The under jaws (10) - strongly-marked boncs in at least all the Dipterian and Cœlacanth genera-we find represented externally by massy plates, bearing, like those of the upper jaw, their range of teeth. As shown in a well-preserved spec men of the lower jaw of Holoptychius, in my possession, they were boxes of bone enclosing a bulky nucleus of cartilage, which, in approaching towards the condyloid process, where great strength was necessary, was thickly traversed by osseous cancelli, and passed at the joint into true bone. It is in the under jaws of the earlier Ganoids that we first detect a true union of the external with the internal skeleton, - of the bony plates and teeth, which were merc plates and teeth of the skin, with the osseous, granular walls which enclosed at least all the larger pieces of the cartilaginous framework of the interior. The jaws of the Rays and Sharks, formed of cartilage, and fenced round on their sides and edges by their thin coverings of polygonal, bony points, are wholly internal and skin-covered; whereas the teeth, which rest on the soft cuticular integument right over them, are as purely dermal as the surrounding shagreen. Teeth and shagreen may, we find, be alike stripped off with the skin. Now, in the earlier ganoidal jaw, two sides of the osseous box which it composed, - its outer and under sides, - were mere dermal plates, representative of the skin of the placoids, or of their shagreen; while the other two, - its upper and inner sides, - seem to have been developments of the interior osseous walls which covered the endo-skeletal cartilage. Nor is it unworthy of notice, that the reptile fishes of the period had their ichthyic teeth ranged along the edge of an exterior dermal plate which covered the outer side of the jaw; whereas their reptile teeth were planted on a plate, apparently of interior development, which covered its upper