The motions of the chymiferous system are of two kinds. The tubes themselves are distended by the influx of the fluid elaborated in the digestive cavity, and their diameter is reduced by the contractions of the cells forming the spherosome. The alternate currents from one half of the body to the other and vice versa are also the result of the alternate contraction of the opposite halves of the spherosome; but the slower flow of the fluid through the chymiferous tubes, and especially its undulating motions, now in one direction and then in the opposite direction, within comparatively short tracks of the tubes, are unquestionably determined by the vibratile cilia which line their inner surface.

For the same reasons, I am not inclined to consider the colored cells lining in vertical rows the walls of the abactinal portion of the digestive cavity as homologous to liver cells. No doubt they are analogous to a liver; but, to be homologous with such a complicated glandular organ, they should derive the fluid they contain from bloodvessels, and not from chymiferous tubes. As pigment cells do not occur at the surface of all Ctenophoræ, but only in some of their representatives, I shall describe them in their proper place.

In our temperate latitudes the Ctenophoræ are annual animals, laying their eggs in the autumn and then dying, and the young brood making its appearance in the spring. I have watched the species of the coast of Massachusetts during twelve successive years, and invariably found that in the earlier part of the summer the majority of specimens observed were small and destitute of sexual organs, or, at least, not yet filled with eggs and spermatic cells, as they are later in the season. The largest specimens are always seen during the last summer months, and all disappear after the autumnal gales. The sexual organs of the Ctenophoræ are described by some anatomists as sexual glands, and called ovaries and testes, according to the sexes. While I retain the name of ovaries for the female, and propose that of spermaries for the male organs, I must record my objection to the use of the word *gland* to designate these organs. A glandular sexual organ can only exist in animals which have a distinct vascular system, through which blood is circulated; and this is not the case in the Acalephs. Here again the reproductive organs are only analogous, and not homologous, with the organs performing the same functions in the higher animals. In Ctenophoræ they are simple pouches or lateral sacs of the chymiferous tubes, and have no special walls distinct from those of the tubes with which they communicate. The actinal disposition of the sexual organs is another peculiarity of the Radiates, which distinguishes them strikingly from similar organs in other types of the animal kingdom. It should also be remembered, that hermaphroditism is not very uncommon among these animals, in which case the male alternate with the female organs in their radiated arrangement. Among Polyps, we have such a combination in Cerianthus: