

pointed out by Mr. Jocelyn Swan and others, the application of heat in any form in the more acute stages is contra-indicated, and relief is more likely to be found in cooling applications than in hot baths or radiant heat.

In the later stages, with which we are here concerned, there is functional loss of movement in the intrinsic muscles of the foot, with or without pain and swelling. The muscles have been completely inactive for some time and are wasted. Tissue changes have taken, and are taking, place. In addition to the blood extravasation through the walls of the damaged blood vessels, there has been inflammatory invasion of the surrounding tissues, and the products of this are not removed owing to stagnation in the veins and lymphatics. Massage and passive movements of the foot give much relief and do a great deal of good, and I think that, apart from electrical means, there is no better treatment to adopt, especially if it is carried out after immersion in hot water. In addition to this, however, some means of getting rhythmical contraction of the muscles is urgently called for, as it is the best method for re-establishing lymphatic and blood efflux; if this be left until too late, permanent tissue change will take place, with loss of muscular function, commonly leading to flat-foot.

Method of Application.

The patient sits with his feet in a warm foot-bath, deep enough to rise above his ankles. If it does not cause pain the temperature of the water may be 110° F. If this is painful, lower temperatures may be used.

After a quarter of an hour, water is removed from the bath until only the soles of the feet are covered as they rest flat on the bottom of the bath, the water rising between the toes, but not into the dorsum of the foot.

An indifferent electrode of a faradic circuit is connected to a piece of wet lint which encircles the ankle of the foot to be treated; it is better to do one foot at a time. The active electrode, a carbon plate, is first immersed in the water in front of the toes.

A metronome is in the circuit, making not more than fifty interruptions a minute, and the current is gradually introduced. It will be seen now that rhythmical contraction is taking place in the foot. The action of the interossei and flexors and extensors of the toes can be seen in a remarkably satisfactory manner. The simultaneous action of the opposing sets of muscles is unavoidable, and matters little, because the object in view is attained—namely, a rhythmical contraction and relaxation, with the certainty of increased blood supply, and efflux of blood and lymph from the part.

The stimulus should be weak at first, but it will be found as a rule that a good contraction of the muscles can be borne from the start if the whole of the above technique is followed exactly. The position of the electrode in the water can be adjusted in its relation to the foot, thus allowing a diffusion of the stimulus before it enters the tissues, and a more even application to different parts. Careful watch should be kept on the muscle contractions the whole time, and the treatment should be discontinued as soon as the muscles show signs of fatigue. This point will take longer to reach as the treatment progresses.

Results.

So satisfactory is this method, and so pleasing the appearance of the part, with the parting and closing of the toes by the action of the interossei, that it at once suggests itself as the best method of applying any form of electrical stimulus to the muscles of the feet, for whatever reason. It is highly probable, though hard to prove, that the deeper layers of muscles are all stimulated in some degree. On moving the electrode to the outer side of the foot, the abductor minimi digiti is seen to start rhythmical contraction, and on the inner side the abductor hallucis may be stimulated, and so on.

After this treatment voluntary movement will soon return in most cases, and care should be taken to elicit this as soon as possible. When it is established, regular and carefully selected exercises should be given until the muscles have regained their tone and ready response. Above all things, until tenderness has disappeared from beneath the feet on pressing them to the ground, the patient should not be allowed to walk about the hospital. His first essays in walking should all be carried out under

instruction, as otherwise he will probably develop a bad style, and I have seen cases of flat-foot which I believe to have been acquired in this way.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

MALIGNANT DISEASE AFTER INJURY.

UNDER present war conditions injuries to bone, accompanied or unaccompanied by suppuration, are of relatively great frequency. In addition to bone lesion, such injuries may be associated with extensive cicatrization. In view of the common belief that squamous cell carcinoma is liable to occur in an ulcer or scar of long standing and that sarcoma is liable to supervene on injury to bone, I have examined the records of the Middlesex Hospital in order to obtain some idea of the future chances of the wounded soldier in these two respects.

Out of over 10,000 records of malignant disease less than 1 per cent. are examples of cancer affecting the skin of trunk or limbs. Amongst these, cases of carcinoma arising on scars form a very small proportion and have chiefly been associated with cicatrices from extensive burns. Somewhat allied to this class are rare cases affecting the face where lupus has been treated with x rays, and the less uncommon cases where cancer has developed on the scalp at the seat of a sebaceous cyst of long standing.

