A review of the past and present treatment of disease in the hip, knee, and ankle joints : with their deformities / by Hugh Owen Thomas.

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OF THE

PAST AND PRESENT TREATMENT

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WITH THEIR DEFORMITIES,

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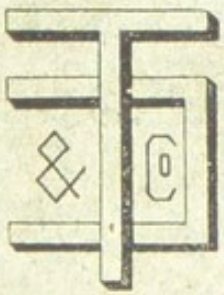
HUGH OWEN THOMAS.



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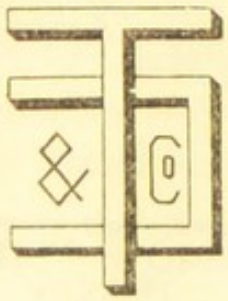

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"In natural science every explanation and hypothesis is readily accepted as the correct one, provided it only harmonizes with our previous ideas and notions. From this we may likewise understand how it is not easily given to any one, and least of all in a department of science like ours, to adhere strictly to what is considered the first condition of every observation and research—namely, to be entirely unbiassed, and to take in every case, a free and impartial view of the subject. * * * For even the honest investigator, the most sober thinker, cannot so far emancipate himself from that influence, and from the consequent obscuration of his views and judgment, as would be requisite, or as he himself may wish or believe."—"MEDICAL LOGIC," BY F. OESTERLEN, M.D.

PREFACE.

The following first appeared as a chapter in my volume on "Diseases of the Joints of the Lower Extremities," and was rewritten and extended for the Liverpool and Manchester Medical and Surgical Reports, from which this pamphlet is reprinted. It has been republished in the hope that a criticism will set aside the prejudice which hinders improvement in the treatment of articular disease. The furore excited some years ago by the reported success of the American method has passed away, and in this country has been discarded. At the time of its introduction I judged it would be condemned as soon as surgeons habituated to careful clinical observation tested it. In like manner will the treatment of spinal disease by the plaster of Paris jacket, jury-mast, &c. Dislocation of the sternal end of the clavical treated by fixing the arm to the back—another New York method—had its very short day. So will the treatment of cretinism by circumcision become a surgical curiosity. "Happy thoughts" seldom succeed in surgery.

One of my neighbours, in the discharge of his duties as a clinical teacher, informed his alumni that originality belonged neither to my teaching nor my means. I answer that my knowledge of surgical lore is sufficient to justify me in stating that whatever claim I make to originality may be verified by every unbiassed critic. Such assertions are not complimentary either to his predecessors or himself. For if these means were already

in existence in any form, how comes it that their value was not appreciated by my critic before I introduced them to the profession. ?*

In criticising Dr. Bauer's published opinions, in justice it is here acknowledged that I had no access to his teaching later than 1868. The doctrine he then taught, may have, (probably has), undergone important modification. Dr. Bauer has done so much for this department of surgery that it is only fair to acknowledge his work, as he is not so well known as he should be in England. I cannot better introduce him than in Dr. Sayre's eloquent but not over drawn portrait.

"Professor Louis Bauer, of Brooklyn, (now of St. Louis) a German surgeon of very scientific attainments, with an energy that knows no limit, has devoted his time almost exclusively to this department of surgery. In fact, the professional mind of this country has been attracted to this particular branch of surgery through the various articles of this able author in the different medical periodicals more than from any other source, and his lectures on this subject are very valuable instruction to Orthopedic literature.

* The same authority instructs his class that the means are very ineffective, yet he uses them exclusively. An explanation of this contradiction would be instructive, and in the absence of such I am reminded of Cotton's Laconic "Professors in every branch of the sciences prefer their own theories to truth; the reason is that their theories are *Private* Property but truth is *Common* stock."

11, Nelson Street,

July 1, 1878.

A REVIEW OF THE PAST AND PRESENT TREATMENT OF INFLAMED JOINTS,

BY H. O. THOMAS, LIVERPOOL.

Since the publication of my views on the nature and treatment of Diseases of the Hip, Knee, and Ankle Joints, the subject has engaged the special attention of surgeons, and the merits and demerits of various methods have been debated more fully than before; and as one of the gentlemen I dissented from expressed the opinion in a communication to myself, that my notice of his views and means was too limited (which I now believe), I therefore decided to review more fully than I had hitherto done the various methods championed by gentlemen whose views are worthy of being well considered. One notable feature is prominent in the discussion of the last three years, namely, that it has principally concerned the treatment of the hip joint. Why this joint should be referred to as though its treatment involved special theoretical principles, I have failed to perceive; indeed, the press-reports of lectures and discussions amply confirm my former assertion, that those who have devoted special attention to the surgery of the articulations are also specially wrong in their theories, and, consequently, in their practice. The methods advocated in and out of the surgical profession, may be sub-divided into two classes, namely, those believed to be based on scientific principles and professional experience, advocated by surgeons trained to practise their profession scientifically, and, again, the other methods heralded by unqualified practitioners, who

generally claim to have arrived at their knowledge from intuition, or accidental experience; while some, even credit themselves with a special mission to relieve mankind.

In the first class may be included the following authors, viz.:—The Coopers, Ford, Beale, Coulson, Little, Hugman, Wildberger, Bauer, Prince, Barwell, Coote, Brodhurst, Taylor, Sayre, and others who have insisted upon principles of treatment diametrically opposed to those I inculcate. In fact, I find that the writers have not attained, or even wished to attain, but that all have rather dreaded, enforced, uninterrupted, and prolonged rest.

In the second class may be placed the late Grosvenor, of Oxford, (flour cure); Evan Thomas, of Liverpool, (pitch plasters); Taylor, of Manchester, (issue peas); Hutton, of London, (manipulation); Clucas, (manipulation); the Penrith bone setter, (manipulation); and a number of others (male and female) whose names I cannot now recollect, but whose treatment and its results I know too well. To me it seems inexplicable how educated men* can seriously discuss evidence not verified by unbiassed witnesses. Having had exceptional opportunities of watching the practice of many of these individuals, and having seen its results, I assert with the utmost confidence that there is nothing to debate, and I never yet met with one case, relative to which, on my making a careful analysis, there remained a single fact worth noting as an addition to surgery. Frequently I have seen cases in which the patient asserted that he was cured by so and so, when it was only too apparent that he was unconsciously attributing an effect to a wrong source. Ignorance of the first principles of treatment of this form of inflammation is the true explanation of

* See Sir James Paget, article on bone setting. Mr. E. R. Bickersteth's Address on the recent Progress of Surgery, page 11. Bauer's second edition, page 303. Sayre, page 208-9.

the unwarranted opinion of even members of our own profession regarding this class and their practice.*

Before noticing in detail the treatment of articular diseases of the lower extremities, in vogue during the last thirty years, I shall show from authors, that up to this time, all writers of authority differ from my views :—

"One thing, almost essential to the production of anchylosis, is the part being kept motionless ; and as M. Sanson well observes, this condition has such influence that it will of itself bring on the changes which will terminate in a joint becoming incapable of resuming its functions, in consequence of true or false anchylosis." (ANCHYLOSIS, COOPER'S DICTIONARY OF SURGERY.)

"In addition to the direct effects of inflammation in the production of anchylosis, a variety of other circumstances facilitate its progress and augment its severity. Among these are the long-continued rest of the limb in one position." (LITTLE ON ANCHYLOSIS.) Page 2.

Dr. Prince devotes five pages to quotations from authors expressive of their opinion on the evils that arise from immobility (so called.)
(DR. PRINCE ON DEFORMITIES, &C.) Page 52-9.

"On the contrary motion of the joint without pressure is not only not injurious, but it is highly beneficial." (TAYLOR ON THE MECHANICAL TREATMENT OF THE HIP JOINT.) Page 15.

"Gentlemen, absolute rest of inflamed joints, however beneficial for a time, has likewise its therapeutical restriction, and experience teaches that if the immobility of healthy articulations is unduly prolonged they will become stiff, dry, and even anchylosed by fibrous bands." BAUER, ORTHOPEDIC LECTURES, 1864.) Page 57.

"The treatment which prevents either of these contingencies (anchylosis) and establishes mobility of the joint, is passive movement, with shampooing and pressure." (BARWELL.) Page 379.

"Sayre thus teaches :—When this instrument is employed, it is necessary that the child should be taken from it very frequently, and have all the joints

* This opinion refers only to the treatment of inflamed joints by these unqualified professors ; that some of them may have skilfully treated other lesions I am not prepared to deny.

carefully moved, otherwise too long continued rest of the joints may end in anchylosis. In moving the diseased joint, care must be taken to hold the pelvis, and to make slight extension upon the diseased limb when motion is given to the joint. Perfect rest, long continued, even of the diseased joint is decidedly injurious, as there is danger of its resulting in anchylosis." (AMERICAN CLINICAL LECTURES.) Page 14, 1875.

At page 157, Sir B. Brodie on Diseases of Joints, 1850, also refers to a case which he judged as indicating that long rest would produce anchylosis.

(1568.) "The growing together of the joint surfaces may be produced in various ways. It is usually consequent on inflammation of the parts composing the joints, especially when of long standing and when the joint has been long at rest." (CHELIUS'S SURGERY.) South's Edition.

"It is also manifest that if permanent anchylosis be the result arrived at by the surgeon, rest must be a necessary condition for bringing it about." (WHARTON HOOD.) Page 113.

These extracts express the opinions maintained by past and contemporary authors, as to the effect of prolonged rest of diseased joints. My teaching is the reverse of the theory advanced in these quotations, and it is my conviction that the principles inculcated by these my predecessors aud contemporaries have been the cause of the minimum success attending the treatment of articular inflammation. Yet I am informed constantly that my theory and method of treatment are not original. One critic affirmed that the appliances have been in use sixteen years in America; another, that they have existed "from time immemorial in this country;" others, ere they had had a day's experience of their use, not understanding how they should be made or applied, commenced to make innovations to suit their own defective knowledge.

Firmly convinced that my theoretical principles are correct, and that the appliances are suited to the application of these principles, and that they have not been improved in efficacy by any other surgeon up to this date; and that better, quicker, and more useful results are obtained by this method than by

any other; holding this opinion (at the same time inviting a practical demonstration of the contrary), it is not possible for me to be tolerant of methods which must be wrong if mine are right. To me it appears an anomaly that the surgeon should have to make a choice of theories, the principles of treatment should not be left to the discretion of the surgeon, but should be unalterable. No doubt ere long it will not be a question, "How shall we treat this patient? Shall it be by Bauer's, Barwell's, Sayre's, Taylor's, or Thomas's principles?" The theory must first be settled, and the mechanics will "right themselves," and at no distant time after. It is the desire to assist in this settlement that has induced me to review those incorrect methods which have been received with such acclaim during the last fifteen years. I will also attempt to answer the objections advanced since the publication of my views, and alsc point out the mistakes of the crowd of tyros who have taken the field and given forth their limited experience with the confidence of veterans.

The writers on this subject are many, but I shall notice only those who have influenced the practice of surgery in later years. Some have deviated but little from ancient principles and practice; as, for example, "Dr. Little on the Stromeyerian method (tenotomy) in anchylosis;" Brodhurst on ankylosis (a method of tenotomy and passive motion); and Wildberger (a mere manual of sc-called orthopraxy.) Dr. Louis Bauer, of St. Louis, late of New York, on the publication of his lectures in 1864, became entitled to priority in attempting to improve the mechanical means in the treatment of inflamed joints. Some of the appliances were designed by himself, whilst he adopted others designed by Dr. Davis, and modified by Dr. Sayre. In his writings, the ancient theory of rest is taught, as shown by his warning his readers of the supposed evil of rest. He, like all his predecessors, is ignorant of the

one fact upon which all treatment should be based, namely, that rest is a remedy, an over dose of which it is not possible to give the patient. Of the work published in 1864, entitled, "Lectures on Orthopædic Surgery," the second and third chapters are devoted to the etiology and treatment of diseases and deformities of the knee and hip joints. On page 36, the second column from the last paragraph, to the end of the first column on page 37, he advises to treat injury of the knee joint by extension.

If, however, "the contraction of the hamstring muscles have become permanent, extension alone is hazardous, for it may give a new impetus to the active disease . . . In these cases, the division of the contracted muscles or their tendons, should precede the use of extension."

He also recommends a firm back splint, yet remarks—

"But we feel persuaded that a simple pulley and a proportionate weight is the gentler and more reliable remedy;"

And at page 37, adds, concerning the weight and pulley method—

"The water-bed secures cleanliness in case of suppuration, and the elastic extension and counter extension enables you to move the articulation as often as is needful, to prevent anchylosis."

Referring, again, to Anchylosis, on the same page—

"Repeated gentle movements effectually prevented the consolidation of inter-articular effusion."

Here we have the dread of prolonged, nay, of an almost unavoidable degree of rest, and a thwarting-of-resolution policy set forth. In the remainder of this chapter the method of reduction of deformities of the knee is explained. The author objects to any attempt at reduction without the previous practice of tenotomy in each case, dreading by the exercise of force the return of the previous inflammation. In 1868, Dr. Bauer published a second and enlarged edition of his lectures, and it was very interesting to me to peruse this latter

edition, as it was only too evident that his views theoretically, though still antiquated, were undergoing a gradual change, but still he had not got rid of the dread of prolonged rest. Among his changes of treatment may be noticed that at page 290, he advises the immediate fixation of the knee in the straight position, and tapping; and again at page 288, he denies that blistering is of any value to the knee joint in relieving distension. At page 291, he refers to the very objectionable practice of compression, and still advocates.

"Compression of the articulation for some weeks after the operation," (tapping.) "Compression of the affected joints is one of the most estimable auxiliaries in their treatment, and should be resorted to when practicable; but when resorted to, it should be thorough and decided."

This has not been my experience, as I have found that only cases of simple synovitis do tolerate compression, and those that do, would be better treated by its omission. It is not, in my opinion, correct practice.

