the general history of the origin of limestone, from their affording strong evidence of the sources whence carbonate of lime has been derived.*

* We see that thermal springs, in volcanic districts, issue from the earth, so highly charged with carbonate of lime, as to overspread large tracts of country with beds of calcareous tufa, or travertino. The waters that flow from the Lago di Tartaro, near Rome, and the hot springs of San Filippo, on the borders of Tuscany, are well known examples of this phenomenon. These existing operations afford a nearly certain explanation of the origin of extensive beds of limestone in fresh-water lakes of the tertiary period, where we know them to have been formed during seasons of intense volcanic activity. They seem also to indicate the probable agency of thermal waters in the formation of still larger calcareous deposits at the bottom of the sea, during preceding periods of the secondary and transition series.

It is a difficult problem to account for the source of the enormous masses of carbonate of lime that compose nearly one-eighth part of the superficial crust of the globe. Some have referred it entirely to the secretions of marine animals; an origin to which we must obviously assign those portions of calcareous strata which are composed of comminuted shells and corallines: but, until it can be shown that these animals have the power of forming lime from other elements, we must suppose that they derived it from the sea, either directly, or through the medium of its plants. In either case, it remains to find the source whence the sea obtained, not only these supplies of carbonate of lime for its animal inhabitants, but also the still larger quantities of the same substance, that have been precipitated in the form of calcareous strata.

We cannot suppose it to have resulted, like sands and clays, from the mechanical detritus of rocks of the granitic series, because the quantity of lime these rocks contain, bears no proportion to its large amount among the derivative rocks. The only remaining hypothesis seems to be, that lime was continually introduced to lakes and seas, by water that had percolated rocks through which calcareous earth was disseminated.