

ly fretted by intermingled ridges and furrows, pits and tubercles, which were either boldly relieved, as in the *Holoptychius*, or existed, as in the *Glyptolepis*, as slim, delicately chiselled threads, lines, and dots. The head was covered by strong plates, which were roughened with tubercles either confluent or detached, or hollowed, as in the *Bothriolepis*, into shallow pits. The jaws were thickly set with an outer range of true fish teeth, and more thinly with an inner range of what seem *reptile* teeth, that stood up, tall and bulky, behind the others, like officers on horseback seen over the heads of their foot-soldiers in front. The *double* fins, — pectorals and ventrals, — were characterized each by a thick, angular, scale-covered centre, fringed by the rays; and they must have borne externally somewhat the form of the sweeping paddles of the Ichthyosaurian genus, — a peculiarity shared also by the double fins of the *Dipterus*. The *single* fins, in all the members of the family of which specimens have been found sufficiently entire to indicate the fact, were four in number, — an anal, a caudal, and two dorsal fins; and, with the exception of the anterior dorsal, which was comparatively small, and bent downwards along the back, as if its rays had been distorted when young,\* they were all of large size. They crowded thickly on the posterior portion of the body, — the anterior dorsal opposite the ventrals, and the posterior dorsal opposite the anal fin. The fin-rays of the various members of the family, and such of their spinous processes as have been detected, were hollow tubular bones; or rather, like the larger pieces in the framework of the Placoids, they were cartilaginous within, and covered externally by a thin osseous

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\* A peculiarity which also occurs in the anterior dorsal of the *Dipterus*.