

can, like these, crawl up into the shallows, or we can occasionally mount at peril in a balloon; but the utmost extent of our vertical range is a distance no greater than that which we can walk in a couple of hours horizontally on the earth's surface.

The "Challenger" travelled on the voyage, from Portsmouth and back to the same port, 68,690 miles; and this distance, taking into consideration the time consumed from port to port, was traversed at the average pace of only four miles an hour, or fast walking pace. In an express train on land the entire distance could be conceived of as being accomplished in eight weeks, and in about half that time at the rate at which a Swallow can fly.

If there were land all along the equator it would be possible to run round the world in a train in less than three weeks. I used to wonder how the main mass of the inhabitants of America could have peopled the entire country down to Cape Horn, from so remote a starting-point as Behring's Straits; but a walk of four miles a day would bring a man from Behring's Straits to Cape Horn in about seven years, and a move of a quarter of a mile a day would bring a tribe the same distance in a little over a century.

The earth, considered as a comparatively insignificant component particle of the universe, may be justly compared to a small isolated island on its own surface. As, in the course of ages, such an island develops its own peculiar insular fauna and flora, so probably on the surface of the earth alone has the peculiarly complex development of the element Nitrogen occurred which has resulted in the various forms of animal and vegetable life.

On the theory of evolution, it is impossible that plants or animals of any advanced complexity, at all resembling those existing on the earth, should exist on other planets or in other solar systems. It is conceivable that very low forms of vegetable life may exist on other planets and may have been by some means transported to the earth: the idea is conceivable, though highly improbable. But it is quite impossible that that infinitely complex series of circumstances which on the earth has conspired to produce from the lowest living forms a Crustacean, for example, should have occurred elsewhere; still less is it possible that a bird or a Mammal should exist elsewhere; still more impossible again that there should be elsewhere a monkey or a man.

All these forms are quite certainly terrestrial, and terrestrial only, as surely as is the Apteryx a peculiar development of New Zealand alone, or the Dodo a production of the Mascarene Islands only. It is even probable that protoplasm, itself, the