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.