

## CHAPTER II.

### VEGETATION OF THE LAURENTIAN AND EARLY PALÆO-ZOIC—QUESTIONS AS TO ALGÆ.

OLDEST of all the formations known to geologists, and representing perhaps the earliest rocks produced after our earth had ceased to be a molten mass, are the hard, crystalline, and much-contorted rocks named by the late Sir W. E. Logan Laurentian, and which are largely developed in the northern parts of North America and Europe, and in many other regions. So numerous and extensive, indeed, are the exposures of these rocks, that we have good reason to believe that they underlie all the other formations of our continents, and are even world-wide in their distribution. In the lower part of this great system of rocks which, in some places at least, is thirty thousand feet in thickness, we find no traces of the existence of any living thing on the earth. But, in the middle portion of the Laurentian, rocks are found which indicate that there were already land and water, and that the waters and possibly the land were already tenanted by living beings. The great beds of limestone which exist in this part of the system furnish one indication of this. In the later geological formations the limestones are mostly organic—that is, they consist of accumulated remains of shells, corals, and other hard parts of marine animals, which are composed of calcium carbonate, which the animals obtain directly from their food, and indirectly from the calcareous matter dissolved in the sea-water. In like