

another, but that they appear and disappear unexpectedly, without direct relations with their precursors; for I think no one will seriously pretend that the numerous types of Cycloids and Ctenoids, almost all of which are contemporaneous with one another, have descended from the Placoids and Ganoids. As well might one affirm that the Mammalia, and man with them, have descended directly from fishes. All these species have a fixed epoch of appearance and disappearance; their existence is even limited to an appointed time. And yet they present, as a whole, numerous affinities more or less close, a definite coördination in a given system of organization which has intimate relations with the mode of existence of each type, and even of each species. An invisible thread unwinds itself throughout all time, across this immense diversity, and presents to us as a definite result, a continual progress in the development of which man is the term, of which the four classes of vertebrates are intermediate forms, and the totality of invertebrate animals the constant accessory accompaniment."

The difficulty of carrying out comparisons so rigorous and extensive as were needed in order to reconstruct the organic relations be-