

opening, shielded by an operculum, or gill-cover. In the *Osteolepis* the mouth opened below the snout, but not so far below it as in the purely cartilaginous fishes — not farther below it than in many of the osseous ones — than in the genus *Aspro*, for instance, or than in the genus *Polynemus*, or in even the haddock or cod. It was thickly furnished with slender and sharply-pointed teeth. I have hitherto been unable fully to determine whether, like the mouths of the osseous fishes, it was movable on both sides; though, from the perfect form of what seems to be the intermaxillary bone, I cannot avoid thinking it was. The gills opened, as in the osseous fishes, in continuous lines, and were covered by large bony opercules — that on the enamelled side somewhat resemble round japanned shields. (See Note D.)

But while the head of the *Osteolepis*, with its appendages, thus resembled, in some points, the heads of the bony fishes, the tail, like those of most of its contemporaries, differed in no respect from the tails of cartilaginous ones, such as the sturgeon. The vertebral column seems to have run on to well nigh the extremity of the caudal fin, which we find developed chiefly on the under side. The tail was a one-sided tail. Take into account with these peculiarities — peculiarities such as the naked skull, jaws, and operculum, the naked and thickly-set rays, and the unequally lobed condition of tail — a body covered with scales, that glitter like sheets of mica, and assume, according to their position, the parallelogramical, rhomboidal, angular, or polygonal form — a lateral line raised, not depressed — a raised bar on the inner or bony side of the scales, which, like the doubled-up end of a tile, seems to have served the purpose of fastening them in their places — a general clustering of alternate fins towards the tail — and the *tout ensemble* must surely impart to the reader