

as he had done on the previous occasions, and I drew off cerebro-spinal fluid. As the fluid came away the pulse gradually became weaker; when 12 c.cm. had come away the pulse was imperceptible at the wrist; we then stopped, and injected 8 c.cm. of the antitoxin. As this was done the pulse again appeared at the wrist. The remainder of the phial of serum was injected subcutaneously. He did not sleep at all that night, and on the morning of January 17th the nurse gave him an injection of pituitary extract, as his condition became very bad. We found him later quite unconscious, with scarcely perceptible pulse, 150 to the minute, and the head still more retracted. The anterior chamber of the left eye now contained thick, curdy-looking pus. He was again injected with half a million of his autogenous vaccine. The evening of the same day he was again seen by Dr. Dighton, who found him extraordinarily improved; he was able to take food by the mouth, was rational, and looked as if he was now really going to recover. At 4 o'clock the next morning, January 18th, he took a sudden turn for the worse, became cyanosed, the pulse failed, and he died the same morning.

The only comment I have to make on the case is that we were disappointed with the antimeningococcic serum, which, as far as we could judge, produced no clinical improvement. On the two occasions on which the vaccine was given a notable improvement followed. The sterilization of the vaccine was effected by heating to 58° C. for thirty minutes.

PRELIMINARY NOTE ON TWO CASES TREATED BY RIB TRANSPLANTATION.

BY

W. I. DE C. WHEELER, M.D., F.R.C.S.IRE.,
SURGEON, MERCER'S HOSPITAL, DUBLIN.

Two recent cases of transplantation of bone have impressed on me the usefulness of portion of a rib as a transplant instead of the anterior crest of the tibia, which is more usually employed.

Congenital Dislocation of the Hip.

In this case the child, aged 4, was treated unsuccessfully by Lorenz's method. The following operation was performed on March 5th, 1914, through Kocher's posterior incision. The upper and posterior rim of the acetabulum was freely exposed, and the bone in this region freshened by light touches of a gouge and chisel. A finger-length of one of the upper ribs was removed in a position where the curve seemed suitable for re-enforcing and deepening the posterior portion of the acetabulum. Before reduction of the dislocation three single sutures of fine aluminium bronze wire were passed through the bone in the required position with a strong fully curved needle. The head of the bone was then levered into place and the rib fixed with its centre at the point where the head of the bone appeared to escape most easily from the socket.

Skiagrams taken at frequent intervals showed, first, the rib in good position; afterwards it almost disappeared, and later still a well-defined shadow marked the position of the transplant.

The head of the bone, judging by the skiagrams, did not appear in the best position, and the joint was again exposed through Murphy's "goblet" incision eight months after the first operation. The head was found, after rotation of the leg inwards, to be in normal relation to the acetabulum, and the latter showed an excellent formation of new bone deepening the socket considerably at the site of introduction of the rib. The shape and size of the new bone corresponded in a large measure to the original transplant.

Modification of the Albee Operation for Spinal Caries.

In this case the child, aged 5 years, was operated upon on January 19th for ever-increasing kyphosis in the mid-dorsal region of the spine. She had been treated without success since May, 1914. Absolute rest with extension on a Whitman's splint and subsequently with a spinal jacket did not arrest the progress of the disease. Skiagrams showed active caries in three vertebrae.

An incision was made slightly to one side of the spines of the vertebrae and carried well above and below the

disease. The laminae and transverse processes were cleared of the soft tissues and the exposed bone freshened with Jones's arthrodesis gouge. The articulations of the adjacent ribs were freely exposed. A superficial horizontal incision approximately at right angles to the vertical incision was carried forwards in the direction of the ribs. The erector spinae muscle and dense aponeurosis was carefully preserved and pulled backwards. The rib was divided with bone forceps just outside the articulation and was easily separated forwards under the muscle to the required length and removed. The curve of the rib suited admirably the kyphotic curve of the spine. The rib was laid on the freshened bone and held firmly in position by interrupted sutures of catgut through the divided soft parts. The fragments of bone detached during the freshening of the vertebrae were carefully preserved and placed deeply in the wound.

