

Still, as astronomers have suspected the existence of unknown planets from observing perturbations not accounted for, and as voyagers have suspected the approach to unknown regions by the appearance of floating wood or stray land birds, anticipations of such discoveries have been entertained and expressed from time to time. Lyell, Dana, and Dr. Sterry Hunt more especially have committed themselves to such speculations. The reasons assigned may be stated thus:—

Assuming the Laurentian rocks to be altered sediments, they must, from their great extent, have been deposited in the ocean; and if there had been no living creatures in the waters, we have no reason to believe that they would have consisted of anything more than such sandy and muddy *débris* as may be washed away from wasting rocks originally of igneous origin. But the Laurentian beds contain other materials than these. No formations of any geological age include thicker or more extensive limestones. One of the beds measured by the officers of the Geological Survey is stated to be 1,500 feet in thickness, another is 1,250 feet thick, and a third, 750 feet; making an aggregate of 3,500 feet.¹ These beds may be traced, with more or less interruption, for hundreds of miles. Whatever the origin of such limestones, it is plain that they indicate causes equal in extent, and comparable in power and duration, with those which have produced the greatest limestones of the later geological periods. Now, in later formations, limestone is usually an organic rock, accumulated by the slow gathering from the sea-water, or its plants, of calcareous matter, by corals, foraminifera, or shell fish, and the deposition of their skeletons, either entire or in fragments, in the sea bottom. The most friable chalk and the most crystalline limestones have alike been formed in this way. We know of no reason why it should be different in the Laurentian period. When,

¹ Logan : "Geology of Canada," p. 45.