

The Editor requests that all communications be timed to arrive not later than the 12th during the winter months, their addresses being too numerous to publish, letters will have to be forwarded from Murree:

HOME TREATMENT AND PREVENTION OF SCARLET FEVER.

By R. MILNE, M.D.

(Continued from page 240.)

ABOUT measles Dr. Milne writes:—"For several years I have adopted the same method of treatment in cases of measles. The great difficulty found in such is the infectious nature of the malady before any signs are definitely manifest. When, however, the eucalyptus oil is used at the earliest possible moment, I have found that it has entirely stopped the epidemic spreading. When such a case has occurred I have kept the aroma of the oil in the rooms, and had a little sprinkled on the beds day by day, as well as on a handkerchief at the chest of the children. This has, I have found, entirely limited the epidemic to at most one or two cases who had been playing with the first child on the attack coming on, while in many instances it has cut the epidemic short. This spring an outbreak occurred in Her Majesty's Hospital in a ward containing twelve children, all under four years of age. The child was isolated and the above plan carried out: three cases occurred on the fourteenth and fifteenth days, but none afterwards.

I should like to be permitted to add a word of warning on the subject of measles. Since my paper was written a measles epidemic appeared in our receiving home, where sixty children were in residence. The epidemic was limited to the first infection—that is, to cases occurring within twelve to sixteen days after the first appearance. Yet I cannot speak with the same confidence in regard to measles as with regard to scarlet fever. I should like to explain this, because several correspondents have written to me as if I had recommended this line of treatment being pursued with equal confidence in cases of measles as in cases of scarlet fever.

In both of the articles published I have referred to the same line of treatment for measles, namely, by eucalyptus. Dr. Curgenvin says he has tried it and found it useless. My experience leads me to a far different conclusion. As stated in my first paper, I found it most beneficial. My subsequent experience in several homes has fully confirmed this. Yet against this allow me to put the following: The brilliant writer of "Peru" was staying with her younger sister when the latter

was attacked with measles (on a Saturday). On the following Monday her mother consulted me as to what precautions could be taken to prevent the elder sister developing the trouble, and, secondly, how the spread of the disease among the six younger children (who had not then had measles) could be prevented. She felt sure her elder daughter would be attacked, as she was considerably run down. Naturally I felt that this furnished an excellent opportunity for a trial of the eucalyptus treatment, and I recommended it accordingly. The treatment was at once begun and continued daily. The younger children had eucalyptus placed in their pillows at night, and on a handkerchief on their chests by day. On the sixteenth day measles became manifest in the eldest daughter. There had been no isolation as regards the others, and the treatment had still been continued in their case. Would they escape? They did not. In sixteen days four were down with a modified attack of measles.

By way of contrast to the above, consider what occurred at the same time at the Girls' Village Home. In six different cottages, six children were attacked with measles. First infection occurred in four cottages, and none beyond.

Now is it possible to account for the successful treatment in these cottage cases as compared with the failure in the private family? I think so. In the private household the children were often in the same room, while in the cottages they were in a different room, which, however, opened upon the same landing as the other bedrooms. My personal belief is that in the private family infection was spread through the violent coughing of the patient. For in the act of coughing disease germs will be thrown at least twenty feet—probably a much greater distance. In this way the contagion was thrown far beyond the immediate action of the eucalyptus, and inhaled by the others before destruction of the germ, and so the disease is spread. In the cottages on the other hand, the eucalyptus had time to act upon the contagion and destroy it.

My ultimate conclusion is, therefore, this, that I believe the eucalyptus treatment will be as successful in measles as in scarlet fever if we succeed in obtaining some powerful, yet agreeable, disinfectant for the child's mouth and air passages. In this connection it must be borne in mind that, by careful examination for Koplik's spots, an attack of measles may sometimes be detected three, or even four, days before the appearance of the rash, and this preventive precaution can be adopted at a very early stage indeed.

In October 1909 three cases of measles occurred simultaneously in a branch Home with seventy children. They were treated on the above lines. There was no further case.

