

XIII. *A Letter from Mr. James Sherwood, Surgeon, to Martin Folkes, Esq; President of the Royal Society, concerning the minute Eels in Paste being viviparous.*

S I R,

Read Feb. 13.
1745-6.

ALTHO' the microscopical Objects, which I have the Honour to inform you of at present, have been already very commonly seen and observed by many of the Curious; yet I flatter myself the Observations I have had the Happiness to make on them, and which you were pleased to be a Witness of, will be no less entertaining to the *Royal Society*, than extraordinary in the Event.

The Eels in *four Paste* are the Animalcules in Question; in which, Accident (which has often introduced amazing Discoveries) has opened the following Scene to me.

Examining one Day a Number of these Eels, and having a Mind to view a single one, I placed the largest I could find in a small Drop of Water, under the Microscope; in doing of which I found I had wounded him in the Belly; a long slender Tube proceeded from the Wound, doubled in the Form of an Intestine, which I then took it for.

The next Day I communicated this to Mr. *Turbeville Needham*; and, having a Mind to see the *Viscera*, as we then thought, he cut one in two, near the Middle; when, to our great Surprise, we found this Part had shot out from each of the divided Ends,

I 2

and

and a Number of seeming *Ova* issued from them ; but we soon found, that these were really live Eels, included in their proper Membranes, though of different Degrees of Maturity. Some mov'd but slowly their Head and Tail, others coil'd and uncoil'd themselves pretty briskly ; and indeed it was pleasant to behold the most mature making many Efforts to disengage themselves from their enveloping Membranes, frequently varying their Position, being sometimes spiral, then like a Figure of 8, till at last they were intirely at Liberty, and swam about like the Parent Eel.

By this it appears, that what I at first took for the Intestine, we now found to be the *Uterus*, which shews, in the large Eels, to be full of dark Spots, and are the young Eels. These dark Spots are also observable in the young ones, as soon as deliver'd from their Parent.

To be sure of this Experiment, I repeated the Operation on Numbers of these Eels in Presence of Dr. *Parsons*, and several other Gentlemen, and always found young ones ; some so mature (*viz.* those towards the Middle of the Parent) as to disengage themselves before I could get them under the Microscope.

In cutting one of these Eels, I happen'd to divide a young one exactly in two ; but, notwithstanding the globular Appearance, as in the Parent, there issued nothing from the wounded Extremity of either Part ; which must be owing to the Immaturity of the young ones.

From this it is plain, that these Eels are viviparous ; and consequently cannot favour the common Opinion
among

among Naturalists, That all Kinds of Animalcules are produc'd by minute Eggs floating in the Air, and falling into the different *Matrices* and *Pabula*, that sustain each Kind.

In order to arrive at some Knowledge of this, I have made some fresh Paste, and have cover'd some with a Piece of Lawn, some with a Bladder, and expos'd the rest as usual. I have also made a Mixture of Flower and Water without boiling, and tied down some of that, and left the rest open; whereby it may appear how far the Air may or may not be concern'd in the Conveying of these Animalcules: For there is no Mean to be imagin'd, by which these Creatures can get into the Paste, if we do not suppose Nature has decreed two Ways for their Production, that is, from Eggs in the Air, besides the Manner that appears before us: But this, together with the Result of some other Experiments, shall be humbly offer'd to your Consideration, in a future Paper, by

S I R,

Your most obedient Servant,

J. Sherwood.