

duction of theory than of observation, yet the opinion is in the main correct, and in correspondency with what had been long previously maintained by Ellis. In the spicula of Alcyonidæ certainly, we can find no traces of organism, and they lie seemingly unconnected with the adjacent parts. The axis of *Penatula* is a solid bone formed of laminae laid over each other, softer and cartilaginous at each extremity where it seems to be organically connected with the soft surrounding flesh: it is evidently secreted, and deposited successively in layers, from the inner surface of a thin pellucid membrane which Bohadsci has described as investing it in the manner of a periosteum,\* and probably is endowed with that low degree of vitality which preserves the horns, hairs and feathers of the higher animals in that elastic and fresh condition which they have only when in connection with living parts. The horny axis of *Gorgonia*, notwithstanding some observations of Ellis which apparently tend to a different conclusion,† is not more distinctly organized, and is doubtless formed in the same manner as the axis of *Penatula*, for it is also of a lamellated structure, and, according to Lamouroux, is invested with a similar periosteum.‡ A cross section of the stem or of a principal branch will show the layers to be disposed concentrically round a central medulla, the layers

condensées, épurées par l'affinité, réunies, juxta-posées successivement, et ont formé, par leur réunion, l'axe central et longitudinal dont il s'agit. Aussi cet axe est-il d'une substance continue, non poreuse."—*Anim. s. Vert. V. ii. p. 294*. See also p. 78—80; and p. 311.

\* "Totum os membrana tenuis, lutescens, pellucida cingit, atque in utroque extremo in ligamentum contorquetur, quod ex una parte in apice trunci pinnati, ex altera vero in apice trunci nudi inseritur."—*De Anim. mar. p. 104*. See also *Corall. p. 214, 218, 224*.

† "Proceeding thus far, I was led on to observe, what kind of communication there was between the suckers (or polypes) and the bone of the animal; for this end I examined several specimens, both dry, as well as those that were preserved in spirits, with good magnifying glasses, and could distinctly trace an infinite number of minute winding canals, that lead from the suckers through the flesh into those parallel longitudinal tubes, which closely surround the bone or solid part on all sides; perhaps these may not improperly be called the periosteum; for all along that side of those tubes by which they adhere to the bony part, I could discover the pores very plainly from whence the juices flow, that supply it with proper materials to answer this great end."—*Soland. Zooph. 69*.

‡ "L'écorce des Gorgoniées ne se lie pas immédiatement à l'axe, elle en est séparée par une membrane d'une nature particulière, si mince dans le genre *Gorgonia*, qu'il est très-difficile de l'apercevoir; elle est plus apparente dans les *Plexaures* et les *Eunicées*."—*Polyp. Corall. Flex. p. 391*.