

every hope to arrive at any satisfactory result upon this subject, did it not appear now, that the inquiry must be circumscribed within different limits, to be conducted upon its true ground. The results to which I have already arrived, since I have perceived the mistake under which investigators have been laboring thus far, in this respect, satisfy me that the point of view under which I have presented the subject here is the true one, and that in the end, the characteristic gradation exhibited by the orders of each class, will present the most striking correspondence with the character of the succession of the same groups in past ages, and afford another startling proof of the admirable order and gradation which have been established from the very beginning, and maintained through all times in the degrees of complication of the structure of animals.

## SECTION IX.

### RANGE OF GEOGRAPHICAL DISTRIBUTION OF ANIMALS.

The surface of the earth being partly formed by water and partly by land, and the organization of all living beings standing in close relation to the one or the other of these mediums, it is in the nature of things, that no single species, either of animals or plants, should be uniformly distributed over the whole globe. Yet there are some types of the animal, as well as of the vegetable kingdom, which are equally distributed over the whole surface of the land, and others which are as widely scattered in the sea, while others are limited to some continent or some ocean, to some particular province, to some lake, nay, to some very limited spot of the earth's surface.<sup>1</sup>

As far as the primary divisions of animals are concerned, and the nature of the medium to which they are adapted does not interfere, representatives of the four great branches of the animal kingdom are everywhere found together. Radiata, Mollusks, Articulata, and Vertebrata occur together in every part of the ocean, in the Arctics, as well as under the equator, and near the southern pole as far as man has penetrated; every bay, every inlet, every shoal is haunted by them. So univer-

<sup>1</sup> The human race affords an example of the wide distribution of a terrestrial type; the Herring and the Mackerel families have an equally wide distribution in the sea. The *Mumalia* of New Holland show how some families may be limited to one continent; the family of *Labyrinthici* of the Indian

Ocean, how fishes may be circumscribed in the sea, and that of the *Goniodonts* of South America in the fresh waters. The *Chœna* of Lake Baikal is found nowhere else; this is equally true of the *Blindfish* (*Amblyopsis*) of the Mammoth Cave, and of the *Proteus* of the caverns of Carinthia.