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Dr. J. C. W. Lever M.D.
With the Editor's kind regards

JOHN SCOTT

ON THE TREATMENT

OF

DISEASES OF THE JOINTS:

AND OF

Ulcers and Chronic Inflammation.

A NEW EDITION,

WITH AN INTRODUCTION AND A CHAPTER

ON

THE CONSTITUTIONAL ORIGIN AND TREATMENT OF DISEASES OF THE JOINTS,

By WILLIAM HENRY SMITH,

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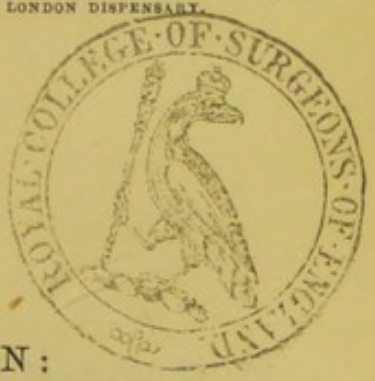

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INTRODUCTION.

THIS volume, which I have the honour to republish at the desire of the friends of the late Mr. John Scott, and with the consent of the publishers and proprietors of the copyright, is in many respects one of the most interesting and valuable monographs in our professional literature, rich as it is in such works.

The remarks of Mr. Scott, in his Preface, on the separation and discordance of pathology and the treatment of diseases, are still just and applicable, although it may be admitted that since he wrote, some improvement has been made in this direction.

Pathology ought to embrace the very slightest and earliest deviations from the normal state of the beautiful structures composing the machinery of the animal body, and it is altogether a one-sided and unreasonably restricted view of that important science to confine it to a knowledge of those disorganizations, the result of gradual changes of structure and diseased actions, which we can trace after death or the separation of tissues or limbs by the knife. Nor ought we to stop at the earliest changes of structure traceable by the eye with the aid of the microscope, but we should push our inquiries a step further, and endeavour to ascertain the laws and agents which excite disease in local structures. In the functions of digestion and nutrition, in the food, habits, and accidents to which

individuals are subject, in poisons introduced into the system or generated within it, or in the chemical and physical forces and agents which minister to decay and change, we shall discover the primary causes of most local diseases. And to the appropriate constitutional treatment we must look for the most efficient and perfect means of cure.

Mr. Scott has remarked that "the influence of disorder of the health and the digestive organs in keeping up local diseases, has of late years been fully explained;" but the reader must bear in mind that, his purpose not being to treat of constitutional disorders, but the means of arresting and removing their consequences and effects, he has confined his attention to the latter subject, otherwise he would scarcely have adopted such a conclusion. Much has been accomplished since Mr. Scott wrote, but much more still remains to be done to enable us to acquiesce in so sweeping a statement.

With this limitation we can heartily concur in the concluding remarks of the Preface, respecting the necessity for and the great value of local remedies, in the treatment of diseases of the joints and ulcerated surfaces.

In this department of the healing art we should be extremely cautious in deciding where its limits lie, to what conditions we must attach the disheartening conclusion that they are irremediable. If we regard too earnestly the termination of diseases, the state of the tissues as they are revealed by dissection, we shall find our efforts in applying remedies checked, and shall but "enact a law of neglect," as little justified by truth as the pretensions of the most unscientific empiricism.

However accurately we may know the train of consequences which will ensue from the first deviations from a healthy state to their ultimate termination in fatal disease, such knowledge certainly ought not to be deemed of equal importance to that

of the means by which the progress of disease can be arrested; but, strange to say, such is not the order in which contributions to the science of medicine are estimated. An accurate description of diseased states, the discovery of some phenomena about them not previously recognised, are hailed by the profession, and confer immediate distinction on the authors or observers, whilst remedies, or plans of treatment, however effective and valuable, are always received very coldly, often with perfect indifference, and sometimes meet with unsparing and unscrupulous opposition.

The history of this work of Mr. Scott well illustrates this professional prejudice.

The father of Mr. Scott obtained a very extensive popular reputation for the cure of diseases of the joints and ulcerated legs. He resided at Bromley, in Kent, and that village was constantly filled with patients who resorted to him from the metropolis and all parts of the kingdom. We have abundant and unimpeachable testimony that he succeeded in curing numbers of surgical cases which, had they come under the care of the most eminent surgeons of the day, would have been pronounced hopeless. In fact, he saved for his patients innumerable limbs which had been condemned to amputation.

Mr. Scott was not a writer, consequently a certain degree of odium was attached to him by the profession, as it appeared that he pursued some secret process, and this is so opposed to the maxims of professional ethics that even the appearance of it could not be tolerated.

His son, the late Mr. John Scott, having obtained the position of surgeon to a large hospital, and having had long experience of the success of his father's practice, published the method of treatment he had seen and practised.

His work, it must be admitted, was not very favourably received by the profession. The medical journals about the

time of its publication had acquired considerable power and influence, and, for reasons which may readily be assigned, his critics pronounced his pathological principles to contain nothing new, and his plan of treatment was slighted and disparaged. There is always, unhappily, a prevailing fashion in medicine and surgery, and the journals find their account in conformity with it.

The answer to the charge of want of originality is, that with the immense mass of facts accumulated in physiology and pathology, he who would advance the science or art of healing can scarcely do otherwise than avail himself of truths familiar to all, and it is more by new combinations of established principles and new applications of known remedial agents that our hopes of progress lie, than in systems which profess to begin upon entirely new foundations. And the recognition of this truth is as important to the real interests of the profession as it is to the cause of truth and science.

Undeterred by criticism and opposition, Mr. Scott continued his practice, and realized by it a considerable fortune.

A sufficient number of eminent surgeons have adopted the plan to establish the fact of its being highly efficient; but, as too often happens, many who have recognised the practical improvements of Mr. Scott in terms, have departed from it so far in practice as, in a great measure, to render it nugatory. Thus Mr. Liston, in his "Practical Surgery," observes, "In chronic swelling of a joint, following an acute inflammatory attack, or coming on slowly and gradually as a consequence or not of some slight injury, the first object of the practitioner will be to arrest the progress of the disorganization, to stop it short of destroying the cartilages and corroding on the bone he will also have to endeavour, by all means in his power, to promote absorption of the fluids effused into the synovial capsule and bursæ, and to bring their secreting membranes

into a more healthy condition. These indications, in consequence of the advanced stage of the disease and the state of the constitution, are not easily fulfilled in many of the cases which present themselves. In the more favourable cases speedy amendment will follow the fixing of the articulation and the application of uniform and gentle pressure. This is effected somewhat after the manner of Mr. Scott's plastering which has been employed very extensively and rather indiscriminately in all and sundry affections of joints, and to many swellings and pains in other parts. A great part of Mr. Scott's process—all that part of it intended for effect—may well and safely be dispensed with, such as the bathing with camphorated spirit, the mercurial ointment, and a vast deal of the plastering.

"The treatment necessary to control or check disease in joints in particular cases demands on the part of the practitioner a careful, steady, and proper understanding of the various pathological changes, a nice discrimination, and a perfect acquaintance with the effects and objects of the various therapeutic means. In all injuries and diseases of joints, in the slow strumous degenerations, white swelling (a most comprehensive term), as in the most violent form of articular inflammation, perfect quietude and repose of the affected part form the most powerful and essential curative indication; neglect this, and all other means are found nugatory and were as well untried. Nothing but disrepute and disgrace can accrue to the profession and professors if hot irons, moxas, and issues continue to be used, as they often are inconsiderately enough, to the neglect of more powerful and less appalling means. Instant relief invariably follows a state of perfect and absolute rest; other means, local and constitutional, are thus afforded a fair chance of doing good, and the natural efforts towards a cure are no longer thwarted and interrupted. But above all, the effect on the general health is

most remarkable and cheering. Even in very complicated and bad cases, in which sinuses communicate with the cavity of the joint, in which the heads of the bones are ascertained to be in a state of ulceration, the good effects of perfect quietude of the joint will soon be manifest by the cessation of pain, the cessation of discharge, and the improvement of the patient's health."

Having thus adopted one important, nay indispensable point of Mr. Scott's practice, and stated his principle, Mr. Liston proceeds to describe the means he recommends for the purpose of securing the perfect repose of the joint. It consists of layers of lint soaked in a solution of gum acacia, bound over and around the joint with a coarse calico roller bandage, with the occasional use of a splint to keep the whole in its situation until the mucilage dries—a most inefficient and awkward substitute for Mr. Scott's plaster must such a gum arabic casing prove! At the same time, while admitting that in many cases this plan will entirely fail, and that other measures and purposes must be sought besides the simply rendering the joint quiescent, the writer has overlooked the other no less important principles of Mr. Scott's method. The truth is, the substitute involves far less trouble, time, manual labour, and we may add watchfulness and surgical skill; and therefore if it accomplishes one part, although certainly an indispensable one, of the general indication, it must not be confounded with Mr. Scott's method, and when and where it fails, the failure cannot be adduced as evidence against the latter.

The means described and recommended by Mr. Scott secure in the most perfect and complete manner the quiescence of the joint; it is one of its great merits that it does this more perfectly and for a longer period without a necessity arising for shifting and renewing the dressing than any other way. But it does more than this, it excites and maintains a gentle,

warmth and action upon the skin over a large surface around and contiguous to the diseased joint, and thus by the well-known principle of counter-irritation, relieves and subdues the inflammatory action in the structures of the joint itself. It effects in this way, all and more than all, that can be effected by friction, embrocation, moxas, blisters, &c., since the action on the skin is persistent, painless, and associated with support and perfect repose. Moreover, it is free from the objections which lie against any and every one of these methods of obtaining counter-irritation.

It is by combining the two principles of treatment, both ministering to the same end, and both essential to success, for which no other means, so far as we know, have been suggested adequate to the purpose.

The camphorated spirit application, the mercurial ointment, and every part of the plastering, are therefore indispensable, and in the absence of other means adequate to the end, if they are left out render the whole valueless.

That there is still another agency enlisted in the curative process, will be by most observant persons readily conceded. The campho-mercurial ointment, of which Mr. Scott's sheathing for diseased joints consists, most certainly exerts a beneficial and healing influence upon the diseased parts; whether it be by a species of stimulation, or by some more recondite action of the mercury on the vessels of diseased, or inflamed structures, may be disputed according to our views respecting the influence of this substance upon the human constitution, but that it ministers materially to the end in view, namely, the recovery of the joint, is most certain.

It may appear a very trivial discussion to enter upon as to the manner in which any particular remedy acts in restoring a part to health, if abundant experience has been collected to prove that it does effect such a restoration. But it is precisely

on such questions, answered on purely theoretical grounds, that very many real improvements in surgery and medicine have been first inefficiently tried, injudiciously modified, and then rejected from practice.

It is an inefficient application of Mr. Scott's principles of perfect repose, counter-irritation, and mercurial-stimulation, associated and employed simultaneously, when mere gum, or wooden splints and calico bandages are substituted for his applications, and no fair argument either for or against his method can be drawn from the utter failure of the latter.

It is not difficult to assign the reason for this substitution having been adopted. Mr. Scott's plan involves a great amount of personal trouble to the surgeon; it requires considerable manual skill, and far more manual labour, to dress a joint in his way than is exerted to amputate a limb. Nothing is left to the patient himself, who has to resign himself into the surgeon's hands as completely as he does for a great operation; and the mere packing up a joint in a way favourable to a slow process of cure ensuing, neither gratifies the taste nor imagination; but in humble and permanent usefulness it equals, perhaps surpasses, the more brilliant efforts of surgery.

In a literary point of view, few books are more susceptible of abridgment than this of Mr. Scott's, but it has been deemed expedient to republish it entire, because when the principles and practice it describes and commends are stated as naked propositions, without a full relation of the evidence upon which they arose and are based, it is not so manifest that a slight departure from the course of treatment in some of its details will defeat the whole end and aim of the method. But this is seen at once if the book itself is read. Moreover, it is the greatest evil incident to the literature of medicine, that most practitioners are content, perhaps compelled for want of time, to read of remedies, methods of cure, and histories of diseases

in manuals and compendiums, instead of the original monographs of real observers. It leads too, to uncertainty, and an eternal fluctuation in practice, to the oblivion of most valuable facts and the adoption of innumerable errors. If, therefore, a surgeon wishes to know what has been found the most effectual method of treating the diseases of the joints, he ought to peruse carefully and thoughtfully this work of Mr. Scott's. If his purpose is to trace the diseases in the various structures, to understand, in a word, their pathology, he will find it in Sir B. Brodie's volume.

The chapter on ulceration and chronic inflammation, which in Mr. Scott's first edition preceded the treatise on the joints is here placed at the end. It is certainly, to say the least, fully equal in value to the former part of this treatise. It is well worthy of the attentive perusal of the student and young practitioner, as containing an exposition of some of the most important principles of surgery.

This, perhaps, is the place for me to mention that the plan of treatment recommended by Mr. Scott, in diseases of the joints and the treatment of ulcerations, is equally applicable and effective for the removal of tumours, whenever they exist in the common integuments, in superficial glands, or in the substance of muscular parts.

In inflammation of the periosteum, threatening caries of the bones, in nodes, and in inflamed bursæ mucosæ, no remedy is so efficient as his ointment and plasters, properly applied and steadily persevered with.

For inflammation of the vertebræ, either of the bones or connecting ligaments, in caries and consequent incipient deformities, the accurate adjustment of pressure, with the same applications, is, of all curative measures, the only one which can be implicitly relied on.

I sincerely trust that the reproduction of this treatise will extend the application of Mr. Scott's method of treatment to the relief of many sufferers, and the preservation of many limbs.

I have added a chapter on the Constitutional Origin and Treatment of Diseases of the Joints, a subject only casually touched upon by Mr. Scott, but which the more recent progress of the science of surgery has greatly elucidated.

W. H. Smith.

51, Mortimer-street, Cavendish-square.

MR. SCOTT'S PREFACE.

Of the diseases of the joints, the pathology has been so fully and accurately investigated by various writers, especially in Mr. Brodie's invaluable work, that little remains to be done on this part of the subject, but the treatment still admits of very great improvement; for in most diseases the latter is seldom a logical consequence of the former, but itself requires a separate investigation. Hence we find that the most profound pathologists are not always the most successful practitioners. Dr. Baillie is said to have remarked, that "although he knew better than other men how to distinguish a disease, he did not know better how to cure it;" and there is a whole nation (the French) remarkable for the minuteness of their pathology and the inefficiency of their practice.

The object of this work is to communicate that mode of treatment which my father, Mr. Scott of Bromley, has for many years employed in diseases of the joints with complete success in a vast number of cases, in which the methods ordinarily employed had proved ineffectual. It is now many years since I first learned it from him. I have seen its efficacy verified in numerous cases, first under the care of my father, and since under my own, and I feel it to be too important to be confined to an individual.

To this Essay is added a short inquiry into the nature and treatment of chronic inflammation, and ulceration in general. This I have been compelled to do in order to explain the operation of the remedies proposed; I have, however, endeavoured to treat the subject as concisely as possible, and to

confine my observations to a statement of those facts which are necessary to illustrate the principles I wish to establish.

The influence of disorder of the health and the digestive organs in keeping up local diseases has of late years been fully explained; but little notice has been taken of the reverse truth, the influence of local disease in keeping up disorder in the constitution and the digestive organs; yet the latter is as true and important as the former. Pain or any irritation in a part will assuredly spread disturbance throughout the system, and thereby impair the functions of the stomach, and its connected organs; and if we can relieve this pain, or soothe this irritation, by local remedies, we shall go as far towards imparting tranquillity to the system and the stomach as by the employment of alteratives, aperients, and a regulated diet, which it is often vain to adopt without attention to the former. There never was a greater delusion than that of supposing, with some modern surgeons, that medicine and diet are all that is necessary for the treatment of local diseases, and that local remedies are needless. It is a scrupulous attention to, and a dexterous application of, the latter in addition to the former, which has enabled my father to succeed in curing so many local diseases, which had baffled all previous efforts.

10, New Broad Street,
January, 1828.

DISEASES OF THE JOINTS.

THE term white-swelling was once indiscriminately applied to most of the chronic enlargements of the joints. It is now well known, that, however similar they become in their latter stages, the disease originates in different structures. But it is often impossible to distinguish, from the appearance presented at an advanced stage of these diseases, which structure was primarily affected; and the diagnosis chiefly depends on what information we can collect about the previous symptoms and progress of the complaint. This want of distinction, however, is of less practical moment than might have been supposed; the disease, although modified by the structure in which it is seated, essentially consists in chronic inflammation, and its consequences. Hence the same principle must regulate our treatment in each form of these diseases; the practical object is to proportion the activity of the treatment to that of the disease, and this will be indicated by the urgency of the symptoms, in whichever structure disease is going on.

Although disease may begin in any of the component parts of an articulation, it may ultimately involve the whole. Mr. Brodie has shown that there are three parts in which these diseases commence; the synovial membrane, the articular cartilages, and the cancellous structure of the bones: but textures so intimately connected soon participate in diseased action, and the disease, although simple in the beginning, becomes more or less complicated in its progress. The knee and hip joints are more frequently the seats of disease than the other articulations of the body. I have therefore selected

them as the subject of the following description, only remarking, that what is true about these larger joints, is true also of others on a smaller scale.

DISEASE ORIGINATING IN THE SYNOVIAL MEMBRANE OF THE KNEE JOINT.

When disease begins in the synovial membrane of the knee joint, the inflammation in general is not very acute; it pursues its course slowly, but ultimately extends to the contiguous parts. It seldom attacks children or old persons, and is most frequent about the adult period of life. The symptoms which characterise it, and the order in which they occur, are as follows: stiffness of the joint, which is greatest in the morning, and diminishes after exercise (because the synovia, which is suppressed by inflammation, is promoted by a little exercise; yet the exercise, though it may appear to be useful, is actually injurious, for the joint is better after a day of rest than of exertion), pain on moving the joint,—tenderness,—at length pain even when the joint is at rest,—tumefaction of the joint, at first only a general fulness, but soon more considerable, chiefly prominent on each side of the ligamentum patellæ, subsequently causing an elevation of the tendon of the rectus femoris,—fluctuation in the joint; about this time a partial and temporary alleviation of the inflammatory symptoms,—pain greatest at night, and chiefly referred to a spot between the inferior edge of the patella and the head of the tibia. As the disease advances, the fluctuation is less distinct. Now, the motions of the joint are more limited, and the leg cannot bear to be extended; hence, the patient keeps the limb half bent: the skin surrounding the joint is so pale as to have given it the name of white-swelling, and shows to what an extent the blood has retreated from the surface to the interior of the joint; it is also so distended by the swelling as to assume a shining appearance. Hence also the natural depressions of the surface of the joint are filled up, giving it an oblong spheroidal shape: there is a sense of internal heat within the joint, the remainder of the limb being chilly and

wasted, making the enlarged joint look larger than it really is. This depends not only on a wasting of the muscles from disuse, but on a non-deposition of the buffer of fat, the supply of which is cut off by the great excitement going on in the neighbouring joint; sometimes the inflammation having begun and advanced slowly, will be suddenly rendered more acute by a blow, or disorder of the health. As the disease advances, the internal heat, the external swelling, the limitation to the motion of the joint, the pain on moving it, or resting on it, all become greater. The pain in many instances is so violent as to deprive the patient of sleep; great constitutional irritation arises, and often spasmodic contractions of the muscles of the affected limb. These are exceedingly distressing, and occur chiefly when the patient has relapsed into a doze, and thus has lost all voluntary control over the muscles.

Such are the symptoms, and their progress, when inflammation begins in the synovial membrane of the joint.

Whilst the above symptoms, in the above order, have been indicating the progress of disease, the following are the changes which have been going on in the internal structure of the joint, as far as they can be inferred from the symptoms, or have been detected by dissection.

The disease begins in that part of the synovial membrane which does not cover the articular cartilages, and consists of the following changes, in the following order: an increase in the vascularity of the membrane; diminution of its secreted fluid; slight swelling of the membrane; after a little time, an effusion of an unnatural quantity of fluid into the joint; a deposition and organization of coagulable lymph, limiting more or less the motion of the joint. Sometimes large masses of lymph are deposited, of an oblong form, which adhere to the inflamed membrane only at one extremity; but in most instances the inflammation is more equally diffused, and the lymph adheres to the whole inflamed surface; thickening of the synovial membrane, and of the cellular substance exterior to the capsular ligament, constituting a soft pulpy mass, often agglutinated to the skin. This sometimes renders it difficult to detect fluid within the joint.

When the changes that have been described have taken place within the joint, the disease, sometimes, by palliative treatment, has become stationary, and the patient, keeping his limb at perfect rest, comparatively easy. Slowly, however, the disease advances, and at length ends in ulceration, which generally extends to the articular cartilage of the tibia before that on the femur is at all affected. Next, caries extends to the extremities of the bones; the whole cavity of the joint is in a state of suppuration, attended with so severe an aggravation of all the symptoms, that too frequently the patient falls a victim to the disease. The commencement and advance of ulceration are attended by excruciating pain; but when suppuration has taken place, there is often some alleviation. Thus this period of the disease may be marked by a slight diminution in the pain, with an increase in the bulk of the joint; yet this is not always the case: sometimes the progress of inflammation and ulceration, together with an enormous distension of the joint, prolong the suffering, which does not abate until the joint bursts and its contents are evacuated.

The articular cartilages being destroyed, and thus the extremities of the bone denuded, as long as the morbid action continues, the process of reparation cannot begin. If it was difficult to arrest the disease before, it is still more so now, with an increased local disease, and a diminution of constitutional power, with hectic fever. If the diseased action can be arrested, anchylosis may be accomplished. In most instances, however, the extremities of the bone have become soft, and not so well calculated to deposit bone as in their natural state. Thus the great obstacles to anchylosis in this advanced stage of the disease are, the continuance of morbid action, softness of the bone, and a debilitated system. Occasionally, the disease, having destroyed the cartilages, stops, and does not extend to the bones, leaving them hard, polished, and grating during the motion of the joint.

Not unfrequently disease of the synovial membrane is much more gradual and insensible than the process above described, for a long time being indicated by no other symptoms than a trifling enlargement of the joint, with slight stiffness and slight

tenderness on pressure, or on extending the leg, and it will go on in this indolent state for a very long time. At length there appears a gradual increase of the swelling, with an undulating feel to the touch, not from effusion, but from thickening of the synovial membrane; the motion of the joint becomes limited, partly from deposit, and partly from pain; the limb becomes contracted, the surface of the joint pale, with a slight aching at night. In this state a diseased joint will often remain stationary a long time, sometimes ultimately advancing very slowly, but in other cases suddenly, assuming a more active form, and becoming the formidable disease which I have described above. The two forms of disease already described have a common cause, and also a common termination, that is, the destruction of the joint. This takes place in both cases in the same way, so that, from the appearance of the latter stages, it is impossible to say whether it began in the more or the less acute form.

Causes.—The causes of this disease are various. In many instances it is produced by mechanical violence; slight, perhaps, in its effect in the first instance; but the daily exertion of the limb keeps up the inflammation in the synovial membrane, till it continues even though the joint is rested. Fever appears sometimes capable of producing acute inflammation of the synovial membrane; at least, when the constitution has been affected by long-continued excitement, this form of disease sometimes occurs. Cold, also, is one of its exciting causes, but I think seldom, unless the constitution has been previously disordered. A loose cartilage in the joint sometimes occasions it; likewise when joints have been weakened by acute rheumatism, this state sometimes terminates in inflammation of the synovial membrane. When the constitution has been debilitated by the long-continued use of mercury, cold will not unfrequently occasion inflammation in a joint, and this may begin in the synovial membrane. It may occur also in that feeble state of health left by small-pox, or other eruptive fevers; but in all these cases, the state of the constitution seems only the predisposing cause, for the commencement of the disease is generally, and apparently with reason,

attributed to exposure to cold, or some mechanical injury. The state of constitution, however, in which this disease, when once set up, is most liable to run the course I have described above, is that which is called the strumous.

DISEASE BEGINNING IN THE SPONGY EXTREMITIES OF THE BONES.

Disease may begin in the cancellous structure of the bones, and be propagated gradually to the cartilages, and to the synovial membrane of the joint; it occurs most frequently in children, and is rare after the body has arrived at maturity. Those are most liable to it who have a strumous constitution; but this may prevail in various degrees: it may be so slight as to show itself only when the health has been impaired by long illness, or it may prevail in so great a degree as to manifest its influence even in ordinary health; thus in some children, the cervical glands will swell, although their looks, feelings, and appetite indicate no falling off of the health. This form of disease is very generally either accompanied or preceded by other scrofulous symptoms, and is so insidious in its commencement as frequently to escape observation, until it has made considerable progress. When occurring in children, it very often is not observed at all, until they are unable to walk without limping, and on examination the joint is found to be enlarged. The first symptom usually complained of is an occasional obtuse pain, deeply seated in the articulation, and unattended by any swelling at the commencement. This symptom, however, is neither constant nor considerable, from the circumstance of the diseased action being carried on very slowly, and in a structure but sparingly supplied with nerves. A feeling of weakness in the joint is also complained of, and a degree of fatigue after exercise, greater than that which is experienced in the corresponding limb: the pain is altogether inconsiderable, and is not immediately increased by moving the limb in any direction; but the stiffness and inconvenience are more perceptible in the evening of a day in which the limb has been much used, and the joint is

at this time somewhat fuller and larger than natural. This fulness arises partly from the secretion of an increased quantity of synovia, and partly from slight swelling of the soft parts, and subsides after a few hours' rest. The joint will allow of complete flexion and extension, is not tender to the touch, nor is there in the first instance any effusion into the adjacent structures. When the disease has extended to the periosteum, the pain becomes somewhat, but not materially, increased; the joint is enlarged, and the patient limps in walking; the swelling presents the appearance of an enlargement of the bones themselves, retaining to a great degree the natural shape and figure of the articulation, and affording a firm and somewhat elastic feel to the touch. The skin assumes an unnaturally white appearance, which it retains throughout a considerable period of the disease. Subsequently, the soft parts become tender and more considerably swelled. In the early stages the chief tenderness is just on the condyles of the thigh bone, while no uneasiness is felt on pressing the other parts of the joint. The periosteum and superjacent cellular membrane sympathise with the disease in the bone almost invariably before the cartilages and synovial membrane of the joint. The swelling is confined to the soft parts covering the extremities of the bones, in the present stage of the disease; the joint appears to be wider than natural when viewed anteriorly, and presents a very different appearance from that which arises from disease commencing in the synovial membrane. From the wasting of the limb, the swelling of the joint appears to be greater than it really is. When the disease has extended to the cavity of the joint, the motions of the limb become limited and attended with pain, particularly in the extension of the leg, so that the patient keeps it bent to a certain degree, and walks on his toes. But the pain, swelling, and tenderness are by no means so considerable as when the synovial membrane is the primary seat of disease. When it has extended to the soft parts, it proceeds rather more rapidly than before; coagulating lymph and fluid become effused into the cavity of the joint, as well as into the substance of the synovial and cellular membranes. These effects take place in

general without any pain, except on motion, and are attended with little constitutional excitement. Before suppuration has taken place within the cavity of the joint, abscesses generally form in various parts of the cellular membrane, communicating with the surface of the bone. When the disease has arrived at this stage, it not unfrequently assumes a more aggravated form. Ulceration proceeds with comparative rapidity, attended with more considerable pain, and suppuration is established in the cavity of the articulation. When ulceration and suppuration are about to take place, the disorder of the general health becomes more considerable than it has been during the former periods of the disease. Not that there is now any violent constitutional disturbance; but a dry feverish heat is felt on the surface of the body; the powers of the stomach are impaired; great disinclination is felt both to take food and exercise; the appetite is often depraved, as well as defective; the bowels are generally costive; and the patient becomes weak, languid, and emaciated.

If the position of the limb be not particularly attended to, it will frequently become contracted, and in some cases this will increase until it becomes fixed at a right angle with the thigh. In other instances, the leg will be even dislocated upward and backward by its powerful flexors, so that the condyles of the os femoris form a considerable projection beyond it. When the disease has arrived at the latter stages, the patient is very much distressed by spasmodic contractions of the muscles on the affected limb, when he loses control over them in falling asleep; the pain is also more severe at night. When the constitution is highly disposed to scrofula, or when, this disposition existing in a minor degree, its powers have been reduced by previous disease; it frequently occurs, that a sufficient proportion of phosphate of lime is not deposited in the bones to enable them to bear the superincumbent weight, and to resist the action of the muscles inserted into them. This state is more frequently manifested in the spongy extremities of the bones than in their more compact structure.

Although the soft parts of the body may be imperfectly developed, and nourished in an inadequate degree without

giving rise to disease in them from the absence of exciting causes, a deficiency of earthy matter in the bones renders them liable to be inflamed by mechanical causes, which could not produce any ill effect, were they of their natural firmness. The disease in general arises without any assignable cause, and often occurs in several joints at the same time; which latter circumstance proves that it must be attributable to a cause influencing simultaneously all the joints that are so affected. "Although the vascularity of bone is perhaps as complete as that of many other structures, it is so sparingly endued with nerves, that it is less readily roused into diseased action either from exciting causes or from sympathy."* Admitting that the structure of the bone were perfect, it certainly would not be liable to be diseased so frequently as this affection occurs. The disease occurs at that period of life, and in that part of the bone, in which there is the largest proportion of animal, and the smallest of earthy matter, and in which also the vascularity is the greatest. When it occurs in the shaft of the bone, the internal cancellous structure is the part primarily affected. The first stage of the disease may be considered to consist in a preternatural softness of the cancellous structure of the bone, from a deficiency of its earthy matter. This portion of the bone becomes increased in vascularity, in consequence of its being inflamed by the pressure and contusion it experiences in the motions of the limb. The inflammation is of course modified by the constitutional predisposition of the individual, assuming the form and producing the effects of scrofulous disease. As the medulla becomes absorbed, the vessels having assumed a morbid action, cannot produce a healthy and natural secretion. The cancelli are therefore filled with a transparent straw-coloured fluid, and subsequently a substance of a caseous consistence will be deposited in them. Sometimes the former will be absorbed, and the cancelli will be found to be wholly occupied by the latter. This substance, like the diseased action which produced it, may pervade the whole extremity of the bone, or it may be

* Hunter on Inflammation, &c.

confined to a portion of it. As the disease advances, the cancelli themselves are partially obliterated; portions of the bone mortify and exfoliate, other parts become carious. Some time ago I witnessed the amputation of a wrist joint, affected with this disease: the operation was performed at the earnest desire of the patient, on account of the excruciating pain he endured, which was infinitely greater than could be accounted for by the appearance of the disease, and arose from a large piece of the bone having exfoliated into the joint. Sometimes the inflammation in the bone itself will be more severe, attended with pain and the formation of matter in its substance, which may communicate by a small opening with the cavity of the joint. In other instances a considerable portion of the extremity of the bone will be destroyed by caries. The disease extends to the cartilages and the synovial membrane of the joint, which ulcerate, and matter becomes effused into its cavity. The ulceration of the cartilage commences in that side of it which is in contact with the bone. In some instances the sinuses which result from inflammation in the cellular membrane external to the joint, subsequently communicate with its cavity, and give exit to the matter it contains; in others, the joint becomes distended to an enormous size before it ulcerates, its parietes presenting a purple hue. In this form of disease, even should the morbid action be arrested after it has destroyed the cartilages, the structure of the bone is so greatly altered and impaired, that ossific union of its extremities rarely, if ever occurs; they are usually united by a ligamentous substance, and may be separated again by maceration.

