

hand in the wall of the intestine a row of apertures and on the other a series of free ciliated funnels which under those circumstances have very much the form and exactly the position which Mr. Bourne figures as possessed by the supposed internal opening of his segmental organ, with the openings directed inwards. In specimens which are »teased« or roughly dissected this is particularly likely to happen, and the inference that this free-opening, inwardly-directed, ciliated funnel is the internal termination of the segmental organ is a very natural one.

I have no fondness for »controversies« and cannot see how I can benefit by »seeking« one with Mr. Bourne whom I only know of as a rising young zoologist. I have simply stated the facts as they appear to me. But I cannot help in conclusion expressing the hope (in which I am sure I shall have the sympathy of all who have read Mr. Bourne's very injudicious note) that he will in future bear in mind that »Colonial Naturalists« (among whom I can scarcely yet rank myself) require no other treatment, no more patronage and no more neglect, than naturalists at home.

University of Sydney, November 27th 1884.

2. Artificial Fecundation in the Mollusca.

By William Patten, Ph.D., from Boston U.S.A.

eingeg. 27. Januar 1885.

During a short stay at the Zoological Station at Trieste my attention was called to the development of *Haliotus* and *Patella*. In September and early October many specimens of *Haliotus* were found containing either ripe ova or active spermatozoa. All attempts, however, to procure fertilized ova were fruitless and toward the end of October no more ripe ova or spermatozoa could be obtained.

I have been unable to find in the literature upon the subject any reference to the external appearance or deposition of the ova of either *Patella* or *Haliotus*. The absence of any external sexual organ or any gland secreting a substance for attaching the eggs to foreign objects or for holding them together, and the fact that the eggs had not been observed by any one led me to the conclusion that they were probably deposited singly in the water and there underwent an external fecundation.

As the animals would not deposit their eggs in confinement I determined to try artificial fecundation and was greatly pleased to find on the first trial that after about four hours quite a number of the ova experimented with were in the first stages of segmentation. This was of special interest to me, as I know of no instance of artificial impreg-

nation having been performed on any of the Mollusca. When the experiment was first performed two or three hours elapsed after bringing the ova and spermatozoa together before fecundation took place. — This was due to the fact, I believe, that the sexual products were not fully matured, for the spermatozoa, when first taken from the testis, were motionless and only showed active movement after having been kept two or three hours in sea-water. A month or six weeks later however (or about the middle of January) spermatozoa were found which were quite active immediately after being removed from the testis, and at that date fecundation took place in from half to three quarters of an hour after mixing the sexual products.

In order to satisfy myself that we actually had an artificial fecundation and not an apparent one, I took the ripe ova from as many as ten females and placed them in separate glasses of sea-water without adding any spermatozoa. After twenty-four hours these ova were carefully examined but no eggs in segmentation could be found, — whereas fifteen separate experiments upon the ova of seventy-five individuals never failed to give a larger or smaller per cent of fertilized ova, when a number of spermatozoa had previously been added.

This, I think shows clearly that the segmented ova were not previously fertilized internally, but that they were the products of an external, artificial fecundation.

The ovaries of the larger specimens contained an enormous number of ova, about ten per cent of which under the most favorable circumstances could be successfully impregnated. The ova thus artificially impregnated underwent a normal development and after six days had produced a provisional nautiloid shell. After twelve days (the longest time I succeeded in keeping them alive) the larvae still swam about and showed no signs of assuming the adult form.

The same condition found in *Patella*, as regards absence of an albuminous gland and external sexual organ, prevails in *Haliotus* and *Fissurella*, and I believe that the ova of both these genera could also be fecundated artificially, but unfortunately it did not occur to me to try it until after the spawning season had passed.

3. Vorläufige Mittheilungen über *Archenchytraeus Möbii* n. sp.

Von W. Michaelsen, Kiel.

eingeg. 27. Januar 1885.

A. Möbii lebt in angeschwemmtem Seegras am Strande der Kieler Bucht. Er ist 20—35 mm lang, hat ungefähr 60 borstentragende Segmente und ist milchig weiß. Die Borsten sind fast gerade mit schwach

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