

intervening cavity. The form of this cavity is exhibited in Fig. c, which represents a perpendicular section of the whole organ, and where the central portion or principal mass of the sucker is drawn away from the circular disk, the inner margin of which appears like a row of teeth. It is evident that by this mechanism, which combines the properties of an accurate valve, with an extensive cavity for producing rarefaction, or the tendency to a vacuum, the power of adhesion is considerably augmented.*

So great is the force with which the tentacula of the cuttle-fish adhere to bodies by means of this apparatus, that while their muscular fibres continue contracted, it is easier to tear away the substance of the limb, than to release it from its attachments. Even in the dead animal I have found that the suckers retain considerable power of adhesion to any smooth surface to which they may be applied.

Our attention must first be directed to the remarkable family of *Sepiæ*, which comprehends three principal genera, namely, the *Octopus*, the *Loligo*, or Calamary, (depicted in Fig. 121,) and the common *Sepia*, or Cuttle-fish. The first of these, the Octopus, which was the animal denominated Polypus by Aristotle, has eight arms of equal length, and contains in its interior two very small rudimental shells, formed by the inner surface of the mantle. This shell becomes much more distinct in the *Loligo*, where it is cartilaginous, and shaped like the blade of a sword. (Fig. 123.) The internal shell of the common *Sepia* is large and broad, and composed wholly of carbonate of lime: it is well known by the name of the *cuttle-fish* bone. Its structure is extremely curious; and deserves particular attention, as establishing the universality of the principles which regulate the formation of shells, whether internal or external, and from

* The description I have here given is the result of my own examination of a large Octopus, which I had lately an opportunity of dissecting: and the annexed figures 123,* A, B, C, are copied from drawings I made on that occasion. A represents the sucker in its usual form when not in action: B shows the sucking surface fully expanded: and C is a section of the whole, which had become somewhat flattened by the operation of dividing it.