affection of the periosteum, rendered it probable that this was not an ordinary case of abscess in the tibia. Having shortly before had a somewhat similar case, in which the pain was relieved, although a very small quantity of matter was evacuated, I recommended that the tibia should be trephined.

The operation was accordingly performed on the 27th of September. The patient having been rendered insensible with chloroform by Dr. Snow, a trephine, five-eighths of an inch in diameter, was applied over the centre of the larger projection about the middle of the tibia. The surface of the bone was here found to be soft, but its substance was hard as ivory, and it was with much difficulty that the trephine was made to perforate it. The original cavity of the bone was found to be occupied by dense bony structure, so that a cylinder of solid bone, an inch in depth, was removed, without any cavity or cancellous structure being exposed. The centre of the portion of bone thus removed was found, when subsequently more carefully inspected, to be softened to a very limited extent.

A smaller trephine, three-eighths only of an inch in diameter, was then applied over the second projection lower down upon the tibia. The bone here was much softer, and before the instrument had penetrated half an inch, a small cavity was opened containing some thin brownish-looking matter. This cavity was examined with a probe, and extended a little way up the centre of the bone.

The smaller trephine was now again applied about midway between the two former openings. The bone here was softer than in either of the other situations, and the instrument entered its substance readily. It had penetrated about three-fifths of an inch, when a considerable quantity of reddish matter oozed up by its side, and the trephine entered a distinct cavity in the bone; a probe introduced through the aperture passed up to the neighbourhood of the first opening made by the larger trephine. This was therefore enlarged, and a communication established between it and the opening last made. The cavity exposed by the second application of the trephine appeared not to communicate with the other. Had it done so, the matter would have passed through it, and not have been forced up by the side of the trephine when applied the third time. The two collections of matter, in all probability, corresponded to the two distinct injuries which the part had sustained.

For some days after the operation, the patient suffered severe pain in the leg, but nevertheless occasionally got some natural rest at night. On the 2nd of October, he for the first time experienced an interval of complete ease. The pain, when it recurred, had now changed its character. It was rather an excessive smarting than the dull aching sensation formerly experienced.

On the 6th of October, the pain from which he had so long suffered had entirely subsided, but he complained of an increase of the smarting sensation upon the surface. He was directed to apply some flannel sprinkled with chloroform over the leg, but experienced little relief from its use. On the 7th, he had some remission from the smarting pain, but it returned again on the 8th. On the 9th, he continued tolerably easy, but the pain again recurred on the following day. On the 11th, a fortnight after the operation, he was free from pain, and slept well, although the parts were still tender to the touch. On the 19th and 21st of October, he continued free from pain.

This patient continued under observation during the month of November, after which he left town. There had been no return of pain at that time, the swelling of the leg had gradually subsided, and he slept soundly at night without any medicine. There was every reason to believe that he was permanently relieved of a complaint which had for so long a period caused him so much suffering.

In cases like the preceding, where a continued pain fixes itself in a bone, and where its nature cannot be satisfactorily ascertained from the symptoms, an exploratory operation may be necessary. The interior of the bone may be occupied either by pus, or by some more solid morbid deposit, or by scrofulous matter, or by a piece of necrosed bone. In such doubtful cases, I have been led to prefer, in the first instance, a trephine of a small diameter to one of a larger size. A portion of bone is by this means more quickly removed, and the opening made more readily heals. Should the first application of a small trephine not discover the disease, a second or a third opening may be made in the bone without inconvenience.

The accompanying wood-cuts (which were introduced to illustrate some other points, in a paper in the *London Journal of Medicine*) will show how advisable it may be that in some cases the crown of the trephine should be applied over a very

limited surface, and in others, how necessary it is to use the instrument a second time.

Fig. 1. Abscess in Tibia, opening into knee-joint.

Fig. 2. Abscess in upper end of Tibia, containing putrid pus and dead bone; trephined unsuccessfully. The cavity lined by a dense membrane.

