EXAMINATION OF THE BACK.

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Back cases appear to be uninteresting to everyone except those who suffer, or who have to pay. The idea seems to be that little or no kudos is to be got out of them in either the indoor or outdoor hospital departments, hence they are usually relegated to the care of the junior, and, therefore, the less experienced members of the hospital staff. As a matter of fact there is quite a fascinating interest in tracing an inadequately defined pain to its true source, or proving its non-existence.

The mechanism of the back is of such a nature that when thoroughly appreciated it enables a correct diagnosis to be made in the majority of cases; but this entails a careful study of the entire structure so that the parts unaffected may be eliminated in order that the true seat of the trouble shall be determined.

The somewhat haphazard method, which has hitherto largely prevailed, of grouping all injuries of the back into the category of "ripped" or "sprained" back, with no attempt at accurate or scientific diagnosis, has not unnaturally created an impression that when this is done it exhausts all the knowledge of the profession concerning injuries in this region. No other part of the body has been the subject of so much unskilled and random diagnosis, for the exact pathological condition present seldom seems to engage particular attention.

There is no doubt that "back cases" bristle with difficulties, and may be so complex as to lead to greatly divergent views, because the failure to observe one apparently unimportant factor may lead to an entirely wrong conclusion.

For a successful diagnosis, several things are essential. Firstly: One or more careful physical examinations, bearing in mind the conditions which may arise from natural causes, which are with difficulty distinguishable from those of traumatic origin; secondly, an appreciation of the psychology of pain; thirdly, a full history of the injury alleged.

One of the great difficulties in the examination of cases of alleged injury to the back is that with a large, stout individual, such as one often has to deal with, it is far from easy to make a
satisfactory examination of this part of the body, and one is
tempted to accept the man's own statement (which under the
circumstances is of little value) that he experiences pain at some
particular spot.

It is not easy to discover what is amiss, even when there exists
an actual physical cause for the pain complained of, but our worst
difficulties commence when we come to determine whether the
stiffness and pain alleged are real or feigned.

When disease exists in the spine Nature's warning is pain. When
pain exists, stiffness and muscular rigidity naturally follow—

similar to the well-known condition of the abdominal rigidity in
appendicitis. It is reasonable, therefore, to believe that if there is
no stiffness, and no rigidity, there is no pain and consequently no
actual disease.

After middle life the spinal column gradually becomes less
elastic, and in old age movements are always performed with
difficulty, but not necessarily with pain.

Osteophytic arthritis is a common cause of limitation of move-
ment of the spine in working men.

The small anatomical differences in the length of the lower
limbs, which is much more common than is generally supposed, is,
when it exists, compensated for by slight curvature of the spine.

A lateral curve often gives a useful cue to an unsuspected
asymmetry of the body.

When there is no complaint of pain on percussion over the
spinous processes of the vertebrae it may be assumed that there is
no gross damage to the neural arches.

None of the cervical spines (except the seventh) can, as a rule,
be palpated. The spine of the seventh cervical vertebra is
prominent, but it should not be forgotten that the first dorsal is
often equally so. It is, therefore, unsafe in counting the spinous
processes to assume that the prominence felt is the seventh
cervical.

A line drawn horizontally round the body at a level with the
highest point of the iliac crests covers the fourth lumbar spine.
From this point the vertebrae may be counted upwards.

Where Fixidity Occurs.—In the normal state there is practically
no widening of the spaces between the dorsal spines when the
patient bends, and there is therefore no flexion in the dorsal region.

Flexion of the spine takes place almost entirely at either the
cervical or lumbar region, or at both. This is an important fact to
remember when examining the back for injury.
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Inability to move the cervical vertebrae is seldom fraudulently alleged, and the comparatively few cases which arise are easily dealt with.

The lumbar region, therefore, demands careful, and in the absence of alleged injury of the neck, exclusive attention in cases where it is stated there is inability to stoop.

A common experience in these cases is, that a claimant who alleges that months before he strained or injured his back, stoutly affirms that he is quite incapable of bending his back. When asked to do so he makes a slight forward inclination of his body from the hips and then resolutely declines to make any further attempt at movement. If he is simulating incapacity, the difficulty of proving it is great.

