

During such periods fresh-water cementation of the carbonate grains could take place. (Cementation by fresh water just above sea level is a common occurrence.) One of the evidences for periods of exposure above sea level is the discovery of large "solution cavities" which have at one time been dissolved out of some of the buried limestone layers by fresh water. Since the sea water in low latitudes such as this is at or near the saturation point with respect to calcium carbonate, it does not dissolve limestone sufficiently for forming such cavities.¹¹

Another line of evidence indicating that the Bahama Banks were formed very gradually, over a long period of time, is the almost complete absence of land-derived (terrigenous) sediments within the entire stratigraphic column in that locality. If the Banks had been built up from sediments brought in from elsewhere, it would have been impossible to have formed a 14,500 foot stratigraphic column of practically pure carbonate material. This is true especially in view of the fact that the North American continent is close by on the one side, and the large island of Cuba on the other. Both of these could have supplied huge quantities of non-carbonate mud and clay, if there had been any strong transporting force.

Then there is the fact of the extremely steep sides of the Bahama Banks, as an indication of slow formation. When water currents pile up sediments, the mounds they produce have a gentle, broad slope. In order for the steep sides to be formed there has to be lithification of the sediments to form stable rock layers before any appreciable thickness of steep escarpment can be accumulated. Otherwise the new sediments only slump down to low-angle slopes. Thus we can be sure that the Bahama Banks were formed by natural marine sediment production, rather than by some catastrophic means.

The Amount of Time Necessary

Careful measurements of the rate of sediment production on the Bahama Banks have been made. Thirty centimeters of thickness per thousand years is accepted as a close estimate.¹² Since this is very close to one foot per thousand years, one can easily see that 14,500 times 1,000 years would be required for producing the thickness of carbonate materials which was found in the deep test well which penetrated the Bank at Andros Island. We of course can not say that the time required for the formation of this stratigraphic column was exactly 14,500,000 years. Sediment production rates vary considerably with changes in the environment. However, because of the large part played by algae and marine animals in the production of the sediments, one can not postulate any enormously higher sedimentation rate than now exists.

Another factor to keep in mind is the existence of periods of time which were less favorable for the forming of sediments. At present, the conditions for such production on the Bahama Banks are extremely favorable, especially with respect to water depth. It is evident that subsidence of the Banks in the past has succeeded