

wide, the maxillary extending to the posterior end of the præoperculum; lower jaw very prominent in front. The maxillary is armed with a single series of numerous teeth which gradually increase in size towards its posterior extremity; in the posterior half of the bone some of the teeth (placed at regular intervals) are larger than the others, but the difference between them is much less than in the other species of this genus. Intermaxillary with one or two larger and several small teeth. Mandibular teeth extremely numerous and closely set, decreasing in size towards the front; but near to the symphysis the bone is armed with a single long fang which appears to be easily lost, as it is present only in a few of the specimens; infraorbital bone not dilated, leaving the whole of the cheek uncovered. Branchiostegals nine.

The dorsal fin commences opposite to the origin of the anal, and is as high as the body underneath. Form of the anal as in the other species; it terminates at a short distance from the caudal, the caudal peduncle being not much longer than deep. Caudal fin forked. Pectoral fin extremely narrow; ventral fin extending beyond the vent.

Some of the specimens are still provided with very large and deciduous scales, there being only about five in a vertical series between the origins of the dorsal and anal fins. But in the majority of the specimens the skin is quite scaleless, and does not show even traces of pouches. The colour of all the specimens is black.

Luminous organs are present as very small eye-like spots; they are arranged in two series along each side of the abdomen, and in a single series along each side of the tail. The branchiostegal series is likewise present, as well as an organ below the small eye, but the glandular mass on the back of the tail is only rudimentary.

### *Photichthys.*

*Phosichthys*, Hutton, Cat. New Zeal. Fish., p. 55.

This genus is closely allied to *Gonostoma*, from which it differs in the following points:—

Both jaws are armed with a single series of teeth; those of the maxillary being small and equal in size. The intermaxillary is armed with two large fangs besides the small teeth; mandible with seven large equidistant teeth, the spaces between them being filled up with very small denticles. Vomer with a fang on each side of its head; palatine with strong, curved teeth, which gradually decrease in size backwards. The dorsal fin corresponds in position to the space between ventrals and anal; adipose fin small. Air-bladder present as a long simple sac with thick walls.

As the specimens available are very much deteriorated, it appeared rather hazardous to enter upon the examination of some points of their anatomical structure. On the whole, it resembles much that of *Gonostoma*. The stomach is cæcal; when empty, its