

have to deal with here, but permanence of position along with change of elevation ; and this modified by the fact that there have always been mountain ridges, internal plateaus, and marginal areas affected in various ways by the vertical movement of the land. Further, the elevation and subsidence of the land have not always been uniform, but often differential, while every movement has tended to produce modifications of ocean currents and of atmospheric conditions. The whole subject, more especially in its relations to life, thus becomes very complicated, and it is perhaps in consequence of partial and imperfect views on these points that so much diversity of opinion has arisen. For example, it is evident that we can gain nothing by adding to the continents those submerged margins delineated by Murray in the *Challenger* reports, and which have in periods of continental elevation themselves formed portions of the land. Nor do we establish a case in favour of perished oceanic continents by the argument that they are needed to furnish the materials of marginal mountains which are due to the continuous sweeping of arctic material to the south by currents, as we see in the coast of North America to-day. Nor do we invalidate the permanence of the continents by the bridges of land, islands, and shallow water at various times thrown across the Atlantic. The distribution of Cambrian Trilobites, as illustrated by Matthew,¹ seems to show a bridge of this kind in the north in very early times, and similar evidence is furnished by the animals and plants of the Devonian and Carboniferous, and by the sea animals and plants of the later Tertiary and modern. Gardener has postulated a southern bridge in the region of the West Indies for the migrations of plants, and Gregory has adduced the evidence of those conservative and slow-moving creatures, the sea urchins, in favour of similar connection in the West Indian region at two distinct periods of time (the Lower Cretaceous and the Miocene Tertiary). But

¹ Transactions Royal Society of Canada, 1892.