A typical scarlet fever case of great interest was that of a child of four years of age. The symptoms appeared on the day following her admission to the Home. The temperature rose to 103.8° , and the symptoms were very severe. On the eleventh day, when peeling most freely, she was seen by a scarlet fever hospital superintendent and a local secretary of the British Medical Association. Some sixty-nine other children were in the Home, sixteen of whom were under four years of age. With these she was constantly at play. On seeing this the medical superintendent's remark corresponded with the expression of a medical officer of health who saw some cases elsewhere the day before. "Good gracious! is it safe? I see the scarlet fever case and I see the healthy children all about in the room, but I must have a few days to think over it, for I cannot take it in. It is so contrary to all my teaching and experience. All I can say," he added with a smile, "is that by all sanitary law and authority you ought to be in prison for ten years for exposing so many children to such dangerous infection."

At the end of the fourth week this child was seen by the medical officer of health with some fifty children at dinner under the trees in the open air. She was carefully inspected by him. Her hands and feet were peeling most freely in large patches. In spite of thus mingling together, however, with so many children of such tender years, no other case occurred. She was inspected two days later by other medical practitioners from a large society.

In the outbreak of November and December 1908, at the Girls' Village Home, I received a written assurance before the commencement of the plan of treatment that the milk supplied came from farms certified free from any infectious disease. One case had occurred previous to those nine, and this had been removed to the isolation hospital. It was due to this instance that I called for the written assurance referred to. I may add that I would not have the slightest hesitation in accepting milk from a farm or elsewhere where children or others were affected with scarlet fever, provided only that the treatment I advocate is duly and absolutely carried out.

In reply to the natural question, "How were these children infected?" five sources, apart from the milk, have been found. First of all it may come from some of the children's friends. Children's friends are allowed to visit the village once a quarter, and there is a considerable number of these week by week. Secondly, from goods sent in, such as clothing. Thirdly, the children occasionally visit the outside shops at Ilford. Fourthly, ordinary visitors to the Homes may have

caused the contagion. Lastly, children may have been admitted when actually suffering from the disease.

In the earlier days of my practice I was much troubled with doubtful cases. Now, under the treatment which I advocate, these give me no anxiety whatever. On the slightest suspicion suspected cases are put to bed for from two to four days and rubbed, morning and evening, with pure eucalyptus oil, and their throats treated with 10 per cent carbolic oil. It is only when the cases are confirmed that I have the children rubbed once daily until the tenth day. The plan of this treating suspicious cases with eucalyptus has the great advantage that it does not in any way interfere with the confirmatory diagnosis of the future, whether peeling, rash or tongue.

A medical officer of health who called and saw some of these scarlet fever cases in various stages lying in the same ward with recent major operation cases remarked, "Good heavens, Milne! a scarlet fever case between two cases of recent operations for hernia! I could not have believed it unless I had seen it." Yet there was no infection.

Let me remark that the astonishment expressed by these visitors is universal among medical men whenever they have observed cases under the treatment. On many occasions I have kept a child in the same room with from six to twenty-five other children, without any infection spreading. In several recent experiences the patient remained the whole time in a room occupied by twenty-four others at night, all under fourteen years of age. A company of medical officers of health visited our Village Home while scarlet fever cases were peeling freely. There was one instance of especially bad tonsils, and one case of chronic otorrhœa. When these were seen by the medical officers of health, one said: "This is marvellous. To think that I was so long in charge of a scarlet fever hospital, and in spite of all I could do, and keeping the children seven and eight weeks, to find a fresh outbreak on their return home; yet here, before our eyes, we see case after case in cottages with from sixteen to twenty-four others, mingling freely with one another all the time, and after a few days with 1,300 other children both in school and at church. Our system of treatment seems absolutely ridiculous, with its expense, labour, and worry, in contrast to this simple plan; and yet the efficacy of this plan is beyond question."

