

Original Communications.

THE HOT MUSTARD HIP-BATH IN DIARRHŒA AND CHOLERAIC DIARRHŒA.

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

WE all know that, in the former epidemics of cholera in this country, there was a general disposition to diarrhœa or to painful affections of the bowels in those places where Asiatic cholera was prevalent. The same was the case here. There were much diarrhœa, some choleraic diarrhœa, and a few cases of genuine Asiatic cholera. The use of the hot mustard hip-bath in diarrhœa and choleraic diarrhœa I will illustrate by cases in which it was alone used, and in which its immediate benefit was unmistakable.

CASE I. J. C., aged 31, the head gardener of my neighbour, had diarrhœa for nine days. He said that he was suddenly seized, between two and three o'clock in the early morning, with sickness and purging; and that ever since he had vomited his dinner, and had six or seven stools daily, with constant epigastric and abdominal pain, and occasional severe griping. He took at first a quarter of a pint of brandy in hot water to stop it; and then some domestic opiate astringent; and the last day a dose of calomel, which was followed by twelve stools. He was naturally a strong, healthy young man; but he began to look ill. He had taken his usual food, and, the last two or three days, a good deal of brandy and water.

I directed him to try a hot mustard hip-bath, which he prepared and regulated himself. He mixed four ounces of mustard with seven gallons of water; got into it at 90°; raised it to 110°; and, after twenty minutes, it stung him so much that he could only remain in it five minutes longer. He went to bed, felt drowsy, and went to sleep; and had no return whatever of the diarrhœa, pain, or sickness. The next day, he was fit for work. I ordered him to avoid stimulants, and to keep to tea, mutton, and rice for a few days. He has been since quite well.

This was a case of simple diarrhœa in a healthy young man, injudiciously treated by brandy and astringents, running on for nine days, and immediately cured by one hot mustard hip-bath of 110° for twenty-five minutes.

CASE II. A very delicate baby of nine months old had diarrhœa for a fortnight after weaning. Lime-water did not stop it. The bowels acted three or four times a day. The secretions were fetid, and the child was sick after his food. Directions were given that he should be seated in a hip-bath, containing a gallon of water and a tablespoonful of mustard, for five minutes night and morning: the water as hot as he could bear it. No medicine was given. This was continued for three days. The diarrhœa yielded, and never returned.

This was simple diarrhœa in a strumous infant of nine months old, showing the applicability of the remedy to an early age and a weakly subject.

CASE III. A strumous boy, about three years old, was an out-patient of the infirmary here with a diseased finger, and was brought by his mother for this, and obstinate diarrhœa. The house-surgeon, struck with his sunken eyes and collapsed look, requested me to see him. He was cold, with cramps, griping pains, and occasionally was sick, and purged with rice-water stools. He had had diarrhœa for a week;

but these aggravated symptoms came on the day before, and he had passed no urine. His pulse was hardly perceptible. It was a case which struck me as likely to run into fatal collapse easily. I requested the nurse to put him immediately into a mustard bath as hot as he could bear it. She used a hot bath in which his legs and half his body were immersed. He struggled and cried, but was kept in the bath for ten or fifteen minutes, then dried and wrapped in a blanket, and laid down. He soon fell asleep. Four hours after, when I saw him, he was playing in his bed, and had no return of vomiting, purging, pain, or cramps, since he left the bath. I told his mother she might take him home, and give him milk and water and bread and butter only; and on the house-surgeon going to see him, on the second day, he found he had remained quite well; and his mother had given him a teaspoonful of castor-oil, as his bowels did not act.

This was a well marked case of choleraic diarrhœa. Though there was no collapse, there were rice-water purging and vomiting, cramps, cold skin, failing pulse, no secretion of urine, and that sunken eye which shows that much of the watery part of the blood has escaped. Chalk mixture, kino, and opium had failed to restrain the fortnight's diarrhœa. The child gave me the impression that, if he had been sent home to a low suburb, with his mother a mere inexperienced girl, with directions as to food and medicines, he would have got worse and died. One hot-water mustard-bath, which covered and well reddened his legs and half his body for a quarter of an hour, cured him, and he was sent home safe.

In these cases, no medicines were given. They are fair, simple experiments, in which there can be no possible doubt that the hot water mustard hip-bath relieved simple diarrhœa in a strong vigorous man and in a puny infant, and choleraic diarrhœa in a weak strumous child. I bring them forward as simple experiments worthy of attention; not as proofs that this should be the universal treatment of diarrhœa, but that it is one promising mode of treatment, simple, efficacious, rational, and now especially valuable as strengthening the more important point, that there is a stage in Asiatic cholera—that stage in which the great gush of watery fluid from the gastro-intestinal surface has taken place, followed by the cold skin, the shrunken hands, the want of secretion of urine, the commencing decarbonisation of the blood—in which this powerful remedy may, by producing reaction, bring back the circulation to the surface, and stop the progress of the disease.

That it is a most powerful remedy, these cases of diarrhœa prove; and the reasons seem to me to be these. In the first place, it produces a revulsion of blood to the surface, and thus changes that tide which has set in towards the organs of the abdomen.

The visible effect of hot water at 110° with mustard is to redden the skin more, and with greater rapidity and permanence, than water alone.

This red colour arises from the coloured blood-corpuscles becoming redder, more oxygenised, and therefore of higher vitality, than they do in passing through the lungs.

Here, in the skin, the blood-corpuscles are passing from the smallest arteries to the radicles of the veins through the intervening capillaries, and would normally have become more purple instead of scarlet, having expended part of their oxygen. In cholera, they have become at this point much more venous, giving the characteristic blue, or rather leaden, aspect. The corpuscles are highly carbonised instead of oxygenised, and the patient dies of carbonised blood.

