two-thirds of the series, fossils are not abundant, giving further evidence that these layers were formed slowly in a sea that was so quiet that most of the fossil shells were either dissolved or broken into fine grains before being covered over.

A very meaningful part of this particular time record is the set of layers of evaporite material (in this case anhydrite, as mentioned above). They are found interspersed in between the layers of shale, silt, and dolomite at various points in the local stratigraphic column. These evaporite layers are of much the same types as those which are presently being deposited in the shallow, brinish waters in some parts of the Persian Gulf, Caspian Sea, and on the coast of Baja, California, south of San Diego. Therefore, we can only conclude that they were formed in relatively shallow, evaporative basins of the ancient inland sea. Each recurring evaporite layer of anhydrite which appears in the well cores, as one progresses up the stratigraphic column in that geographic area, undoubtedly represents a period of time when the amount of water flowing into this inland sea was restricted (as is also true in modern evaporite-forming seas).

The amount of time represented by the sediment layers which cover the reefs of the Rainbow area is even more impressive than that of the layers beneath. The Canadian oil drillers in these oil fields find more than 4,000 feet of shale, sandstone, siltstone, chert, limestone, and dolostone lying above the reefs. These are in varying multi-layered formations, most of which are of types which could not have been laid down by rapidly moving water (Table 1). The limestone and dolostone make up between 1,000 and 2,000 feet of this covering. Practically all of the layers of limestone and dolostone are of types which could have been formed only by the usual slow processes of limestone formation.

But even more impressive than all of this 4,000 feet is the set of layers which immediately surround and cover the reefs. The latter are known collectively as the Muskeg Formation, and are classified as Middle Devonian. This formation which covers the Rainbow reefs is made up primarily of evaporite minerals. The evaporite layers give testimony to the condition of stagnation and increased salinity of the water. The fact that the larger reefs became heavily dolomitized (changed to dolostone), as their burial progressed, is further evidence of the slow change to more saline (salty) water. The dolomitization which is observed in the well cores of these reefs is of the type expected in an intertidal and supratidal (just above the tide) environment. This type of environment brings about the death of reefs, and if there are increased evaporative conditions, the increase in magnesium content of the water provides the magnesium ions to slowly convert the reef material to dolostone (Langton, 1968, p. 1,943).

It is possible that the briny water was considerably deeper at some times than others, but in either case the reefs were dying and being fossilized right in the broad marine basin which had fostered their growth (Davies, 1973, p. 3541-3543). The sedimentary record which has been left in the basin tells us clearly that there were numerous changes of water depth during the time of evaporative conditions. The elaborate series of different types of evaporitic sediments in the basin around the reefs, and over the tops of the same, gives a clear picture of time, and of depth changes during the evaporating process. Evaporite mineral layers can be deposited in deep water if the basin is stagnant, with extensive evaporation occurring from the surface. However, an absolute requirement for deposits of the type found here is that there be time