have previously suppurated, give real difficulty when in close contact with nerves or large vessels.

We use blunt-pointed scissors curved on the flat, a strong tissue separator, and special ring-shaped gland forceps with a spring catch and long handles, which enable an assistant to assist the operator.

Drainage should be employed in extensive and doubtful cases. But we do not favour drainage tubes for aseptic cases; a narrow gauze wick suffices. The Kashmir sawdust pads are useful as outside dressings, and, with a well-applied knitted bandage of loose mesh, the head is comfortably fixed almost as if splinted. We remove the drain usually after twenty-four hours, and then do not dress aseptic cases till the ninth day, when the stitches are removed. For ligatures we use locally prepared iodine-chromic gut, and for sutures local silk thread.

So far as I can judge, the end results are very satisfactory. I have not seen pulmonary phthisis as a later complication, nor tuberculous peritonitis.

There is an increase of pulmonary tubercle in Kashmir, but no apparent increase in glandular disease. The climate is favourable, and it is proposed shortly to start a State sanatorium, which is likely to attract tuberculous patients from the plains of North India.

MULTIPLE SUBCUTANEOUS TUBERCULOSIS FOLLOWING CIRCUMCISION AND TREATED BY TUBERCULIN.

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In April, 1913, a male infant, suffering from several recurring subcutaneous abscesses, was sent to my laboratory at the General Hospital by Dr. A., with a view to diagnosis and vaccine treatment. The appearance of the lesions suggested a tuberculous rather than a pyogenic origin. The child had been circumcised eight months previously, and the practitioner who performed the operation, and who sent the child to town for an opinion was, unknown to us, suffering at the time of the operation from tuberculous laryngitis, which subsequently proved fatal.

History.

At the age of 7 weeks the child was circumcised by Dr. A. The wound suppurated badly, and three weeks later the right inguinal glands enlarged, and an abscess formed which was incised. No laboratory investigation of the pus was made. A week later, what the mother describes as a measles-like rash appeared on the child's face, body, and limbs; this gradually faded, except for several small areas, which became indurated and suppurated at intervals. At the same time the child lost its appetite and became emaciated. As each indurated area softened it was incised, but in most cases failed to heal after several months' treatment. Eight months after the circumcision the child came under my notice.

Condition on Examination.

The child was now 10 months old, emaciated, and hectic. There were numerous suppurating foci on the body, face, and limbs, several of which had failed to heal after incision and evacuation of pus. On the outer margin and the sole of the right foot there were several discharging sinuses, dressed with gauze drains. There was a similar lesion on the left instep. On the outer surface of the right upper arm there were two recently healed scars surrounded by indurated tissue of a purplish red colour. Over each gluteus maximus, and on the right cheek, and over the right lower jaw there were superficial ulcerations with similar purplish indurated edges to those seen on the right upper arm. The prepuce had healed, and in either inguinal region there were healed scars of recent incisions. On the right side a small abscess was pointing, from which 0.5 c.cm. of thick pus was aspirated. No other tuberculous lesions but those indicated could be detected.

Laboratory Investigation.

Films stained by the Gram, Leishman, and Ziehl-Neelsen methods and the usual laboratory media inoculated,

and incubated aerobically and anaerobically at 37° C. and 22° C., were all negative. Special attention was given to a possible sporothrix infection by means of cultures on dry glass, etc. A portion of the pus was inoculated subcutaneously into two guinea-pigs, which both showed well-marked tuberculosis when examined four weeks later. Smears from the caseous glands and from the spleen showed numerous long, slender, acid-fast and alcohol-fast bacilli. Cultures from the caseous glands and splenic emulsion of the guinea-pigs were inoculated on plain and glycerine egg medium and on fuchsin egg medium. All the tubes inoculated gave a luxuriant growth of the tubercle bacillus after two weeks' incubation at 37° C. Rabbits were inoculated subcutaneously and intravenously with caseous gland material and splenic emulsion from the guinea-pigs, but were apparently unaffected. At autopsy, two months later, no evidence of tuberculosis was found.

While awaiting the results of the guinea-pig inoculations I inquired of a second doctor who was now in attendance as to a family history of tuberculosis. He kindly informed me that there was no family history of tuberculous disease in either parent, and that the child had never lived in close contact with a tuberculous person. The child had always been breast-fed. Having satisfied myself that the child was in all probability infected at the time of the circumcision by a human type of tubercle bacillus, I was at a loss to account for it till some months later, when the practitioner who performed the operation died suddenly from tuberculous laryngitis, the supposition being that the raw wound was infected by coughing during the operation.

