The ilia were considerably enlarged. The right shoulder girdle was only very slightly affected. The right humerus was markedly affected in the head and lower part of the shaft. The upper third of the right ulna and whole of the right radius were involved, the arm showing considerable bowing. The small bones of the right wrist and hand were not affected in any way. The left shoulder girdle, clavicle, and coracoid were slightly involved; the head of the left humerus and the shaft scarcely at all. The olecranon process and head of the left ulna were involved, but the rest of the bone and the radius had almost entirely escaped. The small bones of the wrist and hand were normal. The head of the right femur was involved to a certain extent, as was the shaft, and the ischium was slightly affected. The lower end of the right femur was markedly affected, as were the tibia and fibula, the leg showing decided bowing. The left pubis ischium and femur were very markedly affected, and there was a decided superimposed arthritis in the left hip-joint. The tibia was very markedly affected and the fibula to a less degree, the knee-joint showing a mild arthritis. Small bones of the ankle and foot were not affected, nor were the lower portions of the tibia. The articular surfaces were, on the whole, free, except for the left hip and left knee. These were painful on extreme movement in any direction, but more particularly in abduction and external rotation of the hip.

Examination of the heart and lungs was negative. No abnormalities were found in the abdomen, with the exception of slight piles both external and internal. This did not trouble him to any great extent except for slight bleeding about once in six weeks. The teeth, though many had had fillings, were healthy and the gums showed no pyorrhoea. Mr. Mumford kindly examined the nose and throat, and reported as follows: A chronic post-nasal catarrh with chronic pharyngitis. Pus was exuding from the antrum in considerable quantities. He did not advise operation, as in the porous condition of the skull bones infection might be spread farther. The tonsils were comparatively healthy. Blood examination showed no abnormalities, and the urine examination was negative. The Wassermann reaction in the blood was negative. The diet had been so varied, owing to his residence in India, Canada, and England, that no conclusions could be drawn.

Treatment.—He was given ionization to the left hip, as this had given him relief before, and he was instructed in the use of nasal antiseptics. After four weeks the pain in the hip was somewhat relieved, but otherwise he remained *in statu quo*.

This case seems to correspond exactly to the original clinical picture described by Paget. There is no obvious cause for the onset of the inflammation, it being noticeable that there is no history of trauma. Certain observers have lately suggested that Paget's disease occurs after blows on the various parts of the skeleton. It would seem, however, that the conditions are definitely distinguishable, and Paget's disease cannot be classed with the cases of traumatic osteitis. The course of the disease is slow and does not affect the general health to any extent. In the present case there was little or no pain except in the left hip and knee, which would seem to be due more to superimposed arthritis than to the actual inflammation of the bones. Pain is not always absent in Paget's disease, as in some cases tender points have been described frequently on the tibia and sometimes in the skull. The progressive enlargement of the vault of the skull is exceedingly characteristic, and the x rays at once puts the diagnosis beyond doubt. So far no treatment has been discovered which holds out any prospect of relief. In the cases of traumatic osteitis referred to above Lane seems to have had some success by scraping out cancellated parts of the bone, but in such a widespread condition as the present this treatment is obviously inapplicable.

"PERNICIOUS ANAEMIA," APLASTIC OR TOXIC.

BY

J. F. REY, M.R.C.S., L.R.C.P.,

BOGNOR.

An interesting case of "pernicious anaemia" recently came under my care. The patient was an Englishman, aged 48, who had a splendid health record; he weathered the strenuous South African campaign, suffering great privation and exposure, and remained physically fit and worked hard afterwards, but eventually in 1917 his "nerves gave way" owing to privations, business worries, and bad food. His weight decreased; haemorrhoids, from which he had suffered for twenty years, caused trouble, and were removed by operation in March, 1918. Nine months later bleeding and discharge began to occur at intervals every few weeks. In 1919 his appetite became poor, and he felt languid, depressed, and fatigued; flatulence was marked, and his colour became pale. In November, 1920, he had "influenzal catarrh" with diarrhoea lasting fourteen days; an anal abscess developed and burst, leaving an anal fistula. This was successfully cured, under cocaine anaesthesia, during his present treatment.

