

## EDITORIAL COMMENTS

It is my pleasure to introduce the first in a series of articles by George Howe on the search for fossilized pollen grains in Precambrian strata in the Grand Canyon. The work was sponsored by the Research Committee of the Society. This study has an interesting history and the positive results obtained in this, as well as the earlier Burdick investigation, should interest you.

A. W. Mehlert makes some interesting comparisons between Flood and uniformitarian geology referencing some recent articles that have appeared in the Quarterly.

The invited paper by Dr. von Fange introduces the topic of archaeology in relation to the Bible. The

interpretation of field evidence and the typical chronology arguments that surface in the creation and evolution discussions are presented.

John Moore cautions creationists on the use of the word evolution. Distinction should be made between macro and microevolution. Robert Kofahl carefully describes a proper definition of science. Dr. Humphreys notes a verification of his predictions from a previous Quarterly article about the magnetic field of Uranus. Your comments are invited on this issue.

Emmett L. Williams, Editor

### INVITED PAPER

## A REVIEW OF PROBLEMS CONFRONTING BIBLICAL ARCHAEOLOGY

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### Abstract

*Biblical archaeology as a scholarly discipline is introduced. The problems of interpretation of field evidence are discussed. Further source materials are listed. Typically the major area of disagreement between humanistic and conservative archeologists is that of chronology.*

### A Matter of Definition

Suppose by a combination of miracles you were able to determine that one of your ancestors lived in a certain village a thousand years ago and that the site of that village was accurately located, and here you are, spade in hand, to learn all you can about your ancestor. What would you find? Perhaps a few stone foundations of homes, bits of broken ceramics, buttons, metal fragments, maybe even a coin or two, but no writing of any kind is likely. Anything found beyond this would be amazing indeed. And now you try to put together your ancestor's life with only a fraction of 1 percent of the original data and well over 99 percent speculation. This illustrates in a sense the impossible task laid before archeologists of the Bible lands and why we should never be caught in the trap of thinking that somehow archaeology must "prove" the Bible.

It is no secret that most of what we may term Biblical archaeology is in the hands of those described by Schoville (1978, p. 97) as having "broad humanistic interests". Their own preferred term currently is "mainstream" in contrast to those who are identified as "conservative". Humanists believe in all sincerity that their speculations are "scholarship", while anyone differing from such views is a "fundamentalist". Recently van Hattem (1981, p. 18) concluded that the evidence supports the usual early date for the patriarchs accepted by conservative scholars. However, those pushing for the origin of the Abraham "stories" to a date later than David dismiss the conservative view as "funda-

mentalist", an all too common example of supporting a position by namecalling rather than from evidence.

A crystal clear statement appeared in the program of the annual meeting of the Society of Biblical Literature in 1969 that illustrates the so-called humanistic position:

The basic dilemma in historical Jesus (or read biblical archaeology instead of Jesus) research is not any complexus of technical problems but rather the seeming incompatibility between intellectual honesty and traditional Christian belief.

Nothing could be stated more clearly. Before he begins his research, the humanist already knows that the Bible is *not* true historically.

The humanists believe they are operating without presuppositions in contrast to those who accept the Bible as historically true. Yet the assumptions governing their interpretations are very plain in their writing. In their minds evolution is the great unifying principle of explanation. Modern cultures evolved in a long slow path from primitive to modern; the world is very, very old; the Bible is just another ancient book full of error and myth.

When one reads extensively in the field of Biblical archaeology, one cannot help noting with what glee speculation is seized upon if it runs counter to the Biblical record. For example, Finklestein, like Martin Noth in Germany, seized upon the Fall of Jericho as his chief illustration of how archaeology contradicted a Biblical statement, and accused G. Ernest Wright (1961, p. 15) of being driven beyond the reach of common sense in trying to uphold Scripture. And so we need not be surprised to find items such as this in the literature from the pen and the mouth of the humanist.

