

Notwithstanding some exceptions, due to special conditions, as, for instance, on deep ridges between oceanic islands, where gravelly deposits are found, or in bays, fjords, and enclosed seas, where mud is met with in shallow water, it may be said that, along all coasts situated in or fronting the great oceans, 100 fathoms is the average depth at which fine mud or ooze commences to form. At about this depth the deposits on the whole assume a greater uniformity of composition and grain, and the signs of mechanical action tend to diminish or completely disappear. The greater the extent and depth of the ocean, the greater the depth to which wave-movement extends, and consequently the greater is the depth at which the mud-line is formed around the coasts,<sup>1</sup> but the average depth of this mud-line may be taken as approximately about 100 fathoms.

Not only is the 100-fathom line important as a dividing line between Deep-Sea and Shallow-Water Deposits, but in the physical relief of the globe it appears to mark the outer and upper limits of the continental masses, all within that line (the continental shelf) belonging to the continental plateaus, while beyond the 100-fathom line there is a relatively rapid descent of the sea-floor to the level of the depressed regions of the oceanic basins. This is shown by the fact that, while the area of the ocean between the shore-line and a depth of 100 fathoms is estimated at over ten millions of square miles, the area between the 100-fathom line and the 500-fathom line—in other words, the area of the ocean's bed taken in by a descent of the next 400 fathoms—is estimated at only about seven millions of square miles.

Marine Deposits as a whole may be arranged, from the point of view of their relative geographical and bathymetrical position, into three groups, viz., (1) DEEP-SEA DEPOSITS, formed beyond the 100-fathom line; (2) SHALLOW-WATER DEPOSITS, formed between the 100-fathom line and low-water mark; and (3) LITTORAL DEPOSITS, formed in the space between high and low water marks. From the point of view of their composition, as well as of their geographical and bathymetrical position, Marine Deposits may be separated into two great divisions, viz., (I.) PELAGIC DEPOSITS—those formed towards the centres of the great oceans, and made up chiefly of the remains of pelagic organisms along with the ultimate products arising from the decomposition of rocks and minerals; and (II.) TERRIGENOUS DEPOSITS—those formed close to continental and other lands, and largely made up of transported materials immediately derived from the disintegration of the land masses.

The relations of these large groups to each other, and their subdivisions, are exhibited in the following scheme, which is the first attempt at a systematic classification of Marine Deposits as a whole.<sup>2</sup>

<sup>1</sup> Stevenson, "On the Destructive Effects of the Waves of the Sea on the North-East Shores of Scotland," *Proc. Roy. Soc. Edin.*, vol. iv. pp. 200, 201, 1859.

<sup>2</sup> A very large number of names have been given to deposits in the littoral and shallow-water zones by geologists, physical geographers, and marine surveyors, viz., muds, oozes, sands, boulders, gravels, with various qualifying words indicating their colour, physical aspect, or composition, such as blue, red, yellow, black, soft, coarse, angular,