AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Abstract of a Paper on "The Microscopical Appearances presented in the Intestinal Discharges and Muscular Fibres of a Patient who died of Epidemic Cholera." Read, by request, at a meeting of the Boston Society for Medical Improvement, on June 11th, 1849. By WALDO (L.) BURNETT.

On Sunday, June 3d, a man at the northern part of the city was attacked with the premonitory symptoms of cholera. The case ran a rapid course, and in a few hours he was in a state of collapse; and on the next morning, at ten o'clock, he died.

A post-mortem examination of his body was made, on the afternoon of the same day, at half past three o'clock. At this autopsy I secured a quantity of the "rice water" liquid found in his intestines; also a portion of one of the pectoral muscles. These specimens I submitted, on the morning of the fifth, to careful and repeated microscopical examinations, and obtained the following results.

1st. "*Rice Water*" Liquid.—This was found loaded with epithelium of both varieties, viz., the *cylinder* epithelium, and the *tessellate* or pavement epithelium. These cells were floating about not only singly, but in large flakes of one-thirtieth to one-tenth of an inch in size, and attached uninjured to the "basement membrane" from which they grew; so that it would appear that this "basement membrane" had been stripped off, bearing the cells upon it. The cloudiness and opacity of this liquid seemed entirely due to the presence of immense quantities of these epithelial cells, since no mucous corpuscles, or any other corpuscles whatever, as well as no shreds of lymph, could be detected from repeated examinations.

It is well known that the *tessellate* or pavement epithelium covers the mucous membrane of the mouth and œsophagus, while the mucous membrane of the remaining portion of the alimentary canal is covered by the cylinder epithelium. Therefore the presence of both varieties of this epithelium in these discharges would show that they came from the surface of the *whole* of the alimentary canal, instead of from its intestinal portion only.

Loitering here and there, in the field of the microscope, was an occasional crystal of the *oxalate of lime*.

For a long time, I could perceive nothing in this liquid but the two substances just mentioned, viz., the epithelium and the crystal of oxalate of lime. But, after increasing the power of the instrument, a third element appeared, and was then so apparent that I greatly wondered I had not before seen it. This was the presence of thousands of thousands of *animalcules* swarming and sporting about in every direction. For a time, I thought that this must be a mere accident, but very many subsequent examinations afforded the same results; and, that I might not be the only person to vouch for their presence here, I showed them to my friend, Dr. D. H. Storer, of this city, who made the remark, that he distinctly saw them "writhing about." By a power of five hundred linear diameters, they could clearly be seen, some as *linear* mov-

ing bodies, others having a more globular character—the former seeming to be only a linear aggregation of the latter. They seemed, therefore, to be *vibriones*, and by measurement the single animals were from $\frac{1}{16}, \frac{1}{666}$ to $\frac{1}{26}, \frac{1}{666}$, and the compound chain-like animals were from $\frac{1}{8000}$ to $\frac{1}{4000}$ of an inch in diameter. I state these facts in this precise manner, since some, it is probable, may think that all this is simply the *molecular motion* so often observed in the secretions. But that they were distinct animals having voluntary motion, I have no doubt, since Dr. Storer, as well as myself, saw them moving in a serpentine manner over the field.

2d. *Muscular Tissue*.—Not thinking of seeing any of these appearances, I examined a small bit of muscle, with reference to ascertaining, if possible, on account of the involuntary muscular contractions during life, the proximity of the *striae* of their *fibrillæ*. But my perception of these relations was not very acute, from my astonishment to find in this tissue these same animalculæ in great numbers. A little distilled water, used to soften the tissue, brought out great numbers of them into it, so that they were seen, as in the intestinal liquid, sporting about hither and thither. In these examinations, all possible care and precaution were used, to prevent the introduction of any foreign bodies into the field of observation.

The great fact to be borne in mind, as the result of these examinations, is that the same *animalculæ* were found in great numbers both in the intestinal liquid and in the muscular fibre. And the fact of their being in the muscular fibre would argue, I think, decidedly against the supposition of their mere accidental presence in the liquid of the alimentary canal.

I much regret that, before these observations were made known, I should not have had the advantage of more specimens from patients who have since died here of this disease. And although it may seem premature that these results from a *single* case should thus be made known, yet they are exposed as simple facts, and upon future examinations I shall rely for the proof, either, on the one hand, that these *animalculæ* were simply *accidental* to this case alone; or, on the other hand, that their presence is constant in this disease; and if the latter is found to be correct, as would seem thus to have been foreshadowed, there will then be sufficient time to attempt to trace their *causative* relation with this dire disease now among us.

Furthermore, should future investigations show that these *vibriones* are equally common in the tissues and secretions of patients dying of other diseases; in other words, that their presence in this disease is not specific; yet the above note will not, perhaps, be considered without value—since it may serve to call the attention of better observers than myself to this interesting subject.

P. S. At the meeting at which this paper was read, two plates, showing drawings of all these appearances and the *animalculæ*, were exhibited.

Fourth Meeting of "The Association of Medical Superintendents of American Institutions for the Insane," at Utica, N. Y.

The Association of Medical Superintendents of American Institutions for the Insane, convened at Churchill's Hotel, in the City of Utica, N. Y., on the 21st day of May, 1849, at 10 o'clock, A. M.

The President, DR. WM. M. AWL, in the chair; and DR. KIRKBRIDE, Secretary.

Present.—Dr. Bates, of the Maine Insane Hospital.

Dr. Bell, of the McLean Asylum for the Insane.

Dr. Stedman, of the Boston Lunatic Asylum.