showing some order, it is necessary that the situation incorporate beforehand a considerable amount of order. So it is not true that order will arise spontaneously out of disorder. In particular, out of the utter disorder envisaged by those who maintain that the universe began with an explosion, the present degree of order could never have arisen spontaneously.

If crystallisation should seem to occur spontaneously, then, it is under conditions which themselves would never occur spontaneously. Likewise, it might be said that a cloud of gas would compress spontaneously, if it were surrounded by a larger cloud at a higher pressure. Maybe it would; but such a situation would never arise spontaneously in the first place.

Open and Closed Systems

The second common argument used by evolutionists is that the Earth, in particular, is an open system; and that in an open system strange things may happen to the entropy, and to everything else.

First of all, let it be noted that the Earth is indeed an open system: it is open to the action of the Creator. Creationists agree that the existence of life on the Earth is to be ascribed to that kind of openness. So in a sense the evolutionists, in appealing to an open system, are stating a profound truth. But that kind of openness is not what they mean.

An open system, in the sense in which the term is used in thermodynamics, means one which can exchange matter or energy with something outside itself—with the surroundings.

As for the matter, the evolutionists themselves would agree that, during the time in which they believe life to have developed, the only exchange of matter was represented by any meteors which struck the Earth. And scarcely anyone proposes that they had anything to do with the origin and development of life.

(The notion that life was brought here from other planets by space travellers has nothing to do with the thermodynamic idea of openness. Besides, that notion is not a theory of the origin of life; it presupposes life.)

Well, then, if the openness has any effect at all, it must be through the receipt or exchange of energy.

It is just here that some very loose arguments are often heard. Some say that there was a great increase in entropy in the Sun, or in outer space, or somewhere; so that a spontaneous decrease in entropy on the Earth is not surprising. The idea seems to be that an increase in entropy in one place can atone, so to speak, for a decrease in another. It is rather as if one were to expect a small pot of water, put onto the fire, to freeze, provided a larger pot put beside it boil. Or, again, it is like saying that Niagara Falls a great amount of energy is being dissipated, so it would not be surprising if a perpetual motion machine were to work in the vicinity. But surely an increase in entropy in one place has to do with an (alleged) decrease in another only if there is some connection of cause and effect between them. And, needless to say, such a connection has not been demonstrated.

(References to be continued on page 206)

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