with the certain result of being confused. Here, as elsewhere, we must, as a great thinker once said, distinguish where we cannot divide; and I may add we must divide where we cannot separate.

You may observe that I have been only saying that which is familiar, but saying it in recondite phrase—a process that is apt to be annoying, but yet is not without its advantage. It tends to give the familiar a fresher aspect, and to fix its features on the mind in a more effective manner. Grasp the change of conception which has taken place in the terms in which I have described it; realise that it has generally consisted in a substitution of the particular for the general. The gain has been immense, because the elements were seldom all united, and their partial effect produced too often insoluble difficulties when the constituents had not been discerned and when we could only see an imperfect whole instead of perfect parts.

Consider the functions of the cortex of the brain as an illustration of this truth. You can do so without my aid. I need not dwell upon its features, I need not point out the details of the illustration it affords, because these are well known to every one of you, and I have already, perhaps, spent too much time and too many words over that which is superfluous to discuss, and I shall have to consider another illustration on account of its special significance.

The point to which I would bring your thoughts—that for the sake of which I have dwelt on the nature of the change which has taken place in our ideas—is the probability, or rather the certainty, that this process of analysis is far from finished. Absolutely complete we must not expect it ever to become; but we cannot even conjecture at present how far off may be the point which we may reasonably regard as that of relative completion; we cannot yet guess how far we may be from the point at which we shall reach the ultimate of our practicable analysis, the point beyond which we cannot go with the confidence that science demands and a scientific habit of thought must have.

(To be continued.)

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF ACUTE CROUPOUS PNEUMONIA.¹

INTRODUCED BY

J. F. GOODHART, M.D., F.R.C.P.,

Physician to Guy's Hospital and Consulting Physician Evelina Hospital for Children.

DR. GOODHART, after referring to the interest and importance of the subject, and having observed that there were really no differences between the general symptoms in childhood and those of adult life, raised the question whether pneumonia in childhood was often ushered in by either vomiting or convulsions. He had no doubt, considering the high authority upon which the assertion was made, that it was correct, but he could not say that he had seen it so sufficiently often to say that it was a very common occurrence. He would lay more stress upon other cerebral symptoms such as a rather noisy delirium and high fever, the cerebral pneumonia of Rilliet and Barthez, a condition which he had thought more often associated with pneumonia at the apex, but which was not now generally thought to be so, though it was certainly a more common symptom in children than in adults. The term "apical" ought to be enlarged to "upper half," for it was not proved that the involvement of the actual apex was so very common, or that the upper lobe suffered more than the apex of the lower lobe. There could be no question that with this qualification it was very common in children. In 120 cases there were two apical to every five at the base. Henoch gave one to two, but Sanné, on the other hand, made an actual preponderance of apical cases. Adopting, however, even the figures that were least favourable to it, it would seem that pneumonia at the apex was more common in children than in adults. This might be due to the fact that the disease began

more often at the root of the lung and implicated the bronchial glands more readily, or rather that the bronchial glands were so sensitive in childhood to disturbing conditions of all sorts, that the position of the implicated part was in some way determined by them. Both sides were affected, much more frequently in children than in adults. Very often, if the chest were auscultated carefully, although the main disease was situated, say in the scapular region on the one side, there would be heard some evidence, more or less pronounced, of disease on the other, and usually somewhere about the root of the lung. Some earlier affection of the bronchial glands might be the determining cause of this double affection. This frequent incidence of pneumonia upon the root of the lung probably explained its frequent latency, the general symptoms being present, and yet the definite physical signs wanting for the first three or four days. The next difficulty was abortive pneumonia. The healthy working of the lung was bound up intimately with that of other viscera, particularly of the stomach and abdominal organs. The high fever of sudden onset, the flushed face, the delirium, the dry cough, were all common enough from some sudden gastric upset, and in certain families was the natural reaction to some trivial informality of diet, excitement, or what not. In such there was also often some added harshness of respiration in one part or another. Another element of obscurity was the ready production of collapse in children.