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This item by Rast (1981, p. 18) appeared several years ago regarding the discovery of sites identified as possibly Sodom and Gomorrah:

One prominent scholar who was supporting a grant for their excavations threatened to withdraw his support if they were indeed identifying their sites with the Biblical Cities of the Plain. There is a segment of the scholarly community which regards it as unscholarly to focus on possible connections between archaeological evidence and the Biblical record, because the evidence is often so tentative. Yet the most farfetched speculation is permitted in other areas of archaeological scholarship.

One gets the impression that the question of evidence is not raised as long as the Bible is under attack.

It should be noted that Biblical archaeology includes three areas of scholarly study—each unfortunately living in splendid isolation from the other two for the most part: Field or dirt archaeology; linguistic studies—the study of inscriptions; and Biblical studies—the study of Biblical text. Each has the potential of benefiting greatly from the other two. We give just one illustration: Kitchen (1966, p. 23) observed the strange and remarkable fact that modern literary criticism of the Old Testament thrives completely separate from actual literary finds of Orientalists who study the ancient manuscripts/inscriptions. For example, a certain literary style known to be common 1,500 years before Solomon is tagged as fourth century B.C. Greek, and therefore the wisdom literature is moved up 500 years to fit the notion.

#### **Limitations of Biblical Archaeology**

Biblical archaeology is not an objective science. Miller (1982, p. 213) stated that archaeologists tend to be overconfident regarding the possibility of reconstructing the details of Biblical history. Consider these points:

(1) The fragmentary nature of the evidence from the ancient Near East complicates the drawing of inferences. One reasonable estimate is that we have at hand less than 1/1000 of the potential evidence from antiquity based on the admittedly optimistic projection that 1/4 of the available sites have been surveyed, that 1/4 of these sites have been excavated, that 1/4 of the excavated sites have been adequately examined, and that 1/4 of the materials and inscriptions have been published. In reality, hardly more than an estimated 200 of over 5,000 sites in all of Israel and Jordan have been excavated, and less than 50 of these can be considered major excavations. In Mesopotamia less than 1 percent of the total sites have been excavated. No sites in Israel except Zumrun and Masada have been totally excavated. The bulk of the potential evidence remains buried. Thus we see that only a tiny fraction of the full picture of ancient life was preserved and these fragments are almost all mute. From there it is human inference and imagination perhaps unrelated to reality (Schoville, 1978, p. 121). According to Lapp (1963, p. 121) less than 2 percent of the best sites in Palestine have been touched by archaeologists. While much work has been done in the past two decades, we can hardly say that this situation has really changed.

(2) By its very nature, Biblical archaeology is a very, very slow, careful, tedious process. At the rate the important Biblical site of Hazor is being excavated, the work will continue for another 800 years. (Schoville, 1978, p. 121).

(3) Field archaeology often produces a lopsided view of an age. All precious things that could most tell us of the past are those things that burned, weathered away or decayed. Even the documents we find on very rare occasions are non-representative or are not open to study, and so we are brought to a halt.

(4) Normally, only a tiny area of an entire site can ever be dug (Kitchen, 1977, p. 12). Tell Beit Mirsim where Albright “established” the standard archaeological chronology had only about 1/4 of the surface excavated, but only parts of that area were excavated down to bedrock. All kinds of important features can be missed by accident. For example, a time period may exist in part of a site that was not excavated, and therefore is missed. If one digs 5 percent, one misses 95 percent, and if you are not on the site you thought it was, such as happened at Heshbon, the error is 100 percent.

(5) The monstrous growth of pure speculation is illustrated by the huge amount of literature developed around the JEDP hypothesis. As Kitchen observed (1966, p. 23) even the most ardent advocate of the documentary theory must admit that there is no single scrap of external, objective evidence that any alleged source-document ever existed. But JEDP rises above, as it were, the need for any evidence. It is a kind of badge that publicly proclaims an attitude toward the Bible, that it is no different than any other ancient document.

