health had been maintained with one kidney only; and further that the diagnosis ventured on during life as almost certainly true from the history and symptoms was abundantly confirmed by the *post mortem* examination.

TRANSVERSE FRACTURE OF THE UPPER END OF THE TIBIA BY INDIRECT VIOLENCE.*

By W. H. JALLAND, F.R.C.S., York.

ON Friday, August 20th, my partner, Mr. Husband, was sent for to see a joiner named W. G.; and, in his absence, I went. I found W. G. in bed; he informed me that he met with his accident in the following way. He was sitting upon the roof of a shed in his yard, with his legs hanging over the side, doing some repairs, when he suddenly slipped, coming to the ground upon his feet, a distance of from six to eight feet. He rolled on the ground; and, upon attempting to rise and walk, found he was unable to do so. He was then carried into the house. Upon making an examination, I found the left knee-joint very much swollen from effusion into it; and also detected a transverse fracture of the tibia, just below the tuberosities, the separated portion being split into two pieces, apparently from the lower end having been driven into the upper one. The outer tuberosity was displaced somewhat outwards, and the head of the tibia measured an inch more in circumference than the sound one. The fibula was not broken. Mr. Husband afterwards examined the leg, and quite agreed with me as to the nature of the injury. The limb was placed upon a Macintyre's splint, slightly bent, and an evaporating lotion applied to the knee. It was kept upon this a little over five weeks, when the splint was taken off, and a gum-and-chalk bandage put on.

The peculiarity of the case is that the head of the tibia should be fractured by indirect violence, and with such apparent ease, the distance which he fell being at the most eight feet. As a rule, the bone that is injured from a fall upon the feet is the femur, either the neck or the shaft; and the reason is manifest, there being but one bone in the thigh to receive the shock. In the leg, the case is different; there being two bones, the fibula as well as the tibia must sustain some of the force; and, in this case, the fibula was not injured, but the tibia was broken at its thickest part. The patient informed me that the leg was perfectly right before the accident. The man, the recipient of the injury, is sixty-one years of age, but looks older, has the arcus senilis well marked, and his arteries, also, are in a rigid condition (atheroma?), showing that the tissues are undergoing a process of degeneration. His bones seem peculiarly liable to fracture, as he tells me that he has previously sustained fractures of the right tibia and ulna, and also some ribs. I have referred to several surgical works, but can find no mention of a fracture of the upper end of the tibia being occasioned in this manner, all writers giving direct violence as the cause.

CASE OF RHEUMATOID ARTHRITIS OF TWO YEARS' DURATION SUCCESSFULLY TREATED AT WOODHALL SPA.

By ROBERT CUFFE, M.R.C.S.Eng., Woodhall Spa.

COLONEL — of the Royal Artillery, India, aged 55, of small stature and very temperate habits, had led a very active Indian life, being fond of sport; he had spent nights in the Himalayas watching the habits of game. His father was slightly gouty. In June 1871, when travelling in a railway carriage he caught cold from draught. Two days afterwards, a lump came on the nape of the neck, with thickening of the surrounding parts. In July, Buxton was tried; and, after three weeks' baths, the heels became painful and the joints of the fingers were swollen, with a good deal of constitutional disturbance. These symptoms gradually yielded. In December 1871, he sailed for India, and seemed to recover a little. In July 1872, he was taken seriously ill with symptoms similar to those at Buxton, with great febrile disturbance. The wrists were swollen; the hips, shoulders, and back were also affected; he could only walk with difficulty, and was obliged to be fed for some months. In December, he returned to England and consulted an eminent London physician. In May 1873, he was sent to Aix-les-Bains, and tried the sulphur springs for five weeks, with some improvement. In June, he went to Evian, Switzerland; and the baths there were tried with but little improvement. In August, Wildbad Spa was

visited with the like result after five weeks' treatment. In October, he returned to England. He tried Evaux-de-Challis waters from November 1873 until February 1874. From these various baths, he derived but little more than temporary relief.