Not only did this ready occurrence of collapse tend to facilitate the attributing to the pneumonic consolidation a larger area than belonged to it, it was also inseparable from another feature of some pneumonias, namely, the absence of the physical signs when the consolidation was in reality there. This condition had been termed silent pneumonia, because, although the general symptoms were present, and with these the dulness on percussion characteristic of consolidation, the application of the stethoscope revealed nothing. Apart from the occurrence of collapse, there was a very ready explanation of silent pneumonias to be seen often in the *post-mortem* room, namely, the presence in the smaller bronchi of gelatinous casts of the pneumonic exudation. These casts were doubtless the cause of most cases of silent pneumonia, but they were equally valid causes of acute collapse of the lung, for they seldom completely filled the lumen of the bronchia, and thus readily allowed of the expulsion of the residual air, while they as readily refused the admission of any fresh intake; still there was no reason why pneumonia should not sometimes abort, and whether such abortion was possible or not was a very important matter to settle before discussing the further question whether drugs or treatment of other kinds were effective in controlling the disease.

On the whole there seemed no doubt, from a careful and even judicial scrutiny of the effects of treatment, and of the records of earlier times, and even occasionally now, of the effects of bleeding in adults, that pneumonia did abort, and possibly frequently so. In relation to these points the question arose whether such a pronounced organic change as acute pneumonia could be produced by nervous influence such as sudden shock. Dr. Goodhart had seen several cases of the kind that left little room for doubt upon the matter; the last case of the kind was a particularly interesting one.

A boy, aged 14, so far as is known in perfect health, was returning from school on December 14th, when a railway collision occurred, and he was thrown violently from one side of the carriage to the other, striking his head on the opposite side. He got out and walked home, a distance of a mile or two, but on reaching home he was violently sick, and was indisposed the next day and the next. On the fourth day after the event he was seen by Mr. Williams, of Woolwich; the patient was then complaining of vertex headache, and pain and tenderness over various dorsal vertebrae. He had also slight cough, a pulse of 120, and a temperature of 104.5°. He was conscious when roused, but was irritable, and curled himself up in bed like a cerebral case; his bowels were confined. Dr. Goodhart saw him on the eighth day after the accident, by which time the left apex was becoming dull on percussion, and tubular breathing had just appeared. He went on well; crisis supervened on the thirteenth day, and the temperature was normal for three days afterwards. He then suddenly went to the bad again; his temperature ran up to 104° or 105°, and presented this puzzling feature, that it was so high in the morning and fell to 95.4° at night; and this for three days in succession. After that it remained at 105° and 104°, till Dr. Goodhart saw him again seventeen days later. He was then practically moribund, but the symptoms seemed to point more to ulcerative endocarditis than to anything else, for although the disturbed action of the heart rather suggested renal disease, yet the hectic temperature was all against renal disease, at any rate pure and simple. The pneumonia had by this time cleared up. He died an hour or two later, and Mr. Williams found, *post mortem*, masses of dark-looking vegetation upon the aortic valves. In this case

¹In the Section of Diseases of Children at the Annual Meeting of the British Medical Association held at Nottingham, July, 1892.

the sequence of events was probably as follows: Severe shock to the nervous system, resulting in acute pneumonia, and the latter condition favouring the cultivation of septic germs, and the production of the disease known as malignant endocarditis.

Dr. Goodhart alluded next to pneumonia recurring often in the same individual. Recently he had seen a second attack in a child of only 14, and it was with her, as he believed it generally was, a manifestation of the rheumatic diathesis. Occasionally marked fœtor was present in acute pneumonia, fœtor such as was usually associated with gangrene of the lung. The cases had got well, twice with the supervention of empyema. The cause of the fœtor was not clear; generally it portended some unhealthy ulceration of the bronchial tubes, although, as appeared from cases of bronchiectasis, not always so. Passing over the difficulties of diagnosis introduced by the predominance of pleurisy, of the relation of pneumonia to empyema, of the difficulty of deciding between croupous and catarrhal forms of disease, Dr. Goodhart turned to the question of treatment. As to drugs, a little acetate of ammonia to induce diaphoresis; a little opium, if necessary, in the shape of paregoric or Dover's powder to ease pain, and not to interfere with the action of the skin; a little aconite, perhaps, if the disease were very acute, or very painful; a little carbonate of ammonia as a stimulant, were all the drugs that he habitually ordered in a typical case. In the very acute cases sometimes seen in older children, a leech or two would sometimes bring great relief. The simplest methods were for the most part the most successful. After a free use of antipyretics for the reduction of the temperature in acute pneumonia as well as other diseases, he now used them very occasionally; they reduced the temperature without any amelioration of the symptoms, and without any influence on its course. They had this great disadvantage, that they knocked the temperature about to such an extent, that it was difficult to know how the disease was working out as regards the power of the patient. An occasional dose of this or that antipyretic might be useful where there was some real occasion and promise of value.

