the skin free from fat midway between the upper and lower limits of the incision, on both the outer and inner side of the limb, as the flap has here to be folded on itself. The skin and its attached fat is next dissected back for a couple of inches at A, and taken in hand by an assistant, who pulls it upwards, so as to enable the surgeon similarly to separate it to a less extent all round the limb. This being done, the knife is then sunk obliquely into the anterior muscular mass, as was done by Alanson, until it reaches the bone; and the whole being well retracted, the remaining mass of muscles is totally divided in the ordinary manner by two principal strokes of the knife, the direction of which is still slightly oblique towards B. The bone being cleared, it is sawn at C, which is about an inch or an inch and a half above B.

As a result of this method of operating, the anterior portion of the soft parts falls well over the face of the stump and end of the bone, the convex anterior flap fitting nicely into the concave posterior, and, when healing is completed, the scar is entirely behind the bone, and in no danger of pressure. All the advantages of the method by long anterior and short posterior flaps are also preserved, and I believe it will be found that greater facility and expedition in operating are secured.

[A patient was exhibited in whom the operation was performed at the junction of the middle and lower thirds two years previously, and who was able to walk perfectly with the weight of his body resting principally on the end of the femur.]

Amputation through the knee-joint, with preservation of the patella by this method, I find to be a most excellent operation; excellent in the ease with which it is performed, and in the stump which results. In this situation, owing to the distance to which the integuments of the ham retract after their division, it is advisable to draw the incision less obliquely than in the thigh, and my rule is to begin an inch and a half below the tubercle of the tibia, and to draw the knife round to a point about an inch below the cutaneous fold of the ham, D E. The skin and subcutaneous cellular tissue having been dissected up until the lower border of the patella is visible, an operation which is facilitated by flexing the knee, the ligamentum patellæ is divided, and the head of the tibia, with the semilunar cartilages, then separated by division of the other ligamentous structures. The assistant having then carefully drawn the posterior border of the incision out of harm's way, the whole of the structures behind the joint are next divided by a single stroke of the knife, from the surface inwards. With the exception of Syme's ankle-joint amputation, I know of no operation which gives a better stump than this amputation through the knee; and I may remark, parenthetically, that I believe we should consult the prospects of recovery, and the future comfort of our patients, were we oftener to select amputation in this situation rather than in the upper third of the leg. [Two patients were exhibited showing this amputation.]

In the leg, the incision may be drawn from before backwards and upwards, as in the thigh, special care being taken to slope the knife well upwards when dividing the sural muscles. Occasionally, on account of the tendency which the skin covering the inner surface of the tibia has to slough, I have taken the covering from the outside, retaining as much as possible of the muscular tissue attached to the fibula, and dividing the bones almost at the level of the incision on the inner aspect. The former method gives the better stump should no accident befall it, but the liability to sloughing is undoubted.

Although it is to amputation in the lower limb that I look upon this operation as specially applicable, yet I have also had recourse to it in the upper. Here, probably, the covering is best taken from the posterior aspect; and, in one case of amputation through the elbow-joint, I obtained an exceptionally good result in this manner.

I have practised this operation now for over ten years, under the name of "oblique circular" amputation, as a term best describing its main feature. I am bound to confess, however, what I have not long since discovered, that an operation in all essentials the same has for long been described by French writers, as invented by Soupart of Liège. Though I cannot, therefore, introduce it to you as a new operation, yet I can cordially recommend it as an old one. I should have been glad, had I been able, to bring before you a greater number of persons on whom I have practised it; but, although I have only succeeded in tracing three whom I could bring to this meeting, I can frankly state that their stumps are not better than those which may generally be obtained.

ON INTERMITTENT FEVER AMONG CHILDREN IN LOW-LYING DISTRICTS: ITS FREQUENCY, AND THE IMPORTANCE OF RECOGNISING IT, OWING TO ITS CURABILITY.

Read in the Section of Diseases of Children.

By W. R. THOMAS, M.D., M.R.C.P.,

Physician to the Sheffield Public Hospital and Dispensary; Lecturer on Medicine, Sheffield Medical School.

DURING the last few years I have been rather astonished at the frequency with which I have met with cases, more especially in hospital-practice, among children presenting symptoms of which the following is a somewhat general description, and at the magic effect of quinine when prescribed in such cases.

The child for a few days appears to be cross and irritable, disinclined for fun or amusement, and seems to be languid and excessively weak; the appetite is poor, and whenever moved the child cries, as if any movement gave rise to pain. After a time the patient seems to be cold; the face looks pale and pinched; the hands are shrunken and pale; the skin generally is dry and rough; the appetite is poor; the respiration is frequent, and the pulse is frequent and small.

