The Nearctic region, or the North American, from Mexico northward, excluding the West India Islands. — Of peculiar types there are among Mammals the Marsupial of the genus Didelphys, successor to genera that extend far back in American geological history; among Reptiles, which, however, are more properly neotropical, the Alligator; among Fishes, the Ganoids, which extend south to Mexico and Cuba; the Humming Birds, (only six) ranging up from South America; and the fresh-water Mollusks, in which this region "surpasses all other parts of the globe."

The Palearctic or Eurasian, north of the Atlas Mountains of Africa, and including Persia, the region of the Himalayas and northern Japan. — This great region has its Monkeys of the African genus Macacus at Gibraltar and north Africa, in Tibet and north China; its Camels, ranging from Sahara to Mongolia and Lake Baikal; Horses (Asses); its Bovidæ (Cattle), of which there are more kinds in the Old World than in the New; the Hyrax, a genus occurring in Syria as well as in Ethiopia; the Beaver (*Castor fiber*), near the *Castor canadensis* of North America.

Aquatic Species.

Contrary to old ideas, the bottom of the ocean abounds in life through all depths, down to 3000 fathoms, and has its species even to a much greater depth. And along the bottom, from Arctic to Antarctic seas, there is a highway nearly as broad as the ocean, where the temperature is not above 40° F. or below 28° F., and by this highway species befitting those depths can migrate the world over.

Limitation in distribution along shores depends much on the kind of bottom, whether rocky, or sandy, or muddy; on the quality of the water, whether pure or impure, or encroached upon by fresh waters from the discharge of rivers. But the two chief sources of limitation, both along shores and throughout the depths, are temperature and amount of light.

The surface distribution of temperature, as illustrated by the temperature chart, has been explained on page 45. The isothermal line of 68° is the boundary of the coral-reef seas. Within the area, and for the most part between the parallels of 29° north and south, the reef-making Corals abound. Part of the species require its warmer portions; the hardier extend to its borders. By following the outline of the area it may be seen, where reef Corals can grow, and from what coasts of the Atlantic and Pacific reefs they are excluded by the coolness of waters; and also why the Bermudas are within the coral-reef limit, although situated in latitude 32½° N.

It will also be observed that in the Atlantic Ocean the meeting of the isotherms of 56°, 62°, and 68° at Cape Hatteras signifies that two temperate zones, the temperate and subtemperate, which have great expansion on the European side of the ocean, and even include the whole Mediterranean Sea, with its very abundant life, are wholly excluded from American waters because of the meeting at that point of the Labrador and Gulf-Stream currents (page 46), and thereby of zones of Labrador and Gulf-Stream species. The chart thus explains many strange facts in the distribution of the life along the borders of the ocean.

The second cause of limitation is the amount of light, as explained by Fuchs. It has its effects at 120 to 180 feet, and more marked at 420 to 480 feet. The greatest depth at which gelatine bromide photographic plates were sensible to light in experiments in the Gulf of Nice was 400 meters (1312 feet); 350 meters for eight hours of the day; 300 meters from sunrise to sunset; and in Lake Geneva, the greatest depth 200 meters (Fol and Sarrasin). It is generally held, however, that there can hardly be a total absence of light, even at abyssal depths, since, while many animal species are blind, or have eyes excessively large or excessively small, many others have them of normal size and structure. The phosphorescence of various species among Fishes, Crustaceans, Annelids, Ophiurans, Ascidians, Gorgonias, Antipathes, Medusæ, as well as Infusoria, may be all