DISEASE COMMENCING IN THE CARTILAGES.

Disease sometimes begins in the articular cartilages. This is most frequently met with at the adult period of life. The first symptom is pain, which is inconstant in its duration, inconsiderable in degree, and referred to various parts of the affected limb. At first, the joint is more particularly painful after much exertion, and is relieved in a corresponding degree

by rest; shortly, however, the pain becomes both fixed and permanent, and is aggravated by every movement of the joint. The patient consequently limps in walking, more especially when he first begins to move the limb; he keeps the knee bent, and the heel raised, the toes only coming in contact with the ground. He is compelled to keep the limb in this position, in consequence of the great pain experienced by the compression of the ulcerated surfaces in any attempt to extend the leg. For the same reason he can bear the limb to be moved by his hand, when he cannot raise it by means of its own muscles. These symptoms occur before there is any tumefaction of the soft parts about the articulation. The pain becomes more severe in proportion to the progress of the disease, and the patient is very much harassed and distressed by spasmodic contractions of the muscles on the affected limb. He will usually point to the head of the tibia as the chief seat of the pain, which, in the generality of instances, will continue to harass and distress him for several months before the soft parts are affected. It will be particularly aggravated by any position of the limb in which the articulating surfaces are compressed against each other. When, however, tumefaction of the soft parts does occur, it is slight in degree, and by no means proportionate to the pain. It arises from inflammation and thickening of the cellular membrane external to the cavity of the joint, and is unattended by fluctuation. In some cases, where a portion only of the articulating surface is diseased, the patient will experience relief by placing the limb in such a position as shall take off the pressure from the ulcerated surface, and throw the weight on that which is not affected. This accounts for his being in pain in certain positions only of the limb.

After the disease has existed for a considerable time, fluid is in some instances effused into the cavity of the joint, in consequence of the whole synovial membrane becoming ultimately inflamed. At length, the ulceration in the cartilages extends to the bones themselves, which become carious; matter is effused into the cavity of the joint, attended with an aggravation of all the symptoms, and ulceration of the syno-

vial membrane. This form of disease is readily distinguished from that which commences in the synovial membrane of the joint, by the following circumstances.

At the commencement, the pain is inconstant, inconsiderable, and referred to various parts of the limb; it gradually increases in severity, and becomes subsequently both fixed and permanent. It is altogether unattended by swelling or tenderness on pressure throughout a considerable period of its duration; there is greater pain in the flexion and extension of the joint, and in every motion of the limb, in which the ulcerated surfaces are rubbed against each other; the patient is also very early in the disease distressed by the starting of the limb at night.

When disease commences in the synovial membrane, the pain is always attended by tumefaction of the soft parts, and it is in general as severe in the commencement of the disease, as it is in the subsequent stages, until suppuration is about to be established, and although the motion of the joint is not attended with such extreme pain as in the preceding form of the disease, it is more limited in extent.

Disease originating in the cancellous structure of the bones, occurs generally in young subjects, and much more rarely after the period of puberty. Although pain may precede the swelling of the articulation, this symptom is much less severe than in those cases in which the cartilages are primarily affected, and is not at all increased by moving the joint in any direction, nor does the patient limp in walking, until the swelling of the soft parts occurs from the extension of disease. The disease is very slow, attended throughout all its stages with less pain than either of the preceding forms. The tumefaction is also firmer to the touch, and extends more over the extremities of the bones, presenting the appearance of their actual expansion, and retaining to a great degree their natural figure. Successive abscesses form, and leave sinuses communicating with the diseased surface of the bone in the vicinity of the joint, before suppuration has taken place in its cavity. When an abscess has formed in the cavity of the joint, the size of the articulation is not nearly so much diminished by

its evacuation as in the more acute form of disease which commences in the synovial membrane.

DISEASES OF THE HIP JOINT.

Disease commencing in the synovial membrane of the hip joint is ushered in with pain, which is usually confined to the hip in the incipient stages, and is not so frequently referred to the knee and to the other parts of the limb, until the disease has extended to the cartilages and to the bones, as when it commences in these structures. The pain is increased by moving the joint, so that the patient limps in walking: it is very soon succeeded by tenderness on pressure, and slight tumefaction of the nates and groin; but from the joint being so deeply seated, the swelling is less evident than in the more superficial articulations. The muscles on the affected limb after a short time become flabby and wasted, the nates appear flattened and wider than on the opposite side, and the line by which they are defined at the inferior part is lower than on the sound limb. The limb becomes elongated, and bent upon the pelvis.

When the inflammation has extended to the muscles, their fibres become impatient of extension, so that the crest of the ilium on the affected side now becomes drawn down towards the trochanter major. When the thigh is bent forward, the flexors of the leg are put upon the stretch, and this cannot be effected without compressing the diseased structures. To take off this pressure, the knee becomes permanently bent, and any attempt to straighten it gives considerable pain, which also is frequently referred to the knee itself. This circumstance tends to mislead the patient, and induce him to attribute to the knee the disease which is actually seated in the hip. The thigh and leg being thus elongated, and in a state of flexion, the toes only touch the ground, and any attempt to straighten the limb gives pain.

Fluid becomes effused into the cavity of the joint, varying in quantity in different cases; this may be distinguished from a collection of pus, by its occurring at an early period of the

disease, and not being preceded by so great a degree of pain and constitutional disturbance as would have attended the occurrence of suppuration. Coagulable lymph is effused into the cavity, as well as into the substance of the synovial membrane, which is agglutinated by a similar deposit to the surrounding cellular substance. The disease, continuing its progress, extends to the cartilages and to the bone; producing ulceration, and in this stage the patient is much distressed by spasmodic muscular contraction. The formation of matter is preceded by rigors and an aggravation of all the symptoms, both local and constitutional: these, however, vary in different instances, in proportion to the violence of the disease. In general, the soft parts surrounding the joint become exquisitely painful and tender to the touch, attended with a considerable degree of inflammatory fever. The spasmodic muscular contractions are more frequent, and more painful, the thigh more contracted, and even the slightest movement of the limb intolerable. Ulceration occurs in the substance of the synovial membrane, and usually proceeds more extensively in the acetabulum than in the head of the os femoris.

This joint being deeply seated, the collection of matter in it occasions more extensive diseased action before it can be brought to the surface, and is consequently attended with greater constitutional disturbance than in the more superficial articulations. Sometimes the abscess will break beneath the glutæi muscles; in other cases, it will point in the groin, or on the dorsum ilii. Not unfrequently, too, in consequence of the strength of the fascia lata femoris, it will gravitate down the thigh, and break just above the knee.

When the thigh is kept in a state of permanent flexion, and the cartilaginous brim of the acetabulum has been extensively destroyed by ulceration, the dislocation of the femur on the dorsum ilii may occur. Thus an abscess being formed in the joint, inflammation is propagated to the superjacent muscular structure, in order to bring the matter to the nearest point of the surface. This structure then becomes swelled, tender, and impatient of the extended state of its fibres, which no longer hang in a loose and flaccid state, more especially if

there be a large collection of matter. Under these circumstances, the patient is dreadfully distressed by violent muscular contractions, which ultimately dislocate the femur on the dorsum ilii, the toes and knee being permanently turned inward, and the limb considerably shortened. It has been stated that the dislocation of the limb results from the head of the bone being pushed out of the socket by the pus and lymph effused into its cavity. The former would certainly gravitate out of the acetabulum, and, as the bone is retained in its situation chiefly by the muscles, it is difficult to conceive how lymph can have the power of overcoming their resistance, more especially in the stage of the disease in which their irritability is increased by the extension of inflammation in them, and in which stage alone this effect is produced.

Sometimes we witness very large collections of matter occurring in the hip joint, unattended by the dislocation of the limb. In these instances the inflammation is less acute, and the matter, gravitating down the thigh, does not distend the glutæi muscles. When this is the case, the limb is very rarely dislocated, unless the head of the bone has been destroyed by ulceration to a considerable extent. When this latter effect has taken place, although the limb is shortened, it is moveable in all directions, and, when left to itself, is generally turned outward instead of in the contrary direction. At the commencement of the disease, the pain is more severe than at any subsequent period until ulceration is about to take place, and is greater when the patient moves the joint than when he bears his weight on the affected limb. The pain, however, except when ulceration is about to take place, is not nearly so excruciating as in that form of disease which commences in the articular cartilages.

Many of the symptoms enumerated in considering the disease of the hip joint, commencing in the synovial membrane, are common to those which originate in the articular cartilage, and in the cancellous structure of the bone. The latter occurs commonly in young subjects, and is much more rare after puberty. The organic changes produced in the structure of the joint are similar to those described in speaking of this

affection of the knee. There is little or no pain until the disease extends to the soft parts, which takes place very gradually, and it is then much less acute than in primary disease of the synovial membrane or articular cartilage. Very frequently, indeed, the enlargement of the part is the first symptom that arrests attention. I have seen a large collection of matter take place in a joint, the head of the bone partially absorbed and dislocated, without producing pain enough to disturb the patient's rest. At first, he does not set his foot fairly to the ground; complains that the limb is soon fatigued, and that it is stiff and uneasy after exercise. The motion of the limb is for a long time unattended with pain, which, when produced, is generally referred to the knee. As the disease advances, the soft parts become tender to the touch, both in the groin and nates, and the latter, instead of their previous flattened appearance, exhibit some degree of roundness and tension. The swelling, too, is firmer and more extensive on the dorsum ilii than in the other diseases of the joint, and arises from the soft parts sympathising with the disease in the bone; serum or coagulable lymph, or both, being effused into the cellular membrane. The inguinal glands are sometimes swelled and tender, and occasionally proceed even to suppuration. Abscesses form in various parts of the cellular substance, not communicating with the cavity of the joint, before the latter becomes the seat of suppuration. They are attended with little pain, and terminate in sinuses, which not unfrequently ulcerate into the joint, so that the matter is found to escape by various apertures. Ulceration has generally proceeded to a great extent in the head of the bone before the cartilage of the acetabulum has become affected. The bone, therefore, is seldom dislocated until its head has been so far destroyed as to allow the toes and knee to be turned outwards instead of in the contrary direction.

When the cartilages are the primary seat of disease, the pain, at its commencement, is neither severe nor constant, but gradually becomes so, and is unattended with swelling or tenderness. Pain is the only symptom that is manifested for a long time; it increases with the duration of the disease,

and is aggravated when the ulcerated surfaces are moved on each other; it is usually referred to the knee, or to various parts of the limb, and is more severe in these situations than in the hip itself until the soft parts participate in the disease. The wasting of the limb, and flabbiness of the nates, occur earlier than in the preceding forms of disease, and are more apparent from the absence of swelling. The patient walks lame, and, after a time, is unable to bear weight on the limb or the slightest motion. Spasmodic muscular action occurs early in the disease, and becomes gradually more distressing during its progress. Ultimately, the soft parts become involved in the disease, swelled and tender, and at last are converted into a confused organized mass, in which it is impossible to trace any appearance of the original structures. Ulceration most frequently occurs in the cartilage of the acetabulum at the same time that it takes place in that covering the head of the thigh-bone. When the cartilage is destroyed, the bones become carious, the head of the thigh-bone is diminished and the acetabulum is rendered more capacious, its brim being often entirely removed. Sometimes ulceration proceeds completely through it, and the matter escapes into the pelvis. At the London Hospital, some years ago, there occurred a dreadful case of this disease, affecting both the hips, and the abscesses communicated with the cavity of the pelvis on each side through the acetabulum.

When suppuration takes place, there is usually only one collection of matter, not several small abscesses occurring in succession, as when the disease commences in the bone itself.

TREATMENT OF DISEASES OF THE JOINTS.

I now proceed to the practical part of this Treatise,—that which relates to the treatment of the diseases of the joints; and this divides itself into two parts—first, the constitutional; and, secondly, the local. I shall first explain the constitutional treatment. In this, little novelty will occur to the well-informed surgeon; but as I design this treatise as a guide to the young surgeon, in the treatment of diseases of the joints,

it is impossible for me to omit an important part of this treatment, merely because it wants the recommendation of novelty. Besides which, I shall have an opportunity of explaining the result of my experience on the degree of value to be attached to the different constitutional remedies, and the rules by which they are to be employed, so as to extract from them the fullest advantages. The best remedies may be employed so as to be entirely useless.

*Constitutional Treatment.**—Even in the most acute stages and most inflammatory forms of the diseases of the joints, there is usually little occasion for general depletion : the relief of the part is nearly all that is required for the removal of the febrile state of the system it may have produced. The only constitutional evacuants that are necessary are purgatives, the choice and management of which depend on the particular disorder of the digestive organs. This commonly consists in inactivity of the alimentary canal, with deficient and unhealthy secretions not only of this canal, but of the liver. Hence the combination of mercurial with other purgatives is generally necessary. Our object is better attained by the repetition of moderate doses, than by any sudden and violent operation. When this plan has been pursued sufficiently long to unload the bowels, and to procure sufficient and healthy secretions, the digestive organs remain weak and irritable, and liable to relapse into their former disorder. This is best prevented by an occasional mercurial aperient, and a daily dose of neutral salt, sufficient only to keep the bowels gently soluble. Whenever it is practicable, however, it is more desirable to promote the action of the bowels by exercise than by medicine, and this may often be effected by the aid of crutches. In many instances, however, where the digestive organs have been long disordered, a continued employment of mercurial alteratives and saline aperients is necessary for its permanent removal ; but in these cases, the mercury requires to be used in the mildest form, and with the greatest caution. Occasionally, however, even with these precautions, it increases

* Vide chapter at the end, "On the Constitutional Origin, and Treatment of Diseases of Joints, by the Editor."

instead of diminishing the irritability of the digestive organs. This may often be obviated by giving it in conjunction with sarsaparilla. Sometimes, where these have failed, the tongue has become clean, the appetite improved, and the secretions healthy, by laying aside mercury, and giving in its stead the sulphate of magnesia or potass, and in other cases, by the use of soda with some vegetable bitter and aperient.

In some instances, the power of the digestive organs has been so greatly reduced by the continuance of disorder, that the quantity of food necessary for the support of the individual cannot be digested with sufficient rapidity to prevent the occurrence of fermentation. In these cases alkalies are of essential service in neutralising the acid that is thus generated, and obviating the deleterious effects that would arise from its presence. The operation of this class of remedies has been estimated so highly as to induce many persons to believe that they possess the powers of a specific. Although such a supposition is altogether nugatory, they certainly exert a most beneficial influence in many instances. Probably they may in some measure—more especially when combined with some aperient bitter, as aloes, &c.—supply the place of the bile, the quantity of which is so evidently deficient. The carbonate of soda is the form that I have generally found the most serviceable, given in doses of half a drachm three times in the day: smaller doses I have not found so efficacious.

Next to medicine, the diet requires attention. It must be such in quantity and quality as the stomach can readily digest. Early in life, when the constitution has to withstand the debilitating effects of local disease, as much nourishment should be given as can be well and readily digested. When the system has been much reduced by local disease, the constitutional disturbance has been in some degree relieved, and the patient resides in a pure dry atmosphere, the quantity of food that will be digested is far more than could be expected. It is impossible therefore to determine beforehand the quantity of plain nourishment that may be allowed; but if it consists of plain animal food, and well-boiled vegetables, and all variety of dishes is forbidden, there is little danger that

the unpampered appetite will exceed the powers of the stomach.

The disorder of the digestive organs being removed by the above treatment, they are still left irritable and feeble, and prone to relapse into their former condition; the constitution, too, is enfeebled by the excitement of the disease. In this condition, experience shows that what are called tonic medicines are of essential use. If properly timed, they are seldom given for a week before it is manifest from the amended appearance of the patient, that a step has been gained in the treatment of the case. Some management is requisite in the use of them, beginning with the lightest, as the mineral acids, and then proceeding to the more powerful, as Peruvian bark, at first in infusion, but ultimately in powder, in which form it is far more effectual than in any other. The extract is a good form for children, and the sulphate of quinine, which seems to contain all the tonic as well as the anti-intermittent power of bark, when combined with sulphuric acid, may be borne when the powder could not. It is, however, of all forms of bark the most stimulating, and sometimes parches the tongue and quickens the pulse, in which case it should be withdrawn. The employment of steel is often attended with decided advantage, more especially when given conjointly with some of the last-named preparations.*

In many instances, especially in the advanced stages of the disease, when the constitution is so weak and irritable as not to bear tonics, sarsaparilla is a medicine capable of producing extraordinary benefit: it will often (when all other medicines fail) succeed in tranquillising the irritability of the stomach and of the nervous system. With regard to fermented liquors, I have not seen so much benefit arise from their use as to induce me to recommend their general adoption, even in the latter stages of the disease, except under peculiar circumstances. During the early periods of its progress, they are altogether inadmissible, and even afterwards I think that their acescent quality is so predominant, that it is more inju-

* On the subject of remedies, see chapter at end.

rious than their stimulating property is beneficial. I have frequently found that instead of increasing the strength and powers of the patient, they excite disorder of the stomach, diminish the appetite, and thus debilitate him.

There is another agent of great importance, but requiring great caution, and that is exercise: if not carried to exhaustion, if used with regularity and moderation, it strengthens the muscular fibre, invigorates the circulation throughout the body, and thus is beneficial to the general health. If this was its only effect, its employment would be beneficial in all chronic cases of these diseases; but it often does more harm to the local disease than good to the general health. Whilst the disease in the joint is in the slightest degree acute, exercise will increase the inflammation, which will be indicated by pain; but in the chronic stages, whenever exercise can be taken on crutches without pain, either during the exercise or a few hours afterwards, it may be taken not only with impunity, but with advantage: thus pain is the guide. This exercise, however, must never be continued long enough to produce fatigue. In the intervals, the patient should be confined to the recumbent posture, by which means he will be able to walk longer than if he fatigued himself by sitting up. The exercise, too, should be taken in the open air, in which it is far more invigorating than in apartments, however spacious: it ought never to be taken immediately after meals, the undivided energies of the system being required for the process of digestion. Exercise, by promoting all the secretions as well as the peristaltic action of the bowels, often supersedes the necessity of aperient medicines.

Another point which deserves attention is the function of the skin: its due performance has great influence over the state of the digestive organs. Besides, if it is checked by cold, as is often the case in this variable climate, more particularly in persons whose circulation is languid, internal congestion is frequently the result. Hence, to promote the action of this important surface, woollen clothing should be worn next the skin. With the same view, the warm bath is very useful; its temperature should not exceed 98, and it should not be used

longer than ten minutes at a time, in the middle of the day. If used longer and at bed-time, it is liable to debilitate by producing excessive perspiration.

The warm bath, however, is inadmissible in all cases attended with excessive perspiration. In such cases it is very useful to sponge the surface of the body with cold spirits and water, afterwards rubbing it perfectly dry. In such cases, too, cold bathing is sometimes eminently useful, if it is speedily followed by a general glow.

But of all the means of invigorating the constitution, there is nothing comparable to a residence in a pure dry air: that it will not alone arrest local disease, as some suppose, must never be forgotten, but of all constitutional remedies it is the most valuable. I have often observed that the removal of a patient from London to the country, more particularly to the sea side, has produced a sudden and great amendment in the health and the local disease. That the invigorating power of sea air is far greater than that of country air, I am quite satisfied by experience. When we witness the deleterious influence of marsh air on the human constitution, and the length of time it will last in the form of ague, even after removal from it, it is easy to believe and comprehend the opposite truth, the beneficial influence of a healthy atmosphere.

I have thus far explained only the constitutional treatment necessary for the successful management of the diseases of the joints. On the importance of this treatment I need not enlarge; for an attention to it, unless I am much mistaken, far too exclusive, is the peculiar characteristic of modern surgery. I now proceed to the especial object of this work, that is, to explain the local treatment, which, in the hands of my father and myself, has been very successful in these formidable diseases.

Local Treatment.—The first condition is the absolute rest of the affected joint, for the best remedies will be counteracted by the friction of the diseased surfaces. The degree of rest will depend upon the violence of the disease. In a very aggravated form, the patient must be confined altogether to the horizontal posture; and this strict confinement must be

continued some time after exercise has ceased to be painful. A fresh accession of inflammation is often produced by an accidental slip. The best rule is to keep children off their legs as long as possible, as it requires considerable time after the subsidence of disease, before the joint can bear their active movements, and it is difficult to prevent them from using their limbs, when they find they have the power; at the same time, it is desirable to let them walk out on their crutches, when they can do so without experiencing pain in the diseased joint, either during the continuance of exercise or subsequently. In some cases, although pain is not felt while they are walking, it will come on in the evening, and when this occurs, exercise should not be persevered in; but if this be not the case, they will derive great benefit from it. The same rule will also be a criterion as to the degree of exertion they may safely employ, and the length of time it may be continued.

If the joint is in a state of more or less active inflammation, the first object we have in view is to subdue it, and this is to be done by the same remedies, whether the inflammation is primary or that which ushered in the disease, or a subsequent relapse of a later period. In fulfilling this indication, it is desirable accurately to proportion the quantity of blood that is taken to the degree in which the diseased action is carried on, so as merely to produce a local effect, and not influence the constitution at large. In this manner the disease being mitigated, the system will be relieved and not debilitated. With this view, from six to twelve, or even twenty leeches, may be applied to the part, proportioning the number to the age and strength of the patient, and encouraging the bleeding subsequently by fomentations; or from six to twelve ounces of blood may be taken from the part by cupping. This method will be found very eligible in the hip-joint; but I have sometimes thought that the pressure of the glasses has aggravated the disease when they have been applied to the knee.

On the whole, however, my experience leads me to believe, that the probable effect of blood-letting will be better indi-

cated by the state of the constitution than by the activity of the local disease. In patients much emaciated, local bleeding has rather aggravated than reduced the disease; yet, subsequently, in these very patients, when their constitutional power had been improved by proper treatment, local bleeding has been distinctly serviceable.

When a sufficient quantity of blood has been removed, the best application that can be immediately employed is the common bread and water poultice. I have never found that benefit result from the use of cold applications which others have described, nor do they appear to me to be calculated to produce a good effect in these diseases. The inflammation is internal and deeply seated, and the circulation in the minute vessels of the skin imperfect, as is evident from its remarkably pallid hue. It is desirable, therefore, to promote the cutaneous circulation, rather than diminish it by the use of cold applications.

The abstraction of a sufficient quantity of blood will be succeeded by a diminution of the inflammatory symptoms. It is desirable to abstain from any further bleeding as long as they continue to subside, and then to employ another bleeding, and, if necessary, repeat it after a similar interval, and so on as long as it is followed by relief. By these means the disease will be gradually reduced to a chronic state, which will not be benefited by any further blood-letting, as long, at least, as it remains in that state; but it is extremely disposed to accessions of inflammation from very trifling causes, which will require the application of leeches to be renewed.

Although, in the more acute stage of the disease, a warm poultice, by soothing irritation, and promoting cutaneous perspiration, was highly serviceable, yet here it ceases to be of advantage: the utmost effect it can now exert is, in some degree to palliate a disease it cannot control.

In this stage of the disease, instead of attempting to stimulate the absorbents, to remove the fluid or solid substances that have been deposited either in or around the joint, the true object is to put an end to that morbid action of the vascular structure of the joint which is still going on in the

chronic stage of the disease, and which, though it manifests itself externally by less striking symptoms than those which attend the acute form, is within, gradually destroying the texture of the joint. If this action can be arrested, the absorbents will spontaneously remove the deposited matter.

Since the diseased structure is supplied with an inordinate quantity of blood, and nervous influence to such an extent as to deprive the remainder of the limb of its due proportion, as is evidenced by the pallid colour of the skin, and the wasting of the muscles and the fat, we must infer that this supply is necessary to the maintenance of the diseased action, which will be diminished if we can divert the former to its original destination. As the state of congestion in which the internal vessels are placed has been brought about in a very gradual manner, it can only be relieved by means that are equally gradual in their operation. If, however, we excite in the vessels of the skin which covers the diseased structure a degree of inflammation which does not irritate the system, nor cause any increase in the heart's action, the blood and nervous influence, which are now determined to the maintenance of the new inflammation, are necessarily diverted from the internal disease. If this effect be produced in a degree which shall excite irritation in the constitution, it frustrates its own purpose, by increasing the rapidity of the circulation throughout the whole body, and consequently through the diseased limb. The new inflammation is therefore maintained, and the original disease is aggravated in two ways. First, it will, of course, proceed with greater rapidity when the constitution is in a state of excitement; and, secondly, the superficial inflammation being too violent, will extend more deeply, and will be actually propagated to the disease itself, instead of influencing it by derivation. We must therefore be particularly cautious not to produce too great a degree of inflammation in the skin; and, to render it effectual, we must increase the extent of surface to which the stimulus is applied, and continue its operation unremittingly. This may be done with perfect safety when a more violent excitement would be inadmissible. If we trust to counter-irritation alone, it is

generally impossible to excite it in a sufficient degree to arrest the disease, without producing constitutional disturbance.

The degree of counter-irritation which is safe, yet effectual, will vary in different cases, according to the susceptibility of the patient. The means most commonly employed are blisters, tartar emetic ointment, setons, and issues. With regard to blisters, I have not found them well adapted to these diseases. They succeed very well in mild or incipient cases, with fluid only in the joint; but they are far less serviceable in those of long standing, in which lymph has been deposited. Even the former cases may be relieved with greater ease by milder local treatment. If they are applied sufficiently near the seat of the disease to exert any influence over it, the inflammation they excite is frequently propagated to the morbid structure. In the cases which I shall relate in a subsequent part of this volume, there is one in which the joint became contracted and stiffened during the time that a blister was kept open.

The chronic stages of diseases of the joints are usually attended with little pain, except on moving the limb. For the remedy, therefore, to be proportioned in activity to the disease, it must produce little effect on the sensations of the patient. If the inflammation it excites is attended by any great degree of pain, it will produce constitutional irritation, and thus become injurious. These observations are applicable not only to blisters, but to the ointment of tartarized antimony, which often excites as much irritation as blisters. With regard to caustics, I have met with many cases in which they have been altogether ineffectual, and many others in which they have been decidedly injurious. In those cases, however, in which the disease has commenced in, and is confined to, the articular cartilages, we have the high and valuable authority of Mr. Brodie in favour of issues; yet in these cases he remarks that their long-continued use is sometimes injurious. "I have seen many cases," says Mr. Brodie, "in which the caustic issue has in the first instance removed all the symptoms of the disease; and yet, after some time, notwithstanding the patient has remained in a state of perfect quietude, and there has been no evident cause of aggravation,

they have returned nearly in the same form as before, and with their original severity. In some of these cases their recurrence is to be attributed to the issue itself, which, from some cause that the present state of our knowledge does not enable us to explain, produces an effect apparently the opposite to that which it produced when it was first made. The issue being allowed to heal, the symptoms again subside, and perhaps the patient may find himself entirely and permanently relieved before the sore is completely cicatrized. The same thing may be observed, perhaps, more frequently where a blister has been long kept open by means of the savine cerate; and here, if the blister be of large size, the recurrence of the pain is usually attended with a quick pulse, a furred tongue, and much constitutional irritation; of all which the patient is relieved, when the blistered surface is allowed to skin over."*

I cannot refrain from relating the following instance of the injurious effects of issues. A young gentleman had a disease in the hip-joint, originating in the cancellous structure of the bone. After the acute symptoms had been subdued by local bleedings, so that he was free from pain, except on moving the limb, an issue was made behind the trochanter major. This was immediately followed by extensive inflammation in the cavity of the joint, attended by the most excruciating pain, and violent constitutional disturbance. A large abscess formed, and the joint became dislocated.

Of the use of moxa in these diseases, I cannot speak from my own experience; holding it liable to the objections, just stated, to the use of caustics; and having seen many cases of its failure in the hands of others, I have not felt disposed to make trial of so severe a measure. I have now under my care a case of diseased synovial membrane of the knee-joint, which is rapidly yielding to the treatment I shall have to describe, in which moxa was applied four times, and produced as many eschars, each of the size of a half-crown, without influencing the disease in the slightest degree.

The inflammation of an issue is not readily controlled. It

* Brodie on the Diseases of the Joints, p. 194.

often becomes more violent than is desirable, and in some instances is propagated to the diseased structures. In the instance of the common boil, that degree of inflammation which terminates in sloughing of the cellular membrane, produces merely ulceration of the skin; and the degree of counter-irritation necessary to relieve a local disease, may be excited in the skin far more safely than in the cellular substance, both with regard to the part and the constitution. The mischief produced by issues and perpetual blisters, can never be produced by the local treatment I am about to recommend; and I can confidently affirm, that it will produce all the good results that the former severe remedies can ever effect. The degree of cutaneous inflammation, which I have found so safe and beneficial, produces merely a slight smarting in the first instance, and subsequently an itching in the skin, an uniform redness of the surface, and a slight eruption. When the skin is found in this state on removing the applications, blood will readily flow, by applying leeches or cupping-glasses, provided the symptoms, especially pain, indicate the necessity of so doing.

The above-mentioned irritating, and sometimes very mischievous remedies may be all superseded by the following treatment. 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 the unguentum hydrargyri fortius cum camphorâ. This is thickly spread on large square pieces of lint, and applied entirely around the joint, extending for at least six 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 one inch and a half broad, and vary in length; some are fifteen 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 is the only difficult part of the process. 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 front, the other for the back, the two others for the sides of the joint. 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.

In some cases, in which the skin is thick and indolent, sufficient irritation will scarcely be excited by the above applications, and this may be promoted by rubbing on a small quantity of tartar emetic ointment previously to the application of the cerate. This, however, is rarely necessary.

In some cases, also, it is desirable more effectually to prevent the motion of the limb, particularly in children. This may be done, by applying on each side of the joint, externally to the plasters, a piece of pasteboard, softened by soaking in water, and cut into the length, breadth, and form of splints. These being soft, will accommodate themselves to the figure of the joint, and, when dry, effectually preclude all motion.

I think that this form of splint is infinitely preferable to those that are made of wood. It affords a very firm support to the limb, and at the same time counteracts the contracting effort of the muscles in as great a degree as can be effected without exciting inflammation. I have met with cases, in which the diseased surfaces have been so forcibly compressed, by means of wooden splints, as to excite inflammation, and

thereby cause a more violent contracting effort of the muscles, the resistance of which has aggravated the disease.

It is manifest that the contraction of the limb arises from the disease in the joint, and the degree of the former will be proportioned to that of the latter. It is equally obvious, that any forcible compression of the diseased surfaces by splints, or other means tending to restore the limb to a straight position, will aggravate the disease, and therefore frustrate its own object. It appears to me, that the contraction of a limb, under these circumstances, may best be prevented by those remedies that will most speedily and effectually relieve the disease, at the same time urging the patient to favour the restoration of the limb to its proper position as much as possible, without occasioning pain. It is surprising how completely this may be effected in a gradual manner, during the subsidence of disease. I have at present under my care a young gentleman, whose hip-joint is anchylosed in a position perpendicular to his body, which when I first saw him was forcibly contracted at a right angle to the trunk.