Obviously such incapacity is not associated with the cervical region; we have seen that the dorsal region does not contribute to the flexion of the spine, and therefore the alleged difficulty in stooping must, if it exists, be confined exclusively to the lumbar region. If this is remembered, it enormously simplifies the investigation of these cases, for the attention of the examiner may be wholly concentrated on the five lumbar vertebrae.

Tests for Fraudulent Stiffness of the Lumbar Vertebrae.—I am indebted for many of the following observations to Dr. A. McKendrick, from whose book on “Back Injuries” I have obtained much assistance.

Simulated fixidity of the lumbar region may be exposed by the following: The patient should be laid absolutely flat on his back, his heels, knees, buttocks and shoulders should touch the table. The natural forward lumbar curve is in this position apparent. It will at once disappear if the thighs are flexed on the abdomen, unless fixed by injury or disease.

If, whilst lying flat on the table in the position above described the patient is told to keep his knees straight and assume the sitting position, and then bend the upper part of his body a little forwards, the normal forward lumbar curve—if not fixed by injury or disease—will entirely disappear.

The patient is induced to sit in an upright position on a chair; if both knees are now extended, the normal forward lumbar curve disappears if not fixed by injury or disease.

The value of these three tests is great, for the positions which the patient has in each been induced to assume are, from an anatomical point of view, exactly the same which he declared was impossible when asked to perform them when standing! For it is
obvious that, if, when lying on his back the patient's thighs are bent on the abdomen, the position is the same as if he had stooped so low when standing, that his head would approach the ground; and that if he can be induced to sit bolt upright, either on a table or on a chair, with his knees extended, he is in fact bending his body at a right angle to his thighs and would, were he standing, be making a very low bow.

There is, however, this difference, that in stooping forward in a standing position the body would fall, as it were, by its own weight, were it not restrained from doing so by the erector spine and other extensors of the back; whereas in assuming the sitting posture from the prone the body is raised against gravity and the flexors of the spine, i.e., the abdominal muscles, are brought into action. The fact, however, that a different set of muscles are brought into use does not diminish the value of the tests as far as capacity or incapacity to stoop is concerned.

Although these facts may be demonstrated to the satisfaction of the examiner, it is a matter of much importance in cases where arbitration proceedings are pending that indubitable proof should be forthcoming, and this, fortunately, can be procured. It is found in radiographing the lumbar region that when it is impossible to get a patient to move his lumbar region voluntarily, so as to come in contact with the X-ray plate, a better result is obtained if the knees are drawn up; this, as already stated, obliterates the normal forward convexity of this region and brings the vertebrae more in contact with the X-ray plate.

McKendrick points out that a permanent record of the fact that a patient who alleges he cannot stoop is, in fact, able to bend this portion of his spine, may be obtained by taking an X-ray photograph first in the position which the patient alleges is the fixed one, and second, with the knees drawn up. A permanent photographic record of the difference in size of the interlaminous spaces is thus obtained. When the lumbar vertebrae are in their natural position, i.e., curved forwards, the radiogram shows that the spinous processes approximate each other, whilst when the thighs are flexed on the abdomen they are widely separated. Comparative measurements taken between the shadows of the spinous processes in the two plates prove that movement has taken place. In radiography stout men are always a source of difficulty, but with “screen plates” I am informed it is usually possible to demonstrate that movement has taken place. These “screen plates” do not, of course, show the finer details necessary for demonstrating disease of the bones, but are sufficient for the purpose indicated.
Fracture dislocation is a serious injury. The nature of the accident and the condition of the patient immediately after its happening, are alone sufficient to prevent any likelihood of the condition being missed. Paraplegia would, of course, tell its own tale, and even the occurrence of girdle pains would be suggestive.