Histological diagnosis indicates that sarcoma constitutes about 9 per cent. of all malignant disease, affects practically all regions of the body, and occurs at all ages with fairly uniform distribution. Direct association of sarcoma with injury is not often recorded; when it is stated to have occurred the sarcoma most frequently affected a long bone.

So far as concerns date of onset of the malignant disease after the trauma carcinoma and sarcoma are in marked contrast; "one year since injury" is an average period when sarcoma is said to have followed on injury of a long bone; "twenty years since injury" is an average period when carcinoma develops in a scar.

It will be seen, therefore, that past experience is reassuring; the probability that a given soldier will suffer from malignant disease at the site of his wound is so small that it may be neglected. Nevertheless, the total number of wounds, injuries to bone, and cicatrices will be very considerable, and there can be no doubt that examples of the type of malignant disease under consideration will not be infrequent in coming years.

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GUNSHOT WOUND OF ABDOMEN IN A BOY.

A boy, aged 6, was admitted to the Royal Devon and Exeter Hospital on the evening of November 19th, having been brought from Chagford in a motor car. With other children he had been playing with a loaded rook rifle when it went off; the bullet entered his abdomen on the right side of the umbilicus, and was evidently directed upwards. On admission the child was very collapsed and his clothing saturated with blood.

He was taken to the theatre and anaesthetized; the abdomen was washed with methylated ether and painted with tincture of iodine. An incision about 4 in. long was made to include the entry wound, from which blood was flowing freely. On opening the abdomen the lower part was found full of blood, which was wiped out and the pelvis packed with gauze; the coils of small intestine were then in turn taken out of the abdomen on to hot Cripps pads and the wounds in the small intestine sought for and in turn sutured; there were sixteen wounds, and from some of them portions of food and blood clot were protruding; the last hole was in the left mesocolon. The operation wound was sutured in layers and closed and the child put back to bed. A normal saline enema with glucose was ordered every six hours. As the last coil of the ileum was being returned a very long and slightly inflamed appendix made its appearance; to avoid possible future trouble this was removed in the usual way.

The temperature was 100.8°; it rose on the next day to 101.6°, and on the evening of the third day to 103°, but the next morning it fell to 100°, and did not afterwards rise above 99° except on the seventh day, when all external stitches were removed. On this day the child was observed to have some irritation posteriorly in the left loin; a hard point which could be felt under the skin was cut down upon and a small rifle bullet easily extracted.

The child made a good recovery, and was discharged cured on January 12th no whit the worse for his experience.

EDWARD J. DOMVILLE,
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AN ERRANT RABBIT BONE.

THE report on February 2nd, 1918, p. 166, of an errant fish-bone by Dr. I. David of Colombo brings to mind a similar incident in which a rabbit bone was concerned. I attended a gentleman, aged about 50, in March, 1882, on account of a swelling in the left iliac fossa, with symptoms of colic. A week later I found him still in bed with a temperature of 104°, when he was suddenly seized in my presence with vomiting and purging. Although enjoined by me to stay in bed he went to business next day and considered himself well.

Some months after, the late Mr. Reginald Harrison read at the Liverpool Medical Institution a case in which a rabbit bone had passed by the urethra. On asking Mr. Harrison for particulars I found we had both had to do with the same person. It seems that in April, 1882, this gentleman was seen by Mr. Harrison on account of a large swelling at the base of the bladder, irritability of that organ, pus in the urine, and the escape of gas bubbles at the end of micturition. Later, in the urinary deposit striped muscular fibres were found. Early in June, 1882, he reported himself greatly better after the passage by the urethra of a bean-like body $\frac{3}{4}$ in. long, which he brought to Mr. Harrison and had taken for a stone. This on being cleaned proved to be part of a rabbit's femur. Gas bubbles continued to issue for a few months, but during the following year he became quite well.

It is evident that during my attendance the bowel was undergoing perforation and adhesion to the bladder, with a toxic "crisis" evinced by the vomiting and diarrhoea. Later the perforation of bladder and the formation of a vesico-intestinal fistula were proved by the presence in the urine of striped muscular fibres derived from food. No particular date was given on which the patient had eaten rabbit, which, however, he often did.

