

The polype then is expanded and wishes to sink within its cell. To answer this wish two distinct sets of muscles are provided, the one acting upon the *animal*, and the other upon the flexible part of the *cell*, or, in other words, on that portion of the inner tunic which has been carried outwards in the polype's egress. The former set originate from the bottom of the cell (*a*, 8,) and from the sides near the bottom (*a*, 9); whence trending upwards, they are inserted into the stomach, and into the pharynx and tentacular ring. It is obvious from this position, that their contraction will draw the whole body down in the cell, where it lies doubled up in the form of a letter S, that all its parts may be brought within the compass of its house. The other set of muscles for the retraction of the flexible portion of the cell, or operculum, have their origin from the inner surface and near the top of the fixed immotive part, and are inserted into the piece on which they act; (Fig. *b*, 2, 3,) so that when the first set have partially done their duty, the second follow up the process by pulling after the sinking body the flexible membrane, inverting it at the same time as we undo a stocking from the leg; and as the last result, closing the aperture or fixing the operculum down upon it.

To replace the polype in its external relations a very different mechanism is brought into play. The inner tunic of the cell, or that which immediately invests the body and encloses the viscera as in a sac, appears to be susceptible of changes in its capacity from the action of some muscular fibres that run in a transverse direction through it. When the polype lies perdue, the sac is distended and the muscles relaxed, but on their contraction the capacity of the sac is reduced; and the body, pressed upon on all sides, must of necessity rise upwards in that direction in which it is most free to move. At the same time the little creature appears to have the power of straightening the alimentary canal; and by its pressure against the bottom of the cell, the extrusion of the body is aided and completed.*

* It would appear as if muscular fibre were here reduced to its simplest condition. The filaments are totally disconnected, and are arranged the one above the other in a single series. They pass straight and parallel from their origin to their insertion, and have a uniform diameter throughout their course, except that each filament generally presents a small knot upon its centre, which is most