The blood picture of the aplastic type of pernicious anaemia, as given by H. Vasquez and Ch. Aubertin in *Le Traitement des Anémies*, is as follows:

No poikilocytosis, no anisocytosis, no polychromatophilia, decreased number of leucocytes, relative decrease of polymorphonuclears; no myelocytes; no eosinophils; no nucleated reds, no haematoblasts. Coagulation absent or greatly decreased.

Now the first blood picture of the case here related conformed to this type in all particulars except the anisocytosis: only a few large red cells were found. The relative number of mononuclears throughout the course of the disease was excessive and this pointed to the existence of a bacillary infection which was not overcome. I was led, therefore, to believe that I was dealing with a case of toxic anaemia.

	Jan. 27, 1921.	Feb. 23, 1921.	April 21, 1921.	July 4, 1921.
Red cells	2,800,000	2,500,000	5,800,000	6,800,000
Haemoglobin (Haldane's)	45%	65%	93%	105%
Colour index	0.9	0.77	0.8	0.8
Leucocytes	6,542	7,500	8,125	8,417
Polymorphs	62.4%	24.5%	50.6%	49%
Mononuclears	33.2%	64.7%	43.4%	46%
.. large	5.6%	43.2%	35%	2%
.. small	27.9%	21.5%	8.4%	19%
Hyaline cells	3.2%	7.7%	5%	4%
Eosinophils	Nil	3.1%	1%	1%
Mast cells	0.9%	Nil	Nil	Nil
Eichhorst's corpuscles ...	Nil	Nil	1 per 1,000 reds	2% reds
Abnormal cells	A few large red cells	None	None	None
Arneth's index (normal 2.76)	2.91	4.05	2.23	2.55

The diarrhoea was first checked by astringents and tincture of opium. Gastritis was troublesome until the discovery that there was a lack of free hydrochloric acid in the gastric contents. The administration of hydrochloric acid in large quantities overcame this and stopped the excessive flatulence which he had after meals. Carbohydrates were restricted; later he gradually took to normal diet. Injections of soamin were given until the maximum amount was injected. Capsules of beta naphthol (1½ grams) were given daily and also haemoglobin.

When I saw the patient on July 4th, 1921, he appeared in excellent health, eating well of everything, sleeping well, enjoying all sports, and complaining of no fatigue. In this condition he returned to South Africa to resume his former work. On October 1st, 1921, all medicine was discontinued. In a note dated February 15th, 1922, he states that he is "absolutely fit in every way."

THE LOCAL APPLICATION OF TUBERCULIN.

BY

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MODERN writers on tuberculosis tend to decry the value of tuberculin. Fowler, in his recent volume on tuberculosis, says that "nothing at all is heard now of tuberculin as a remedy." It does not, however, follow from this that it is not being used to good purpose. While not a specific for tuberculosis of the lungs, it is, if given in small doses at weekly intervals, undoubtedly an influential factor for good. Cases treated with tuberculin make more satisfactory and more rapid progress than others not receiving such injections. In addition to using tuberculin hypodermically in pulmonary tuberculosis, we have for several years been using it locally—in gland cases, in lupus, and in abdominal tuberculosis particularly—with excellent results.

