

horny coverings of Insects, to the feathers of Birds, and the fur of Quadrupeds, which shows more directly than the internal bones, their adaptation to the medium in which they lived.

A further advantage arises from the fact that the enamelled condition of the scales of most Fishes, which existed during the earlier geological epochs, rendered them much less destructible than their internal skeleton; and cases frequently occur where the entire scales and figure of the Fish are perfectly preserved, whilst the bones within these scales have altogether disappeared; the enamel of the scales being less soluble than the more calcareous material of the bone.\*

\* The following are the new Orders into which M. Agassiz divides the Class of Fishes.

First Order, *PLACOIDIANS*. (Pl. 27, Figs. 1, 2, Etym. πλαξ, a *broad plate*.) Fishes of this Order are characterized by having their skin covered irregularly with plates of enamel, often of considerable dimensions, and sometimes reduced to small points, like the shagreen on the skins of many Sharks, and the prickly, tooth-like tubercles on the skin of Rays. It comprehends all the cartilaginous fishes of Cuvier, excepting the Sturgeon.

The enamelled prickly tubercles on the skin of Sharks and Dog-Fishes are well known, from the use made of them in rasping and polishing wood, and for shagreen.

Second Order, *GANOIDIANS*. (Pl. 27, 3, 4, Etym. γανος, *splendour*, from the bright surface of their enamel.) The families of this Order are characterized by angular scales, composed of horny or bony plates, covered with a thick plate of enamel. The bony Pike (*Lepidosteus Osseus*, Pl. 27<sup>a</sup>, Fig. 1);