

bridges do not involve want of permanence in their termini. Because an engineer has bridged the Firth of Forth, it does not follow that the banks of this inlet did not exist before the bridge was built; and if the bridge were to perish, the evidence that trains had once passed that way would not justify the belief that the bed of the Firth had been dry land, and the areas north and south of it depressed. The more we consider this question the more we see that the permanence, growth and sculpture of the continents are parts of a great continuous and far-reaching plan. This view is strengthened rather than otherwise, when we consider the probable manner in which the enormous weight of the continents is sustained above the waters. We may attribute this, on the one hand, to rigidity and lateral arching and compression, or, on the other, to what may be termed flotation of the lighter parts of the crust; and there seems to be little doubt that both of these principles have been employed in constructing the "pillars which support the earth." It is evident, however, that an arch thrown over the internal abyss of the earth, or a portion of its crust so lightened as to be pressed upward by its heavier surroundings, must, when once established, have become a permanent feature of the earth's foundations, not to be disturbed without calamitous consequences to its inhabitants.

It is the part of the philosophical naturalist to bring together these apparent contrarieties of mutation and permanence; both of which are included, each in its proper place, in the great plan of nature. It is therefore my purpose in the present chapter to direct attention to some of the terminal points or fixed arrangements that we meet with in the course of the geological history, and even in its earlier parts, and more particularly in reference to the organic world. This, which is in itself constantly changing, has been placed under necessity to adhere to certain determinations fixed of old, and which regulate its forms and possibilities down to our own time.