The value or harmfulness of the local application of warmth was difficult to estimate. In a series of cases that had occurred in the practice of Dr. Frederick Taylor and in his own at the Evelina Hospital, which had been put on record by Dr. George Carpenter, which were being treated for one cause or another by the hot wet pack, in each case the temperature of the child rose rapidly in the pack—in some of the cases to a degree bordering upon hyperpyrexia. Dr. Dickinson had ventured upon the statement that in the case of renal disease much mischief had probably been done by purging and sweating indiscriminately; and as regards sweating, that was true of its routine application in pneumonia. A poultice unquestionably had its uses, but it was also terribly abused in diseases of the chest. Poultices were liable to be applied, by even trained nurses, scalding hot; they were heavy, they got stiff as they grew cold, and they necessitated a good deal of disturbance of the child. Dr. Goodhart had now for years discarded them in favour of packs, either hot or cold, and a light cotton wool jacket.

For some four years he had adopted the suggestion of Dr. D. B. Lees, and in most cases had applied an icebag to the chest. The details of eighteen of these cases had been published in the *Guy's Hospital Reports*. It was a very valuable method of treatment, and one that might safely be adopted in all but the youngest children without any undue precautions. Of eighteen cases, not, however, all in children, success might be claimed in eight; in seven, although they did well, it might be questioned whether the treatment had any real effect upon the disease; and in three others, all young children, there was a noticeable amount of collapse, subsiding, however, without harm as soon as the icebag was removed. The occasional occurrence of such a condition was not of much moment, for it could be avoided by a little watchfulness, and could be prevented altogether, perhaps, by excluding the youngest subjects—say, those under 2 years old—and by the administration, at any threatening, of a diffusible stimulant, alcohol or ammonia, and by the application of warmth to the feet. It had been suggested, too, by Dr. Lauder Brunton that it might be avoided by care in keeping the cold application from the region of the pericardium. Dr. Carpenter, who as house-surgeon at that time watched these cases, formed the opinion that this was, indeed, the case, and

that care should be taken in applying the icebag to keep it well to the side and back. Dr. Goodhart, however, was not prepared to accept this explanation, for ice had been applied, and he had applied it himself, for the local treatment of pericarditis, and certainly without any ill result.

Cold was not a remedy that could be applied in every case, but was it suitable for some. Both methods, no doubt, had their suitable sphere, though this remained to be determined. As to meat extracts and essences and alcohol, it was his conviction that more people were killed with these than harm was done by all the drugs in the *Pharmacopœia*. Who had not seen many times the "kept up" patient who had providentially refused to, or could not, take any more of anything, and whom the blessed rest had saved? The fevered child cried for water; even milk and water it would have none of; we should be very careful how we poisoned it with meat extracts; and alcohol should be administered only as needed, by the thimbleful, well diluted.