I cannot resist including the following important testimony:—

On February 26th, 1909, Dr. Charlotte Wheeler, resident medical officer in our "Babies' Castle" Home, Bankhurst, Kent, wrote that they had an outbreak of scarlet fever, and that she was treating the patients on the lines I advised. She wrote on March 3rd: "We have

had six definite cases of scarlet fever. The first was a servant girl on February 24th, 2, 3, 4 on February 27th, 5 and 6 on March 3rd. The six were nursed together in the babies' room, being sent there as soon as they were found, the nurse attending to the other children at the same time. On March 10th the children all returned to their respective nurseries, and the service girl began very light work in the nursery. She was peeling freely at the time she started work among the uninfected children. One other case peeled heavily, the others more slightly. There has been no nephritis or ear trouble, except one child, who had been previously suffering from purulent otitis, which had ceased, but recommenced. We have been now three weeks without a definite case." Later she wrote, "There has been no further development, nor albumen. There were some eighty-four children in the Home, the oldest two being eight and nine years of age. Moreover they are delicate children placed there for special nursing."

A very important experience is that of a medical friend who had seen some of the work I have described above. Having charge of an emigrant party to a distant colony with many children he found some cases of scarlet fever appear among them soon after starting. He had a good supply of all the necessaries for the method of treatment I have advocated. No case appeared after the third day out; consequently there was no spread of the epidemic. In my experience I have never known the trouble spread through any cases of otorrhœa or ozœna, for I had never had such. I have, however, had children returned, after seven weeks' absence in a fever hospital, with a little skin on the sole of their feet unpeeled, and within a few days the children who slept on either side of them were attacked. It is more necessary to emphasise this, because tonsils, ears, and nose have been blamed by many prominent medical authorities as being the only cause for the spread of scarlet fever infection. Yet, as one medical officer of health remarked in one case of mine which he examined, "If tonsils ever convey the infection this one should." After fourteen weeks, however, there is no sign of any infection from any of the above cases which I have detailed.

When last year some officers of public health visited the village the lady superintendent told them how, eighteen years ago, her daughter was taken into the isolation cottage for scarlet fever. After ten days the child was sent home in the peeling stage. Her mother did not then know how safe such a procedure was. "Consequently," she said, "I had all a mother's anxiety about my eighteen months' baby, yet nothing whatever happened! After this my confidence in Dr. Milne's method of treatment was fully established."

I need hardly add that, rationally considered, this system of treatment means a saving of untold amount. A medical officer of health said to me that he had some thirty cases of scarlet fever caused by milk infection. Isolating them cost over £300. Another, when examining these cases at Ilford, said that even in his district (60,000 to 70,000 inhabitants) this would mean a saving of many many thousands of pounds annually. A third scarlet fever hospital superintendent said that for England alone it meant a saving of many many millions of pounds annually. "I have tried Dr. Milner's plan," he stated, "and have no doubt of its success. What it will save to the world no one can estimate. No one can guess its large economies."

One interesting point I should like to emphasise is the great advantage a scarlet fever patient enjoys by being treated at home instead of in the hospital. This may seem curious, but it is well established. In the hospital case much time is lost before the treatment is commenced. There is first of all the sending for the medical practitioner, probably waiting for a confirmed diagnosis; the certificate for removal has to be obtained; and finally comes the ambulance with all its risks of chill and other dangers. Moreover, if the case develops at the end of the week, there is apt to be a delay for Sunday. It is found that the numbers admitted to fever hospitals on Monday are much greater than those on any other day. For instance, on Sunday, May 2nd, 1909, at 10 a.m., I sent a special message with a notification of a diphtheria case, and requested early removal. The reply came back that he could not be removed "until ten o'clock to-morrow morning."

If, on the contrary, the patient remains at home, the treatment is started at once, even before the diagnosis is verified. There is no risk of infection if this treatment is carried out thoroughly. The severity of the trouble, however, is greatly lessened. The few hours' delay caused by removal to a hospital may make a marked difference in the result. The trouble spreading to the nose or Eustachian tubes is unknown to me; yet, as one specialist remarked, "After a short time we have not only the scarlet fever germ infection to deal with, but others secondary to this, causing the very greatest trouble." As I have said, I have never had any experience of secondary troubles with this treatment. This point has been most powerfully impressed on my mind by the intercourse I have had with superintendents of scarlet fever hospitals. It greatly surprised them to learn that I have never had secondary difficulties with *throats, noses, ears, or kidneys*. These, then, are powerful arguments for the home treatment of scarlet fever. The hospital specialist, it appears to me, is placed at a great disadvantage with the results which

will follow private treatment of the trouble at home by an ordinary medical man.

