

lower surface, and thin the crust. It was of such thinness that the internal heat escaped with rapidity sufficient to prevent a lowering of the temperature of the different zones of crust, and thus produce a thickening of the crust. But, if by sedimentation, the crust were made thicker, this balance would be destroyed; the escape of internal heat would be retarded, and it would therefore, re-fuse the inner surface of the crust, and restore the thickness, and with it, the balance of actions. Thus, wherever the original crust has been supplemented by sediments, more or less of the original crust has been lost from the under side. Who can say how much has been lost? Undoubtedly, an amount approximating the entire thickness of the overlying sediments. It is generally admitted that the Eozoic strata are 50,000 feet thick. There must have been consequently, 50,000 feet of the primitive crust melted away. This leaves crust-thickening due to progressive cooling, to be supplied by sediments above the Eozoic. If the Eozoic beds extend down 30 miles, then 30 miles of primitive crust are lost. If that crust was less than 30 miles thick, then some part of the 30 miles melted away must have been sedimentary rocks.

I wish to make one more point in this connection, and that, I believe is new. If sediments accumulated only along the continental slopes, then not only did all formations grow finer and thinner in receding from the shore; but they must be found to disappear at great distances from the shore—except in shallow water. Thus, we are not at liberty to suppose the Eozoic beds extended under all the oceans, so as to be literally universal. Wherever they now exist, the land was then not far distant. Thus also, in general, it should result that *all formations grow thinner and less fragmental as they pass under newer formations.*

So it appears that by due reflection, it becomes possible to reproduce the important features of the ocean's primitive history. The earliest outcrops of sea-bottom were entirely consumed by erosion. We find traces of those lost lands in the grains of vitreous quartz, which must have been a product of