The remedies thus applied will not require very frequent removal. The time during which they may be left undisturbed, will depend chiefly on the necessity for a repetition of the bleeding, in which we must be guided by the degree of pain, or when there are open abscesses, by the quantity of the discharge. Should neither of these influence the question, the only necessity for removing the dressings will arise from their having ceased to keep up any irritation in the skin. In some cases it will be necessary to re-apply them every week; in the generality of instances they may be allowed to remain a fortnight, and in others for a longer time. Even where there are open wounds, I allow them to remain several days, or a week, being firmly convinced by experience that the presence of the matter does less harm than the frequent disturbance of the part. A strumous ulcer can scarcely be disturbed too seldom; nothing does so much harm as officious dressing and probing.

Consider the condition of a joint thus done up. First, it is thickly encased in emplastrum plumbi, leather, and calico, by which perfect rest is ensured, and it is so supported and

secured from external injury, as no longer to be a source of perpetual anxiety to the patient. It is a striking sight to see a child, who, before the application of these dressings, was in constant fear of being touched and moved, this fear keeping him in a perpetual state of nervous irritation, immediately after their application losing all fear about his joint, and permitting himself to be touched and carried with perfect tranquillity of mind. This circumstance alone cuts off a constant source of irritation to the constitution.

Besides this, the moderate, uniform, extended support which the plaster-bandage affords is the best remedy for the vessels, weakened by long disease, and in that state which constitutes chronic inflammation. Of this, the best proof I can offer is the great efficacy of this bandage in old ulcers of the lower extremities, which are kept from healing by a chronic inflammation of the integuments, and which heal on curing this chronic inflammation by mechanical support. Let it never be forgotten, however, that this remedy is inadmissible, as long as active inflammation exists in the joint, which it is sure to aggravate, and that, in applying it, it is of the utmost importance to distinguish between a moderate and uniform support, which affords the full benefit I have been describing, and violent unequal compression, which, by impeding the circulation, is sure to aggravate the disease. There is only one rule that can be a safe guide in this respect—to apply the plaster-bandage in such a way as shall afford ease and comfort to the patient. If it occasions pain, either on its first application or subsequently, it is either applied badly, or the part is not in a fit state for it. So much for the mechanical mode in which this method of treatment operates.

Next, it is a powerful means of exciting the vessels on the surface, and by that means of determining the blood from within. The skin is rubbed with camphorated spirit until it is red, and smarts; it is constantly under the influence of an ointment strongly impregnated with camphor, and, by being enveloped in an impervious covering, the perspiration of the part is confined, so as to keep it constantly in a steam bath. In these ways the action of the vessels of the skin is greatly

promoted, as is evident by the surface being no longer pale, and commonly becoming covered with a crop of slight pustules or vesicles.

Lastly, this surface, thus kept in a constant state of augmented action, is exposed to the influence of a powerful mercurial preparation. That mercury is one of the most powerful means we possess for controlling the action of the capillary vessels, removing congestion, and subduing inflammation, has been so fully proved of late years, more especially in inflammation of the iris, that it would be superfluous to attempt to prove it. In these cases, the whole system must be subjected to the influence of the remedy, in order to control the disease of a part. In diseased joints, however, the debility and irritability of the constitution are so considerable, that if mercury be given so as to affect the system, it invariably aggravates the disease. The only question, therefore, is, whether it exerts the same power when applied locally, without affecting the constitution. I am aware that the prevalent notions about the way in which mercury operates are unfavourable to a belief in its local operation. But if mercury did not possess a power when locally applied, why is it ever employed as a local remedy? What shall we say to the many instances in which enlarged glands and other tumours waste and disappear under mercurial plasters? When mercury is introduced into the system by friction of the skin, must it not pass through the vessels of the part before it can reach the system? and how can it pass through these vessels without acting upon them? To deny it, would be to contend, that it did not act upon the part until the whole constitution became impregnated with the remedy, and, as it were, reflected its action again on the part from which it was received; a proposition which implies a much more minute knowledge of the way in which the remedy operates than any man in the profession possesses. I trust, however, that what I have already stated is conclusive on this subject; but, at all events, I am certain that the other remedies are not nearly so efficacious if the mercurial ointment be omitted.

The remedies I have just detailed may be employed for

any length of time, and over any extent of surface that may be necessary, without irritating the constitution, or producing salivation. They also admit of being varied and modified in as great a degree as the disease varies or is modified by them; they are consequently adapted to disease commencing in any of the structures of which a joint is composed, as well as to the various stages in which it may be found. Mechanical support is applicable to that degree of diseased action by which lymph is deposited, and it is capable of arresting the progress of ulceration and suppuration, and preventing their occurrence. Whether merely the effusion of lymph has been produced, or whether ulceration and suppuration have taken place, the disease we have to combat is essentially the same, differing in degree rather than in kind.

Thus there may be active inflammation excited in every form and in every stage of the disease: this must be reduced by proportionate loss of blood, and by soothing applications. The former must be regulated by the degree of tenderness and pain when the limb is in a quiet state, and repeated as long as it continues to afford relief. If there be no pain at all except on motion, this remedy is not required, but we may safely have recourse to the other means.

The more chronic form of disease in the synovial membrane is so indolent, that it is with difficulty acted upon at all, and is very little relieved by the loss of blood. In this description of case a greater degree of counter-irritation must be excited; this will also ensure a more powerful mercurial influence.

When the cartilages are the structures primarily affected, the loss of blood is certainly of service; but as they are less readily acted upon by remedies than either the soft parts or the bones, the greatest benefit is derived from a much more considerable degree of counter-irritation than is applicable to the other forms of disease. These cases are also very much relieved by the application of the pasteboard splints, so as to impede as much as possible the motions of the joint.

When the disease commences in the bones, as long as it is confined altogether to them, I do not think that the loss of blood is attended with so much benefit as it is capable of

affording after the soft parts have become affected. In this form of disease, the local use of mercury is most especially beneficial; it should, therefore, be applied without delay, and its operation favoured by exciting a considerable cutaneous irritation. It is necessary, also, in this case, to prevent all movement of the joint, in order that the bone, in its softened state, may not be injured by the contusion it would experience in the exercise of the limb.

When the synovial membrane is the seat of the more acute form of disease, the loss of blood should be repeated more frequently, and continued for a greater length of time, than in other cases. The mechanical support must be very accurately applied, and in a very moderate degree. The counter-irritation should be comparatively slight, merely sufficient to favour and expedite the mercurial action. If much inflammation be excited in the skin, it will extend to the disease in the membrane, and aggravate it. This disease being naturally more acute than the other forms, is more liable to participate in any inflammatory action which may exist in the neighbouring structures. The slight forms of this disease may be arrested by the repeated application of leeches and poultices, together with the unguentum hydrargyri fortius rubbed on the part every night, if absolute rest be enjoined.

The combination of the foregoing means is infinitely more efficacious than any other remedies with which I am acquainted. It is applicable to every constitution, and, under the various modifications of which it admits, to all the forms of the disease. It causes little or no pain, produces no constitutional excitement, and maintains incessant and extensive influence on the disease. If we trust to mercurial friction, we are altogether deprived of the advantage arising from mechanical support, and as there is usually either an original or acquired irritability of the system, the constitution becomes affected by the remedy before it has produced a sufficient local effect. If any mercurial plaster be employed, the firm cohesion of its particles prevents the powerful influence it is capable of producing in the form of ointment.

The emplastrum ammoniaci cum hydrargyro, I have some-

times thought, has produced a good effect in indolent habits, and in chronic disease of the cartilages and synovial membrane. It is not, however, adapted to produce mercurial influence on the disease, but is beneficial in exciting a greater degree of cutaneous irritation. It will often blister to the extent of its application, and in some irritable habits induce inflammation of an erysipelatous character over the whole surface of the body; an effect that is very distressing to the patient. The application of sea water is in some cases beneficial, by exciting a mild degree of cutaneous inflammation; and on the same principle, poultices composed of sea weeds are of service. They are not, however, adequate of themselves to control the disease, and I think that the benefit attributed to them has often arisen from the effect produced on the constitution by a residence on the sea-coast during the time of their employment. In two cases, consisting merely of slow inflammation of the synovial membrane, and effusion of fluid into the joint, the local application of vapour, conjoined with absolute rest and a residence on the sea-coast, completely removed the disease.

When matter is formed in the cavity of a joint, is it desirable to evacuate it or not? My experience would lead me to conclude that to make an opening into the cavity of a joint is, in almost all cases, an injurious mode of practice. When there is considerable action going on in the diseased structures, attended with acute symptoms, and a great degree of pain arising from distension, the opening of an abscess in this state is almost invariably followed by very serious consequences. The aperture thus made heals by the first intention, the parietes of the joint inflame, and pus, mixed with a small quantity of blood, is subsequently secreted with so much rapidity, that in a few days the cavity is more distended than before, and the pain, with the constitutional disturbance, is violently increased.

Mr. Brodie, in speaking of this subject, remarks, "I have seen cases where, after a great deal of pains having been taken to obtain complete evacuation of the contents of the abscess, and the puncture having healed, in a few days the tumour

has become as large as ever, attended with pain in the limb, and a fever, resembling typhus in its character, and threatening the life of the patient."*

I have generally found, too, that the acute and distressing symptoms which, while they seem to require such a measure, almost preclude the propriety of its adoption, may be removed by the judicious application of the foregoing remedies, and which I have shown are as well adapted to the suppurative as to any stage of the disease. When, however, the abscess is thus reduced to a chronic state, I cannot see what can be gained by opening it: the disease is not thereby moderated; but, on the contrary, even if not increased to an alarming degree, it invariably proceeds with greater rapidity. This is manifest by the quantity of pus that is daily discharged from an abscess when opened, which previously increased in size but very slowly, if at all. By persevering in the use of the remedies before described, I have repeatedly found that the secretion of matter may be diminished so materially, as to be reduced within the quantity that the absorbents have the power of removing, and that very large collections of matter have been thus absorbed without either breaking or being opened. In other instances, in which the abscess had made its way towards the surface of the limb, so far as to inflame the skin itself, the inflammation, excited in the latter structure by the remedies, has arrested the action going on in the deeply-seated parts, and thus the abscess, after having been very materially reduced in size, has ultimately broken spontaneously, without any unpleasant symptoms.

In other cases, too, a similar diminution of the abscess has occurred, the contents of which consisted of curd-like substance, mixed with serum: the latter has been almost entirely absorbed, and the skin ulcerated to allow the evacuation of the former, so that scarcely any fluid has escaped at the opening. Under these circumstances, the abscess points and breaks very gradually, at the same time that it diminishes in size, the diseased action existing in a greater degree on the surface

* Brodie, p. 201.

than at the fundus of the abscess. The aperture thus formed by the absorbents being conical, remains open, allows the matter to escape as long as it continues to be secreted, and is attended with no bad consequences of any kind. I would also observe, that I think it highly injurious to squeeze the matter out of an abscess when opened in any way; at the same time that it can be of no service whatever, the tension being removed by the escape of that which flows spontaneously; and, further, healthy pus is by far the least irritating application that can be applied to any diseased surface. Even the evaporation produced by its exposure to the air, when the matter is pressed out, will in some instances, conjointly with the pressure thus employed, excite inflammation in the cyst. If, however, the matter be allowed to escape without any interference, and the parietes of the abscess be moderately supported by a bandage, they will gradually contract and diminish the cavity, at the same time that its contents are as gradually expelled.

When, therefore, matter is formed in the cavity of a joint, instead of opening it, I always endeavour to reduce the degree of diseased action, and thus to diminish the secretion of pus, and consequently the size of the abscess, as well as all urgent symptoms. By these means, we may often succeed in dispersing an abscess entirely, and in other instances cause it to break under the most favourable circumstances.

That air admitted into any cavity which is in a state of health, as the abdomen, does not there produce inflammation, is no more a proof that its being applied to a diseased surface may not increase the action of its vessels, than that the admission of cold air into the lungs will not increase disease in them, because it does not excite it when they are in a state of health.

At all events, it is manifest that, when an abscess has broken, or has been opened, it is a much greater source of irritation to the constitution than it had been previously, because, generally speaking, hectic fever is not produced until this has taken place.

With regard to the treatment of the sinuses that so fre-

quently result from abscesses in the neighbourhood of scrofulous joints, and in general communicate with the surface of the bone, it is manifest that they were produced, and are kept open, by the disease in the latter structure, to the state of which, therefore, our remedies must be directed. It has always appeared to me, that to inject them with stimulating lotions, for the purpose of inducing a healthy action at the bottom of the sinuses, or of promoting the exfoliation of bone, as well as to attempt the removal of the latter, before it is completely separated, is almost invariably injurious.

It very frequently occurs, that the bone is merely carious; that is, in a state of ulceration, and not of mortification. In these cases it is very easy to excite such a degree of inflammation as is incompatible with the vitality of the bone, and cause exfoliation when it would not otherwise have taken place. If, however, a portion of the bone be actually dead, and you attempt to remove it before the absorbents have effected its separation, the violence thus inflicted on the contiguous part, already inflamed, will be very likely to induce more extensive exfoliation instead of effecting the separation of that which is already deprived of its vitality. When, however, the diseased action in a bone that has caused either ulceration or death of its substance shall have been arrested, these effects of course instantly cease to be produced; this, therefore, should be the object of our treatment. When the latter of these effects has supervened, the separation of the dead portion will take place, if not as rapidly as that of the soft parts when similarly circumstanced, as much so as the nature of its structure will admit, and consequently it cannot be accelerated by any means. You cannot apply a more powerful stimulant to the absorbent vessels than that of a dead portion of the structure of which themselves constitute a part.

As the death of the bone is the result of such excessive action as is incompatible with its vitality, one is at a loss to conceive on what principle the injection of stimulating lotions can have been adopted, as they must necessarily cause an

extension and aggravation of the disease, if so applied as to produce any effect at all.

The length of time that will be requisite for the cure of any of these forms of disease will be chiefly regulated by its duration, the rapidity of its progress, and the changes it has produced in the structure of the part. When the vessels of any structure have been for a considerable period the seat of disease, they will become proportionably debilitated, and indisposed to resume a healthy action. If lymph has been long effused and organized, it will require a much longer time to effect its removal, than if recently deposited. If ulceration and suppuration have taken place, these changes indicate a greater degree of vascular derangement, which it will be more difficult to control.

Although disease, in an active form, is more dangerous if allowed to pursue its progress, and will produce more serious consequences in a given time, it will generally yield to suitable remedies more speedily than disease of an indolent nature, in which similar organic changes have taken place.

CASES.*

Case 1.

On the 4th of June, 1826, a little boy, between two and three years old, was brought to me from Hatfield, with disease in the left knee, which was in the following state on my first examination of it:—When viewed anteriorly, the joint appeared broader than natural, the swelling extended some way over the ends of the bones, and felt firm; but there was no fluid in the joint. Above and below the swelling, the limb was wasted, the leg contracted to a right angle with the thigh; the joint was exceedingly tender, so painful that he could not bear the slightest motion, and even when the limb was at rest he frequently cried out from pain.

I was informed by the parents, that they had for a long time perceived that there was something the matter with the child, and were unable to find out what it was; but about a month before, a swelling was discovered in his left knee. The joint was at first tender, but capable of being moved and fully extended without producing pain. They immediately applied to Mr. Osbaldestone, with whom I had the pleasure of conferring on the case; and everything had been done by that gentleman which the nature of the case suggested. Absolute rest was enjoined, leeches were applied, then blisters, and, lastly, embrocations of various kinds, and remedies calculated to improve the general health were internally administered. Notwithstanding the most judicious use of these means, the disease proceeded with great rapidity, until it arrived at the state which has been above described.

I ordered him an occasional purgative of calomel and rhubarb, and soda dissolved in some bitter infusion; his diet was to be light and nutritive, and his knee was dressed in the

* The applications described at page 28, were renewed at each time that the notes of the following cases were taken.

way described at p. 28; he was sent back into the country, and desired to return in a fortnight.

June 18. On taking off the dressings, which had remained undisturbed for the last fortnight, during which the knee had been much easier, for he had scarcely ever cried out on account of pain, a very visible amendment was discovered. The knee was less swelled, less tender, and could be bent and extended with much less pain; it was therefore done up again for another fortnight.

July 4. On his return the swelling was very much reduced: scarcely any tenderness remained. He had never complained of uneasiness since his last visit, and could bend and extend the joint, and even walk on it without assistance, and without feeling pain; his health was visibly improved. I did not see him again for three weeks, at the end of which time he was much better in health, his joint was restored to its natural size and flexibility; it was quite free from pain and tenderness. Indeed, he could now walk so well, that it was with the greatest difficulty he could be kept off his feet. To prevent a relapse, however, which is so often occasioned by premature exercise, his parents were advised not to permit him to walk, for he was too young for crutches, and the mechanical support was continued for some time longer.

Case 2.

William Rowe, six years and a half old, was brought to me on the 6th of June, 1824, with a disease in the right knee. The joint was swelled, and its width, when viewed anteriorly, appeared to be increased by the tumefaction extending over the condyles of the femur. There was no fluid in the cavity. The joint was tender when pressed; the pain was constant, chiefly distressing at night, and extending particularly down the shin bone. He could move the joint, and walk up stairs or on a level surface, without uneasiness; but he could not walk down stairs without great pain. The leg was contracted, and he could not endure any attempt to straighten it. His health did not appear to be impaired, but he was rather a delicate child.

About three months before, he was kicked just below the knee that is now affected: from that time he had constantly limped, and the lameness and difficulty in walking had been gradually increasing. This case was now treated in the same manner as the last.

June 20. In a few days after I first saw him, the pain

began to subside. The swelling and tenderness are much reduced. The joint is now free from pain, and less contracted.

July 4. He can straighten the limb entirely: the joint is greatly improved in every respect, and much diminished in size.

July 18. The swelling is quite reduced, and the joint has regained its natural appearance; it remains, however, rather weak.

August 10. The joint is now quite recovered, and he can use it as well as the other.

Case 3.

I was consulted on the 23rd of May, 1826, on the case of a young lady, thirteen years of age, residing in Henrietta-street, Russell-square, who was the subject of disease in the left knee. The joint was somewhat swelled and tender, more particularly on the inner condyle of the femur. She suffered a good deal of pain at night, but it subsided before the morning. The motion of the limb was limited, and the pain, which prevented the full extension and bending of the leg, was increased by exercise.

There was no obvious constitutional disorder; she was of a light complexion and delicate appearance; the bowels were regular, and the tongue clean. About ten years before, she had an abscess above the inner condyle of the os femoris, which burst, and healed after being open about six months. At this time the joint was not at all affected, and she could move it in either direction without the slightest pain.

About a twelvemonth before she applied to me, she first experienced pain in the joint, which was tender and painful on exercise. These symptoms were relieved in some degree by the treatment adopted; but she had felt them more or less from that time, and they had been gradually increasing for some months past.

She was directed to take the pilula ferri composita, and the knee was dressed in my usual manner.

June 7. The application has produced considerable irritation on the skin, the joint is less swelled, the pain and tenderness are much diminished, and the motion of the limb is more extensive, and attended with less pain.

June 23. The joint is in every respect considerably improved.

July 28. She has been at the sea-side since I last saw her, and has been using the limb so freely, as to have occa-

sioned an accession of diseased action, so that the joint is now in fully as bad a state as when I first saw it.

August 12. She has rested the limb since I last saw her, walking on crutches, and it is much improved in every respect.

September 10. The pain, swelling, and tenderness have entirely subsided; she can move the joint to the full extent, and walk on it without the least pain. The same means were pursued in this case for another month, when the joint appearing quite well, they were discontinued, and there has been no return of the complaint.

Case 4.

Robert Davies, thirteen years of age, residing at Chelsfield, applied to me on the 26th of April, with a disease in the knee. There was considerable tumefaction of the joint, extending some way over the extremities of the bones, causing them to appear wider than natural, but not arising from effusion into the cavity. It was tender, particularly on the inner condyle, very painful during the early part of the night, as well as in walking or in moving the joint in either direction. The limb was contracted, and limited in flexion as well as in extension. The diseased joint measured thirteen inches in circumference, the other twelve inches. His bodily health was tolerably good. About a year and a half before, finding his knee painful, he perceived that it was swelled; but was not aware how long it might have been enlarged before the pain directed his attention to it.

From that time the pain, swelling, tenderness, and difficulty in walking, had been gradually increasing, notwithstanding the use of various remedies.

My usual mode of treatment was now adopted in this case.

May 10. He has had much less pain since he has worn the present application. The joint is not so tender, and is reduced in size at least a quarter of an inch in circumference. He can extend the limb more fully, and the attempt to straighten it is attended with less pain. There is an uniform blush on the surface of the skin to the extent of the application.

May 24. He has felt no pain since his last visit, except a slight smarting produced by the application. The joint now measures twelve and a half inches, is straighter, and the tenderness is confined to the inner condyle of the femur. The limb can be moved without any uneasiness, and his nights are no longer disturbed by pain.

August 2. The joint has been gradually diminishing in

size, and improving in every respect, so that he can now walk on it without the slightest pain, although it is still weak.

August 30. The joint is now reduced to its natural dimensions; he has not the least feeling of uneasiness in it, and can walk on and use it perfectly; but he cannot bring the leg in a right line with the thigh, although very nearly so. In the following January this case continued quite well.

Case 5.

Thomas Croot, aged fourteen, residing in London Wall, applied to me on the 3rd of November, 1826, with a complaint in his left knee. There was a general fulness of the joint, which was tender to the touch, and painful when bent or extended; so that he limped in walking, and the motions of the limb were confined to a very small sphere. He was hot and feverish during the early part of the night, when the pain was so great as to deprive him of rest. His appetite was impaired, his tongue clean, and bowels open.

There was also a hard elastic tumour on the head of the tibia, presenting to the finger the feel of coagulable lymph effused on the periosteum: it was of the size of a crown piece, painful, and tender, but unattended with any superficial redness.

The disease had been of eight months' duration, and he could not account for its origin. It commenced, as he described, with a deeply-seated aching pain, three months prior to any swelling; both of which had continued to increase, notwithstanding the constant use of such remedies as were calculated to relieve the complaint. The means that had been employed were the frequent application of leeches, poultices, blisters, and several stimulating applications, together with a variety of internal medicines. The means that were adopted in the last case I had recourse to in this.

November 17. The pain ceased almost immediately after the application of the dressings I made use of on his last visit. The swelling is much reduced, and he can now walk without either pain or limping.

December 5. He can now straighten and bend the joint perfectly. He has been free from pain since his last visit, excepting for a short time on Thursday last, when he fell down, and so severely bruised the skin on the head of the tibia, as to cause its ulceration to the extent of a sixpence. No inflammation, however, beyond the point of skin actually destroyed, has resulted from this accident.

December 19. A small portion of bone has escaped at the wound on the head of the tibia, and the swelling is entirely gone. The wound healed very shortly after this; and some months afterwards the boy called to show me that he continued quite well.

Case 6.

J. M., residing at Kingsland, between five and six years old, was brought to me on the 2nd of September, 1826, with a disease in the left knee. It was much swelled, from effusion of lymph into the parietes of the joint and the surrounding cellular membrane, but without fluid in its cavity. The joint appeared to be wider than natural, was exceedingly tender, and so painful as to destroy his rest. The motions of the limb were very much confined by the deposit, and were still more limited by the great pain experienced in any attempt to straighten or bend the joint. There was a sinus on the outside of the leg, just below the head of the fibula; the leg was permanently bent upon the thigh at a considerable angle, and the whole limb much wasted. The health and appetite of the patient were impaired; he was emaciated, and troubled with a constant cough and expectoration of mucus; the bowels were regularly relieved every day, and the tongue clean. He had been previously subject to glandular swellings in the neck, and about three years before he fell down and broke his arm and bruised his knee. The former readily united; but the latter was not particularly attended to, and in a few months began to be swelled, somewhat tender and occasionally painful. Leeches were applied, succeeded by poultices, and subsequently blisters were four or five times repeated, absolute rest being observed. These means reduced the swelling in a very trifling degree only, and at this time he could not bear the smallest alteration in the relative position of the limb. Some time afterwards, adhesive plasters and a bandage were applied, without any alleviation of the symptoms. Poultices were again had recourse to for two months, during which time an abscess formed, and produced the sinus that has since remained open. This sinus was injected with stimulating lotions every day for a month; but they produced considerable inflammation, and did not at all promote its healing.

My usual treatment was now adopted; but conceiving that the state of constitutional irritation was produced entirely by the local disease, I did not prescribe him any medicine.

September 30. Since the joint has been so effectually sup-

ported, although he could not bear it to be bent or straightened, he has been able to use such a degree of exercise, with the limb perfectly stiff, as has counteracted any benefit that he might otherwise have derived from the means adopted. The complaint, therefore, is not at all relieved.

October 28. He has walked on crutches ever since his last visit, and I never saw greater improvement in any similar disease than has taken place in this case. The tumefaction, tenderness, pain, and contraction of the leg are all diminished; he can bear the joint to be moved more extensively, and the sinus is perfectly healed: his health and appetite are very much improved.

November 20. Very great amendment has taken place since his last visit. He can now walk on the limb, bend and straighten it to the fullest extent that a healthy joint will admit of, without the least pain, and it is not at all tender to the touch. He has some eruptions behind the ears and on the head, of a scrofulous character.

December 14. The joint is in all respects quite as well as the other. The only difference that can possibly be discovered between the two is that it appears to be rather wider, arising from the muscles not having yet recovered their natural size, although they have very materially increased in bulk. The eruption has been removed for some time, he has been in the country for the last month, and has perfectly recovered his health.

Case 7.

H. W., eleven years of age, residing at Walworth, applied to me in January, 1826, with a disease in the left knee, which was very much enlarged. The swelling was produced by the effusion of lymph, there being no fluid in the cavity. There was a sinus just at the extremity of the inner condyle, communicating with the joint, and another above the outer condyle. The leg was permanently bent at a right angle to the thigh, and they were both very much wasted. Any attempt to alter the relative position of the limb was intolerable. The joint was so tender, that he could scarcely suffer it to be touched. The pain was incessant, and so severe as altogether to destroy his rest during the early part of the night, when he was constantly disturbed by spasmodic muscular contractions, and subject to violent perspirations.

He was of a fair complexion, with light hair and eyes, the pulse quick, the skin moist, tongue foul, bowels irregular, and the appetite impaired. The disease had been of two years

and a half standing. In July, 1823, the joint being so weak as to occasion him to limp in walking, was first observed to be somewhat swelled, and slightly tender; but it was not painful, and could be perfectly straightened. It was rubbed with a white ointment, which brought out a great many pimples, and by which the skin was kept sore for six months; adhesive plasters were afterwards employed; but they aggravated the complaint from being, as he supposed, too tightly applied. Subsequently, leeches and poultices were had recourse to, and afforded him some relief. A perpetual blister was next recommended, and kept open for three weeks. During the use of this remedy, the leg became contracted nearly as much as it now is, having been quite straight before the application of the blister. Various other applications were also adopted, notwithstanding the use of which, the pain, swelling, and contraction continued to increase. The joint became enormously distended, and burst at the extremity of the inner condyle in November, 1825. At this time, and subsequently, it discharged very much, and a quantity of substance resembling curds escaped at the wound. Some time afterwards an abscess on the outside of the femur formed and burst, leaving the sinus there situated.

January 1, 1826. The following medicine was prescribed:

℞. Hydrarg. Submuriat. gr. ij.
Rhei Pulv. gr. vj.
℔ ft. Pulvis sumend. in melle bis septimane.

℞. Magnesiæ Sulphatis ℥ j.
Infus. Rosæ ℥ x.
Tinct. Cardam. Comp. ℥ j.
℔ ft. Haustus bis quotidie sumendus.

Eight leeches were directed to be applied to the knee twice a week for a fortnight, and fomentations and poultices were constantly employed.

January 14. The tenderness, pain, and swelling are so much reduced, that the knee is now in a fit state for mechanical support, conjointly with the other means that have been detailed. The bowels have been regularly relieved by the medicines, the tongue is less coated, and the appetite somewhat improved.

January 25. The swelling, pain, and tenderness are very much relieved. He is now entirely free from pain, except on motion, and can even make an effort, when in bed, to straighten the limb, which is consequently less contracted. He cannot bear to have the joint moved, but can now walk on crutches without any inconvenience.

February 8. The joint is much reduced in size, and there

is a proportionate diminution of the symptoms. He can bear the limb to be moved in either direction, but the motion of the joint is extremely limited. It is not at all tender, and the sinus on the outside of the thigh is entirely healed.

From this time, the joint continued in a progressive state of amendment; in the following April he was allowed to use it, and could not only bear the weight of the body on it as well as on the sound limb, but could also walk up stairs with the greatest facility. The limb is very much contracted, and the joint allows of but very little motion. His health is quite restored.

Case 8.

A young gentleman, of light complexion, thirteen years of age, residing near Market Harborough, in Leicestershire, was brought to me on the 8th of January, on account of a disease in his right knee. The joint was very much swelled and very tender; the synovial membrane was thickened in its texture, adherent to the surrounding cellular membrane, and considerably distended by the effusion of fluid into its cavity. There was a sinus on each side of the head of the tibia, the result of previous abscesses; the tumefactions of the soft parts extended considerably over the head of the tibia, and the condyles of the femur. The slightest movement of the articulating surfaces on each other gave him so great pain, that he could not endure it: the joint was quite easy, except when touched or moved. The leg and thigh were wasted, and he had profuse nocturnal perspirations; he was very thin and emaciated, his countenance pale, pulse weak and frequent.

There was a sinus on the metatarsal bone of the little toe of the affected limb. The disease in the knee had been nearly of two years' duration, from an injury he received in March, 1822. He felt no inconvenience from the accident until the beginning of April. The joint then first became swelled and painful when touched or moved; at other times, it was entirely free from pain, but very weak. These symptoms rather increased, so that in the beginning of May he began to limp, but continued to use exercise until June, when he rested the limb altogether. Leeches and a bread-and-water poultice were applied, and continued till the following August, without affording any benefit. An issue of the size of a half crown was then made over the tendon of the rectus, and soon after he went into the country; but the issue was kept open for about two months. Subsequently, a dozen leeches were repeatedly applied, and an ointment was used that brought

out a great many pimples, and destroyed his rest. These remedies were continued till the following April, when he returned to town with the disease worse than when he left it. Poultices were again applied, and subsequently two issues, each of the size of a half crown, were made; one in the situation of the former, and the other on the head of the tibia. In July he went to Margate, where he remained four months; the lower issue was healed, the upper one only remaining open. In October he returned to town, and the upper issue was kept open until the following January. These means, however, were inadequate to control the disease, which continued its progress in an uninterrupted course. The tenderness, tumefaction, and difficulty of moving the joint gradually increased, and his general health, which had been previously good, declined. During the greater part of the time he was taking such medicines as were considered to be calculated to remove the disorder of his digestive organs, and to improve the state of his constitution; but they were of course incapable of counterbalancing the irritation and debility resulting from local disease so extensive and so long continued.

The treatment that has been before related was now had recourse to in this case, and small doses of calomel and rhubarb, conjointly with neutral salts, were prescribed.