The tuberculin is made up in an ointment, using anhydrous lanoline as a basis when lupus or adenitis is treated. It is made up in the form of a liniment when dealing with abdominal disease or pulmonary tuberculosis. The strength of the preparation varies according to the reactive power of the patient, the aim being to secure a definite reaction at the site

into which it is rubbed, the reaction being indicated by a roughening, a reddening, or a papular eruption on the skin. The ointment or liniment should not be strong enough to produce a general reaction, as indicated by an increase of temperature, anorexia, or malaise. No case dealt with by us along the lines mentioned has ever shown such a reaction. Koch's old tuberculin T. or P.T., or preferably equal parts of both, is used. We generally make up the ointment in four strengths—namely, No. 4, 1 in 4; No. 3, 1 in 3; No. 2, 1 in 2; No. 1, 1 in 1. In dealing with glands, for example, we begin with the weakest ointment, No. 4, one part of tuberculin to four of anhydrous lanoline, rubbing in a piece the size of a pea. If there be a reaction, we keep on with that, applying a similar amount every five days. If there be no reaction, we go on to the stronger form. In some cases we have to use the strongest form—namely, equal parts of tuberculin and anhydrous lanoline—before a satisfactory reaction and result are obtained. If, on the other hand, the reaction be very severe from using the weakest of the four strengths, the 1 in 4, it is necessary to use a still weaker preparation. In several instances we have had to use it as weak as one part of tuberculin to eight parts of anhydrous lanoline.

A diminution of the size of the glands is usually noted within a week or two. It may take several months to cause them to disappear. Treatment of glands by operation produces more rapid results in gland cases, it is true. On the other hand, recrudescence of the disease is very common after operation; further, dissemination of the disease not infrequently ensues in such cases, and at the best there is the tell-tale disfiguring scar. When dealt with by tuberculin the cure results along nature's own lines by the production of antibodies and by raising the resistance of the individual. Four cases may be quoted.

1. A carter, aged 46, was admitted to the sanatorium with two large masses on either side of the neck. Treatment with tuberculin locally resulted in those masses, which in one instance were as large as a closed fist, becoming scarcely palpable. Treatment lasted for five months.

2. This patient was seen at the dispensary in Glasgow. Her mother was a patient in the sanatorium suffering from pulmonary tuberculosis, spinal disease, and tuberculosis of the knee. The patient herself had been operated on, she did not know how often, for glands of the neck. There were several discharging scars reaching almost from one ear to the other. Numerous glands, varying in size, were palpable on both sides of the neck, and above the right clavicle there was an irregular mass about three inches broad. She told us that she had received instructions to go into a Glasgow hospital to have a further operation. We asked the Glasgow Corporation to send her to us, in order that we might try conservative measures. The inunction of tuberculin has resulted in a total disappearance of the glands on both sides of the neck. The patient has increased in weight. All toxic symptoms, which previously were very marked, have disappeared.

3. A woman was admitted to the sanatorium with very large masses of glands well down both sides of the neck; she also had involvement of the lungs. There was infiltration to the level of the fourth rib on the left side, and to the second rib on the right. We gave her tuberculin inunctions immediately on admission, using 1 in 3 ointment. An improvement was noted within a fortnight. After a month we went on to 1 in 2 ointment, and kept on that for four months, applying it twice each week. At the end of that period we used 1 in 1. She was able to stand the stronger ointment without excessive reaction. We discharged her from the sanatorium after six and a half months. The glands were not palpable, and the lung disease perfectly quiescent.

4. A young lady, aged 20, was admitted with a scattered mass of glands reaching from the mastoid process to the clavicle on the right side. They were matted together and adherent to the skin, and, although there was no ulceration, the condition was very disfiguring. Tuberculin was applied by inunctions, and all traces of the glands were removed within six months.

These cases, selected at random, illustrate the results very generally obtained. In treating glands other measures may of course be required. For example, when there is caseation the caseous matter must be aspirated from time to time. When there is associated scrofuloderma the ulcerating areas must be cleaned, and may require to be touched up with acid nitrate of mercury or pure lysol to accelerate healing. When there are discharging sinuses the injection of Calot's oil or paste or of bipp facilitates their closure. Ultra-violet rays from a tungsten arc lamp may also help. Probably any septic organisms which keep up the irritation and cause the ulceration are thereby destroyed. Further, the action of tuberculin locally is facilitated and accelerated if it be combined with other measures, particularly (1) exposure to x rays, giving almost a Sabouraud pastille dose once a week; (2) the application of radium emanations, using 30 mg. for twenty minutes on four successive days, screening that with $1\frac{1}{2}$ mm. of lead; (3) the injection of tuberculin, giving it in minute doses 0.000001 c.cm. to begin with, every seven

days, and increasing gradually, reaching if possible pure tuberculin. All reactions must be avoided.

