The patient stood the operation well, and there was practically no shock. On the third day a catheter was tied in, but as soon as the patient was left alone he removed it. This he did on two subsequent occasions, so the attempt was abandoned. At the time of writing (March 21st) a fair quantity of urine comes from the meatus, and the very large cavity in the perineum is gradually filling up. The patient's general condition has improved markedly.

As regards the calculus the photograph (see figure) shows it in the hand of a Burmese nurse, which gives a good idea of its size. Its exact dimensions were—length $2\frac{1}{2}$ in., breadth 1.7-1.6 in., and depth 1.1-1.6 in. It weighed 2 oz. 5 dr. when dry and was composed of urates with a coating of phosphates about $\frac{1}{4}$ in. thick.

Soon after operating on this case I received THE LANCET of Feb. 22nd containing a note on an interesting case of urethral calculus by Captain T. C. Rutherford of my service. I have reported my case, as it was one of strictly urethral calculus; no part of it reached the interior of the bladder, and for a strictly urethral specimen it is undoubtedly a large one. I think that the method of crushing *in situ* and piecemeal removal would have been a better one and would have resulted in less damage to the tissues had the lithotrite been available, but as it is the patient is making a good recovery. No other calculi were detected in the bladder on passing the sound.

Meiktila, Burma.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

VACCINE TREATMENT OF MIXED INFECTION IN PULMONARY TUBERCULOSIS.

BY BERNARD HUDSON, M.D. CANTAB., M.R.C.P. LOND.,
VISITING PHYSICIAN, QUEEN ALEXANDRA SANATORIUM,
DAVOS-PLATZ.

THE following report on three cases of undoubted mixed infection in pulmonary tuberculosis which were greatly benefited by vaccine treatment may prove of interest to readers of THE LANCET.

CASE 1.—A girl, aged 16. Duration of disease two years. Physical signs: scattered râles over the upper lobe of the left lung. Disease quiescent, no cough or sputum, except very occasionally, and temperature normal. During a period extending over a year there were at more or less regular intervals of one month attacks which can only be compared to influenza—that is to say, the temperature rose to 100° or 101° F., accompanied by malaise, aching pains in the back and limbs, and shivering. These attacks lasted about three or four days and then passed off, but left the patient weak and pulled down, and, generally speaking, kept her back. Many different vaccines were tried, both stock preparations and vaccines prepared from the sputum when there was any, which was only very occasionally. Among the organisms used were the B. Friedländer, B. septus, streptococcus, staphylococcus, pneumococcus, and M. catarrhalis, but with absolutely no effect. The patient also had a prolonged course of tuberculin injections. Finally, an organism resembling the M. catarrhalis was isolated from the nasal and pharyngeal secretions and used as a vaccine.

Since the injections were given the patient has been free from the attacks and is doing very well, putting on weight and improving in general health.

CASE 2.—A woman, aged 35. Duration of disease one year approximately. Physical signs: infiltration of the left upper lobe, only slight and not easy to detect. There was also a considerable amount of general bronchial catarrh. The disease was apparently arrested, the patient as a rule being very well; the temperature was normal and the digestion good, but there was a good deal of sputum (20 c.c. in the 24 hours), which contained a moderate number of tubercle bacilli. For a period of three months she had regular very acute attacks of fever, the temperature usually rising to about 102° F., and in one instance even reaching 104.5° . These attacks occurred at intervals of three weeks, and were accompanied by severe headache, malaise, and shivering. (Malaria was excluded.) The cough and sputum were not increased during the attacks, and there was no pain in the side or elsewhere. These febrile explosions only lasted two days, the temperature then falling as abruptly as it had risen, the defervescence being accompanied by copious sweating. A vaccine was prepared from the sputum, and contained M. catarrhalis and B. Friedländer in equal quantities.

Since the patient has been under treatment with this vaccine the attacks have become less severe, occurring at longer and longer intervals. Her general condition is much

improved, the sputum being less in quantity, and I have every hope that she will soon be quite free from these periodical febrile attacks which have been the means of keeping her back for so long.

CASE 3.—A man, aged 37. Physical signs: extensive disease of the left lung, with cavitation of the upper lobe. Activity arrested and patient very robust and with a normal temperature. In December, 1911, he began to have a raised temperature and increase in the amount of sputum, and shortly after this he had a hæmorrhage of about half a pint. This stopped in two or three days' time, but was followed after an interval of 14 days by another one of about the same amount. The bleeding stopped, but again occurred in 14 days, and so on till the patient had had in all eight hæmorrhages, with an interval of 14 days approximately between each one. During all this time the temperature was raised, being 100° to 101° F. in the afternoons. The sputum was trebled in quantity, having increased from 15 to 45 c.c. in the 24 hours; also the sputum was very offensive. After the patient had had eight hæmorrhages the sputum was cultivated and a short-chained streptococcus isolated, from which a vaccine was prepared and injections begun. He had, it is true, two more hæmorrhages, but the temperature gradually came down and the sputum diminished in quantity and became much less purulent in character. He was up and about again by the middle of March, and regained quickly his former health and condition.

I consider that this man had his cavity infected by a streptococcus, and that this was the whole cause of the trouble, raised temperature, increased, offensive sputum, and hæmorrhages, these latter being due in the first instance to the ulcerating action of the secondary organism (in this case a streptococcus) on a vessel, and the subsequent ones to digestion of the clot, by the action of the same organism, which required about 14 days to be accomplished.

Davos-Platz.

NOTES ON A CASE OF RHEUMATOID ARTHRITIS TREATED WITH SUBCUTANEOUS INJECTIONS OF RHEUMATISM PHYLACOGEN.

BY FREDERICK PORTER, M.B., C.M. EDIN.

PHYLACOGENS are "sterile aqueous solutions of metabolic substances generated by bacteria grown in special artificial media." Rheumatism phylacogen is made from a large variety of pathogenic bacteria.

The obscurity of the etiology of rheumatoid arthritis and the results of its treatment form my excuse for publishing the following notes. I believe that the result obtained is sufficient encouragement to pursue the treatment in other cases, and also it may throw some light on the etiology of this disease.

A female aged 58 years, married, had been bedridden for the past four years. The disease started seven years ago with pain and swelling over the right knee, and then spread to other joints, in every way typical of rheumatoid arthritis. She suffered from acute febrile attacks every six or eight weeks. She had also—which I believe to be important—an offensive yellow vaginal discharge slightly tinged with blood. The discharge contained staphylococci and bacilli coli. I gave in all ten injections of phylacogen. I gave $2\frac{1}{2}$ c.c. for four days in succession and on the fifth day I gave 5 c.c. As there was a marked reaction after the last dose, the temperature rising to 103.4° F., I waited for four days and then I repeated the procedure. After the first three doses of $2\frac{1}{2}$ c.c. the reaction was slight, the temperature on the first occasion rising to 100.2° with a slight rigor and a pulse-rate of 110, but these symptoms quickly subsided. On subsequent doses the reaction was less marked, the temperature never rising above 100° , but the patient felt chilly. The patient felt benefit after the third injection in relief of pain and she informed me that she had not slept so well for months. The vaginal discharge completely disappeared and now, six weeks after the last injection, she is still free from pain, and she can be moved about without any discomfort.

This patient had been treated with every well-known remedy, and her diet was carefully regulated. She had undergone a prolonged course of calcium lactate without any benefit. Although the time which has elapsed—under two months—is short in which to draw any conclusion as to the future history of this case, the general benefit this patient received was so marked that it will encourage me to give this method of treatment further trial.

Edinburgh.