

gelatinous, and the external a complete membrane, so formed as to cover the stem in the manner of a sheath or tube. That the other Gorgoniæ consist of a horny stem coated by a membrane, which is hardened by carbonate of lime. That the sponges are of a nature similar to the horny stems of the Gorgoniæ, and only differ from these and from each other by the quality of texture. And lastly, that the Alcyonia are likewise composed of a soft flexible membranaceous substance, very similar to the cortical part of some of the Gorgoniæ; and in like manner slightly hardened by carbonate, mixed with a small portion of phosphate of lime.

“From this mass of evidence we collect, in general, that the varieties of bone, shell, coral, and the numerous tribe of Zoophytes with which the last are connected, only differ in composition by the nature and quantity of the hardening or ossifying principle, and by the state of the substance with which this principle is mixed or connected; the gluten, or jelly, which cements the particles of carbonate or phosphate of lime, and the membrane, cartilage, or horny substance which serves as a basis, appearing to be only modifications of the same substance, which progressively graduates from a viscid liquid, or gluten, into a gelatinous substance, which again, by increased inspissation, and by the more or less perfect degrees of organic arrangement, forms the varieties of membrane, cartilage, and horn, which, it seems, form the peculiar differences of the several species.” *Abst. Phil. Trans.* i. 25–26. There is a very full analysis of Hatched’s paper in Thomson’s *Syst. of Chem.* v. p. 559, et seq. The paper itself will be found in *Phil. Trans. abridg.* xviii. p. 706.

Raspail has ascertained that a large proportion of iron enters into the composition of the Alcyonella, which he thinks may be derived from the *habitat*, the zoophyte developing itself upon ferruginous rocks. The iron holds the same position in the polypidom, that the carbonate of lime does in the Oculinæ, or the crystals of silex in the sponges. Its great proportional quantity may be estimated from the following experiment.—“Un fragment sec du Polypier faisait dévier de trois degrés la nouvelle aiguille aimantée, construite par notre collègue, M. Saigey, quoique ce fragment ne présentât à l’aiguille qu’une surface d’un centimètre environ. Cette déviation paraîtra énorme si l’on veut se rappeler que l’Alcyonelle est une substance spongieuse extraordinairement légère; ajoutez à l’importance de ce résultat que le fer paraît y exister à l’état de trioxide, puisqu’avant comme après l’incinération, la substance est également rougeâtre, et qu’en conséquence son influence sur l’aiguille aimantée serait infiniment faible, si le fer existait en faible quantité dans son tissu lâche et spongieux.”—*Mem. de la Soc. d’Hist. Nat.* iv. p. 119.

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“Non tamen, post tot ac tantos scriptores, pigebit meam quibusdam locis posuisse sententiam. Neque enim me cujusquam sectæ, velut quâdam superstitione imbutus, addixi: — — — sicut ipse plurimum in unum confero inventa, ubicumque ingenio non erit locus, curæ testimonium meruisse contentus.”—*Quintilian.* iii. i.