At page 292 are laid down rules for our guidance previous to puncturing the knee joint for the relief of the accumulation; these rules are not confirmed by the experience of those who have practised aspiration of this joint. The mechanical appliance designed to fix the knee joint is shown at pages 290-1, and is very inefficient, being a mere sheet iron gutter.

In this (latter) edition, Dr. Bauer still adheres to the practice of tenotomy, and forcible rupture in the reduction of deformity of the knee, and there is no evidence that he has ever had reduction of deformities of this articulation by simple fixation; nay, at page 308, he expresses his doubts of the possibility of its being attained, except by tenotomy and

forcible rupture.* Chap. third, first edition, is devoted to disease and deformity of the hip joint. Deformity of this joint arises he says :—

"Chiefly from the presence of effused liquid of some kind within the joint," attended with "peripheral and nocturnal pains, culminating in tonic contraction of certain muscles and deformities."

And at pages 51-2 nocturnal pains are said to arise from :—

"Antagonistic directions of forces, muscles inclining one way, hydraulic forces another."

And in the same paragraph he attributes the inclination of the so-called deformity of the third stage to the diminution of distension of the joint, and the consequent increased control of the limb from muscular action. At page 54, his treatment is prescribed, and he also reviews that of Sir B. Brodie, Bonnet, and Physick, and complains that though their treatments were good, yet they "were not heeded by the profession." He fails to perceive, why the long splint and its modification were set aside, namely, because the results attainable by the appliances of Brodie, Bonnet, and Physick were seldom secured to the patient, both from a dread of prolonged rest and from the absence of any means to allow a prolongation of the period of repose, to the joint after the patient was removed from bed. At page 54, he insists on the importance of

* During the last two years I have succeeded in reducing deformities of very long duration, by simple fixation—one angular deformity of knee joint that had existed twenty-four years ; this was corrected in eight weeks. Another case of twenty years' duration, was reduced in eighteen weeks. Again, a lady with extreme deformity of hip joint which had existed twenty-four years, was corrected in twenty-two weeks. These ancient deformities are corrected more readily if during the treatment there is a return of some degree of inflammation, which quickly subsides as soon as the deformity is corrected, and limb made immovable, the progress to reduction of deformity not being a condition of immobility.

rest and "suspension of all locomotion," and also prescribes the antiquated local applications :—

"By leeches, cold and other appropriate applications."

But, at page 57, he delivers an eloquent tirade against complete prolonged immobility; and in the same page proves his treatment to be sadly defective in efficient rest by reporting that :—

"Nocturnal pain, &c., cannot be relieved by even opiates" or the "wire breeches,"

Except when aided by powerful extension; yet in the same page we are told that :—

"Extension can prevent, but not cure active contractions of the muscles, and its indiscreet application will certainly stimulate the disease."

My observation of the practice of others amply bears out the truth of this remark, and I can add that those cases treated by the addition of (continuous) extension, or by it alone, do not do so well as when they are even left to the method of nature (muscular action.)*

At page 59, the Davis—Taylor—Sayre type of appliance is discussed; and he reports that :—

"However useful and indispensable the hip splint obviously is, its application in hip disease is nevertheless circumscribed." And only fit in those cases of "incipient hip disease, when the inflammation and reflex actions are moderate; secondly, after active symptoms have subsided; thirdly, after the contracted muscles have been successfully treated."

At page 60, we are informed of the effect of extension by Sayre's splint.

"The usual effect which the splint exercises is the alleviation of pain."

But, he also adds, that the pain may increase by its use, and that—

"To persist in extension would be to aggravate the disease."

* Here I refer to the attainment of resolution only, and the deformity being ignored.

In the second column of page 60, he gives his opinion that idiopathic diseases of joints are not amenable to mechanical treatment.

"That a constitutional disease is equally unamenable to mechanical remedies need no proof."

With this I cannot agree, as those diseases of idiopathic origin require mechanical aid just as much as those of traumatic origin, and those inflammations that occur from "constitutional fault" quite as frequent as those that arise from injury.

In the second edition of Dr. Bauer's volume, the treatment of hip joint disease commences to be discussed at page 284, and in the first paragraph he lays down the rule that more fixation is required during the second stage than during the first, and recommends his wire breeches, which extend only to the pelvis and lower limbs. This apparatus is in my opinion defective, not being of sufficient length in the trunk portion, and, consequently, not able possibly to give the joint that amount of immobility which it would have done had it been carried up to the angle of the scapula. In the last paragraph, page 285, he gives cogent reasons against using the pulley extension method. At page 287 is to be seen a pictorial illustration of his own Portative-Appliance which he extols as able to effect that which Sayre's modification of Davis's apparatus cannot. The practical difference between the two (Bauer's and Sayre's) I fail to perceive, as the arguments he advances at page 206 against Sayre's are equally applicable to his own invention, which he says also resembles the apparatus of Dr. Andrew, of Chicago—the ischiatic crutch. This similarity does not exist in practice; for Dr. Andrew's instrument can be so regulated as undoubtedly to take the weight of the trunk from the hip, though it cannot fix the limb; and as the arrest of friction is of more importance than the arrest of pressure, Dr. Andrew's appliance is thus very defective.

These are Dr. Bauer's views regarding the treatment, &c., of the hip and knee joints; in his first edition the general treatment of articular inflammation is not discussed; but in this edition the omission is supplied in a chapter specially devoted to its consideration. Chapter thirteen is devoted to the "Causation of joint disease," and in it he attributes to all articular inflammation a traumatic origin; and in proof of this relies (page 238) upon the fact that mechanical treatment benefits all cases. That many cases arise from traumatic causes few will deny, but most cases too plainly, during the process of the after treatment, show that they are of idiopathic origin, many cases have occurred in my own practice, where the local lesion has resolved, but where the patient has died from a "constitutional fault."

I fail to perceive what the cause of the disease has to do with the mechanical details of treatment, neither can I understand how, as Dr. Bauer believes, it would fail if the disease was of idiopathic origin. Mechanical aid appears the one thing needful above all others, whether the difficulty arises from rheumatism, prolonged use,* injury, scrofula, or as a sequela to some zymotic disease.

Chapter fourteen is devoted to anatomical changes, &c., of inflamed joints, and contains much interesting original information.

* Unusual prolonged use (friction or concussion) of a joint will produce inflammation of it, and this is not a rare occurrence. At page 315 of the second edition, Dr. Bauer reports a case of friction producing the lesion; and I was consulted during this year by an omnibus driver who attributed the inflammation (chronic) of his knee joint to the continual (concussion) jar of his limb, which he kept on the pedal of the omnibus break all day. We have no reliable evidence of prolonged rest producing inflammation in anchylosis. The Fakirs of India are sometimes referred to as examples; but I am of the belief that they produce stiffness only by prolonged disuse, and as they have no desire to use again the stiffened joint, it remains stiff. This condition cannot come under the term anchylosis, true or false, as it depends on the person's will.

Chapter fifteen contains the author's views of the "Clinical character of joint disease;" and when referring to the general symptoms of articular inflammation, he says

"Pain is the most prominent, usually the first to appear, and the last to disappear."

Except in severe traumatic cases, I have always noticed that a feeling of weakness was the initial symptom, and the final one to disappear.

Page 250-54 are devoted to the symptoms in general, which indicate articular inflammation, and here Dr. Bauer unfolds a tale of horror and mentions symptoms, which show beyond doubt that in the treatment of these difficulties, he has not been able to attain a medium amount of curative rest by his methods of fixation. From the first paragraph, page 250, it is apparent the author does not think that the will of the patient, calling the muscles into action to steady the extremity, decides the direction of deformity. I cannot endorse his assertion that

"In affections of the tibio-tarsal and tarsal articulations, the peronei muscles are retracted."

This contraction of the peronei in disease of the ankle or foot joints is extremely rare, in my opinion. Again, he says—

"In affection of the elbow joints, the biceps, muscles, and pronator-teres are involved."

From this I also dissent. It were well if they were involved.

At page 256 the will of the sufferer is admitted to affect sometimes the position and mobility of the limb, at other times "hydraulic pressure," "osseus material," and "muscular contractions." At page 258, the author very properly says—

"To speak of a dry joint in these affections is an absurdity."

Chapter sixteen is devoted to prognosis and treatment of diseases of the joints, and commences with a summary of symptoms and

conditions which, luckily for sufferers, do not occur where correct treatment is undergone. Dr. Bauer also very properly warns the reader that primary symptoms are not a reliable barometer of the actual difficulties which the surgeon may have eventually to grapple with. At page 273 we are informed that the treatment of joint disease

"Is infinitely better to-day than it was fifty years ago."

Certainly not in the United States. Their theory is ancient though their practice is new, but they have omitted what was good in the old practice, and held on to that which was bad. At page 274 the cause of articular disease is again discussed, and Dr. Bauer asserts that they are all of traumatic origin—to myself it would matter little whether they were of idiopathic or traumatic. I anticipate, however, that few among those who have had an extensive field of observation, will agree with the author that all these do arise from injury. In page 275, diagnosis is discussed, where all those antiquated signs, which are of little value are enumerated.

At page 277, the treatment of joints in general is laid down.

"The very first therapeutical axiom in the treatment of joint disease is rest, absolute and unconditional; and the next proper position of the affected articulation. The efficacy of these two are greater and more reliable than the entire antiphlogistic apparatus, and they generally suffice to meet the exigencies of the first stage."

This quotation shows that since the publication of Dr. Bauer's first edition, he has materially changed his views, and, in my opinion, has considerably progressed; yet, at the end of the second paragraph, page 277, it is apparent to me that he still prescribes local medication. Again, discussing the position of the affected joint, last paragraph, page 277, he says:

"The position of the affected joint should be that in which the patient is most comfortable and at rest."

This, again, is proof of his methods being defective in obtaining rest, inasmuch as all positions are those of ease, provided a curative degree of fixation is secured, but all positions are not such that the utmost future use can be obtained.

At page 278, he says:

"Some surgeons advise to give the extremity such an angle as will be most conducive to its usefulness."

"We have nothing to do with that object at this juncture; our object is to relieve disease, and thus preserve the entire usefulness of the joint; their advice is in place when the joint is about anchylosing."

The policy laid down here is, in my opinion, exactly the reverse of the proper one. It is in the diseased condition that deformities can be corrected quickly, safely, and with least pain, and he seconds my dissent from the above at page 280.

"If the affected member has already been placed in mal-position, you have promptly to reduce the same to insure articular rest."

This contradicts the last paragraph in page 277. Again, at page 281, second paragraph, Dr. Bauer insists on the necessity for reduction of deformity in the inflammatory condition. This latter statement again is a direct contradiction of paragraph at page 278, commencing with "We have nothing to do, &c.," which has been previously quoted by me. At page 282, the value of extension (continuous) is summarized thus:—

"As it is, I am impelled to state that I have derived little or no benefit from extension per se in the treatment of progressive joint diseases. Whatever benefit I have derived from it at all, is unquestionably due to ITS COLLATERAL EFFECT UPON FIXING THE AFFECTED ARTICULATION."

"1.—Extension cannot part the inflamed articular surfaces, for which it has been erroneously designed by its author.

2.—Powerful extension is perhaps the promptest remedy against an ephemeral muscular spasm, as every one has experienced himself if he has happened to be suddenly attacked by spasm of the muscles of the calf; but it cannot be relied on in persistent spastic agitations of the muscles.

3.—In many instances extension will not fail to relieve the spasms, but will react unfavourably upon the violence of the existing joint disease, if persisted in.

4.—The division of the contracted muscle is the surest and unfailing remedy."

"The most violent periods in the course of joint disease I have observed in consequence of keeping a restricted muscle on the stretch."

Here Dr. Bauer confirms my assertion that it is the unavoidable fixation inseparable from the practice of extension, which is the true remedy.

I most cordially agree with all he reports against the practice of continuous extension in joint inflammation. At page 296, it is satisfying to note that he protests against the application of blistering, or any other derivant to the region of the joint.

Chapter seventeen is devoted to the treatment of the sequelæ of joint disease, and commences with a paragraph which might cause some to doubt that Dr. Bauer ever saw a case of genuine resolution (secured soundness), it is evidence to me of the want of means to diagnose the attainment of resolution.

The second and third paragraphs in this chapter are devoted to the treatment of stiff joints, and manipulation is commended with passive motion, and the lumber, known as emollients, is advised, also cold and hot douche, or a visit to Germany. The remainder of this chapter is devoted to teaching that "Brisement force," combined with myotomy, will correct deformities which continued extension cannot correct, and this teaching appears to coincide with that of our countryman, Mr. Brodhurst, the special advocate of tenotomy, "Brisement force," and passive motion. My experience will not permit me to endorse the opinion of the author as regards the purpose of these last three items of treatment, viz., Tenotomy, "Brisement Force," and Passive Motion.

The two first procedures in my opinion are very rarely required. I have repeatedly seen reduction of deformity by simple retention after failure by "Brisement force," though this latter was employed while the patient was under æther. As to "passive motion," this is a phrase, that conveys to my mind no information. I cannot see a place for it in the art of surgery.

Whatever difference of opinion may exist with regard to the treatment of these lesions by the methods advised in this volume, I have great pleasure here in acknowledging that surgery is much indebted to Dr. Bauer for his labours as an innovator in the treatment of inflamed joints; and he has given courage to others to venture on a voyage of discovery in the treatment of these difficulties.

Dr. Bauer's labours have been the means of inspiring several surgeons in the United States to attempt the improvement of the mechanical treatment of articular inflammation, and among others, Dr. C. F. Taylor, of New York, has appeared as an exponent and practitioner of the theory, but his method of practice varies from that set forth by Dr. Bauer. His opinions have been published in the "New York Medical Record," Sept. 1, 1867, and May 8, 1875, and in a treatise "On the Mechanical Treatment of Diseases of the Hip Joint," Ward & Co., New York, 1873. I find also that he is patentee to a form of hip appliance,* also Surgeon to a Hip Hospital, in which establishment (if there is the same mania for specialities in the United States as exists in this country), he has had sufficient opportunities to test his speculative views as regards hip inflammations. Dr. Taylor's writings† contain many clinical

* See foot-note, Dr. Bauer, second edition, page 286.

