

the Mediterranean in 1975 (Cruise 42A) penetrated on down beyond the evaporite series. For example, at Site 372 in the Balearic basin, east of the Balearic Islands, approximately 300 meters (980 feet) of pelagic ooze, marl, and marlstone were found beneath the evaporite deposits. These are normal, open-ocean sediments with a high proportion of Foraminifera shells and coccoliths.⁵⁹ We recognize these as having been deposited in the same way as the similar sediments which were laid down on top of the evaporitic series (discussed in the previous subsection).

When we apply the same accumulation rate to these deposits as we recognized in the similar ones lying above the evaporites, we will add a minimum of 8.5 million years to the age of the sedimentary column here and at other related sites drilled. On the basis of data recorded from the many Mediterranean drillings, and known accumulation rates, we are thus able to determine that the deposition of sediments in this famous sea has been going on for a good many millions of years. The deepest sediments drilled were recognized as belonging to the Early Miocene Epoch of geologic time. (Most geologists date the beginning of the Miocene as approximately 25 million years ago.)

In summary, we can therefore say that in the central parts of the Mediterranean, away from land, the sea floor has thick layers of very fine-grained, biologically-produced sediments, just as has been found in the central parts of the great oceans of the world. In addition, layers of evaporitic minerals in the Mediterranean reveal that this sea underwent long periods of extensive evaporation with a deficiency of fresh water. Both of these basic groups of sediments are of types which require long periods of quiet water for the particles to settle to the sea floor.

FOOTNOTES

1. E. L. Winterer, J. I. Ewing, et al., Initial Reports of the Deep Sea Drilling Project, v. 17, 1973, p. 145-234.

2. Animals and plants which float in the open water (rather than living on the bottom) are known as "pelagic" organisms. This term is widely used in oceanographic literature, but for the sake of simplicity we have used it only occasionally in this chapter.

3. See Chapter 3 for a discussion of the laws of biological growth, and the stability of these laws.

4. G. W. Prescott, The Algae: A Review, 1968, p. 170.

5. R. S. Wimpenny, The Plankton of the Sea, 1966, p. 224. Compare Prescott, The Algae, p. 171 and 318.

6. M. G. Gross, Oceanography: A View of the Earth, 1972, p. 112, 119.