After a time, which is extremely irregular, ranging from half an hour to two or three hours, the skin begins to be hot and dry, the pulse, which before was frequent and small, becomes now full and yet frequent; the respirations become more frequent; there is want of appetite, great thirst, costive bowels, the urine is scanty and high, and occasionally there is slight delirium. This stage continues for from two to six hours.

Then comes the sweating stage; the whole skin becomes bathed in perspiration, and all the symptoms abate; respiration becomes more natural; the pulse full, and less frequent; the appetite improves; the thirst goes; and a deep sleep comes on, from which the patient awakens apparently refreshed, but very languid.

Such is a description of these cases when seen by the medical man daily; but generally speaking, in the out-patients' department in hospital-practice, it is difficult or impossible to obtain a concise account of the case from the parent. This is the sort of case we are apt to see. A patient, aged eighteen months, is said by the parent to have been becoming weaker day by day for the last two months. The lips and face are pale; the pulse frequent and weak; the appetite is poor; thirst is great; bowels costive; urine high; there is no lung or heart mischief; no abdominal signs of importance.

In such a case it is often difficult to make a proper diagnosis; and when we see a patient daily becoming weaker, and more especially if we get a history of the heats and sweats, we are apt to look out for tuberculosis. I have many times been quite at a loss when trying to ascertain the cause. I have looked out for phthisis, pulmonary, or abdominal; and, thinking that the profuse perspirations,

in the head and all over, the throwing off of the bed-clothes, the constant crying, as I presumed, from aches and pains, might be symptomatic of rickets, I have looked out for other corroborative symptoms, but have failed to meet with them.

Whenever I meet with cases presenting such symptoms now, I always make particular inquiries as to where the patient is living, and almost invariably find that the house is in a low-lying region of the town, that it has been, in fact, exposed to malaria, but not in the concentrated form which produces ague.

Now, we are not positive as to what malaria is. We do know that heat is required for its development, together with moisture and decaying vegetable matter; and we are apt to consider those patients who have lived in India for a prolonged period, or who have lived in very marshy districts, as being almost the only patients liable to suffer from ague, because ague in its severe form is only met with generally in such patients. I believe that we frequently have cases of this disease to treat which we never recognise at all; patients who suffer from slight chills, heats, and sweats, and who grow thinner, weaker, and paler every day; patients who are supposed to suffer from other complaints, and who perhaps do, but who mainly suffer from mild intermittent fever with its consequences. The malaria to which they have been exposed has been but mild, and the attack of fever is consequently mild. These cases are also most frequently met with in those parts where great alterations are being made, where the soil is turned up in large quantities, and exposed to the air. Many of our best authorities point out the fact that attacks of ague are frequently met with in places where excavations for building or other purposes have been made; and I feel satisfied that I have seen scores of cases of mild intermittent fever in patients who have been exposed to malaria from excavations, and in those who live in houses but recently built. The spleen in these cases is generally more or less enlarged, oftentimes enormously increased in size.

I saw a case a short time ago, in consultation with a medical friend of mine, which drew my attention more particularly to the fact of the frequency of this disease, owing to the weak state to which the patient was reduced, and the difficulty we found in forming a proper diagnosis.

This little boy had been ailing for about two months. He seemed to become paler, thinner, weaker, less inclined for exertion or amusement, every day, and yet nothing tangible could be found to account for all this. The medical man had looked carefully for phthisis, pulmonary or abdominal, for rickets, and other diseases, and could not find anything to account for the gradually increasing weakness. The mother and the child now went away to visit some friends, thinking that the change would do the patient good. In a few days after its arrival, the child was taken suddenly ill, and was in danger, suffering from bronchitis, under the care of the medical man for about three weeks. Towards the end of this time this medical gentleman found that the spleen was enormously enlarged. After a stay of one month, the mother and child returned home. The family medical attendant was now sent for, and was surprised to find the spleen enormously enlarged, extending down as far as the crest of the ilium. When I saw this child I found the spleen enlarged as above stated, firm to the feel, and tense; the edge could be distinctly felt and grasped. The patient was very anæmic, thin, and flabby; quite unable to stand. Loud anæmic murmurs could be heard, but there was not any valvular disease of the heart; no lung-mischief; no *tabes mesenterica*; no rickets. The medical man said that cases of ague were rarely seen in the neighbourhood, and he was inclined to think that the enlargement was due to some other cause; but, as the town was almost on a level with the river, as certain fields around and in the town were occasionally submerged in winter, as the small country town visited by the mother and child was also built on land on the same level almost as the river, and as upon inquiry we found a distinct history of pallor, followed by heat and perspiration, daily, we decided to give small doses of quinine with the tincture of iron, to be gradually increased if found suitable. The child rapidly improved under that treatment, and is now fat, lively, and eats well.

