in other instances, the projections are but slightly developed (*Fig.* 9). The greatest care is necessary in making such sections, in order not to break these partitions, inasmuch as they are mostly very thin, oftentimes filmy, and brittle. A section made by simply breaking the branch across, holding it very steadily in the fingers, is much better than a cut by the section wheel. At the tips of the branches the cells can hardly be recognized as such, but appear more like irregular depressions of greater or less depth (*Fig.* 12, *b d e f*). Between these the corallum is very loose and spongy, each cell communicating with the others through large, irregular channels, penetrating even to the centre (*Fig.* 12. *a*) of the branch. In the specimen which we have figured (*Fig.* 12), the intercommunicating channels are less numerous than in many cases; for instance, a specimen now before me is so thickly channelled, that the solid, calcareous deposit occupies much less room than the open spaces. Passing down the branch, for half an inch, we come to a point where the cells have a definite outline (*Fig.* 10) and the bottom (*b*) of the cavity is clearly circumscribed. About the mouth (*a*), or entrance, and between it and that of the adjoining cells, the corallum is traversed by tortuous cavities (*i j*), some like channels (*i*), and others like lacunæ (*j*), all of which communicate freely with the cavity of the cell. Around the base (*b*) of the cell the corallum (*k*) is more solid, and the intercommunicating channels (*h*) are smaller and fewer; but around, and at the centre of the branch, we find, again, a spongiform structure, such as we have figured from a section lower down the branch (*Fig.* 11. *a*). Nor is this absent at any age, even in the oldest part of the corallum; at least we have found it at the centre of stems, from an inch to an inch and a half in diameter. Sometimes, such is the irregularity in the rate of development of the branch, that we find the cells quite deep at the distance of half an inch from the tip, and transversely divided into three or four superposed chambers (*Fig.* 9). The transverse partitions (*c*) which lie between these chambers are as thin and fragile as the false partitions, but they are more regular, and seldom, if ever, perforated. The same may be said for the oldest and deepest cells (*Fig.* 13). In fact there is very little change in the structure of the cell after it has acquired three or four transverse partitions; there are the same tortuous channels, both about the youngest (*Fig.* 10, *h i*), the more advanced (*Figs.* 9, *e f h*, and 11), and the oldest (*Fig.* 13); and beyond that, the corallum is, as we have described it in *Fig.* 10, *k*, nearly solid, with only here and there a narrow channel, until we approach the axis of the stem, where we always find a spongiform mass (*Fig.* 11, *a*). The form of the cell, at all ages, is cylindrical (*Figs.* 9, 11, and 13), and the transverse partitions are nearly uniformly arranged, at equal distances, one above the other, and at such heights, that each included chamber is from one quarter to one third broader than deep. The direction in which the cells trend is, more or less, along