(6) Modern archaeology is designed to gain maximum information from a stone-age culture, but this is not really what we want to find. Kathleen Kenyon, the founder of modern scientific archaeology around the mid-20th century, was characterized by Mendenhall (1981) as one who gathered infinite amounts of useless detail, and who ignored the value of texts in shedding light on the past. Her excavations covered too tiny a slice, carried out endless elaboration, and never got to any real results or relationships. She was blinded by the trees and never saw the forest. This rather unkind critique stemmed from his work under her supervision at Jericho, the excavation that won for her top rank in scientific archaeology!

Another classic speculation repeated for decades as pure truth was that Moab and Ammon did not exist at the time of the Exodus/Conquest, and therefore those portions of the Bible were not true. More recently investigations have concluded that archaeological sites in those areas are “much older” than previously thought (van Hattem, 1981, p. 91).

If anyone doubts that archaeology has limitations when it comes to interpreting the data, he has only to consider the bitter archaeological debate between two prominent Israeli archaeologists: Looking at the same evidence on the Conquest, Aharoni said it was peaceful; Yadin said military conquest. Pottery which Yadin dated to the divided kingdom, Aharoni dated to the time of King David. Aharoni said the destruction of Level III at Lachish was that by Sennacherib in 701

B.C., but Yadin said it was a century later from the Babylonian attack of 597 B.C. (Anon., 1980, p. 1).

More recently a passionate debate about the excavation on top of Mount Ebal appeared in 1986. Adam Zertal (1985, p. 26) shows why he believes he has found Joshua's altar. Aharon Kempinski (1986, p. 42) dismisses the structure as an Iron Age I watchtower. And the battle appears to be more one of ideology than of evidence.

### Problems of Chronology

The core of the most heated controversies in the field of Biblical archaeology has always been chronological uncertainty (James, 1981, p. 70). Conventional tables of archaeological time periods which flow out of and are based on the same assumptions as the geological table of time, especially the assumption of uniformitarianism — long, slow, uniform, gradual change. A layer of sediment four feet thick must have taken twice as long as one of two feet. The periods and ages of archaeology are universally accepted as accurate within a handful of years in almost all the literature.

The chronology of Palestinian pottery was established by William F. Albright (1971, p. 84) from his work at the site of Tell Beit Mirsim in the 1920s. Further refinements of course have been made and the precision of ceramic dating for the Biblical period is thought by some to be within a century, others say within 50 years, and one scholar in a recent lecture said that ancient pottery could be dated within 10 years. The whole structure, as we will observe elsewhere, hangs on the validity of Egyptian chronology — a fragile thread indeed.

Albright (1971, p. 84) believed that just about everything had been solved:

Since Egyptian chronology is now fixed within a decade or two for the Middle Bronze and Late Bronze Ages, our dates are approximately certain wherever we can establish a good correlation with Egyptian cultural history . . . thanks to scarabs and inscriptional evidence . . .

But only a few short years later, Israeli scholar Rainey (1982, p.220) speaks of Albright's subjective impressions about Tell Beit Mirsim, that the Albright school is in practice based more on personal opinions than on actual finds, and that too often the opinion of an excavator has usurped the place of true archaeological evidence. Similarly Miller (1979, pp. 37-47) observed that Albright's intuitive but faulty ideas of chronology and interpretation are so ingrained in the generation of scholars he trained at Johns Hopkins that archaeology no longer looks at actual evidence. Yet this same chronology continues on and on.

Dr. Adnan Hadidi (1970, p.11), the respected Director of Antiquities of Jordan, made the following remarkable statement about dating accuracy:

It is a strange anomaly that pottery of the Middle and Late Bronze Ages, can in Palestine at any rate be dated by its contexts to within 25 or 50 years with reasonable accuracy, whereas as soon as the historically far better-known Roman period is reached, a couple of centuries seems to be the closest limit one can hope for.

Can anyone seriously believe that accuracy improves as we move farther back into time?

In the past several decades a few scholars who questioned the "received" chronology and who offered alternatives have been brutally attacked including personal character assassination (Velikovsky, 1983). The profession is not ready to tolerate chronological dissidents.