In all these cases, as might have been expected, I have found quinine act like a charm. Children, and grown-up persons, too, who had been ailing for weeks, and in some cases months, have, under its influence, rapidly improved, when other remedies did not seem to have the slightest effect.

As these patients invariably are extremely susceptible to the malaria, I have always recommended removal to higher and healthier parts.

In bringing this subject before the members of this Section, I have had two objects in view: first, to lay stress on the fact that, during the last three years since I have been in the habit of looking

for such cases, I have found them, and frequently successfully treated them; secondly, to point out that cases which would otherwise appear very serious, and which would no doubt become serious in due course, if the proper remedy were not prescribed, or removal recommended, become easy of cure, as soon as the cause has been ascertained.

THE PROGNOSIS OF CHRONIC NON-SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

Read in the Section of Otology.

By P. McBRIDE, M.D., F.R.S.E.,

Aural Surgeon and Laryngologist to the Edinburgh Royal Infirmary, and Surgeon to the Edinburgh Ear and Throat Dispensary.

WHILE this paper, from the nature of the subject, can contain little that is novel to the experienced otologist, it may yet serve a good purpose by eliciting in discussion the views held by British aurists upon a question of immense importance. Before attempting to form a prognosis in any given case, it is absolutely essential to have in the mind's eye a clear view of the pathological conditions which may be present in chronic non-suppurative inflammation of the middle ear. Let us then glance at the possible factors of deafness (accompanied or not by tinnitus or vertigo). I think that most of those present will agree with me when I say that in every case of the disease under consideration, one or more of the following conditions are present. 1. Obstruction of the Eustachian tube; 2. Swelling of the tympanic mucous membrane, due to infiltration of lymphoid cells; 3. Accompanying the last-named condition there must, of necessity, be present more or less free exudation. As a result of disease or abuse of treatment, the tympanic membrane may have become flaccid, so that from loss of tension it is unable to fulfil its function. These factors of deafness are all susceptible of treatment. We must now, however, turn to the consideration of two other pathological conditions which are by no means so amenable to remedies, namely: 4. Thickening of the parts within the tympanum, and the formations of adhesions where their existence is detrimental to hearing; 5. Secondary disease of the labyrinth.

Starting from these premisses, let us glance separately at the various data which influence our prognosis. In calling attention to the different points, it must be understood that it is not alleged that a definite conclusion can be arrived at without welding together the information gleaned from various methods of examination. At the same time it is necessary, in a paper like this, to consider the results of each method separately. Having given this explanation, to guard against misapprehension, I shall proceed on the lines I have sketched.

Hereditary tendency to chronic non-suppurative tympanic disease, a syphilitic or an arthritic taint, are all of more or less unfavourable significance. Hereditary deafness is often of that form known as proliferous catarrh, and the same may be said of that produced by syphilis. A gouty or rheumatic tendency I have often found to exist in those who are afflicted with symptoms pointing to a like pathological condition of the tympanum. In the latter case it is probable, judging by analogy, that the joints of the ossicles are the parts most affected.

Tinnitus, slight at first, but gradually increasing in amount and duration, until it is well-nigh constantly a source of extreme annoyance, and paracusis Willisii (hearing better in a noise), are most unpromising symptoms. Both point to the presence of what Roosa has termed proliferous inflammation, a term which embraces many various pathological conditions, all of which are, however, characterised by the presence of adventitious fibrous tissue or even bone, the result of chronic inflammatory changes. The latter symptom we are, in all probability, justified in ascribing to impaction or ankylosis of the stapes.

After obtaining the history of a case, it is my custom to apply the tuning-fork test. Even if the result point to affection of the sound-perceiving apparatus, I do not consider myself justified in abandoning the case on this account alone, if a subsequent examination reveal chronic middle ear-disease. In the first place, it is probable that a change of tension in the labyrinthine fluid, resulting from physical and remediable changes in the middle ear, may cause a temporary loss of function in the auditory nerve. Again, if, in a case of chronic otitis media, we have pathological changes in the internal ear dependent upon tympanic disease, and, provided deafness be not absolute, it follows that treatment directed to the latter may prevent aggravation of the former, and, by improving the