famous voyage is believed to have passed close to this plateau, though it is very unlikely that any of Magellan's soundings detected it. The drilling operations at this site (no. 167) revealed 3,800 feet of practically undisturbed sediments. The upper 2,000 feet of this column proved to be almost pure Foraminifera and coccolith chalk ooze and chalk, with most cores testing over 90% calcium carbonate. And a large proportion of the cores from the lower parts of this test hole were similar in composition to the upper 2,000 feet.[38]

While making any study of the carbonate columns from rises and plateaus we should also remember to contrast the sedimentary columns from nearby drillings in deeper waters, off the rises. Some of these, drilled during the cruises we have just listed, are at Sites 51, 53, 166, 206, 210, 278, and 283. In all cases these are within a 600 mile radius (usually much less) of at least one of the carbonate columns numbered above. These contrasting columns have, in most of their sections, a substantially different composition from the nearby carbonate columns, thus showing that the two types were accumulated independently of each other without interchange of sediments. The contrasting columns are in most cases composed of sequences of marine clay, Radiolaria and diatom ooze, chert, and fine volcanic ash, with occasional layers of chalk or chalk ooze. The greater water depth at these sites is the main reason that chalk oozes were less likely to accumulate, as was explained earlier. These columns which contain extensive sections without appreciable amounts of carbonate sometimes give an even more detailed record of the environmental history at the site of deposition than do the great carbonate columns. The latter usually do not lack well fossilized Foraminifera shells and coccoliths for identification throughout the column, but the shells (or spicules) of the Radiolaria and diatoms are even more durable, and therefore show excellent preservation. In cases where the radiolarian and diatom skeletons did finally partially dissolve, they frequently formed layers of chert (flint is a variety of chert). This provides us with additional information concerning the history of the stratigraphic column.[39] So, here again, the sediments of the ocean floors tell a very complete and reliable story of the past.

Quantities of Equatorial Chalk

We can better visualize the broad expanse and thickness of one basic kind of sediment (the chalk-oozes and chalks) in the ocean floor if we briefly review some of the data from the Deep Sea Drilling cruises which concentrated on the central part of the Pacific. Actually, similar amounts of these same sediments were found in extensive areas of the Atlantic and Indian Oceans, but we can not attempt to summarize so many cruises in a work of this type.

West of South America begins a broad equatorial belt of very thick carbonate ooze and chalk deposit which extends from approximately 10° north latitude to 20° south latitude, and westward for several thousand miles. During the seventh, eighth, ninth, seventeenth, and thirty-third cruises of the Deep Sea Drilling Project,