Mr. Harrison in his report also quoted two similar cases: (1) a swallowed hair pin passed by the urethra as a calculus, of which it formed the nucleus;² and (2) a swallowed piece of slate pencil removed from the bladder by lithotomy.³

Liverpool.

RUSHTON PARKER.

Reports of Societies.

PURPURA AND HAEMOPHILIA.

At a meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine on March 22nd, Dr. ROBERT HUTCHISON being in the chair, Major W. PALMER LUCAS, Professor of Pediatrics at the University of California, spoke of clinical experiments he had carried out according to the methods described by Dr. W. H. Howell, Professor of Physiology at the Johns Hopkins Hospital. Three factors were essential to clotting: (1) Prothrombin, (2) thrombin elements, and (3) the substance known as antithrombin, which held the blood in solution. If the coagulability of the blood were decreased there was either an increase of antithrombin (as in cases of purpura due to streptococcal infection and in some cases of jaundice), or a decrease of prothrombin. This occurred in most cases of purpura and in haemophilia. In Henoch's purpura, for instance, prothrombin was decreased during an attack; the decrease was very marked, and the amount of prothrombin

present was always below normal. In blood transfusion for purpura he preferred whole blood to serum, as in some serums there was an excess of antithrombin. Good results had been obtained from blood transfusion in purpura, but in haemophilia he had not been able to raise the prothrombin factor enough to obtain success. He usually depended upon rest and local treatment. Haemophiliacs usually bled up to a certain point and then stopped. If the blood were examined at once (and it was very difficult to get a sample at this time) the factors were practically in the normal condition. The whole factor in coagulation was the balance between prothrombin and antithrombin. Replying to questions, Major Lucas said it was not advisable to employ the method in private homes. A hospital laboratory was required. Kephalin was not by any means a panacea. He had used it on haemophiliacs, but it had not had much effect. There were, he said, two types of the haemorrhagic disease of the newly born: (1) in which the antithrombin factor was increased—the septic cases belonged to this type, and the mortality was very high on this account; (2) in which there was diminution in the amount of prothrombin. In one case recovery followed whole blood transfusion. So far he had done no work on syphilitic cases. The reason for the want of balance between prothrombin and antithrombin was at present being worked at, but so far, analyses had given no results. The investigation was difficult on account of the number of tissues that had to be analysed. In rheumatic purpura prothrombin was usually deficient. He had noticed that haemophilic patients were often able to predict the moment of recovery. This was especially so in the case of children, who often announced that they were "now going to get quite all right," even though there appeared to be no change in the condition. It was often possible to tell the moment of recovery even from the facial expression.

VALUE OF X-RAY TREATMENT.

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, on February 15th, Dr. W. G. HARVEY, Major R.A.M.C. (T.C.), assistant physician and in charge of X-ray Department, Adelaide Hospital, Dublin, gave an estimate of the value of x-ray treatment in various conditions, founded upon an experience of over 500 cases. His observations were summarized as follows:

1. Ringworm. In this the rays were used as an epilating agent. A fortnight after a proper dose of x rays the irradiated area shed all its hair, healthy and parasitic, while some three months later a new growth of hair, free from the parasite, occurred. This treatment was the best for the cure of ringworm. It was certain, painless and rapid, and left the child free from infection within a month of starting. There were, however, many technical points which required attention, or accidents—for example, alopecia—might occur.
2. The results in favus theoretically should be equally good, but such cases often became reinfected.
3. Rodent ulcers in general did well, unless the periosteum or cartilage were involved. True epithelioma were more variable, but many responded well to x rays.
4. Epithelioma on a lupus site should never be treated with x rays—the results were very bad.
5. Warts—senile and juvenile—were amenable to x-ray treatment. Four cases of warty growths on the feet did well.
6. Keloid was satisfactory in its response to x rays.
7. Lupus did well, but the cosmetic results of Finsen light were probably better. Tuberculin injections appeared to favour the treatment.
8. Lupus erythematosus was not benefited.
9. The results with tuberculous glands had not been all that was to be desired.
10. Actinomycosis (one case) was not affected. In the treatment of neoplasms and deep-lying tissues much improvement had been obtained since the methods of "filtration" and "cross fire" were introduced.
11. The symptoms of Graves's disease subsided under x rays. No considerable benefit was derived in simple goitre.
12. Malignant tumours, whenever possible, should be surgically removed. When that was impossible x rays might occasionally bring about a cure, and frequently relieved pain and diminished the tumour.
13. Uterine myomata and enlarged prostates required massive doses of x rays, but with them appeared to do well.