Dr. HENRY ASHBY (Manchester), observed that one of the many diagnostic difficulties occurring in the pneumonias of early life was to distinguish between croupous and catarrhal pneumonia. Perhaps this was not a very important matter, but it had at least the effect of vitiating statistics in reference to the mortality, and also the results of treatment. It arose most frequently at the bedside, but was not always removed even by examination after death; in some cases of lobar pneumonia the lobules might be readily distinguished, and the pneumonic lung lacked the solidity and firmness of red hepatisation, and yet microscopical examination showed effused fibrin as well as leucocytes and epithelioid cells in the air sacs. This was true of a large number of acute lobular pneumonias of early life, a more or less extensive fibrinous exudation being found in the air sacs. *Post-mortem* examinations showed that croupous pneumonia was not always lobar, but might occur in nodules or patches, surrounded by crepitant lung, or it might involve an extent of the surface, or occupy the root of the lung only. In some cases he had found a typical red hepatisation in one lung, and a catarrhal pneumonia in the other. A bacteriological examination did not help, as Fraenkel's diplococcus was found both in croupous and catarrhal pneumonia. Clinically croupous pneumonia was distinguished by its sudden onset, continuous temperature for a week or so, and a crisis; as well as by signs of lung consolidation; catarrhal pneumonia by an insidious onset, intermittent (or rather remittent) temperature terminating by lysis, with the signs of bronchitis, and perhaps a more or less patchy pneumonia. But in the experience of all, cases were often met with of a mixed character. The truth really was that there was no sharp dividing line, and that the two varieties might shade away into one another. The sudden onset of croupous pneumonia, with at times vomiting and hyperpyrexia, while the classical physical signs were delayed, might suggest scarlet fever, and as a matter of fact it was not rare to find such cases of pneumonia sent into hospital as scarlet fever. In other cases where there had been excessive delirium, sordes on the teeth, and high fever, they had been sent to hospital as typhus. In such cases a careful examination of the chest, and a delay of twenty-four hours in coming to a conclusion, would prevent any such error. He had not often seen convulsions occurring in place of the rigor, but severe convulsions were not uncommon in the early stages in association with a high temperature. In these cases the pneumonia might be overlooked, and the symptoms were referred to some lesion of the brain. This was especially so in cases in which hemiplegia followed the convulsions, and it was then assumed that a brain lesion existed which had caused both the convulsions and the hemiplegia. What really took place in these cases was an acute croupous pneumonia, followed by convulsions, these latter causing a meningeal hæmorrhage, with a resulting hemiplegia. In some of the cases of the so-called cerebral pneumonias, the resemblance to an acute meningitis was very close, and the difficulty in diagnosis was increased by the fact that in rare cases an acute meningitis did actually take place in the course of acute pneumonia, as he had on several occasions verified *post mortem*. In the vast majority of cases in which the cerebral symptoms were present, they were merely the result of the high temperature and poisoned state of the blood. There might be headache,

delirium, drowsiness, and even retraction of the head, and more or less coma in cases of uncomplicated acute croupous pneumonia. In some cases the early symptoms were more or less connected with the abdominal organs; there might be vomiting, diarrhoea, and severe pain referred to the abdomen. These symptoms were suggestive of peritonitis, and Dr. Ashby had seen several such cases in which the diagnosis of peritonitis was made, but which were in reality cases of croupous pneumonia with some dry pleurisy at a base, the sharp pleuritic pain being referred to the abdominal wall. Peritonitis, however, did sometimes complicate pleuro-pneumonia, the inflammation affecting both sides of the diaphragm, and a local or perhaps a general peritonitis might be the result. When the classical signs of a croupous pneumonia were present over an extended area of lung, there was no difficulty in making a diagnosis. But all knew from experience cases in which the presence of a pneumonia was suspected, but a most careful examination of the chest yielded negative results or the evidence afforded was indecisive. The revelations made on the *post-mortem* table showed how easy it was to overlook the presence of a pneumonia if dependence had to be placed upon physical signs alone for diagnosis. A portion of lung might be in a condition of acute inflammatory congestion, the percussion note over it being tympanitic or "boxy," rather than high-pitched or dull, while the breath sounds were weak rather than tubular, and crepitation absent. Instead of an extended area of lung being involved, red hepatisation might be present in nodules or patches, surrounded by or backed up by normal lung, and consequently no dull note was got on percussing the chest wall. The pneumonic consolidation might be central, that is, situated at the root of the lung and never involve the surface or only do so late in the attack. The well-known fact that a tympanitic note might be elicited over a portion of lung in an early stage of pneumonic consolidation, or possibly a patch of red hepatisation surrounded by normal lung deserved to be emphasised, as also that weak and distant rather than tubular breathing might not uncommonly be present in an early stage. Some of these difficulties in diagnosis on account of the want of definite characters of the classical signs were especially apt to occur in the so-called "creeping" or "wander" pneumonia, as here a small thickness of the surface might be involved, and successive portions of the surface in turn attacked. In some cases when there was some dry pleurisy on the surface, the child might wince when percussion was made over the affected area, and this might give a hint as to the position of the pneumonic lung. The tendency of the last few years had been to regard croupous pneumonia as a zymotic disease, and this had tended to diminish confidence in drugs, especially those supposed to control or cut short the attack. Clearly there was no means of cutting short or aborting the disease. Nevertheless Dr. Ashby used habitually tincture of aconite and acetate of ammonia in the early stages, rather with the object of acting on the skin than with any hope of controlling the inflammation. Dover's powder or its equivalent in a fluid form was certainly useful when a sedative was called for. Digitalis and ammonia were useful, as also was alcohol if the circulation showed signs of flagging. In cases in which the fever ran high, the best local application was an icebag kept in contact with the chest wall by means of a flannel bandage. Dr. Ashby had used the cold, or rather the graduated, bath with considerable success in hospital practice, but it undoubtedly required care, as an alarming depression might easily be produced. In cases in which a large extent of lung was involved, oxygen inhalation was often very useful as a temporary restorative.

