and is two formations lower than the oldest fish-remains of Europe.

We have now stirred up all the old bones—the oldest bones buried on our planet—so far as we know. But I do not think we have found the first fishes yet. There must have been some forms still less like fishes than these. Perhaps if we could carry the line back, we should find fish-like creatures approximating more and more to crustacean creatures. There was *Pter-y-go'-tus* in the Old World and America, and *Eu-ryp'-te-rus* plentiful in America, with its extended pair of arms reminding one forcibly of the *Pter-ich'-thys* or "Winged-fish" of the Old Red Sandstone. There was *Cephalaspis*, with its broad head-shield exceedingly similar to the shield of the modern King-crab and some of the old trilobites. Other intimations exist of a possible near relationship between these half completed vertebrates and the dying-out forms of Crustaceans. But these are questions which must be left to the future.

These relations enable us to contemplate with new interest, some of the despised fishes which live in our times. Our sturgeons, gar-pikes, and sharks are the sparse representatives of those ancient families which once sustained alone, the dignity of the vertebrate type. In their forms was first enshrined the conception of the vertebrate plan of structure which was destined to remain on the earth under its various modifications, until man, the thinking and ruling vertebrate, should arrive. Of these ancient families, the placoderm was destined to disappear with the Devonian, and without a successor. The sturgeon-type has survived in a slender line of representatives, to the human epoch. The cestraciont sharks were probably differentiated into the various better known families of modern sharks, but continue to our times, to exemplify the probable nature of old *Onchus*, patriarch of sharks. The bony scaled ganoids—more fish-like than any of the others, both in form and scaly covering, were well represented by *Onych'odus*. The power and numbers of their family continued to increase through Carboniferous and Mesozoic times;