† To Dr. Taylor I am indebted for his collected writings, and here acknowledge his courtesy in sending them to me, and at his request I now more fully notice his views.

observations which I am glad to find corroborate my own notes; and judging from his writings, had he simply made deductions from clinical observations of cases while treated by simple fixation, he would have evolved the same theory as myself, but starting with his mind stocked with the opinions of "the fathers," together with an additional idea that the muscles are at the root of all the evils attending hip inflammation, he has made his appliances to enable him to apply this idea in practice. This he informs us in page 289, vol. ii, "MEDICAL RECORD,"—

"An apparatus, like a remedy, should be the embodiment of an idea."

From this none can dissent if a maximum amount of success follows the application in practice of the idea, otherwise we are called upon, as the navigators term it, "by sounding," to feel our way to correct principles, and try by a method of deduction, to gain a correct theory.

In the commencement of this article (MEDICAL RECORD, Sept. 1, 1867), Dr. Taylor discusses the causes of failure by the use of his appliance, which he attributes—

"To the inefficiency of the instrument employed, and to a practical disregard of the true end to be sought by its use."

And he further objects to "elastic extension," and condemns Dr. Sayre's appliance, which he claims as his own design, a model of which he had laid aside after using it only once. In last paragraph, page 289, when referring to the advisability of preventing motion at the knee joint in hip inflammation, he writes:

"Primarily it is an advantage when the counter extension is complete, but not otherwise, to cause the motion of progression to be at the hip instead of the knee, as it would be if the latter were not confined."'

The meaning of this quotation is better expressed at page

23, in his treatise on the "Mechanical Treatment of the Diseases of the Hip Joint."

"But motion at the knee is a decided disadvantage. It prevents, or at least diminishes, motion at the hip joint."

This is not correct, as anyone can observe, that fixing the knee limits the friction and motion at the hip joint, while permitting motion at the knee increases friction, and allows more action at the hip.

An anchylosed knee always diminishes the extent of the radius of action and friction at the hip.

At page 290, Dr. Taylor expresses his disbelief in the possibility of drawing out the head of the bone by extension, and very properly remarks

"It would be harmful if it did occur."

On the same page he expresses his opinions on the necessity that

"Muscular tonicity must be temporarily destroyed."

This, to my mind, is inexplicable. I should rather say, place the limb at ease, and the muscles will be quiescent and remain so until wanted by the patient to resume duty. Again, when discussing the supposed destruction of muscular "tonicity," we are informed that it may be, and generally is, followed by weakness of the muscles about the joint, which may require special treatment to restore their "tonicity."

"This is a sacrifice we must make to the greater good of arresting the diseased action in the joint."

I have never noticed that atrophy of the muscles after the treatment of lesions of joints required special attention to induce them to resume their functions, for as soon as the articulations are sound, they are certain to regain their action and power, and the more they are delayed, the more certain the surgeon is of securing resolution beyond the possibility of a relapse.

In the same paragraph we are told that—

"On the other hand, if contractions accompany or follow disease, we may be sure our counter extension has been inefficient, and therefore worthless, and that the improvement, if any, is due to the quiet fixation of the joint, which the splint has been a convenient means of accomplishing, and I suspect this is very often the case in the use of both splint and pulley."

When stating my conviction of the incorrectness of the treatment of joint inflammation by any system of extension. I have always expressed myself in the sense contained in the above paragraph, that all these injurious methods of treatment—namely, those of extension involve inseparably in their application, a certain amount of "quiet fixation," which is alone the remedy that benefits the patient, despite the extension he is too frequently tortured with.*

At page 291, Dr. Taylor reports that he has advised a clog under the sound foot, but evidently with neither method nor success, as he says

"The difficulty is in carrying the plan into practice."

From this it is apparent that since I introduced this addition to the treatment of hip affections, Dr. Taylor had become acquainted with the method, as he informs us that—

"Indeed many have advised, as I sometimes have when circumstances were such that nothing better could be done—patients to wear a thick sole on

* All forms of extension in joint disease involve inseparably in their application a certain amount of fixation, and the success that sometimes follows this treatment can be explained thus, articular disease may be of a traumatic, or idiopathic origin. If of traumatic origin, and the patient is in excellent health, there are in operation, two items favouring resolution which nullify the injurious effect of traction, viz., a tendency in the constitution of the patient to repair, and the "quiet fixation" inseparable from the extension, but should the case be of idiopathic origin, there will be two items of evil which may nullify the benefit of the small amount of "quiet fixation," viz., the tendency in idiopathic cases to retrograde, and the injurious force of continuous traction. A sufferer under the latter condition gives way, and posterior fixation is resorted to by extensionists, or exsection is performed.

the foot of the well leg, and use crutches, letting the lame leg hang. The only difficulty is in carrying the plan into practice, with sufficient perseverance and uniformity."

This is an admission that cases occur which Dr. Taylor cannot aid by his method of treatment, and the article concludes with testimony to the injurious tendency of the extension methods.

"I have seen several legs irretrievably spoiled by applying the straps on the leg only, neglecting to include the thigh. This has been generally done when the treatment had been by the weight and pulley, force enough to relax the powerful muscles about the hip joint must be liable to pull asunder the weaker ones at the knee and ankle if traction be made only from the foot and leg."

If all this damage can occur from extension applied to a sound joint, what may be the amount of damage done to an unsound articulation, the structural surroundings of which are softened by inflammation?

Again, we are informed that

"With the best appliances disease of the hip joint is not easy to cure."

I dissent from this, as the hip joint presents no difficulty which does not also present itself in diseases of other joints.

Dr. Taylor concludes by very properly drawing attention to the fact that the treatment of joints is not so much a question of splints as of principles.

"There is no magic in surgical apparatus, let them be ever so cunningly devised. They should have a function corresponding to our idea of the requirements of the case."

In the New York "MEDICAL RECORD," issued May 8, 1875, is a further exposition of Dr. Taylor's views, the paper is entitled, "On some of the elements of Diagnosis of the different stages of Diseases of the Hip Joint," and he commences by asserting

"The importance of an early and correct diagnosis of disease in the hip joint must be apparent to all. But diagnosis implies much more than a recognition of existing disease. It embraces, or should embrace, such a

careful analysis of the existing facts, as to resolve the condition into distinct and well-defined elements, which are separately comprehended, and which, being correctly interpreted, are the indications to which our treatment ought directly to respond."

From this quotation it is apparent that the author is of opinion that each stage requires special treatment. In the second paragraph, page 321, he says :

"Of course there are stages and degrees of this disease which advertise it to the dullest comprehension and to the most careless observer."

Here is an admission that the early stages of this disease are not readily diagnosed by the methods of diagnosis hitherto in vogue, but he will find in practice that the diagnostic method I have introduced to the notice of the profession, will enable the most obtuse among us to detect early the presence of the slightest inflammation in this joint.

In the third paragraph Dr. Taylor says :

"The symptoms generally relied upon as diagnostic of disease of the hip joint are worthless for all practical purposes of either anticipating the graver stages of the disease, or of affording indications for treatment."

Yet the reader is not introduced to any other method of diagnosis, though he admits the worthlessness of the usual symptoms relied on for detecting this lesion. In the first paragraph, page 322, when contrasting the effect of art or non-interference in a case presented to him for treatment, he says :—

"Without treatment it was only a question of time, for death of the bone, with its attendant dangers, would occur ; and with treatment, increased physical suffering was inevitable."

If this is a deduction from Dr. Taylor's own practice ; it is by no means creditable to his method.

Page 323 is principally devoted to the consideration of the value of flexion as a sign of joint inflammation, but nowhere does the author give a method (beyond the rough one of digital

manipulation) by which one can measure this flexion, which, he admits, always exists from the earliest period, and he concludes his remarks with an opinion which demonstrates beyond doubt that he has not a correct appreciation of the value of this very symptom. He says :

"A very slight injury of the joint, the merest trace of inflammation resulting from such injury will cause an immediate response of muscular action, which can be appreciated by the examiner for the purpose of diagnosis, still, while the disease must have advanced to a considerable degree before the patient becomes mentally conscious of anything wrong. Of course, I reject etherization as being utterly valueless as a means to assist diagnosis, and am simply amazed that it has ever been used for that purpose. To relax the muscles is to destroy the most delicate evidence of suspected disease."

This latter paragraph certainly amazes me, as no amount of etherization would relax joint flexion caused by inflammation so long as no violence was used.

Also at page 323, Dr. Taylor gives an illustrative case of reduction of flexion, when the inflammation was only of two weeks duration ; yet it required six weeks for his method to reduce the flexion ; even if the inflammation had existed four weeks, my splint, by obtaining mere fixed reclination, would have succeeded in reducing it in one or two days at the utmost.

At page 324, the author enunciates his own views as regards the muscular contraction which accompanies and indicates articular lesion. It is here given in extenso.

"The mistakes in diagnosis arise from confounding as identical, two conditions which are entirely different and wholly separable. A condition of so-called contracture is a permanent shortening of the muscles. It is characterised by increased rigidity and diminished contractility. The DIMINISHED CONTRACTILITY and diminished irritability are important to be remembered.

This condition of the muscles may result from various causes. It is specially likely to be found after long disease, accompanied with the absence of all direct or reflex nervous excitation to action ; as after fibrous or bony ankylosis and disuse ot the joint.

But this condition of the muscles must not be confounded with nor mistaken for the constant, excessive, unrelaxing, tonic contraction, in greater or less degree, varied or not with spasm, but always present when there is any disease whatever in the joint. The latter may exist so slightly as not to prevent the extremest flexion and extension, or it may exist to such a degree as to arrest all motion as completely as true ankylosis; but it can always be detected when we have a clear conception of its distinguishing characteristics. In the earliest stages of any injury to the joint, supposing such injury to be so slight as to produce the least possible inflammatory action, there may be a mere stiffening of the muscles, not enough perhaps to prevent motion, but always enough when one is looking for it, for the educated touch to detect what I have named, A RELUCTANCE TO RELAX. It is quite independent of the patient's volition, though it often requires careful management to prevent the voluntary efforts from mingling with and obscuring this condition, which is independent of the will. It is the first feeble involuntary intimation of an effort to arrest motion, which, further along, and after the disease have increased becomes palpable enough to the most ordinary observation. It is chiefly in the earlier and later stages when mistakes of diagnosis are most likely to be made. In the beginning, this symptom, being less pronounced, may be overlooked; and later, when it has increased to its greatest degree it may be mistaken for contracture or permanent shortening; and it is also often mistaken for ankylosis when it is sufficient to arrest motion. In the stage of its higher activity there are two conditions by which muscular contraction—the increased, constant, tonic contraction here meant—may be distinguished from so-called contracture, or the muscular shortening, for which it is so often mistaken. There is increase of irritability (independent of muscular power), accompanied with what may be called a relaxibility, while muscles in a state of contracture or permanent shortening are characterised by want of irritability and by inelasticity. The former RELAXES on the application of force. The latter stretches by its physical elasticity, or by the rupturing of inelastic fibrous tissue."

Here the author correctly, I hold, informs us that contraction of the muscles or tendons can arise from "various causes," but only refers to one cause, and again defines two abnormal conditions of the muscle—one, contraction, which relaxes on the application of force; the second, where the muscle stretches from physical elasticity, or ruptures from inelastic tissue.

Although the writer maintains the existence of two charac-

teristic changes in the contracted muscles, he mentions three—first, relaxing by application of force; second, stretching by its physical elasticity; third, rupturing of inelastic fibrous tissue.

This classification is not warranted by any clinical observation given us by the author, or any other writer on this subject; and as soon as Dr. Taylor has mastered my diagnostic method for detecting recovery of inflamed joints, the incorrectness of this classification will become apparent. The conditions he separately defines are but degrees of the same abnormality of the muscles.

At page 325, is given the history of a case of hip joint inflammation which had existed fifteen months, and at the time the patient consulted Dr. Taylor, his joint was evidently in a condition of inflammation; yet, to correct the deformities present, the author's splint, with counter-extension was used, together with weight and pulley as extra tractors. This latter item was equal to a pull of fifty pounds added to that of the counter-extension apparatus, which equalled in all, one hundred and fift y pounds, and all this had to be continued uninterruptedly for six weeks, whilst simple fixed reclination would have succeeded under ten days. I make this assertion, basing it on the history given, viz., that the disease was active; this being the easiest, quickest, and safest period for reduction of deformity.

Another case is related at page 325, a perusal of which shows a poverty of diagnosis—

"Peculiar quality of muscular action and the educated touch"

appear to have been the signs depended upon; and there is mentioned in the history of this case, rupture of the joint and burrowing of the pus down the thigh, which is referred to as—

"Showing how extensive disease of the thigh may depend on previous disease of the hip joint; and, secondly, how the former may go on while the latter is recovering."

This is a misinterpretation of a casualty that sometimes occurs

in hip inflammation. Dr. Taylor has evidently not noticed what others have, namely, that the hip joint distended with pus after rupture, forms a collection external to the joint, which collection may travel downwards, and by the time it has got below the middle of the thigh, ceases to be connected with the joint. This is not always the case. This progression of the joint contents down the thigh, cannot be correctly termed disease of the thigh. Page 326, first paragraph, Dr. Taylor says

"I hope I have been successful in satisfying those who have followed me so far, that it is never safe to dismiss a case as cured, no matter what may have been the method of treatment employed, merely because the pain has been relieved or that there is no hurt in locomotion."

