Phosphatic concretions.

Associated with the glauconite in certain localities, more especially off the Cape of Good Hope and off the Atlantic coast of the United States, irregular concretions, largely made up of phosphate of lime, have been dredged. The concretions vary greatly in size and form, with a greenish or brownish glazed external surface, and are made up of heterogeneous fragments derived from the deposit containing the concretions (grains of glauconite and other minerals or remains of organisms), cemented by phosphatic material, which constitutes the principal part of the concretions. When the cemented particles are purely mineral, the phosphatic matter acts simply as a cement, but when the remains of calcareous organisms are included in the concretions, the phosphatic material plays a more important part, filling the internal chambers, and often the calcium carbonate of the shell is pseudomorphosed into calcium phosphate. When the filling up of a foraminifer, for example, and the pseudomorphism of its shell, are complete, the phosphate, attracted around this little centre continues to be added at the surface, and thus a phosphatic granule is formed, the external appearance of which no longer recalls that of the organism around which the phosphate has grouped itself. These phosphatic concretions occur chiefly along coasts bathed by waters subject at times to great and rapid changes of temperature, which cause the destruction on a large scale of marine life, the decomposition of the organic remains, sometimes thickly covering the sea-floor in such localities, giving rise to the phosphate of lime to be permanently fixed in the phosphatic nodules.

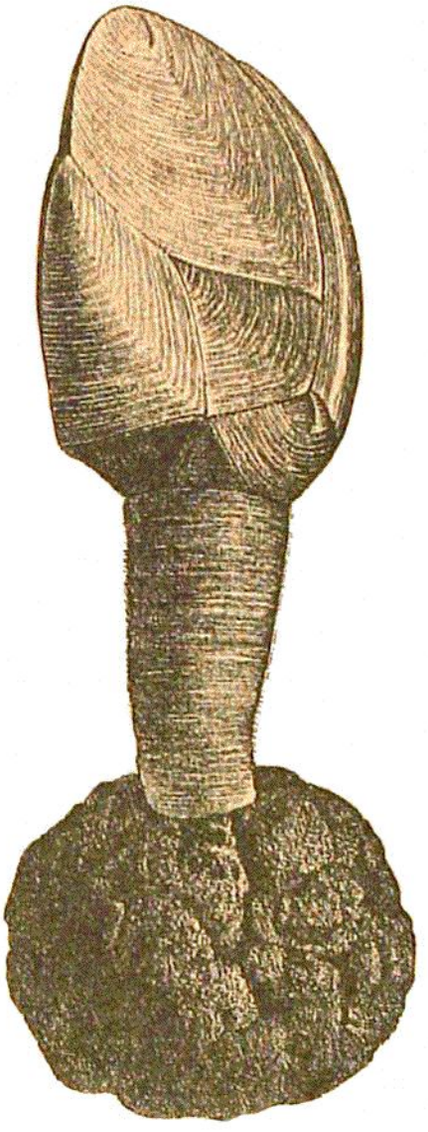

FIG. 134. — MANGANESE NODULE WITH *SCALPELLUM DARWINII* GROWING ON IT.
"Challenger" Station 299, South Pacific, 2160 fathoms.

Phillipsite.

Just as the silicate glauconite occurs in the terrigenous deposits, and is supposed to be a secondary product derived from the decomposition of continental rock fragments, so the