Dr. C. N. GWYNNE (Sheffield) did not consider the ice treatment could ever be adopted as a routine treatment. It required constant medical supervision and as a soothing application was inferior to a properly applied poultice; the danger of collapse or rigors must also be noted. He considered the use of antifebrin when the temperature rose high and there was great restlessness a valuable adjunct. The value of digitalis was well marked in many cases; it slowed the respiration and pulse, and often lowered the fever. Its action as a heart tonic was most valuable in a disease where heart failure was so frequent a cause of death. Alcohol was unnecessary in most cases, and often harmful. Beef-tea as a

diet was valueless and frequently absolutely harmful, disturbing the digestion and producing flatulence. He recommended peptonised milk diet in delicate patients, and custard—peptonised milk, gruel, etc.

Dr. D. B. LEES (London) confined his remarks to the question of the local treatment of pneumonia by the icebag. He claimed for this form of treatment (1) that it reduced temperature; (2) that it diminished physical signs; (3) that it relieved pain; (4) that it was pleasant to the patient; (5) that, when used with reasonable caution, it was perfectly safe. He thought that now it was beginning to be generally allowed that the external application of ice was the best and most effectual form of antipyretic, and much safer than any of the antipyretic drugs. But he claimed that this was far from being its sole effect, and he had often seen marked diminution of the physical signs under its influence, but seldom had there been great local improvement twenty-four hours, or even more, before the occurrence of the crisis. The effect in relieving pain was often very striking, and the presence of the icebag was usually pleasant to the patient. With regard to the question of safety, he pointed out that it was simply a question of efficient nursing, and that, if the nurse were reliable and the temperature taken hourly, the icebag being removed when it fell to 100° and replaced when it rose again to 102°, no symptom of collapse would be produced. He exhibited temperature charts of six cases treated with ice, and gave the details in each case as evidence in favour of these claims.* He laid special stress on the last case, that of a boy, whose right lung was completely collapsed by an old empyema, and who developed pneumonia in the left lung. Such a case would, he thought, have been absolutely hopeless under any other treatment, but, after early and persistent treatment with ice the child recovered. Dr. Lees concluded by giving a few practical hints with regard to the employment of the icebag. In addition to the precautions above noted with regard to children, he laid stress on the utility of applying warm fomentations to the lower limbs and a hot bottle to the feet; also on the value of vasodilator remedies, such as alcohol in hot water, with or without a little nitroglycerine. Lastly he stated that failure of the icebag treatment was sometimes due to a too limited use of it, and that frequently two or even three icebags were necessary.

Dr. W. J. TYSON (Folkestone) insisted on the importance of early diagnosis, which must be made by symptoms rather than by signs. If a patient had had a chill, pain in the side, rusty sputum, and high temperature, there was scarcely any room for doubt as to the diagnosis of pneumonia; but in children the history might be absent, the characteristic sputum more often than not did not appear, and pain in the side, taken by itself, was not of great value, and it also was often absent. He believed that high temperature, accompanied by an increase of respiration out of proportion to the increase of the pulse, was sufficient to establish the diagnosis of pneumonia; at any rate, the case should be treated as such. In rather a remarkable case under his care in 1890, only the above two symptoms were present. The patient was a girl, aged 13½. The temperature on the eighth day of the illness dropped from 104° to 96.6° F. Neither before the crisis nor after it were any physical signs at all detected; on the fourth and fifth day diarrhoea was present, which naturally led to the suggestion of typhoid fever; but the progress of the case soon negated this view. In the cases of pneumonia of the apex with severe cerebral symptoms, which most commonly occurred in childhood, there should not be much difficulty, for meningitis apart from tuberculosis, traumatism, or extension of disease of the petrous bone, was most rare.