Subsequent History of Case.

Though the child was extremely ill the parents were anxious that "injections" should be tried, seeing that they were in the first place advised to come to town for vaccine treatment. With some misgivings I prescribed weekly injections of P.T.O., starting with 0.0001 c.cm.; they were administered by Dr. B. in gradually increasing doses for several months. Coincident with the administration of tuberculin the child became less fretful, and its appetite and general condition improved. When seen eight months later all the lesions had completely healed, and the child looked the picture of health. The mother informed me that the healing commenced shortly after the tuberculin was first administered.

The case is of interest from the somewhat unusual source of infection, and, considering the child's serious condition, from the rapid improvement which set in coincident with the administration of tuberculin. Moreover, although the infection was widespread, it was, as far as could be ascertained by physical examination, confined to the subcutaneous tissues.

THE POSSIBILITIES OF DOMICILIARY TREATMENT IN PHTHISIS.

BY

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ALTHOUGH considerable progress is being made in the provision of sanatoriums, the vast majority of consumptives perforce remain at home during the greater part of their illness. The problem of domiciliary treatment thus merits careful attention, but doubts have been expressed as to the likelihood of any measure of success resulting from it. This is not the view expressed in the interim report of the Departmental Committee on Tuberculosis as follows:

It should, however, be borne in mind that a short stay in an institution in which the patient may be educated, followed by a course of home treatment, in shelters, etc., under close supervision, is a form of sanatorium treatment which has certain advantages and which may successfully be adopted in a large number of cases.

In the present article an attempt will be made to show what may be done in an average working-class home. It would be futile to overlook the influence of the locality and of the actual house in which treatment is attempted. It is unfortunate that in many cases the home conditions are such as to hold out scant prospects of success. More-

over, the attitude of the patient and his friends is of vital importance. The treatment of phthisis is usually protracted and makes great demands upon faith and patience. No effort should be spared to make the principles of home treatment intelligible to them and to engage their active support; tact and forbearance are no less essential than a clear idea of what is to be attempted.

The general practitioner, on whom the immediate responsibility for the case devolves, may now avail himself of the services of the tuberculosis officer and nurse, and it is important that there should be intimate co-operation between them. The tuberculosis officer may be of great assistance with regard not only to early diagnosis, but also as to prognosis and the details of treatment. He should meet the patient's doctor at the beginning of treatment, and subsequently at intervals of two or three months. Upon the patient's doctor would devolve the actual supervision of the patient, and in this the assistance of the nurse would be invaluable.

The aim of domiciliary treatment is to bring the patient's immediate surroundings and way of living into as close accord as possible with sanatorium practice. It is therefore desirable that patients should receive a preliminary period of sanatorium treatment. The change in environment often turns the scale towards arrest, and when this has begun, a faithful adherence to the principles of the sanatorium régime will often prove successful in the patient's own home. The educational value of the sanatorium would alone justify its existence. There the hygienic-dietetic conditions are fully realized. The length of stay necessary is conditioned by many factors. For educational purposes six weeks is adequate.

The first essential of home treatment is a separate bed and bedroom. Apart from the danger of infection, it is always difficult to nurse a patient in a room shared with another member of the family. Difficulties sometimes appear insuperable, but even in poor crowded homes it is often possible to draft some of the inmates to the houses of relatives or friends, but a bedstead may have to be provided by some charitable agency. The bedroom should be as plain as possible. All carpets, curtains, superfluous furniture, pictures, etc., should be removed. Windows and door should remain constantly open, the bed being placed so as to avoid draughts. Absence of a fireplace need not disqualify a bedroom, provided that there is a sufficiency of bedclothes, etc.

It is desirable that "open" cases should take their meals in their own room. When this is impracticable and the patient spends much time in the common living room this should likewise be transformed as far as possible. Sometimes the front parlour may be converted into a day room. Doors and windows should remain open, and the patient must be encouraged to keep away from the fireside. He should be sufficiently clad to be able to sit in comfort by the open door.

The nurse should instruct those responsible for cleansing as to the dangers of allowing dust to accumulate, and the advantages of a damp cloth must be carefully explained. Detailed advice must also be given as to suitable clothing, food, etc., and as to the disposal of sputum. On the efficiency of the latter depends the degree of danger to which the other inmates of the house are exposed. On the whole it will be found that paper handkerchiefs, or even pieces of newspaper, commend themselves, being cheap and easily burnt. A paper bag is useful for the soiled papers when out of doors.

