These are from 0·02 to 0·06 mm. in diameter, but no larger (see Pl. XIII. fig. 1). They are of a yellowish-brown colour, and so opaque that no structure can be made out in their interior. The method of formation of these young buds was not directly observed, but in all probability they arise as in the case of the last species by the aggregation and proliferation of a number of the blood corpuscles surrounded by an ectodermal layer derived from the wall of the vascular appendage. The only specimen showing a stage in the early formation of a bud is the one represented in figure 9, where an outer layer of cells is seen separating off from the ectodermal wall of the vessel (*ec.*), while the free mesoderm cells inside are becoming arranged along the wall and in some places are proliferating. Some of these cells have become enlarged (*o.*) and already look like the ova which they become later on. Just as in *Sarcobotrylloides wyvillii*, young ova are conspicuous in the bud from a very early period (Pl. XIII. figs. 7, 8).

In transverse sections of the stalk, until the very top is reached, no further development of the buds is seen except a slight increase in size. Just below the head, however, there is a narrow zone where buds are found in various stages of development from the simple spherical double-walled sac up to the young Ascidiozooid (Pl. XIII. figs. 7, 8). The course of development is apparently the same as in the last species. Sections showing the archenteron divided into three, the dorsal nerve tube, the ventral endostyle, the posterior ovary, and lastly the elongation of the abdominal region may all be seen. It is remarkable, however, that the earlier stages, showing the division of the archenteron and the formation of the endostyle, which were those most commonly seen in sections of the peduncle of the last species, are here much rarer than the later stages, where the ovary and intestine have made their appearance (see Pl. XIII. fig. 7).

The buds in this species seem to remain, when in the condition of two membranes surrounding an archenteron, in a dormant condition undergoing no change except a slight increase in size, until they have reached the top of the stalk, where they rapidly pass through the stages of their development which had been delayed, and appear in the form of young Ascidiozooids (Pl. XIII. fig. 10) which then continue to grow slowly in size until they arrive at the base of the head. This course of development would explain the comparative rarity of buds in the earlier stages, which were passed through more rapidly. In some cases the buds do not become completely constricted off from the vessels as in *Colella pedunculata*, but remain attached by their posterior ends up to a late period in their development (see Pl. XIII. fig. 8). Figure 10 shows a young Ascidiozooid in which all the chief systems of the body, including the genital glands (*ov.* and *t.v.*), and even the digestive gland (*h. gl.*) on the intestine, are already present.

The Formation of the Colony.—In this species the colony seems to be more stable and to undergo change less rapidly than in the case of *Colella pedunculata*. This may be inferred from the observed facts, that the Ascidiozooids are more of the same size, the differences between those at the opposite ends of the head not being very great; that