cipally the ileum, was inflamed or ulcerated in patches ; that in the whole twelve the colon was vascular, inflamed, ulcerated, eroded, or otherwise diseased ; that in one it was gangrenous, and in two much contracted ; that the rectum was much inflamed and abraded ; and that the liver was diseased in six and the spleen in three. In all the cases also the peritonæum contained more or less serous or sero-albuminous fluid.

The above papers form the principal ones on subjects in medical pathology. We should now proceed with the examination of the others, which are highly interesting and not less deserving regard. This, however, we must defer for the present, in favour of other matters which claim consideration. We, therefore, close the volume, with the hope of soon recalling the attention of our readers to subjects on which we cannot doubt they feel as much interest in receiving information as the industrious members of the Dublin Institution have in communicating it.

ART. III.—*Surgical Observations on the Treatment of Chronic Inflammation in various Structures, particularly as exemplified in the Diseases of the Joints.* By JOHN SCOTT, Surgeon to the London Ophthalmic Infirmary, and Assistant-Surgeon to the London Hospital. London, 1828. 8vo. pp. 291.

THE treatment of chronic inflammation, and its consequences in the textures forming the different articulations, has long been a task of such extreme practical difficulty, as in a large proportion of cases to make it be abandoned for the more certain and less tedious alternative of removal by the knife. When a joint affected with incipient disease is submitted to the surgeon, the first proceeding is to pursue the usual routine measures, the chief object of which is to check inflammation and to obviate its products. The local detraction of blood, repeated according to its apparent effects, the application of blisters, tartar emetic, or sulphuric acid ointment, caustics, or moxa to produce ulceration, setons and other counter-irritants, not omitting dry friction and the *douche*, are the means usually tried with the view of subduing the inflammatory action in the capsular cellular membrane, in the synovial membrane or articular glands, or in the cartilaginous extremities of the component bones. When these resources of surgery are exhausted unavailingly, the joint, if removeable by amputation, is consigned to the knife ; or if beyond the reach of this alternative, as in the vertebræ and the

coxo-femoral articulation, it is abandoned to what is termed the powers of the constitution, which in a large proportion of cases are totally inadequate to effect a cure.

That this is the usual course of events, with regard to the management of diseased joints, every practical surgeon will be ready to admit. The cases which can be justly said to be cured are few indeed. In still fewer instances, after all means and appliances have been diligently employed, some degree of recovery takes place; and after long disease of the limb, the patient, if he does not recover the motion of the joint, retains at least a member which answers as a means of support. Amputation, when admissible, though the means of removing the diseased parts, is not entitled to the character of a cure. When inadmissible, the patient is left to his fate, or gets well without it.

If we inquire into the causes of the inefficient state of this department of surgical therapeutics, they will be found to consist partly in the organic peculiarities of the articular textures, partly in the surgeon neglecting to accommodate his measures to these peculiarities. What these organic peculiarities are, it may be said, is perhaps not altogether ascertained. But enough is known to justify the inference, that, considering the variety of textures composing a joint, considering its complicated structure and its great extent of motion, when the inflammatory process is once established in one or more of these textures, it is very difficult to keep it under control, and almost impossible by the ordinary means to eradicate. Whether it depend on the circulation of these textures, or on their organic sensibility, certain it is that the inflammatory process is attended with less acute suffering, and advances much more slowly than in other textures. But in compensation it proceeds with a great deal more certainty; and without very urgent external indications, it gives rise to changes in organization and structure, which powerfully resist all the ordinary sanative measures. Condensation of the synovial membrane, deposition of granular lymph on its surface, or of sero-albuminous fluid in its cavity, effusion of sero-gelatinous fluid into the capsular cellular tissue, are a few of the changes which tend to render the influence of remedial means less powerful than in other situations. If to these be added erosion of the cartilages, chronic inflammation of the cancellated structure of the epiphyses, and ulceration or caries of these parts, it is not difficult to perceive how little influence the measures usually put in practice can have in restoring the sound state of so many different textures. It too often happens that the surgeon has to contend with the morbid products and effects of inflammation, not the process itself; and if his mea-

asures are not both seasonably employed and steadily persevered in, they avail as little as if they had not been used at all.