In the last stage of life, his whole surface is leaden or blue and cold, and he lies pulseless often for hours; and, though so icy cold to the touch, throws off his bed-clothes, instinctively seeking through the skin more oxygen for the carbonised blood stagnating in his capillaries.

Some years ago, a pastrycook here went into his ice-well, and was asphyxiated by carbonic acid gas there. Shortly afterwards, when his dead body was brought up, it was as blue and leaden and livid as a cholera corpse. He died of carbonised blood.

It is true that respiration goes on to the last in cholera; but pathological anatomy shows that the mass of blood in the body is venous. The pouring out of the watery parts of the blood and its salts leaves the corpuscles without life, and in a short time incapable of being re-vitalised. The object and hope is, to stop this white hæmorrhage before the red corpuscles are incapable of re-oxygenation.

Now, if we consider the large surface of the skin which is reddened by a hot mustard bath and the rapidity of the circulation, the bath itself must, by this reddening process, be a powerful agent towards arterialising the whole mass of blood, and thus in giving more life. A blood-corpuscle does not take a minute to complete the whole circuit of the body. Each corpuscle thus reddened, and therefore more highly vitalised, passes on to the heart, and its place is instantly taken by another, subjected to the same process, and so on in every capillary vessel subjected to the heat and stimulus in an ever-flowing stream, and so rapidly that each makes the whole circuit (though it does not return to the same spot) in less than a minute of time. The amount of corpuscles so reddened in half an hour must be very considerable. I can only explain in this manner the rapid restoration to good health and strength in the cases related; and, if so, the hope that this treatment early employed may diminish the pernicious after-effects of the devitalised corpuscles in the vessels, only to be got rid of, if at all, by an after-fever.

From this reasoning, it follows that the reddening stimulus to the skin must be over a large surface, and continued for a considerable length of time, and tried early, before the blood-corpuscles have altogether lost the power of becoming oxygenated. And the test that the remedy has been applied in time would be in its reddening effects on the surface. If no reddening were produced, the hot mustard-bath would have been applied too late.

In the early stage of the hatching of an egg, the red corpuscles may almost be seen to be formed out of the yellow yolk, by equable, continual warmth and air—a process of the same kind as this, but a slower one, and by heat and air alone. Here heat is combined with a stimulant of the nerves, which goes to explain the rapid action of the joint means. For here is direct heat to re-vitalise the corpuscles, and a powerful excitant of nerve-force to circulate them more rapidly and to rouse the sluggish powers.

The rationale of this is the conversion of physical into vital forces.

Very hot water and mustard over a large surface is one of the most powerful vitalising agents we can employ.

On the continent, the grocers sell "mustard bran" for mustard foot baths and poultices, which our neighbours much use; but it is not to be procured in our shops. From the kindness of a lady who sent a quantity of it, which she obtained at Colman's, 26, Cannon Street, London, to the Infirmary here, I find that it is much stronger than common mustard, both in poultices and baths; and, as it is only three pence a pound, it should be introduced generally into this country for external use.

ABSTRACT OF A PAPER ON CHOLERA.

By P. O'CALLAGHAN, LL.B. and LL.D. Dub., and D.C.L. Oxon; formerly Surgeon in the 11th (Prince Albert's Own) Hussars.

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IN the year 1832 I happened to have medical charge of the garrison of Limerick, under the district superintendence of the late Sir James Pitcairn, during the memorable outbreak of spasmodic cholera. I believe that the number of cholera cases in that garrison was nearly a third of those in the whole of the troops serving in Ireland at that time. My responsible and arduous duties on that occasion gave me the most favourable opportunities for studying this extraordinary disease, not only in the military hospitals, but likewise in the crowded civil establishments and refuges extemporised for the reception of the numerous cases of cholera in that populous city; and much subsequent experience and observation enabled me to test the value of the practical knowledge thus acquired.

Long before the idea was accepted, or even generally entertained, by the medical profession, I satisfied myself that the cholera was not a contagious disease, and that it was incapable of reproduction from the human body either alive or dead. I was also convinced that it was produced by a subtle atmospheric poison, borne along in suspension in the air, but not in chemical solution. It would, on this supposition, be likely to invade localities capriciously as it were, and in various degrees of intensity; and in general would be more under medical control in its advent and retrocession, because the poison would be at those times in smaller quantity and more diluted. I have been further convinced that this singular poison is material, and that its specific gravity is a little greater than the atmosphere, although it may be wafted forcibly in its strong currents; for I have observed that it had always a tendency to subsidence in calm and stagnant states of the air.

The latter supposition will serve to explain many of its strange phenomena. For instance, I have remarked that most persons were attacked towards morning, after they had lain several hours in a horizontal position, near the floors of their apartments, and probably immersed in the most polluted portions of the vitiated air during that time. It would occasionally happen, that even the lee-side of a ship might be alone infected, if the vessel had been sailing any length of time with a side wind.

I have observed the disease to stoop, as it were, and pounce upon a single bell-tent in a large camp, leaving all the others perfectly unharmed; and in another striking instance, I have seen one side of a large barrack-room attacked, although not a single case occurred on the opposite side, which was equally crowded. The immunity of the uninfected side in the latter case, appeared to me to have been caused by the poisoned air having been blown over it through high windows, and deposited on the beds under the opposite wall.

From these observations it can be easily conceived that this terrible atmospheric poison is mainly influenced in its course by the direction of the winds, and that any locality in which it unhappily might prevail should look for a storm or strong gale of wind as the most merciful of all providential visitations; for I believe that neither the heat nor the cold, the humidity nor dryness of the air have the smallest influence in lessening its virulence.

If this theory should be true, it must follow that the worst localities are those in which the air is least circulated—such as narrow and crowded streets in