

impressed him as being "full of truth", although "with some little nonsense". And at last Sprengel's work had its reward.

Of much importance in the understanding of the relations between large sets of organisms living in the same area, is the occurrence of what may be called "nutritive chains". As Prof. O. Zacharias points out, some of the fresh-water fishes in a pond depend upon the supply of small crustaceans (copepods, &c.), and these again on much minuter organisms (infusorians, diatoms, &c.), and these again, to some extent, on the bacteria which cause the putrefaction of the dead organic matter. In short, there is a circulation of matter from one level of life to another.

Dr. Bernhard Fischer has shown that even on the high-seas bacteria are present, playing their usual part of "middlemen between death and life" by transforming dead organic matter into inorganic substances which can be used again by plants. As far as is known they are absent from the ice-cold water on the floor of the ocean.

Prof. W. C. M'Intosh and Mr. George Murray have given definiteness to the conclusion that "all fish is diatom" in the same physiological sense as "all flesh is grass". The food-canals of the copepods, and other small crustaceans which form a large part of the food of fishes, contain abundant remains of the siliceous shells of diatoms.

There is not a more fascinating chapter in bionomics than that which deals with the inter-relations of plants and animals. We refer to their complementary relations as regards interchange of gases with the atmosphere; the ultimate dependence of animal-life upon plant-life, since only plants can subsist upon inorganic food; the selective action of animals on plants, which Prof. Stahl has worked out in the case of snails; the selective action of bacteria on animals, which Prof. Haycraft has skilfully dealt with in connection with man; the carnivorous plants, which have fascinated many from Linnæus to Darwin; the whole question of the pollina-