January 15. The joint is much less swelled, and less tender; he can bear it to be moved without suffering so much pain as on his last visit, and he has been able to walk on crutches without inconvenience since the mechanical support was afforded to the joint.

His tongue is less coated, and the bowels have been more freely opened.

January 29. Since his last visit the joint is improved in all respects, as well as his general health.

February 12. He can now raise the limb by its own muscles; the tumefaction and tenderness have in a great degree subsided, and the discharge from the sinuses is very much diminished.

June 11. The sinuses that resulted from the abscesses on each side of the head of the tibia are healed. The tenderness of the joint is not now complained of: he can move it without the least pain, and bend and straighten it much more extensively. It is nearly reduced to its original size, and he is sufficiently recovered to return into the country.

The event of this case was a complete restoration of the limb, which increased in strength very rapidly during his residence in the country, and he has not had any return of the disease. The motion of the joint is very limited.

Case 9.

In August, 1824, I was consulted on the case of a young gentleman residing at Derby, whose left knee-joint was the seat of disease. The joint was much enlarged, very tender, and very painful, more especially at night; he could not bear the least movement of the joint. The leg and thigh were much wasted, and indeed the whole body greatly emaciated. There were two deep sinuses, one extending considerably upwards on the inside of the femur; the other, at which a large portion of the inner condyle of the bone protruded, in a state of exfoliation, leading directly into the cavity of the joint. The discharge was profuse and very offensive, and the leg considerably bent upon the thigh.

His bowels were disordered, and his stools clay-coloured; the appetite impaired, and tongue foul. Perspiration was frequent in the day, and profuse at night.

It was stated, that in February, 1824, the natural small-pox left the child in a very reduced state, and was succeeded by glandular swellings in the neck. An abscess then formed above the inner condyle of the thigh-bone, and was opened, the sinus still remaining. Another abscess formed in the vicinity of the shoulder-joint, but has since healed. Soon afterwards, the left knee-joint became swelled and tender, attended with pain on motion, which increased so as shortly to deprive him of the power of walking. Another abscess then formed just on the front of the knee, and was also opened. After this, both the local symptoms and the constitutional disturbance were most materially augmented. The joint became so painful, that he could neither rest nor bear it to be touched or moved; it increased in size very much, and discharged through the sinus at the end of the inner condyle of the bone.

During all this time, though leeches, poultices, fomentations, and a variety of other applications were used, as well as such medicines as were considered to be adapted to the case, no diminution of the disease, and consequently no improvement in the state of his constitution, took place. The sinuses were opened, probed, and stimulating injections employed, without inducing healthy action, or even preventing their extension.

About the end of June he was brought to town, when a surgeon of eminence gave it as his opinion that, in the event of the child recovering from the complaint (of which there was not much probability), it would eventually be a stiff

joint. In order to promote this result, he directed a splint, somewhat curved, to be constantly worn, to fix the joint at such an angle as should be convenient for his using the limb in future.

I prescribed small doses of calomel and rhubarb to be taken every third day, and Epsom salts, with sulphuric acid, in the intermediate time ; the knee was dressed in my usual manner.

September 13. The mode of treatment I first adopted has been continued to this time, with a gradual although not a rapid improvement in the complaint. The joint is now much less tender, except on motion ; it will admit of being moved extensively without pain. He sleeps well at night, his stools are of a better colour, his appetite somewhat but not much improved, and his bowels have been kept regularly open by the medicine prescribed.

October 1. I removed a portion of the bone, which came away with facility ; and the joint is improved, the discharge is diminished, and the perspirations are less profuse. Small doses of Hydr. c. cretâ were now prescribed to be taken at bed-time, and the powder of sarsaparilla in the day.

October 12. Another portion of the bone was removed, and the knee is much reduced in size.

October 22. There has been a very decided amendment in all respects during the last three weeks ; his appetite and general appearance are much improved, his strength is increased, perspirations lessened, and the discharge is very much diminished. He was now directed to take the sulphate of quinine. Mr. Hammond, of Edmonton, was good enough to visit the patient with me this morning, and found the disease much more reduced than he expected. I consider that the successful issue of this case was essentially promoted by the kind attentions of Mr. Hammond, and his judicious management of the patient while under our joint care.

November 5. There has been an uniform and gradual amendment of the complaint, and the patient has been able to use the limb so freely, that he has altogether loosened and displaced the applications since his last visit ; he is now in much better health, and the sinus on the inside of the thigh is healed.

December 18. A large piece of bone was removed this morning, and a small piece still remains, which is not yet quite loose. The thickening is almost absorbed, and his health is perfectly good.

Soon after this date, the remaining portion of the bone came away ; the sinus healed very shortly afterwards, and the

boy regained the use of the limb ; and so far from his having a stiff joint, he can bend and straighten the leg very nearly, although not quite, as fully as the other.

When I last heard of this patient, November 24th, 1826, he continued quite well, and was able to run about on the limb as much as before he had had any disease.

Case 10.

Maria Green, thirteen years of age, was brought to me on the 6th of January, 1822, having a disease in the left knee. There was a general fulness and swelling of the articulation, which was painful and tender when pressed, particularly on the inner condyle of the femur. The joint was much contracted, and the swelling chiefly prominent on each side of the ligament of the patella. The pain was most distressing at night, and much aggravated by exercise, and by the flexion or extension of the limb. The health was not affected.

Five months before, she fell down and bruised her knee, in consequence of which accident it became swelled, tender, and painful. These symptoms subsided in a great degree ; but afterwards they became more severe, and gradually increased until she could neither walk on the limb, nor straighten it when in bed, her rest was also much disturbed. This case was now treated in my usual manner.

January 20. The application has produced its full effect, and is attended with a marked diminution of the symptoms.

February 4. The joint is considerably improved since her last visit, and is now entirely free from pain when at rest.

February 21. The swelling is much reduced, there is very little tenderness, and the motion of the joint is more extensive.

March 10. The joint is not at all tender, and she can walk on it without pain ; but it is still very weak.

March 27. The swelling is entirely removed, there is no pain in the joint, even when fully extended, but it still remains very weak.

April 18. She has acquired much strength in the limb since her last visit, and is now able to use it tolerably well without inconvenience ; but it appears desirable to continue the mechanical support, as the joint is not sufficiently strong to leave it off.

Case 11.

A young gentleman, fifteen years of age, residing at Clapham, consulted me on the 2nd of February, 1822, on account of a

disease in the right knee. There was considerable tumefaction of the joint, arising principally from the effusion of fluid into its cavity. The swelling was chiefly prominent beneath the tendon of the extensor muscles. He complained greatly of tenderness on pressure, and of pain in the joint, which was increased by exercise or motion, so as to occasion him to walk very lame, and prevent him from straightening the knee. He was in good health.

He informed me that for the last twelve months he had experienced stiffness and difficulty in moving the joint, attended sometimes with a grating sensation, and with pain on straightening the limb, more particularly on first exercising it; subsequently, he observed the joint to be somewhat swelled; the enlargement, however, subsided in a great measure, and again appeared. He did not pay much attention to the complaint until about a month ago, when the symptoms became more inconvenient, and they have since been gradually increasing in severity.

I adopted my usual treatment in this case.

February 11. During the last two days he has felt much less pain and inconvenience in the joint, and it is also reduced in size.

February 25. He is now altogether free from pain; the stiffness and grating sensation on moving the joint are removed; he can walk on, and straighten the limb, without the least inconvenience, and the swelling is very much reduced.

March 7. The joint is now reduced to its natural size; he can use it perfectly, and it is to all appearance quite free from disease.

In this case there has since been no return of the complaint.

Case 12.

Anne Slowe, sixteen years of age, applied to me, on the 26th of March, with a disease in the right knee. The joint was considerably enlarged, both from effusion into the cavity, and from thickening of its parietes. Pressure just beneath the patella gave extreme pain: she could not bend nor straighten the limb, nor even walk with it in the half-bent position. The swelling was chiefly prominent on each side of the ligament of the patella; her health was tolerably good, but some years before she had had an enlargement in the glands of the neck. About seven years ago, she fell down, and cut her knee, just below the patella; the wound soon healed of itself, but the joint continued very painful and

swelled for a month or more. When rested, it became better; when exerted, worse. The joint continued in this state, occasionally better and worse, until she went to service, which she was soon obliged to leave, on account of the increased pain in the knee. It became much more swelled and tender, so that she could not walk upon, or use the limb, and at length she was unable even to straighten it in bed.

Eight ounces of blood were abstracted by cupping-glasses, before my applications were put on.

April 10. The joint has been gradually improving; the pain, tenderness, and swelling are much reduced. She is quite free from pain, except on moving the limb, and can sleep all night. The motion of the joint is more extensive.

April 23. The swelling of the joint is entirely removed; it is much stronger, free from pain, and capable of perfect flexion and extension.

Mechanical support was continued for some time longer, and the joint has remained perfectly well.

Case 13.

Mr. S., thirty-one years of age, residing at Royston, applied to me on the 17th of January, 1823, on account of a disease in the right knee. The joint was very much swelled, and its cavity distended with fluid. The swelling was chiefly prominent on each side of the ligamentum patellæ; the tendon of the rectus muscle was also elevated, and the cavity distended on each side of it. The synovial membrane appeared to be thickened in its texture. Pressure on the ligament of the patella caused great pain, the chief seat of which was referred in that direction to a spot in the centre of the joint. Every movement of the joint was attended with great pain; the patient was unable to bend or straighten his knee completely, and walked with it in the half-bent position.

About six weeks previously he felt pain in the knee; it was rather swelled, and tender, which caused him to limp in walking, and he could neither bend nor straighten the limb without inconvenience. About four days from the time of his first feeling pain, he strained the knee in walking down a ladder, which occasioned a blackness down the calf of the leg: after this the complaint became much worse. The pain was so violent for a few hours on the following day as to be almost intolerable: as it subsided, the joint became more swelled and very stiff. The next day, the joint having been subjected to exercise, a violent accession of pain ensued, succeeded by an

increase of swelling. These symptoms were in some degree alleviated by resting the limb, and applying leeches and fomentation. As the inflammation did not subside, cupping was had recourse to, succeeded by liniments, which gave some relief to the symptoms. He stated that from the first, great inconvenience had been occasioned by the patella not moving freely over the bones beneath; the surfaces, I suppose, not being sufficiently lubricated in consequence of the inflammation.

The joint was cupped previously to my applications being used, and some saline purgative medicine was prescribed.

January 31. The joint has been in much less pain, and is reduced in size; it can be more easily and extensively moved, but is still tender, and will not admit of being fully bent or straightened. The cupping and applications repeated.

February 14. The fluid is entirely absorbed; the synovial membrane is still somewhat thickened and tender, particularly when pressed in the situation of the ligamentum patellæ; he can fully bend and straighten the joint, and can walk without much inconvenience. The free motion of the patella is still obstructed.

February 28. The joint is nearly restored to its natural state: the only complaint he now makes is, that it is rather weaker than before.

This case has since remained quite well.

Case 14.

A lady, residing in Charlotte-street Bloomsbury-square, consulted me on the 10th of April, 1822, having the following complaint in her left knee:—There was excessive tumefaction of the joint, arising entirely from distension of the synovial membrane, with scarcely any thickening of its texture. It was tender when pressed, very painful, more particularly on using exercise, and so extremely weak that she walked with the greatest difficulty.

She informed me that about six years before, a violent swelling of the joint suddenly occurred. It was excessively tender, very painful, and as hard as a stone. A number of leeches were applied without any good effect, and then blisters were employed to a considerable extent. Under this treatment the disease was relieved, and the joint restored to its natural state.

It remained quite well for about four years; and in October, 1821, from the effects of cold, as she believed, the joint became

stiff and uneasy; tenderness and pain were subsequently experienced, and then it began to enlarge. The swelling continued to increase gradually for about six days, when it gradually subsided. The reduction of the joint to its natural size required rather a longer time than was occupied in arriving at its height; so that the whole time from the commencement to the dispersion of the swelling, was about a fortnight. As soon, however, as the joint was reduced to its natural dimensions, it began to increase in size, and continued to enlarge for about six days; at the end of which time the parietes of the joint were distended to the utmost degree they were capable of bearing. The swelling then began to give way, and in about eight days the joint was restored to its natural size. While the tumefaction was at its greatest height, the joint was very tender, and so painful that the patient could scarcely set her foot to the ground; as soon, however, as the swelling began to abate, the pain was relieved in an equal degree, and indeed it appeared to be produced solely by the great distension of the synovial membrane.

No sooner, however, was the fluid re-absorbed, than it would begin to accumulate, and again subside; the whole process being carried on in the same manner, and occupying the same time, as before. The disease had continued to pursue the same course from the above-mentioned time, without any deviation.

In the first instance, leeches were employed, and blisters, six or seven in succession: each one, however, appeared to make the joint weaker than before. Stimulating embrocations, hemlock, and other poultices, and various other remedies, were used, without producing the slightest alteration in the progress of the complaint. I treated this case in my usual manner: as the patient invariably neglected to take the medicines which were repeatedly prescribed for her delicate state of health, the complaint cannot have been influenced by any constitutional remedies; they need not, therefore, be transcribed.

April 24. The joint is in much the same state as when I saw it a fortnight since. She states that the swelling has subsided and re-appeared in the usual manner. The applications have not produced much effect on the skin.

May 8. The disease has not undergone the slightest alteration, although the effect of the applications on the skin has been more considerable.

May 22. The former progress of the disease appears to have been influenced; the joint is certainly less swelled than when I last saw it, and the tumefaction has not reached the

height which it previously attained. There is considerable irritation on the skin.

June 5. The joint is much stronger than it was on her last visit, and is not nearly so much swelled. She states that the swelling subsided much sooner after I last saw her than it was accustomed to do, and that, after its subsidence, there was an interval of a day before it again began to enlarge.

June 19. Although the joint still continues to enlarge, the swelling, when at its greatest height, has not attained above half its accustomed size ; and there is now an interval of two or three days after its subsidence, before there is any appearance of re-accumulation.

July 30. The size of the swelling has been gradually diminishing on each accession, and the interval between the reduction of the joint and the recommencement of the tumefaction has been continually augmented. It has now altogether ceased to swell, and though the joint is much stronger, still it requires to be supported, to enable her to take her accustomed exercise, which, indeed, she has continued to the present time.

The joint continued quite well until January, 1826, when she had an attack of similar disease in the right knee, and the left knee also became affected. By pursuing the same mode of treatment for between two and three months, the disease was arrested in both knees, and they have continued free from it to this time, January, 1827.

Case 15.

Francis Emmerton, thirty years of age, residing in Bartholomew Close, came under my care on the 5th of February, 1821, with a disease in the left knee.

There was in this case greater tumefaction of the joint than I ever remember to have seen before. The cavity was amazingly distended ; its parietes were thickened, and adhered to the surrounding integuments. It presented the appearance of an oval tumour, excluding entirely from view the natural prominences of the joint. The tendon of the rectus muscle was elevated by the fluid contained in its bursa, and it was equally distended laterally. The joint was so painful, that he could neither rest night nor day. Any attempt to alter the relative position of the limb was attended with agony, and he could not even bear to walk on crutches with his foot in a sling. The leg was very much bent, and the whole limb was greatly wasted. The joint was more particularly tender

just beneath the lower edge of the patella, which part he described as being the chief seat of the pain.

He was dreadfully emaciated and exhausted by the continuance of disease, and was drenched in perspiration at night.

In June, 1814, he strained his knee; it remained weak, stiff, and swelled, but not painful. An ointment, which produced a great many pustules, was rubbed on to the knee, with which it was kept sore for six months. Strengthening plasters were then applied; but neither of these remedies were productive of any benefit, nor did he derive relief from cupping. He continued in this state for nearly a year. The joint first began to be painful during exercise; it was quite easy when at rest, nor did it prevent him from pursuing his employment as a bricklayer for between two and three years.

In November, 1816, he went into an hospital, and remained there for thirteen weeks. During this time, by means of blisters and issues, conjointly with absolute rest, the disease was so much relieved that, after he had left the hospital a twelvemonth, he was able to resume his employment, although it was attended with considerable pain. He continued to walk on the limb for three years, but was obliged to keep the issue open during the whole time; for, whenever it began to heal, the disease became worse.

In October, 1820, having injured the joint by trifling accidents at different times, it became so painful, that he was obliged to give up his employment; even now, however, he could walk on the limb, although with great inconvenience: it was but little swelled.

He then returned to the hospital, and remained there four months, during which time poultices were employed, leeches applied twice a week, and a large issue was made on each condyle of the femur. Notwithstanding the use of these remedies, the disease became rapidly worse, and the joint distended to the enormous size before described. His health suffered very materially, and the powers of his constitution were so much exhausted by the disease, that amputation was proposed to him as the only means of saving his life; but he refused to submit to the operation, and left the hospital with great pain and difficulty. His strength was so excessively reduced, that I did not like even to repeat the local bleeding which had been employed so frequently without arresting the disease; and, indeed, I entertained very little hopes that any means would be able to control it. I thought it right, however, to make the attempt, and adopted the plan of treatment

that has been already detailed with the greatest care and precision, and desired that I might be informed if he did not find himself relieved by it.

March 2. He has been more free from pain, the joint is less swelled, and his health is rather improved, sufficiently so to encourage me to proceed in attempting to save the limb.

March 15. He is much better, is now able to walk on his crutches without much pain; the joint is reduced in size, less tender, and less contracted.

March 29. The joint is not much better: twelve ounces of blood were taken from the knee by cupping, before the renewal of the applications.

April 11. He is now much improved in health; the pain and tenderness have been materially less since he was cupped; the swelling is also reduced, and he can move the limb with greater ease. Cupping was again had recourse to before the applications were renewed.

April 25. He has been gradually improving since his last visit, and the limb is less contracted: the cupping and applications were repeated.

May 9. He states that he has had much less pain, and the joint is evidently more materially improved; it is less tender, much straighter, and he can bear a little weight on the toes. Cupping and applications renewed as before.

May 22. On the 12th instant, his crutch slipped as he was ascending a staircase, and, in order to save himself from falling, he was obliged to throw his whole weight on the diseased limb, which was thus so much strained as to occasion very great pain. He removed the dressings, and re-applied them, after having put on some leeches. The pain gradually subsided, and in a week's time he was as well as before the accident. The cupping and applications repeated.

June 19. The joint is much less swelled, and straighter; the bursa under the tendon of the rectus muscle does not appear so prominent, notwithstanding the uniform diminution of the swelling. The integuments, instead of being in a state of tension, are now quite relaxed, and he can bear more weight on the limb than on his last visit. The applications were repeated.

July 15. The joint has not continued to make the same rapid progress towards recovery as before, and he is not yet free from pain. Cupping and applications repeated.

August 9. He is now entirely free from pain, excepting what he occasionally feels when turning in bed. He can bear his weight on the limb, the effused fluid is entirely absorbed,

and the joint nearly, if not quite as small as the other. There remains the slightest tenderness, on pressure, just on the outer side of the head of the tibia, but not on any other part; the leg is very nearly straight, but the joint quite stiff.

Although the disease and its consequences were so speedily removed in this instance, almost a year and a half elapsed before the knee had acquired sufficient strength to enable him to walk on it with that degree of confidence which could induce me to allow him to throw aside his crutches altogether. I presume that the bones had become so much softened in their texture, by disease of seven years' continuance, that a considerable time after its subsidence must necessarily have elapsed before ossific union could take place. At the expiration of the time I speak of, this was accomplished; the limb is firmly anchylosed, and is not more bent than is desirable to enable him to walk with ease on a stiff joint. He soon after returned to his avocations, and has pursued them from that time to the present (1826) without any interruption whatever.

Case 16.

A lady residing in the neighbourhood of Brunswick-square consulted me on account of a disease in the left knee, on the 10th of March, 1826.

There was no tumefaction of the joint, but it was slightly tender to the touch. She complained of a constant shooting pain deeply seated in the joint, and much increased by any attempt to bend or straighten the limb, the least movement of it being attended with extreme pain. She suffered so much at night, that her rest was much impaired, and she could find no easy posture for the limb, the half-bent position being that in which it was the least uneasy. The pain proceeded up the thigh, to the hip, very frequently; the joint was so excessively weak, that she could scarcely bear any weight on it. She was a stout, middle-aged woman, in tolerably good health. She had frequently felt pains in various parts of the limb for a very considerable time; but the symptoms had of late increased with rapidity to the degree just described. I treated this case in my usual manner.

March 24. The limb is stronger, the pain much less severe, and confined altogether to the knee: she no longer feels any pain in the hip, and the joint is not tender on pressure.

April 8. She is now quite free from uneasiness, except on moving the joint, and is not at all disturbed at night: there

is still some pain in flexion and extension, more especially the latter.

April 22. The joint has been gradually improving and becoming stronger, and is perfectly free from pain; on first rising in the morning, it appears quite well, until it has been used during the day; in the evening, it is rather stiff and uneasy.

May 5. She now feels no inconvenience whatever in the joint beyond what arises from a slight degree of stiffness after the too free use of it. This case continued quite well in January, 1827.

Case 17.

Mr. W. W——, twenty-eight years of age, residing in the Regent's Park, consulted me on the 4th of January, 1826, on account of a disease of the left knee.

The slightest movement of the joint was attended with extreme pain: he was utterly unable to raise his leg by its extensor muscles, but could bear to have it elevated by his hand, provided that in so doing there was neither friction nor pressure upon the cartilaginous surfaces. The synovial membrane was neither swelled nor tender; there appeared to be some effusion into the cellular membrane above and around the patella; and if this bone were rubbed against the condyles of the femur, a grating noise and extreme pain were produced. He could walk with his leg, when straight, tolerably well, and without very material inconvenience, until he had continued to use it for a short time, after which the pain became very severe. He was comparatively easy when the leg was straight; but the bent position was always painful. He was much troubled with spasmodic starting of the affected limb at night; the leg and thigh were much wasted, the nates being in a natural state.

In the winters of 1821—1822, when travelling on the Continent, and in the habit of using violent exercise, he first perceived pain in the knee after exertion, and the whole limb was fatigued sooner than the other. From that time the limb had always been affected in a greater or less degree: after undergoing much exertion it would be so painful, swelled, and tender, that he has been repeatedly obliged to rest it entirely, after which it became better, so that he could walk with only the ordinary pain he was accustomed to. He said he had never been free from pain for the last four years, and that the symptoms, together with the weakness of the limb, and the difficulty of using it, had been gradually increasing, until they

incapacitated him from pursuing his usual avocations. Ten ounces of blood were removed by cupping prior to my applications being used.

January 25. The pain continued equally severe for some days; but it is now considerably abated: he can bear the limb to be bent and straightened without pain, and it is much less severe when the patella is moved on the condyles of the femur.

April 25. He can bend and straighten the knee, and elevate the leg, by its extensor muscles, without the slightest inconvenience. He can walk on the limb perfectly, nor does he suffer any pain from rubbing the patella on the condyles of the femur.

In this case an accession of disease was subsequently brought on by a too free use of the limb. The means before detailed were persevered in; but it was not until October following that the joint was completely recovered. He then went into the country, and left off his crutches. Since that time he has had no return of the disease, but has been gradually acquiring strength, and has been able to walk a distance of five miles without inconvenience.

March 7, 1827. The joint is in all respects perfectly well.

Case 18.

A lady, forty-five years of age, residing in one of the principal market towns in Essex, applied to me on the 16th of May, 1823, on account of a disease in her left knee.

A spot on the inner side of the head of the tibia was so excessively tender, that she could not bear to have it touched. There was neither pain nor tenderness throughout the remainder of the joint, although there was a general fulness and tumefaction over the whole synovial membrane. She could neither straighten the limb, nor bend it, without great pain, nor could she raise or extend the leg by its own muscles. The slightest motion of the joint, or any attempt to bear weight on it, occasioned very much pain. The limb was much wasted; she was greatly distressed at night by spasmodic contractions of the muscles. All these symptoms she described as gradually increasing.

She was evidently labouring under considerable disorder of the digestive organs, which the medicine she had been taking failed to remedy.

When a child, she was affected with glandular swellings in the neck. In August, 1822, she injured her knee by bruising

the part that is now so tender against a bedstead. From that time she had always felt pain, weakness, and inconvenience in it, in a greater or less degree. The pain was not constant, nor the inconvenience very great, until about Christmas last, when she was unable to place the left leg foremost in going up stairs, and the symptoms becoming more severe, she attributed them to rheumatism. The joint was then excessively weak, and very painful on first moving the limb in the morning; she also experienced more inconvenience after exercise than during its continuance. At this time there was not the least swelling perceptible, but she was much distressed by spasmodic muscular action.

She used various stimulating applications, expecting that as the weather became milder, the complaint would subside, instead of which it became gradually worse, and early in the spring she first perceived that the joint was swelled. The joint was dressed in my usual way, and the following medicine was prescribed:

℞ Hydrarg. Submur. gr. ij.
Extracti Colocynth. Comp. gr. viij.
M et divide in pilulas ij., alternis noctibus sumendas.

℞ Magnes. Sulphatis ʒ j.
Tincturæ Humuli ʒ j.
Infusi Caryoph. ʒ iss.
M ft. Haustus, bis quotidie sumendus.

May 31. She has had no pain nor spasmodic action of the muscles since the joint has been mechanically supported, but the spot is equally tender to the touch. The applications have not produced sufficient irritation.

April 14. The joint is not improved, nor have the applications yet produced the requisite degree of irritation on the skin, which is excessively indolent. Twelve ounces of blood were now removed from the knee by cupping, and some tartar emetic ointment was rubbed on to the part before the dressings were applied.

April 28. The applications have produced their full effect on the skin, and the joint is very much improved in all respects; the pain, swelling, and tenderness are considerably relieved, and she can extend and bend the leg by its own muscles.

From this time, by persevering in the same means, the disease gradually subsided, the flexion and extension of the joint were attended with less pain, the swelling soon subsided entirely, and the joint was restored to its natural state.

It remained, however, very weak, and as she was a heavy woman, I was anxious to prevent her from using the limb for

a considerable time. There still remained a slight grating noise on moving the patella on the bones beneath it, but this was unattended with pain or any inconvenience.

Case 19.

For the notes of the following case I am indebted to Mr. Smith, of Gracechurch-street, as well as for his able assistance, which essentially contributed to its favourable termination.

In January, 1824, I was requested to visit a young gentleman, thirteen years of age, residing in the city, in consultation with Mr. Smith. The patient complained of great pain in the right hip; it was so severe as to deprive him entirely of rest during the early part of the night; and the tenderness of the groin and nates was great. There was considerable swelling on the outer part of the thigh by the side of the great trochanter, with evident fluctuation of matter deeply seated, and any attempt at the flexion or extension of the thigh caused extreme pain. The limb was elongated and inclined forward; the nates as well as the muscles of the leg and thigh were flabby and wasted; and he had experienced occasional rigors in an evening.

He stated that about May, 1823, he first felt pain in the right thigh, which was so weak and painful as to cause him to limp in walking. Some stimulating applications were used at this time, and leeches were afterwards employed, together with internal remedies, for six weeks, when another surgeon was consulted. Leeches were again prescribed, together with fomentations, succeeded by a strengthening plaster to cover the whole hip, and the patient was directed to lie constantly on an inclined plane. This plan was pursued until the following January, when I first saw him.

As the inflammation was considerable, I directed that twelve leeches might be applied to the hip, succeeded by fomentations and poultices, which were continued for two days, and on the Thursday the hip was dressed in my usual manner. From the day on which the joint was thus supported, the pain altogether ceased, and the swelling and tenderness began gradually to subside. He was allowed to take exercise on crutches, but not to set his foot to the ground: ten drops of the tincture of iodine were directed to be taken twice a day, and the applications were renewed every fortnight. After pursuing this plan for six months, he was able to walk on the limb without the slightest pain; the

muscles had nearly recovered their natural appearance, and the limb was scarcely, if at all, shorter than the other.

In August he had a severe attack of typhus fever, which confined him to his bed for six weeks, and left him in a very reduced state, but without any return of disease in the joint. The hip continued well until the following April, 1825, when he fell down and bruised it against the step of a door. This accident occasioned a violent accession of disease in the head of the os femoris, which proceeded with great rapidity. The thigh was forcibly bent upon the pelvis; he not only could not bear the limb to be moved, but even the least alteration in the position of his body was attended with extreme pain, so that he was altogether confined to his bed. He was freely purged; leeches were applied to the hip in as great numbers, and repeated as frequently as his strength would allow; fomentations and poultices were also employed in the first instance. As soon as the diminished violence of the symptoms would admit, the applications were again had recourse to, and bark was given internally. These means were pursued for three months from the time of the accident, before the disease was sufficiently abated to allow of his leaving his bed. After this period the disease subsided so rapidly, that he very shortly resumed the use of his crutches, and by the end of the following September was able to walk on the limb without the slightest pain, but he was not allowed to discontinue the use of his crutches for some time. Although the thigh was forcibly bent at a right angle with the body, as the disease subsided, it was gradually restored to its proper position, merely by his favouring its return to this position as much as he could without pain, and the bone is now firmly anchylosed in a direction perpendicular to the body.

Notwithstanding that the head and neck of the bone have been so completely absorbed as to reduce the length of the limb two inches, matter was not at any period of this second attack secreted in sufficient quantity to give evidence of its presence in the cavity.

August 1, 1827. This patient remains perfectly well at this time, and is able to walk on the limb without any difficulty.

Case 20.

On the 12th of February, 1824, I was consulted about a young gentleman, between six and seven years old, who had disease in the left hip. When I first saw him, the joint was much swelled, containing a large collection of matter, extremely

tender, and so painful that he could get no rest. The slightest movement of the joint caused agony, he would scarcely allow himself to be moved without crying. The body was so much contorted as to have led to the opinion that the spine was also diseased; but this was not the case. The thigh was constantly bent at a right angle with the body; it was considerably shortened, and the two knees closely approximated. The matter had made its way as low as the middle of the vastus externus. He was a delicate child; his appetite was so much impaired that it was very difficult to induce him to take food; he was feverish, thirsty, had a hot skin, a coated tongue, and irregular bowels.

About four years before, he had strained the hip, so as to render him lame for a few days; this soon subsided, and he felt no more of it for a year and a half; he then complained of pain in the same limb, but it was only of short duration; until midsummer, 1823, when he returned from school, nothing further was observed, except that he was not so capable of exertion as the other children, and frequently complained of his legs aching; he now began to limp after exercise, but not when he first rose in the morning; he suffered pain in various parts of the limb during the night, but he was quite easy in the day.

Leeches were now applied to the hip, succeeded by blisters; some opening medicine was given, and absolute rest strictly enjoined. Warm bathing and alterative medicines were afterwards employed; but the lameness gradually increased, and the limb appeared to elongate; a blister was then applied and kept open. Hitherto he had been tolerably free from pain during the day, when the limb was motionless, though always restless and uneasy at night; the above means having failed to afford relief, a caustic issue, of the size of a dollar, was made behind the great trochanter. From this time he continued incessantly in such extreme pain that he could not rest a moment, nor even bear a person to walk across his room. The hip now swelled rapidly; the whole body was drawn down on the affected side; the thigh became permanently bent, and was soon observed to be getting shorter; the leg was bent upon the thigh, and his health was greatly affected. The eschar separated in a week from the application of the caustic: peas were inserted into the wound; but the pain was so severe, that they were discontinued after a few days. The issue was allowed to heal, and fourteen leeches were applied to the hip: the change was attended with very little alleviation of the symptoms; opiates failed to procure sleep; and

he was so exhausted by pain that his life was despaired of, and no further efforts were made to arrest the disease. The healing of the issue was attended with some alleviation of his sufferings, and his strength was in some degree recruited by a more nutritious diet. Still, however, the disease was making progress, the swelling increasing in size, and the limb diminishing in length. I directed twelve leeches to be applied to the part, and repeated, if the pain was not relieved; fomentations and poultices were also used; small doses of calomel and rhubarb were given; a better diet was allowed; fermented liquors and stimulants of every kind being interdicted.