In this section we shall examine— all too briefly— why some, including this writer, are very uncomfortable with the generally accepted chronology. The interested reader may pursue the arguments in the references of this article. Is it really possible as Jean de la Bruyere (1645-1696) said, that the exact contrary of what is generally believed is often the truth? And should we be content to receive and pass on a chronological system without question and without noting its many problems? The surest way to corrupt youth is to teach them to esteem more highly those who think alike than those who think differently. There seems to be a great deal of lockstep thinking in Biblical archaeology in speculative matters.

The Jericho excavations are an immensely complicated story, but briefly we can say that Garstang's earlier excavations were interpreted as support for the Scriptural account while Kenyon (1957, p. 266) came up with no support for the Biblical account:

At just the stage when archaeology should have linked with the written record, archaeology fails. This is regrettable. There is no question of the archaeology being needed to prove that the Bible is true, but it is needed as a help in interpretation to those older parts of the Old Testament which from the nature of their sources . . . cannot be read as a straightforward record.

I have two comments: The argument is— as most are— a chronological one, and it seems very safe to say that the conventional chronology is vulnerable in many ways. Second, I have personally heard one of Kenyon's students (now a world-recognized scholar in archaeology) openly scoff at Kenyon's highly subjective decisions during the Jericho excavations. Thus, the interpretation is not as conclusive as many writers would have us believe, but it fits very well into a humanist conception of the Jericho story.

Let us broaden this point. Field archaeology is more subjective than one might gather from reading most accounts of digs. J. Maxwell Miller (1982, p. 213) said recently, "There would be many different interpretations of a 5-meter square (the normal unit for excavating at a dig), if the director did not always have the final say in the excavation report." And consider comments such as the following:

a. William G. Dever (1983, p. 42)

. . . I decided that it was a disgraceful situation— a reflection on our much-vaunted modern methods— to allow a major, well-published city wall system (at Gezer) to remain in such dispute that authorities could vary by as much as twelve hundred years on the question of its date, not to mention its interpretation.

Dever says the great outer wall is Late Bronze Age; Kenyon dated the same wall to the Hellenistic period; Kempinski says Iron II. But the result, as Dever observes, is that after clearance of nearly the whole of a Palestinian site's city-wall system, together with its modern stratigraphic excavation, scholarly opinion as

to the date of the outer wall differs by more than a thousand years. Dever charges Kempinski was simply ignoring the overwhelming evidence. In that context, how can anyone be so positive about the Jericho dig?

b. William C. van Hattem (1981, p. 87):

I personally cannot free myself from the suspicion that the dating of some of Bab edh-dhra pottery (the supposed site of Sodom) was a result of wishful thinking rather than real fact finding. The "Cities of the Plain" had to be found in a certain era in a certain area . . . The weakness (of the argument) is not the biblical patriarchs, but the assumed chronology in which the archaeological facts are made to fit one way or another . . . We will have to be prepared to take account of new facts even when they challenge us to abandon established chronologies and widely accepted readings of history.

c. There is some interesting evidence that the long-revered sequence of Paleolithic-Mesolithic-Neolithic supposedly covering hundreds of thousands of years exists only in the minds of those who find it important to interpret the ancient world in uniformitarian terms. Although uniformitarianism has been discredited in the 1980s by leading evolutionists, the chronology based on those assumptions has achieved a life of its own. Clark (1980, p. 101) cites evidence to show that hunting/gathering (i.e., Paleolithic times) and settlement agriculture coexisted, that the Mesolithic in Europe had several Neolithic features, and that many so-called Neolithic societies in southwest Asia lacked some of the essential criteria for recognition as Neolithic.

In Wright's pioneer study of the period between the Chalcolithic and the Early Bronze Age, he distinguished three groups of pottery—each supposedly dominant for a lengthy period of time in turn. Since that time, it has been shown that these groups of pottery, at least in part, are contemporary. This concurrence of the pottery groups in Palestine, and the attempts to use them also as chronological indicators have caused great confusion since each of five authorities has employed a different method of interpreting the archaeological data (Yassine, 1985, p. 68).