Dr. MORE MADDEN, from his experience during twenty years in the Children's Hospital, Dublin, regarded pneumonia as being generally a complication of typhoid fever. The plan of treatment he relied on was quinine or antipyrin in combination with small doses of grey powder, a milk diet, and, when stimulants were wanted, as was generally the case, then either brandy or whisky, in quantities proportioned to the age and condition of the child. Dr. More Madden urged the application of a packet or envelope of warm poultices as long as any consolidation of the lungs remained, and recom-

* Selected from cases published in the *Lancet* of November 2nd, 1889.

mended the inhalation of a terebinth vapour or steam of hot water and turpentine.

Dr. MACKENZIE (Burnley) referred to the fact that many patients recovered rapidly with no medicinal treatment. Regarding the pain of diaphragmatic pleurisy associated with pneumonia, which was situated in the abdomen and over the shoulder, there was frequently in these painful areas distinct evidence of hyperæsthesia, that of the shoulder being due to the irritation being conveyed by the phrenic to the root of the fourth cervical nerve, producing the hyperæsthesia in its peripheral distribution over the shoulder.

Dr. MANSSEL SYMPSON (Lincoln) said that the difficulty of diagnosis from the other acute febrile affections of infancy, and the great clinical likeness of pneumonia to them was an argument for the specific nature of that disease. The collapse which occurred at the crisis was due to the specific action of the poison on the heart. Another point of much interest was the association of apical pneumonia with vomiting, convulsions, great headache, and occasionally hemiplegia, which was luckily transient. Whether this were due to the influence of hyperpyrexia, as Dr. Ashby had suggested, or to any other cause, such as œdema of the brain (to which the vomiting had been attributed) was at present uncertain. In cases of central pneumonia, no pain might be complained of anywhere owing to absence of implication of the pleura; as the lung trouble extended outwards, pain in the side or belly might appear. In treatment, alcohol should be reserved entirely for the period of crisis and collapse. Digitalis should be given then as a general heart stimulant, as the failure was not entirely on the right side. Soup was most useful, and Benger's food also in place of beef tea.

Mr. FREER (Birmingham) narrated a case of pneumonia in which antifebrin had proved distinctly disadvantageous, whilst

Dr. J. W. SMITH (Ryton-on-Tyne) stated that he had obtained benefit from the use of the same drug in an analogous case.

Dr. KING (Chester) wished to draw attention to the fact that in most cases of croupous pneumonia in its earliest stages over the suspected area the breathing was slightly more distant. With regard to the treatment, he placed great value upon the use of the icebag applied, not directly, but over two layers of flannel, and used intermittently, according to the effect produced. The local abstraction of blood by leeches was also very useful.

The PRESIDENT (Dr. Lewis Marshall) observed that diagnosis was of momentous importance, and very difficult. Careful attention should be given to it at the outset. He referred to the languid way in which children with pneumonia would allow an examination, as contrasted with the resistance of a child with broncho-pneumonia. There was no specific remedy, and the physician should not be satisfied with a mere depression of fever; the course rendered diagnosis more difficult. He also touched upon the abuse of heart tonics and alcohol in the early stages of pneumonia.

Dr. SAMUEL WEST (London) spoke of the difficulty of diagnosing between croupous and catarrhal pneumonia in children, and of the confusion which this introduced into statistics and treatment. The irregularity in the temperature of pneumonia in children was a further cause of difficulty in estimating the effect of treatment. He drew attention to two important points in diagnosis which had not been dwelt upon by previous speakers as much as they deserved: (1) The alteration in the pulse-respiration ratio, which was as marked in children as in the adult, and which in those cases where the sudden onset of acute fever was the chief symptom, might determine quite early the correct diagnosis. (2) In infants the condition of the fontanelles, which were as a rule tense and prominent in meningitis and retracted in other cases resembling meningitis—for example, the so-called cerebral pneumonia. In respect of treatment, pneumonia was a specific disease, though it might not depend upon one organism only, and there was as yet no known antidote for pneumonia any more than for other specific fevers. The treatment was therefore general and symptomatic. Among the symptoms were three of prime importance: the temperature, the dyspnoea and cyanosis, and the cardiac failure. The fever did not require active treatment unless it was excessive. So far from fever being in itself bad, it was