The frequent unhappy results of these measures, doubtless, have contributed to beget in the minds of surgeons that impatience of the influence of remedies—that hopeless indifference to their effects,—which often induces them to condemn precipitately to the knife a joint, which a little more perseverance might have saved, or to give up a case which, under a new combination of circumstances, has terminated more favourably than could have been anticipated. It may not be possible to remove at once all misconception on this head, and to render the treatment of diseases of the articulations at once uniform and efficient. It is due, however, to the author of the present volume to say, that he has great merit indeed in directing the attention of surgeons to a very important practical fact in the management of this class of diseases. Without denying or underrating the value of other means of removing chronic inflammation in the articular textures, the object of Mr Scott is to show that too little attention has been paid to two circumstances of the first moment,—perfect rest, and uniform mechanical support and gentle pressure of the affected joint.

It is unnecessary to enter into a formal view of the whole of Mr Scott's useful and instructive work. The general principles with which he introduces the consideration of the subject are familiar to surgeons; and it is manifest that his sole reason for premising these observations is to prepare the mind of the reader for the particular application which it is the proper object of his work to make known. In imitation of Mr Baynton of Bristol, who inculcated strongly the advantage of mechanical support by plaster and bandage in healing sores of the extremities, Mr Scott is at some pains to show, that the method of that gentleman, though a valuable improvement, is, however, insufficient, and sometimes injurious, by rendering the support only partial. To be useful and effectual in restoring the healthy circulation, Mr Scott justly contends, that the pressure ought to be general and uniform. While Mr Baynton recommended the plasters to be applied firmly below and above the ulcer, but without encompassing the entire limb, Mr Scott surrounds the whole member from the lower part upwards, with the view of giving equable and uniform support to the vessels in every part of it. In this we are satisfied there is both reason and experience. We know not that Mr Baynton could have foreseen the extreme to which his doctrine was to be carried; nor can we say whether what we are now to mention, was a necessary result of his method of applying the adhesive plasters. But more than once have we seen limbs treated according to that method, in which, indeed,

the ulcer was healed, but with such an unsightly contraction of the fleshy parts of the leg, with such a depressed shrivelled cicatrix, as to communicate the idea, that part of the muscle and cellular membrane must have been absorbed, destroyed, or consumed during the process of healing. To obviate a result so unseemly, the method of the present author is doubtless much better calculated; and we may assert from trial, that it possesses all the advantages without the evils which result from drawing the plaster-slips with such extreme straitness over the sore to be healed. In short, the method recommended by Mr Scott, which consists in applying the slips uniformly, but regularly, round the limb, and supporting the whole by a bandage of uniform pressure and support, is that which may in all instances be most effectually employed for healing ulcers which depend on chronic congestion of the vessels of the lower extremity.

This, however, though not entirely irrelevant, is a digression; and we proceed with the proper subject of the work.

Though the exact nature of the diseases incident to the joints has become pretty well known by the researches of Mr Ford, Mr Brodie, and others, Mr Scott properly recalls to the recollection of the reader the principal pathological facts which the practical surgeon should bear in mind. The structure of all the articulations is so much alike, that, making allowance for some differences in the simplicity or complication of the articular apparatus, the same morbid processes nearly are common to all, and require to be treated on certain general principles. Synovial membrane, capsular ligament, cartilage and bone, which enter into the structure of every articulation, when subjected to the inflammatory process, undergo in different situations nearly the same changes. The most important difference demanding attention is that which arises from the texture primarily affected, which in one may be the synovial membrane, in another the cartilages, and in a third the bones.

The succession of morbid changes which takes place in each of these cases is well distinguished by Mr Scott.

