

expeditions hitherto made, the remaining Holothurids met with in the great depths are comparatively few both in species and individuals, and unmistakably show the closest relation to the present shallow-water fauna; so that while the Elaspoda have retired towards the abysses an infinitely long time ago, the latter have emigrated only at a comparatively much later period. The *Cucumariæ* and several other present shallow-water forms that have descended as far down as 2000 fathoms are veritable *Cucumariæ*, &c., that, in spite of their highly altered mode of life, have not yet had time to acquire any noteworthy deviations from the typical character of the genera in question. Such an emigration, which can be traced in the case of divers groups of marine animals, can only be effected extremely slowly, and undoubtedly takes place from competition with the shore fauna. We may suppose that the livelier struggle for existence which must arise in the littoral region or its vicinity, where an infinite number of various forms fight for subsistence, compels such forms, as lack sufficient power of resistance, to this so-called migration, and to retire to somewhat deeper and more peaceful regions, partly in their fully-developed state, partly in their later and more "conscious" embryonic stages, when, being independent of current and wind, they begin to crawl about. The others, from being unable to seek these places of refuge, succumb in that "Bellum omnium inter omnes" which is going on especially at or near the shore. But in proportion as the remaining shore fauna increases and extends downwards, even these formerly peaceful places become the field of a livelier competition in every respect, thereby necessitating a continual migration towards the greater depths.

The faculty hereby gained by the animals of enduring an ever-increasing depth, and of accommodating themselves to its conditions, being transmitted by inheritance and accumulated from generation to generation, must become a matter of great importance. If we take, for instance, two such forms as are with certainty known to belong to the same species, the one living at a great depth, let us say 1000 to 2000 fathoms, the other, on the contrary, belonging to shallow water, e.g., *Brissopsis*, it appears to me impossible that the larvæ of the form accustomed to live near the shore should be able to attain their full development and to settle in the great depth; nor is the contrary case any more imaginable. The faculty of thriving and existing under such extremely peculiar conditions as are offered by the deep sea cannot be acquired at once. Indeed, we see every day examples of animals obliged to change climate and to alter their mode of life; the parents sustain the new conditions only with difficulty, or even perish by their influence, but their immediate progeny possesses greater power of resistance, and their later descendants do so to yet a higher degree, until the animal becomes finally acclimatised. The larva of a marine invertebrate or the full-grown animal itself, accustomed to live at a pretty moderate depth, for instance 50 to 100 fathoms, can only with difficulty, and during a short time, endure to live in an aquarium, however con-