

with the results of the evaporation of modern sea water, as explained by Dean. (As sea water is being evaporated, the CaCO_3 precipitates earlier and in less amount than the CaSO_4 . As average sea water is being evaporated, the CaCO_3 begins to precipitate when a volume of approximately 0.53 has been reached, whereas the CaSO_4 does not begin precipitation until the water has been reduced to 0.19 of its volume. By the time the sea water has been evaporated completely, the total amount of CaCO_3 precipitated from one liter of water is 0.117 grams, and the total amount of CaSO_4 precipitated is 1.38 grams.¹⁵ These differences show clearly that any attempt to explain the formation of the multitude of microlayers of evaporites which is found in the Delaware Basin (covering large parts of the Capitan reef), as a rapid process, is contradicting the ~~experimentally demonstrated~~ well-known principle of orderly precipitation of these two minerals.

Even those who suggest the possibility of evaporite-carbonate deposition from layered marine solutions have not discovered evidences or processes which would allow us to formulate a theory of rapid deposition of thick beds of evaporites. A further barrier to such a theory is the fact that, in the Castile banded anhydrite, the layer of organic matter of each couplet is usually distinct from (and lying between) the calcium carbonate and the anhydrite layers of the couplets. This signifies at least a brief time period of growth of organisms in the water for each couplet (before the water again became too brinish for the organisms to thrive).