The application of the graft alongside of the spinous processes after Jones's method, instead of the original plan of splitting the spinous processes to receive it, and the procuring of the transplant from the operation area with very little addition to the original incision, made the operation simple and rapid.

The size and shape of the graft, as in the first-mentioned case, was admirable.

In both cases, in trying to save the periosteum of the rib, the pleura was injured, but at the time of operation it was obvious that this was avoidable; and in neither case did the patient suffer any ill effects from the development of transient pneumothorax.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUGGESTED FORM OF TREATMENT FOR TETANUS.*

THE bacillus of tetanus produces toxins which affect the nervous system. No doubt the toxin becomes incorporated with the nerve centres—it passes to the nerve centres, not by way of the lymphatics of the nerve, but through the plasma of the nerve fibres. I can well imagine why the treatment of tetanus with antitoxic serum so frequently fails to cure. Flexner states that *Trypanosoma gambiense* can be suppressed by drugs in the blood and lymph vessels without being destroyed in the central nervous organs, and the virus of poliomyelitis prevented from developing through intraspinal injections of an immune serum that is without effect when introduced into the blood. I may add that when I was working on pellagra in Columbia, S.C., I gave monkeys subdural injections of a bacillus which I found in the nodes of patients who suffered from pellagra; in twelve hours I made a lumbar puncture and inoculated ascitic real broth tubes with the cerebro-spinal fluid which was withdrawn. In twenty-four hours I had a vigorous growth of the same bacillus.

The treatment by antitetanus serum is a general treatment, but what we require is a local treatment to come into contact with the local infection of the nervous centres of the brain and cord. We certainly have not had brilliant results in treating syphilis of the nervous system by injecting salvarsan into a vein—in other words, by general treatment—and it is dangerous to inject salvarsan directly into a subarachnoid space. Swift and Elliott† were the first to employ the serum of salvarsan-treated patients for intraspinal injection, and many brilliant results have been met with by this generalized local form of treatment. As Flexner remarks, it is known, for example, that the cerebro-spinal liquid produces a means of direct and immediate contact with the structural tissues of the brain; whatever chemical is introduced into this liquid will immediately find its way to the supporting elements—the nerve cells and fibres of the cortex.

Why not treat tetanus by the same method as syphilitic diseases of the nerve centres? The cases are parallel. We recognize the fact that the toxin or toxins of the tetanus bacillus are incorporated with the nerve centres and fibres. We know that general treatment with anti-

* Abridged.

† New York Medical Journal, 1912, 10, 10653.

I asked one of my soldier friends this question: Supposing a man refuses to take his portion of rum, what is given to him in place of it? His answer was, Nothing. I submit that this man's answer supports Sir Victor Horsley's contention. Rum is served out to these men, and they are told that it is to do them good, a man says "I don't want rum, give me something instead of it to do me good," and he gets nothing; therefore the rum is given as a substitute for something else that would be of benefit to the men in the trenches. Dr. Mercier has failed utterly to grasp Sir Victor's contention respecting regulation No. 34. Sir Victor gives reasons why he considers the statements and suggestions in this regulation to be incorrect, reasons which ought to be conclusive to any ordinary mind, and which certainly do not leave him open to the charge of "gross inaccuracy" made against him by your correspondent.

I quite agree with Dr. Cooper that enough is not being done to save the men of the army now in training from the effects of alcohol. I consider that the sweeping reform made by Russia at the time of the outbreak of the war ought to have been an object lesson to this nation; as it is undoubtedly a fact that it was owing to the sobriety amongst her soldiers that Russia was enabled to mobilize her army weeks before it was ever expected she could have done so—a factor which played no unimportant part in the happenings during the first six weeks of the war.

When England is prepared to take her courage in both hands and follow Russia's example a better state of things will prevail, but until that happens, for goodness sake let us be consistent, and not give men when face to face with the enemy what we know to be bad for them when undergoing training at home.—I am, etc.,

Plymouth, Feb. 8th.

ROBERT SIMPSON.

EXTERMINATION OF VERMIN INFESTING TROOPS.

SIR,—I have read with much interest Lieutenant-Colonel S. Monckton Copeman's "Note on a successful method for the extermination of vermin infesting troops." Like all other troops, we have had our share of these pests in this brigade. I have found that a powder consisting of three parts of black hellebore root and one of borax freely dusted over the men's blankets, clothing, etc., is the easiest, cheapest, and most effective way of getting rid of them, a single application often being successful.

