

into the œsophagus, or true mouth, is situated at the bottom of this cavity; that is, at the part most remote from the external orifice; so that all the food has to pass through the respiratory cavity, before it can be swallowed, and received into the stomach.

In several of the *Annelida*, also, we find internal organs of respiration. The *Lumbricus terrestris*, or common earth-worm, has a single row of apertures, about 120 in number, placed along the back, and opening between the segments of the body: they each lead into a respiratory vesicle, situated between the integument and the intestine.\* The *Leech* has sixteen minute orifices of this kind on each side of the body, opening internally into the same number of oval cells, which are respiratory cavities; the water passing both in and out by the same orifices.†

The *Aphrodita aculeata* has thirty-two orifices on each side, placed in rows, opening into the abdominal cavity, and admitting the water, which is afterwards received into numerous pouches, containing cæcal processes of the intestine; so that the nutriment is aerated almost as soon as it is prepared by the digestive organs.‡

In all the higher classes of aquatic animals, where the circulation is carried on by means of a muscular heart, and where the whole of the blood is subjected, during its circuit, to the action of the aerated water, the immediate organs of respiration consist of long, narrow filaments, in the form of a fringe, and the blood vessels belonging to the respiratory system are extensively distributed over the whole surface of these filaments. Organs of this description are denominated

\* A minute description of these organs is given by Morren, in pages 53 and 148 of his work, already quoted.

† The blood, after being aerated in these cells, is conveyed into the large lateral vessels, by means of canals, which pass transversely, forming loops, situated between the cæca of the stomach. These loops are studded with an immense number of small rounded bodies of a glandular appearance, resembling those which are appended to the *venæ cavæ* of the cephalopoda.

‡ Home, Philos. Trans. for 1815, p. 259.