probably the natural reaction of the organism against the disease; but it might outrun itself and become excessive and then require treatment. Antipyretic drugs, in his experience, proved to be of very doubtful value. Baths and packs had their uses, but also abuses. Of the icepack he could not speak as enthusiastically as Dr. Lees. A simple and good method of cooling fever patients was the "air bath," as it had been called, the patient being simply lightly covered or placed naked under a cradle covered with a sheet. This was a simple and beneficial method. The dyspnoea and cyanosis was largely mechanical and associated with distension and probably paralytic failure of the right heart from over-distension. For this there was but one means of relief—namely, bleeding; not a local bleeding but a free venesection. Copious bleeding in such cases had saved many lives; yet, speaking generally, the cases in which it was indicated were far from common. Cardiac failure was recognised as one of the chief dangers and causes of death in pneumonia, but it would be wrong to think that it was necessarily and only a failure of the right side from over-distension. The poison generated in pneumonia, whatever it was, could, like that of other specific fevers, affect the muscular substance of the heart itself, and lead thus to muscular failure of the heart as a whole—of the left as well as of the right side. This could only be treated by the usual means, especially diffusive stimulants and cardiac tonics; and here it was that the use of alcohol came in. Dr. West agreed with those who had already spoken of the harm done by the indiscriminate use of alcohol in pneumonia; but for cardiac asthenia they, or similar diffusive stimulants, were essential. Among the cardiac tonics he ascribed a high place to caffeine, either by the mouth or subcutaneously.

TREATMENT OF RINGWORM.¹

[WITH DISCUSSION.]

By ALFRED EDDOWES, M.D. EDIN.,

Clinical Assistant to the East London Hospital for Children, Shadwell.

Dr. EDDOWES said that he would deal only with the treatment of ringworm of the scalp. Dr. Unna had had great success in the treatment by his method with chrysarobin. To those accustomed to use chrysarobin (chrysophanic acid), the method might be strongly recommended providing the patients could be seen sufficiently often and carefully attended to. Experience showed that Unna's plan could only be carried out under conditions which could not be secured in out-patient practice in London. Dr. Eddowes had therefore sought to modify it so as to be able to get through a large number of cases in a limited time. The result was not so rapid as with the original, but could be highly recommended. The essential preparations were (1) a sulphur and vaseline ointment about 3j to 3i, (2) olive oil, (3) a compound chrysarobin ointment containing, say, 25 grs. of chrysarobin to the 3j, the same proportion of ichthyol, and 10 grs. of salicylic acid. The plan is this:

First Week. The sulphur ointment to be applied daily. Hair to be cut as short as possible with scissors over the whole scalp. Scalp to be washed two or three times during this week with soft soap or soda and water. A cap to be worn night and day.

Second Week. The chrysarobin ointment to be rubbed well into a few patches, but not over too wide an area, or in such quantity as to run down on the face, neck, or ears: the rest of scalp to be dressed with the sulphur ointment. If the two ointments become mixed up a little it is of no consequence. A piece of oiled silk or gutta-percha tissue a little larger than the hairy scalp is then placed over the ointment, and a tightly—or rather, should I say, a closely-fitting—skull cap is then fastened over all. All ointment to be thoroughly wiped off scalp and tissue or oiled silk, and fresh ointment applied daily. The area to which chrysarobin ointment is to be applied must be regulated according to the condition of the skin and the comfort of the patient from day to day. If the skin be very intolerant of the remedy, it should be cleansed by wiping with tow or cotton wool, and be dressed with the sulphur ointment instead. If the chrysarobin be well borne, the area to which it is applied is daily extended till the whole scalp is dressed with it, but never for more than four days consecutively. At the end of four days in any case, and sooner if necessary, on account of irritation, the sulphur is entirely substituted for the "dark" (chrysarobin) ointment. During the last night of the week the scalp is well oiled, next morning well washed with soft soap or soda and water, dried, oiled, and patient brought for inspection.

Third and Following Weeks. Precisely as the second until a cure has been effected.

¹ Read in the Section of Diseases of Children at the Annual Meeting of the British Medical Association held at Nottingham, July, 1892.