With this opinion and useful hint I quite concur, but of what value is it in the absence of some test to enable the surgeon to end his treatment. Dr. Taylor has here made an omission which cannot be explained, except by the supposition that he has no method of testing the genuine recurrence of soundness. What are here wanted are the signs of resolution. What I maintain to be the signs of recovery are, that the soft parts around the joint appear and feel well atrophied, and that there is an entire absence of pain or tenderness in the part, for instance, as to pain, the patient should awake from sleep in perfect ease, even though he may have been reclining on the affected limb, again when pressure is applied to the ligaments betwen their attachment, or when percussion is performed on the limb, unawares, these tests should give no pain, but the most crucial and infallible test IS THE ABILITY OF THE PATIENT, AFTER USING THE LIMB, TO RETURN IT AT WILL TO THE POSTURE IT WAS MAINTAINED AT DURING TREATMENT; OR, IF A CASE OF ANCHYLOSIS, IT SHOULD REMAIN AFTER USE, IN THE POSTURE IT WAS RETAINED IN DURING TREATMENT. At page 328, the author gives another of his clinical deductions, as regards indications of treatment, which he says depend—

"On delicate shades of muscular conditions," "imperceptible amounts and qualities of motion."

If this were correct, it would be doubtful if the experienced veteran could treat these cases with any reasonable chance of success.

In a treatise "On the Mechanical Treatment of Diseases of the Hip Joint," published in 1873, Dr. Taylor further explains his peculiar views and mode of treatment. Although this volume is mentioned in the preface as "The completer system of Mechanical Treatment," he evidently does not think mechanical treatment applicable to all cases.

"There be cases in which the mechanical treatment on account of Pathological conditions, is not applicable, let such be left out of consideration."

Knowing of none such myself, it would have been instructive to have had this class of cases specified. Chapter one contains statistics of cases occurring in the New York Orthopædic Dispensary and Hospital, and deductions therefrom. In chapter two, the cause of hip joint inflammation is considered to be of a traumatic one in the majority of instances. And at page 12, the crusade against muscular action commences.

"But the muscular rigidity made necessary to diminish the immediate pain and injury of motion, increases the ultimate damage to the joint, not only on account of the steady pressure from the increased muscular action—itself sufficient to destroy the vitality of the parts—but every movement and the weight sustained are transmitted directly to the joint, because of the rigid and inelastic condition of the muscles. So that, on the very first intimation of a diminished ability to bear pressure—which is the great obstacle to a spontaneous arrest of any morbid process within the joint—the exigency of arresting motion to save the joint from immediate pain, causes the muscles to take on a contraction of such a rigid and permanent character as to be a condition of perpetual wounding of the parts. Their own excessive action as well as their inelasticity constitutes a continual source of severest injury.

Hence, there is established a self-continuing traumatic condition calculated to increase and prolong any diseased action once commenced in this joint; the more the disease, the more the muscular contraction and rigidity to avoid motion, and the greater the pressure on and injury to the affected tissue. The purely mechanical force of pressure—that which is due to the confinement of the disease within inelastic walls and the vastly increased muscular action

which expends its force on already inflamed and sensitive structures—is sufficient to prevent, one would think, any diseased movement, once ever so slightly set up, from terminating by resolution while the pressure continues. But add motion to a diseased and compressed joint, and can we wonder at the destructive course disease of the hip-joint ordinarily runs.

We find, then, from our premises as well as from clinical experience, that it is pressure or motion under pressure, which is the destructive agent in disease of the hip-joint. Hence we derive our two prime indications for mechanical treatment.

1st. To relieve the pressure in the joint due to muscular contraction, by temporarily destroying the muscular irritability and contractility.

2nd. To protect the joint from weight and concussion.

The indication for arresting motion in the joint, which is well met by the gypsum bandage and similar expedients, pertains only to a condition of rigid muscular contraction, and consequent increased constant pressure in the joint. But no such necessity exists after the muscular rigidity has been overcome to the degree of entirely removing all pressure within the joint.

On the contrary, motion in the joint without pressure is not only not injurious, but it is highly beneficial."

From the last paragraph in this quotation, it is apparent that its author judges motion in an inflamed joint to be less injurious than pressure; as to the first portion of this quotation the best illustration of its fallacy is to imagine ten cases of hip-joint inflammation identical in degree &c., with the exception that the muscles controlling the joint in five out of the ten cases are paralyzed. Which of the two sets of cases would go to destruction or spontaneous resolution first? If art does not interfere, I should say, the set that are paralyzed, would go on to the destructive stage, and the set with muscles unaffected to resolution, first. Had Dr. Taylor given as much attention to what he designates "quiet fixation" as he has spent in torturing the muscles, he would at this date have held very different ideas, and such as when embodied in an appliance, would have had a most gratifying result, with a saving of much unnecessary trouble to him, and time and pain to the sufferer. The third chapter commences with a complimentary reference to

Dr. H. G. Davis, who first applied counter-extension with locomotion in the treatment of hip-joint inflammation. Better I say that he had never entered the profession, as far as articulations are concerned. He also refers to Dr. Gordon Buck, as having introduced "extension and counter-extension in fractures for overcoming muscular action." This is incorrect as J. H. James, Esq., of Exeter, was the originator, and first practiser of this method. He published it to the profession in July, 1839, at the Meeting of the British Medical Association at Liverpool; whereas Dr. G. Buck published his description &c., in 1867, and on a comparison of the two publications, that of J. H. James's is the better, and has more detail, namely—that of an arrangement to diminish the friction of the limb on the couch.

What is most remarkable to me in the writings of Drs. Bauer, Taylor, and Sayre, is their emphatic protest against the extension treatment, while they all advise some form of extension—for instance in this chapter,

"The painfulness usual during activity is lessened by the quiet of the patient's position, and this is wrongly credited to the effect of extension; while the muscular contractions are still not overcome, the pressure in the joint continues practically the same, and while the surgeon may fancy that his patient is being cured by extension and counter-extension, he often is really getting only a certain amount of temporary relief from fixation."

"In careful, experienced hands, the weight and pulley may be made a valuable means: as frequently employed by the careless and inexperienced, my observations in this country and in Europe, satisfy me that it is inferior in practical results, to the plaster of Paris bandage, which does not seek so much and generally accomplishes the anchylosis which it seeks, and with the leg in a better position than is generally obtained by carelessly employed extension."

At page 22, the author condemns Dr. Davis's appliance, and at page 23, Dr. Sayre's appliance meets with the same fate, and on carefully perusing chapter four, which describes the Taylor appliance, I also feel compelled to pass an adverse sentence on Dr. Taylor's apparatus, which, as he tells me, was made to suit an idea, for after a careful consideration of his opinions

set forth in his publications, it is only too apparent that his erroneous principles, which his appliance represents, makes it unnecessary for me to consider the value of the appliances made to apply those principles in practice, as to the treatment of some of the casualties which may arise during the mechanical treatment, Dr. Taylor makes but imperfect reference.

The next gentleman whose advocacy of the "American Methods," deserves special notice is Dr. L. Sayre who is certainly the "great apostle" of this system. Drs. Bauer and Taylor have hitherto filled the position of clinical labourers in this department while Dr. Sayre has taken the part of missionary; indeed his incessant zeal has (much to his credit and honour) induced him to visit other countries to instruct surgeons, in what he judges to be a valuable addition to the treatment of articular inflammation and orthopedics, and so his name has become known to the "million" in connection with the "American method," this combined with the publication last year of his volume on Orthopedic Surgery and Diseases of the Joints has brought him to the front so prominently that on the publication of his volume it was reviewed in most of our professional periodicals with unqualified approval and in such a manner commended, that indicated to me that insufficient knowledge on the part of reviewers accounted for the laudatory comments.

* The first twelve chapters of Dr. L. Sayre's volume are devoted to orthopedics. With the practically orthopedic portion of the volume I note no advance on the traditional treatment. It may represent the condition of the mechanics of this department of surgery in the United States, and if so, it is behind time compared with British orthopedics as I understand it. I exclude the so-called orthopraxy machine makers, who seem to be stuck in the same quagmire in the new world as in the old.

* Lectures on Orthopedic Surgery and Disease of the Joints, by Dr. Louis Sayre, published by Churchill, London, 1876.

The author begins the discussion of articular inflammation in lecture thirteen, where at page 156-7, the symptoms of sprained ankle are enumerated, and a method of manipulative diagnosis, is advised, such as, if practised in this country, would "stamp" the surgeon in the opinion of the patient as being "a novice," and "at sea" in the matter; granting that the questionable distinctions which Dr. Sayre makes can be detected, then even detection is here mere curiosity, which injures the sufferer and gives no aid to treatment. In page 158, also is enunciated Dr. Sayre's favourite theory, "Blood Blister," which, I suspect, is a purely speculative one, as nowhere in his volume does he refer to any actual proof supporting this "Blood Blister" theory.

"Let us, then, next consider how such disastrous results may be brought about. We will take, for example, a simple sprain of the ankle, which is very common and from which all of you, it may be, have suffered. As I have already told you, a "Blood Blister," or extravasation, is first produced. Such a "Blood Blister" is considered as insignificant under ordinary circumstances, if it be allowed immediately to heal. If, however, the "Blood Blister" is constantly irritated by friction, an ulcer is formed, which rapidly increases in size, and involves the deeper tissues.

This, I believe, is exactly the morbid process going on in one of these neglected sprained ankles. The small quantity of blood effused behind the synovial membrane, or between the cartilage and bone would be speedily absorbed, if sufficient rest were allowed to the part; but there is no swelling and little pain, it may be to give warning of the mischief done, and the patient does not stop his usual walks and exercise. The "Blood Blister" becomes irritated, and increases in size, and finally, on account of the disturbance produced, he is obliged to lay by for a short time."

This "Blood Blister" theory, as laid down in this quotation, refers to joints in general, and the only way to give my grounds as to the incorrectness of this teaching is to discuss that which usually takes place in sprains of the knee joint in particular (this being the joint that gives us the best field for observation and deduction.) I will suppose a Mr. B., who has (during the hour previous to his consulting me) fallen whilst alighting from an omnibus, while in motion, and twisted and rotated inwardly his

knee (which is usually the history of knee accidents not involving fracture.) He is able, in a few minutes after the accident, to walk a short distance, two or three hundred yards, but the joint becomes more painful, distension rapidly occurs, until, at the expiration of an hour, the joint is acutely painful and extremely distended. The history and appearance of the knee induce me to introduce, without delay, a No. 3 aspirating needle, and to aspirate the articular contents, which, in the majority of cases, consist of fluid blood, and coagulates into a firm clot as soon as removed. The patient now has much relief, and the joint is fixed, he is sent home, and about the third day the same distension of the joint recurs, this is aspirated, and is usually composed of bloody serum ; a third aspiration is seldom required. How this hermorrhage within the joint occurs, I am not prepared to say, certainly a blood effusion, which equals four fluid ounces, often more, cannot come from "behind the synovial membrane," or "between cartilage and bone," and be referred to as a "Blood Blister."

With the author's views as to the cause of intermittent night pain in joint distension, with its evils, and the unnecessary dread of joint incisions, so well stated at page 159, I concur, but from many of his details of treatment, pages 160-3, of inflamed or sprained ankles, I am obliged to dissent, such as "hot water," "elastic compression," "friction with the hand," "manipulation and friction," all to be employed "when the injury is first received," and, he adds, at the conclusion of lecture thirteen,

"could such treatment be faithfully carried out in every case from its earliest commencement, there would rarely be need of the mechanical appliances and surgical interference, to be described in our next lecture."

In my opinion these special items of treatment, when practised, are a "Royal Road" to the so-called "disease of the joints," the sufferer having to recover, despite this malpraxis which has been in vogue from time out of memory, and which I am glad to say,

surgeons have surely but slowly begun during the last thirty years to lay aside.

Lecture fourteen is devoted to the consideration of inflammation of the ankle and joints composing the foot, and the reader is introduced to a new appliance which is advised as the best form of mechanical aid in the treatment of ankle joint inflammation, and is so designed that it may and can take for a few hours, a little of the weight of the body off the ankle; and, moreover, it is evident from its construction, that it effectually arrests motion of this articulation. But why the author should here arrest motion, and yet not only not advise its limitation, but the very reverse in inflammation of the hip-joint, I fail to perceive.

"By the splint I prevent motion which would be the cause of relapse."

"I should do well, I think, to explain to you when motion is injurious, and when it is demanded.

So long as there is active inflammation in a joint, motion is injurious, and rest absolutely necessary. In the first stages of inflammation of any joint, rest is also imperative, and, in fact, is the essential element of the treatment; and, as long as acute pain is produced by pressing the synovial surfaces and articular cartilages together, rest must be enjoined; or, if motion of the joint is requisite, in order to prevent anchylosis, then this motion must be always accompanied with extension, in order to relieve this pressure. But, when pressure can be borne without pain, and the difficulty in motion depends upon the contraction of tissues around the joint from want of use or from deposits, as the result of an antecedent inflammation, then motion—passive motion—applied with discretion, is just as much a part of the treatment as rest was in the earlier stage of the disease."

I hold that neither here or in any other portion of his work, does Dr. Sayre explain how we are to detect that motion is injurious. He certainly informs us under what conditions he would allow the patient to use his limb, but it is not reliable (though what he says on this point contradicts his teaching in the "American Lectures.") I hold that in the case of the ankle joint the condition of soundness would be indicated thus:—After moderate use there would be increase of power to extend

the joint, and an equal ability on the part of the patient, by the exercise of his will only, to flex the joint, and these two motions of the articulation should increase by exercise and by volition, not by so-called passive motion, which would give needless pain and trouble, or possibly do harm, or should the ankle have been retained during treatment in the extended position, then the reverse action must increase with use. The cases of ankle and foot-joint disease reported in this volume, are to me of no value, as, with two exceptions, all occurred in patients at an early period of life, 3 to 7 years of age; my experience informs me that at this early age the sufferer can recover from an extensive destructive inflammation of the joints of the foot, with very little aid from art, even despite a method of prolonged fallacious treatment, beginning by poulticing with linseed, cow-dung, bread, sea tang, oatmeal, marsh mallows, ointments, and other filth, whose name is "legion."

