

prolongation, but, in proportion to the diameter of the tubes they form, they may be said to be fully equal in this respect. They anastomose so closely, and have such small interstices occupied by the uniform layer, that, in reality, the latter fills much the smaller part of the whole bulk of the stolonial portion of the colony. At the edge of the colony, where the anastomosing tubes, budding laterally (*Fig. 5*, f*), are progressing in growth, the uniform layer (*d*) is in preponderance, but only here. The chymiferous network not only covers the horny spines (*Fig. 6*), but also penetrates through their lateral apertures into the interior. This is not at all a different feature, however, from that observed in the horizontal parts of the horny layer, when it is young and forms as yet only a network of more or less elevated ridges, into the meshes of which these chymiferous tubes dip. The only difference is, that the latter is horizontal, whereas the spines are the same network much more elevated, as if pushed up from below. (See wood-cut 35, p. 238.)

This horny layer, already so frequently mentioned, varies according to age; at first it originates in isolated spots (*Fig. 5, e e*), which gradually dilate, horizontally, at the same time that they become elevated (*f*), till finally they coalesce and form a network. With age, the interstices of this network become filled up below, so as to cover completely the rock or shell, upon which the colony has settled, with a continuous layer. The upper side of this layer still retains its network form, the meshes constituting the elevated ridges, which give a dried specimen that honeycomb appearance so often noticeable. At pretty regular intervals, these ridges begin to be elevated, more than the rest of the network, and appear as low, conical, rough papillæ. When seen from above, these papillæ look like stellate excrescences on a retiform groundwork. As the papillæ grow higher, this stellate appearance becomes more conspicuous, and the rays of the star more prominent, till we may see that each ray corresponds to a single one of the several ridges which unite to form a papilla. Each of the ridges rises frequently into spinules, and these serve to render it bristling, and, when seen from above, give the arms of the star a more slender appearance. With increasing age, the papillæ grow higher and proportionally more slender, and frequently curved. In the latter stages of growth, they may more properly be described as spinous than papillate, especially the oldest ones, which are quite slender and pointed. We have already mentioned (p. 233) that there is no horny covering to the upper side of the stolonial layer, nor to the hydroids which arise from it; the whole horny mass is a foot secretion, just as truly as it is among the Gorgonioid Polyps.¹

¹ See Dana, on the foot secretions of Gorgonia, in his work on the Zoöphytes of the United

States Exploring Expedition, p. 54, § 49. Philadelphia, 1846, 4to.