In the discussion which followed Dr. MOORHEAD said that he looked on x rays as a specific in the treatment of Graves's disease, but Dr. CROFTON raised the question whether there might not be danger of thyroid insufficiency following the treatment.

¹ *Liverpool Medico-Chirurgical Journal*, 1883, p. 185.

² Mr. Brownhill, *London Medical Gazette*, October, 1845.

³ Mr. Alfred Roberts, Sydney, N.S.W., *Med. Times and Gazette* July 30th, 1859.

years, after his retirement from practice, was the preparation of a translation of Dante's poems; a translation of Hell was published about two years ago, and those on Purgatory and Paradise were in course of preparation. His health began to fail early in 1917; he became seriously ill in August, and died on December 11th. He is survived by his widow, by a daughter, and by a son who holds a Government appointment in Burma.

DR. BROOKS H. WELLS of New York, professor of gynaecology for many years at the New York Polyclinic Medical School and Hospital, and editor since 1892 of the *American Journal of Obstetrics and Diseases of Women and Children*, died recently at the age of 58.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE degree of Doctor of Medicine has been conferred on Eric A. Pearce-Gould, and the degree of M.A. *honoris causa* upon R. H. Anglin Whitelocke, M.D. Edin.

UNIVERSITY OF CAMBRIDGE.

PARLIAMENTARY REGISTER.

THE Registry of the University desires to make it known to graduates who are not already on the register as members of the senate, including Bachelors (who became full Bachelors in the December of the year in which they were admitted to their degrees), that they are entitled to be placed on the register of parliamentary electors of the university under the provisions of the Franchise Act of 1918. Forms for making the necessary claim will be sent on application to the Registry.

UNIVERSITY OF MANCHESTER.

THE following gentlemen have obtained the Diploma of Public Health: G. M. Coope, Isaac Flack, T. E. Flitcroft, J. E. Lezama, H. E. R. Stephens.

UNIVERSITY OF ABERDEEN.

AT the graduation ceremony on March 22nd the following degrees were conferred:

M.D.—F. L. Keith, W. B. Livermore, Major J. Macpherson, A.A.M.C.,

*W. L. Miller.

M.B., Ch.B.—† J. D. Brown, I. G. Innes, Winifred M. A. Kirdness,

Mary J. M. MacLaren, A. Ritchie.

* Commended for thesis. † With second class honours.

‡ Passed fourth professional examination with distinction.

UNIVERSITY OF GLASGOW.

RESEARCH FELLOWSHIPS IN MEDICINE AND APPLIED CHEMISTRY.

UNDER the bequest of the late William Brechin Faulds, Writer in Glasgow, a Research Fellowship in Medicine, of the annual value of about £200, tenable for three years, has been founded in the university. The Fellowship will be awarded, on the recommendation of the Faculty, by the *Senatus Academicus* to a recent graduate in medicine who has shown capacity for independent inquiry or research. He will devote himself to some branch of work approved by the *Senatus*, and will not engage in professional practice. He may be authorized or required to pursue his inquiry for one year elsewhere than in the University of Glasgow. The Ferguson Trustees have announced their intention of founding a Research Fellowship in Applied Chemistry, also of the annual value of £200, tenable by a Bachelor of Science of the University. He will be expected to carry out his investigations either at the university or at the affiliated Royal Technical College.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AT the meeting of the Royal College of Physicians of London on March 25th, when Dr. Norman Moore, as is noted elsewhere, was elected President, it was resolved, on the recommendation of the Committee of Management, that, inasmuch as the South African College, Capetown, is to become the university of Capetown on or about April 4th, the courses of instruction in chemistry, physics and biology, anatomy and physiology, hitherto recognized by the Conjoint Board in England when given at the South African College, shall be recognized under the constitution of the new university, and that the examination in chemistry, physics, and biology for the degree of bachelor of science of the university of Capetown shall be accepted in lieu of the first professional examination of the Conjoint Board in England in those subjects. The Western University, London, Ontario, was restored to the list of universities recognized by the Examining Board of England. At the same meeting a gift from Mrs. John Abercrombie of a pair of scales, formerly the property of Dr. Edward Jenner, was accepted.