In pages 181-4, are given details of the mechanical treatment of the tarso-metatarsal articulations, which is a mode by extension, such as will be highly prized by the anti-muscle and extension practitioners in America and this country.

"The patient should at once be placed upon his back in bed, and extension made from the toes by slipping an Indian Juggle on each toe, and attaching them to a cord fastened in the ceiling."*

Chapter fifteen is devoted to the anatomy and diagnosis of the abnormal conditions of the knee-joint. At pages 186-7, are described the symptoms and mode of diagnosing acute and chronic inflammation of this joint. The symptoms given as attendant on the acute stage, are those generally accepted by

* I recollect a learned professor, when testing the knowledge of his students, asking an impertinent fellow what he would do if suddenly called to a case of bleeding from a varicose vein of the leg, this occurring in the public street, he answered that he would elevate the limb, and tie the patient's foot to the nearest "door knocker," a proceeding quite as reasonable as the Indian Juggle extension treatment."

surgeons, but when the author instructs us as to the manner of diagnosing the chronic condition, he informs us that—

"The erosion can be very easily detected by crowding the articular surfaces together, and slightly twisting them upon each other, when the most intense pain will be produced."

Obtuse indeed must the surgeon be, who cannot detect ever so slight a degree of inflammation in this joint, without this injurious degree of manipulation, which would do more harm in ten minutes than the surgeon could undo in ten days, and is needless if the surgeon has any practical acquaintance with his art, as the condition here referred to is such that the unqualified can almost detect at sight. This form of diagnosis and treatment is confined in England to untaught practitioners "who know not what they do."

In this chapter is also described a condition of the bones forming the knee-joint, which I have never met with, and consequently cannot comment upon—indeed some of the casualties indicated by Dr. Sayre appear, from a perusal of the lecture, to be purely speculative, for in pages 190-3, are given supposed pathological conditions, as explanations of some of the symptoms of articular lesion.

In lecture sixteen, the treatment of the knee-joint is laid down, and is divided into two heads—

"Treatment for the earlier stages of the disease, and treatment when the disease has become so developed that the case requires extension and counter-extension operative interference, &c."

Indeed, the whole of this volume is notable in advising treatment for defects of his method and treatment to correct treatment (remedy for his remedies). For the first stage, "posterior splint," "confinement to bed," "until recovery is well advanced," "hot or cold water," "after a few days have elapsed write for a liniment," "a liberal amount of hand rubbing and passive motion," "and firm compression." No wonder the author adds, "these cases are slow in recovering." The above is the

treatment when the ligaments alone are involved, but when "synovial membrane becomes involved" "an active plan of treatment" is sketched. This active plan of treatment is appended here in extenso. It almost reminds me of John De Vigo, and the good old times gone by.

"When the injury has been followed by effusion into the joint, next to absolute rest, elastic compression is the most essential element in the treatment. Place the patient in bed at once. It may be, and quite probably will be necessary, in the majority of cases, to make some local depletion by means of leeches or wet cups before resorting to any measures for the purpose of promoting absorption of the fluid. The necessity of local depletion, and its amount, will be decided by the vigour, general health of the patient, and the degree of inflammatory action present, as manifested by increased heat about the joint, increased frequency of pulse, pain, and general constitutional disturbance. After local depletion, hot fomentations and elastic compression, secured either by means of a fine India-rubber bandage, or, still better, by the double India-rubber bag before referred to (see Fig. 131), will be of the greatest possible service.

If absorption of the fluid does not take place rapidly under this treatment, counter-irritation may be resorted to by applying blisters above and below the joint. Never apply your blisters directly over the knee-joint, but apply them above the capsular ligament, and below the ligamentum patellæ. In addition, iodine ointment may be applied over the joint, and covered with oiled-silk. Never use iodine locally in the form of tincture, for the reason that it is painful, the alcohol is soon evaporated, thereby leaving the iodine as a coating upon the skin, which permits only a very small quantity to be absorbed. After the first application, succeeding applications are of no service as far as absorption goes; for they simply facilitate the destruction of the cuticle, and until this layer is removed, further absorption of the iodine cannot take place. The objection to iodine, therefore, in the form of tincture, is that it renders but little service except when its effect as an escharotic is desired; but, used in the form of an ointment, scarcely any pain is produced, no exfoliation of the cuticle follows, and therefore absorption can go on, and in this manner the remedy renders continuous service.

When the acute symptoms have subsided, great benefit may be derived by freely shampooing the parts, slightly lubricated with cosmoline, vasoline, or any substance which will permit the hand to glide over the surface freely, without producing too much irritation to the skin. Friction should be

applied in this manner with very great freedom for from twenty minutes to half-an-hour at each sitting; and, while one hand is made to do rubbing around the joint, the other hand should rub up and down upon the limb above the joint, thereby greatly facilitating the absorption of the effused fluid. If the case does not yield to this treatment, and the effusion increases so as to make tension sufficient to paralyze the absorbent vessels, it may be necessary to aspirate the joint and remove all the fluid possible. In many instances, if only a small quantity of the fluid is removed, the tension upon the absorbent vessels will be relieved to such an extent that the remainder may be absorbed by the means already mentioned. This is an application of the same principle that governs us in the management of certain cases of ascites; namely, first, removing a portion of the fluid from the abdominal cavity in cases where great distension is present, and then resorting to diuretics, hydragogue cathartics, etc., for the removal of the remainder."

What labour to the surgeon and annoyance to the patient consequent upon pain and delay, is here shadowed forth, when, with an aspirating needle the joint can be relieved in a few seconds, ease secured, and time economised. Aspiration of joints is evidently an unexplored field to Dr. Sayre, for the contents of page 197 unmistakeably point out dangers and practical difficulties which, I say without the slightest hesitation, do not exist in practice. In the last paragraph of the same page, he advises the making of a fine incision if the joint contains pus; this is not a conservative item of treatment. I have frequently succeeded in making a perfect and rapid cure of knee joints distended with pus, by the practice of repeated aspirations with efficient fixation. That such joints may sometimes have to be incised I admit, but aspiration and fixation usually succeed and much shorten the treatment, and with vastly less risk than incision. Incision is the "dernier ressort" and an excellent one at times when the joint contains very old collections of condensed pus, &c., but this will not occur unless mismanagement or neglect has extended over at least twelve months. At page 199, Dr. Sayre when discussing the treatment and the modus operandi of his procedure, makes this, to me, extraordinary statement

"For the tendons will heal by the time the articular surfaces have resumed a healthy action."

Now, tendons are usually only a few days healing; surely it is not meant here that they will take as long a period as the inflamed joint which may take weeks. In the same page commenting on Sir Benjamin Brodie, the lecturer says

"In looking over Sir Benjamin Brodie's works, I find he recommends positive rest, and that is all. But you may do this—you may rest the joint in splints—but you do not do all that is required. You may keep the limb perfectly still, and locked up in every conceivable way, and yet do not overcome the tendency of the muscles to contract—you do not prevent the reflex action."

Here Dr. Sayre is certainly mistaken, for in page 139 of Sir Benjamin Brodie's volume on disease of the joints, fifth edition 1850, he will find that the extension method (or counter-extension) is advised, and details for its practical application are given, but I must admit the arrangement would not allow of the application of a hundred and fifty pounder, as Dr. Taylor reports, but which, Dr. Sayre says, is not essential.

"Simply enough extension to overcome the reflex contraction of the muscles."

Sir B. Brodie's mode of applying extension was, I judge, such as would, if required, permit double this amount of traction, but he does not report well of it, and the veterans in the medical profession in Great Britain, will readily vouch for Brodie's acuteness of Clinical Observation, and, had there been any merit in extension, it would not probably have escaped his observation, interested as he was in this department.

On page 200 is a diagram of the Sayre knee-apparatus, and both the drawing and text inform us that while it is intended to diminish pressure (take it off altogether it cannot) it is also designed to arrest friction, although Dr. Sayre is an advocate for friction in other joints while yet in the unsound state. On the same page we are informed that

"When the joint is filled with liquid acting like a foreign body, as in the ankle-joint, it is advisable to give the patient the benefit of the doubt as regards being able to secure absorption, trusting that the fixation of the joint in

such manner as will relieve the patient of all pain and remove all pressure from the diseased surfaces, will diminish the amount of irritative fever, and give us the opportunity to build up and invigorate the general system, so as to render the absorption of fluid practicable."

This again shows that its author is a novice in the aspiration of joints, "to give the patient the benefit of a doubt" here is to prolong the abnormal condition, and in many cases the delay would be fatal to success.

At page 201 is a pictorial illustration of a case of inflamed knee-joint with angular deformity, and posterior luxation of the head of the tibia. On page 206 is a like exhibition of the same patient after the application of the knee support, and the accompanying text is so worded that it may be supposed that the deformity and luxation had been corrected in one hour. Now this was in this case impossible, and I base my assertion upon the contents of pages 202-4, where details are given of a tedious process which the patient must undergo previous to having the knee splint applied. A perusal of pages 202-4 convinces me that days, not an hour, would have to elapse before that patient could have been exhibited as free from deformity. In the preface to this work, Dr. Sayre informs the reader that it contains

"Many expressions which I would like to change."

It was Dr. Sayre's duty as a public teacher to change anything of the correctness of which he had a doubt.

He continues to discuss treatment in lecture seventeen, and he advises that

"The instrument must be worn until the joint is well; until concussion, produced by bringing the tibia and femur together, does not cause pain, and until pressure over the coronary ligaments is painless. When this can be done, you may remove the instrument and commence the passive movements and manipulations that are to restore motion to the joint, and complete the cure."

Here are given fallacious symptoms, supposed to indicate the sound state, and that the limb is fit for use, but which are not infallible criteria of the soundness of the joint. Again, "passive

movements and manipulations" are not required "to restore motion to the joint." The whole of page 208 is devoted to the recommendation of manipulative details, which at pages 209 and 211, he warns his listeners are dangerous.

"There are some cases in which the disease progresses reasonably well until passive motion is resorted to, and then there is at once an almost constant tendency to new inflammatory action, in consequence of such movements, however careful they may be made."

The risk is much increased when the surgeon is ignorant of the existence of danger. Why should there be any risk? Indeed, after perusing this paragraph, I was not surprised to find that he admits the success of pretenders, and professes to divine their means. (See page 208).

At page 210 is introduced an illustration of a knee machine made by Mr. Darrach, New Jersey, which, from its appearance, might have been taken from "Scultetus' armamentum." In referring to anchylosis of the knee joint, Dr. Sayre strongly advises the "straight position," and I have much pleasure in seconding his opinion. At page 211 a series of illustrative cases are given, and, when relating the history of case No. 1, he refers to the marked relief from pain on extending and counter-extending the bones of the joint.

"When Dr. Cleveland took hold of her foot to move her in position for the operation, she seized him by the arm with her teeth, and held on with the grip of a tigress, until I grasped her limb above and below the knee, and by firm extension and counter-extension, to separate the bones from each other, gave her such relief that she let go her hold upon his arm."

That immediate relief followed Dr. Sayre's manipulation I feel confident, as his procedure involved in its practice that "quiet fixation" which Dr. Taylor points out as inseparable from extension and counter-extension.

Any surgeon who has moderate experience, must have occasion at times to raise from a McIntyre splint a compound fractured leg, for the purpose of cleaning beneath the limb, and he will admit

that the way to do it with least pain, is to grasp the ankle and knee of the injured extremity and counter-extend it, raising the leg at the same time; but no surgeon would be so unreasonable as to throw away the McIntyre and take to extension only. Extension per se is an evil, and, in serious cases, every item must be carefully considered, and that method with least defect should come into general use. What is the very best method? Clinical observation alone can solve this question. After a careful perusal of Dr. Sayre's typical cases of knee-joint disease, I fail to note anything specially instructive in them. They were treated by the usual routine of treatment common among specialists here and abroad, viz :—"Tenotomy," "Brisement force," "passive motion," "manipulation," and "imperfect fixation." There was no stated theory, yet they all did remarkably well. That Dr. Sayre is not usually so successful, I gather from the prominence he gives to "exsection or amputation" in this lecture.

In exsection Dr. Sayre is almost without an equal; and, as the exponent of a method of treatment of joint disease which I hold is a straight way to exsection, his opportunities of operating may have been many. Excision is also argued in lecture eighteen, the mechanical treatment of which is "poor indeed."

In lecture nineteen, inflammation of the hip-joint is expounded, the anatomy, pathology, etiology, and symptoms of the first stage of this disease are given, and with Dr. Sayre as with others, the treatment of hip-joint inflammation is looked upon as being the best test of methods. In my opinion the knee-joint is the best field for clinical teaching.

The discussion of the causation of this complaint, and the views held by Dr. Bauer are repeated; at page 234, the symptoms are given of the first stage, this is continued in pages 235-40, where are enumerated very many useless and fallacious details.

He informs me at page 241 thus :

"We have thus dwelt upon them at some length, because many of them

differ from those of more advanced stages only in degree, consequently require only one description; but more especially because it is in this stage that the diagnosis is most difficult and important."

I hold the diagnosis by a method now at our service to be just as easy in an early as in a later stage.

At page 240, a means of manipulative diagnosis is prescribed, which, if practised would do more harm in five minutes, than could be undone in five months; he also asserts that no one symptom is diagnostic of this lesion. I append this manipulative diagnosis in extenso.

"Again, holding the knee with one hand and fixing the pelvis with the other, press the thigh-bone upwards. This manœuvre generally causes pain, which can be detected in the patient's face, even when he denies he feels it. If the manœuvre does cause pain, then observe whether or not extension relieves it. To make your examination doubly sure, if tenderness has not already been detected, sweep with the thigh its largest possible circle, by which means the head of the bone cannot possibly escape being brought in contact with every part of the acetabulum."

