

into being, and the order of classification adopted, after many revisions, by the higher naturalists. Cuvier, with not a few of the ichthyologists who preceded him, arranged the fishes into two distinct series,—the Cartilaginous and Osseous ; and these last he mainly divided into the hard or spiny-finned fishes, and the soft or joint-finned fishes. He placed the sturgeon in his Cartilaginous series ; while in his soft-finned order he found a place for the polypterus of the Nile and the lepidosteus of the Ohio and St Lawrence. But the arrangement, though it seemed at the time one of the best and most natural possible, failed to meet any corresponding arrangement in the course of geologic history. The place assigned to the class of fishes as a whole corresponded to their place in the Palæontological scale ;—first of the vertebrate division in the order of their appearance, they bordered, as in the “ Animal Kingdom ” of the naturalist, on the invertebrate divisions. But it was not until the new classification of Agassiz had ranged them after a different fashion that the correspondence became complete in all its parts. First he erected the fishes that to an internal cartilaginous skeleton unite an external armature of plates and points of bone, into his Placoid order ; next, gathering together a mere handful of individuals from among the various orders and families over which they had been scattered,—the sturgeons from among the Cartilaginous fishes, and the lepidosteus and polypterus from among the Clupieæ or herrings,—he erected into a small Ganoid order all the fishes that are covered, whatever the consistency of their skeleton, by a continuous or nearly continuous armour of enamelled bone, or by great bony plates that lock into each other at their edges. Out of the remaining fishes,—those covered with scales of a horny substance, and which now comprise nearly nine-tenths of the whole class,—he erected two orders more,—a Ctenoid order, consisting of fishes whose scales, like those of the perch, are