general traits of relationship so characteristic of the great types of the animal and vegetable kingdoms, can be understood, or even perceived. How, then, could these relations have been devised without similar powers? If all these relations are almost beyond the reach of the mental powers of man, and if man himself is part and parcel of the whole system, how could this system have been called into existence if there does not exist One Supreme Intelligence, as the Author of all things?

SECTION V.

CORRESPONDENCE IN THE DETAILS OF STRUCTURE IN ANIMALS OTHERWISE ENTIRELY DISCONNECTED.

During the first decade of this century, naturalists began to study relations among animals which had escaped almost entirely the attention of earlier observers. Though Aristotle knew already that the scales of fishes correspond to the feathers of birds,¹ it is but recently that anatomists have discovered the close correspondence which exists between all the parts of all animals belonging to the same type, however different they may appear at first sight. Not only is the wing of the bird identical in its structure with the arm of man, or the fore leg of a quadruped, it agrees quite as closely with the fin of the whale, or the pectoral fin of the fish, and all these together correspond in the same manner with their hind extremities. Quite as striking a coincidence is observed between the solid skull-box, the immovable bones of the face and the lower jaw of man and the other mammalia, and the structure of the bony frame of the head of birds, turtles, lizards, snakes, frogs, and fishes. But this correspondence is not limited to the skeleton; every other system of organs exhibits in these animals the same relations, the same identity in plan and structure, whatever be the differences in the form of the parts, in their number, and even in their functions. Such an agreement in the structure of animals is called their homology, and is more or less close in proportion as the animals in which it is traced are more or less nearly related.

The same agreement exists between the different systems and their parts in Articulata, in Mollusks, and in Radiata, only that their structure is built up upon respectively different plans, though in these three types the homologies have not yet been traced to the same extent as among Vertebrata. There is therefore still a wide

¹ ARISTOTELES, Historin Animulium, Lib. I., Chap. 1, Sect. 4. δ γάψ έτ δψτιθι πτεψότ, τοῦτο ἐτ ἰχθύϊ έστι λεπίς. — Consult also the authors referred to in

Sect. 4, notes 1 and 2, and the many other works, pamphlets, and papers, quoted by them, which are too numerous to be mentioned here.