Polypharmacy, so called, at times is not without its value. Certain drugs are more efficacious in combination than alone. Likewise tuberculin, combined with other measures, is specially effective. That tuberculin is the deciding factor I have no doubt. The results are lacking in most of the cases if it be omitted. In using tuberculin locally for pulmonary and abdominal cases the strength that is utilized also depends on the reaction power of the individual. The tuberculin is mixed with linimentum camphorae compositum in the proportion of 1 to 5 minims to 1 drachm. The weakest is used to begin with. That is increased if there be no reaction till the maximum is reached. With such treatment one commonly has witnessed excellent results, in cases of tuberculosis of the abdomen particularly. Many cases could be quoted. The liniment is applied every three or five days, and a flannel binder or belt is kept to assist in its more thorough application. In those cases also the results are greatly accelerated if the treatment be combined with other measures, such as x rays, and tuberculin hypodermically. Cases of lung disease, where the disease causes tightness and pain in the chest, are often greatly benefited.

An extensive trial of tuberculin over many years has convinced one that while it is in certain methods of administration a two-edged sword, it is also a powerful weapon for good. Certainly it should not be relegated to the dust-heap or allowed to sink into oblivion. Its efficiency may be tested in the simple manner outlined above by any practitioner. Those particular forms of tuberculosis are only too common everywhere. The method is absolutely safe. No case, out of hundreds dealt with by us, has to any degree been the worse for the treatment at any time.

Memoranda :

MEDICAL, SURGICAL, OBSTETRICAL.

AN ABDOMINAL FORM OF INFLUENZA (?).

DURING the last few days, following upon a mild epidemic of influenza, we have seen several cases showing unusual symptoms, sufficiently rare in our experience to warrant us in describing them.

From April 18th, when the first case was seen, to April 24th we have observed 10 (8 adults and 2 children), distributed amongst five families. Their chief features are as follows: Puffiness of the face with oedema of the eyelids and redness and oedema of the conjunctivae over the outer half of the eyeballs. The eyelids are drooping, and in some cases completely closed; there is no purulent discharge. In each case there is abdominal pain, referred to the umbilicus, with vomiting, and in some of the cases diarrhoea, with considerable collapse. The temperature is about 102° , and remains so for several days; the pulse rate is not raised in proportion. The tongue is greyish, but not much coated; the abdomen is a little distended and somewhat resistant. A marked feature is pain in the muscles of the neck on flexing the head; the arms and legs feel stiff and heavy, and some of the patients complained of pain in the calves, especially on walking downstairs. There is no albuminuria and no skin eruption.

We shall be interested to know if your readers have seen similar cases.

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Milford Haven.

H. O. WILLIAMS, M.B., B.S.

Reports of Societies.

ABDOMINAL EMERGENCIES.

A MEETING of the Cardiff Medical Society was held on April 11th, with Dr. F. BUCKHAM in the chair, when a paper was read by Mr. GEARY GRANT on abdominal emergencies. He laid stress on the importance of a painstaking history and careful physical examination with such methods as x rays, cystoscopic examination, and differential leucocyte counts where circumstances and time permitted, but deprecated what Mayo termed in another connexion "deadly and scientific delay." The importance of attempting to make an approximate diagnosis was, first, to exclude an extra-abdominal condition simulating an acute abdomen. The case described at that meeting by Professor Emrys-Roberts well illustrated this, and showed that although an exploratory