

an ancient sea, *e.g.* many of the molluscs of Lake Tanganyika; (c) the cosmopolitan forms which are readily transported on birds' feet and otherwise from one water-basin to another; and (d), if any remain, the autochthonous or aboriginal forms which are not represented by any near relatives outside of fresh water.

The question of the origin of land animals was present to the inquiring minds of the Greek philosophers, but, so far as we know, it has not been seriously tackled except by one naturalist, Prof. H. Simroth, in his *Entstehung der Landthiere* (1891). And notwithstanding the author's ingenuity and learning, the work does not convey the impression of a problem solved.

Slowly, and it may have been by zigzag paths, organisms wandered inland from the shores of sea and estuary and river, or became able to survive the drying up of landlocked basins. Simroth seeks to show that hard skins, cross-striped muscle, brains worthy of the name, red blood, and so on, were acquired as the transition to terrestrial life was effected.

Besides the five main life-areas—littoral, pelagial, abyssal, fluvial, and terrestrial—minor ones might be distinguished. Much work of interest has been recently done in regard to the organisms found in brackish water, in caves, underneath the ground, in the air, within other organisms, and so on. But to discuss these is beyond our scope.

It is at least stimulating to think over the possible historical relations of the great faunas which we have alluded to above. Various possibilities may be stated.

Evolution
of Faunas.

(a) According to Moseley, "The fauna of the coast has not only given origin to the terrestrial and fresh-water faunas, it has throughout all time, since life originated, given additions to the pelagic fauna in return for having received from it its starting-point. It has also received some of these pelagic forms back again, to assume a fresh littoral existence. The terrestrial fauna has returned some forms to the shores, such as certain shore-birds, seals, and the polar bear; and