Yet, concerning these manipulations Dr. Sayre informs us in his lecture at Philadelphia, and printed in the "MEDICAL AND SURGICAL REPORTER," January, 1877:—

"Let us find out whether it be hip disease truly, or not. If it be disease of the hip-joint the adductor muscles would be rigid. Here they are soft, and I can adduct and abduct his limb. If I limit my examination to the hip-joint alone, I find that the limb moves freely, and I can invert his toe. Were there disease in that hip with effusion such a movement would all but murder him. If there were effusion in the joint, with this amount of distortion, no power on earth could invert that toe without rupturing the capsule and allowing the effusion to escape."

His own language in this quotation applies to most of his manipulations performed for diagnostic purposes, indeed the manipulations that "would all but murder him" in Philadelphia, are not so severe as those advised to his class at New York.

Referring to the explanation of knee-pain symptoms, the author appears to have forgotten Dr. Bauer's very conclusive

explanation by reference to the anatomy of the obturator nerve, as given in his works.

In the beginning of lecture twenty, is an attempt to solve the causes of the deformity of the so-called second stage of hip inflammation, and all is attributed to hyperdistension of the capsule with fluid. That this may occur in the dead subject, I am willing to admit, but I think it does not in the living subject, on the contrary, the deformity arises from muscular action, and this Dr. Sāyre partly admits at page 244, first paragraph. I cannot see that hyperdistension has any special effect on the living person, to determine the direction of the deformity. For instance, sometimes we meet with an extreme quantity of fluid in the knee-joint, and an absence of disease, and there is no contraction or deformity, for a good reason, there is no joint tenderness to call the muscles into action. The first of the author's typical cases is given at page 245, and he informs me that all the symptoms were aggravated by weight and pulley, which had been persevered in for ten months at St. Luke's Hospital.

At page 247, the signs of the third stage are given, and the variation of deformity is referred to rupture of the capsule. With this I do not concur. A rupture of the capsule may take place without the variation of deformity supposed to be characteristic of the third stage. The variation depends upon the fact that another set of muscles are sometimes called into action, namely—those that are inserted into the tibia (hamstrings.) Dr. Sayre in a very able manner disposes of the ancient theory of dislocation of the head of the femur from disease.*

* My fellow townsman Dr. Macfie Campbell informed me that in one case of exsection that he performed at the Northern Hospital after making the usual incisions to expose the joint he found the shaft of the femur separated from the articular head, the separation had taken place at the neck, the articular head he found in the acetabulum, with its vitality unimpaired, and the ligamentum teres intact.

At pages 254-5, the prognosis of this complaint is indicated, and may be summarized thus—first stage, good result; second stage, doubtful; third stage, hopeless, and fit for exsection. Referring to the treatment of the second stage, he says that

"To decide what is the best treatment that can be adopted, requires the greatest skill and judgment on the part of the surgeon."

That some knack genius, or long experience is necessary to treat this, or any other stage, is ridiculous. In reality, nothing more is required than consistent principles, and the exercise of common sense* and skill in applying those principles to practice.

In lecture twenty-one, treatment—we find that mechanical apparatus for hip-joint disease, and its application, are considered. Treatment is divided into local and general, whilst tonics, with oil and stimulants, are prescribed, and excellent hygienic rules are insisted upon, together with sea bathing in warm weather. With this latter remedy, is the steel splint taken off?

At page 250, the author gives his readers another of his theories of treatment. I say another, for it may be noticed that Dr. Sayre's theory varies according to the locality of the disease, the principles he advises in treating one joint he sets aside when treating another, nay, he even varies his theory whilst treating the same articulation.

"In this case, then, I have accomplished what? By my excavation I have removed the essential morbid cause; by the splint I prevent motion, which would be a cause of a relapse." Page 167. Ankle.

"So long as there is active inflammation in a joint, motion is injurious, and rest is absolutely necessary." Page 169. Ankle.

"In all these cases, no matter in how favorable condition the joint may be when the instrument is removed, it is necessary for a time to apply some kind

* The late Prof. R. Knox the anatomist when instructing his class, always (jocularly) included this among the special senses, but also remarked that it was this one that was frequently absent in many persons.

of apparatus to protect the joint against accidents, such as falls, trippings, etc., and also to prevent too free motion of the joint." Page 209. Knee.

"Again, firm support may be given to the limb, and at the same time motion of the joint allowed within the limits of safety, by the use of the instrument which I now show you, made by Mr. Darrach, of Orange, New Jersey." Page 209. Knee.

"Motion is much more painful than rest, even when rest is accompanied by pressure produced by muscular contraction. Hence the patient naturally choosing the least of two evils." Page 246. Hip.

"The local treatment which has grown into favor during the past few years, but which I have advocated earnestly for the past twenty-five years, depends upon the necessity of giving absolute rest and freedom from pressure of the parts involved in the disease, without materially interfering with the mobility of the joint. Page 259. Hip.

"Bonnet's method—fixation without extension—for local treatment has been the plan abroad. In this country, however, fixation with extension has been chiefly employed, and to afford an apparatus that would meet these indications, leathern splints, gypsum and starch bandages, and strong wire gauze, moulded to fit the limb, have all been employed with more or less benefit, but all these plans prevented mobility." Page 259. Hip.

"There are many cases in which the inflammation is so violent, and the pain upon the slightest movement so intense, that absolute rest is requisite for a time, and in such cases the fixed dressing alluded to answers a most excellent purpose. Under these circumstances I employ most commonly the cuirass, with extension. (See Fig. 190.) But motion is as essential in retaining a healthy condition of the structure about a joint as light is essential in retaining a healthy condition of the eye; for the ligaments around a joint will become fibro-cartilaginous, or even osseous, if motion is denied them, particularly if a chronic inflammation is going on within the joint with which they are connected. It was in consequence of such accidents occurring in several instances that I was led to contrive some plan by which extension could be maintained that would remove pressure from the acetabulum and the head of the femur, and at the same time permit motion of the joint, thereby retaining the capsular ligaments in a healthy condition." Page 260. Hip.

"It was designed that the motions of the joints should be free, and no harm will attend this freedom of motion, unless the joint itself becomes the seat of disease; but on the contrary, restraint will give rise to more or less anchylosis and deformity." Page 270. Hip.

"If left to itself, the rest which is so essential to the joint is procured by the firm muscular contraction which prevents motion, and this is so perfect, in many instances, as to assume the appearance of genuine bony anchylosis." Page 274. Hip.

"If employed at all, they must be frequently removed, and passive motion employed, else anchylosis, more or less complete, will take place, and the last state of the patient may be worse than the first." Page 274. Hip.

"The patient should then be secured in some apparatus—the wire cuirass (Fig. 169), is most convenient—which will prevent the possibility of motion." Page 277. Hip.

"This plan is to be pursued until the more acute symptoms have subsided; but as it is a disease chronic in its nature, long confinement in a bed is injurious to the general health, and we must, therefore, contrive some mechanical appliance which will give extension and counter-extension, at the same time admitting motion of the joint while it permits the patient to take exercise in the open air." Page 13. American Lectures.

"In some cases where the disease is very acute and the children very small, this is best effected by placing them in a wire cuirass; a modification of Bonnet's grand appareil will be found very useful. When this treatment is employed, it is necessary that the child should be taken from it very frequently, and have all the joints carefully moved, otherwise too long-continued rest of the joints may end in anchylosis." Page 14. American Lectures.

"Perfect rest, long-continued, even of the diseased joint, is decidedly injurious, as there is danger of it resulting in anchylosis." Page 14. American Lectures.

From quotations such as these the reader has to evolve a theory of treatment, for the author appears to have no method beyond a "rule of thumb;" and "the greatest possible skill and judgment," on the part of the surgeon are required, if he depends on these contradictory principles to guide him.

Again, what can be the meaning of the quotation at page 260, "Hip?" How can the the comparison between an inflamed joint, "and a healthy eye," illustrate the matter? There is no similarity of function or state. It reminds me of the stupid remarks that ignorant and senseless people frequently make to their medical

attendant. When the patient is prevented by disease from leaving bed, they say "he cannot possibly get well if you keep him thus in bed," not considering that rising from bed means convalescence.

Further, what is meant by the following?

"It (the appliance) was designed that the motions of the joints should be free, and no harm should attend this freedom of motion unless the joint itself becomes the seat of disease."

Are the appliances used where no joint inflammation exists, and if so, for what purpose?

At pages 262-3, the Sayre hip-apparatus and its mode of application are given, and the inventor mentions that other means must be used during the night, such as the weight and pulley; this latter he designates "bed-extension." At page 268, the information is given that the appliance cannot support the weight of the body, and crutches are advised as accessories. Until I had read this page I understood that its designer taught that his splint prevented intra-articular pressure, but if it cannot sustain the trunk weight, it certainly cannot relieve intra-articular pressure.

From the last and following paragraphs of page 269, it is apparent that Dr. Sayre, like Dr. Taylor, has not found the value of the simple but very important artifice in the mechanical treatment of this affection, namely, locking the knee-joint, which alone, I suspect, would, in the treatment of very early inflammation of the hip-joint, give results quite equal to those obtained by the use of their own very expensive and illusive machines. The treatment is continued in lecture twenty-two; and at page 273, the non-mechanical details are discussed, which consist of change of air, leeches, ice, mild mercurial internally and externally, "energetic antiphlogistic," and pressure by strapping. In my opinion, Dr. Sayre's therapeutics are antiquated, and his mechanical treatment is a puzzle, the surgeon being introduced to so many appliances,

all for the hip-joint, each of which is very complicated, as well as very expensive.

The first stage, he says, can be treated by the Sayre or Taylor appliance, but when

"There is a great deal of tenderness around the joint, and other evidences of inflammatory action are present," *

Then he advises weight and pulley, but

"If the patient is uneasy, restless, irritative, and does not bear the extension apparatus well,"

it is advised to place him in a wire cuirass, or other fixed apparatus. Much as Dr. Sayre has advocated the extension treatment, more emphatic testimony than he gives here to the superiority of posterior fixation could not possibly be borne.

The above amounts to this:—That if the patient cannot tolerate the irritation of extension, then give him plenty of fixation and ease his pangs.

The second stage is also advised to be treated by extension to reduce deformity, then the hip appliance, and the "wire cuirass." Hyper-distension of the joint, by accumulated fluid, is to be relieved by aspiration, or canula. In the performance of this operation, we are instructed in the details of a method more injurious to the patient than the tension of the accumulated fluid; in fact a repetition two or three times of the procedure here counselled, would, in most cases, necessitate exsection of the articulation. Those accustomed to posterior fixation and to the use of the aspirator, know that the latter instrument can be employed with perfect safety, and with such little pain to the patient that anæsthetics are rightly deemed unnecessary.

* Is there no inflammatory action in the commencement of this lesion? I should say yes.

At page 278, when discussing the treatment of the third stage, the author informs us

"I only suggest that Nature should be assisted by mechanical appliances in her efforts to bring about this spontaneous cure."

"It is from Nature's method, however, that we are to deduce the principles that are to govern us in the treatment of these cases."

What is the method of Nature? She attempts to arrest motion, both by muscular action and by the deposit of plastic matter around the joint. How can the Davis-Sayre method of encouraging motion be termed assisting Nature's efforts? For as soon as art slips in with an efficient method of fixation, which includes arrest of motion and pressure, Nature takes away her rude mechanics, without showing any signs of being offended.

At page 208, the description and discussion of the mechanical treatment of hip-joint inflammation terminates, and it is obvious that Dr. Sayre has recourse to several appliances, appearing to have least faith in his own invention. Then the Taylor splint, or if the case does not progress well, the weight and pulley are tried by him, and should these means fail to give satisfaction, the "wire cuirass" a method of posterior fixation, is, as a forlorn hope, pressed into the service.

And, although the "wire cuirass" is such a trustworthy remedy, Dr. Sayre frequently warns his readers of the dangers attending it, which dangers, I hold, are purely imaginary, and originate from a theory of treatment which is other than correct. Dr. Sayre, I learn from his lectures, resorts to the "cuirass" in severe cases only; but had he employed it in the early stages of the affection, the grave apprehensions which afterwards impel him to the "cuirass" would in all probability have been spared him. He, in fact, commences with a medium remedy, and, should the case retrograde, another medium quantity of treatment, until it is late, when complete fixation is resorted to, so that some indeed tend to recovery, and do recover with his imperfect treatment, and are

put down as evidence to justify the means. This he admitted by his resorting to posterior fixation, when checkmated, for want I hold of this very posterior fixation, which he rejected at the commencement of the inflammation.

The accompanying cases given as illustrative of his treatment of hip-joint inflammation, are cases wherein Nature had struggled on to the third stage, when Dr. Sayre interfered and corrected the known deformities that accompany her method. Most of the cases in this volume are evidences of personal skill, rather than typical cases to guide the student in treating the various phases he may meet with. They do not illustrate the correctness of any principle; and he closes his lecture by informing us at the same time that the operation of exsection may be unnecessary.

"Lecture twenty-three is devoted to the history and description, with illustrative cases, of exsection of the hip-joint. This operation, as I have previously asserted, is one of which I have not and hope will never have much personal experience. I have witnessed several of these operations in various joints, and seen many patients some years after they had been operated upon, and from observation I am convinced that those cases of joint inflammation which did well after exsection, would have done better had they been treated by a correct method. I also believe that some cases are met with, which a correct method may benefit but cannot save; in such cases exsection is in vain. I have seen cases in which the patient having no store of vitality, the disease commenced with inflammation of ankle-joint, then hip inflammation; and after the accession of brain, kidney, or lung disease, the sufferer succumbed; as the Turks would say "his time had come." Correct treatment is no warrant that the sufferer must recover, but granted that the subject when he consults the surgeon, has a fair amount of stamina, then, if treated by a correct method, he must recover, and does so with the aid of art. But if treated

by a method based upon erroneous principles, and he recovers, which many do and "excellently well," then his recovery was despite the surgeon's interference. This, all experienced practitioners well know may occur. Sydenham wrote as an experienced observer when he asked the question

"What is the particular importance in just telling us that once, twice, or even oftener, this disease has yielded to that remedy?"