Referring to the analysis of finds in Mycenaean shaft tombs, Dayton (1978, p. 238) commented: "The important point is that all styles exist side by side in time. Archaeologists have been too ready to give time-spans to different varieties of pottery and assume that one must succeed the other." No doubt this statement is too strong, but a great deal more attention ought to be given to the assumptions underlying pottery dating, to the validity of its dating, and to the supposed anchor points on which it rests.

d. It is not unusual to find statements such as the following: In 1973 Beno Rothenberg surveyed a settlement in the Sinai which he dated to the Proto-dynastic period (late Chalcolithic - Early Bronze Age I), but the site may, in fact, belong to the Middle Bronze I period, a difference of a thousand years or more, according to Cohen (1980, p. 77).

e. The Negev wilderness south of Judah played an important role in the time of David, Solomon, and the kings of Judah. Eminent archaeologists have analyzed supposedly the same pottery as follows: Rothenberg (13th century B.C. or earlier); Aharoni (11th century

B.C.); Cohen (clearly 10th century B.C.); Glueck, who first surveyed the area (between 10th and 7th centuries B.C.). C14 tests in 1980 tended to support Glueck (Danielius, 1975, p. 11). One prominent archaeologist privately intimated that another had planted or salted the site with pottery sherds that would support his own dating.

f. Miller (1980, p. 133) believes there are good reasons to doubt the arguments advanced by Albright and others for dating the Exodus/Conquest during the 13th century B.C. He believes that Bimson presents a thorough and fair analysis of the matter, and concludes that those who hold to a 13th century B.C. date have no monopoly on the archaeological evidence. This is an important point because Kitchen who is universally respected for his sound scholarship in Biblical archaeology, and who holds a conservative view of Scripture, has accepted the late Exodus date. But despite all Kitchen's painstaking and monumental work in Biblical archaeology, James (1981, p. 69) states that his efforts are hardly above criticism. For example, one of the key fixed dates for the late Exodus date is now known to be based on a mistranslation of an Assyrian text. Horn (1977, p. 24) suggests that:

It is high time that another detailed and penetrating study on the date of the Exodus were written, for no serious monograph on this subject has been published since J. W. Jack's now outdated work appeared in 1925.

Henige (1986, p. 57) sums it all up nicely:

Paradoxical though it seem, there is probably more argument about both the details and the broader aspects of ancient Near East chronology today than there was 50 years ago, when the paucity of data itself encouraged a more comforting degree of certitude.

All the assurance in the world as we read the literature, and there is arrogance as well, does not conceal the fact that ancient chronology is a highly speculative business. No one has developed a decisive system as yet, but we can one day expect a key discovery or reinterpretation that will resolve many of the present uncertainties. That will be a welcome day.

### Finds and Illuminations

This paper is not the place to attempt to list and describe many hundreds of finds and inscriptions that marvelously illuminate the Scriptures. Instead we comment on recent evaluations of current Biblical study materials which include sections on archaeological finds.

Moyer and Matthews (1985 and 1985a) have published evaluations of the use and abuse of Biblical archaeology in current Bible dictionaries. As we might anticipate, they have sorted those volumes according to mainstream (which we have termed humanistic) and conservative orientations. They have provided a much needed service by identifying those which are badly out of date. The winner from a balanced conservative approach is Douglas (ed), *New Bible Dictionary* (1982), also available in a beautiful color-illustrated version in three volumes.

One conservative Christian archaeologist is considered to be one of the top scholars in the world, highly respected by all viewpoints: Kenneth A. Kitchen

(1977). He is must reading for any conservative Christians interested in Biblical archaeology.

Besides the above evaluations, several examples of interesting recent finds are discussed.

