more complicated system, where the branches at the right hand end have increased considerably and are beginning to fork in their turn. In E, finally, an anastomosis has been effected between two of the secondary branches at the right hand side of the system so as to produce an island of common test (x, y) surrounded by a ring of Ascidiozooids. Such an island (which is very commonly seen in large colonies of *Botrylloides*, see Pl. I. fig. 4) is entirely different from a simple system such as A or B, not only in mode of formation but also in structure. In the first place it contains no common cloaca, and in the second place the surrounding Ascidiozooids are placed so that their ventral edges face inwards, while in the simple system (A or B) the dorsal edges of the Ascidiozooids are nearest to the centre of the space. This arrangement is obviously a result of the mode of formation of the "island," which is morphologically outside the system although enclosed by a part of it. It is, therefore, not at all surprising to find that such islands usually contain numbers of "terminal knobs" like those found in the colonial test outside the systems and forming the edges of the colony (see Pl. I. figs. 2, 5). Even more complicated conditions than that shown in E are found in old colonies of *Botrylloides*, but they are all produced in the manner which has been indicated by irregular branching and anastomosing.

The other characters by which the typical *Botrylloides* differs from the typical *Botryllus*, viz., the shape of the Ascidiozooid, its position in the test, and the situation of its apertures, may, I think be regarded as the natural result of the modification of the system which has just been traced. In *Botryllus* each Ascidiozooid in the system has its atrial aperture opening directly into the circular centrally placed common cloacal aperture, and therefore the body must be placed with its long axis directed radially, and the atrial aperture must be situated at the central (morphologically posterior and dorsal) end, far from the branchial aperture, in order that it may reach to the common cloaca. Hence in *Botryllus* the Ascidiozooids lie with their ovate bodies horizontal (*i.e.*, the antero-posterior axis is parallel with the upper surface of the colony), and the apertures are distant. Now when the system became much elongated it would clearly be impossible for the Ascidiozooids at a distance from the common cloaca to have their atrial apertures opening directly into that cavity, so they came to communicate with canals continued outwards through the test, from the common cloaca, one in each branch of the system. Such an arrangement would not only do away with any necessity for radial extension in the body of the Ascidiozooid, but would, by bringing the common cloaca (in the shape of its prolongation the canal) closer to the body, tend to cause the branchial and atrial apertures to come nearer. As a result of this we find in *Botrylloides* the cylindrical Ascidiozooids placed more or less vertically (*i.e.*, with the antero-posterior axis perpendicular to the surface of the colony), and with the apertures close together at the anterior end of the body.

In the collections there are four species and a well-marked variety of *Botrylloides;*