more time to the soft tissues where the pain appears to be, comparing if necessary with the other side, we may note some resistance in a part of the muscle, and the patient will tell us we are exactly on the offending spot; on continuing the examination we may presently discover that the resistance is due to a definite fibrous thickening. Further useful information may be obtained by working from the patient's point of view. When we palpate the tissues and try to define the indurations, we are carrying out the ideal massage for this condition, and the sufferer will know at once that to continue those manipulations would do good. In this we have the key to the treatment—namely, massage, which is not merely superficial rubbing, but is really a repetition of the manipulations carried out during our examination. Changes can actually be felt to take place in the fibrous tissue under the influence of massage.

The foregoing is typical of the easily recognized condition of fibrositis as seen in muscular rheumatism; more obscure cases may be due to minor degrees of fibrositis which may be difficult to diagnose. Time and patience are necessary, but frank co-operation with the patient will tell us if we are on the right track. The following case is instructive:

A lady, aged 34, had had a fall on the coccyx fifteen years previously, and had since suffered pain round the coccyx and right side of sacrum. The pain was of a vague character, fairly limited in distribution, and, though not always acute, generally gave rise to some feeling of discomfort. Latterly she had become very irritable and a worry to her relatives. The pelvic organs were declared healthy, and a small anal fissure had been operated on, but as no benefit resulted from this further consultations were held. Apparently the advisability of the removal of the coccyx was discussed, though it was pointed out that there might be a large mental element present, as the patient was considered highly neurotic. Had it been possible to guarantee cure, the patient would gladly have undergone the operation, but at this stage she consulted me. The painful area was gently palpated for evidence of fibrositis, yet, even before I had time to make up my mind, the patient exclaimed, "Do you know, I have been waiting for years for someone just to do that to me." This remark was very significant. She had done all she could to obtain relief, had offered herself for examination and treatment by different medical men, and on every occasion had tried to direct attention to the actual seat of pain. Casual examination had shown nothing to account for it, and the search had been carried farther afield without success.

As the examination proceeded the tissues soon relaxed sufficiently to allow certain definite painful fibrous strands to be felt. My mind was now fully made up that here was a case of fibrositis with every reasonable prospect of clearing up. The treatment, which consisted of massage and diathermy, was attended by improvement, and after thirteen visits the patient was quite free from pain. There has been no return of any discomfort since she was last seen over twelve months ago.

It will be observed that we may easily be misled unless we keep before us the possibility of fibrositis. A person with pain in the left side of the chest may have a systolic murmur at the apex, yet the origin of his complaint be entirely in the intercostal muscles. Similarly, people may have pain in the loins arising from the muscles in the back and quite unconnected with the kidneys, even though the urine might show a trace of albumin. In the case just quoted the anal fissure was not to blame, yet had some pelvic disorder been present our minds would have turned to that as the causative agent.

In certain other conditions the cause may be found in a region unsuspected by the patient. Headache is often due to indurations in the upper fibres of the trapezius, and relief quickly follows appropriate treatment of these areas. In several cases of flatulent dyspepsia the condition has been speedily cured by treatment directed to fibrous nodules or strands in the erector spinae muscles.

In one instance a lady who for several months had had headache and sickness, with actual vomiting after dinner, was seen one afternoon during an attack of headache; this disappeared after about ten minutes' massage to the back of the neck, and there was no sickness that evening—the first time for months. Further examination revealed indurations in the erector spinae muscles. These disappeared after massage, and she has now been quite well for over nine months.

The simple headaches may be due to spasm or cramp of the scalp muscles induced by the pathological condition in the trapezii, and the relief can thus be explained; but I hesitate to advance any definite theory as to the disappearance of the dyspepsia. We know, however, that if one muscle or set of muscles is painful on contraction the antagonistic muscles, which do not merely relax but rather pay out, will be awkward in their movement, being more or less on tension all the time to avoid or limit jarring of the painful muscles. If, then, there is trouble in the erector spinae muscles the

abdominal muscles will be correspondingly affected, and thus may react on the normal digestion processes.