A cure does not always commend the reputed means.

While admitting Dr. Sayre's undoubted skill in the department of hip-joint exsection, it is not possible as yet, for him or any other surgeon, to give exsection its real value, until a correct theory has become more general among surgeons, as the treatment both here and on the Continent is sometimes some aid, at others, an obstacle to resolution.

Even among those who have hitherto sanctioned and frequently performed hip-joint exsection, dissenters have presented themselves. Not to mention others, Mr. Timothy Homes of London, has given us his views in the "LANCET," Nov. 1877. His lecture is a very interesting addition to the recorded opinions on this subject, and Dr. Sayre's special teaching is therein ably and fully discussed.

In lecture twenty-seven, the author commences to illustrate his views regarding the etiology and treatment of anchylosis. A perusal of his volume shows us that this is a casualty, the advent of which he specially dreads, and this special lecture equally shows that when he meets the difficulty, he has abundant courage to grapple with it. In fact his deficiency in the knowledge of his subject, is almost compensated for by his untiring zeal. In this lecture we find no information which is not contained in the treatise by Dr. Little, and also in the works of other surgeons both past and contemporary.

There are cases reported, from which Dr. Sayre deduces

special information, but as they have been called into question by so able a clinical observer as Dr. Bauer, this caused me to review some of my own cases illustrative of the discussion between them.*

What is meant by anchylosis? Generally that an articulation has been in an unhealthy condition and has recovered with permanent or temporary stiffness. Now, all writers, myself excepted, teach that this is the result of rest, and that the more rest, the more certain anchylosis, and they so tone their teaching as to impress the student that recovery with anchylosis is in some way blame-worthy.

But it should be remembered, that patients suffering from other diseases, such for instance as smallpox, scarlatina, and diphtheria, recover from the disease, though they ever afterwards bear upon their persons traces of the malady which afflicted them. Yet no sane person ever thinks of blaming the medical attendant for the pits and scars which his patient presents. Nor should it

* In the "SAINT LOUIS CLINICAL RECORD," May, 1877, Dr. Bauer gives a very able resumé of the history of operation for relief of true anchylosis and other matters pertaining to this difficulty. A perusal of this caused me to review some of my own cases (long cured) and carefully to read the discussion between Drs. Bauer and Sayre, and have been much instructed thereby, and was also able to verify Dr. Bauer's views, as to the astonishing amount of motion at the hip joint that can be simulated. In one case, the patient, though firmly anchylosed, could extend his thigh to a line with the trunk, and also bring it to a right angle with the body, and further, ran up a perpendicular iron ladder, sixteen feet long, without any difficulty. Many cases I have witnessed, got up and down stairs, so as to defy detection of the existence of anchylosis, until carefully examined with pelvis fixed. It is very apparent that Dr. Bauer has failed to convince Dr. Sayre of this condition, for in the "Transactions of the Philadelphia Medical Congress," Dr. Sayre fails to notice its existence in the case reported at page 596 of the "Transactions," though Dr. Rea Barten graphically describes the symptoms of anchylosis, and also fails to diagnose it, though he does not go so far as Dr. Sayre, who designates this case as one of "good motion."

be otherwise with cases of hip-joint inflammation. Recovery with anchylosis will ever and anon occur, but it should be the surgeon's aim to diminish the chance of anchylosis remaining, after the inflammation in the joint has undergone resolution.

To succeed in the surgery of joint inflammation, I believe it imperative to recognise at least four varieties of anchylosis.

First—True anchylosis : Bony union of the bones comprising the joint, the result of a high or erosive degree of inflammation. It may result with or without efficient treatment.

Second—Fibrous anchylosis : A deposit in and around the joint capsule, of much plastic organizable material, the result of a high degree of inflammation. It may occur with or without efficient aid.

Third—Latent anchylosis : That is, a condition maintained by a fractional degree of inflammation, not to be detected by any digital or manipulative test, but by use simply, and this condition may result either from ill-treatment, or from the want of sufficient prolonged treatment by a correct method.

Fourth—Simple stiffness : A condition remaining for a time only, after genuine resolution, which will pass away quickly or tediously ; its progress being stimulated by the will alone.

The first form of anchylosis is usually permanent, and lest any attack of inflammation should terminate in this condition, that position allowing of the utmost possible use to the joint in future, must be secured at the onset of the treatment. Once consolidated, however, the joint is not very liable to have periodical remissions of tenderness.

The second form may become permanent even when genuine resolution of the articulation has been attained, and is liable (though rarely, once it has become sound), to recurrent inflammatory action, such as may not incapacitate the sufferer from

attending to his duty; but at this point, if aid from art is not secured, a limb that has been cured in a correct position, is very apt to vary from that position.*

The third form of anchylosis is that which most puzzles the surgeon, who, on examining the affected joint, detects nothing but stiffness, and therefore orders his patient to exercise the articulation. This the patient reports he cannot do. A consultation follows, the patient is put under the influence of ether, passive motion is employed, twists and turns are performed, but in vain; for the patient is unable to make use of his joint, as his adviser would wish, who frequently doubts his patient's willingness to try to use it. It would indeed be as reasonable to attempt to cure a fever patient by kicking him out of bed, as to benefit joint disease by wriggling at the articulation, in fact neither the one method nor the other will succeed, until convalescence is well established.

This form can be detected by noticing that the limb, after discontinuing fixation, varies from the position it was in at the termination of treatment and cannot by the will alone be returned to the initial line or angle. The latter test is the negative of that indicating resolution.

At page 211 of Dr. Sayre's volume, the author refers to this condition, and is at a loss how to explain or diagnose it.

"There are some cases in which the disease progresses reasonably well until passive movements are resorted to, and then there is at once an almost constant tendency to new inflammatory action, in consequence of such movements, however carefully they may be made."

Such cases do require to be managed with the greatest caution, if this, the third form of anchylosis is unknown to the

* I have not included in this class of anchylosis, contraction of muscles, as this may or may not exist with joint stiffness, for cases occur when, after division of the tendon or tendons, perfect radius of normal action is at once secured for the joints.

practitioner, but once recognised, it is not without promise in regard to final results concerning motion. It is the attendant's want of knowledge as to the exact state of the articulation, that obstructs a successful issue. I find that Mr. H. Marsh has noticed what I call the latent form of anchylosis, but has not attributed to it any clinical value, nor has he recognised the lesson, which, I hold, it teaches us. At page 98, "BRITISH MEDICAL JOURNAL," vol. 11, for 1877, Mr. Marsh says

"This use of weight at night is a matter of great importance. If it be neglected, you will find in many cases that although active disease has ceased, the limb will, in the course of a few months, become flexed upon the trunk, so that the child walks more and more upon his toe, and with more and more lordosis."

The fourth form of anchylosis is that condition of joint stiffness, in which Bathers, Rubbers, Shampooers, Movement-curers, Muscle-thumpers, Huttonists, Hoodists, and Galvanists, acquire and maintain a reputation for knowledge and curative skill. When a case of this class is transferred to one these special practitioners, time and some deceptive ceremony, complete the case, which the surgeon has previously brought to genuine resolution, yet not to perfect use. When the surgeon learns the result, even he too frequently, from an imperfect knowledge of the signs of resolution, at once concludes, that here is something "not dreamt of in our philosophy." For example, at page 303 of Dr. Bauer's second edition, is given a case of joint disease successfully treated by the author, yet from his non-recognition of the fourth form of anchylosis, a female quack with neither knowledge nor skill, secures credit due to Dr. Bauer; because, if the joint had not been already made genuinely sound by Dr. Bauer, motion could not have been restored by any amount of scrubbing, &c., even if all the Huttons and Hoods, "et id genus omne," since the days of Adam, had been engaged in the case. This fourth, and to be hoped for, condition of stiffness is indicated, when, after use of the limb, the patient is able to vary it from, and return it at will to, the posture it was in during treatment.

Some of my readers may reasonably ask :

Will no amount of rest anchylose a joint where there has been no inflammation, or only a slight degree of it? For all practical purposes, I say certainly not. No surgeon need fear to err from over caution. W. J. Little, M.D., the founder of this department of surgery in England, at page 31, in his volume on anchylosis (though in his published views he dissents from myself) gives most important evidence corroborating this.

"We are credibly informed, that in India, religious devotees, after twenty years' duration of voluntary contortion of the limbs, are restored to symmetry and activity by the energetic manipulations of the native medical practitioners. It appears not improbable, that a greater natural looseness of the articulations in the inhabitants of warm climates, and some influence exercised by an elevated temperature, in relaxing the contracted tissues, may favour this result of oriental skill and perseverance ; but the practitioner who would expect similar good fortune in our climate, would be disappointed."

Here we are informed that after "twenty years' duration of voluntary contortion of the limbs," motion is restored by treatment and favourable conditions of climate. But Dr. Little ignores the very evident factors which render the restoration of motion possible, viz. : First—a joint which though stiff, is perfectly sound, and second—a change of ideas on the part of the patient, who has become willing to exercise his joint, and tries his utmost to do so. The joint being sound, his endeavours are successful, and motion is restored. This is the explanation of the result, not manipulation, unctions, or warm climates.

Dr. Sayre's work is entitled "Orthopedic Surgery and Diseases of the Joints," yet it is confined almost exclusively to the joints of the lower extremity, with their treatment by the Davis mechanical method, together with additional novelties taught by Dr. Bauer. Indeed the book reads like an elaborated copy of Bauer's volume. I fail to note in the treatment of the inflamed articulations any originality that can be traced to Dr. Sayre. Even the Sayre splint Dr. Taylor lays claim to. Neither have I noticed any new truths

in the work, in fact nothing but the reiteration of the ancient doctrine, dread of prolonged rest, with appliances so constructed as to enable the surgeon to carry this doctrine into practice.

The fact of their being adapted to the requirements of this ancient and well-known doctrine, accounts for the popularity of Sayre's splints. The joints of the upper extremity are slightly alluded to just sufficient to enable the reader to perceive that Dr. Sayre knows a little less about them than his contemporaries.

Chapters twenty-four and twenty-five are also devoted to the explanation of the treatment of spinal diseases which he has been able to popularise in this country, and is what I hold to be a medium method of posterior fixation, and when practised by surgeons in this country, who have been hitherto accustomed to the old method of lateral pelvic crutches, its superiority must appear undoubted, but I know from observation that it is very inferior in efficacy to Dr. Bauer's posterior shield, with which wonders can be done. Anent the "jury-mast," of which Dr. Sayre makes much of; what purpose does it serve, to lumber the patient with this tackle when a bran stock will do more, and pleasanter? It would be as reasonable to rig a bow-sprit to the patient's abdomen, from which to suspend an inflamed knee-joint. Again, concerning the preliminary suspension previous to applying the jacket, the argument advanced by Mr. Marsh, against the continuousness of the effect of Dr. Sayre's portative hip appliance is equally good against continuousness of the effect of this preliminary suspension. The most that can be advanced for this method of treating spinal disease, is that it is superior to the old method almost universally preached in this country (but which I never practised), and that when the disease is situated near the middle of the spine, a fair amount of fixation can be secured, but when situated low down or high up, as in the cervical or lumber portion, it is a fractional assistance only. Although the recorded teaching of a professor of surgery, Dr. Sayre's book contains more

contradictions and errors than any treatise yet published on this subject. Dr. Sayre has christened his method the "American method." It has been extensively used in this country, and, from personal observation, I can confidently assert its utter failure.

It has been said by our transatlantic friends that their method has not been well tried by us. The profession can judge for themselves, by consulting Mr. Howard Marsh's interesting paper, published in the "BRITISH MEDICAL JOURNAL," page 20, 1877. We appear from his evidence to have carried out the details of the extension method with more care than even its originators; this can be seen by reference to the illustration in the "BRITISH MEDICAL JOURNAL," fig. 10, page 98. Extension is so applied that it almost reminds me of the "Charge of the Light Brigade." Extension to right, above, below; splint to the right and left, and a hard mattress underneath; in fact, the patient, like a warrior of old, is encased in mechanism, all of which is in my opinion ridiculous. Mr. Marsh reports well of this extension for reducing deformity—but we know that the patient need only remain in a supine position with the knee stiffened, when reduction must take place, even if no appliance is worn.

Concerning the supposed merits of the Davis, Taylor, and Sayre form of portative splint, Mr. Marsh shews so conclusively its defects, that I have reproduced that portion of his lecture; at page 99 he says

"The time at my disposal does not allow me to do more than thus very briefly to describe the principle of these instruments and the method of their construction; and in so short a notice it is not possible to do them justice. But you may find a full account of them in Professor Sayre's recently published Lectures on Orthopedic Surgery (Churchill, London), or in Dr. Taylor's essay on the treatment of Disease of the Hip-joint (New York.) The object at which they aim is undoubtedly most important, and they are constructed with great mechanical skill; yet I confess I have found it extremely difficult to obtain satisfactory results by their use. I suppose the greatest amount to which the surface of the head of the femur can be separated from that of the acetabulum cannot be more than about the tenth of an inch. And it is very

difficult to preserve efficient extension and counter-extension within this range; for the parts cannot be acted upon as if they were parallel metal plates to be adjusted by a screw ; they must be controlled through the agency of perineal bands and strapping fixed upon the skin, and all these are apt to give when they are subjected to constant traction ; and, if they yield, though it be but slightly, they soon, in the aggregate, lose this tenth of an inch of extension, which they should maintain, and then the articular surfaces come again into firm contact. Besides, I may refer to what has seemed another difficulty. Both Dr. Sayre and Dr. Taylor allow to move the thigh upon the trunk by bringing it towards flexion, and it has always appeared to me that, if the perineal band be adjusted, according to their direction, when the limb is extended, it will become loose when the limb is flexed. However, I have not had the good fortune to see Dr. Taylor carry out his treatment (though I once saw Professor Sayre apply his splint to a patient in the hospital) ; but the results published both by him and Professor Sayre are very striking, and are such as all may envy. Still, I cannot help thinking that, with either instrument, extension and counter-extension can only be maintained by such an amount of incessant watching as cannot be secured in the usual course of practice ; for, so far as I have observed, the perineal band requires readjustment—when the child is up and about—several times in an hour, and it always grows loose in the course of the night. Again, perineal bands must always be very troublesome appliances in young children, especially in girls."

