

cated surfaces, the well-marked Cœlacanth style of disposition and ornament. But though I could *not* recognize in either bones or scales the remains of one ichthyolite more of the Old Red Sandstone, “that could be regarded as manifesting as peculiar a type among fishes as do the Ichthyosauri and Plesiosauri among reptiles,”* I was engaged at the time in a course of inquiry regarding the cerebral development of the earlier vertebrata, that made me deem them scarce less interesting than if I could. Ere, however, I attempt communicating to the reader the result of my researches, I must introduce him, in order that he may be able to set out with me to the examination of the *Asterolepis* from the same starting-point, to the Cœlacanth family,—indisputably one of the oldest, and not the least interesting, of its order.

So far as is yet known, all the fish of the earliest fossiliferous system belonged to the placoid or “*broad plated*” order,—a great division of fishes, represented in the existing seas by the Sharks and Rays,—animals that to an internal skeleton of cartilage unite a dermal covering of points, plates, or spines of enamelled bone, and have their gills fixed. The dermal or cuticular bones of this order vary greatly in form, according to the species or family: in some cases they even vary, according to their place, on the same individual. Those button-like tubercles, for instance, with an enamelled horn, bent like a hook, growing out of the centre of each, which run down the back and tail, and stud the pectorals of the thorn-back, (*Raja clavata*), differ very much from the smaller thorns, with star-formed bases, which roughen the other parts of the creature’s body; and the bony points which mottle

* Agassiz’s description of the *Pterichthys*, as quoted by Humboldt, in his *Cosmos*.