In determining the precise spot at which the trephine should be first applied, the most projecting and most sensitive point is to be selected. But it will sometimes happen that a considerable portion of bone is equally enlarged, and that no one part is particularly tender to the touch. A slight increase in the temperature of the skin, which can be appreciated by the touch, will then in some cases indicate the proper situation for the operation.

13, Dover Street, Piccadilly, Nov. 1852.

CLINICAL REMARKS UPON THE EFFECTS OF THE BATH THERMAL WATERS IN THE TREATMENT OF CHRONIC RHEUMATISM.

By JAMES TUNSTALL, M.D., Physician to the Eastern Dispensary of Bath, and formerly Resident Medical Officer of the Bath General Hospital.

I AM perfectly aware that, in bringing under the notice of my professional brethren the good effects of a course of the Bath waters, in the treatment of Chronic Rheumatism, I run the risk of being accused of telling a thrice-told tale; it will be said that every medical man knows that these waters have been unduly celebrated, and that at present they have no reputation whatever: this, however, has been the case in reference to all our British springs. I hold it to be a duty to the profession, that those who practise at our Spas, should occasionally bring forward the result of their practical experience in the employment of these valuable remedies. I am persuaded that much

of the discredit cast upon our native springs, and the extraordinary virtues attributed to those in other countries, has arisen, in a great degree, from the fact, that British physicians have hesitated to make use of the abundant materials at their command. This omission arises, in a great degree, from the very natural, but, I conceive, mistaken notion, that, by so doing, they would incur the suspicion of writing to advance their own individual professional renown. The result of this diffidence has been, that patients are in the present day sent to Germany to procure that relief which their predecessors obtained at home; and this disinclination to impart a knowledge which only experience can supply, has led to a comparative ignorance on the part of British practitioners, not only of the chemical qualities of our native springs, but also of their effects in the treatment of disease. Such neglect of these remedial agents does not obtain abroad: there every physician is in some degree acquainted with the composition and mode of action of the various mineral waters; the literature of the profession is rich in works upon the subject, and the crowded state of the various watering places shows the importance ascribed to them in continental medicine.

Dr. Fuller, of St. George's Hospital, in his valuable work on Rheumatism, Rheumatic Gout, and Sciatica, just published, thus alludes to this subject:—"The vast importance of the total change of scene and air consequent on a visit to the English or continental watering-places, can hardly be over-estimated: a new stimulus is imparted to the system, the organic functions receive an impulse which cannot be imparted to them in any other way, and remedies which have proved unavailing at home, very shortly become active agents for good. . . . Observation has convinced me, that he who is tormented by rheumatic gout in a chronic form, will usually experience more relief from a month's residence at Bath, than from a much longer sojourn at any other watering-place." My own experience fully corroborates these remarks of Dr. Fuller.

It will readily be admitted, that acute rheumatism, while it is one of the most common, exceeds almost all the ordinary febrile affections, in the protracted character of its convalescence; while the amount of permanent loss of power and deformity which usually attend it, render it one of the most intractable and unsatisfactory diseases. It may indeed be said to become chronic by wearing itself out; the patient's strength and vital power being reduced to a state of debility scarcely permitting inflammatory action.

If we are called in to see a patient in the first stages of chronic rheumatism, we see that a general want of tone pervades the chylipoietic viscera; the circulation is languid, the blood vitiated and carbonized; the secretions of the skin and kidneys are changed in their sensible appearance and chemical character; the muscular and fibrous structures gradually becoming impeded in their functions, deposits of extraneous matters, solid and fluid, take place in the neighbourhood of the joints, with a slowly progressing contraction of the muscular fibres of the extremities, and great nervous debility.

The object of my present remarks is to show that, in the Bath waters, we have a remedy, which possesses the power of arresting the further progress of an insidious malady, by improving the patient's general health and bodily powers. Before I proceed to this part of my subject, let us, for a moment, inquire what circumstances give rise to these *sequelæ*—a very great portion of which occur after the more acute symptoms have been subdued, and the practitioner has taken leave of his patient.

