has not yet assumed any of those more determined characteristics which distinguish the full-grown animal or the perfect plant? Do physicists know a law of the material world which presents any such analogy to these phenomena, that it could be considered as accounting for them?

In this connection it should be further remembered, that these cycles of size characteristic of different families, are entirely different for animals of different types, though living together under identical circumstances.

SECTION XIV.

RELATIONS BETWEEN THE SIZE OF ANIMALS, AND THE MEDIUMS IN WHICH THEY LIVE.

It has just been remarked, that animals of different types, even when living together, are framed in structures of different size. Yet, life is so closely combined with the elements of nature, that each type shows decided relations, within its own limits, to these elements as far as size is concerned.[1] The aquatic Mammalia, as a whole, are larger than the terrestrial ones; so are the aquatic Birds, and the aquatic Reptiles. In families which are essentially terrestrial, the species which take to the water are generally larger than those which remain permanently terrestrial, as for instance, the Polar Bear, the Beaver, the Coypu, and the Capivara. Among the different families of aquatic Birds, those of their representatives which are more terrestrial in their habits are generally smaller than those which live more permanently in water. The same relation is observed in the different families of Insects which number aquatic and terrestrial species. It is further remarkable, that among aquatic animals, the fresh water types are inferior in size to the marine ones; the marine Turtles are all larger than the largest inhabitants of our rivers and ponds, the more aquatic Trionyx larger than the Emyds and among these the more aquatic Chelydra larger than the true Emys, and these generally larger than the more terrestrial Clemmys or the Cistudo. The class of Fishes has its largest representatives in the sea; fresh water fishes are on the whole dwarfs, in comparison to their marine relatives, and the largest of them, our Sturgeons and Salmons, go to the sea. The same relations obtain among Crustacea; to be satisfied of the fact, we need only compare our Crawfishes with the Lobsters, our Apus with Limulus, etc. Among

[1] GEOFFROY ST. HILAIRE, (ISID.,) Recherches zoologiques et physiologiques sur les variations de la taille chez les Animaux et dans les races humaines, Paris, 1831, 4to. — See also my paper upon the Natural Relations between Animals and the Elements, etc., quoted above, p. 32.