Medical News.

THE Wellcome Historical Medical Museum will be closed for cleaning from April 1st to 30th inclusive.

ANDREW TAYLOR STILL, the founder of "osteopathy," died recently at the age of nearly 90.

AT a meeting of the College of Ambulance, Vere Street, London, on March 23rd, it was decided to place the institution on a permanent basis, for which purpose a considerable sum of money will be needed. Its founder, Sir James Cantlie, expressed the hope that it would be linked with the University of London, and brought into relation with the new Ministry of Health.

A PAPER on the medical aspects of the food problem will be read by Dr. Robert Hutchison at a meeting of the West London Medico-Chirurgical Society, at the West London Hospital, on Friday, April 5th, at 8.30 p.m.

PROFESSOR ARTHUR KEITH will give at the Royal Institution after Easter a course of five lectures on British anthropologists, and Dr. C. S. Myers two lectures on present-day applications of experimental psychology.

AN entrance Salomons Scholarship of £50 at Epsom College will be vacant at the beginning of the summer term. Applications must be received, addressed to the Secretary of the College, 37, Soho Square, W., by April 6th.

THE annual meeting of the Medical Sickness Annuity and Life Assurance Society will be held at the Holborn Restaurant on Friday, May 3rd, at 4 p.m. Nominations for members of the committee must be received in writing at the society's office, 300, High Holborn, W.C., not later than one month before the date of the meeting.

THE regulations of the University of London with regard to the M.D. (State Medicine) have been amended to recognize laboratory experience at a base hygiene laboratory and experience in charge of a base district on lines of communication of a British expeditionary force. Full particulars can be obtained on application to the Academic Registrar.

THE University of Edinburgh has accepted an invitation to attend a conference summoned by the Foreign Secretary and the Minister of Education to consider, with representatives of other universities, the possibility of establishing closer connexion between British universities and those of the allied countries. The conference is to be held on May 9th.

AT the monthly meeting of the Central Midwives Board on March 21st, the chairman, Sir Francis Champneys, referred with deep regret to the death of Mr. Arthur Henry Williams Ayling, L.S.A., who had represented the Society of Apothecaries, and announced that Mr. Charles Sangster, M.R.C.S., L.S.A., had been appointed his successor. Twenty-nine midwives were removed from the roll on their own application. At the meeting on the previous day four women had been struck off the roll on various charges.

THE Prehistoric Society of East Anglia is an energetic body which now draws members from districts far beyond its borders, and not a few among them are members of the medical profession. Its president last year was Dr. A. E. Peake, who does not reside in East Anglia, but his address described some new excavations of Grime's Graves at Weeting, in Norfolk. Like other papers in the *Proceedings*, and like indeed a great part of the matter on prehistory now being published, it is largely concerned with attempts to date, or rather to find epochs for, the objects unearthed.

AT the annual Court of Governors of the Hospital for Epilepsy and Paralysis, Maida Vale, on March 22nd, the observations made by Mr. Hodge, to which we referred last week (pp. 346, 352), and the letter by Professor Elliot Smith in the *Times* of that day, were discussed. It was pointed out that the Home of Recovery at Golders Green was established as a branch of the hospital at the end of May, 1917, to receive men, on the recommendation of the Ministry of Pensions, who had been invalidated from the services suffering from what is commonly known as "shell shock." Two resolutions prepared spontaneously from the patients at present in the Home, numbering 95, and signed by all, had, it was reported, been sent to the Committee. The resolutions stated that all having benefited, and in many cases recovered, they desired to express their contentment and satisfaction with remaining in the institution. Past experience in general hospitals had taught them to appreciate separation from other cases, especially from the so-called "cheery man"; they preferred "to risk the air raid results before that of going to another hospital."