

use of by invertebrate animals; aragonite being much less durable than calcite (pp. 141, 244). Hence while shells of gasteropods, many lamellibranchs, corals and other organisms, formed largely or wholly of aragonite, crumble down into mere amorphous mud, pass into crystalline calcite, or disappear, the fragments of those consisting of calcite may remain quite recognizable.

It is evident, therefore, that the absence of all trace of organic structure in a limestone need not invalidate an inference from other evidence that the rock has been formed from the remains of organisms. The calcareous organic débris of a sea-bottom may be disintegrated, and reduced to amorphous detritus, by the mechanical action of waves and currents, by the solvent chemical action of the water, by the decay of the binding material, such as the organic matter of shells, or by being swallowed and digested by other animals (*postea*, p. 243).¹⁰⁴

Moreover, in clastic calcareous rocks, owing to their liability to alteration by infiltrating water, there is a tendency to acquire an internal crystalline texture (p. 621). At the time of formation, little empty spaces lie between the component granules and fragments, and according to Mr. Sorby these interspaces may amount to about a quarter of the whole mass of the rock. They have very commonly been filled up by calcite introduced in solution. This infiltrated calcite acquires a crystalline structure, like that of ordinary mineral-veins. But the original component organic granules also themselves become crystalline, and, save in so far as their external contour may reveal their original

¹⁰⁴ Sorby, Presidential Address, Q. J. Geol. Soc. 1879. G. Rose, Abhandl. Acad. Berlin, 1858; Gümbel, Zeitsch. Deutsch. Geol. Gesellsch. 1884, p. 386. Cornish and Kendall, Geol. Mag. 1888, p. 66.