surrounding basins that no appreciable quantity of contrasting sediments from them, or from elsewhere, are brought up on to the ridge by ocean currents.[28] Thus Eauripik Ridge is, and has long been, an ideal place for the slow accumulation of the shells of pelagic Foraminifera, coccolithophores, and similar organisms. This forms an excellent time-indicating record of the past.

If one is accustomed to thinking of the growth of marine life in terms of only thousands of years, the stratigraphic record here at Site 62--and also at most other sites drilled--will be little short of staggering. At Site 62 the actual sedimentary column was approximately 1,880 feet in depth, and nearly all of it shows every evidence of having accumulated by the slow, natural processes by which biologically produced deep-sea sediments are forming today. The sediment thickness at this site is more than that of some similar columns found in the eastern equatorial Pacific, but not as deep as several others drilled in the western Pacific. The sedimentary column at Site 62 was very thoroughly sampled and cored, especially the upper 1,200 feet (364 meters) of it. (See Figure 31 for a summary diagram of the column.) Of this 1,200 feet, very few sections contained less than 70% calcium carbonate, and most parts possessed from 80 to 94% of this compound.[29] When one considers that nearly all of this carbonate is from the accumulation of shells from the minute animals and plants which lived floating in the upper layers of water above, he is forced to realize that some millions of years are represented here.[30] As explained in the earlier part of this chapter, the Foraminifera, and the coccolithophores and their relatives, are the primary producers of carbonate material for these sediments.[31] The rate of deposition due to the constant "slow rain" of their shells and calcareous plates hardly ever exceeds 20 millimeters (slightly less than 1 inch) per 1,000 years. So, even if one were to assume such extraordinary growth conditions in the ancient seas as to allow for a growth rate 10 times as fast as at present--which is probably biologically impossible--over one million years would be required for producing the upper 1,200 feet of this sedimentary column.

When we examine the stratigraphic column found at Site 64 we find a composition and structure similar to that of Site 62. The drillings, like those at Site 62, were made on a low, broad ridge of the ocean floor (the Ontong-Java Plateau) and penetrated to an even greater depth than those at Site 62. This plateau (sometimes referred to as the Solomon Rise) is a large, nearly level area, over 300 miles in width. Because of its raised position, above the surrounding ocean floor, it has been protected from invasion by foreign sediments, and has accumulated an unusually reliable and uniform pattern of pelagic oozes and chalks from the shell-producing organisms which have lived in the water above the plateau. We will not give the details of this column, but they can be obtained from the same source to which we have been referring.[32] We should, however, mention that at this site, just below the 1,300 foot level, the drill began to penetrate several layers of lithified chalk ooze (which is called chalk). Farther on down, even some layers of hard limestone were encountered.[33] This presence of layers of differing