We have undoubtedly many preventible causes in action. How useless it is to advise our patient to move about and use his limbs, if he has been for weeks confined to his bed in a constrained position! It would be as absurd as for a surgeon to allow the lately fractured arm to remain in a sling, after perfect bony union had taken place; our duty in either case is to direct passive motion, until the strength of the patient enables him to move the limb himself. In the same way that the surgeon, after a fracture, restores the use of the fractured limb, by graduated exercises, both active and passive, so ought the physician, in the convalescence from acute rheumatism, to see the use of the limb restored as much as possible, and not permit his patient to produce rheumatic ankylosis, by bandages and other contrivances, without a warning; or to cripple along upon crutches because he has neither the will nor energy to persevere in the recovery of his limbs by the use of moderate exertion. Far better is it to cross the room by the help of the chairs and table, than to drag through a weary mile, bandaged up, on crutches.

In the treatment of gout and chronic rheumatism, there are many evils to contend against. I have said that numerous pre-

ventible causes combine to produce morbid effects. Thus, the practitioner is consulted by a patient, exhausted in nervous energy by the long continuance of disease, incapable of the least exertion, and too enervated to perceive its necessity; a case in which active remedies, general and specific, have ceased to produce good effects; where opiates and other sedatives, useful in the earlier stages, are now productive of mischief: he sees with regret the habits of the sick room, its improper diet and stimulants still forming a part of the daily routine of a passive existence: the patient complains to him of enlarged, tumefied, and painful joints, loss of appetite, and sleepless nights.

In such a case, what is to be done? He prescribes a tonic, and orders gentle movements of the affected limbs. His medicines are regularly administered, but his directions are not complied with, from the fear of producing pain: the case gradually approximates to complete loss of power in one or more joints; then anxious to abolish the associations of the sick room, he advises his patient change of air.

Now I am inclined to attribute much of the suffering in these unfortunate cases to the patient's extreme nervous debility, producing a disinclination to convalescence: in other words, that the partial immobility induced by the acute attack, has engendered a fear in the patient's mind lest movement should reproduce pain and inflammation. This fear is shared and encouraged by nurses and attendants, who, instead of assisting the patient to leave his recumbent position, and move his limbs, do all in their power to render it unnecessary, and thus, by mistaken kindness and pitying solicitude, aggravate sufferings which they are most anxious to alleviate.

It is in these cases that the Bath thermal waters produce such beneficial effects. The immersion of the whole body in a warm, tonic, and exhilarating fluid, highly charged with carbonic acid gas, in a bath of sufficient capacity to permit free muscular motion, soon restores the nervous energy, improves the quality of the blood, and, by promoting the circulation of the capillary vessels, strengthens the joints, and restores muscular vigour. The salts which these waters contain are peculiarly grateful to the dyspeptic stomach; the iron, from its extreme subdivision, is, I make no doubt, completely taken into the circulating system, so that while their internal exhibition improves the biliary, renal, and cuticular secretions, they produce little or none of the usual effects of iron upon the alimentary canal.

As I do not desire to overburthen these remarks with cases, I shall select two only from my note-book, as types of those in which this treatment proves successful.

CASE I. Mr. P. T—, aged 25, came to Bath in October, 1850, having had an attack of acute rheumatism in the previous June. At this time there was considerable lameness in the right lower extremity, with enlargement and stiffness of the ankle joint, the patient limping along by the aid of a stick. The limb, in walking, was perfectly straight, from the want of the *voluntary* effort to use either the knee or ankle. Satisfying myself that the heart was unaffected, and that the lameness proceeded in a great degree from the habit acquired in the early period of his convalescence, I directed him to abstain altogether from walking abroad, until he could cross his chamber without his stick. I ordered him to drink the waters at their source twice a day, and to apply the hot douche to his limb three times a week. In a month he returned to London, perfectly recovered.

I have but few remarks to make on this case, but I feel persuaded, that had he remained at home, no treatment, however judicious, would have been successful. The use of the limb would have been lost for the want of the voluntary effort; nay more, had he continued his crippled gait a few weeks longer, permanent lameness would have resulted; for nature will pursue her vital actions, and if, after rheumatic inflammation has been subdued, motion is restricted or suspended, the natural secretions become excessive, from not being required for their legitimate functions. Thus, in this case, the tendons of the posterior surface of the limb would have become contracted, and the ankle joint the seat of a permanent rheumatic deposit, in consequence of the whole work of the limb being thrown on the anterior femoral muscles.