February 17. The bowels have been sufficiently acted on, and the violence of the symptoms is in some degree mitigated, so that I can now have recourse to my usual mode of treatment.

February 24. The child has been able to rest much better at night since I last saw him; he can bear to be dressed and moved without pain, and the joint has not increased in size.

March 3. His appetite and general appearance are much improved; he can now stand upon the sound leg to have his dressings removed; the swelling is reduced, and he can bear the limb to be gently moved.

March 17. There has been a gradual improvement in his health and strength; the bowels are regulated by small doses of Epsom salts, combined with sulphuric acid: the joint is considerably reduced in size: the tension of the integuments and contraction of the limb are much diminished.

April 2. The thigh is much less bent upon the pelvis; he is now able to walk on crutches without pain or inconvenience, and his health is very good; he now takes the carbonate of iron, the bowels being regularly relieved without any opening medicine.

May 1. The joint is much reduced in size, but there is every appearance that it will soon burst; it is quite free from pain, but the matter is more superficial, though greatly diminished in quantity.

June 2. The abscess has burst, but a very small quantity of thin matter has escaped, and the aperture is plugged by a piece of curd-like substance. He is quite free from pain, and there is not the slightest constitutional disturbance; the wound is defended with a piece of lint, and the limb dressed in the same manner as before.

June 9. There has been an inconsiderable discharge from the wound; the hip is quite free from inflammation; and he has not had the slightest pain.

June 28. The complaint is going on very well; the wound is nearly closed; there is scarcely any discharge; and he can bear the limb to be moved in any direction. This case continued to mend until the limb became perfectly well; of course, it was anchylosed, and considerably reduced in length.

When I last heard of this patient, he was seen in a garden driving a spade into the ground with the affected limb, which, being shorter than the other, was very convenient for such a purpose.

Case 21.

A young gentleman, twelve years of age, residing at Kingsland, was brought to me on the 1st of February, 1826, on account of a disease in the left hip. It was painful, swelled, and tender, and so excessively weak that he could not bear the least weight on the limb. All motion was attended with an increase of pain, which was so severe at night as to disturb his rest. His appetite was tolerably good, his tongue clean, and bowels regular. There was a collection of matter, which pointed just on the outside of the rectus femoris muscle, at the distance of one-third of its length from the hip; at this part the skin was discoloured, and of a livid purple hue, to the extent of a sixpence.

When he was eighteen months old, he had disease in the left hip, attended with the formation of matter, and the dislocation of the bone, which is anchylosed on the dorsum ilii. Early in last November he was kicked by his brother at school, on the same hip; this was followed by a great degree of pain and tenderness, which partially subsided in a few days. Afterwards the symptoms gradually increased (notwithstanding the use of various remedies) until they became so severe as to confine him to his bed for some time. My usual dressings were now applied.

February 8. The application has produced extensive irritation on the skin, attended with considerable itching, while the pain and tenderness have subsided in a corresponding degree, and the strength of the limb has increased, the discoloration of the skin has almost disappeared, and the collection of matter is diminished in quantity.

February 15. There is now no mark of the previous discoloration of the skin, the pain is entirely relieved, the matter diminished in quantity, and the strength of the limb much increased.

This case continued in a state of progressive amendment: on the 9th of March no fluid at all could be felt, and the limb

was so perfectly recovered, that the patient could walk on it, and move it in any direction, without the slightest pain or inconvenience.

Case 22.

Elizabeth Edwards, twenty years of age, applied to me on the 13th of February, 1825, on account of a disease in the right hip. She experienced in the joint very considerable pain, which was aggravated by exercise, and by moving the limb in any direction. There was a general tenderness over the whole of the hip; but she complained more particularly of pressure in the groin and behind the great trochanter, and could not bear to lie on the affected side. The whole limb was much wasted, and it was also somewhat elongated; she had not any pain in the knee nor down the leg. About three months before I saw her, she first felt pain in the hip: this, however, was inconsiderable at its commencement, and preceded by a weakness of the limb, which was also more easily fatigued than usual. From that time the pain had been gradually increasing in severity, until she could scarcely bear any weight at all on the limb.

Twelve ounces of blood were taken from the part previously to the applications being employed.

February 20. The pain and tenderness are relieved in some measure, but not entirely. The cupping to be repeated before the applications are renewed.

February 27. She has had no pain since her last visit, but there is still some tenderness on pressure and in moving the joint.

March 26. There is not the least tenderness on pressure, and she can bear to move the joint without inconvenience: the elongation of the limb is less apparent.

April 20. The joint is much improved in appearance, the limb is not so much wasted, and the muscles are firmer than before.

May 13. There is not the least pain or tenderness, and she can move the joint in every direction with perfect ease: there is no perceptible elongation of the limb, but the joint still feels rather weak: on this latter account, the mechanical support is to be continued for some time longer. In the following August the joint had so completely recovered, that she resumed her occupation—that of a servant—without experiencing any return of disease.

Case 23.

January 16, 1827, I was consulted on the case of J. H., a delicate girl, fifteen years of age, who was affected with disease in the right hip. The elongation of the limb was very apparent, to the extent of an inch and a half below the left limb; the nates were flabby, and the cleft at the inferior part lower than that on the opposite side by an inch and a half. The thigh was somewhat bent on the pelvis, and the leg was bent upon the thigh. The spine of the ilium was drawn down on the affected side, and any attempt to put the flexors of the leg on the stretch was productive of pain. The joint was very stiff, and its motion very limited. Slight movements of the joint, however, were not immediately attended with pain, although it invariably succeeded to the smallest exertion. She suffered constant pain in the knee, which extended down the calf of the leg, was aggravated by walking, and became so severe at night as to disturb her rest.

She stated that about two years and a half before, she had felt pain in the right leg and thigh, which was relieved after a few months by rest, blistering, and stimulating embrocations. It remained well until last May, when she again felt occasional pain in the same knee; it extended down the leg, and continued to increase in constancy and in severity in proportion to the degree in which the limb was used. In the autumn the limb was first perceived to be elongated, and all the symptoms were gradually increasing in severity.

She was directed to take the pilula ferri composita, and the hip was dressed in my usual manner.

January 30. Since her last visit she has generally been free from pain during the day; but there has been a slight accession of it at night, although much less severe than formerly; and she has walked the distance of two streets to my house without feeling any inconvenience.

February 27. She is now quite free from pain, and the elongation of the limb is evidently diminished.

March 27. She is very much improved in health, has had no return of pain, the limb is straighter, its motions more free, and unattended with pain, and the contraction of the leg and thigh are also less perceptible.

April 24. The elongation is scarcely perceptible, the flabbiness of the nates is much less manifest, and the movements of the joint are more free and extensive.

July 28. There has been a uniform and gradual amendment of the hip for the last three months, and it has been

attended with a proportionate improvement in her general health. She can now move the joint, and walk on it as well as ever. The muscles have greatly recovered their firmness, the limb is restored to its natural position, and the only complaint she now makes is, that it feels rather weaker than the other.

Case 24.

Some years ago, a lady, about thirty years of age, residing at that time at Hanwell, consulted me on account of a disease in the hip-joint, attended with the largest collection of matter I ever saw in such a case. I regret very much that, not having taken any record of the case at the time, the only description I can give must be from memory, and this, after the lapse of so long a time, must necessarily be very imperfect; I am unwilling, however, to pass unnoticed so remarkable an instance of recovery under very unfavourable circumstances.

In July, 1812, she fell down an area, and bruised her hip severely. She did not experience any serious consequences from this accident, and in October, 1817, she slipped down stairs, and injured the same hip very much: it continued swelled and painful for some time. Soon after this second accident, she began to feel pains in the hip and knee, particularly in the latter, which, after walking but a short distance, became so weak as to render her incapable of proceeding. These symptoms continued to become more and more distressing until the following year, when she applied to a surgeon of eminence in town, who told her that there was a gathering in her hip, which in all probability would soon break: he prescribed some medicine to be taken, and directed the hip to be poulticed until it should break. The disease continued its progress; the hip increased in size; the pain was very severe and constant in the knee; she was much distressed by spasmodic action of the muscles; and at last was unable to raise or move her leg in the least, as she lay upon her bed. The leg became much elongated; it was at one time (according to her description) three inches longer than the other. I need not observe that such extensive local disease could not exist without very marked and serious disturbance of the constitution. Among other distressing symptoms, she was very much troubled with vomiting, which caused great agony in the hip. I never saw any case in which the nates and upper part of the thigh were so enormously distended as in this.

This case was treated in the manner and upon the principles detailed in the preceding pages. Such internal remedies were employed as the circumstances of the case appeared to indicate, and the local means were precisely those that I have so much insisted on.

She informs me, that in three months after the time I first had recourse to them, there was so decided an amendment, as to lead me to express an opinion that the matter might possibly be absorbed. This opinion was ultimately verified; and, after a very long confinement, she is now perfectly recovered, without the slightest deformity, and has regained the complete use of the joint, without any impediment whatever.

Case 25.

Mrs. K., residing at Clapham, consulted me on the 30th of July, 1821, on account of a disease in the right ankle. The swelling presented the appearance of an enlargement of the joint, retaining its natural figure, and extending considerably over the extremities of the tibia and fibula. It was very tender when pressed, and so painful that she could not bear the slightest weight on the limb, nor the least movement of the joint. There was a large sinus just at the extremity of the fibula. Her health and strength were very much impaired, and she was two months advanced in pregnancy.

She informed me, that nine months before, she first felt pain in her right ankle, having, the preceding day, remained some time in wet shoes; and soon after, she perceived that the joint was swelled. It remained in this state for some time, and then the weakness, pain, swelling, and the difficulty in walking, gradually increased. After the lapse of a month, an embrocation and a bandage were had recourse to, without affording relief. Blisters were next applied; but they caused so much inflammation, that she could scarcely set her foot to the ground. She was afterwards recommended to try the effect of leeches, seven of which were applied every other day for a considerable time, without any alleviation of the complaint; indeed, she fancied that they made her foot weaker than before, and less capable of bearing the weight of her body: at this time she was so much reduced, that she could only sit up a part of the day. The swelling was now nearly stationary. Poultices were subsequently applied; but the disease continuing its progress, she became so incapable of bearing the least weight on the limb, that she was obliged to have recourse to crutches. About the same time an abscess formed, and was

opened just at the lower extremity of the fibula: a small quantity only of matter was evacuated, and the swelling was but very little reduced. A cold lotion was next applied, and, during its use, the orifice of the sinus healed; but the pain was very distressing until it again opened, and from that time it continued to discharge.

She was directed to take a drachm of the powder of bark twice a day, in water, and the ankle was done up in my usual manner.

August 31. Her health and appetite are improved. She has had much less pain, the swelling and tenderness are diminished; she can move the joint more extensively, and with greater facility.

September 30. The joint has continued to improve in every respect since I last saw it; she is now entirely free from pain, and can move the foot in every direction with perfect ease, and the swelling is more considerably reduced.

October 31. The sinus is healed, and the joint is so far recovered, that she has thrown aside her crutches, being able to walk, and to attend in her shop without them, notwithstanding she is pregnant.

The joint soon after this was restored to its natural size, and perfectly recovered; of course, it was necessary to keep it supported until she was confined. She had, however, no relapse of the disease, and has remained quite well to this time (August, 1826).

Case 26.

A young man, residing at Lambeth, consulted me on the 23rd of July, 1826, on account of a disease in the right ankle. It presented the appearance of a uniform enlargement of the joint, and was not tender to the touch; it allowed only of very limited motion, and that was attended with a grating sensation. The whole limb was much wasted, and the leg, from the knee to the heel, was at least an inch shorter than the other. There were five scars in the vicinity of the joint, the result of successive abscesses; the tumefaction was of a yielding, elastic nature, as if arising from the effusion of solid substance, and it was rather more prominent on the anterior part than elsewhere. He could extend the foot in a slight degree: but its motion was altogether impeded in the oppo site direction, although not attended with pain.

The foot, from the heel to the end of the great toe, was shorter than the other foot by three quarters of an inch, and the length, from the point of the ankle to the sole of the foot,

was half an inch shorter than from the same point of the other ankle.

In the year 1817, in consequence of a sprain, the joint first became swelled. A few months afterwards, a small abscess formed and burst just behind the inner ankle, notwithstanding the use of leeches and blistering.

In January, 1818, a similar abscess formed in front of the joint; this was attended with much more pain than the former, and he could not put his heel to the ground, but was obliged to walk with a crutch.

In December of the same year, an abscess appeared behind the two former; his foot was much turned inward, and so completely extended, that he could not bring his heel within five inches of the ground. In the spring of 1819, he went to Margate, and then, in addition to the foot being permanently extended, the leg was forcibly bent upon the thigh: any attempt to straighten it occasioned the greatest pain.

The joint remained in this state, without much alteration in appearance, for three or four years: and the heat was so great, that a rag doubled eight times, wetted in a cold lotion, became dry in a few minutes.

During this time, leeches, blisters, hemlock, and other poultices and fomentations were employed; sarsaparilla, and alterative doses of mercury, were prescribed, conjointly with a well-regulated diet, without any amendment of the complaint. Flannel bandages and cold lotions were afterwards applied with some advantage. Mechanical support was subsequently adopted by means of adhesive plasters, and, although it afforded him only a partial relief, not being extensively and uniformly applied, it was of more service than all the preceding remedies.

The effect of my usual mode of treatment in this case, was first to give strength and firmness to the joint, and to enable him to use it with greater confidence, so that he continued his avocation, that of a warehouseman, during the whole time he was under my care. A gradual diminution of the swelling, and a proportionate increase of the sphere of motion, were produced; and, in the course of four months, the joint was restored to its natural size and figure. In consequence of his subjecting the joint to a degree of exertion it was unequal to bear, it remained weak, and he continued to experience some stiffness and difficulty when he first set it to the ground in the morning, for a considerable time.

Case 27.

Henry Anscome, aged eighteen years, applied to me on the 25th of October, with a disease of the ankle. The joint was swelled from thickening of its parietes, and not from effusion into its cavity: it was very tender, and so painful that he could not even set his foot to the ground, but walked on crutches, carrying it in a sling. The slightest movement of the joint was productive of great pain; and this was so severe, when his ankle became warm at night, as to cause him to lie with it out of the bed. The leg was very much reduced in size.

He stated, that two years before, he strained his ankle in walking, in consequence of which accident it was swelled and painful, and was occasionally better and worse for about nine months. At the expiration of this time it became much more swelled, and so painful, that he could not walk without the assistance of two sticks. He was then obliged to desist altogether from using the limb for four months; after which time, by repeated blistering, it was so far recovered that he could again walk upon it. The swelling, however, was little, if at all, reduced, and he could not set his foot to the ground without feeling pain. He continued to follow his employment as a gardener, with great pain and difficulty, until the following January, when the disease had become so much worse, that he was obliged to desist from using the limb. The joint was then exceedingly swelled, tender, and painful; the calf of the leg was wasted, as well as the thigh. Poultices were applied for four months; but the symptoms became gradually more severe, and his health began to decline. An abscess formed and burst just behind the inner ankle: it did not discharge much, and at this time he was in the country.

This case was now treated in my usual manner.

November 20. The disease is considerably relieved, the symptoms have all subsided in a marked degree, and he has now much less pain at night.

December 18. He states that he has been able, since I last saw him, to walk across a room, without crutch or stick; the swelling is reduced, and he is entirely free from pain.

January 17. He is now able to walk on the limb, and to use it without the least pain; but it is still very weak.

The joint, from this time, continued gradually to improve, and to increase in strength. In the following April it was reduced to its natural size, and was so perfectly recovered, that he returned to his employment without the least pain or inconvenience.

October 28. The joint has remained perfectly well to this time; he has continued his occupation, and has walked on the limb this morning twenty-three miles, and intends to return the same distance this evening.

Case 28.

C. L., twenty-six years of age, residing at Camberwell, applied to me on the 4th of November, 1825, on account of a disease in the left ankle-joint.

The pain was constant, and so severe at night as to disturb her rest; she was also much distressed by spasmodic action of the muscles. The joint was considerably swelled, the tumefaction presenting an elastic feel to the touch. She could not bear the slightest motion of the joint, which was attended with a grating sensation. The leg was much wasted, and it was with the greatest difficulty that she could set her foot to the ground. She complained that there was great internal heat in the joint, while the rest of the limb was always pale and cold.

About a year before, she first felt pain in the joint, which had been very weak for some months previously. There was not, however, any perceptible swelling for nearly six months after the pain had become constant. The pain and difficulty of moving the joint had been gradually becoming more severe from its commencement. The remedies that had been employed were fomentations, leeches, cold lotions, stimulating embrocations, cold pumping, and stimulating plasters, which produced excessive irritation on the skin. Salt water had been applied on cloths to the joint; and during a residence for some time at the sea-side, warm and cold baths had been used. These means, however, failed to arrest the disease.

I dressed her ankle in my usual manner.

November 18. The pain is so much reduced as to enable her to rest at night: she still suffers very much on moving the joint, and it is very tender to the touch. The applications have produced considerable irritation on the skin, attended with great itching, and a diminution of the chilliness she complained of so much on her last visit.

December 1. The joint is improved in every respect; the swelling is reduced; there is no pain when the limb is at rest, and much less than formerly when moved.

December 15. The joint has been gradually improving since her last visit, and she can now bear it to be moved, without the slightest pain.

The subsequent history of this case may be comprised in a few words. She continued to gain strength in the limb every week; in three months from the time I first saw her, she could use the diseased joint as well as the other; and to the present time (June, 1826) she has used that limb as much as ever, without any return of disease, or even the slightest inconvenience.

Case 29.

A gentleman, residing in Devonshire-place, consulted me on the 7th of February, 1827, having a disease in the left ankle.

The joint was so tender that he could scarcely bear it to be touched or moved; there was considerable tumefaction, arising partly from effusion into the cavity, and partly from that of serum into the cellular membrane. There was great tenderness of the periosteum both of the tibia and fibula, and the swelling extended nearly half way up the leg. There was a small swelling just at the lower end of the tibialis anticus muscle, the action of which was attended with pain at this part, as well as in the joint itself.

About a month before, as he was stepping out of a carriage, his foot slipped, and his ankle was twisted; it immediately swelled, and remained weak. In a short time the pain became so much aggravated, that he had scarcely had any rest for a fortnight. The leg was almost entirely covered with small scars, the result, as I believe, of scrofulous ulcers. Some embrocation was employed, and a flannel bandage applied. He afterwards went to Brighton, to make use of vapour baths, without deriving any benefit.

He was now directed to take a drachm of the powder of sarsaparilla twice in the day, and the ankle was dressed in my usual manner.

February 14. He has been free from pain from the time when I first saw him, and has been able to sleep well at night; the swelling is very much reduced; he can move the joint, and walk on it without pain, but it is still somewhat tender on pressure.

February 28. There is now scarcely any appearance of disease; the swelling, pain, and tenderness being entirely removed: the joint remains rather weak, so that is it desirable to continue the mechanical support for a short time longer.

Case 30.

T. Somson, a confectioner, forty-eight years of age, applied to me on the 28th of February, 1827, with a disease in the

right ankle. The joint was swelled, painful, and tender to so great a degree, that he could scarcely set his foot to the ground. The least movement of the joint occasioned extreme suffering, and he was quite exhausted for want of rest. The swelling was confined to the inner side of the joint, and consisted in the deposition of solid substance. The calf of the leg was much wasted.

Last October he twisted his ankle : this accident produced a slight degree of pain in the first instance, and, in about a fortnight, it became so severe as to attract attention. Soon afterwards, the joint was so much swelled and inflamed, that he was unable to set his foot to the ground. By the use of leeches and fomentations, with constant rest for two months, the redness and swelling were in some degree abated, so that he was able to walk on crutches ; the pain, however, was very little relieved, and latterly it had gradually been increasing in severity.

I dressed his ankle in my usual manner, and desired him to come to me again in a month.

March 27. The pain began to subside in a few days after the applications were put on ; and for the last fortnight he has been almost free from it, except when he has used the limb too freely, for he has since that time resumed his occupation. The swelling and tenderness are much diminished, and the motion of the joint is more extensive, and unattended with pain.

April 29. The swelling and tenderness are much reduced, and the joint is greatly improved in every respect.

May 30. The swelling, pain, and tenderness have entirely subsided, and he has been able to walk a distance of two miles to his business every day, without the assistance of crutches.

Case 31.

Mary Mason, twenty-two years of age, applied to me on the 18th of April, 1827, with a disease in the left ankle. It was in constant pain, so tender that she could scarcely bear the slightest pressure, and the least movement of the joint produced a great increase of suffering ; the swelling was considerable, and extended completely over the tarsus, as well as around the joint.

On the 9th of November, in jumping off a coach, she strained her ankle very severely. This accident produced so violent an inflammation, that she could not set her foot to the ground. Leeches, cooling lotions, and poultices were employed,

and by these means the pain was in some degree relieved, but the swelling did not subside. Subsequently leeches were applied, succeeded by blisters, in consequence of the pain having increased, but they produced only temporary relief. Since that time various plasters and other applications had been employed, nevertheless the pain and swelling had gradually increased, as well as the difficulty in moving the joint.

I immediately had recourse to my usual treatment in this case.

May 6. She has been quite free from pain since her first visit; the swelling and tenderness are much diminished; the movement of the joint is more extensive, and unattended with pain.

May 18. The swelling is quite reduced, the joint is altogether free from pain, and she is able to walk across the room without any inconvenience but that of weakness in the joint.

June 14. She has been able since her last visit to use the limb very freely, and the joint is quite restored to its natural state; but as it still feels weak, I have once more applied the bandages.

Case 32.

John Cutts, thirty-three years of age, residing at Poplar, consulted me on the 25th of February, 1825, on account of a disease in the left ankle. The joint was much swelled, so tender that he could not bear it to be touched, and could not endure the least motion. The pain was constant, and particularly severe at night; there was also a sensation of burning heat in the joint. The swelling appeared to arise from the effusion of fluid into the joint, as well as from thickening of the synovial membrane. The limb was much wasted, his whole body much emaciated, and his health impaired. His tongue was clean, and his bowels regularly open; but he was subject to constant nocturnal perspirations.

In the year 1819 he first felt pain in the joint, uncertain in in its seat and duration, and unattended by any swelling. The pain used to remit for some time, and then return, each accession being more severe than the preceding attack. In the year 1820 the swelling of the joint first appeared, more especially after exercise; but it subsided in a great measure during a night's rest: the pain also now became both fixed and permanent, and, together with the other symptoms, gradually increased.

Leeches were applied to the part, and at first relieved the

pain ; but they did not reduce the swelling, and subsequently ceased to afford any relief. Fomentations, poultices, and a variety of stimulating applications were used without benefit, the limb being at the same time in a state of perfect rest.

The patient was directed to take a drachm of the powder of bark twice a day with some tincture and diluted sulphuric acid, and the ankle was dressed in my usual manner.

March 4. The pain continued equally severe for the first five days and nights after the application, for the last two it has been very trifling when the joint is at rest. The application has produced sufficient irritation ; the motion of the joint is very limited, and attended with considerable pain. The night sweats are relieved.

March 18. He has been entirely free from pain since I last saw him ; the swelling and tenderness are reduced, and the former now appears to consist chiefly of solid substance. The motion of the joint is more extensive, and attended with less pain.

From this day he continued gradually to improve, and in four months from the time of his first applying to me the joint had quite regained its natural shape and appearance, and he could walk on and move it in every direction without the slightest pain.

It has remained quite well to this time, January, 1827.

Case 33.

Mr. R., forty-four years of age, residing in the Strand, consulted me on the 1st of November, 1825.

The left ankle was swelled from the effusion of solid substance, without any fluid in the cavity. It was very tender, excessively stiff, and the motion very limited. It was with the greatest difficulty he could set his foot to the ground, and the pain was so severe at night as to destroy his rest.

There was also on the centre of the tibia a small swelling, resembling in size and figure the half of an egg divided longitudinally. It was exceedingly tender, and incompressibly hard. His tongue was coated, bowels confined, appetite impaired, and urine high coloured.

He stated, that having been previously subject to gout, in November, 1824, he had in both ankles an attack, which continued in an atonic form until the following May, notwithstanding the employment of various medicines. He then went to Margate, and having remained there a month without receiving any benefit, he came home, but returned in the

beginning of July. The shin-bone now became affected. Warm baths were of no service; but he derived some relief from blisters, and from the pumping of warm water on the joint. The pain and tenderness were now somewhat less acute, but the swelling did not abate. He returned home early in October, and then became worse. Leeches were applied, succeeded by a perpetual blister. These remedies afforded some relief to the pain; but the swelling was not in the least diminished. During the greater part of this time he was taking various medicines under the direction of different medical men.

I directed him to take five grains of the Plummer's pill every night, a drachm of the carbonate of soda twice a day, to keep his bowels open, and my usual remedies were applied to the diseased parts.

November 7. He is certainly improved in health, and has been able to walk better and with less pain since his last visit.

November 14. He suffers no pain at night, and the swelling and tenderness, both on the tibia and ankle, are much diminished. Sarsaparilla was now prescribed instead of the soda.

November 28. He is now so much improved, that he has been able to walk from his house to mine. He is entirely free from pain in the joint, which is not at all tender to the touch; the swelling is materially diminished, and he sleeps well at night.

He continued gradually to improve, and to acquire strength in his limb, and in the course of another month all swelling had subsided, and he was able to walk from Hampstead to London without pain or difficulty.

It is remarkable that although the constitutional disorder could not be relieved by the internal remedies he had taken for a twelvemonth, it yielded rapidly on the subsidence of the local source of irritation. In a very short time after the amendment took place in his ankle and shin, his appetite, which, together with his powers of digestion, had been constantly impaired, became exceedingly good, and he had all the feelings of returning health.

Case 34.

In April, 1824, Mrs. H., residing in the neighbourhood of Cavendish-square, consulted me, having a disease in her right foot. She complained of extreme tenderness on pressure, just in the situation of the strong ligament extending from the os

calcis to the os naviculare on which the astragalus is supported. This spot, however, which was so exceedingly tender when pressed, was not larger than a sixpence. She suffered great pain at night; and there was a swelling, of the form and size of the longitudinal section of an egg, in the hollow of the foot. The pain in walking extended to the hip, and was so severe, that she could not set her foot fairly to the ground, but was obliged to walk on its outer edge, and even this was attended with great difficulty. The calf of the leg was considerably reduced in size, and the tumefaction and tenderness had extended as far as the great toe.

About a year before her consulting me, she had struck her foot violently against a pail, in going down-stairs. On the following morning she was unable to set her foot to the ground, and was obliged to rest it altogether for a few days, during which time the inflammation subsided in a great degree. The swelling still continued, together with great pain, which was much increased by walking. Various applications were employed, notwithstanding the use of which, the disease became rather worse; and, by the following Christmas, the whole foot was very much swelled and inflamed, and so painful that she could not set it to the ground. This accession of inflammation subsided, leaving the foot nearly in its previous state: the pain and difficulty in walking still continued. She came to town in the latter end of February, when repeated blisters, and subsequently the tartar emetic ointment were freely used; absolute rest being at the same time enjoined. These means, however, failed to afford any relief, and the pain continued unabated.

In this case, by pursuing the mode of treatment so often described, the pain and swelling gradually subsided; and in the following June, when she returned into the country, had altogether disappeared.

In the July following, a chair slipped from under her, and she fell with great force on the affected foot. This accident occasioned violent pain, which continued unabated for a month, when she returned to town. At this time cupping was had recourse to, succeeded by the mode of treatment I before employed, and the applications were renewed every week. At the end of five weeks the pain had entirely subsided, and was not reproduced by the hardest pressure I could make on the affected spot. Having, however, suffered so severely, she could not be prevailed on to walk on the foot until the following March, though she had no return of the symptoms.

She was then induced, by great persuasion, to make the

attempt; and, finding that it did not produce any inconvenience, she has since continued to use the limb very freely, without experiencing any return of the disease.

Case 35.

Ann Bell, twenty-one years of age, consulted me on the 24th of February, 1821, on account of a disease in the right elbow.

There was great tumefaction and tension of the soft parts surrounding the articulation, and they were very much inflamed, in consequence of a seton that had been passed through a sinus just above the inner condyle of the humerus, directly across the joint, to the outer condyle. In consequence of this treatment, the pain was so violent, particularly at night, that she had sat up for a week together, dreading to go to bed. She could not move the arm in the least, nor even lift it from her side, nor move her fingers without extreme suffering. There was some motion in the joint. The discharge was profuse, and her health very much impaired. There was no rough surface of bone discoverable on introducing a probe, to ascertain the direction in which the seton had been passed.

About three years before, she fell down and hurt her elbow: it was swelled and painful for two months, after which it was so much better, that she could resume her occupation (that of a servant); the joint, however, still continued enlarged, and always inconvenienced her more or less. It continued in this state until April, 1820, when it became more painful, and a swelling commenced just above the inner condyle of the humerus. It continued to increase in size until the following August, when it broke, and has ever since continued to discharge. The pain, swelling, and difficulty in moving the arm, gradually increased until the seton was passed, which greatly aggravated her sufferings.

I immediately withdrew the seton, and had recourse to mechanical support alone, thinking that local bleeding would not be of service in her reduced state, and that the inflammation would subside in a great degree as soon as the source of the irritation was thus removed.

March 10. She states that her arm has been improving daily, and that she has experienced great relief; the discharge has been profuse: a thick, healthy pus. The swelling and tenderness are very much reduced; she can now rest at night, and move her arm without pain when in the sling. Her health and appetite are also much improved. The arm was now dressed with the cerate, in my usual manner, the mouths

of the sinuses being defended by a small piece of lint dipped in the black wash.

March 24. There is very great improvement in her general appearance, as well as in her arm : it is free from pain and tenderness ; she can move it much more freely, and is now able to discontinue her sling. The discharge and swelling are both materially diminished.

April 21. The arm is in a progressive state of amendment.

May 12. The discharge has now entirely ceased ; the swelling is reduced, and she is able to use the arm very freely without pain.

July 30. Her arm is now so far recovered, that she can use it nearly as much as the other : it is free from pain and tenderness, and there remains but a very trifling thickening of the synovial membrane. She has very little movement in the joint ; but this is altogether unattended with pain, and she is in perfectly good health.

Case 36.

Sarah Butcher, fifty-two years of age, applied to me on the 14th of April, 1826, with a disease in the right elbow.