(1) Bab edh-Drah is located on the southeastern coast of the Dead Sea in the approximate area where Sodom and Gomorrah once stood. We leave the question as to whether or not the first of these sites was actually Sodom and focus instead on the findings of two paleobotanists. In two seasons of collecting and sorting plant remains, David McCrery (1978) found remains of these crops at the site: Wheat and barley, dates, wild plums, peaches, flax, grapes, figs, pistachio nuts, almonds, olives, pine nuts, lentils, chick peas, pumpkins, watermelon, and castor-oil plant, that is the evidence. Interpretation heads in two opposite directions. The conservative Christian points to Gen. 13:10: The land well-watered everywhere, before the Lord destroyed Sodom and Gomorrah, even as the garden of the Lord. The humanist looks for signs of irrigation.

Another interesting development occurred several years later in the early 1980s. Shea (1983) analyzed two Ebla tablets which listed almost 600 ancient place names including many in Israel and Jordan. The tablets are dated back at least several centuries before the destruction of Sodom and show the routes taken by a traveller of that time. Shea notes that Sodom, before its destruction, was one of the places visited, and that linguistically it is identical to the Biblical city of that name. Of special interest is the fact that the place names listed on the tablet just before and after Sodom are now geographically impossible for a modern traveller. The route passes through some of the most devastated land in all the world, and the route taken to the north of Sodom is now completely blocked by a rugged range of sawtooth mountains. When the land was "like the garden of the Lord", travel would have been easy. The tablet supports the conclusion that the land in that region changed radically at the time of the destruction. This should not be surprising, however, since in Genesis we may paraphrase the earliest mentions of the Dead Sea as the "sea where the plain used to be". Similarly, Josephus noted as a matter of fact that the Dead Sea did not exist before the destruction of Sodom.

(2) The work of specialists on ancient agriculture and animal domestication is very illuminating despite full commitment to the evolutionary framework for explanation. Consider these comments taken *passim* from Reed (1977) in *Origins of Agriculture*: Despite a lack of consensus we are left with the Near East as offering the clearest picture of a history of continuing cultural change culminating in the cultivation of plants and the domestication of animals. If village life is to be correlated with an increase in population as I believe we must accept, then the arc of hills from western Iran through northern Iraq, and southwestern Turkey, down through Palestine and western Jordan almost to the Red Sea was sprouting villages. In each such village a group would depart and found a new village. Whatever the factors, plant agriculture did arrive in the Near East, and with such a rush and such a rapid spread that we are amazed.

To the creationist the above statements are an almost perfect description of the spread of civilization to the

south and west of the mountains of Ararat during the first centuries after the Flood. The arc of villages described by Reed are just where we would expect them to be from the Biblical account and from the geography of that region.

In poring over the studies of Reed and other specialists, the creationist finds nothing at all in the evidence that is out of character with the description of the early post-flood world, except of course the conventional dating. But Reed, an ardent evolutionist, speaks of C14 irresponsibility even though he strongly disapproves of creationists taking note of that comment. Reed (1977, p. 896) concluded:

Of the various areas of the world considered in some detail by (leading specialists), the emerging pattern of agricultural beginnings for the Near East seems to me to be clearer than is that for any other area.

(3) No ancient tablet in all the world is more famous than Tablet XI, Gilgamesh Epic, because in all sincerity it is believed by many humanists since the 1870s to be the original version from which the Genesis story of the Flood was later formed. Literally thousands of books have picked up and retold this belief. The tablet does not tell about a flood at all, and the story got its start on the basis of a mistranslation. The reference to the birds in the tablet cannot have any relationship at all with the Flood account. The vessel is not an ark, and the date of the tablet is centuries later than even the most radical late dating of Genesis. This gross error has been known for more than a century, but the story goes on and on as a monument to careless scholarship, and it is routinely referred to today as solid evidence that Genesis is a late collection of myths. (Rapaport, 1986, p. 57).