CASE II. Mr. B—, aged 61, a farmer from Devonshire, consulted me on the 11th of June, 1851, stating that he had had repeated attacks of rheumatic gout, which had entirely deprived him of the use of his lower limbs, so that he could only move from room to room by means of his hands and knees. The patient was of the lymphatic temperament; his nervous system was greatly depressed from long continued disease. The circulation, however, was regular, but languid. I examined him in

the recumbent position, and found that he could, in that position, freely move his limbs, which were free from contractions or gouty deposits. I could detect no pain nor tenderness in the spine, nor any evidence of internal structural malady. The bowels were in good order, the urine healthy and secreted in proper quantity, the appetite good, and digestion well performed.

My opinion of the case was, that it was one of extreme nervous and muscular debility, produced by a perseverance in the use of *colchicum*, long after the more acute symptoms of gout had been overcome; that in fact it was a complication of arthritic disease with slow, narcotico-irritant poisoning. I advised him to bathe three times a-week, and to drink the waters twice daily at the spring. I put him upon a generous diet, and ordered him to spend several hours daily in the open air, and to abstain altogether from medicines. He continued this plan until July 12th, at which time he was able to stand with the assistance of the table, and to walk a few steps supported by two persons. I then directed him to go to the sea-side for six weeks, and to return to Bath in September. He returned greatly improved in every respect, and again commenced the use of the waters, obtaining so much benefit, that on the 31st October, he returned home perfectly recovered.

This, though a severe case, is but the type of many frequently met with in this city, in which the long perseverance in the domestic use of *colchicum* produces so complete a prostration of strength, that to move a limb, or even change the position in bed, is attended with fainting fits and profuse perspiration. I remember many years ago, a case in which sudden death occurred from syncope caused by the long-continued use of this remedy, which being easily obtained, and much commended for its specific effects, is constantly taken by many gouty persons as an innocent remedy.

To show how completely we may be foiled in our diagnosis, by this pernicious practice of domestic medication, I will here mention a case which came lately under my notice.

I was consulted a few days since by a gouty subject, who complained of chronic pyralism accompanied by several anomalous symptoms, for which at first sight, I could assign no sufficient reason. Upon questioning him closely, he told me that for two years past, he had been in the habit of purchasing *potassii iodidi* ʒi, which he dissolved in a pint of water, of which he had during the whole of that period taken a wineglassful twice a day, he having been recommended to try it by a neighbour.

It is this indiscriminate medication that environs the Bath thermal treatment with so many difficulties, and which not unfrequently brings discredit on the springs themselves. I last week met a medical gentleman, who told me he was taking three doses daily of *colchicum*, and was then about to take a bath. I am fully persuaded, that if we wish the waters to produce good effects, their judicious employment requires no medicinal interference; and that they are a very powerful remedial agent in the hands of the physician, whose duty it clearly is to watch their effects in the same way that he would those of any other medicine, and not by over-anxiety for his patient's recovery, to interfere with them by prescribing remedies often useful alone, but incompatible with the rational employment of the Bath waters.

Bath, December, 1852.

ON THE SOURCE OF HÆMORRHAGE IN CASES OF PARTIAL SEPARATION OF THE PLACENTA.

By F. W. MACKENZIE, M.D. Lond., Fellow of University College, &c. &c.

THE precise source of hæmorrhage in cases of this description, whether from the uterine or placental surface, does not appear to have been very accurately ascertained. By some authorities, it is believed that the blood flows exclusively from the great venous and arterial openings in the lining membrane of the uterus, which are laid bare by the separation of the placenta; by others, that the discharge issues principally or entirely from the vascular openings which exist on the exposed surface of the placenta; whilst others regard the hæmorrhage as having its origin partly in the maternal and partly in the placental surfaces. The following quotations from writers of acknowledged celebrity will confirm the general accuracy of this statement, and explain the motives which suggested the investigation, the results of which it is the more immediate object of this paper to make known.

