

complished by a different apparatus. The air is to be



Fig. 91.

either delicate tufts or plumes floating outside of the body,

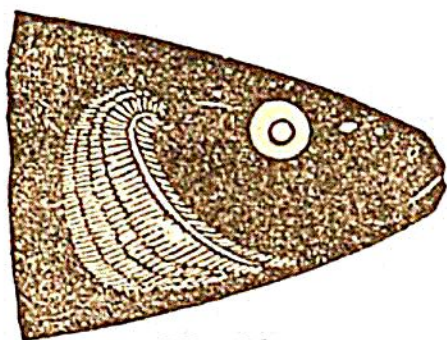


Fig. 92.

derived from the water, in which more or less is always diffused.

The organs for this purpose are called *branchiæ* or *gills*, and are

as in some of the marine worms,

(Fig. 33,) and many mollusks, (Fig.

91, *g*;) or they consist of deli-

cate combs and brushes, as in fishes,

(Fig. 92,) crabs, and most mollusks,

(Fig. 88, *g*.) These gills are al-

ways so situated that the water has

free access to them. In the lower aquatic animals, such as the polypi, and some jelly-fishes and mollusks, respiration takes place by the incessant motions of vibratory cilia, which fringe both the outside and the cavities of the body; the currents they produce bringing constantly fresh supplies of water, containing air, into contact with the respiratory surface.

250. Many animals living in water, however, rise to the surface and breathe the atmosphere there, or are furnished with the means of carrying away a temporary supply of air, whilst others are furnished with reservoirs in which the blood requiring oxygenation may be accumulated, and their stay under water prolonged. This is the case with the seals, whales, tortoises, frogs, many insects and mollusks, &c.

251. The vivifying power of the air upon the blood is due to its oxygen. If an animal be confined for a time in a closed vessel, and the contained air be afterwards examined, a considerable portion of its oxygen will have disappeared, and another gas of a very different character, namely, carbonic acid gas, will have taken its place. The essential office of respiration is to supply oxygen to the blood, at the same time that carbon is removed from it.