The possibility of eye-strain and other sources of irritation or infection must of course be borne in mind, and as superficial pain may be due to, or an accompaniment of, deep-seated lesions, masseurs must have some guide to help them. This they may obtain from the patient. A patient with reflex spasm in the abdominal muscles set up by an inflamed appendix or an enlarged spleen draws away from the examining hand. On the contrary, the person with fibrositis feels at once that the manipulations are going to the seat of his trouble, and asks for prolongation of the treatment as it is so comforting. This guide eliminates the chance of doing damage in obscure cases, and has also enabled me at different times to attack confidently various pains associated with definite organic disease, but which nevertheless appeared to be due in part to local conditions. To quote two examples:

A man consulted me with regard to pains shooting from the back beneath the ribs, round towards the front of the body. I came to the conclusion that he had hereditary syphilis, and refused to treat him until he had submitted to examination and treatment by someone else. When he had started on a course of salvarsan I treated his back, with much benefit.

The other case, a lady, aged 22, who had definite evidence of intracranial pressure, asked me to treat her for violent headaches. I specifically warned the mother that at the most we were only dealing with a symptom, and no matter how much improvement might ensue, she must be prepared to go on with the operative measures which had been arranged to take place later. Massage to the trapezii, which were tight and contracted, gave such pronounced relief that, in spite of my previous warning, the mother began to doubt the diagnosis already made, and only with difficulty was she persuaded that trephining was still necessary.

A CASE OF OSTEITIS DEFORMANS (PAGET'S DISEASE).

BY

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Cases of Paget's disease are of sufficient rarity to make it desirable to put on record such a striking case as the present one.

W., aged 54, was always well in childhood, and at the age of 22 joined the army. He served for nineteen years, fourteen of which were spent in South Africa, Egypt, India, and Burma. He only went sick six times during his service; he had malaria three times, twice in India and once in Burma, with one month's sick leave each time. He had dengue fever in Madras and influenza twice. At the outbreak of war he volunteered for service and was sent to Canada on special work. He spent five years in the service and never missed a day's duty for sickness. He has suffered from piles and a certain amount of constipation ever since he was 30 years of age.

Family History.—His mother died of Bright's disease at an advanced age. His father died at the age of 88 after suffering considerably from arthritis in both hips. Two paternal uncles also suffered very much from the same trouble.

History of Present Illness.—The first time he ever noticed any trouble with his locomotor system was after a bad attack of sciatica in Burma fifteen years ago. He was coming down the river a distance of 1,000 miles, returning to Rangoon, and the sciatica came on five days after leaving his station. He attributes the onset to getting thoroughly wet while snipe shooting. He was never quite the same since this attack, but there was no serious trouble until 1915, and even then the stiffness did not trouble him to any great extent. In January, 1915, he was in Halifax and got worse every year, having very bad colds. Six months after the armistice he applied for a medical board and was sent to Harrogate. In the winter he had chronic nasal catarrh, which left him deaf. In 1918 he began to notice enlargement of his bones, more particularly of his head, as he constantly required new hats, and finally had to have these made for him as nothing was kept in stock which would fit him. He had for the last four or five years suffered from a good deal of pain and stiffness in the left hip, which had been relieved temporarily by ionization, otherwise he had suffered no pain. There was no history of trauma at any time that he could remember.

The patient appeared in very fair general health, but the enlargement of the head gave him a peculiar aspect. He walked slowly and stiffly, owing to limitation of movement in the left hip, and required the help of a stick, but at his own pace could cover up to half a mile without undue fatigue. The following bones were found to be affected by the osteitis: The whole of the cranium was markedly enlarged, with considerable outgrowth of the frontal bones. The facial bones were practically unaffected. The cervical vertebrae were not noticeably enlarged, but there was a good deal of osteitis in the lower dorsal region. The ribs were not affected. The lumbar vertebrae were not involved to the extent of the dorsal.

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

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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