"It is," observes Dr. Robert Lee, "from the great semilunar,

valvular-like, venous openings in the lining membrane of the uterus, and of the arteries which are laid open by the separation of the placenta, that the blood alone flows in uterine hæmorrhage."—*Lectures on Midwifery*, p. 361.

In criticising the opinion, that the hæmorrhage comes from the exposed placental surface, and the statement of Dr. Simpson, that he knows no reason, anatomical or otherwise, for alleging that the open placental orifices do not bleed, Dr. Ashwell remarks:—"It would have been well if these orifices and their capacities had been demonstrated. I have never yet seen them, although I have subjected numerous placenta to examination, both before and after injection; nor have I been more successful when I have carefully peeled off an adherent placenta after death. It is, on the contrary, easy enough to show to the satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these, the tip of the finger may be inserted, while their course and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely, such an organization affords the clearest proof of the source of the hæmorrhage in placenta previa. By some unfortunate accident, the placenta and the intervening decidua are detached, and as the uterus is full of blood, there is no barrier to prevent its escape; in moderate amount if the detachment be slight, but excessive in quantity if the separation is considerable and attended with excitement and hurry of the heart's action."—*Medical Gazette*, Nov. 7th, 1845.

"That the blood is not poured out of the placenta," says Dr. Chowne, "is obviously suggested, by considering what the effect upon the child would be, of profuse hæmorrhage derived from those vessels upon which the sustenance of the ovum depends. Hæmorrhage occurring under such circumstances, the child would be subjected to a two-fold privation. First, in being abridged of its natural supply by a quantity equal to all that should be furnished to it through the detached portion; and, secondly, in the exit and waste of even that curtailed quantity which enters the placenta by the attached portion, and is by some supposed to make its escape by the detached portion. Reverting to the terrible hæmorrhages that sometimes take place while the child remains secure, and is born even vigorous and strong, I am led to regard the sufficient way in which it is nourished as evidence, that the blood effused is not poured out of the placenta."—*Lancet*, August 28th, 1847.

In opposition to these views, we have the following opinion expressed by Dr. Simpson. "I know of no reason, anatomical or otherwise, for alleging that the open placental orifices do not bleed; and, on the contrary, I believe with Dr. Hamilton and others, that the discharge issues principally or entirely from the vascular openings which exist on that exposed placental surface. In cases in which the placenta is partially and repeatedly detached before labour begins, (as happens frequently in placental presentations,) before each attendant attack of hæmorrhage is arrested, the vascular system of the separated portion of placenta seems to require to become blocked up and impervious, with coagulated and infiltrated blood. This obliteration of its vascular cells prevents the further circulation of maternal blood through the detached part of the organ, and hence prevents also the further escape of it from its exposed surface. Each new detachment gives rise to a renewed hæmorrhage, which again ceases on the sealing up of the vascular system of the detached part. . . .

"In common cases of unavoidable hæmorrhage, the amount of the attendant flooding seems to be as much regulated by the quantity of placental surface *still* remaining attached to the uterus, as by the quantity *already* separated from it; the degree of flooding depending as much or more upon the extent of the means of supply of blood, as upon the extent of its means of escape. And in proportion as we approach nearer and nearer a total separation of the placenta, the number of its *afferent* utero-placental vessels is diminished, till at last, we find that when the one organ is once completely separated from the other, the flooding is instantly moderated, or entirely arrested; for the placenta ceases to yield any discharge of maternal blood, as soon as its own supplies from the maternal system are thus cut off by the dissection of all its organic and vascular attachments with the uterus."—*Medical Gazette*, Oct. 10, 1845.

The third opinion regards the hæmorrhage as having its origin, partly in the uterine and partly in the placental surfaces. On this point the following authorities may be quoted.

"In all cases of floodings," says Dr. Radford, "which occur during the latter months of pregnancy or in labour, several effects are produced by this accident: firstly, the utero-pla-