

deposition, as well as the chemical nature of the water during this long period of time. We can also observe what the relationship of these deposits of banded anhydrite was to the reef which surrounded them. In most cases these deposits are found lapping up on to the sloping sides of the reef, showing that they were laid down after those parts of the reef had grown. So the deposition of the entire series of banded anhydrite layers most likely came late in the history of the basin.

#### Thicknesses and Their Meaning

Concerning the thickness of the entire series of evaporitic couplets, it was pointed out earlier that this was found to be approximately 1,300 feet, in the area of most intensive study. In the eastern and southern parts of the basin, the total thickness is often over 1,600 feet, and in at least one place is 2,600 feet. (In some places this includes layers of common salt which are interstratified with the anhydrite.)<sup>16</sup> It should be remembered that this Castile evaporite deposit extends over almost the entire Delaware basin.

The extent and thickness of this evaporite deposit brings up the question of how much sea water had to be evaporated in order to form it. In Chapter 5, footnote no. 27, we pointed out that five meters (16 feet) of sea water contains enough calcium carbonate to form a layer one-half millimeter thick, and enough calcium sulfate to produce 2.2 millimeters of anhydrite. Thus approximately 400 miles depth of water is required for producing even a 1,000 foot deposit of anhydrite. This means that the equivalent of at least that much depth of water had to flow into the Delaware basin (at times of high tide, storms, etc.) and evaporate, in order to produce such a deposit. Even at an evaporation rate of 16 feet per year, which is practically the highest marine evaporation rate known today, 135,000 years would be required for producing a 1,000 foot deposit of anhydrite. Dean took this evaporation rate into account in arriving at his conclusion that each of the couplets in the series of 200,000 represents an annual deposit.<sup>17</sup> Thus his estimate of the length of time is reasonable.

Therefore, since these broad, uniform beds of microlayers have all the characteristics of a series of natural deposits, produced by the well-known laws of concentration and precipitation in a quiet body of water, we can be sure they are "genuine." Because of the uniform nature of these microlayers over many miles horizontally, and throughout many hundreds of feet vertically, any possible speculation about such layers of minerals having emerged from mysterious, hidden storage depots deeper in the ground would obviously be out of order. If the calcium carbonate and anhydrite were found in huge, irregular masses, and without the layers of organic matter, such a speculation would be within reason. But when this orderly, natural depositional record is viewed as it actually exists, the Christian is instinctively led to think back to the principle of God's consistency in upholding the natural laws which He originally established. Actually, it is a thrilling experience just to realize