

had bronchial disease, but who had been lying in a semi-lifeless state for several days, thus proving the accuracy of the opinion of Dr West, that collapse may occur in such circumstances without bronchitis.

4th. That in the four cases fatal from typhoid fever which were examined, the parenchyma of the lungs was primarily affected in two; and in two secondarily, in the one case labouring under pertussis, the lesions found seemed more the result of it than of measles.

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ARTICLE V.—*Postscript to a Paper in the January Number of this Journal, confirming the discovery by Keber of a Remarkable Body Penetrating into the Ovum of the Fresh Water Mussel.* By MARTIN BARRY, M.D., F.R.S.

HAD this discovery by Keber extended no further than that of the penetration into the interior of the ovum of a body having always the same appearance, form, and size, and this by a funnel-shaped canal evidently provided for the purpose,—had Keber's discovery gone no further than even this, there would have been sufficient in it to induce the thought with every one deserving to be called an embryologist, "What else can this be than a spermatozoon?" But when to that discovery he has it in his power to add, This body which I saw, not only at the very mouth of the micropyle, but in countless instances at all degrees of penetration through that canal, and in the yelk itself,—this body which has always the same general appearance, colour, form, and size,—and after getting into the ovum divides into many parts,—this body *I know to be a spermatozoon, for I have traced the spermatozoon of the same animal from its earliest origin through all stages of development, and become perfectly familiar with its appearance, colour, form, and size:* I say, when a man has it in his power, as Keber has, to add all this, he speaks with authority which no man has a right to question, until he shows that Keber misinterpreted what he saw; for at mere denials a man sure of his facts can afford to laugh and "bide the time," as some of us have done before him.

Let observers mark well what Keber says of *the size of the ova* in which they should find a funnel-shaped micropyle, and the entering or entered spermatozoon, namely, ova of  $\frac{1}{40}$ " to  $\frac{1}{30}$ ". And let them notice his experience of the season of the year—*September*—in which ova of this size are most frequent. By attending to these two things they will not have to look long before seeing a confirmation in several parts of the field of view; for when once seen, the objects in question are so easily recognized that the observer wonders how it was that they were not seen sooner. If they neglect attention to the size of ova, they may perhaps see a globule of albumen, and think that Keber

took this for a spermatozoon; instead of which he pointed out particularly, in his first work,<sup>1</sup> the nature of the same. All that Keber asks for is, that observers should *rigorously test* his observations. I never read an account of a discovery in which such testing was shown to be more anxiously desired. Only let me warn observers not to publish denials until they are quite sure that they have been looking at *the thing which Keber pointed out*; otherwise they will make themselves ridiculous by "a beating of the air," and wish that what they wrote could be expunged. I have seen smaller ova of the animal in question in which, as Keber says, no micropyle existed. Again, I have seen larger ova in which no remains of the micropyle could be discerned, while in ova of the size above mentioned, I think I never failed to find it when the ovum lay in a manner which made the seeing of it possible. And rarely has it happened that in ova of about the said size, I did not find the remarkable body in question either entering or already entered. He who has not seen all this, and traced the spermatozoon from its earliest origin through all stages of its development to a body not distinguishable from that which penetrates into the interior of the ovum, if he respects his own reputation, let him pause before denying the discovery of Keber.

Keber terms the spermatozoa *cells*. I have been in the habit of terming their large extremity a *nucleus*. No doubt, however, if it be a nucleus it is vesicular, as other nuclei become. And really it is no easy matter to point out where the *nucleus* ends, and where the *cell* begins; that is to say, it would not be easy to point out this in a manner that would be satisfactory to every eye. There is a fact, however, noticed by myself, of which I omitted to make mention, and which it may be worth while to make known here, as a fact which is in perfect keeping with what I saw to follow the penetration of the spermatozoon into the ovum of the rabbit. My fact is this: that the many parts into which Keber saw the said large extremity to divide, *are nuclei themselves*.

*Second Postscript, confirming Keber's view that the Penetrating Body is a Spermatozoon.*

I have lately (in March 1855) resumed my examinations of unio, directing my attention chiefly to the *testis*. It is now in my power to state, with Dr Keber, that *I am quite incapable of seeing any difference either in size, oblong form, or behaviour towards light, between the body or anterior end of the mature spermatozoon of unio, and the body which he has figured entering its ovum.*

M. BARRY.

<sup>1</sup> *De Spermatozoorum Introitu in Ovula*. Königsberg, 1853.