The joint was swelled, from a thickening of its parietes, tender, and in constant pain, which was most severe at night : the fore-arm was permanently bent, at a right angle to the humerus. There was very little motion in the joint, and that was attended with great pain, and with so decided a crepitus, as to evince that the bones were denuded of their cartilage. She complained of great heat in the joint ; and the motion of the fingers was attended with so much suffering as to deprive her entirely of the use of them. The articulation of the head of the radius was not included in the disease. Her bowels were irregular, and her appetite not very good ; but there was no great constitutional disturbance.

It was between four and five years since she first perceived a great heat and swelling in the joint, succeeded at intervals by considerable pain. The disease continued much in this state for nearly two years, the pain and swelling occasionally increasing, and at other times being less distressing. The pain then became constant and more severe ; the swelling increased ; she was soon altogether deprived of the use of the limb, and it gradually became more contracted. In the first instance she went to Southend, and had recourse to hot bathing : subsequently, a great variety of stimulating remedies were employed, some of which, according to her account, aggravated the disease, and none of them had been able to arrest its progress.

I directed her to keep her bowels open with rhubarb and magnesia; and my usual treatment was adopted.

April 28. She has had less pain since I saw her, and has been able to use her hand and fingers a little: the joint has felt stronger, the thickening is somewhat reduced, but the arm is in precisely the same state with regard to motion.

May 16. The joint is better, in respect both to the pain and swelling, and can be moved with less inconvenience.

June 14. She has been entirely free from pain, and is able to cut her food, but I have cautiously abstained from moving the joint: the swelling is entirely reduced.

July 12. The joint is so much improved, and the strength of the limb so greatly increased, that she can now follow her usual avocations, which are those of household work.

August 10. The elbow is now quite stiff, and firmly anchylosed, and altogether free from pain. The rotation of the radius is unimpeded.

September 15. She has remained quite well since her last visit, and has continued to use her arm very freely, without any ill effect, except a little occasional pain after exerting it too much.

Case 37.

J. G., forty years of age, residing at Stockwell, applied to me on the 4th March, 1826, on account of a chronic disease in the left wrist. The synovial membrane was thickened and swelled, presenting a yielding elastic feel to the touch. There was not any fluid in the cavity: it was very tender when pressed, and very painful, particularly at night, or on moving the joint.

She complained that the whole hand and fingers were numb, and affected with a sensation similar to that she has experienced in half the ring-finger, and in the little finger, when the ulnar nerve has been pressed upon behind the inner condyle of the humerus. The pain extended up the arm as high as the elbow.

She stated that about the middle of last December, she fell down and fractured the lower extremity of the radius and ulna. The fracture was reduced, but the pain and swelling of the soft parts, together with the numbness and unpleasant sensation in the fingers, continued unabated.

My usual mode of treatment was adopted in this case.

March 18. The tumefaction and tenderness of the joint are considerably reduced: she can move it better; the pricking sensation is removed; but the numbness in the fingers still continues.

April 2. The joint is much reduced since I last saw it, and the numbness in the fingers is considerably relieved.

April 16. The joint is reduced to its natural size; she can move it freely in every direction; the natural sensation of the fingers is entirely restored, and she can use this hand as well as the other.

Case 38.

A lady, residing in Long-acre, consulted me on the 14th of December, 1822, having a disease in the left wrist. The effusion of lymph had occasioned much swelling of the joint, which was tender when pressed, and so painful when moved, as nearly to deprive her of the use of her hand. She did not feel pain when the hand was at rest, except after it had been too freely used, but the motion was much limited. There were two fistulous orifices at the outer extremity of the radius, and one just at the styloid process of the ulna.

In the year 1813 she first perceived the joint to be swelled; it had been weak for a long time previously, and she had felt an aching pain when it was much used.

The first indication of disease was the occurrence of a small swelling on the back of the wrist, which continued in an indolent state for a long time, and subsequently broke, leaving a fistulous orifice. This was succeeded by two similar formations of matter, which gave rise to the sinuses that still continue.

This case was now treated in my usual manner.

December 28. The joint has been free from pain, although she has used it much more freely than before, having been able to do so in consequence of the mechanical support it has derived from the applications.

January 13. The motion of the joint, which is improved in every respect, is more extensive, less painful; the swelling is diminished, and the discharge from the sinuses is reduced in quantity.

January 30. There is considerable amendment since the last visit: one of the sinuses on the outer side of the radius is healed.

The two remaining sinuses were healed about a month after the closing of the former one, but the recovery of the joint was much retarded by the free use to which it was subjected. By the latter end of July, however, it was entirely restored to a natural state, and has since remained free from any return of disease.

ON

THE TREATMENT

OF

ULCERS OF THE EXTREMITIES

AND

CHRONIC INFLAMMATION.

I HAVE little to add to Mr. Scott's brief but invaluable chapter on ulcers, headed by him "Concerning Chronic Inflammation and its Treatment," except to observe that the title he gives is a misnomer, the subject of the chapter being more correctly designated by the above heading.

Mr. Scott has done full justice to his predecessor, Mr. Baynton, whose plan of treating ulcers of the extremities is still too much and most improperly followed. It has been said that Mr. Scott's plan differs but little from Mr. Baynton's. Nothing can be further from the truth, and I agree with Mr. Critchett, who has written a book expressly on this subject, who says, that between the two plans "there exists all the difference between a correct and a false principle, between a safe, efficient, and widely applicable mode of practice and one that is at least very limited, doubtful in its results, and dangerous in its tendency."

Mr. Critchett, referring to the present work, adds, "Owing to the brevity of Mr. Scott's remarks upon the subject of ulcers, to their being hidden as it were, in a work professing to treat upon a different subject, owing perhaps to some little prejudices that existed in the mind of the profession against

the author . . . . from whatever cause it may have arisen, certain it is that the valuable principle suggested originally by the eminently practical, acute, and self-taught mind of his father, the late Mr. Scott, of Bromley, has been almost entirely overlooked or neglected by the profession."

Now that so long a period has elapsed since both the Scotts have been removed by death, it is surely time for all such prejudices to cease; and I sincerely trust that the republication of Mr. Scott's work will, for the sake of sufferers as well as the honour of the profession, lead to the universal adoption of his most successful method of treating ulcers, as well as of diseased joints.

EDITOR.

ON THE

TREATMENT OF ULCERS OF THE EXTREMITIES AND CHRONIC INFLAMMATION.

When inflammation is either originally slight, or has been rendered so by treatment, it will sometimes, instead of subsiding altogether, continue its progress in a chronic form. I proceed to inquire what are the causes of its continuance, and the means by which it may be removed.

Inflammation in a chronic form differs in degree, but not in kind, from that which is acute ; it may equally induce the four general terminations of inflammation—viz., effusion of lymph, suppuration, ulceration, and (though more rarely) sloughing.

Inflammation in the lower extremities may be excited, maintained, and aggravated, by a varicose state of the veins. Under these circumstances, the vein being greatly dilated, its valves become unequal to their office, and no longer sustain the column of blood which it contains ; the consequent gravitation of this fluid impedes the circulation in the minute venous ramifications ; thus arises venous congestion, which necessarily excites increased arterial action, and this being exerted not only on the venous branches which are the seat of congestion, but also on the secerning extremities, which terminate in the cellular tissue, there occurs in the latter an effusion of serum. If the limb be continued in the depending position, the inflammation is augmented, coagulable lymph is at length effused, and if the process goes on, the vascular structure of the part becomes weakened, and ulceration is the consequence. Thus the two essential conditions of this disease are venous congestion and increased arterial action.

If inflammation be excited by an accidental cause in a lower extremity where there are no varicose veins, it will be augmented and the pain increased by the depending position of the limb. From this cause ulceration is of much more frequent occurrence in this situation than elsewhere. If

ulceration occur under these circumstances, and the limb is continued long in a depending position, the sore will become purple, gorged with venous blood, which frequently oozes out of it in considerable quantity. It is certain, therefore, that in this case the powers by which the blood is transmitted through the limb are diminished, and no longer equal to overcome the gravitation of this fluid.

In a healthy leg (though in a depending position so many hours in the day) no swelling occurs, and no congestion in its blood-vessels. It is plain that in health the heart and arteries are capable of propelling the blood through the veins, although the influence of gravitation is continually favourable to the descent of blood into the limb, and continually unfavourable to its ascent out of it.

Now the difference between these two states of the limb consists in inflammation, which proves that in this state the propelling powers of the vessels are diminished, they became distended with blood, which keeps up and aggravates the inflammation as long as the limb is kept in a depending position.

The true pathology of chronic ulceration in the lower extremities appears to be this. The ulcer is only the termination and effect of the chronic inflammation by which it is surrounded, and the former cannot be healed until the latter is removed. In the treatment, the direct object is not to heal the ulcer, but to cure the chronic inflammation ; for if this can be effected, the ulcer heals spontaneously. The essential remedy for this state of things is mechanical support, which restores to the vessels the power of propelling their fluid along their canals.

This mode of treatment was first introduced into practice by the late Mr. Baynton, of Bristol, a gentleman who must be remembered with gratitude as long as improvements in surgery are estimated by their practical value. The remedy he has recommended is productive, when properly employed, of incalculable benefit, not only in ulcers of the legs, but in a vast number of local diseases ; the principle therefore on which it acts, and the mode in which it ought to be employed, are

questions of no trifling importance. Mr. Baynton's notion of the mode in which mechanical support operates, he expresses in the following way: "In consequence of a greater deposition of lymph between the interstices of the muscles and the cells of the cellular membrane than is necessary for their lubrication, or than the absorbents can carry away, which, gradually increasing, will remove the absorbents from their vicinity to the arteries, and consequently occasion a loss to them of the effect of arterial impulse, which, while the vascular system of the limb continues in a perfect state, may be supposed to have considerable effect in propelling the returning lymph, as the lymphatic vessels are plentifully supplied with valves, therefore," he concludes "that the principal difficulty which occurred in the curing of ulcers has been occasioned by deficiency of power in the absorbent vessels, and that it appears certain that such deficiency of power is a consequence of that diseased state of the common integuments of the limb, which failed to preserve the parts in a natural situation, and render them subservient to each other's natural actions."

Thus, if I understand Mr. Baynton rightly, an excessive effusion of lymph separates the absorbents from the arteries, and thus deprives the former of an important aid to their propelling powers; and this effusion depends on a want of the natural support of the common integuments: but there are strong objections to this theory. The œdematous state of the limb is invariably preceded by pain and tenderness, and consequently looks more like the effect of inflammation than of deficient absorption. Besides, ulceration is a positive proof that the activity of the absorbent vessels is increased, and that the disease consists essentially in inflammation.

If a patient with an ulcer on his leg be confined to bed, the pain, redness, and tenderness will rapidly subside, and the ulcer will heal, in many cases speedily; but as soon as he begins to use the limb, the inflammation will return, and again terminate in ulceration. If, however, the limb be subjected to mechanical support, the inflammation will subside, and the ulcer will heal as quickly as, and often quicker than if he were confined to bed. All ulcers, not of a specific nature,

which occur in the upper extremity or the trunk of a healthy person are healed with facility; yet the only difference between the parts there situated and those of the lower extremity is in the course of the venous circulation. It is clear therefore that the obstinacy of ulcers in the lower extremities depends on the obstruction to the venous circulation, and this is corroborated by the fact, that the means by which this obstruction is obviated immediately get rid of the obstinacy of the disease.

The above considerations lead me to the conclusion that the effusion of lymph and of serum into the cellular membrane, and the distension of the integuments, are the effect, not the cause, of inflammation, as Mr. Baynton supposed. Now mechanical support is a remedy equally well adapted to ulcers on the lower extremity, whether they arise from a varicose state of the veins or not. It is capable also of affording great relief in many cases of chronic inflammation not so violent as to produce ulceration. In the former cases, it is not the ulceration that is the object of our solicitude, but the inflammatory action, which induces ulceration. The ulceration ceases as soon as the inflammation is arrested; and as this has been shown to depend on distension of the veins, which are no longer able to resist the gravitation of the blood, we have only to afford such an uniform support to the limb, as shall prevent the veins from yielding to the pressure of their contents. If we adopt the adhesive bandage with this view, it must be applied in a manner very different from that in which it is recommended by Mr. Baynton. He directs the "middle of the piece of plaster to be applied to the sound part of the limb, opposite to the inferior part of the ulcer, so that the lower edge of the plaster may be placed about an inch below the lower edge of the sore, and the ends drawn over the ulcer with as much gradual extension as the patient can well bear. Other slips are to be secured in the same way, each above and in contact with the other, until the whole surface of the sore and the limb are completely covered, at least one inch below, and two or three above, the diseased part."*—"The force

* Pages 25, 26.

with which the ends are drawn over the limb must be gradually increased, and when the parts are restored to their natural ease and sensibility, which will soon happen, as much may be applied as the calico will bear, or the surgeon can exert."

I could relate many instances in which this mode of applying the plaster bandage has been attended by great mischief. The pressure round the part of the leg encircled by the plaster and bandage is so much greater than at the lower part, where a roller only is applied, that the venous circulation is so much impeded as to cause considerable tumefaction of the foot and ankle. This produces extensive inflammation, which is propagated to the original seat of disease. Besides, in many instances, the inflammation of an ulcerated leg extends much more than an inch below the ulcer; so that, according to Mr. Baynton's directions, we are to apply to a portion only of the disease a remedy which, when so applied, aggravates the remainder; for I repeat that inflammation is the disease, and ulceration only its consequence.

Instead therefore of commencing the application of plasters an inch below the ulcer, it is necessary to afford equal support to the whole limb, in order effectually to bring about a uniform state of the circulation. The difference between using the adhesive bandage with this view, and with that of squeezing the parts that are swollen into their natural dimensions, will be obvious to every one. By applying the plasters to the whole limb in the manner I am about to describe, we at once relieve congestion, and the attendant inflammation. The pain subsides, the lymph and serum are secreted in a less abundant quantity, and absorption going on, the limb is less swelled on the following day. In this manner it is gradually reduced to its original size and figure. When the limb is reduced to its natural state, Mr. Baynton directs that the plasters should be applied "with as much force as the calico will bear, or the surgeon can exert." I must confess that, according to my experience, when a limb is reduced to this state, all pressure applied in a circular manner, with a view to compress the parts into a smaller space, is uniformly injurious, and productive of inflammation, which, if this

principle be persisted in, will terminate either in ulceration or sloughing.

With regard to the method of fulfilling the foregoing indication, the emplastrum plumbi, P. L., spread on calico, is the best application, as it does not irritate the skin. It is most conveniently made use of when cut into slips of fifteen inches in length by two in breadth. The foot being placed at a right angle to the leg, one of the slips should be applied from the first bone of the great toe, along the inner edge of the foot, around the posterior part of the os calcis to the first bone of the little toe; the middle of another slip should then be placed under the bottom of the os calcis, and its ends extended perpendicularly up on each side of the leg; the third is to be applied along the foot, parallel to the first, and overlapping the half of it; the fourth should be placed parallel to the second, overlapping the half of it, and extending perpendicularly up the sides of the leg. In this manner they should be applied alternately along the foot, and up the leg, the one holding and as it were antagonizing the other in the motions of the foot until the whole limb is covered from the toes to the knee. Subsequently to this, a calico bandage is applied in the usual manner, first alternately around the foot and ankle, and then up the leg as high as the knee. It is necessary to be particularly careful that the plasters and bandage be applied in such a manner that their superior and inferior edges are accurately placed in apposition to the skin, otherwise they will exert an unequal pressure, which is highly injurious. The whole should be applied with only that degree of tightness which is perfectly agreeable to the feelings of the patient, and not with a view of compressing the parts into a smaller space. In this manner every vessel in the limb will be uniformly and effectually supported.

In respect to the time at which it will be necessary to renew the applications, that must be regulated by the quantity of the discharge, for when applied in the manner that has been described, they will remain for weeks, or even for months, without altering their position in the least.

By adopting this mode of treatment, an ulcer on the

lower extremity is placed precisely under the same circumstances in respect to the circulation, as one that has its seat on the trunk, or on the upper extremity; and will heal with equal facility.

A gentleman residing near Chelmsford consulted me on account of deep and extensive ulceration in his leg. He stated that some time ago he had knocked the skin off his leg, and had taken no notice of it. As the disease extended, he applied to his medical attendant, who treated it as Mr. Baynton has recommended. The leg was therefore compressed more forcibly in the middle by the plasters than either above or below the wound, where a roller only was applied. The inflammation consequently extended both above and below them, even to the bottom of the foot, attended with great pain, ulceration, and vesication of the cuticle. I explained to a very intelligent medical man, who was attending the case, that a more extensive and uniform application of the plasters, with less force, would immediately remedy the bad effects that had thus arisen; and by adopting this suggestion the inflammation was arrested, and the ulcer healed with great rapidity.

A gentleman, seventy-four years of age, grazed the skin off the calf of his leg against the step of a hackney-coach. The adhesive bandage was applied for a short distance above and below the wound; it occasioned pain and violent inflammation, which, occurring in an unfavourable subject, and continuing for many weeks, ended in very extensive sloughing. When I was consulted on this case, the patient was unable to bear the least weight on the limb, or to rest at night, notwithstanding the use of opiates. The leg was swelled to an enormous size, the sloughing had been arrested, but the sore was eight inches in length, very nearly encircling the limb, and was extending by ulceration. I treated this case in the manner already described: after the third dressing he became quite free from pain, and was very soon able to walk round his apartment; the leg rapidly diminished in size, the ulcer healed, and still remains perfectly well.

Mary Blackmore, forty years of age, applied to me on the

1st of December, 1825, with a scrofulous ulcer on the calf of her leg; it was nearly as large as the palm of her hand, and contained several deep depressions occupied by sloughs. The sore was very painful during and after exercise, was increasing in size, with ragged edges, and surrounded by a thickened inflamed circumference of considerable extent, and of a livid hue; there were no varicose veins. She stated that the disease had been of eight months' standing, that her mother died of consumption, and that she herself had been subject to scrofulous enlargement of the cervical glands. About twelve months since, two tumours arose on the anterior part of the leg, and broke in about a fortnight after their first appearance: she was confined to the recumbent posture, and they healed in the course of two months. She had not resumed exercise more than six weeks when she felt pain in the calf of the same leg, which increased, and a small swelling appeared and broke. She had made use of poultices and various applications during the last six months; but the pain was unremitting, and the ulceration continued to extend.

I supported the whole limb with the emplastrum plumbi. My patient could immediately walk on it firmly, and with little pain; the feeling of weakness and inability to bear weight on the limb being instantly removed, as well as a distressing sensation of the ulcer being opened by every muscular effort. The surrounding redness and induration diminished; and together with the pain had entirely disappeared in about ten days. The ulcer assumed a healthy granulating appearance, and the discharge, instead of being offensive, sanious, and bloody, soon became inoffensive and purulent. In six weeks from the time I first saw her, she was well enough to return to her occupation, and this was accomplished without her resting a single hour, or taking medicine of any kind. She has since continued in active employment, the scar remaining perfectly well, and the leg in all respects as strong and serviceable as the other.

A lady residing at Rochester applied to me some time ago, on account of two scrofulous swellings in the calf of her leg; they had been of some months' standing, and occurred at the

same time with other indurations in different parts of the body. The latter were removed by the means employed, but the former resisted every method of treatment: the veins in the leg were not varicose. I supported the whole limb in the manner already detailed, and under this treatment the swelling rapidly subsided. Some months afterwards I saw this patient, when she continued quite well.

That deranged state of the circulation which constitutes chronic inflammation is attended with so great a diminution of the power by which the blood is propelled through the capillaries, as to produce congestion. This truth, although more obviously demonstrated in the lower extremity, must necessarily prevail, more or less, throughout the whole vascular system. Although the congestion thus induced so frequently keeps up increased arterial action in the lower extremities, it is not adequate to produce this effect in other situations (where its operation is not favoured by gravitation), unless the heart and arteries are in a state of debility, either natural or acquired.

If, however, the power of the heart and arteries is barely equal to maintain the venous circulation in a natural state, it is obvious that this power being reduced, congestion will be the result. This will of course commence in that system of vessels in which the circulation is the least rapid, and the propelling power the least considerable—the veins—distension of the arteries will be a necessary consequence, and their increased action will be thereby maintained.

Accordingly we find that in robust individuals chronic inflammation rarely if ever occurs, except in the lower extremities, and that if inflammation be excited in those who are of a delicate habit, it will almost always assume the chronic form. As the cause, viz. congestion, by which the inflammation is kept up, operates less forcibly in the upper extremity, it is for a longer time confined to the adhesive stage, in this situation. By its continuance, however, the blood-vessels become more debilitated, the inflammation is increased, and ulceration ultimately produced.

In these cases, local bleeding can only be of service in

relieving extreme distension, but cannot enable the vessels to resume a healthy action ; and if carried beyond a very limited extent, it acts prejudicially by debilitating the system. On the contrary, those remedies which have a bracing and stimulating effect on the fibrous structure are of great service.

From these considerations it would appear that mechanical support may be applied with advantage in the treatment of chronic inflammation in the upper as well as the lower extremity ; and I can assert from ample experience, that it is not less beneficial in one situation than in the other.

In some instances the power of the arteries is so greatly reduced by long-continued disease, that mechanical support is not capable of enabling them to resume their healthy action ; or they may have become so habituated to the performance of morbid action, that they have no disposition to return to a healthy state, even when their turgescence has been mechanically removed. Sometimes, from the situation of the disease, you cannot afford it that degree of uniform support that would be effectual could it be applied,—as in the testicle. In other cases, the texture of the part itself precludes the operation of this mode of treatment ; as in disease of bone.

It is now universally acknowledged that mercury has the power of subduing inflammation ; that when the whole vascular system is placed under the influence of this remedy, inflammatory action subsides. This fact is so fully established in inflammation of the iris and of the cornea, in which the zone of red vessels surrounding the latter disappear, and the deposit of lymph, or the secretion of pus, is arrested as soon as mercurial action is set up, that it is unnecessary to dwell on the subject. I have met with many cases of chronic inflammation in the tibia and periosteum, in which mercury had been given to salivation with the effect of relieving the intense pain, which returned with increased violence as soon as this remedy was withdrawn, and before its effect on the constitution had subsided. In many of the cases this mode of treatment had been frequently employed, and continued as long as the constitution could sustain its influence, with similar relief, and succeeded by similar recurrence of disease immediately

on its being discontinued. These cases occur in those who are of a scrofulous constitution, or in those whose powers have been greatly reduced by debauched lives, by repeated courses of mercury, or by other causes. Here, the vessels of the part are so debilitated that they are unable to maintain a natural state of the circulation when the stimulus of mercury is withdrawn. Every successive course still further impairs the powers of the system, and it is unable to recruit in the intervals, because of the immediate recurrence of pain, which is so intense as to deprive the patient of rest. If, however, the disease can be arrested by any means that do not debilitate the system, the pain ceases, and the patient being relieved from constant agony, is able both to sleep and eat, and his constitution becomes recruited with a rapidity scarcely credible. By continuing the same means, the vascular action in the part may be controlled until the heart and arteries have acquired sufficient power to maintain a natural state of the circulation. It appears that in these diseases, although the internal exhibition of mercury is productive of temporary relief, it so greatly impairs the already debilitated powers of the constitution, as to be succeeded by an aggravation of the disease. It is plain, that in this way the disease cannot be effectually removed. Mercury, however, when locally applied, has the same power of subduing chronic inflammation as when internally administered, and this without producing its constitutional effect; hence we may get all the benefit without any injurious effect. Whether mercury employed in this way really possesses the power I attribute to it is a question of fact which can be determined only by experience; but it appears to me that there is ample proof of the correctness of this opinion, and I will relate a few of the cases which have seemed to me decisive of the question.

Mr. Alexander Gullen, residing at Poplar, applied to me on the 10th of March, 1826, on account of disease in his left tibia, which was so much swelled that its anterior surface was nearly on a level with the patella when the knee was straightened. The tumefaction extended for about two-thirds of the length of the bone, and was as hard and incompressible as the re-

mainder of it: the tenderness was so excessive, that he could not bear it to be touched, nor could he walk without great pain.

His general health was much impaired, his appetite lost, and he was much emaciated. His bowels were regular, and his tongue clean. He stated that, about ten years before, the left tibia first became painful and tender to the touch, after he had suffered from rheumatic pains attacking other parts of his body. He then took mercury, which affected his mouth, and gave him relief during the continuance of salivation; but the pain returned as soon as this remedy was discontinued. He had previously taken mercury in considerable quantity for the relief of former rheumatic attacks. At various intervals during the last ten years he had made use of mercurial friction, and its internal exhibition, on account of the disease in his left tibia. It had always produced a partial and temporary alleviation of the pain, which, however, never once subsided entirely, but had invariably returned with increased violence after each course of mercury, as soon as it had been discontinued, even before salivation had ceased. Leeches, fomentations, and blisters, temporary and perpetual, had been employed. His agony was at this time so excruciating, that he never thought of going to bed at night, but was obliged to sit up in a chair; and he declared that he did not get an hour's sleep in a whole month. The moment he began to doze, he was awakened by pain.

I directed him to take sarsaparilla, and supported the whole limb with adhesive plaster, having previously covered the diseased bone with a cerate composed of equal parts of the ceratum saponis, P. L., and unguentum hydrargyri fortius c̃ camphorâ.

March the 22nd, he states that the pain continued, with very little abatement, for the first week after his last visit, but that he has slept about four hours each night during the two last nights. Exhausted as he was, he would of course sleep very soundly the moment the pain was alleviated. By rest, as well as in consequence of the diminution of pain, he feels much stronger; his appetite is also improved. During

the last two days the leg has itched, and there is considerable redness and irritation on the skin.

March 29. He has been improving in all respects during the last week ; his appetite, strength, and spirits are recruited ; his rest has been more sound, and of longer continuance every night, and he slept soundly the whole of last night. The tibia is much reduced in size, and the tenderness gone. From this date the swelling on the tibia continued to subside, he rapidly improved in health, and has since had no return of the disease.

A case similar to the last was referred to me by Mr. Holgate of Hendon, and it affords me much gratification to adduce his testimony in favour of the practice I am anxious to recommend. This was a case of disease on the tibia, to the extent of a crown-piece, attended with swelling, extreme tenderness, and so much pain as altogether to deprive the patient of rest during the night, and to incapacitate him for using exercise during the day. It was of three years' duration, and had resisted every remedy that had been employed. Leeches, repeated blisters, tartar emetic and mercurial ointments, were used at different times with a partial alleviation of the symptoms; but the disease acquired increased severity at each attack of more active inflammation to which he was repeatedly subject. Alterative courses of mercury were prescribed, both separately and conjointly with sarsaparilla. It had also been proposed to cut down upon the bone, and to evacuate the fluid which was evidently confined beneath the periosteum; but the patient would not consent to the operation.

By pursuing the mode of treatment I adopted in the last case, the symptoms were as speedily relieved; the fluid beneath the periosteum was absorbed, and the disease completely eradicated. When I last heard from Mr. Holgate, the patient had not had any return of his complaint.

I could produce numerous instances of the same kind to prove that these are not isolated cases, but that equal success will uniformly attend this mode of treatment under similar circumstances.

In the beginning of May I was consulted about a gentleman in this neighbourhood, whose left testicle was somewhat swelled, excessively hard, and so painful, that he could not sleep for five minutes during the whole night. His constitution was greatly exhausted by pain, want of rest, and the quantity of mercury and opium he had taken. He informed me, that in the preceding August, a few days after having returned from Ireland, he was seized with pain in the testicle, without any assignable cause, and it became so violent as to confine him to bed for three months. Leeches were frequently applied, and he was kept in a state of salivation nearly the whole time; he also took decoction of sarsaparilla. At length the symptoms so far subsided that he was able to leave his bed, the testicle and spermatic cord still continuing somewhat tender and painful. He had not been out of his house more than four times before he was seized with a similar attack, more formidable than the former: he was again salivated; leeches, poultices, and fomentations were again had recourse to, and also sarsaparilla. Blisters and tartar emetic ointment were applied to the part; but they aggravated his suffering. The salivation was kept up till January, and attended with some alleviation of the symptoms. Sarsaparilla and alterative doses of mercury were then given for a fortnight. During this time the pain, tension, and tenderness became so much more severe, that he was again compelled to undergo salivation, and was at this time so exhausted that he could not turn in his bed without assistance. About the middle of April the disease was so far relieved that he got about two hours' rest during the night, and the mercury was now reduced to two-thirds of the quantity he had previously taken. In the beginning of May he was so far recovered as to be able to take an airing in a coach; this exertion was followed by a relapse of the disease, as he describes, more severe than ever. On this occasion I first saw him: he was then suffering agony, and his constitution was in a deplorable condition. Sarsaparilla was prescribed, opium was discontinued and the scrotum was enveloped in flannel covered with camphorated mercurial ointment. The imme-

diate effect of this application was a glowing sensation of heat on the surface of the scrotum, which was not unpleasant. No relief of any consequence was obtained until the fourth night, when, to his great surprise, he had six hours' sleep. This abatement of the disease was succeeded by a sudden improvement of his appetite, strength, and spirits; in a week he left his bed; and in a fortnight the pain had wholly subsided. The tension and tenderness gradually diminished, and after the employment of these means for six weeks, the part was restored to its natural state, and his health was proportionally recovered.

Mr. S., forty-five years of age, residing at Stratford in Essex, consulted me on the 14th of August, 1826, on account of a disease in the right testicle. On the previous day he had applied to Mr. Self, of Mile-end, who, fearing that disorganization of the part had proceeded so far that extirpation of the gland would be necessary, requested my opinion on the case, and I also entertained great apprehension that the patient could not be relieved from the disease by any other means. The testicle was as big as a cricket-ball, and extremely painful; it had suppurated, ulceration having taken place to a considerable extent, and the surface had assumed a fungoid character, the protrusion of which resembled in size and figure the longitudinal section of a hen's egg. The sore was foul and unhealthy, with several superficial sloughs adhering to the surface; the discharge was watery and offensive, and excoriated the whole of the scrotum. He had latterly become much emaciated, his health and strength being greatly impaired by the disease and by want of rest. In June, 1825, he first felt pain and uneasiness in the testicle, but it was somewhat relieved by the application of a cold lotion. In the following October he was affected in a similar manner, and was again relieved by the application of leeches and a cold lotion, and some medicine. In February, 1826, he had a much more severe attack than either of the preceding. He suffered intense pain in the testicle, which was much swelled and exceedingly tender, with considerable redness and heat of the part. He again had recourse to the means that had

been previously employed, and the violence of the symptoms was at first abated; but subsequently the complaint became rather worse. In the following June he received a blow on the part, which caused great pain, swelling, and a violent aggravation of the symptoms: leeches, together with other remedies, were again employed, and one of the leech-bites ulcerated. The sore thus occasioned spread, and a fungus rose from the surface, which from that time had been gradually increasing in size. I prescribed sarsaparilla, the surface of the fungus was covered with lint wetted with black wash, and the scrotum was enveloped in a piece of flannel covered with mercurial ointment, and was supported by a bandage.