In February 1874, he commenced the Woodhall water treatment at home. Finding, after a few weeks, marked improvement, he was induced to go to Woodhall the following April. The following was his condition on April 29th. He walked lame from thickening around the tendo Achillis of the right leg. There was some amount of thickening of the left wrist, with impaired action, enlargement of metacarpophalangeal and first phalangeal joints, especially those of both middle fingers. He was unable to flex either hand or to mount his horse, from stiffness in the lumbar region and left shoulder. He was unable to raise the left arm fully. He had only three teeth; the loss of the others he attributed to salivation. His heart was feeble; the sounds were otherwise normal. In the urine, there was an excess of uric acid, with lithates. His appetite was good.

After five weeks' treatment with baths, hot douches, etc., he could walk with ease a considerable distance; the thickening of the tendo Achillis had disappeared; he had free action of the wrist; he could flex both hands freely, except the middle right finger; and the thickening of the finger joints had become greatly reduced. Iodism was produced; and he left on June 4th.

On August 13th, he reported: "I am gradually recovering the use of my hands and fingers, and absorption is being continued." At intervals, he repeated the Spa treatment, until its influence on the system was produced.

On October 13th, he returned to the Spa. He had much improved; he now used the gun, and could exercise with his sword, which he had not done since he left India. On October 22nd, he left the Spa, continuing local treatment as before.

On January 12th, 1875, he reported as follows: "I have much pleasure in stating that the use of the baths of the Woodhall Spa, combined with the drinking of the iodine and bromine waters there and at home, have restored to me the use of my limbs and hands, which were crippled by rheumatoid arthritis for nearly two years. I may say that, after trying the baths and waters at Aix-les-Bains and Wildbad, none have had such a decided beneficial effect on the chronic rheumatic enlargements of the tendons as the Woodhall Spa waters." I may add that this patient's desire to return to his regiment to complete the remainder of his time, induced him to seek every means possible to effect that end. He consequently most zealously carried out instructions in every detail, not only the usual bath and local treatment, but the dietetic regimen, to which may be attributed a more rapid recovery than is usual in similar cases. He returned to his regiment in India in January 1875.

The notes of this case were supplied by the patient, as well as the report of his recovery on leaving England.

REMARKS.—From observations in similar cases, both in private as well as those in the hospital, I have noticed that the metacarpophalangeal and first phalangeal joints of the middle fingers were more tardy in recovery than others.

It may be interesting to inquire what has led to this rapid recovery after all the usual means had failed; again, what is the therapeutic action of iodides in the human organism? and why are they more potent in natural mineral waters than when chemically produced?

In the first place, iodine when set free exercises a solvent action on organic matters by its oxidising effects. Dr. Broadbent says that iodine is permitted to exercise its influence on the seat of disease in virtue of the comparatively slight affinity by which it is held in union with the base; this being so feeble that, in the presence of certain forms of living protoplasm in active change, the salt is decomposed, and the iodine set free to exercise its solvent action on the organic matters, whether this be direct or indirect, through the well known oxidising effects of free iodine is not so certain. Professor Binz of Bonn says that iodide of potassium undergoes the following changes when taken internally, in a healthy stomach: a part is changed by the hydrochloric acid into hydriodic acid ($KI + HCl = KCl + HI$); another portion is acted on by the chloride of sodium, so that iodide of sodium is formed; and, if the dose be large enough, a part remains unaltered, all the three combinations quickly pass into the circulation; the hydriodic acid here meets with soda, and forms iodide of sodium, but the alkaline combinations of iodine are again acted on in the tissues by carbonic and other acids, and iodine is set free; this free iodine has the property of combining with certain albuminous bodies; and in this, Dr. Binz believes, lies the explanation of the therapeutic action of the preparation of iodine.

If this theory be the correct one, it explains why the iodine combined with soda—as in the Woodhall water—is less irritating and more

* Read before the Yorkshire and East York and North Lincoln Branches.

powerful (according to some French writers) than when it has potassium as a base; for here we have the chemical changes shortened by the already existence of iodide of sodium to be decomposed by the carbonic acid, so as to set free the iodine.