In the ordinary disease of the knee-joint, in which the process commences in the capsular synovial membrane, increase of vascularity, diminished secretion of its natural fluid, swelling of the membrane, an unnatural quantity of morbid fluid, effusion of lymph in granules, thickening and induration of the synovial capsule, and jelly-like effusion into the articular cellular tissue, are the principal changes which successively take place. If the limb is not removed, or the patient cut off by the constitutional disorder, the extension of the disease to the cartilaginous synovial membrane at length terminates in erosion of the

cartilages, with the production of sanious blood-coloured sero-purulent matter, which finds its way to the surface with great constitutional disorder. The further continuance of this process, if it does not utterly terminate the life of the individual, may at length proceed to a species of ankylosis, in consequence of the destruction of the articular cartilages. In some instances, however, in which we have seen this process going on, the pain which it causes is so severe and unremitting, more especially during the night, that the patients have actually solicited amputation as the only means of putting an end to their sufferings.

When inflammation takes place primarily in the cartilages, which it occasionally does, speedy ulceration or erosion is the result; and while this may cause, on the one hand, secondary inflammation of the synovial membrane with all its consequences, it may induce on the other caries of the cancellated structure of the epiphyses.

The inflammatory process taking place in the *cancelli* eventually leads to similar results, with this exception, that the periosteum and superficial cellular tissue sympathise with the morbid process in the bone sooner than the cartilages and the synovial membrane; and hence superficial abscesses communicating with the bone generally precede the formation of sanious or sero-purulent fluid in the cavity of the joint. The first stage of this form of disorder Mr Scott represents to consist in preternatural softness of the cancellated structure from deficiency of earthy matter. This morbid softness, however, which he thinks is followed by increased vascularity, is more likely to be its effect. The substitution of a straw-coloured fluid, which is converted into caseous matter, for the marrow of the cancelli, is an event which generally leads to caries and death of the bone.

After this general view of the pathological changes incident to the textures composing the articulations, the author proceeds to the practical part of his work. His observations on the constitutional treatment, which are judicious, but neither novel nor peculiar, may be omitted. His instructions on the local treatment merit more immediate attention.

Premising the necessity of absolute rest as an indispensable condition, and to be continued so long as the least motion causes pain, Mr Scott endeavours to determine the circumstances under which blood-letting may be employed with advantage, and to define the extent to which it may be carried. In emaciated patients, whose constitutional powers are considerably impaired, local bleeding, instead of abating, he thinks, aggravates the disease; yet subsequently in the same subjects, after their general health has been somewhat restored by suitable treatment, local bleeding affords decided benefit. But it is only where there is much pain and heat in the joint that it should be employed.

When a sufficient quantity of blood has been removed by cupping or by leeches, the common bread and water poultice is the best application. Of cold lotions he disapproves, as tending rather to repress than encourage the cutaneous circulation. If the return or continuance of pain and heat render it requisite to repeat the local bleeding, this may be done after a suitable interval; but when the urgent symptoms disappear, and the disease remains in the chronic state, there is no longer room for active measures.

So far the treatment recommended by Mr Scott is not materially different from that pursued by the generality of surgeons. In this state of a diseased joint, the usual method is to have recourse to means of counter-irritation, that is, to remedies which, by exciting more or less superficial inflammation, may counteract and oppose that which is going on in the deep-seated textures of the joint. The means by which this is effected, it is well known, are blistering, pustulation by tartar emetic ointment, erythema by sulphuric acid ointment, issues either by the actual or the potential cautery, moxa or caustic potass, or the introduction of a seton.