I am greatly indebted to Staff Sergeant C. Hinton, M.P.S., for this information, and I strongly advise every officer in medical charge of troops to try it, not only as a cure, but also as a preventive, and I feel confident that if once they do so they will always keep a plentiful supply of it on hand.—I am, etc.,

EDWARD J. CROSS, M.D., D.P.H.,

Lieutenant-Colonel R.A.M.C.(T.),
Commanding Eastern Mounted Brigade Field Ambulance.

SIR,—The remedy referred to in my letter to the *Times* of February 2nd was described in the *West Indian Bulletin* in 1902, in *Indian Insect Pests*, 1906, and in my *Bulletin on Insecticides* in 1910. It is not new or secret.

I did not refer to it by its descriptive name as druggists would have produced preparations which came within the name but would not contain the ingredients necessary to render it efficacious or safe to use. I took care to get the proper ingredients, put it in the hands of the military medical authorities, and did what I could to make it available. It is not a secret remedy; its composition has been explained to all medical men who have consulted me and to all firms likely to produce it.

If my procedure appeared irregular, it was due to the unexpected flood of letters, which made a written answer to each impossible; we have dealt with 1,100 letters up to to-day. In view of the fact that the sufferings of our men are not being exploited by a quack remedy and with a knowledge of the pitiful situation revealed by the letters, I think that the best was done to meet a difficult situation.—I am, etc.,

H. M. LEFROY.

Imperial College of Science and Technology,
South Kensington, London, S.W., Feb. 9th.

*** In the *West Indian Bulletin* (1902) Professor Lefroy describes the "crude oil emulsion" pretty fully. It is made of:

10 lb. of whale oil soap
5½ pints of crude Barbados petroleum
4 oz. naphthalene.

When made by the directions given this is said to form a jelly, which from the description appears to be very similar to one of the samples obtained from one of the manufacturers mentioned in the printed circular supplied by Professor Lefroy in response to inquiries. It is largely diluted with water for use as an insecticide, the purpose for which it was devised having been the spraying of plants. In *Indian Insect Pests*, 1906 (which is a monograph by Professor Lefroy published by the Indian Government) the particulars given are less full. He says that the best emulsions containing crude oil are made by a special process. "Such an emulsion containing 80 per cent. of crude oil with 20 per cent. of whale oil soap is prepared and sold under the name of 'crude oil emulsion.' It was made at the entomologist's suggestion, and analysis shows it to be pure, containing the ingredients given above. . . . Obtainable in 5 gallon drums from chemists." It is not quite evident why Professor Lefroy should not publish the formula. There is apparently no reason to suppose that the Barbados crude petroleum would have a different action from any other variety, and in fact it appears to have been adopted at first because it was cheaper in the West Indies than the American crude. If the formula were published now there should be no difficulty in a satisfactory article being made by any manufacturer.

Medical News.

DR. WILLIAM DUNN, of Uppingham, has been appointed to the Commission of the Peace for the County of Rutland.

PROFESSOR VIVIAN B. LEWES will begin his course of Fothergill lectures at the Royal Society of Arts on motor fuels on Monday next; they will be continued on February 22nd and March 1st, at 8 p.m. on each day.

At the meeting of the Royal Microscopical Society at 20, Hanover Square, W., on Wednesday next, at 8 p.m., Professor G. Sims Woodhead will deliver his presidential address, which will deal with some of the microbiological problems of the present war.

At the general meeting of members of the Royal Institution on Monday, when the Duke of Northumberland was in the chair, special thanks were returned to Dr. H. D. Rolleston for his generous gift, in the name of Miss Davy, niece of Sir Humphry Davy, of a bust of that great chemist executed by Samuel Joseph in 1822.

At the meeting of the History of Medicine Section of the Royal Society of Medicine on Wednesday next at 5 p.m., Sir Alexander Simpson of Edinburgh will read a paper on Jean Anstruc (1684-1766), the historian of syphilis and of the Montpellier School. Nowadays he is more famous as the founder of the higher criticism of the Bible, and it is this aspect that will be considered.

