

greater in the shallower zones of depth, and least in the greatest depths far removed from continental land. An examination of the foregoing lists and Tables I. and II. on page 1430 shows, according to the Challenger Results, a gradual decrease in the number of species with an increase of depth. While the number of specimens taken in the various trawlings and dredgings between the depths of 100 and 500 fathoms is stated at 6000, and the number of species at 2050, it will be seen that in depths greater than 2500 fathoms the number of specimens captured is only 600 and the number of species 235. All the intermediate zones show likewise a progressive diminution of specimens and species with increase of depth. These numbers only apply to the Benthos or bottom-living animals, all the doubtful specimens which may have been captured in the surface and intermediate waters having been removed from the lists in constructing these tables.

DIMINUTION OF
THE NUMBER OF
BENTHOS SPECIES
WITH INCREASE
OF DEPTH.

It will be observed that in all the deeper zones the number of genera is very large relatively to the number of species. Thus the 153 undoubtedly bottom-living species taken in the zone deeper than 2500 fathoms belong to 119 genera, whereas in the zone between 100 and 500 fathoms there are 1887 species which belong to only 771 genera; in the still shallower zone—0 to 100 fathoms—there are 4248 species and only 1438 genera. In the deepest zone, therefore, the species stand to the genera in the ratio of 5 to 4, and in the shallowest zone nearly as 3 to 1. The number of genera, in relation to the number of species present, augments gradually with the greater depth throughout all the zones. The proportion of the number of new genera, which the specialists have found it necessary to establish, increases in like manner as the hauls are taken from greater depths and at a greater distance from land, and the same is true with reference to the new species.

RELATIVE ABUN-
DANCE OF GENERA
IN THE DEEP SEA.

The number of species in the two shallower zones which are limited to these zones is, so far as our observations go, very large, viz., 92 per cent. in the zone 0 to 100 fathoms and 75 per cent. in the zone 100 to 500 fathoms, while the number of species limited to any one of the deeper zones is considerably less, viz., 55 to 65 per cent. The same fact is illustrated by the column in Table I. on page 1430 showing the number of species taken in other zones of depth as well as in the one under consideration,¹ for although the number of species is less in the deeper zones still the percentage of species in each zone which pass into other zones of depth is higher in the deeper than in the shallower zones. Migration downwards appears to be indicated by the fact that of those species found in other zones as well as in the one under consideration a larger number is found in the zone above (shallower) than in the zone below (deeper).² In the

PERCENTAGE OF
SPECIES LIMITED
TO DIFFERENT
ZONES OF DEPTH.

¹ The twelfth column from the left Table I., page 1430.

² See last seven columns in Table I., page 1430. The zone under consideration is that without figures in these columns.