

most cephalopods and all pteropods, heteropods, and other surface living animals of high type, even to their extinction. By oscillations of 500 feet up or down, the great mass of gasteropods, and all reef-building corals, would be forced to emigrate, would become modified, or would be destroyed,—and another hundred fathoms would exterminate the greater number of bivalves; while elevations and depressions to ten times that amount might only slightly affect the region of brachiopods, echinoderms, and sponges.

After a careful consideration of the results of recent investigations, we are strengthened in our confidence in the truth of the opinion which we previously held, that the various groups of fossils characterizing the tertiary beds of Europe and North America represent the constantly altering fauna of the shallower portions of an ocean whose depths are still occupied by a deposit which has been accumulating continuously from the period of the pre-tertiary chalk, and which perpetuates with much modification the pre-tertiary chalk fauna. I do not see that this view militates in the least against the “reasoning and classification” of that geology which we have learned from Sir Charles Lyell; our dredgings only show that these abysses of the ocean—abysses which Sir Charles Lyell admits in the passage quoted above, to have outlasted on account of their depth a succession of geological epochs—are inhabited by a special deep-sea fauna, possibly as persistent in its general features as the abysses themselves. I have said at the beginning of this chapter, that I believe the doctrine of the ‘continuity of the chalk,’ as understood by those who first suggested it, now meets with very general acceptance; and in evidence