

at the average depth of the Atlantic and Pacific basins, which does not seem to have practically any influence whatever on the distribution of species; while the slight range of temperature which affects the upper layers of the waters so as to form a littoral fauna within the limits where we have the greatest possible differences between the extremes of heat and cold, due to the daily changes of the temperature, and a continental fauna extending to those depths which we may assume are affected by the slower action of the heat of the sun at different seasons; while at last we find the abyssal regions in which the changes of temperature can be considered as null and in which there is a most remarkable uniformity of temperature though the conditions of pressure at the extremes of depths to which the species belonging to this abyssal fauna range are immensely greater than corresponding extremes due to the difference of atmospheric pressure at different levels on the surface of the earth.

If we examine the physical conditions which prevail within the 100 fathom line, within the continental limits, and within the oceanic limits, we, of course, at first would be inclined to look upon the great differences of pressure as the important element in the limitation of faunæ. The fact, however, that one and the same species so readily adapts itself to the enormous differences of pressure occurring in the oceanic, continental, and even littoral districts would seem to show that this element is not an all-important one. It is among the littoral districts that we find the greatest diversity of faunæ, and these littoral districts mainly differ in their temperature, but it is not the greatest amount of heat which apparently forms the limits of these districts.

They are separated by lines of lowest temperatures. Thus we find an arctic and boreal district, a temperate and a tropical district in which the extremes of temperature range within comparatively narrow limits. A similar condition of things exists within the littoral, continental, and abyssal districts; they represent the depths at which as a general rule certain well marked conditions of temperature exist, regulating as they do for the littoral districts the principal faunistic features of the bathymetrical districts. The littoral where the changes of temperature are greatly affected by the action of the sun; the continental extending from this limit into regions where we find the temperature gradually diminishing till we come to the abyssal or oceanic depths at which we have practically a uniform temperature.

With the exception of the abyssal species found in the Southern Ocean near the Antarctic circle, none of the species of Echinids seem to extend to very great distances from the continental ranges. This agrees well with my own observations in the "Blake," where I found that at even a comparatively short distance from the land there was a marked diminution in the number of species, and also in the number of specimens collected. The greatest distances from any land or banks of moderate depths at which Echinids have been collected are off Tristan da Cunha, at Stations 133, 334, 335; at Stations 153, 156, 157, 158 in the Southern Ocean, south of the Heard Islands, which, however, may not