

forth, with a proboscis, four radiating chymiferous tubes, and a circular tube. These fertile Medusæ are either scattered between the secondary hydræ, or gathered in bunches.

4. *Diphyæ Cuv.*—Compound community of combined twins, arising from an egg-born Medusa. The community consists of twin sterile Medusæ, without tentacles or proboscis (*Ersæa* or *Aglaisma*, when young), from which arise a string of compound, heteromorphous twins, one of which is a hydra, the other a fertile medusa, either male or female, without tentacles but with proboscis, becoming free together (*Eudoxia* or *Cuboides*).

SECTION II.

THE GENUS PHYSALIA, AND OUR PHYSALIA ARETHUSA.

Although for many years past I have had ample opportunities of investigating the North American Siphonophoræ, this volume has already attained dimensions, which forbid that I should dwell upon them for the present. I will, therefore, limit myself to a few remarks upon one of their most remarkable representatives, from which the mode of combination of the heterogeneous individuals, forming this kind of communities, may best be appreciated. By far the most prominent part of the compound body is a large, oblong, pear-shaped bag, full of air, of a bright, bluish tint, varying to rose-color, floating lightly upon the surface of the ocean, so that it is altogether raised above the level of the water. An elegant, comb-like, crenulated crest, edged with a rose-colored rim, and traversed by similar bands, forms a sort of sail above the float, from the lower surface of which hangs a most extraordinary variety of appendages, appearing, at first sight, like bunches of varied tentacles. These appendages are all clustered upon one and the same side of the air-bag, and crowded toward its broader end, while the tapering end has none of them. A more careful inspection readily discloses the heterogeneous nature of these appendages, some of which are simple, elongated hydræ, with or without tentacles, and others medusæ-buds. Unless we compare these hydræ among themselves, and ascertain their mode of combination, we can have only a very imperfect idea of their extraordinary diversity. In the first place, it should be noticed that the largest hydræ are all arranged along the windward side of the animal, and that they are provided with the longest and most complicated tentacles. (Pl. XXXV. *Fig.* 1.) As I have seen these *Physalia* by thousands, in every kind of weather, I have noticed that they always present the same side to the wind, that is, the one from which hang the longest tentacles; and when the