which takes 10 to 14 days to settle in pure water, settles in 14 to 18 hours in a solution of common salt (W. H. Sidell, 1838). A fine clayey precipitate goes down in a solution of the strength of sea water in 30 minutes, which in pure water would take as many days (W. H. Brewer, 1883).

Since the chief part of oceanic work requires the presence of rock-material, depth of water is a condition of prime importance. It is only within shallow depths that the waters come extensively into working contact with rocks; only in the shallow belt where water and rocks are together *along the emerging line* that the greatest amount of force is generated for work. Being at a depth of 500 feet in the ocean is not as complete removal from oceanic forces as being 500 feet above it, but the geological results produced at this and greater depths are relatively small. As explained beyond, there are wide differences between the work of the upper 10 fathoms along shores, and that of the depths from 10 to 100 fathoms; of greater depths along the sides of the oceanic basin when reached by marine currents; and of depths from 100 fathoms to abyssal depths, remote essentially from all currents.

It is therefore obvious that the era in geological history when the ocean carried on the greatest amount of rock-making was that of general continental submergence at shallow depths, with a scattering of emerged rocky ridges or areas. This was the condition of the earth through the Paleozoic eras; and, to a large extent, through Mesozoic time. The condition was in striking contrast with the later and present state, in which the continents have only a narrow margin of shallow water. This fact should be kept in mind when comparing ancient geological events with modern. The time of the greatest amount of ocean work was that of the least amount of river work.

Characteristics of the Working Agencies.

1. The Tidal Wave.

The tidal wave moves as a force wave, and has a mean height, along coasts where least influenced by the land, of less than a foot. The height on the projecting capes of continents is 1 to 2 feet, but along intervening coasts commonly from 4 to 12 feet, and in bays and straits, 15 to 18 feet or more. Along the east coast of North America, southern Florida, Cape Hatteras, and Nantucket are the dividing points between a "Southern," "Middle," and "Eastern" Bay (Bache). The height is 1 to 1½ feet at southern Florida, 2 at Cape Hatteras, and 1 at southeastern Nantucket; but in the Southern Bay at Savannah it is 7 feet; in the Middle Bay, at New York, it is 5 feet; in the Eastern, at Boston, 10 feet.

Up deep bays, when the tide enters between strongly converging coast lines, the wave increases much in height. At the Bay of Fundy, an unusually long wave enters and reaches a height of 40 feet, and even 60 to 70 feet at the highest tides; the advancing wave is like a moving water-fall of majestic extent, but without foam. At the entrance to the Bristol Channel,