

I have observed the same effect myself taking place in the West Indies, where the surface of the coral rock is speedily converted into phosphate of lime, wherever the seabirds are in the habit of congregating.

Such indeed is the simple origin of some of the most important deposits of phosphate in that portion of the world : i. e., Curacao, Sombrero and Aruba, etc.

The prospecting and first development of the latter named island having fallen to my own care and experience, I am able to produce some interesting specimens here, illustrating very clearly the history of their formation, by examination of their fossil organisms, originally carbonate of lime (coral rock), and now seen to be, by analysis, phosphate of lime of over 80%.

The deposits of Florida and South Carolina would appear to owe much of their phosphatic wealth to *debris* of phosphatized limestones and marls.

One of nature's operations, which is a factor in enriching already-formed phosphate beds, may be here alluded to, namely, the property of spring waters (which often contain considerable proportions of bicarbonates and free carbonic acid) to dissolve neutral carbonate of lime, even when presented to them in apparently as the most compact and impervious material. Such has been the origin of the many remarkable caves existing in the limestone rock formations (Cheddar, Derby, Kentucky, etc.)

This property applied to a calcareous phosphated material will, in course of time, ablate, as it were, more carbonate than phosphate, and to this action is attributed the value of many thousand tons of material, in such extensive beds as those of the Somme, Cibly, Liege, and probably of Florida.

While speaking of these beds of the Cretaceous period, I may mention the recent opening up of another similar field in France. I refer to that in the department of the Pas de Calais, which would appear to be of the same nature as that of the Somme.

APATITES.

Although crystallized phosphate of lime is found as a component of rock masses in more recent strata, yet we do not yet know of any