The evidence of direct local infection was in some of these cases unquestionable.

The result of my observations is, that there is certainly no infection from the cutaneous exudations or the pulmonary exhalations of the affected; but that the alvine discharges are highly infectious, and that extreme care should be taken to receive them, at their first discharge, into some disinfecting medium; by which means, I believe, the propagation of the disease may be effectually checked.

I would strongly recommend those who are anxious for further information on this important subject to read the admirable series of letters by our talented associate, Dr. William Budd, in the JOURNAL, in 1854 and 1855.

[To be continued.]

ON MUSTARD HOT BATHS IN THE COLLAPSE OF ASIATIC CHOLERA.

By JOSEPH BULLAR, M.D., Physician to the Royal South Hants Infirmary, Southampton.

In the collapse of cholera, the one object is to produce warmth of surface with rapidity. If the skin can be made to resume its vascularity and heat, the patient has a good chance of life. If not, he dies.

The following case, in which our two common remedies to produce reaction, hot water and mustard, were used together over a large surface, is worth serious consideration.

James Allen, aged 42, engaged on the Netley Railroad, and lodging at Northam, a suburb of Southampton, was suddenly seized, whilst in bed at 3 A.M. on October 15th, with a feeling as if his stomach was blown up, followed by profuse purging of watery stools and vomiting, continuing every few minutes. He went to his work; but, as he became very ill, a gentleman living near the line sent him in a cart to the Infirmary in Southampton.

I saw him at 12.30. He was in the collapsed stage of cholera. His naturally red face was of a purple blue; his surface livid, cold, and shrunken, with the washerwomen's hand. He had rice-water vomiting and purging, was doubled up with abdominal pain, and writhed with cramps in his calves, drawing the strands of his gastrocnemii muscles into rigid cords, which the nurse and porter were rubbing to ease his torture. His pulse was barely perceptible. No urine had been passed since his attack.

No one who had seen the cholera of 1832 and 1849 could mistake the nature of such a case.

Had a slipper-bath been available, I should have used one; but as he had been placed in a house adjoining the Infirmary, and only used occasionally for infectious cases, where were only hip- and foot-baths, I had him seated in a hip-bath half filled with very hot water with three-fourths of a pound of powdered mustard in it, with his feet in a hot-water foot-bath with a quarter of a pound of mustard mixed with it. The water was as hot as the nurse's hands could bear—almost scalding hot. That the water should not be merely warm, but very hot, and renewed by degrees to keep up the heat, is most important; and the medical attendant should superintend this himself. Gradually his face improved in colour; the cramps ceased; he did not vomit; and after half an hour, as he expressed a great wish to get to bed and to pass a stool, he was moved to a close stool, dried, a clean shirt put on, and he was placed in bed, well covered with blankets, and with hot tins to his feet and hands. His pulse, though weak, was now easily felt; and his hands, though still cold, were warmer.

The contrast was striking. When placed in the bath, he was writhing with pain and cramps; when placed in bed, he said he was comfortable, had no

pain, and wanted to sleep. Whilst in the bath, he drank freely of milk and water with lumps of ice in it; and was urged to swallow in the intervals of drinking small lumps of ice. Shortly after being placed in bed, he suddenly ejected a large basinful of milk and water, and was not sick afterwards. An hour after he had been placed in the bath, reaction had so far advanced that there were good hopes, and four hours afterwards he was out of immediate danger. He was ordered to take iced milk in smaller quantities, to swallow ice, and to have broth and tea. He had but one stool of rather a yellowish colour the same evening. No reaction-fever followed; and, except weakness, he was on the second day well.

Having seen, with Dr. Lake, a case of much less severity, in which reaction went on from the time he applied Dr. Chapman's ice-bag to the spine, I had one prepared; and, on his being placed in bed, it was applied; but, as it made him chilly and prevented sleep, it was not persevered in. This coldness from an ice-bag is a proof that reaction has occurred, and that it is not needed.

I had seen a case under Mr. Leonard Lawrence, who had given milk and water freely, on Sydenham's principle of diluting and encouraging vomiting, and also of supplying the blood with absorbable nutriment.

The case of a medical friend, who cured himself in the last epidemic by constantly swallowing ice, related to me by himself, made such an impression, that, as brandy and stimulants had then so obviously failed, I resolved to give ice, if an opportunity occurred.

The indications of treatment in collapse, according to our present knowledge of the pathology of cholera, seem to me to be:

To restore warmth to the cold skin by external heat and stimulants; and the combination of the two in a mustard hot bath is the most powerful.

To give ice and iced drinks internally, as the large abdominal organs are known pathologically to be in a state of congestion; the belly is hot to the patient's sensations, and warm to the touch.

As the rice-water secretion in the stomach is known to be a virulent poison, to dilute it, so as to encourage vomiting.

And, as the most fluid parts of the blood are flowing outwards, to give such diluents as may supply organic materials, such as milk and salts do.

I should have hesitated to give publicity to a single case, if it involved any novelty in principle or in means; but, as such a single case would lead any thoughtful physician who observed it to try the remedy again, it should certainly induce others to do the same. It may not produce reaction where the powers have been profoundly exhausted by long neglected diarrhoea, the obstinacy of which, as well as future fever, may be owing to impure blood from bad air or debauchery; or it may fail in those who seem to have swallowed or breathed such a concentrated dose of the poison that the disease "begins with death"; and it may be of temporary use only to those who subsequently fall into typhoid fever; but in cases such as this, and which were before very common, where the patient was healthy and temperate, with no previous exhausting and neglected long continued diarrhoea, but where death is imminent from collapse, it may save.

It is a single fact, which justifies immediate promulgation by any channel, as the cholera is in Europe; for it occurred in a public institution; relates to a public disease affecting almost exclusively the poor; and is only the wider application of a well known and common remedy, in the action of which we all agree; and, if it has often been used before, has slipped out of memory, and should be restated.