

as on the African coasts and other parts of the Mediterranean shores, that on shore-rocks within reach of the water a hard varnish-like crust is deposited. This substance consists essentially of carbonate of lime. As it extends over rocks of the most various composition, it has been regarded as a deposit of lime held in solution in the shore sea-water, and rapidly evaporated in pools or while bathing the surface of rocks exposed to strong sun-heat.²⁹² But it may possibly be due to organic agency like the amorphous crust of limestone formed by nullipores (see postea, p. 801). During the researches of the "Challenger" expedition, important facts in the history of marine chemistry have been obtained from the abysses of the Atlantic and Pacific Oceans (see pp. 763, 767, 829).

(ii.) The Mechanical deposits of the sea may be grouped into subdivisions according as they are directly connected with the waste of the land, or have originated at great depths and remote from land, when their source is not so obvious.²⁹³

A. *Land-derived or Terrigenous*.—These may be conveniently grouped according to their relative places on the sea-bed.²⁹⁴

a. *Shore Deposits*.—The most conspicuous and familiar are the layers of gravel and sand which accumulate between

²⁹² Bull. Soc. Geol. France (3), ii. p. 219, iii. p. 46, vi. p. 84. See postea, p. 823, where the evaporation in the coral-seas is referred to.

²⁹³ See on this subject an important memoir by Messrs. Murray and Renard, Proc. Roy. Soc. Edin. 1884, and Nature, xxx. 1884; also Murray, Proc. Roy. Soc. 1876; Proc. Roy. Soc. Edin. ix.; Murray and Renard, Brit. Assoc. 1879, sects. p. 340; also for the North Atlantic, "Den Norske Nordhavs-Expedition," part ix. (on Oceanic Deposits), 1882. J. Y. Buchanan, Proc. Roy. Soc. Edin. xviii. 1891, p. 131. But the chief source of information is now the great Memoir on "Deep Sea Deposits" by Messrs. Murray and Renard in the Reports of the "Challenger" Expedition, 1891.

²⁹⁴ On this subject consult the "Deep Sea Deposits" of the "Challenger" Report, chap. v.