August 28th. His general health is much improved, the fungus is diminished, its surface has become clean and healthy, and the discharge is thick and purulent. The testicle is reduced in size, and the scrotum no longer excoriated. The mercury has not produced the least constitutional effect. The same means were continued under the superintendence of Mr. Self, and produced a gradual subsidence of the enlargement of the testicle and of the fungus, the sore being contracted in the same proportion. By the latter end of October the sore was perfectly healed, the testicle reduced to its natural size, and the patient's health completely restored. The constitution was not at any time sensibly under the influence of mercury.

William Skingley, thirteen years of age, of a scrofulous habit, came to me from Brentwood, on the 23rd of May, 1827, with a complaint in his left eye. The conjunctiva was inflamed, swelled, and elevated by the deposit of lymph in its texture, overlapping the margin of the cornea; at the angle of its reflection from the globe it was much swelled, lying in large folds, which distended the palpebræ. There were two large ulcers in this part of the conjunctiva, one at the upper and one at the lower margin of the orbit, three-fourths of its breadth, leading down to the bone. The cornea was rendered so opaque by the deposit of lymph, organized with red vessels on its conjunctival surface, that he could scarcely discern my

fingers when held between him and the window. In the beginning of June, 1826, he had an inflammation of the lachrymal sac, which continued for three weeks before suppuration took place; it then broke, and after having remained open for nine months, the tears escaping at the orifice, it healed. Immediately after the wound was closed, the conjunctiva inflamed and became gradually swelled and thickened, lying in large folds between the globe and palpebræ which it protruded. After a time a thick matter was discharged from the eye, and vision was obscured.

In this case, as the constitution of the patient was too weak and irritable to allow of the internal use of mercury, I made trial of various modes of treatment for seven weeks, which afforded him scarcely any relief. I then directed him to keep some mercurial ointment on a piece of flannel constantly applied to the closed palpebræ, and to continue the carbonate of iron which he was taking. After he had used this application for a week, the conjunctiva was rather paler and less tumid, and he thought that his vision was improved. In the course of another week there was a decided amendment. After pursuing this mode of treatment for two months, the ulcers were healed, the lymph deposited beneath and in the substance of the conjunctiva was absorbed, the cornea had become quite transparent, and he could see to read as perfectly as with the other eye. The only difference that remained between the two eyes was a slight drooping of the upper lid, an increased redness of the conjunctiva, and an adhesion of the lower lid to the margin of the orbit at its nasal angle.

Mary Ann Waldon came under my care at the London Hospital, on the 10th of October, 1827. The gums and the inside of the cheeks and lips were covered with small unhealthy ulcers, about the size of a sixpence, extending by ulceration, with ragged edges and inflamed circumference. The uvula and soft palate had been destroyed by the same disease, which was extending by ulceration. There were small ulcers in the same state on the upper and under surfaces of the tongue, as well as in the mucous membrane beneath it. The ulcers were so sore and painful, that she was

obliged to take the fluids she swallowed luke-warm. Her appetite was good, and her bowels regularly opened. She informed me, that above a year before, she was first affected with a sore throat, and about a fortnight afterwards the disease extended to her mouth and tongue. From that time the complaint had continued, occasionally better and worse, but with little variation; for as soon as one ulcer healed, another broke out in its vicinity, so that she had been unable to swallow solid food for a twelvemonth. During this time she had taken various medicines, and mercury to salivation twice.

I directed her to take sarsaparilla, to gargle her throat with the black wash (taking care not to swallow it), and to keep the sores covered with lint wetted in the same lotion as constantly as possible. After using this application for a week the sores were less inflamed, the pain and tenderness were diminished. In a fortnight they had thrown off their central sloughs, and had become healthy and free from pain; and after pursuing this treatment for two months, the throat and the sores in the mouth were entirely healed.

Abraham Chipp, a carpenter, thirty-six years of age, applied to me at the London Hospital, on the 28th of November, 1827. He was at that time affected with several small ulcers on the chin, upper lip, and nose, extending within the alæ nasi, more particularly on the right side, on the surface of the nose, as far as the termination of the ossa nasi, and on each cheek nearly to the lower edge of the orbit. These sores were bounded on one side by an elevated indurated margin, very tender, and in great pain, which was increased by exposure to cold; on the other side they were circumscribed by a seam or a depressed cicatrix.

He stated, that about sixteen months ago, a pimple arose on the left ala nasi, which he scratched; it suppurated and extended by ulceration across the nose, and within the alæ nasi. As the structure of the skin became destroyed by ulceration, the sore healed on one side, but extended in the opposite direction, and it had continued to pursue this course from the time of its commencement. Subsequently, the chin

and upper lip became affected with a similar disease, which produced the scars and seams now visible on them. His digestive organ showed no sign of disorder. This disease presented so much the appearance of an inveterate form of lupus, that I did not expect it could be arrested by the mild remedies I am about to mention. Having so repeatedly witnessed the good effect of the treatment pursued in the last case, I directed this patient to keep the part constantly covered with lint wetted in the black wash; and to take sarsaparilla. Finding immediate relief from using the lotion, he kept it constantly applied day and night. It was attended with a gradual subsidence of the pain, induration, tenderness, and ulceration. In three weeks from the time I first saw him, the sores were healed, and now (December 26th) there is not the slightest appearance of diseased action.

From experience in many cases analogous to those I have related, I am led to conclude that mechanical support alone is capable of arresting chronic inflammation in many instances; that in others it may favour and expedite the subsidence of disease which it has not the power to remove. In these latter instances, mercury locally applied is capable of controlling the diseased action as effectually as it arrests acute inflammation when internally administered. Mechanical support, too, by relieving vascular distension, favours the operation of the above remedy as effectually as unloading the vessels by bleeding.

In all cases of chronic inflammation, when the situation of the part renders it practicable, I am in the habit of combining these two agents; they are both adapted to the same state of disease, and it subsides most rapidly when subject to their conjoined influence. At the same time it is necessary to obviate constitutional disorder, and to invigorate the heart and arteries by the means detailed in the subsequent part of this work.

These observations equally apply whether the inflammation has proceeded to ulceration or not. In the former, the exposed surface is of course more susceptible than when defended by a cuticle. The rapidity with which a foul unhealthy sore, with a

sanious discharge, may be rendered healthy, and the matter thick and purulent, by this practice, is astonishing. I must, however, confine myself to the following examples of its efficacy. Were I to recite the cases I could adduce, I should far exceed the limits assigned to this part of the work, which is intended merely to elucidate the treatment described in the following essay.

To enter fully into the subject of ulcerative inflammation, is also foreign to my present purpose. I would, however, observe, that the foregoing treatment will be found applicable to the majority of scrofulous ulcers. The black wash is the application most generally adapted to them; sometimes it is advantageous to wash the sore with a solution of the oxymuriate of mercury, or of lunar caustic, at each time of dressing.

With regard to common ulcers (whether varicose or not), when of very long standing, the vessels are sometimes so weakened by the continuance of disease, that the moderate support I have recommended does not enable them to contract upon their contents. In these cases, stimuli are necessary. This effect may be produced by more forcibly compressing the part, in a degree productive of pain on the first application of the plaster, but after a short time rendering it easier than before. Were the limb to be encircled with this degree of tightness, the circulation through the large venous trunks would be impeded, and the inflammation thus aggravated. In order, therefore, safely to compress the vessels of the part inflamed with that degree of force which shall produce upon them the effect of a powerful stimulus, the plasters used with this view must only extend to half the circumference of the leg, and a short distance both above and below the seat of the inflammation. Externally to these, the whole limb must be supported in the manner already explained. This modification, however, is rarely necessary, and should only be applied to ulcers of small extent, which the more moderate and uniform support has failed to relieve. With the same view, the lunar caustic applied in substance to the part is very serviceable, and will be found a very useful adjuvant to this mode of applying the plasters. These means I find so successful, that

I rarely have recourse to any others for the cure of ulcerative inflammation.

I transcribe the following letter from my friend Dr. Farre

"Pentonville, Nov. 10, 1828.

"DEAR SIR,

"Mrs. P. consulted me on the 1st of June, 1827, for an irregular swelling situated obliquely above, and a little over the internal condyle of the humerus, resulting from chronic inflammation, and rendering the elbow-joint nearly immovable. Its size might be equal to the one-half of the longitudinal section of a hen's egg. Her husband, a surgeon, informed me that its formation gradually commenced after the sudden disappearance of a moveable tumour, about the size of a pigeon's egg, seated over the left gluteus maximus, which had been stationary for twenty years. I prescribed a draught of the compound decoction of aloes every morning, a grain of the submuriate of mercury, with a few grains of the aloes and myrrh pill every third night; the opiate plaster for the swelling, and an issue in the arm. This prescription, with the exception of the issue, was carried into effect, and on the 18th of the same month, I had the pleasure of observing that her general health, which had declined, already manifested an improvement, and that the swelling was sensibly diminished.

"Persuaded that an attention to the localities of the case, by removing the constitutional irritation, would materially contribute to her cure, I sent her to you, and on the 5th of November instant, when Mrs. P. consulted me again, I had the pleasure to find, that under your local applications the swelling had disappeared, and that she has a little motion of the joint, which may probably be considerably increased. But there is yet some pain occasionally felt about the joint, brought on by motion or change of weather. The easiest posture of the limb is when the fore-arm is laid on the table, so as to relax all the muscles.

"I remain, dear sir,

"Your faithful servant,

"J. R. FARRE."

A young woman from Camberwell consulted me about a strumous disease in her left breast. It was considerably enlarged, thickened, and indurated, with a somewhat elastic feel: several deep sinuses led into the substance of the breast. The disease originated in milk abscess three years before. She was weak, and very thin. She was directed to take some bark and sulphuric acid. The breast was covered with mercurial ointment thickly spread on lint, and extensively supported by adhesive plaster, and a calico bandage. By the use of these means the disease was rapidly arrested, the induration and enlargement disappeared, and the sinuses healed in about two months from the first dressing.

A gentleman residing in Jewin Street consulted me in December, 1823, for a disease in the left fore-arm. There were ten ulcers of a scrofulous character, in an unhealthy condition, with small sloughs on the surface of the sores, which were surrounded by considerable induration of the cellular substance. The absence of pain showed the indolence of the disease. He was in feeble health. About four years before this he was thrown out of his gig, and fractured the olecranon of this arm. Sometime afterwards he first perceived a small lump at the lower end of the ulna on its palmar side. In two or three weeks, it broke and continued to discharge, but without pain. This was succeeded by similar swellings without pain, which broke and discharged in the same way; they did not heal, but remained foul, unhealthy, and indurated round about them. Other tumours appeared and broke, leaving unhealing ulcers; and this process had been going on for four years when I first saw him. He had already tried poultices, various kinds of plasters, black wash, a sea-side residence, sarsaparilla in large quantities, and various other remedies. The effect of the plaster bandage, the sores being at the same time covered with lint dipped in the black wash, was most striking. In six weeks from the first application of it all the ulcers had healed, and remain so to this day. The only medicine I gave him was one he had taken before—the powder of sarsaparilla.

Henry Frost, twenty-seven years of age, residing in Bruns-

wick-street, Poplar, applied to me on the 27th of December, 1826; at this time there were five ulcers, each as large as a shilling, on the anterior part of the head of the tibia. They were in a foul unhealthy condition, presenting a scrofulous appearance, with a small slough adhering to the surface. There was a small tumour on the inner condyle of the femur, and another on the outside of the thigh. He suffered so much pain from the ulcers, that he could scarcely walk upon the limb, and had been obliged to give up his employment; but he derived no benefit from resting the limb.

He stated that about three years and a half before, he first perceived in the situation of the ulcers a tumour about the size of a walnut, which continued for three years without occasioning any pain. It then increased in size, and broke; subsequently the skin gave way in the situation of the remaining ulcers. The tumour on the condyle of the femur, and that on the outside of the thigh, had been of about two months' continuance; they appeared at the same time, and had been gradually increasing in size, but unattended with any pain. He was directed to take a drachm of the powder of sarsaparilla twice a day. The limb was supported by means of the emplastrum plumbi, and the sores were covered with lint wetted in the black wash, and the tumours with camphorated mercurial ointment.

December 29. The first application has afforded him great ease; he is entirely free from pain, even when walking on the limb. The inflammation surrounding the ulcers is much diminished, and the tumours are also reduced in size.

January 3. He has felt nothing of the ulcers since his last visit, and can use the limb without the least pain: the surrounding integuments are quite pale; the discharge, which was thin and watery, is now thick and purulent; and the ulcers are filled with healthy granulations.

January 8. The indurated tumours on the inside of the knee and on the thigh are absorbed, and the ulcers are much diminished in size.

January 15. The ulcer on the outside of the leg is healed, and those which remain are closing rapidly.

January 22. The sores are entirely healed, and the limb is quite restored to its natural state.

A young man, twenty-seven years of age, living near Waterloo-bridge, consulted me on the 9th of November, about a disease in his right leg, in which there were eighteen ulcers; the largest, situated over the inner ankle, measured three inches in width, and five in length; the smallest was about the size of a sixpence. They were foul and unhealthy, with central sloughs and ulcerating edges, and a sanious offensive discharge, sometimes mixed with blood. The leg was much swelled, in such constant pain that he had not had a good night's rest for six months, and the ulcers were surrounded by a thickened margin, of a livid red colour.

The disease had been of two years' duration, and originated in an abscess which formed on the anterior part of the tibia. This was succeeded by similar formations of matter in various parts of the leg, which broke and continued open. The last abscess occurred about a year ago, and they had all continued to discharge from that time. He was much reduced in strength, and had lost flesh considerably.

I prescribed sarsaparilla, covered the sores with lint dipped in the black wash, and supported the whole limb with the adhesive plaster and bandage. This mode of treatment afforded him immediate relief; after three days the pain had entirely subsided, and he could rest as well as ever. The sloughing and ulceration were arrested, healthy granulations rapidly sprung up, and secreted a good purulent discharge.

December 4. He has had no return of pain; the sores, which have been gradually diminishing in size, are now all healed except the two largest, and these are reduced in dimensions more than one half.

December 28. The sores are now entirely healed; he is much improved in health, and has walked from his residence at Lambeth to the city and back, every day since he has been under my care.

A gentleman of very delicate habit was under my care with a gonorrhœa, which produced sympathetic buboes, and shortly after their subsidence he had a severe attack of fever, which

greatly reduced his powers. Very soon after the fever was subdued, the glands in the groin became again enlarged, very painful, and exceedingly tender, so that I apprehended they were about to suppurate.

In this case the inguinal swelling was reproduced without any localcause, solely by the want of sufficient arterial power to maintain a free course of the circulation through a weakened part. As the inflamed vessels were gorged with blood, at the expense of the rest of the vascular system, which was barely supplied with a sufficient quantity to maintain its action (for he fainted during my visit), I concluded that the former would not be unloaded by withdrawing blood from their vicinity, which would therefore still further impair his exhausted strength.

I therefore directed him to take the sulphate of quinine, and having covered the tumour with the cerate, made with the ceratum saponis and unguentum hydrargyri cum camphorâ in equal proportions, I supported the part uniformly and extensively with the emplastrum plumbi, and a bandage passed alternately around the thigh and loins.

He became quite free from pain in a few days after the applications were put on, and continued to improve so much, that I did not see him again for a fortnight. The pain and tenderness were then quite removed, the swelling much reduced, and his health greatly recruited. I renewed the dressings, and on their removal, at the expiration of another fortnight, the swelling was entirely absorbed, and he could use the limb as perfectly as ever.

A young man living in Fore-street, applied to me on the 27th of October with the glands in the right axilla in a state of chronic inflammation. They were swelled, tender, and painful, and one of them had suppurated, but it had not burst.

He informed me that about two months before, he had a punctured wound in his finger, which produced inflammation in the course of the absorbents, and a small abscess occurred about the middle of the arm. This burst, and after a time it healed, the axillary glands having become enlarged during the time it remained open.

I directed him to take some bark and soda, and pursued

the same local treatment as in the last case. The applications were renewed every fortnight for six weeks, at the expiration of which time, the matter in the softened gland had become absorbed, and the swelling of the remainder had entirely disappeared.

A little boy, six years old, was brought to me from Kingsland on the 10th of December, 1827, with an enlarged absorbent gland in the right groin. It was swelled to the size of a hen's egg, extremely painful and tender, with extensive superficial redness, threatening suppuration. His mother told me that her attention was directed to the part, by his complaining of great pain three or four days before, when she found a lump as large as the top of her thumb, and it had since increased with great rapidity.

Some time before, he was under my care with a disease in the left knee (see case the sixth), which continues quite well.

Not being able to discover any cause for the inflammation of the gland, I began to apprehend that it might be sympathetic with incipient disease in the right hip (of which however I was unable to discover the slightest evidence); it was then mentioned that he had had a little sore on his great toe for some time, which originated in a chilblain.

I made use of the same local application as in the last case, and prescribed an occasional dose of calomel and rhubarb.

December 18. He has not complained of the slightest pain since the second day after I last saw him, and has been able to take his accustomed exercise.

The swelling is reduced more than one-half in size; the pain and tenderness are gone. The applications are renewed.

December 26. He has had no return of pain, and there is now scarcely a vestige of the swelling.

It appears to me that the foregoing cases, which are only a small part of those which I could produce, are amply sufficient to prove that when chronic inflammation is going on in any texture, or in any part of the body to which local remedies are applicable, the local treatment, so far from being of the least, is of the greatest importance, and that the most effectual remedies of this kind are mechanical support and the local application of mercury.

ON THE

CONSTITUTIONAL ORIGIN AND TREATMENT

OF

DISEASES OF THE JOINTS.

I HAVE already, in the preliminary remarks, noticed an assertion of Mr. Scott, in his preface, that "the influence of disorder of the health and the digestive organs in keeping up local diseases, has of late years been fully explained," and observed that it must be understood to be true only in a very limited sense. He seems to refer to Mr. Abernethy, who dwelt much on the constitutional disturbance incident to impaired digestion; and principally that form of it arising from repletion, the inordinate indulgence in eating and drinking, which rendered abstinence and his favourite mercurials, calomel, hydrargyrum cum cretâ, or blue pill and black draught, appropriate and useful items of treatment.

"Diseases of the joints," says Mr. Liston, "originate in a variety of ways, and in any one of the tissues which enter into their formation and composition. These are attributable to injury, as sprain or contusion; but this may have been so slight and so slowly followed by signs or symptoms causing alarm, as sometimes to be nearly forgotten, the mischief being then supposed to arise spontaneously and altogether through some vice in the constitution. Many persons, certainly, are so slightly constituted in these and other respects, that but very trifling causes operate in deranging the functions and structure of their organs and apparatus."

"I must confess," says Sir B. Brodie, "that, in proportion as I have acquired a more extended experience in my profession, I have found more and more reason to believe that local diseases, in the strict sense of the term, are comparatively rare. Local causes may operate so as to render one organ more liable to disease than another, but everything tends to prove that, in a majority of cases, there is a morbid condition either of the circulating fluid or of the nervous system antecedent to the manifestation of disease in any particular structure. Moreover, even in those cases in which a disease may be distinctly traced to some kind of mechanical injury, the character which it assumes depends as much on the state of the general health as on the injury itself. Thus we find a sprain of the ankle in one instance to be followed by no urgent symptoms, while in another a sprain, not apparently more severe, is followed by intense inflammation," &c.

At one period most, if not all, chronic diseases of the joints were deemed to depend upon, or originate in, one particular constitutional disease, *struma*, or scrofula, and the term *white swelling*, popularly and indiscriminately applied to those diseases, involved this hypothesis.

The investigation, pursued so admirably by Sir B. Brodie, into the differences discoverable by dissection in the various diseases of the joints, with the view to trace the particular structure first affected, the nature of the change from the normal state of each, and to connect these with the symptoms, so as to adapt the treatment to every especial case, brought out prominently the important truth that the constitutional conditions giving rise to, or associated with, diseases of the joints, are as various and different as the local phenomena.

What are these constitutional disorders? Are we able to characterize them with sufficient accuracy to guide us in their treatment?

With respect to the pathological facts, Sir B. Brodie candidly admits that the special morbid changes in the structures cannot be detected infallibly by the symptoms antecedent to dissection; and, so far as the differences can be traced, the modifications of treatment applicable to each are really insignificant. When the inflammation is acute, depletion and antiphlogistic measures are to be employed; but he says, "It is highly censurable to lose months or weeks in this way when the inflammation has become chronic." Then he employs friction, issues, cold lotions, liniments, pressure, moxa, &c. &c., almost indiscriminately; that is, whatever texture of the joint is affected, and in all constitutional states, his local treatment is essentially the same. The more carefully we examine and estimate the value of these measures severally and collectively, attempting to discriminate the special circumstances, or symptoms which should guide us in our choice of one or another of them in preference to the rest, the more strong will be our conviction of the truth of Mr. Scott's conclusion, that so far as local treatment extends, "the distinction of the pathological states is of little or no moment." In his method of dealing with the local disease, we have a combination of therapeutic principles in a simple and harmonious whole equally applicable and equally efficient in all cases.

It is quite otherwise with respect to the constitutional conditions which, according to some surgeons, are the consequences, but which we say, with Sir B. Brodie, are in reality the causes of the local disease. These require to be accurately distinguished and variously treated.

"We shall never," says Dr. Budd, in his work on Diseases of the Liver, "have faithful descriptions of inflammatory diseases, or unerring rules for their treatment, until we arrange them, not according to their mere outward, or the prominence of particular symptoms, but according to the nature of their causes;

for it is a truth that cannot be too strongly enforced, that it is the nature of the cause of an inflammatory disease that mainly determines its course and character, and the influence of remedies over it." In illustration of this remark, Dr. Budd refers to the present subject, namely, the cases of two swollen and inflamed knee-joints, one being caused by gout, the other by gonorrhœa. "The appearance of the joint," he observes, "is exactly alike in both cases, and in both there is great swelling from fluid effused into the synovial capsule. We give colchicum in both; in one case the inflammation rapidly subsides under the remedy, and the effused fluid is quickly absorbed; in the other the malady pursues its course as if nothing had been done. And why this difference? The parts that suffer are the same, and the changes in outward appearance exactly alike in the two cases. One might readily be mistaken for the other. The reason is simply this: the morbid changes are in one case the effect of the specific poison of gout, in the other that of the poison of gonorrhœa; and although they are alike in the two cases in those characters that most strike the eye, in the distension of vessels and the effusion of fluid, they differ in more essential particulars.

"Every department of pathology abounds with illustrations of the same truth. We can never foresee the result of an inflammatory disease, or foretel the effects of our remedies on it, unless we have ascertained its cause and know the particular character of the disease we have to treat."

In other words, if we could even see into the cavities of swollen and diseased joints, and clearly distinguish the texture and part affected, this would not enable us to understand the mode of treatment demanded without a knowledge of the causes. And those causes are, according to the testimony of the distinguished authors quoted above, generally constitutional. The following brief remarks, therefore, may be con-

sidered supplemental to the knowledge of the state of the textures of the joints, as described by Sir B. Brodie, and the systematic method of local treatment made known by Mr. Scott.

CAUSES OF DISEASES OF THE JOINTS.

I. *Cachexia.*—That a great number and variety of constitutional disorders have their source and origin in defective digestion and assimilation is beyond a doubt. An oft-recurring and sometimes continuous feverish state in which any part of the system may inflame or fall into disease, is certainly induced by over-eating, inordinate drinking, and general habits of what are called high living, first manifesting their ill effects in disorders of the liver, and others of the digestive organs. In persons so disturbed in health, wounds, contusions, and accidents, scarcely noticed at the moment they are inflicted, either because the injury is in itself very slight and trifling, or from the blunted sensibility of the nervous system, lead to most disastrous consequences, which are not immediately arrested by the cessation of the patient's bad habits.

To such cases, the acute observations and simple practice of Mr. Abernethy admirably apply.

II. *Errors in Digestion and Assimilation.*—There are, however, defects in the processes of digestion and assimilation of a more recondite character connected with predisposition to diseases, *e. g.*, of the joints or of the bones in other parts, a brief notice of which may throw some light on the subject.

A. It is scarcely probable that the diet of any persons, unless of those who are literally starved, is so far deficient in the earthy phosphates, or in lime and magnesia, as not to supply enough of these substances for the maintenance of the

integrity of the bones, and to repair their daily waste. Nevertheless, we constantly find either that the waste of these elements is inordinately great, or that the assimilating organs fail to furnish an adequate supply. In either case, when the digestive or assimilative function fails to afford a sufficient amount of these elements to maintain the condition of the blood necessary to its yielding them to repair either the normal or inordinate wear and tear of the bones, we have a constitutional condition in which very slight accidents will produce ulceration and absorption of bone.

In the prevalence of phosphatic urine when this secretion habitually contains large quantities of the earthy phosphates, we have a palpable indication of this condition.

The consequences flowing from it, both in the origin of local diseases and the locality affected, vary with circumstances.

When the bodies of the vertebra thus become soft, spinal curvature ensues; when the extremities of the long bones of the limbs are the seat of the mischief, the joints become diseased, &c., a slight accident often determining the precise locality where the effects of the constitutional weakness will be concentrated. Inflammation, the invariable concomitant, may either precede, or arise from the primary diseased state. Ulceration of the bone within the joints is described as one of the varieties of this class of diseases.

B. To the same radical organs are doubtless referable the defects in the albumen and fibrine of the blood, generally accompanied by a looseness of its clot, and a deficiency of red globules, which are the accompaniments of other diseases of the joints when a low inflammation exists in the membranes, and ulceration, or degeneration of the capsular ligaments and effusion of flaky albumen, or sero-purulent fluids, within their cavities.

To healthy blood many constituents, designated inorganic, are essential—iron, sulphur, phosphorus, lime, soda, potash; and whether the assimilating organs fail to appropriate them or they are not present in available forms in the food, the result is the same. The organic compounds, the albumen and fibrine, become changed, lose their proper texture and consistence, and appear in this disordered form wherever local disease is set up.

c. The cartilaginous covering of the parts of bones lying within the joints is also subject to inflammation and ulceration. The latter is a form of defective nutrition, a want of proper material for maintaining the integrity of the cartilage, remotely referable to the digestive and assimilating organs.

The origin of the chondrine or gelatinous tissues, such as cartilage, tendon, &c., in herbivorous animals, is very obscure; the material of which they are composed, however, must, like other organic matters, be compounded in their economy; but it is certain that in the carnivora and in man, this material is supplied ready formed, being derived from the gelatin of their aliment. If this substance is deficient in amount in their daily food, or if the process of assimilation with respect to it fails, we find disease attacking the cartilages of the joints.*

III. *Poisons, Syphilis, Mercury, Gonorrhœa, &c.*—The presence of certain poisons, circulating in the blood, or permeating the tissues in their proper fluids, is a recognised cause of diseases of the joints.

A. Most surgical authors admit that syphilis may thus become an exciting cause of inflammation and ulceration. Its effects are frequently indeed manifested on the periosteum

* Mr. Birkett would separate the destruction of cartilage observed within joints from ulceration; the former, he says, depends upon a loss of nutrition and disintegration. "It may be a question," says Sir B. Brodie, in answer to this, "whether ulceration, in whatever part of the body it occurs, is not a process of disintegration depending on a want of nutrition."

or in the cancelli of the bones apart from the joints; but the joints themselves are doubtless attacked with disease from this cause.

B. Mercury too, either from peculiarities of some constitutions, in which, in very small quantities, it exerts a permanently pernicious influence, or from being given for a long time, and in inordinate quantities, certainly exerts a local influence in producing inflammation and ulceration in the joints.

C. It appears certain, from the general testimony of pathologists, that, under certain circumstances, the poison of syphilis becomes combined with the mercury administered as a remedy into a new poison more energetic as a cause of disease than either of those above, and some of the worst affections of the joints are originated by its morbid action.

D. Morbid affections of the joints also arise from the poison of gonorrhœa. I am aware that some authors consider the diseases of joints which are recognised as gonorrhœal to be the result of a transference of diseased action, inflammation by some unexplained kind of sympathy irrespective of absorption of poisonous matter; but when we consider the extreme subtlety of organic poisons, how very minute a quantity introduced into the circulation taints the system, and manifests its presence in various localities, we see reason for giving a preference to the hypothesis of absorption and the material presence of poisonous matter over that which refers the phenomena to mere sympathy.

IV. *Gout.*—Gout is known to be accompanied, if it be not absolutely caused, by a morbid product of the chemical changes incident to nutrition being diverted from their normal course. Uric acid, combined with the soda, which, in a healthy state, is a constituent of the blood, and forming urate of soda, is a recognised poison, to the presence of which diseases of the joints are often referable. The presence of uric acid in the

system is certainly the consequence of certain nitrogenous principles decomposing, and by virtue of chemical affinities the elements unite into uric acid. The soda which, in the form of chloride, is daily taken in our food, and which should pass into combination with the group of organic acids separated from the blood in the liver as a neutralizing base is taken up by the uric acid, and hence the poison in question.

V. *Rheumatism.*—In the juices loosely held in the cavities and interstices of the common integument and muscular and fibrous membranes, potash in organic combination is always present in health. We are indebted to Liebig for this interesting contribution to physiology. In his work on the Juices of Flesh, he has shown conclusively that while the alkaline reaction of the circulating fluid—the blood—is owing to soda, the vegetable alkali—potash—abounds in the fluids pervading the solid textures.

That this element exerts an important influence in regulating the quantity and composition of the fluid secretion which is thrown out of the system through the skin—the perspiration—cannot be doubted. The importance of this function of the skin for the preservation of the balance of forces and the distribution of the elementary constituents of the body, may be inferred from its quantity. In health this amounts daily, even without sensible perspiration, to nearly as much as is secreted by the kidnies. Twenty-four ounces at least may be regarded as a mean. Exercise, external heat, and a variety of agents taken into the stomach, increase the quantity to a great but indefinite extent. Popular opinion respecting the sanitary effects of a free issue of perspiration is supported by all scientific observation. The disturbance of this function of the skin, either from internal causes or the application of cold and moisture externally, is probably always the immediate origin of rheumatism; the first pheno-

menon of which is inflammation of the fibrous membranes, or other tissues, severe pain, obstructed motion of the limbs or muscles, and more or less general fever.

When we attempt to trace the precise cause of rheumatism, we can scarcely avoid at once perceiving the analogy of the function of the skin with the office of the lungs and the kidneys. From both the latter organs substances pass off from the system which, if accumulated within it, originate disease. Carbonic acid, the result of combustion, must be sent off from the lungs—urea from the kidneys. A very brief suspension of the functions of either of these secretory organs will extinguish life. In like manner, some hitherto undetermined product seems to pass out of the body by the skin, which, when partially retained, acts like a ferment, and excites inflammation in the nearest tissues, and has a tendency to spread throughout the system—a true poison. The inflammation excited by this poison is rheumatism. Dr. Prout thought that lactic acid was the substance in question; other chemists have considered it to be formic acid; but we incline to the opinion that its nature and composition have not at present been determined. We know that if the transpiration of matter through the skin be entirely prevented (the experiment has been made, by varnishing the whole surface of an animal) the formation of sugar in the system begins, and a fatal disease—diabetes—is the result. This would seem to prove that the skin secretion is a nitrogenous ferment, and we at once perceive how a local cause may determine its morbid action to the joints.