The question will doubtless arise in many of your minds (as I have been frequently asked): "Can this method of treatment be carried out by a mother in the poorer circles of life? Can the wife of a labourer, with her one, two, or three rooms and six children, be expected to treat the throat and rub the child as advised?" If not, why not? They are entrusted with these priceless gifts. If we have so cramped, restrained and cribbed them that pigs, dogs, cattle, and horses are better provided for, who is to blame? It is a shame that our paupers, prisoners, and lunatics have ample breathing space, and carefully prepared good food, and suitable recreation rooms and grounds, while many honest laboring poor and their children are thus treated. Frequently have I heard in the deepest pathos, from poor but honest parents, such deeply pathetic words as these: "How much better it would be for our children if we were dead or locked up in prison. At home we cannot give them sufficient clothing and food; but if we were dead or in jail they would be taken into some such Home as yours and be well cared for and trained." Such ought not to be, and will not be if we do our duty. In the meantime, let a nurse be provided to go round and not only attend to the children, but also carefully instruct the mother.

When scarlet fever attacks a middle-class family the mother is prevented from attending her own child. That means extra nursing, extra food, extra labour, and all these items, in an ordinary family, are of very great consequence. Such expenses would, by the adoption of this treatment, be reduced to a minimum, and that reduction is worthy of great consideration.

It must also be borne in mind that the father of a family attacked by scarlet fever is, in many instances, prevented from going about his ordinary work so long as the illness continues. That means a loss of wages or salary, and that just at a time when household expenses are greatest. For many years I have never asked a father whose children were ill with scarlet fever to remain absent from his ordinary duties, even when working among the children under my care. The money loss to a community arising from an epidemic of scarlet fever is often of the most serious order. A recent outbreak in a country district, I have been credibly informed, has caused a resultant loss in wages of £50 a week, and the Glasgow epidemic has produced widespread loss of work and much consequent suffering.

Then again, the healthy children in a family attacked by scarlet fever are prohibited from attending school. In many schools the child has to

take back with it a note from its parents certifying that it has not been in contact with an infectious case during the holidays. From various schools I have seen such notes as the following in regard to scarlet fever cases : "I am very sorry to have to send all the boys back, but must obey regulations." I have not enforced any absence from school on the part of those who live in the same home owing to scarlet fever for more than twenty-five years, and during all that time I have been dealing with child cases. I hold that no such loss of school attendance is necessary. At most in ordinary cases, the child affected need not leave school for more than ten days if it be properly treated for scarlet fever at home.

The truth is that when this method of treatment for scarlet fever is generally adopted, the effects will be far-reaching to an important and even unsuspected extent, and this quite apart from the merely professional aspect of the matter. A friend of mine, for instance, who is an owner of weekly property in London, lately told me that during the past five years he has had six or seven sporadic outbreaks of scarlet fever in his houses. In each instance he has had to pay a bill of costs amounting to several pounds for disinfection and cleaning. Such an expense would be rendered wholly unnecessary when this plan is adopted. I never order even the washing of a blanket or a night-dress, far less the disinfection of a room for merely disinfecting purposes after scarlet fever. Wherever a patient has been properly treated he ceases to be a centre of infection; no infective risk remains. A child may sleep in the bed which the patient has occupied. In this matter alone there would be a very large saving to the public purse without danger to the public health. That is only one of many directions in which the marked benefit of the treatment would be manifested.

FATIGUE.

CONSTANT contraction of the muscles causes them to become exhausted, though not completely "exhausted" so that further contraction is impossible, as may be proved by the application of an electric current to an exhausted muscle, when it again responds to stimulus through other than that of the will, namely of mechanical energy. Pain is the cause of cessation of voluntary action of muscles from fatigue, and it is caused in two ways, *firstly* by the direct rubbing of muscular fibres over each other when they are swollen by contraction and consequent thickening and so squeezing of nerve fibres, and of the synovial membranes at the joints which use up the synovial fluid and become dry with prolonged exertion, causing a noise similar to that produced by new leather on movement; *secondly*, pain and exhaustion are caused by