### Problems and Projects

(1) Chronology. From the previous discussion we can conclude that when a site is interpreted where chronology is a key factor, for example, Jericho, the issues are hardly settled as many interpreters would have us believe. The complexities are enormous, the stones are silent, and we may never reach a point where a compelling solution can be stated.

A brief summary of the chronological debate may be found in Stiebing (1985). Creationists ought to encourage the responsible study of chronological problems. The final answers are not as yet in for this immensely complicated problem of dating the ancient world. To a large extent we must play a waiting game and hope that in future excavations some incontrovertible synchronism will be found that will put at rest the present uncertainty about dating the Exodus and other issues. One conclusion seems safe. No side or faction has yet to come up with a satisfactory solution to dating the Biblical world before 1000 B.C., and the challenge lies there waiting for a person of considerable genius to put all the pieces together.

We say this despite the fact that interpreters such as Williams (1981, p. 70-71) state from the humanist perspective that conservatives are overlooking "easily available evidence." This is reason enough to encourage qualified persons to accept such a challenge to examine such "evidence" and its interpretation.

(2) In reading or writing about Biblical archaeology all must do a much better job of distinguishing between evidence and its interpretation. No one writes without assumptions about the ancient world, and currently these assumptions for the most part form two syndromes tagged at various times as scholarly, scientific, mainstream, liberal, humanistic on the one hand and as biblicist, fundamentalist, and conservative on the other. The latest pair of labels in Biblical archaeology—mainstream vs. conservative—is a hopeful sign that strongly held differing viewpoints need not be characterized by name-calling.

(3) Conservative Christians ought to invest in Biblical archaeology, and many more ought to qualify themselves for serious work in field archaeology and in the ancient languages of the Biblical world. G. Ernest Wright's comment is as true now as a generation ago that money from pious, conservative, or fundamentalist sources has never played a very important role in archaeology. The major excavations have been sponsored by sources dominated by a broad humanistic interest (Schoville, 1978, p. 97). As we have noted before, humanists look at the evidence through glasses colored by humanistic presuppositions. This view of the ancient Biblical world has led to the kind of excesses and sterile explanations described by van Hattem (1980, pp. 91-2) as continuing along outworn paths, and explaining away new facts which have come to light; as material left to the side, uninterpreted, and by and large, ignored; as using an assumed chronology in which the archaeological facts are made to fit one way or another; as resorting to name-calling instead of the use of evidence; as a refusal to accept new facts because they challenge scholars to abandon comfortably held but false chronologies and widely accepted but erroneous readings of history.

(4) It is not at all difficult to make a large collection of embarrassing misinterpretations by "mainstream" archaeologists, but the same is true of "conservatives." This is reason enough to strongly encourage qualified persons to become active in archaeology.

About a decade ago William Corliss (1978) began a widely heralded systematic collection of anomalies and errors in various branches of the sciences, some of which deal with the ancient past, such as geology, paleontology, ancient history, astronomy, and some aspects of archaeology. A similar project for the systematic examination of the literature of Biblical archaeology, and including ancient chronology, would be both interesting and useful. This could be an excellent means of distinguishing between evidence and interpretation. We see a small beginning of this idea now and then in articles reflecting on the field of Biblical archaeology. Rainey (1982, p. 217) includes a section on "some recent howlers" in his discussion of historical geography and archaeology. He illustrates how the most eminent scholars can easily go gloriously wrong in their interpretations.

Several illustrations of recent errors or questionable interpretations will suffice to illustrate the point. Inscriptions excitedly accepted as Philistine writing by some of the world's leading authorities on ancient inscriptions turned out in the early 1980s to be a most amateurish fraud. (Anon., 1984, p. 66-72).

Archaeologists who wanted to identify ancient sites with the city of Sodom and the other cities of the plain

were willing to close an eye on destructions dated a hundred years apart by saying they were destroyed "virtually" in the same period so as to fit the Biblical account (van Hattem, 1981, p. 88). Yet on other questions scholars will fight bloody battles in the journals over a one-year difference in dating.