Dr. Murchison, in the Croonian Lectures on the Functional Derangements of the Liver, says that certain morbid conditions of the blood—which he designates lithæmia, whether induced by a structurally faulty liver, which is hereditary, or from too generous living—are produced by the presence of insoluble products from the liver, such as lithic acid and lithates; and this functional derangement may lead to destruction of the secreting tissue, and less oxidised products result, as leucin and tyrosin. These morbid changes are induced by an imperfect disintegration of albuminous matter, instead of being duly oxidised and eliminated by the kidney in the form of urea. Now, as iodine when set free will act on the unoxidised albuminous matter, and so prevent the formation of lithic acid and lithates, it explains the great relief afforded in such cases of blood-poisoning as rheumatism, gout, and calculous diseases.

Although artificial mineral waters apparently are identical with those of the natural springs, still the action of the former is most feeble and unsatisfactory compared with that of the latter; Scoulteten suggests that the electrical condition of the water of many natural springs explains their more potent action; but he does not even venture to explain why. What is this chemistry of nature which hitherto has never been solved? I venture an hypothesis of the existence of cesium and rubidium, and believe that ere long the spectroscope will reveal the existence of these two metals, which were discovered by Bunsen and Kirchhoffner in mineral waters, and in salt springs in the form of cesium chloride. Now, as the Woodhall water contains powerful chlorides, it is not unreasonable to assume the existence of their presence. Cesium is electro-positive towards rubidium, and is the most electro-positive member of the elements; I would, therefore, venture to say that if these metals are present, an electrical condition is going on in the system during the chemical changes of the iodine solution.

THERAPEUTIC MEMORANDA.

THE SUBCUTANEOUS INJECTION OF WATER.

WHEN reading, a few weeks ago, an extract from *L'Union Médical*, and other memoranda, relating to this practice by Drs. Lélut, Burney Yeo, and G. de G. Griffith, I remembered to have read in the *Nouveau Dict. de Méd. et de Chir. Pratiques*, under the article, Douleur, by M. Georges Dieulafoy, a description of the same proceeding. Circumstances, however, prevented me from consulting the eleventh volume of that work, and it was not until the other day that I was able, in the library of the College of Surgeons, to make the following extract (pp. 684-5).

“... des injections souscutanées. Je veux insister seulement sur un procédé des plus efficaces et encore peu connu, qui nous donne depuis quelques mois des résultats merveilleux à l'hôpital Necker, dans le service de notre savant maître M. Potain. Le médicament que nous employons n'est ni d'un prix élevé, ni difficile à se procurer; on le trouve toujours et partout, c'est l'eau ordinaire, l'eau bonne à boire. D'après les expériences très nombreuses, que nous avons recueillies voici ce qu'on peut avancer. Quand un individu est atteint d'une douleur, quelque soit son siège et quelle soit sa nature, on peut sans inconvénient combattre la douleur par les injections d'eau, et dans un grand majorité des cas le résultat obtenu est immédiat.”

This volume was published in 1869; consequently, it does not preclude the idea that Dr. Griffith was one of the first to adopt this simple agent in 1868. But it seems probable, although no date is mentioned in his note, that Dr. Yeo's assistant had been anticipated, as had also Dr. Lélut, by M. Potain at the Hôpital Necker. It will be strange if such a simple method of relief from some of the results of the primal curse be not tried to its utmost capacity.

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ON THE TREATMENT OF CHRONIC DYSENTERY.

IN THE BRITISH MEDICAL JOURNAL of December 25th, there is a paragraph referring to the treatment of chronic dysentery with benzoin. Four years ago, when I was visiting physician to the Scamen's Hospital, Greenwich, I made several trials of the compound tincture of benzoin in the cases of chronic dysentery that came under my care. I was not aware that the drug had been tried before in this form of disease; but its use was suggested from its effect on mucous membranes generally. The results of my experiments were, that benzoin had no effect in checking the disease or in alleviating the symptoms, and that it

was not comparable to small doses of ipecacuanha frequently repeated. Possibly the cases treated by Mr. R. Donaldson differed in some respects from the cases under my care at Greenwich; and I have no intention of questioning the accuracy of his statements. I only wish to state that the medicine has been tried in this country, and that in my hands it has not succeeded. I found it necessary to exercise great caution in admitting the virtues of any drug in this disease, and it is natural in so chronic and wearing a disorder that any remedy is looked to with expectation by the patient, who is always hopeful that some remedy has been found to alleviate his misery; at least this was my unvaried experience in the numerous trials that I made of various drugs.