WITH reference to the article on synthetic drugs in Great Britain in the last issue of the JOURNAL, Messrs. Burroughs, Wellcome, and Co. inform us that they made phenacetin on a small scale many years ago, but as they could not compete in price with the Continental product they did not continue to manufacture it. They are also able to prepare beta-eucaine, although they may not be able to supply it in competition with the price at which it has hitherto been obtainable on the Continent. With regard to hexamethylene-tetramine, they state that they have been manufacturing this for some time in large quantities and of a high standard of quality.

A DEMONSTRATION of the Coolidge x-ray tube took place at the meeting of the Röntgen Society on February 2nd, when a paper also was read by Mr. Sidney Russ, physicist to the Middlesex Hospital, giving some measurements he has been conducting on the radiation from the Coolidge and other tubes in clinical use. The Coolidge tube, as has already been explained, consists of a bulb almost completely exhausted, and of a spiral tungsten cathode, which is raised to white heat by means of a current from a few storage cells. The electroscopic measurements brought forward by Mr. Russ were directed towards a test of the character of the radiation for different spark gaps and for several values of the heating current, and also towards an estimate of the yield of x rays emitted under various conditions. The results of the tests were embodied in very elaborate tables and figures, but, put briefly, Mr. Russ finds that the radiation given out is heterogeneous, and that if the spark gap be kept constant the character of the radiation varies, but not very greatly, with the heating current. A comparative estimate of the yield of x rays emitted by the tube under various conditions was made by measuring the ionization produced in

the electroscope, and the two features of interest that Mr. Russ noted were, in the first place, a large increase in the yield of x rays produced by a small increase in the current used to heat the electrode, and, in the second place, a relatively large yield of "hard" (or more penetrating) x rays than of "soft" when the heating current was increased. Mr. Russ emphasized the warning already given in our previous article that the precautions which may have sufficed for tubes hitherto used by no means necessarily hold good for this new arrival.

NEARLY two years ago the Metropolitan Water Board and its workmen obtained exemption from the Insurance Act, and the Board undertook to provide gratuitous medical attendance for its 3,000 workmen. It was arranged that each medical officer should receive an inclusive payment of 10s. a year for each man on his list, this sum to include attendance, medicines, and all certificates required by the Board. It was arranged that every practitioner who was attending not less than twenty-five of the permanent employees should be included among the medical officers, and eighty-four district medical officers were so appointed. The scheme has worked well, and the appointments, with a change in one case, were recently renewed.

Obituary.

ROBERT BURNET, M.Sc., M.B., D.P.H.,
M.O.H. COUNTY OF CORNWALL.

THE news of the death, by accident, of Dr. Robert Burnet, medical officer for the county of Cornwall and the Cornwall Education Committee, will have been received with deep regret. He was at the time serving as sanitary officer with the division at Exeter. He had joined the Territorial Force at an early stage, and had served with the 2nd Wessex Field Ambulance, holding the rank of captain. In 1913 he was promoted major upon appointment as divisional sanitary officer. On mobilization he moved with the division first to Salisbury, and was promoted lieutenant-colonel at the early age of 39. He was riding in the neighbourhood of Exeter, where his division was stationed, with a brother officer, when his horse bolted and threw him, causing fracture of the skull, which produced death in a few minutes.

Robert Burnet received his medical education at University College, Liverpool, and graduated B.Sc. in the Victoria University in 1897 with first class honours and a scholarship; M.B., Ch.B. in 1900, and M.Sc. in 1901. We are indebted to Dr. A. Bygott, medical officer of the West Suffolk County Council, for the following sympathetic notice of Dr. Burnet's short career:

I first met Robert Burnet in 1902, soon after his appointment as district medical officer for the parish of Birmingham, and have been very intimately connected with him ever since. The appointment was a somewhat remarkable one, being the result of an attempt by an enlightened board of guardians to organize their outdoor medical department on the best possible lines by availing themselves of whole-time officers at what at that time was considered a substantial salary. Four men holding these offices in Birmingham afterwards became county medical officers—in the West Riding of Yorkshire, Derbyshire, Cornwall, and West Suffolk. Burnet took a keen interest in this work, and did his best to develop it, as far as possible, on the lines upon which it was intended, but he found that he was undertaking a practically impossible task. This is well shown in the very valuable evidence he gave before the Royal Commission on the Poor Law in 1907, in which he suggested that the medical services controlled by the boards of guardians should be transferred to the public health authorities, and when this policy was adopted in the Minority Report he supported it on every available occasion.