Mr. Marsh is of opinion that the results published by Drs. Taylor and Sayre "are very striking, and such as all may envy." For many years I was a witness of the treatment of joint disease, by methods sometimes purely expectant, at other times consisting of fractional fixation, and the results in some instances were certainly so striking as to excite my envy. But these very cases, I now know, would have recovered, some with no attention, and others with but imperfect rest. For one result that excited my admiration, ten failed ; deformity or death terminating the history. Isolated instances of excellent recovery by any method, teach us nothing. What is wanted is a method benefiting all. If the past writers and lecturers on this subject are consulted, do they not tell us that Dr. A. cured many cases by mercury ; B. by cautery ; C. by leeches ; D. by repeated blisters ; E. by plasters ; F. by baths, &c. ? Many practitioners had a wonderful run of apparent

successes—but it was gained by a process of "natural selection." Dr. A., for instance, favoured by circumstances, is consulted by a hundred sufferers, and ten of these, even with inefficient treatment, get well, the non-successful cases being charitably attributed to a faulty constitution, are regarded by all as hopeless, and become neglected. Dr. A., now having gained a reputation for skill, is consulted by patients from distant parts, who, of course, suffer from but a slight degree of inflammation, and therefore do well. Extreme cases could not be transported, owing to the want of efficient fixation to ease their pains during the journey.

Mr. W. Adams, of London, has become a convert to the treatment of hip-joint disease by extension with or without motion. He delivered an address on this subject to the Manchester meeting of the British Medical Association, which is published in their Journal, Jan. 5th, 1878.

"On the treatment of hip-joint disease by extension with motion, as practised by the American Surgeons, instead of long-continued rest and immobility."

This (extension with motion) Mr. Adams refers to in the first paragraph as

"The recent advances which have been made in the treatment of hip-joint disease by the American Surgeons."

"The first principle is that of extension, as a means of relieving the most acute pain in joint diseases, especially applicable to the knee and hip-joints.

The second principle is that of extension combined with motion during the progress of disease, the patient being allowed to walk about, so as to promote recovery with free motion in the joint, instead of the ordinary result of ankylosis obtained by long-continued rest and immobility.

There can be no doubt that the discovery and practicable application of these two principles have completely revolutionised the treatment of joint diseases, and changed our opinion with regard to the pathological condition, existing, especially as to the production of acute pain, which formerly was believed to depend upon acute inflammation, requiring active local, as well as general antiphlogistic treatment, such as leeches, blisters, calomel, and opium, etc.

It has now been proved to depend upon undue articular pressure, and contact of inflamed surfaces, produced by reflex muscular contraction, and capable of relief by mechanical means alone, producing extension, whether this be applied by means of the weight and pulley, or by the screw and cogwheels.

The object of extension is not, as generally supposed, to separate articular surfaces, but to overcome reflex muscular contraction, and, by relaxing the muscular rigidity, to prevent undue pressure of inflamed articular surfaces or their margins, when the joint is held in a flexed position by muscular contractions."

From these quotations it is evident that Mr. Adams has "thrown overboard" the "rest and immobility" of our predecessors. Notwithstanding this, I hold that our forefathers were on the right path to a correct treatment of diseased articulations, and that this so-called "American method" is a stray path.

Paragraphs 6, 7, 8, 9, and 10, are devoted to a short history of the extension method, and in paragraphs 11, 12, and 13, we are told that

"The English idea has always been rest and immobility to the joint. The American idea, during the last ten years, has been extension with motion, *i.e.*, preserving motion in the joint whilst the pain is relieved by extension.

In the treatment according to the English system, immobility of the joint is obtained by various instruments and splints; from that piece of surgical antiquity, the long straight splint, reaching from the axilla to the foot, necessitating the confinement of the patient in the horizontal position for many months, and many other contrivances, such as metal and leather splints to the joint, which permit the patient to move about on crutches, to the now fashionable Thomas's splint, invented by Mr. Thomas, of Liverpool, and described in his recently published work.

All these means succeed, more or less, in relieving pain, and promoting recovery, although ankylosis is frequently produced, and this has generally been regarded as the most desirable termination; but in many cases they all fail in relieving pain, for want of the American extension principle, and also, they do not prevent the occurrence of dislocation or partial dislocation, the effect of which is to produce shortening of the limb with permanent lameness."

There appears one special topic about which the American surgeons are unanimous; it is, that to one of their countrymen is due the credit of having introduced to our profession the uninterrupted method of extension. Among them, I notice with astonishment, that Professor Hamilton who should be well informed in the history of extension, wrote to the "PHILADELPHIA TIMES," Nov. 24th, 1877, ascribing the invention to an United States surgeon. The credit of the invention is due to the late J. H. James, of Exeter, who described the details, far more completely than did Messrs. Josse, Crosby, Buck, Davis, or any of his followers. *At the time that Mr. James published the details of his treatment of fractures of the thigh by continuous extension, so great an authority as the late Professor Syme asserted that Hildanus had also practised the method; this, however, is not the fact. Those who consult John Bell's famous volume on "Historical Surgery" can there see figured "The Jack Stone of Hildanus." John Bell surmised that certain illustrations in Hildanus's work represented a strap and buckle, two hooks, and a rope, to which was attached, he thought, a stone. In reality, this supposed stone is only an ingenious method invented by Hildanus to cover the pulley blocks of his apparatus, which he only used for the purpose of reducing dislocations and fractures. His illustration certainly looks very like a stone.

There is nothing in the text to warrant John Bell's description of the "jack stone," which indeed is but an invention of the historian. The mistake can only be accounted for by supposing that Bell simply gazed at the illustrations and never read the explanatory text. A method of retention was well known to surgeons at a very early date, but must have been difficult to bear, and far from satisfactory in its results, for at page 132, book ii., chapter eight, paragraph 8, Heister's surgery, 1745, we are informed that

"If we had an instrument that would keep the fractured thigh properly ex-

* See his address in surgery, delivered at Liverpool, July 24th, 1839.

tended, and of the same length with the sound one, for about fourteen days, or till the case was perfect, we could go on with more certainty and success."

J. H. James's method of continuous extension was original, and I do not believe that he had any suggestion from the published opinions of his predecessors.

I cannot help protesting against Mr. Adams's contemptuous reference to the long straight splint. In my opinion it has been a very simple and useful appliance for many lesions of the lower extremity, and if well applied, can do more for hip disease than any one of the complicated American importations that have supplanted it in the practice of many surgeons. Apropos of Mr. Adams's remark—"the now somewhat fashionable Thomas' splint"—it exactly expresses my opinion, as most of what are called my splints which have been supplied to the profession are more ornamental than useful, and are practically worthless, because of the impossibility of correctly applying them.

In paragraph 14, Mr. Adams gives an isolated case illustrative of the defects of "Thomas's splint," and although Dr. Sayre confirms the opinion of Mr. Adams, it cannot but be apparent to any observant and experienced surgeon that the case in question illustrates neither the merits nor faults of any method. The case is denominated one of "slight flexion." What evidence have we that the shortening, which was apparent after reduction of flexion, did not already exist whilst the limb was in a flexed position? A state which makes the detection of so-called luxation (unless it be extreme) most difficult.

Again, we are informed that nine weeks after the application of my appliance, there was "the occurrence of pain," and that this was relieved by the addition of extension. Now, the explanation of this is that the joint was on the eve of rupture—a statement warranted by the interval of ease—and whether extension had been applied or not, ease must inevitably have followed. In fact, the reported case gives some details of the natural course of

hip disease, and these are erroneously attributed to peculiarities of treatment. Those who desire to apply an injurious detail of treatment, viz., extension, to my appliance, can do so by applying straps to the thigh, and connecting them to the lower cross bars, and then casting off the shoulder braces.

I notice in Mr. Adams's paper on extension, the fault that pervades all the writings of the extensionists; they praise it here, and warn us of its evils somewhere else, and finally end by advising rest and immobility.

"I advise the patient to walk about with the assistance of crutches, wearing at the same time a firm leather splint moulded to the hip, reaching from the waist to the knee; this secures rest and immobility of the joint."

Despite this, at paragraph 17, Mr. Adams affirms rest and immobility to be factors in the production of anchylosis! In fact it is an utter impossibility to find out from the writings of the so-called advocates of extension, what they mean by extension; sometimes it is uninterrupted, sometimes continuous (as the weight and pulley), or again it may be a method of retention—as the Taylor and Sayre appliances shew. Again Sayre's method of treating wrist joints is a plan of retention. In hip joint disease again he advises a combination of fixation and retention (wire cuirass.) In spinal disease, he advises temporary extension, and permanent fixation. Mr. Adams informs us that

"My own experience in the use of these instruments is very limited; but during my visit to America, last year, I had the opportunity of seeing them applied in a large number of cases, and as it appeared to me, with great advantage. In one case, that of a young lady, who was residing in Dr. Taylor's private establishment in New York, where patients are received for the treatment of various deformities, the hip-joint disease appeared to be in a more active stage, judging from the pain she suffered, than I should have thought the walking instrument could have been applicable to, still, when the extending force was applied pretty nearly to its full extent by Dr. Taylor, she was enabled to walk without pain, and therefore it seemed to be a test-case of the value of extension. Children with hip-joint disease in a more chronic

form are frequently seen walking about the streets of New York, wearing these supports, and are enabled to get in and out of the tramway cars, without difficulty."

Mr. Adams's experience of Dr. Taylor's practice derived from observation during his visit to America, strongly recalls to my memory what I observed some twenty years ago in the practice of another person, who also had a reputation for skill in the treatment of joint disease. Many cases have I observed enter the consultant's surgery, lame and in pain, who after being well fitted with several layers of stiff adhesive paper plaster, over, and around, the affected articulation, left the surgery less lame, and in less pain; sometimes, even without any pain. A great number of these patients having repeated their visits from week to week recovered, and even to this day, I frequently meet them in the streets of this town, permanently sound. This is the history of some; others indeed had a very different termination. And if we read the writings of the extensionists, it is only too evident that their experience coincides with the above. Indeed, they plainly say, that some patients recover with but slight assistance, such as the Taylor and Sayre appliances; but that other and more severe cases require more efficient means. If this be so, I ask, why not try the very best means at first? By so doing, after regrets may be avoided, for none can predict with certainty, at the commencement of the difficulty, whether it will at once progress to resolution, or retrograde to a stage which involves a cure with defects.

There are certain qualifications that are of assistance in enabling the surgeon to weigh the pros and cons advanced on behalf of methods. They are—first, observation of the cases not treated, second, observation of cases treated by the supposed most efficient aid. Practitioners of any of these three varieties, can refer to cases of recovery at times, while it must be admitted that the most correct treatment must fail in a certain sum of cases. We know that there is no disease, however trivial, but has attached to it a "death register."

In the February copy of the "London Medical Record," there is introduced to the notice of surgeons another eccentric theory, said to be applicable to injured joints. This doctrine is embodied in the words "compression, motion, use." *

The author of the "American"—or rather of the Sayre—

* Compression is a mode of practice frequently resorted to in the treatment of diseased joints under the misapprehension that pressure is a means conducive to resolution. In estimating its position in the treatment of these difficulties, we must take into consideration the fact that its practical application (like continuous extension) involves an unavoidable amount of "quiet fixation." This "quiet fixation" is the actual remedy, which, in mild cases, may be enough to complete resolution. But pressure per se in any form (like friction) would thwart recovery. Indeed, advanced cases notably will not tolerate the slight degree of pressure necessarily induced by the method of compression frequently practised in surgery. That which is meant by "compression" in the surgery of articulations is a combination of fixation (itself a remedy) which fixation is inevitable in the application of pressure (itself an evil.) We have an example in Scott's dressing. It is my opinion, based upon experience, that compression—even when combined with efficient fixation, if used in the advanced stages of articular disease—is a hindrance to resolution. In my practice, therefore, for some years back, I have carefully avoided applying any form of fixation which involves the least pressure on the inflamed joint. The sound parts of the limb are alone used as points for securing fixation, and the unsound joint is not to be interfered with. In fact, motion, concussion, and unnecessary manipulation must be avoided. A case which came under my notice recently, demonstrates the evil of treatment by pressure. The case is already referred to in the foot-note at page 11 of this article; the patient, an omnibus driver, consulted me, suffering from slight inflammation of the knee joint, caused by the continual jar of the pedal of the omnibus break. As he could not ascend to his "box" on the omnibus with any of my appliances attached to his limb, I treated the knee by a method of slight fixation, with some benefit, but I perceived that he must abstain from his avocation, and undergo treatment by absolute fixation. I advised him to that end; but as he had no means of maintaining himself, he became the inmate of a public charity, when he was treated, first, by simple pressure in the form of a bagful of lead "shots;" then a continuation of pressure and fixation known as "Scott's Dressing;" and last of all, that venerated filth known as linseed poultice, with the result that the knee was soon ready for amputation.

method would have us believe in the possibility of motion without friction. This last theory introduced by Dr. Pilcher, is based on the supposition that motion can occur without friction, and pressure without force. This has been dubbed the "Hood method." The name is enough.

My own inventions for the treatment of inflamed articulations of the lower extremities, have now been used for only a short time by surgeons generally, yet most of the appliances have been made to undergo modifications, to suit indeed, what are in my opinion the incorrect theories of treatment held by these several innovators.

Furthermore, in the majority of cases reported and observed; with the use of my appliances are associated Poultices, Ointments, Blisters, and Leeches, all which are positively adverse to resolution.

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