### Conclusions

It is very unfortunate that we must assume that otherwise intelligent persons will devote enormous energy to explaining away what is unacceptable to their belief system. Man has not changed from the days of Pentecost when scoffers were confronted by the miracle of unlearned apostles speaking in foreign tongues. Their conclusion was that the apostles were filled with new wine. We must assume and have noted that Biblical archaeology is often used to explain away the Scriptures without informing the reader where the evidence has left off and speculation has begun.

And where does all this discussion leave us? Biblical archaeology, combined with the geography of the land, is a wonderful treasure house of illumination for us of the setting of the Scriptures. It enables us to picture Old and New Testament events, helps us understand many things we cannot derive from the text alone. But that is not all of it. Mendenhall (1974, p. 4) quite properly states that "unless Biblical history is to be relegated to the domain of unreality and myth, the Biblical and the archaeological must be correlated." If he means archaeological "evidence" rather than mere speculation, he is correct. While we do not run around trying to prove the Bible, yet we have a certain quiet expectation—quite opposite to that of the humanist. We anticipate that archaeological finds that are unambiguous will be in harmony with the Scriptural account, and the list of just such finds is a very long one.

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## CREATION RESEARCH SOCIETY STUDIES ON PRECAMBRIAN POLLEN: PART I - A REVIEW

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### Abstract

In the last 20 years considerable interest has centered on a 1966 *Creation Research Society Quarterly (CRSQ)* paper in which C. L. Burdick presented photographs and descriptions of pollen grains isolated from Precambrian Hakatai shale and various other strata of the Grand Canyon, Arizona. Burdick produced this paper based on research he conducted at the University of Arizona. He relied as well on assistance from W. E. Lammerts in manuscript preparation. In defense of the macroevolutionary origins model, some workers immediately argued that these discoveries were merely contaminant modern pollen grains and not true microfossils.

At the prompting of the CRS Board of Directors, C. L. Burdick solicited the help of A. V. Chadwick, a creationist, to undertake further analysis of new rock samples from the Grand Canyon. At that time, Chadwick was associated with Loma Linda University, Loma Linda, CA. Based on this work, Burdick reported in a short article (1972) that the first discoveries had been replicated by utilizing essentially the same methods as he had originally used at the University of Arizona. While not altogether denying the 1972 pollen discoveries in Hakatai shale, A. V. Chadwick in 1973 wrote in a letter for publication in *CRSQ* that a more careful analysis of these rocks would be necessary before definitive statements could be made about the presence of microfossils in Grand Canyon strata.

Eight years later (1981) Chadwick, in a brief paper, indicated that by taking unusual precaution in field and laboratory to avoid contamination, and by using a different extraction procedure involving hydrofluoric acid (as well as hydrochloric acid), he had been unable to recover any pollen grains from samples of Hakatai shale.

Since contamination of the rock in the field and on the microscope slides in the laboratory is the usual claim of both creationists and evolutionists who discount the Burdick discoveries, W. E. Lammerts volunteered to determine just how easy or difficult it might be to recover contaminant pollen grains in nature. At about the same time, in Spring, 1983, the CRS Research Committee authorized E. L. Williams, G. F. Howe, G. T. Matzko, and W. E. Lammerts to collect new rock samples and perform pollen extraction by the old Burdick method to see if perhaps the differences in chemical processing between Burdick's method and Chadwick's would influence the final results. We recovered what are apparently pollen grains and other cellular objects from Hakatai shale by using the Burdick techniques. The methods, results, and conclusions of these recent studies will be presented in Parts II and III of this present series of papers.

### Introduction

Finding a fossil land plant pollen grain in rocks labeled "Precambrian" is about as likely (in the uni-

formitarian macroevolutionary scheme of origins) as it would be to find a modern human skull embedded conformably in Mississippian coal layers! Evolutionary scientists have characteristically assumed that early land plants arose from the algae in the Silurian "time" while conifers and flowering plants are not supposed to have made their debut until the Permian and Cretaceous respectively. Thus even the very simplest (non-

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