Without absolutely and invariably condemning these applications, Mr Scott contends that their influence is so uncertain, and so little under regulation or control, as to deprive them almost entirely of any little advantage which they might otherwise confer. All these applications, he maintains, are attended with a degree of positive and certain irritation, which may be so considerable as in many constitutions to aggravate seriously the sufferings of the patient. The probability of their counteracting the deep-seated inflammation is at all times problematical, since it depends not only on the stage of the disorder, but on the texture affected. Thus any of the means of counter-irritation may exercise considerable influence on the disease while there is yet no morbid product which does not admit of absorption, and while there is no very serious injury inflicted on the structure of the capsular ligaments, or the articular cartilages. But scarcely any means of counter-irritation can avail, where much granular lymph is deposited, where the synovial capsule is much thickened, and the capsular cellular tissue injected by jelly-like fluid. It is further no trifling objection to the employment of the most powerful counter-irritant, *e. g.* the caustic issue, that though in some instances it is highly beneficial in abating internal pain, in others, the inflammation which it induces is propagated to the articular textures, and the malady which it is intended to alleviate is in truth aggravated many degrees. Instances of this have been observed by several, and Mr Scott relates one in the present work, (p. 131.) The relief also produced is sometimes only

temporary; and even in the cases to which Mr Brodie found the caustic issue most applicable,—those of ulceration of the cartilages, though the patient maintained his limb in a state of absolute quietude, soon after the issue had ceased to operate, the symptoms returned in their original severity. These objections apply equally to blisters, to moxa, and to all the forms of counter-irritation.

Conceiving, therefore, that the means already in use are either inefficient, or unfit for the purpose, in the treatment of morbid joints, Mr Scott abandons them, and substitutes in their place the following method:—

“ In the first place, the surface of the joint, suppose the knee, is to be carefully cleansed by a sponge, soft brown soap and warm water, and then thoroughly dried; next, this surface is to be rubbed by a sponge soaked in camphorated spirit of wine, and this is continued a minute or two, until it begins to feel warm, smarts somewhat, and looks red. It is now covered with a soft cerate made with equal parts of the *ceratum saponis* and *unguentum hydragryi fortius cum camphorâ*. This is thickly spread on large square pieces of lint, and applied entirely round the joint, extending from at least 6 inches, above and below the point at which the condyles of the femur are opposed to the head of the tibia; over this to the same extent the limb is to be uniformly supported by strips of calico, spread with the *emplastrum plumbi* of the London Pharmacopœia. These strips are about $1\frac{1}{2}$ inch broad and vary in length; some are 15 inches, others a foot, others half these two lengths, and the shorter or longer are selected, according to the size of the part round which they are to be applied. This adhesive bandage ought to be so applied as to preclude the motion of the joint, prevent the feeble coats of the blood-vessels from being distended by the gravitation of their contents in the erect posture, and thereby promote their contraction. Over this adhesive bandage thus applied, comes an additional covering of *emplastrum saponis* spread on thick leather, and cut into four broad pieces, one for the joint, the other for the back, and the two others for the sides of the joints. Lastly, the whole is secured by means of a calico bandage, which is put on very gently, and rather for the purpose of securing the plaster, and giving greater thickness and security to the whole, than for the purpose of compressing the joint. This is an important point, as otherwise an application which almost invariably affords security and ease, may occasion pain with all its attendant mischief.

Of this treatment the objects, so far as we understand Mr Scott, are threefold; first, to induce a gentle but general excited state of the cutaneous and superficial vessels of the joint; secondly, to prevent all motion in the parts; and, thirdly, by this and by the mechanical support to abate the chronic congested state of the vessels. When the first object is not sufficiently attained by the camphorated spirit he allows the inunction of tartar emetic ointment. In cases where the ordinary appli-

cations appear insufficient to prevent all motion, he employs pasteboard splints externally to the plasters. Thirdly, he contends that the antiphlogistic effect of the camphorated spirit, and the complete quietude of the joint, is powerfully assisted by the influence of the camphorated mercurial ointment. Conceiving the power of this agent in subduing local inflammation to be unequivocally demonstrated in its effects on iritis and other inflammatory processes, he contends, that a gentle local application conducted so as not to affect the system, as in enlarged glands and several inflammatory tumours of which it causes the disappearance, is sanctioned by every principle of therapeutics. On the one hand, the other remedies are not so efficacious when the mercurial ointment is omitted; on the other, it may be employed without inducing salivation, not only without injury but with the most salutary effect.

