cording to Cuvier, *chondropterygian* fishes, the Placoid families of Agassiz belong, — among the rest, the Placoids of the Silurian formations, Upper and Lower. But though all the Placoids of this latter naturalist be cartilaginous fishes, all cartilaginous fishes are not Placoids. The *Sturionidæ* are cartilaginous, and are, as such, ranked by Cuvier among the *Chondropterygii*, whereas Agassiz places them in his Ganoid order. Many of the extinct fishes, too, such as the *Acanthodei*, *Dipteridæ*, *Cephalaspidæ*, were, as we have seen, cartilaginous in their internal framework, and yet true Ganoids notwithstanding. The principle of Agassiz's classification wholly differs from that of Cuvier and the older ichthyologists; for it is a classification founded, not on the character of the internal but on that of the cuticular or dermal skeleton. And while to the geologist it possesses great and obvious advantages over every other, — for of the earlier fishes very little more than the cuticular skeleton survives, — it has this further recommendation to the naturalist, that, (in so far at least as its author has been true to his own principles,) instead of anomalously uniting the highest and lowest specimens of their class, — the fishes that most nearly approximate to the reptiles on the one hand, and the fishes that sink furthest towards the worms on the other, — it gathers into one consistent order all the individuals of the higher type, distinguished above their fellows by their development of brain, the extensive range of their instincts, and the perfection of their generative systems. Further, the history of animal existences, as recorded in the sedimentary rocks of our planet, reads a recommendation of this scheme of classification which it extends to no other. We find that in the progress of creation the fishes *began to be* by groupes and septs, arranged according to the principle on which it erects its orders. The Placoids