

was he afterwards satisfied of the non-existence of animalcules, that he combated the opinion of those who maintained the contrary, pointing out where the error lay in mistaking small insects which had crept into the sponge in search of food or shelter for the real inhabitants and fabricators of the zoophyte. Yet not the less was Ellis convinced of its animality;—its chemical constituents and its structure were to him conclusive proofs of this fact, particularly when added to the signs of irritability he saw them exhibit when in a fresh state. “I am persuaded,” he writes to Linnæus, “the *fibræ intertextæ* of sponges are only the tendons that enclose a gelatinous substance, which is the flesh of the sponge. Mr Solander and I have seen the holes or sphincters in some of our sponges taken out of the sea, open and shut while they were kept in sea-water; but discovered no animal like a polype, as in the *Alcyonium manus mortui*.” And again—“I attended last summer in pursuit of the animals in sponges, but believe me there are none: but the whole is an animal, and the water passes in a stream through the holes, to and fro, in each papilla.”*

When Ellis published these discoveries, which form in fact an epoch in the history of natural science,† Linnæus was in the

* Lin. Corresp. Vol. i. p. 161 and p. 163. In a subsequent letter Ellis explains himself more fully. “I am now looking into the nature of sponges, and think by dissecting and comparing them with what I have seen recent, and with the *Alcyonium manus mortua*, that I can plainly see how they grow; without trusting to Peyssonell’s account of them, which is printed in our Philosophical Transactions, wherein he pretends to tell you, that he takes the animal out of them, that forms them; and that he put it into them, and it crept about through the meanders of the sponge. This kind of insect, which harbours in sponges, I have seen; but sponges have no such animals to give them life, and to form them. Their mouths are open tubes all over their surfaces, not furnished, like the tubes of the *Alcyonium manus mortua*, with polype-like mouths or suckers. With their mouths they draw in and send out the water; they can contract and dilate them at will, and the Count Marsigli has (though he thought them plants) confirmed me in my opinion, that this is their manner of feeding. If you observe what he has wrote on sponges in his *Histoire de la Mer*, and the observations he has made on the Systole and Diastole of these holes in Sponges, during the time they are full of water, you will be of my opinion. Take a lobe of the officinal sponge, and cut it through perpendicularly and horizontally, and you will observe how near the disposition of the tubes are to the figure I have given of the sections of the *Alcyonium manus mortua* in my plate of the Sea-Pens.”—Lin. Corresp. Vol. i. p. 79–80.

† The Royal Society adjudged to Ellis the Copley medal, “as the most