tudinal axis, originally subvertical, becomes in this way inclined more and more, and finally lies subhorizontally.

The further development of the Physalidæ is determined mainly by the multiplication of the cormidia on the ventral or inferior side of the vesicular trunk, and by the progressive extension of the pneumatosaccus along its dorsal or superior side. In *Alophota* and *Physalia*, where the single large main tentacle is much longer than all the others, usually the two groups of cormidia (the larger ventral and the smaller basal) remain separated, and their further development is different. The smaller basal group, at the posterior or distal end of the trunk, produces merely a series of small siphons and palpons, placed before the protosiphon, and is provided with a single tentacle only; it always remains sterile and never produces gonophores. The larger ventral group produces early a very large main tentacle, with a gigantic main palpon, much longer and stronger than all the others. The number of cormidia in this ventral group is much larger, and the siphons as well as the palpons and the accessory tentacles become very numerous in the larger species. Some of them afterwards produce gonodendra. In *Arethusa* and *Caravella*, on the other hand, the number of main tentacles increases, and usually the two groups of cormidia (smaller basal and larger ventral) are early united into a single large mass of crowded appendages. The succession and composition of the cormidia seem to follow, however, somewhat different laws in the various species of Physalidæ.

The further development of the pneumatophore in the larvæ of Physalidæ has recently been described by Chun (**83**, p. 559). The inferior or basal third of the invaginated pneumatosaccus becomes separated from the superior larger portion by an annular constriction. The cylinder-epithelium of the former is the pneumadenia, which afterwards expands in the form of a gas-secreting "basal plate" ("Luftplatte"). *Physalia* and *Caravella* afterwards develop the dorsal crest which is wanting in the float of *Alophota* and *Arethusa*.

Truncus.—The marked peculiarity in which the Physalidæ differ from all other Siphonophoræ, is the strange development of the hypertrophic pneumatophore along the dorsal side of the common trunk. The nectosome, therefore, occupies in this family the entire dorsal half of the corm, whereas the siphosome takes the ventral half; the main axis of the trunk becomes subhorizontal, whilst it is vertical in the other Siphonophoræ; the nectosome occupies in these latter the apical or proximal, the siphosome the basal or distal, part of the corm. The naked dorsal face of the trunk, which bears no appendages but includes the float, is in all Physalidæ much larger than the ventral face which bears the cormidia of the siphosome. The cavity of the trunk is wide, and when the gas is expelled through the stigma of the contracted float, the trunk appears as a voluminous sac filled with nutritive fluid. The trunk in the Physalidæ is never coiled up spirally as in the allied Epibulidæ.

Pneumatophore.—The gigantic float of the Physalidæ determines by its excessive