In 1908 he obtained the D.P.H. of the University of Birmingham, and within a few days of receiving it was selected for an appointment as M.O.H. for Handsworth, which he did not obtain. Within three months, however, he was elected as M.O.H. for the county borough of Bury, in Lancashire, and was soon afterwards appointed superintendent of the large combined isolation hospital in the neighbourhood. He was especially fortunate in succeeding two such distinguished sanitarians as Dr. Howarth and Dr. Brindley, who had brought the sanitary work there to a very high level, which level he fully maintained. He

developed the work of medical inspection, which had been commenced by Dr. Brindley, and assisted the council in starting a municipal hospital for tuberculosis, which was made possible by the benefaction of a private donor. He also gave evidence before the Parliamentary Committees in support of a comprehensive General Powers Bill.

In autumn, 1910, he was appointed county medical officer for Cornwall, an office presenting considerable difficulties, as this county is large and populous, and does not contain a single large town. Here he found a fitting scope for his very considerable abilities, and from personal knowledge it can be said that he was well fitted for such a herculean task. During his first year of office there was a very serious epidemic of poliomyelitis in the county, in the investigation of which he proved himself indefatigable, and in connexion with which he received a very serious blow. His only son, a brilliant boy who was destined for the navy, fell a victim to this disease; his life was spared, after a very serious illness, leaving him paralysed. Dr. Burnet read a very excellent paper on poliomyelitis at the annual congress of the Royal Institute of Public Health in Paris. He devoted much energy in the inception of the tuberculosis scheme for the county of Cornwall.

Dr. Burnet's early career was brilliant. He was a man of varied talents, and possessed no mean gifts as an artist and musician, though the strenuous life which he led in later years left him little opportunity for following these and other hobbies. He was singularly alert, throwing himself with ardour into every detail of anything he undertook. In his work he was one of the most conscientious men that I ever knew. In 1912 I spent several days with him in Cornwall. We made a housing survey together, and I was struck anew with his capacity for extracting enjoyment from the daily routine. Our busy lives diverged, and though we constantly corresponded, I only met him once again. His life was cut short at its highest point of fulfilment. Success had crowned his efforts in no light measure, and although one can wish a man no happier fate than that he should, in the prime of life, give that life for his country, yet a host of friends will mourn his loss, and the deepest sympathy will be felt for his young widow and his fatherless children.

COLONEL RICHARD EXHAM, C.M.G., A.M.S. (retired), died at Plymouth on February 1st. He was born on September 27th, 1848, the eldest son of the late Thomas Exham, of Monkstown, Cork, and was educated at Edinburgh, where he took the diplomas of L.R.C.S. and L.R.C.P. in 1871. He entered the army as assistant surgeon on April 1st, 1871, became surgeon in March, 1873, and surgeon-major on April 1st, 1883. He was promoted to colonel on November 20th, 1899, and retired on August 19th, 1903. He served in the South African war from 1899-1901 as principal medical officer of the Natal Field Force and of the lines of communication, and took part in the defence of Ladysmith and in the operations in the Orange River Colony, being twice mentioned in dispatches, in the *London Gazette* of February 8th, 1901, and of September 10th, 1901, and receiving the Queen's medal with four clasps and the C.M.G.

Universities and Colleges.

UNIVERSITY OF SHEFFIELD.

MR. ARTHUR J. HALL, M.A., M.D., F.R.C.P., has been appointed Lecturer in Medicine.

TRIPLE BOARD IN SCOTLAND.

War Service in Lieu of Curriculum.

THE Committee of Management of the Triple Qualification of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow, makes the following announcement: The Committee of Management of the Triple Qualification begs to announce to students who have undertaken approved service with His Majesty's forces that applications for partial recognition of such work in lieu of curriculum will be individually considered. Steps will be taken in each case to grant such concessions as appear to the Committee to be in accordance with the Recommendations of the General Medical Council.