Except in hopeless cases patients should possess their own thermometers and record their temperatures night and morning. Ambulant cases should be weighed once a week. They should use the same scales and wear roughly the same clothes. Temperature and weight records should be shown to the doctor at each visit.

The danger of over-exertion is still imperfectly realized. Patients are too often vaguely urged to get out all they can, and excessive autoinoculation results. The amount of exercise that can safely be allowed must be gauged by the patient's temperature and sense of well-being. Whenever the thermometer registers 99° F. (99.5° in women) patients should remain in bed until the temperature returns to normal. In all cases rest for at least three-quarters of an hour before and after meals is advantageous. Patients need to be warned as to the dangers of alcohol. Sympathetic friends too often tempt poor consumptives into

public houses, whereas a contribution towards their nourishment would be of real assistance.

A brief dogmatic leaflet should be provided, and may conveniently be fastened to the wall near the bed. The following leaflet has been prepared for the Lancashire County Council and the County Borough of Wigan, and is proving useful:

ADVICE TO CONSUMPTIVES.

(a) TO ASSIST YOUR OWN CURE.

1. *Be patient* and obey your doctor's instructions. Consumption is a slow disease and takes time to cure.
2. *Let fresh air be your watchword.* Keep the windows and doors of your living and sleeping rooms widely opened. Do not sit close to the fire; if you feel the cold, put on extra clothing.
3. *Dusty rooms* are always harmful; remove useless articles of furniture, curtains, ornaments, etc. A *damp cloth* should be used for cleansing, instead of an ordinary broom and duster.
4. *Keep your teeth clean* and in good order, so that you can chew and digest your food properly.
5. *Plenty of nourishing and easily digested food* is necessary. Milk is especially valuable, and three pints of milk should be taken daily, together with plenty of butter, margarine, dripping, etc. Eat as much fat meat, bacon, kippers, and other fatty foods as you can comfortably digest.
6. *Rest* for at least three-quarters of an hour before and after meals.
7. *Learn to take your own temperature* night and morning, and notice whether you get at all feverish. In health the temperature is 98.4°; whenever your temperature is 99°, stay quietly in bed until it is normal again.

(b) TO AVOID GIVING THE DISEASE TO OTHERS.

1. The "*sputum*," or "*spit*," is especially dangerous as it contains the living germ of the disease. *Be careful* not to spit just anywhere; spit only into pieces of newspaper or paper handkerchiefs, and burn these as soon as convenient. When out of doors put the soiled papers into a paper bag until you return home, or else use a pocket spitting bottle.
2. *Kissing* should be avoided. Use your own plate, cup, etc.; these articles should be boiled before being washed with the household crockery, or else washed separately.
3. *Sleep in a separate bed* in a room by yourself. The disease may be conveyed to a healthy person through sleeping with a consumptive—for example, a wife sleeping with a consumptive husband.

Nothing, however, can replace the personal advice and supervision of the doctor and nurse. The doctor should see his patient as often as may be required, but at least once a week. Sometimes he may be unable or unwilling to use that degree of firmness requisite for the proper carrying out of the measures above detailed. In such cases the assistance of the tuberculosis officer and nurse will be of value, owing to their greater freedom and independence.

Lack of proper nourishment frequently stultifies any attempt at successful home treatment. Sickness benefit is often almost exhausted before the disease is diagnosed. The special nourishment grant from the Insurance Committee is only applicable to selected cases. Poor Law relief usually proves inadequate to the special needs of these patients. An effort is now being made, through the medium of Care Committees, to provide what is needful.

A shelter is often a valuable adjunct to home treatment, where the circumstances allow of this. The possibility should be considered in every case, especially where there is a garden, yard, or adjacent field. Special training and supervision of the patient are necessary in order to obtain the greatest amount of benefit. It is no usually desirable for females to sleep in a shelter at night. Nothing that has been said above is incompatible with the injection of tuberculin, if this is considered desirable.

Domiciliary treatment depends for its success upon the careful attention to details. The problem is essentially one of hygiene rather than of therapeutics.

M. ARMAND GAUTHIER, Senator of the Aude, who has accepted the Portfolio of Marine in M. Doumergue's Ministry, resigned by M. Monis, is a member of the medical profession. He was Minister of Public Works in the Rouvier Cabinet of 1905.

A PROPOSAL has been made to found a radium institute in New Zealand. Palmerston North has been chosen, on account of its central situation, as the place for the establishment of the institute. It has been suggested (says the *Australasian Medical Gazette*) that the public of the North Island should be asked to subscribe £10,000 towards the cost, making, together with the Government subsidy, a total of £24,000 for the building and apparatus.