

cover of which God is the ultimate Originator. Second, the Bible has nothing to say about either the stratigraphic layers of the Grand Canyon or the reefs and evaporites buried in the oil fields. (We deal with reefs and evaporites together because the two have functioned together to effectively store petroleum. Immense amounts of petroleum are stored in the porous reef rocks; and the impervious evaporite strata which lie above--and sometimes beneath--the reefs prevent the petroleum from escaping.) In Bible times both the continent of North America and the deep layers where petroleum is stored were unknown to mankind, and there is no indication in the Bible that God had any intention of giving early peoples information about them. There just wasn't any need for such information in Bible times. But, since the Bible has nothing to say concerning the study of the earth's deeper layers, it logically follows that a careful study of the Grand Canyon strata and the buried reefs and evaporites is a proper activity. For many centuries nearly all Christians have agreed that a careful, reverent study of the technical aspects of various parts of God's creation is wholesome and honoring to God.

So, why should creationists be so reluctant to make careful examinations of the rock bodies in question or to study the many research reports which describe their petrology and other aspects of their nature? If young-earth creationists consider such a reluctance to be necessary and proper, then would not the only appropriate position for them to take concerning these strata be, "We know nothing about them, and thus we have nothing to say as to how or when they were formed." If they were to take this position, and even explain that their religious faith prevents them from studying the rock bodies, most scientists would respect such a confession. Yet this is not what young-earth creationists say concerning the Grand Canyon, reefs, and evaporite strata. Some of their main leaders openly assert that all of these rock bodies were formed very rapidly only a few thousand years ago by processes which are absolutely inconsistent with the observed characteristics of the rock types. These assertions thus directly oppose and contradict the many hundreds of careful, honest research studies which have been made concerning the rock bodies in question. Many of these studies have been very elaborate, and full reports of practically all of them are available in the libraries and geologic research centers. Furthermore, few if any of these research projects have been carried out for the purpose of demonstrating or supporting evolutionary theory. Most of them are related to the oil industry and say practically nothing about evolution.

3. Characteristics of Some of the Grand Canyon Strata

Let us briefly consider one of the formations of the Grand Canyon rocks in which creationists could readily and plainly see abundant evidence of long periods of depositional and erosional time. This is a geographic area where the eroded upper surfaces of ancient strata can be easily observed. On the upper surface of the well-known Redwall Limestone formation of this canyon there are extensive, ancient erosional features left from the period of time (end of Mississippian) when this great area of limestone was exposed to weathering. Since this is limestone it was prone to the development of caves, caverns, and sink holes during the time it was exposed (before the rock formations above it were deposited). These erosional features are characteristic of karst topography which is now in process of development in parts of the world where limestone formations are at or very near the surface. (Such areas of karst development are common in parts of Kentucky and Virginia.)

Before describing the karst development of the upper part of the Redwall Limestone we should mention that there are definite erosion surfaces both at the base of this formation and farther up, about one-half way to the top of the Redwall Limestone. The definite unconformity at the base of this formation, where it rests on the Devonian, Temple Butte Limestone was noted as early as 1880, by Walcott.