The applications above mentioned Mr Scott recommends not to be often removed. This, indeed, they neither require nor admit. The time for removal may be regulated by the recurrence of symptoms requiring local blood-letting, or the discharge of matter, if there be abscesses or sinuous openings, or by the cessation of the superficial irritation. They should seldom remain less than a week, and in the generality of instances they may remain a fortnight or longer.

The mode of management now described Mr Scott represents, under slight modifications, as applicable to every form and stage of articular disease, and infinitely more efficacious than any other combination of remedies hitherto in use. The only exception to their constant and free application are the symptoms indicating acute inflammation of any of the articular textures; and this of course it is requisite to control by local bleeding by means of leeches or cupping, followed by poultices. When this has been subdued, and the morbid action is brought to the chronic or passive state, the means of mechanical support and compression, modified, nevertheless, according to the texture most affected, should again be put in practice. When the synovial membrane is the seat of morbid action, the counter-irritation should be slight, and sufficient only to expedite the mercurial action; and the mechanical support should be moderate but very accurately applied. When the cartilages are chiefly affected, on the contrary, though blood-letting is beneficial, powerful and long-continued counter-irritation is requisite; and adaptation of pasteboard splints, to prevent all motion whatever, is indispensable. When the disease is confined to the bones, Mr Scott thinks loss of blood less beneficial than in disease of the soft parts. The local use of mercury, with considerable cutaneous irritation, and perfect immobility of the joint, constitute the proper treatment.

On a question of great practical nicety, whether, in the case of matter formed in the cavity of the joint, an opening should be made for its evacuation, Mr Scott infers, after Mr Brodie, from the result of some observation, that in almost all cases it is an injurious measure. When the parts are much inflamed and painful from distension, the opening, if made, heals by the first intention, the textures of the joint undergo secondary inflammation, and purulent matter is secreted with so much rapidity, that in a few days it is more distended than before; and with increased pain the constitutional disorder is violently aggravated. He contends, on the contrary, that the mode of treatment above delivered is suited equally to the suppurative as to the inflammatory stage; that the abscess, if first reduced by antiphlogistic means to the chronic state, is by pressure soon diminished so much in size that the secretion is brought within the powers of the absorbents; that it may disappear without evacuation; and that, if it does not, the progressive advancement of the matter to the surface, and its escape by spontaneous ulceration, is a safer and less injurious mode of termination. Hectic fever, he states, does not appear, generally speaking, till the abscess is opened or has broken.

In the treatment of the sinuous openings which succeed this event, he disapproves of stimulating injections. If the bone is merely carious, and not dead, it is unnecessary to kill it, he argues, and cause an exfoliation which would not have otherwise taken place. If it be really dead, it ought not to be removed by art, which may induce more extensive exfoliation instead of removing that already dead, but left to the absorbents, which will eventually effect its separation.

In giving the above account of the method of treatment recommended by Mr Scott, we have refrained from expressing any opinion on its actual merits. This we do that our readers may have a clear and just idea of its several parts, independent of any remarks, which might tend to influence either in one manner or another. Whatever we have to offer on this topic must be short and rather cursory.

It is, in the first place, manifest that the excellence of two of the general sanative principles laid down by Mr Scott, those of absolute rest and mechanical support, can by no means be questioned. Their actual influence in counteracting chronic inflammation, or, what is the same thing, irregular distribution of blood in the capillaries, is admitted by all practical surgeons. So far there cannot be two opinions on the expediency, nay, the necessity of these means in the treatment of diseased joints; and, in point of fact, they have been more or less applied in practice by all good surgeons who found their patients resist amputation, or where it was otherwise impracticable. These

remedies, however, it must be confessed, have never been employed in the systematic and assiduous manner in which the present author has persevered in their application. To Mr Scott, therefore, chiefly belongs the merit of demonstrating practically the great influence of these agents, and of showing the profession how much may be done in these troublesome and dangerous diseases, by the persevering use of judicious measures. Next to the merit of discovering a new remedy, that of improving and demonstrating the powers of the old, is the greatest service which can be rendered to the practical application of the healing art.

