

handle, and the large and thickly clustered fins the spreading bristles.*

Some of the occipital bones of the *Holoptychius* are very curious and very puzzling. There are pieces rounded at one of the ends, somewhat in the manner of the neck joints of our better known quadrupeds, and which have been mistaken for vertebræ; but which present evidently, at the apparent joint, the enamel peculiar to the outer surface of all the plates and scales of the creature, and which belonged, it is probable, to the snout. There are saddle-shaped bones, too, which have been regarded as the central occipital plates of a new species of *Coccosteus*, but whose style of confluent tubercle belongs evidently to the *Holoptychius*. The jaws are exceedingly curious. They are composed of as solid bone as we usually find in the jaws of mammalia; and the outer surface, which is covered in animals of commoner structure with portions of the facial integuments, we find polished and japanned, and fretted into tubercles. The jaws of the creature, like those of the *Osteolepis* of the lower formation, were naked jaws; it is, indeed, more than probable that all its real bones were so, and that the internal skeleton was cartilaginous. A row of thickly-set, pointed teeth ran along the japanned edges of the mouth — what, in fish of the ordinary construction, would be the lips; and inside this row there was a second and widely-set row of at least twenty times the bulk of the other, and which stood up over and beyond it, like spires in a city over the rows of lower buildings in front. A nearly similar disposition of teeth seems also to have characterized the

* There are now six species of *Holoptychius* enumerated — *H. Andersoni*, *H. Flemingii*, *H. giganteus*, *H. Murchisoni*, *H. nobilissimus* and *H. Omalusii*.