shallow zones the percentage of the species procured in these zones which pass through several zones of depth is very low, while in the deeper zones the percentage of species procured in these zones which pass through several zones of depth is rather high. These facts are evidently to be accounted for by the changes in the physical conditions which take place between the depths of 100 and 500 fathoms. When once animals have accommodated themselves to deep-sea conditions there are few barriers to further vertical or horizontal migration, hence the same species is often recorded in several of the deeper zones. An examination of Table I. page 1430 shows that the percentage of *new* species from the shallower zones, which extend into the deeper zones, is relatively large. This is probably due to a large number of the Challenger's dredgings and trawlings being in rather deep water within these zones and on muddy bottoms. In all probability the deep sea was peopled by continuous migrations downwards and seawards from about the mud-line. If we suppose these migrations to have taken place from the mud-line at many different periods of time and from many different parts of the world, then it may be thus possible to account for the relatively large number of genera in the deep sea in proportion to the number of species.

Diminution in the Number of Species of Benthos with Distance from Shore.

When we take into consideration the horizontal as well as the vertical distribution, it would appear that in all the tropical and sub-tropical regions of the ocean the number of individuals and species living on the sea-bed very distinctly diminishes with the distance from the shore, and especially with the distance from continental shores. This statement would be universally true for all regions of the ocean were not the continental conditions pushed far from land by the presence of floating ice in the great Southern Ocean, and in some similar regions of the northern hemisphere. At first sight it might appear that this diminution in the number of species resulted from the greater depth at the seaward stations. This cannot, however, be the sole explanation. When the captures at the same or similar depths are compared from those stations within and those beyond 300 miles from land, it is found that the near-shore stations yield much the larger number of specimens and species. Stations in depths between 1000 and 2000 fathoms near shore give, on the average, 121 specimens and 39 species per haul; the remote stations beyond 300 miles from land and between the same limits of depth yielded only 21 specimens and 10 species per haul. In making this comparison, those stations were selected in which the conditions as to depth and other circumstances were nearly similar, excepting always the distance from a continental shore.

When the results of the trawlings and dredgings on the different kinds of deposits are compared, similar indications are obtained with reference to the relatively greater abundance of both individuals and species close to continental shores—the Terrigenous