Secondly, It may perhaps be objected to the method of the present author, that its effects are much overrated; that it may answer in ordinary incipient cases of joint disease, but will totally fail in the complicated and serious ones; and that it is absurd to suppose that surgeons of acknowledged skill and experience could be so weak as to relinquish the sure remedy of amputation in formidable cases of articular disease, for measures so simple as camphorated and mercurial embrocations, and envelopes of plaster and bandage. It is not our intention to defend in every thing the method of Mr Scott; for that support we do not think it requires. Something on this topic we have already hinted at the beginning of these observations. If, however, the merits of his method of treatment require confirmation, the reader will find it in the most satisfactory form in the cases given in the appendix. In almost every variety of articular disease, some of them manifestly very severe, complicated, and far advanced, the effects of his mode of treatment appear to be indeed extraordinary. We believe it has been long practised with great success by the father of the present author,—a surgeon not unknown at Bromley in Kent. Evidence, of course, from this source must be much the same as evidence from Mr Scott himself, unless so far as the success of Mr Scott Senior is in many instances its own eulogium. To render this confirmation still more complete, we conceive nothing more is requisite than for Mr Scott to induce some of his professional friends, less sanguine than he is in its favour, to try it in such cases as they conceive themselves warranted for so doing. When this has been accomplished with the effect of verifying his views, it will become every practical surgeon to adopt with diligence a method which promises so much benefit in diseases so little under the control of ordinary means.

Thirdly, Whatever we say in reference to those of the profession who are doubtless entitled to the best and most unequivocal evidence, on a question of practical importance involving the limbs, very often the lives of a large proportion of their patients, sufficient proof of its beneficial result is daily coming

under the observation of many. Without being credulous, we may be allowed to say, that we have seen or known several instances of serious articular disease, in which recovery was effected, and the limb was preserved, not under exactly the same but very similar management, sometimes under regular, more frequently under empirical practitioners. Similar facts must doubtless be well known to others. If Mr Scott, by explaining the principle and illustrating the practice, can convert into an uniform and rational mode of treatment, what has hitherto been capricious, irregular, and unsteady in its application;—if he succeed in realizing in the majority that which has hitherto been effected in one or two individuals only;—he merits in a liberal degree the esteem and the gratitude both of surgeon and patient. As such, the method proposed in the volume before us deserves, and we trust will obtain, a candid and attentive reception from the practical surgeon.

ART. IV.—*Transactions of the Medical and Physical Society of Calcutta*, Vol. III. pp. 451, 8vo. Calcutta, 1827.

THE energy of our brethren in the East continues unabated. Already we have had the third volume of their transactions for some time before us. Nor is it inferior either in variety or interest to those which preceded it.

On the important subject of medical topography and endemic diseases, there are many most valuable contributions. Dr James Ranken takes a general view of public health in India. He considers as the primary cause of the endemic disorders to which Europeans are subject in India, an excess of heat, amounting on an average to 30° above the temperature of Great Britain. A most gloomy picture is given of the progress of public health in India. According to Dr Ranken the health of our settlements in India may be represented as passing through three stages. In their original state unhealthy, by cultivation they experience a short and deceitful improvement, which is followed by increased and perpetual insalubrity.

“An officer is ordered to fix on a fit spot, within certain limits, for a military post. He is not supposed qualified to prognosticate sickness or health from the aspect of the soil. With him, the professional interests of the troops are naturally paramount. As securing the channel of easy conveyance for stores and provisions; affording materials for building; yielding forage to the cattle; commanding ample means of irrigation, and more extended cultivation for all; he thinks the bank of a river, surrounded by a well-wooded country, an invaluable acquisition. The new station, thus situated, is for some time unhealthy. Puddles which offend the eye, stagnant water, grass, and jungle, are by degrees removed from the occupied