The conclusion at which I arrived was, that the disease was best treated by rigidly keeping the patient at rest in bed, in a supine position; by carefully regulating the temperature of the room to about 62 deg. Fahr.; by restricting the diet to few and simple foods, chiefly milk and mutton; and by administering, at frequent short intervals, every three hours, small doses (three to five grains) of the powdered ipecacuanha. If nausea were produced, the dose was diminished or omitted for a time; as I consider that it is very desirable to avoid inducing any disinclination to food. Alcohol in any form very decidedly aggravates the symptoms, and it was always strictly forbidden. These conclusions perhaps contain nothing new; but they result from the trial of many drugs, all of which were found far inferior to ipecacuanha.

REGINALD E. THOMPSON, M.D.

TREATMENT OF EPISTAXIS.

ON referring to THE BRITISH MEDICAL JOURNAL of January 1st, I noticed an article on Epistaxis, and its Treatment by the Internal Administration of Ergot, by Dr. George St. George. He gives particulars of three cases, and I wish to record a severe case which I treated lately, and with a more satisfactory effect, from plugging the nostrils with the liquor ferri perchloridi, than he asserts the latter can have. On Christmas Eve last, I was urgently requested to see a gentleman, aged 82 years, who was said to be bleeding from the nose. On reaching his residence, I found him sitting up in a chair, supported by two females on each side of him, and holding his arms above his head. Blood was streaming profusely from both nostrils and from his mouth, and at his feet was a large basin filled with bright blood, and containing some clots. The floor also was deluged with the same fluid, and he must have lost an incredible amount, as evidenced by his prostrate condition, blanched face and lips, and almost of imperceptible pulse at the wrist. I at once determined to plug, and, with the kind assistance of Mr. James Macaskie, student of medicine, who rendered valuable assistance during the operation, I filled the nasal passages with strips of lint soaked in a rather strong solution of liquor ferri perchloridi, and in a few minutes had the satisfaction of finding that the bleeding had been completely stopped. On examining the throat, I noticed a small clot projecting from the posterior nares, and the patient expelled this from his mouth by hawking. All bleeding was now completely stopped, and, for safety, I remained about an hour longer, and there was no return of the hæmorrhage. Before I left, however, I thought it advisable to give him a little of the liquid extract of ergot; but this could have had little effect, as bleeding had been completely restrained by the previous treatment. Next day, I saw him, and he was in a very exhausted state; but there had been no return of the bleeding. His pulse now was 80, and very irregular in force and rhythm, and his heart gave indications of very disordered action without, however, any murmurs being present at any of the orifices. Other organs were normal. He had, however, been lately troubled much with constipated bowels, and, shortly before this attack, he had complained of his head feeling heavy, and of slight pain in the frontal region. Otherwise his habits had been temperate, and for some years he had been accustomed to take oatmeal porridge night and morning as part of his diet.

On the evening of this day, I was again requested to see him, as his friends thought that the bleeding had returned; and, on hastening to see him, I found that he had inadvertently removed one of the nasal plugs, and this had excited a slight flow of blood: a very small quantity indeed. I re-introduced a new plug dipped in the iron-solution, and the bleeding was at once stopped, and there has never been any return of it since. With careful nursing and caution in diet, and the observance of absolute quietude on the patient's part, he has now so far recovered as to be able to walk out for a little to-day (January 3rd).

I would now wish to make a few remarks on this not uncommon complaint, and first as to the causes at operation in the production of epistaxis. The following may be enumerated. *Predisposing*.—The hæmorrhagic diathesis, and any cause which may weaken the walls of the capillary vessels of the nasal mucous membrane. It is common