the Gorgonia is not continued, as in the tree, from the trunk through the branches, but is interrupted at their origins by several intervening layers of fibres, so that they are rather, as it were, inserted upon the stem than propagations of it; the axis possesses none of that curious complexity of structure,—of fibres, of sap and air vessels and utricular cells,—which renders the wood so beautiful an object under the microscope; and lastly there is between the bark and the crust of the zoophyte nothing but contrasts and discrepancies.*

The axis of a Gorgonia, at least of our native species, resembles a tree in this, that the stem always bears a certain proportion in thickness to the size of the polypidom, being slender in the small, and thicker in the larger specimens: it tapers from the rock or dilated base, and becoming gradually more gracile and attenuated, disappears at the extreme points of the branches. It is covered throughout with the *flesh*, which is the same in structure at all points, but thicker and more loaded with polypes towards the ends of the branches than on the stem or near their base, whence the former generally assume a cylindrical form. This flesh when dry is earthy and friable, a considerable proportion of carbonate of lime entering into its composition; but in a recent state it is soft and fleshy, and excavated with numerous cells for the lodgement of the polypes. When a portion of a branch is macerated in a weak acid, the lime is entirely removed, but the branch retains its original size and figure, and shows the frame-work to be an irregular close texture of corneous fibres, the interstices of which had been probably filled in part with a gelatinous fluid. And this is much the same structure that we find in the Alcyonium. The skin is coriaceous, strengthened with calcareous particles, but the interior offers a fibrous net-work containing a transparent jelly in the squares, and permeated with a certain number of longitudinal cartilaginous tubes. The soft part of Pennatula seems more uniformly fleshy or gelatinous, and its polypes are placed only on certain wings or appendages of the polypidom, but the skin is also coriaceous, and has moreover in its substance a great number of calcareous spicula placed parallel to one another, and which must greatly add to its consistency and strength.

* Ellis and Soland. *Zoophytes*, 76—79.