

amidst this diversity of apparatus, there is one thing which characterizes all the Articulata, namely, the jaws always move sideways; while those of the Vertebrates and Mollusks move up and down, and those of the Radiata concentrically.

215. In the Vertebrates, the jaws form a part of the bony

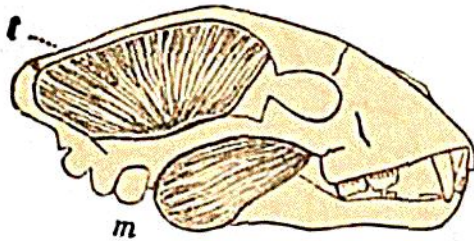


Fig. 67.

skeleton. In most of them the lower jaw only is movable, and is brought up against the upper jaw by means of very strong muscles, the temporal and masseter muscles, (Fig. 67, *t*, *m*,) which perform the principal motions requisite for seizing and masticating food.

216. The jaws are usually armed with solid cutting

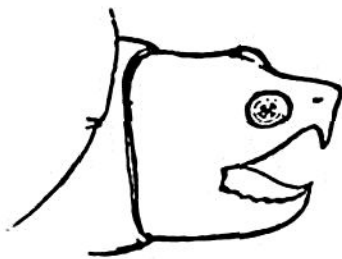


Fig. 68.

instruments, the **TEETH**, or else are enveloped in a horny covering, the *beak*, as in the birds and tortoises, (Fig. 68.) In some of the whales, the true teeth remain concealed in the

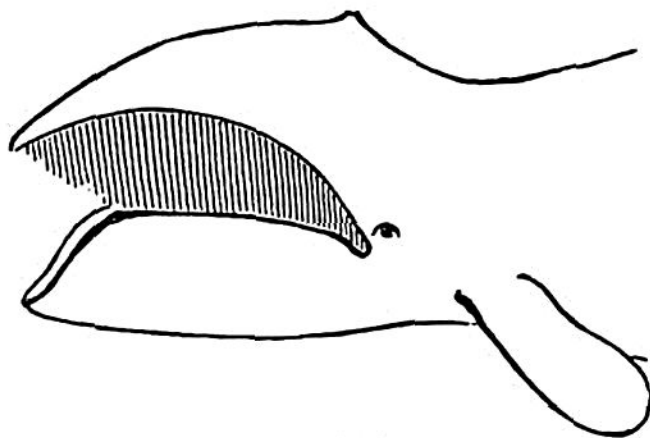


Fig. 69.

jaw-bone, and we have instead a range of long, flexible, horny plates or fans, fringed at the margin, which serve as strainers to separate the minute marine animals on which they feed from the water drawn in with them, (Fig. 69.) A few are entirely destitute of teeth, as the ant-eater, (Fig. 70.)

217. Though all the vertebrates possess jaws, it must not be inferred

that they all chew their food. Many swallow their prey whole; as most birds, tortoises, and whales. Even many of those which are furnished with teeth do not masticate their