God's Time-Records in Ancient Sediments by Dan Wonderly

characterized this sea while the evaporite layers were being formed. The water had a low oxygen content and was of high salinity. (See Table 1 in Chapter 5 for the concentrations necessary for the precipitation of the three main kinds of salts from sea water.)

The results of this warm, highly saline aquatic environment are best seen in the lower strata penetrated at drilling Sites 124, 125, 132, and 134.[50] At Site 124 approximately 190 feet of these layers were drilled and intensely studied. The upper half of this evaporitic series consisted of layers of dolomitic marl ooze. This type of marl is characteristic of stagnant, somewhat hypersaline water, and contains only minor numbers of fossilized Foraminifera and other microfossils. At some levels in the upper half of this 190 foot series a considerable amount of gypsum was found, showing that the water had reached the high level of salinity necessary for precipitating this form of calcium sulfate.[51]

The lower half of the evaporitic series was much more highly varied, consisting of approximately 95 feet of alternating layers (beds) of solid anhydrite and laminated (thinly layered) dolomitic marls. Some of the layers of anhydrite also are finely laminated.[52] Fine laminations in both the marls and the anhydrite layers show that the deposition of these layers was a slow, particle-by-particle accumulation, in a very tranquil aquatic environment. (A tranquil environment is always necessary for the deposition of such fine particles as these.) At this Site 124 some of the anhydrite layers penetrated measured over 5 feet in thickness, while others were only a few inches. The total amount of anhydrite which was drilled was approximately 75 feet.[53] Some of the thicker layers contained an abundance of mosaic-arranged anhydrite nodules. Nodular anhydrite of this type (also called "chicken-wire textured anhydrite") is strongly indicative of its having been formed in a hot, very highly saline, shallow-water environment.[54] (Such nodular anhydrite is being formed at the present time along the Trucial Coast, as described in Chapter 5.)

The evaporitic layers encountered at the other sites mentioned above are similar to those just described for Site 124. However, at Site 134 there was the significant difference that some beds of halite (common salt) were found between layers of anhydrite. This shows that in this part of the Mediterranean Sea (nearer the edge than Site 124) the sea water was concentrated to an even stronger brine than at some of the other sites. (As shown in Table 1 of Chapter 5, the water must be reduced to approximately 10% of its original volume in order to begin to precipitate halite.)

At Sites 124, 132, and 134 there were some layers of fossiliferous, dolomitic marl interbedded with the layers of evaporitic salts (see Figure 35). Several kinds of marine, shallow-water fossils were found in these marl layers. One should not overlook the significance of this fossiliferous marl, for it indicates that there were periods of inflow of major amounts of less-saline water which diluted the brine enough that neither calcium sulfate nor halite could precipitate--and apparently enough that some of the more

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