

The dredgings and soundings along the coast of America, taken by the U.S. Coast Survey in 1867, were subsequently examined by Pourtalès. He found among the deposits two well-marked varieties, siliceous and calcareous; the siliceous deposits extended along the coast as far as Cape Florida. The calcareous deposits are divided into Coral and Foraminiferous formations, the latter found in the greatest depths. He also distinguished a muddy deposit, which he considered quite subordinate and related to the Tertiary formations.¹

Portalès also gives a description of the different stages in the formation of glauconite. He says:—"We find, side by side, the tests perfectly fresh, others still entire, but filled with a rusty-coloured mass, which permeates the finest canals of the shells like an injection. In others, again, the shell is partly broken away, and the filling is turning greenish; and finally we find the casts without trace of shell, sometimes perfectly reproducing the internal form of the chambers; sometimes, particularly in the larger ones, cracks of the surface or conglomeration with other grains obliterates all the characters. They even coalesce into pebbles, in which the casts can only be recognised after grinding and polishing."² Portalès observes that these glauconitic grains are deposited in depths of 50 to 100 fathoms near the coasts of Georgia and South Carolina.

L. Agassiz discussed the results of Portalès' observations, and states that what he had seen of deep-sea deposits seemed to indicate that no recent or ancient formation ever occurred in very deep water. He concludes that the present continental areas within the 200-fathom line, as well as the oceans, have preserved their outlines and positions from the earliest times.³

In the Reports of Carpenter, Wyville Thomson, and Gwyn Jeffreys, on the cruises of H.M.S.S. "Lightning," "Porcupine," and "Shearwater,"⁴ there are many references to the marine deposits collected in the sounding tube and dredges. A comparison is especially drawn between the White Chalk and the Atlantic mud or ooze; in the earlier Reports it was suggested that "we are still living in the Cretaceous epoch," and in later ones that the Atlantic mud "might have been accumulating continuously from the Cretaceous or even earlier periods to the present day."⁵

In 1871 Delesse published his work "Lithologie du Fond des Mers," treating more particularly of coast sediments from the seas of France; it forms an important contribution to our knowledge of marine deposits, and contains lithological charts founded upon the official charts published by the European and American Governments.

The Challenger Expedition left England in 1872, and during the cruise, which lasted nearly three and a half years, many preliminary notices were published by Wyville

¹ Report of the Superintendent of the United States Coast Survey for 1869, pp. 220-225, Washington, 1872.

² *Loc. cit.*, p. 224.

³ *Bull. Mus. Comp. Zool.*, vol. i. pp. 368, 369, 1869.

⁴ From 1868 to 1870; published in *Proc. Roy. Soc.*

⁵ Thomson, *The Depths of the Sea*, p. 470, London, 1874.