That the joints are obnoxious to rheumatic affections is universally admitted, and their character is sufficiently distinct to enable them to be pretty accurately recognised.* Most

* It must, however, be admitted, that without a careful attention being given to the previous history of the patient, rheumatism affecting the joints may be confounded with the effects of poisons, mercury, gonorrhœa, &c., and *vice versa*.

frequently rheumatism attacks the ligaments and tendons surrounding the joints; but by producing swelling and stiffness, it is not unfrequently confounded with deeper seated maladies in the structures of the joint itself.

VI. *Rheumatic Gout.*—The coexistence of the poisons of gout and rheumatism in the well-known form of rheumatic gout, gives rise to swellings and painful conditions of the joints, and the evils of both united require to be met with appropriate treatment.

VII. *Scrofula.*—Scrofula has received so large a measure of attention from professional authors, its precise nature is so much controverted, that I shall not dwell upon it as a cause of diseases of the joints.

Sir B. Brodie observes:—"The term scrofula is often employed without much precision; and, indeed, it is not always easy to determine to what symptoms it may or may not be properly applied. The more correct view of the subject seems to be that it indicates not any specific disease, but rather a certain morbid state of the general system under which various local diseases (many of them having no manifest resemblance to each other) may have their origin."

He himself applies the term "scrofulous disease of the joints" to softening of the bones, absorption of the bony matter, and breaking up of the cancellous structure, consequent on the want of bone earth, which condition issues in abscess and subsequent ulceration of the cartilages.

The constitutional causes of this defect of calcio-phosphatic nutrition have been already alluded to. The most recent and one of the most judicious compilers of a systematic practice of medicine, Dr. Wood, treats of scrofula as identical with phthisis, and regards its characteristic phenomenon to be the formation of tuberculous matter.

It would scarcely be possible to furnish an example of an

irreconcileable diversity of opinion more conclusive of the uncertainty which prevails respecting the nature of scrofula.

VIII. *Pus.*—When purulent matter formed in abscesses in fleshy parts or organs finds its way into the circulation, it is sometimes apparently deposited in the cavities of joints; or at least it excites the membranes lining the cavities to form it, without giving rise to such an amount of inflammation as would be necessary for the effects in wounds or accidents.

Sufficient attention is not given to the facts, which are numerous, of the self-propagation of pus within the system by a process so analogous to the chemical action described under the designation fermentation, that it can only be regarded as a special case of the operation of the same laws as are involved in the production of yeast from sugar and albumen.

This perhaps might be regarded as an effect of scrofula rather than absorption of the cancelli of the bones, since that term is applied very generally to abscesses in the glands, when malignant purulent matter is often for a long time pent up, and which either by such an action of self-propagation leads to collections in the muscles or cellular tissue, or is transferred in an inexplicable manner to remoter parts through the blood vessels.

Purulent effusion into the joints, the matter being derived from other parts, is undoubtedly a common cause of chronic disease in them.

IX. *Neuralgic and Hysteric Affections of the Joints.*—All the preceding constitutional disorders are causes of disease in the joints, which lead to inflammation, ulceration, effusion into the cavities, and disorganization; but there are others which produce simply pain, a certain degree of stiffness and swelling, and consequently obstruction of the use of the joints without proceeding further. Under the general designation

of neuralgia we find at least three forms of painful affections of the joints, which require to be carefully distinguished.

1. Neuralgia the effect of poisonous malaria absorbed into the system.

2. Neuralgia of the joints symptomatic of disease in some remote part of the nervous system.

And, 3. Neuralgia depending upon that disorder of health to which the term Hysteria is applied.

That the poison of malaria sometimes manifests its presence in painful states of the joints, will not be disputed by those who practise in districts where malaria prevails. Often indeed such cases are regarded as rheumatic; but a careful examination of the locality affected, and attention to the history of the case, will discover the difference.

It is not invariably found, even in malarious neuralgia, that the pain is intermittent, although this symptom when present serves to remove any doubt which may exist as to the nature of the disease. Far less do we require to find the paroxysms of pain and the intermissions to recur at regular periods; but when both intermitting paroxysms and regularity of attack and remission mark the symptoms, the nature of the case as one of malarious neuralgia is more manifest.

The second variety is referable to some disease either at the centres of the nervous power, the brain, spinal column, or ganglia, or at the root or somewhere in the course of the nerve, the filaments of which supply the joint where the pain is experienced. The pressure of tumours, of spiculæ of bone, or inflammation in the surrounding tissues implicating the nerve, may each be the remote cause of neuralgia of the joint.

The third cause, namely, Hysteria, is more common, and the symptoms and effects more versatile than the two former.

This class of cases has received the careful attention and

study of Sir B. Brodie, of whose lucid description we avail ourselves :—

"The persons most liable to be thus affected (*i. e.*, with hysterical neuralgia of the joints) are young women of an hysterical constitution, especially those belonging to the more affluent classes of society, living in hot rooms, taking little exercise in the open air, and of self-indulgent habits. Others, however, are not altogether exempt from the disease, and we meet with it occasionally in those who have been brought up in the most prudent manner, in female servants, and even among the peasantry.

"The symptoms may frequently be traced to the circumstance of the patient's attention having been anxiously directed to a particular joint. Sometimes they have followed a blow, or wrench, or some very trifling injury. At other times, when one sister has laboured under an actual disease of the spine or hip ; in another, the same parts have become the seat of hysterical neuralgia."

In some cases we have seen this affection follow from a young lady having heard the history of some distressing joint or spinal disease, from the exaggerated narrative of female friends.

"At first there is pain referred to the afflicted joint of which the patient complains, in different degrees, not only in different cases, but even in the same case at different periods. Often if her thoughts are occupied by some other object of interest, she seems to forget the pain altogether, although there is no doubt that at other times she suffers severely. The pain is variously described, but it has an anomalous character, and the description of it rarely corresponds to that of pain arising from inflammation. The joint is tender, but the tenderness is peculiar ; also a slight touch, or even pinching

the skin, will often cause more pain than a firm and steady pressure, causing the patient to wince, and even exciting motions very similar to those of chorea. The same handling of the joint which seems to cause great distress, when the patient is questioned on the subject, if her attention can be directed to other matters, will be altogether unnoticed. Another very characteristic circumstance is, that whatever the pain may be during the day, it does not awaken her from her sleep at night. When the spine is affected, the pain is referred, not to any one spot, but to various parts; from the lower part of the loins to the upper part of the back. Many cases to which the undefined appellation of spinal irritation has been applied, are examples of this constitutional affection, and not of any local disease."

"Occasionally this affection of the joints is attended with some degree of swelling and periodical changes of temperature, the skin being hot, red, and shining in the evening; pale, cold, and shrunk in the morning."

It is among this class of diseases of the joints, where the disturbance is functional, or rather confined to the nerves, that those numerous cases are found which form the staple material for pretenders of all kinds. The spurious miracles of Prince Hohenlohe, the phenomena which so nearly led into fatal errors many excellent and amiable people in the metropolis a few years ago, the wonders reported of mesmerism, homœopathy, and hydropathy, all belong to this group of maladies. Over the nervous sensations, real and distressing as they may doubtless in many cases be, the excited imagination exercises great influence both for evil and good. But we leave for the moment the mode of treatment which experience has established for restoring patients so afflicted.

Constitutional Treatment of Diseases of the Joints.

Having thus shown that as great a variety exists in the constitutional causes of diseases of the joints, or states of the system in which those diseases originate, as in the pathological phenomena traceable by dissection in the tissues, we may remark that while the local treatment may be so far the same in all cases as to be at least one uniform system, with very slight and insignificant modifications, it is quite otherwise with the constitutional treatment.

Sir B. Brodie candidly admits, that while in his early practice he was accustomed to regard diseases of the joints as diseases which could only be relieved by local remedies, with ordinary attention to the patient's general health, his enlarged experience had led him to a very different conclusion, and had satisfied him "that there are remedies which, acting through the medium of the constitution, exercise a most beneficial influence over the local malady, and by judicious application of which many cases may be brought to a favourable termination, in which this could not have been accomplished otherwise." In immediate connexion with this remark, indeed, he specifies but two of the many morbid states of joints, namely, inflammation of the synovial membrane and ulceration of the articular cartilages; but a careful perusal of his work will show that his confidence in constitutional remedies was equally great in all, or nearly all, the other diseases which he describes.

1. *Cachexia.*—In the well-known excitable habit of body, or cachectic state resulting from repletion and the consequent disturbance of the digestive organs, to which Mr. Abernethy referred so many local diseases, we have frequently to treat diseases of the joints.

The regulation of the patient's diet, by bringing the amount

of the ingesta to a moderate standard as to quantity, the selection of the most nutritive, and bland form of nourishment, and such drinks as serve to restore the tone of the stomach, must be our primary care.

The employment of mercurials in small alterative doses, calomel, blue pill, hydr. c. cretâ, followed by saline or other purgatives, to secure a due action of the liver, and to remove the alvine secretions; simple tonic bitters, acids or alkalies, as the state of the patient's stomach demands, constitute all the needful remedies.

In persons habituated to stimulants, it is advisable not to withdraw them wholly too suddenly, but, by substituting less potent beverages for those to which they have been accustomed, to recover them to temperance. Light wines or malt liquors may replace ardent spirits; the moderate use of ammonia with bitters and spare animal diet usually restore the healthy function of the chylopoietic organs, and place the patient in a favourable condition for the local treatment to effect its purpose of recovering the diseased joint.

Once these patients are fairly under restraint and discipline, unless the health is greatly shattered by their previous bad habits, recovery and the restoration of the joints is merely a matter of time.

It is a very important consideration that no ill consequences can possibly follow the applications forming the items of Mr. Scott's local treatment; whereas many of the counterirritants in ordinary use are always, with such constitutions, attended with danger.

2. In that form of defective assimilation where the bones become softened, their earthy matter not being replaced and the cancelli absorbed, a careful inquiry into the patient's history will often convince us that a very different error has been committed in his training and feeding.

From mistaken motives of prudence among the rich, and from necessity among the poor, the patient's diet has been too innutritious, or scanty, for the maintenance of a healthy tone of the stomach and liver, or for the production of healthy blood. It may be, as we have before observed, that the commonest food and the lowest diet may contain enough of the earthy phosphates for the repair of the bony structures; but from weakness induced by a poor, innutritious diet the powers of assimilation are not adequate to the action necessary to effect the transformations the phosphates undergo before they reach the bones and supply the waste occasioned by absorption.

That the foundation of these diseases of the bones and joints may be laid in early life, although they are not discoverable until a later period, is indisputable. If direct proofs are wanting, we have the analogy of consumption, which is often traceable to similar defective feeding and regimen; and in all cases of hereditary predisposition the wide interval between the first advent of the cause into the system and its manifestation in morbid changes, indirectly supports the conclusion.

At any rate, if we are desirous to ascertain the origin or remote cause of such cases of diseases of the bony structures as we are now speaking of, we must enter carefully and minutely into an inquiry respecting the patient's history.

The constitutional treatment of these cases requires a far more liberal scale of diet than we adopt in the former.

Animal food, rich broths, wine and full-bodied malt liquors, to the full extent of the patient's powers of digestion—of course the digestive organs must in these, as in all cases, receive our careful attention,—and if symptoms of dyspepsia, costiveness, or deficient or morbid secretions of the liver are found, remedies suitable to the symptoms must be adopted.

The effect of mineral acids in giving tone to the stomach is

well known, and they are particularly called for in these cases. It seems highly probable that they have a further action in the assimilation of bony material than is implied in the first changes of the food in the stomach. On this ground we recommend phosphoric acid alone, or mixed with sulphuric, as being both agreeable to the stomach, provocative of appetite for animal food, and probably exciting by its elementary composition the influence alluded to.

The exhibition of bone-earth—phosphate of lime—into the stomach as a medicine was a very obvious idea, but one which has not in this, or in the analogous case of Rachitis, answered the expectation formed of it. Bone-phosphate of lime is a very insoluble salt, and although it dissolves in hydrochloric acid, which, in a very dilute state, is often present in the stomach, and in acetic acid and solution of carbonic acid, a very large quantity may be administered and yet a very minute amount find its way into the circulation. In the hypophosphate of lime we have a salt answering all the required conditions,—containing the necessary elements, being soluble in water and agreeing with the stomach. This salt, therefore, may be given advantageously, and if the patient objects to take it as a medicine, a proper quantity may be incorporated with his bread.

Professor Liebig has recently recommended bread made of lime-water, in place of common water, as a means of supplying lime to the system; and he considers that the diet of many persons belonging to the better classes, *i. e.*, those more artificial, in the selection or cooking of food, is deficient in the amount of this element for the maintenance of health.

Such bread and the hypophosphate of lime are most important agents, and their use should never be neglected in caries of bones and joints, weakness of the spinal column, &c.

The necessity for the patient, in these cases, to be well

supplied with pure air cannot be too strongly enforced. They should always sleep in well-ventilated apartments, and enjoy during the day as free access as possible to fresh air; and the perfect security of the limbs ensured by Mr. Scott's bandaging, while the patient moves about, is one of its best features, allowing as it does free locomotion of the person and rest of the joint.

3. Effusion of flaky diseased albumen into joints is an effect of a disordered condition of the blood, arising in constitutions where the normal changes of nutrition and secretion are interrupted or diverted. We have no very marked features of constitutional disturbance indicative of this condition. It is, perhaps, more closely connected with the state designated struma than bone disease. The suppuration of glands is certainly preceded by deposits of similarly degenerated albumen into their texture, where its presence excites the amount of inflammation necessary to the development of pus. Glands indurated and enlarged by this deposit are often resolved by judicious treatment without suppuration.

I have alluded to the inorganic constituents of the blood, denominated *incidental* by Dr. Prout, as the agents which, by their agency, and probably by their chemical affinities, maintain the integrity of the highly complex substances—albumen and fibrine. The value of iron compounds, especially those in which iron is in combination with the alkaline bases, is well known as a remedy in such cases. Where iron is given without any apparent effect, it is commonly because its salts are recommended indiscriminately, and the one administered taken at random from the list. The French physiologists have conclusively shown that many iron salts precipitate in the stomach and bowels in basic compounds, no trace being assimilated or reaching the blood.

The phosphate of iron, the potassio-tartrate, or the carbonate

combined as it is in Griffith's mixture with potash, and a tonic gum resin (myrrh), will produce the effects we look for when others fail. The iodide, or, more particularly, the arseniate of iron, are most useful,—the latter, probably, by virtue of the very powerful antiseptic action of the acid, since this degenerated albumen is certainly the first stage of that series of morbid changes to which chemists apply the term *decay*.

4. In ulceration of the cartilages, in addition to the general measures for imparting tone to the stomach and securing a proper action in the liver and secreting glands and membraneous surface of the bowels, a diet mainly composed of animal flesh, in which gelatine should largely enter, must be our sheet-anchor. It is a significant fact, that certain persons, at a period of life when some part of the general system begins to fail in power, have a great desire for articles of food composed chiefly of gelatine. They take a fancy to the feet of animals, and to made dishes in which this material abounds; and we have abundant reasons for recommending this form of food in cases of ulcerated cartilage.

5. The treatment of syphilitic poison in constitutions tainted by it, and associated with diseases of the bones, either attacking the general covering, the periosteum, near or apart from the joints, has attracted the attention of so many surgeons, and has been so freely discussed, that I need only observe upon this point the necessity for great caution in forming our diagnosis from the patient's own confession. On the one hand, we find an individual ready to attribute his sufferings from any local disease to this cause; and on the other, others will as steadfastly deny the possibility of its existence when the symptoms are unmistakeable.

The same remarks apply both to mercury and mercurio-syphilitic taints.

That mercury is capable of producing local diseases, when

existing in the system in very minute quantities, no one with any great experience can deny. Its very general, nay, almost universal, employment in a vast number and diversity of diseases, readily accounts for its presence in cases where no suspicion would arise of its existence as the cause of a local malady from the patient knowing that he had never been palpably under its influence, that is, so far as to suffer from salivation.

The character of the pain caused by these poisons is such as to lead very frequently to their being confounded with rheumatism. The distinction lies in this, that in one case the diffused pain is referred to a deeper seat, the patient being sensible that it is in the bones, whereas in rheumatism the ligaments, fascia, and muscles are the seat of the suffering.

It is one of the remarkable circumstances relative to the action of mercury on the system, that its primary action on the liver and other secernents gives relief to the system, and ameliorates the remote effects of the same agent, when after the lapse of some time it has reached the bones. Hence, whether we have to deal with syphilis, or mercury, or the united effects of the two poisons, immediate relief is obtained by moderate doses of mild mercurials.

But the great remedy for all is the sarsaparilla, with the other constituents of the compound decoction of that root.

"No one who has seen this remedy properly administered," says Sir B. Brodie, "can doubt the great efficacy of it in certain cases of disease of the bones and periosteum, as well as in many cases of cachexia (this word is used in a wider sense than we have adopted above), especially that arising from the joint operation of syphilis and mercury. The doubtful reputation which it has obtained with some practitioners is, I apprehend, to be attributed to its being employed in other cases in which it has no specific influence, to the inferior

quality of the drug, or to its being given in insufficient doses."

He recommends well prepared decoction of the best Jamaica sarsaparilla, in as large doses as can be conveniently taken, continued two or three months, and a similar course repeated after an interval.

With these remarks on the value of the sarzæ I fully concur. The shops and market abound in roots which are sold for sarsaparilla, but which are derived from very different plants. Very inadequate quantities of the true sarsaparilla root are sometimes used for decoctions, syrups, essences, &c., and the mixture disguised by liquorice, or other inert extractive matters.

I have been informed by the family of the late Mr. Scott, of Bromley, that he attributed much of his success in the treatment of local diseases of the joints to his strict and undeviating care to supply his patients with efficient preparations of genuine sarsaparilla.

A long course of properly prepared sarsaparilla is very costly, and we often find patients of the middle class reluctant to incur the expense; this, as well as other reasons, loss of time, &c., renders it important to define, as accurately as possible, the cases in which it has a specific influence.

The hydro-alcoholic compound decoction of the United States Pharmacopœia, when prepared properly, with the root in a sound state, and without removing the fibres, is by far the best form which has yet been devised. The root denuded of fibres, as it is seen in the shops, is nearly inert.

6. The treatment of gout, like that of the poisons just spoken of, has engaged a large share of attention from medical men. We need not, therefore, extend these remarks upon it, beyond the observation, that with the local treatment of the joints, we are called upon to rectify, if possible, the constitutional

tendency to active attacks. Foremost in the list of the means for effecting this object stand the natural soda-waters of Vichy. The efficacy of these waters doubtless depends primarily upon the pure soda which gives them their prominent character; but the alkali itself is certainly rendered more energetic, probably by becoming more readily assimilated and combined into organic forms by the innate quantities of active elements with which in these waters it is associated. Hence artificially prepared soda-water fails to afford the same advantage.

The frequent use of pure magnesia as an aperient, which some time since was held in high repute, would certainly never have been abandoned had it not been overrated. The treatment of the enfeebled stomach, inert liver, and torpid secrements of the bowels, always met with in gouty habits, by means of bitter tonics, an occasional blue pill, and warm aromatic aperients, is all too well known to need being detailed here.

7. The treatment of rheumatic affections of the joints is unfortunately, so far as regards internal remedies, at present mainly tentative, and therefore uncertain, although we possess a number of agents which are remarkably efficacious, if we could only determine by some pathognomonic symptom which of them to have recourse to in every especial case. Lemon-juice, guaiacum, mezereon, colchicum, hellebore, snakeroot, the rhododendron chrysanthum, ash-leaves, all the ordinary narcotics in various forms and combinations, and a host of other reputed specifics have to be selected from, often with the happiest results the very first time, but also sometimes without much effect when the greater number have been successively used.

The iodide of potassium not only affords very striking relief in many cases of rheumatic pains of joints and other parts, but it also is equally efficacious for cases where we are satisfied the cause is a specific poison.

Great expectations have always been formed of the influence

of iodine in the treatment of diseases. Its first use for the treatment of goitres and enlarged glands led to its use in all cases attended with external swellings, and the range of its efficacy is pretty well known. In combination with potassium it seems to exert another kind of action besides promoting absorption, and the effects of this compound deserve a careful consideration.

The chemical character and properties of iodine, as is well known, place it by the side of oxygen, chlorine, and bromine; all these four elements, differing widely as they do in physical appearance, have functions strictly analogous—that is, they combine with all other bodies, forming series of compounds having cognate characters. The normal action of oxygen in the living body is in fact well known. It ministers to all the chemical changes incident to health from the first solution of food in the stomach to the separation of every secretion, bringing effete matters from every organ into the state adapted for its separation and expulsion.

But foreign agents obtrude themselves into the living body, poisons (generated by this very action of oxygen on compound substances, when its action is diverted from its course by some force), morbid ferments are made in the living tissues and become factors of disease, and we apply the science of medicine for their destruction and removal. In the iodide of potassium we have two elements which readily separate, and in a nascent state each selects the first substance in contact with it, with which it may have an affinity to form new compounds.

There is no doubt but that a portion of the iodide of potassium we administer internally thus undergoes decomposition, and one of its elements (the iodine) seizes on the organic poison with which it comes into contact, and renders it inert and removable through the ordinary channels of the absorbents

and secretions. Thus it relieves these classes of painful disorders, and supplies in a proper state the potash to the flesh juices necessary to health. That it has a wide range of usefulness in local painful affections is certain; that there are cases very similar in appearance in which it is inefficient will also soon be discovered upon trial.

But we have still another remedy of a strictly analogous character, which also has its limited range of cases in which it is beneficial—namely, bromide of potassium. Much smaller doses of this are to be given than of the iodide; and it will succeed when the latter fails, and, on the contrary, will fail when iodide succeeds.

It would be well worthy of a full and extended trial what cases the chloride of potassium would benefit. This substance, the exact analogue of common table salt, and having a pleasant saline flavour, may be given in large quantities with the food, as it imparts to meat, broth, and gruel a superior relish, and there can exist little doubt of its undergoing decomposition in the system. If, therefore, the remedial properties of the iodide and the bromide of potassium depend upon the liberation and oxidation of the potassium, and not upon the functions of the other elements, the chloride may be expected to supersede them with great advantage, inasmuch as the chlorine is less foreign to the vital functions of the various organs than iodine or bromine.

8. Of diseases of the joints in which are metastasis of pus, or of the inflammatory action which generates it, the associated constitutional condition requires no comment. No more specific indications exist than to give tone to the system by the free use of mineral acids, among which I give the preference to the sulphurous, and a properly regulated diet.

9. Intermitting neuralgic affections of the joints call for our antiperiodic remedies, in full doses and frequent repetition.

Quinine or bark preparations, and arsenic, are all we can depend upon; but they are happily peculiarly effective.

Neuralgia from disease in some remote part of the nervous system is very variable, both as to its duration and amenability to treatment. In obstinate cases, which have resisted all remedial measures given internally, I see no reason for neglecting the local applications of Mr. Scott. He has been, indeed, tacitly reproached for treating such cases by his local appliances, but wherever the original cause of the disease is situated, the fact of the local pain itself abundantly proves the existence of a very direct sympathy between the two parts, however remote from each other, and by virtue of that sympathy the local remedy may be most useful.

In hysteric neuralgia, the treatment is as much moral as physical; nevertheless, attention to the general functions, to the patient's menstruation and habits, will guide us to the most proper and useful remedies. The recently introduced salts of valerianic acid, in which this acid is combined with ammonia, zinc, bismuth, or iron, are very powerful agents in soothing the nervous excitability of hysteric patients.

In concluding this subject, I would impress it on the mind of the reader that the great point relative to the constitutional treatment of patients suffering from diseases of the joints is to give minute attention to the constitutional symptoms, and the patient's previous habits and history, with the view to discover the real cause we have to deal with. This enables us at once to prescribe the proper course of diet and regimen and appropriate remedies, without running the round of half the Materia Medica, and making our practice in every individual case a mere course of experiments.

MR. ASTON KEY

ON

THE ULCERATIVE PROCESS IN JOINTS.

In the Medico-Chirurgical Transactions.

I CANNOT close this volume without taking notice of an admirable paper by my former preceptor, and late friend, Mr. Aston Key, on Ulceration of the Textures of the Joints, published in the "Medico-Chirurgical Transactions" in 1833, illustrating, as it does, the principle so often asserted in the foregoing pages, that so far as the physical phenomena are traceable, various as they are, one common condition characterizes them all—namely, *inflammation*, and therefore the local treatment applicable to all, may in the main be one and the same.

Mr. Key observes—

"The ulcerative process is doubtless regulated by laws as fixed and certain as any other proceeding in the animal economy; the difficulty of obtaining an accurate knowledge of them is perhaps greater than the investigation of other inflammatory actions. In the adhesive inflammation, we have certain products which can be submitted to tests, and the progress of the action can be examined in all its stages and under every variety of attendant circumstance; but in a work of destruction, as the ulcerative process, the products of the action are removed from our observation, and the several steps by which the process is effected are with difficulty followed. Yet, we may observe, that the circumstances of

structure, of texture, and the extent of vital organization with which parts are endowed, tend greatly to modify the relative disposition to ulcerative action."

He then proceeds to trace these modifications as they are the result of the texture attacked; being, 1, highly vascular, as in *mucous membranes;* 2, of a lower degree of vascularity, as *serous membranes;* or, 3, parts endowed with the least degree of vascularity, *fibrous textures*, and *cartilages.*

Regarding the ulcerative process as arising from absorption, he discusses the question whether the removal of parts is due to the action of the absorbents, or the veins, and decides in favour of the latter.

He then admits that "the peculiarity of organization is not the only circumstance that determines the disposition to the ulcerative process. There are other general causes that exert an influence in disposing parts to this form of action. Debility combined with irritability, a disposition to action without proportionate power, is the morbid condition on which the tendency in inflamed structure seems most to depend;" and he refers to persons of excessively irritable constitution, induced by irregularity of living, and scrofulous habits, as examples. In fact, constitutional states, which I have endeavoured above more definitely to appreciate.

Mr. Key next describes the variations in the progress of ulceration of the joints arising from the degree of inflammation; whether, 1st, acute; 2nd, subacute; or, 3rd, chronic; which in all cases begins in the synovial membrane. He admits that the less acute forms of the disease assume various shades of activity between the chronic and the acute forms, and rarely exist long before ulceration of the cartilages begins.

"This may in some measure depend on the peculiarity of those constitutions in which subacute inflammation seems to have a spontaneous origin.

"The knee joint is most frequently observed to suffer disorganization from this form of inflammation. When taken in the early stage, the subacute inflammation of the membrane readily yields to a judicious administration of mercurial remedies, combined with moderate depletion and remedies that allay that excessive irritability of the system that generally attends inflammation of the synovial membrane in delicate persons.

"When the more acute symptoms are subdued, the membrane sometimes fails to regain its normal condition, passing into a chronic form of action so slight as to attract but little attention, and often regarded as stiffness that will yield to exercise and passive motion.

"This slight degree of inflammation that remains often lays the foundation of future mischief, especially if the condition of the patient's health is not adverted to after the acute stage of the inflammation has subsided. The nature of the remedies employed always leaves the patient in a state of weakness and irritability, under which the low degree of action that remains in the joint will be disposed to assume the ulcerative form.

"It is in this state that the compound preparations of sarsaparilla with alkalies are of so much benefit; there is no medicine that more effectually removes this irritable state of system, by giving vigour and allaying excessive action. This state of joint, as the disease advances, is usually attended with more pain than when the disease assumes from the commencement the chronic form; the intervals of ease become short and few; and the action goes on with but little interruption to the formation of abscess.

"In the chronic form of synovial inflammation that occurs in indolent habits of a strumous tendency, especially persons below the age of puberty, years often elapse before the ulcera-

tive process is completed. The symptoms are proportionally mild in their course. The joint is not much swelled; the general and uniform fulness of the joint, so characteristic of the most acute forms of inflammation of the synovial membrane, is absent; the joint appears as if the bones themselves were enlarged, an appearance as much produced by the shrinking of the limb above and below the joint as by the swelling of the joint itself. The swelling of the soft parts about the joint depends on the degree of inflammation present in the synovial membrane, and the consequent effusion in the soft parts. In the most chronic forms the bones can almost be felt through their ligamentous investments; in the less chronic forms, when the disease runs its course in a shorter period, there is effusion of albumen in the soft structures surrounding the joint, which increases its volume, preventing the bones being distinctly felt, and in some measure altering the form of the joint.

"It would appear, then, that there are three forms of inflammation (hitherto considered) of the synovial membrane leading to ulceration of the cartilage: the acute form becoming chronic, in which the joint retains the appearance of uniform swelling, characteristic of affections of the synovial membrane; secondly, the chronic form, in which the disease is insidious and slow in its progress, and the swelling of the soft parts inconsiderable; and, thirdly, the subacute form, intermediate between the two former, marked by more activity, attended with more swelling and more pain than the very chronic form, and a more rapid disorganization of the structure of the joint."

Mr. Key proceeds to explain the manner in which the absorption of the molecules of the less vascular textures—the cartilages—is effected. He says the adjoining membrane becomes preternaturally vascular, extends in growth and forms

fringes of vessels, which take up and convey them to the circulation. This formation of adventitious membrane is accompanied by effusion of more or less pus into the cavities, or in other cases of altered albumen.

Admitting the exactness of his observations on this point, they would seem to negative the hypothesis of a mere failure of nutrition as the immediate cause of ulceration. Practically, the distinction is of little moment; but more recent observations are in favour of the latter view.

The following remarks are to our purpose:—

"Secondary attacks of inflammation in the knee-joint are often caused by neglecting the very important precaution of supporting the weak joint after it has recovered from the long previous inflammation. Long-continued inflammation, of which we see such frequent examples, rarely fails to be attended, after a lapse of years, with partial ligamentous anchylosis of that part of the joint which has been the seat of the affection. From careful observation of a large number of these cases, and subsequent examination of the joints, I believe that the ulceration and anchylosing process may be going on for many years. Nature seems to have in view, as her ultimate object, the complete anchylosis of the surface of the joint; this she effects with the least possible degree of inflammation, and her task is often completed with little disturbance of the patient's general health, except occasionally slight attacks of pain and some swelling about the joint, that subside under rest and mild treatment. But it is necessary, in order to bring the process to a successful termination, to favour the process by restraining the limb from motion, and by giving due support to the joint to prevent any accidental strain or extension of the interior structures of the joint, which may occasion acute inflammation. This can only be effected by means of a firm splint of wood, or metal, combined with straps

of plaster, and mercurial ointment applied in the manner recommended by Mr. Scott. With this security given to the joint, the patient is enabled to take moderate exercise, inflammatory attacks are in a great measure prevented, and we confidently look forward to the possession of a very useful though partly stiff limb."

The remainder of the paper under notice is devoted to descriptions of the varieties observed in diseased joints as to the exact part ordinarily first affected, and the progress of the diseased action over other parts successively. Generally the author refers to obscure constitutional causes for these affections, without characterizing them, that not being his purpose. The essay is one deserving of careful perusal for its clear pathological descriptions. But we cannot rest here; our purpose in surgical and anatomical inquiries is not the mere gratification of scientific curiosity. We have to avail ourselves of such principles and phenomena as we can discover for the furtherance of our art. We have to find a method of treatment which shall, if possible, save the limbs and lives of our patients; and it is in this point of view that Mr. Scott's treatise is pre-eminent.

THE END.