

coral marls in Talbot county. An instance may be cited in the immense deposit of phosphate of lime in the small Island of Sombrero, which lies in the Atlantic Ocean, eastward of Porto Rico. The material is brought here and sold under the name of Sombrero guano. The term guano was originally applied in Peru to the excrements of birds deposited upon the islands along the coast of that country. As rain seldom or never falls upon them, the ammonia formed by the putrefaction of these excrements is, for the most part, retained in combination with acids and mixed with the phosphates and other matters. In other regions the rains wash out the ammonia and other easily soluble substances, leaving behind a mass in which phosphates predominate, and which are therefore called "phosphatic guanoes." The remains of birds in them indicate clearly their origin.

No such remains, however, have been seen in the material brought from Sombrero, as I am informed. On the contrary, all the organic remains which hitherto observed therein are those of *marine* animals. The only way of accounting for the existence of this vast mass of material, containing nearly 80 per cent. of phosphate of lime, is by supposing that it is made up of the remains of the bones of fish and other aquatic animals which, died at the spot or were drifted thereon.

It is well known that coral reefs and islands, especially the latter, teem with animal life. In the case of Sombrero, the island, like others in the vicinity, was raised above the level of the ocean, and in process of time, nearly all the remains of animal life were carried off by rains or passed into the air, except the phosphate of lime, which remained and hardened into a solid rock.

The characters of the many varieties of shells in our cretaceous and tertiary strata are such as to prove they could only have lived in the salt waters of the ocean. The coral indicates not only this conclusion, but also that a climate prevailed during the deposition of the tertiary formations very similar to that of the present tropical regions, which abound with marine animals.

The phosphatic coral marl, on the estate of Mr. D. Kerr, certainly contains more phosphate of lime than belonged to the coral alone, and the surplus must have been derived from the remains of the animals that existed in that region before it emerged above the ocean's waters. The sum of our knowledge upon this highly interesting subject gives strong ground for the hope that we may possess deposits much richer in phosphoric acid. We may find among the results of a minute and systematic survey of our tide water counties, on both shores, deposits, if not as rich as those of Sombrero, yet suffi-