Fracture of a spinous or articular process, or one of the laminae, is not likely to be missed if the case is seen early. The difficulty is that those who, like myself, examine for insurance companies, do not see these cases until long after the happening of the accident. These fractures, if recovery is to take place, are not long in uniting. When a patient gives a history of pain which has been constant over one spot, this, taken in conjunction with the nature of the accident, the subsequent history, and probably the presence of some amount of callus, lessens the difficulty of diagnosis. It is well to remember that simple fractures of the vertebrae are sometimes discovered by X-ray photographs when nothing was complained of but pain and stiffness. In doubtful cases, therefore, an X-ray examination should always be made.

In examining the spinal column it is not sufficient to place the hand on the patient's back, to ask the patient to bend forwards, and then to note that there is immobility, or what is called "boarding" in a certain region. This, McKendrick points out, is only half the truth, and recommends that the examiner's hand should be kept on the patient's back, which should be bent as far as possible. The back may remain absolutely stiff from disease or traumatism, or, on the other hand, the muscles beneath the examiner's hand may begin to twitch, followed by a "giving" of the spine. At first the relaxation or "give" is very short and this is followed by a slightly longer one, and so on until the spine is fully bent, indicating that the erector spine has been voluntarily kept in action. The muscle, the erector spine, which produced the "boarding," has gradually become tired out and finally exhausted. This condition, he states, is often found in malingering and in hysteria, but never in traumatic neurasthenia. On the other hand, when the rigidity has been due to either rheumatism or strain of the spinal joints the "give" is more or less gradual, each becoming shorter than its predecessor until the back is fully bent.

If a man really has pain in the cervical or upper dorsal region it can generally be elicited by bending the head forward, whilst the trunk is held rigid, thus stretching the vertebral muscles; if this can be done without producing pain, the probabilities are that the pain alleged is not due to physical causes.
When the back is bent, each separate vertebra in the cervical and lumbar region moves a little upon its fellow, and each spinous process is separated a very short distance from those of the neighbouring vertebra. If, therefore, when a patient stoops, the fingers of the examiner's two hands are pressed between the spinous processes first of the cervical and then of the lumbar regions, and the patient is asked slowly to raise himself to the erect position, and the spinous processes are found to separate upon flexion of the spine and approach each other as the spine is straightened, and this without pain, it goes a long way towards proving that there is no disease at the particular spot examined.

In cases where the only complaint is of subjective symptoms it is seldom that one examination is sufficient to enable a definite conclusion to be arrived at; and the examination should be repeated, if practicable, as many times as are necessary to enable a correct opinion to be formed.

The power of rotation of the cervical vertebrae can be elicited by asking the patient, when standing with his back directed to the examiner and his feet placed closely together, whether since the accident he has had any trouble with his hearing. The auricles are alternately taken between the finger and thumb, and the head gently pulled well to one side, and then the other, under the pretence of getting a good light into the meatus. This little manœuvre rotates the whole spine and has the advantage of being easily demonstrated to the applicant's doctor if this is thought desirable.

It is curious to note how often one who wishes to allege spinal injury complains of pain at the tips of one or more of the spinous processes of the vertebrae. The places indicated should first be marked, counted, and carefully noted, and the results compared at intervals, both at the examination and at subsequent interviews. The use of different coloured chalks is of assistance in making these records.

There are many apparently innocent means by which a man may be induced to bend his back directly he enters the room and before the formal examination has commenced. I have repeatedly ascertained the flexibility of a spine before the patient knew it was being tested.

As a rule, working men bring their cap or hat into the room when they come to be examined. In a casual way he is instructed to put it below the chair on which he is offered a seat. It never strikes a working man that this is in any way an unusual
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Indeed, he seems to think it the correct place for his hat. Under the assumption that the examination has not yet commenced he often forgets himself, and when he stoops I casually remark, often in a low tone, speaking, as it were to myself, "Cannot be much the matter with his back now, any way, judging from the way he can bend." It is astonishing the large number of cases in which the whole question of further examination, diagnosis, treatment, and alleged continuing disability, is finally settled by such a proceeding, and an explanation follows that, whereas the back has been "bad," it has now recovered, a line of least resistance in which I willingly acquiesce, and sometimes even suggest. It has always struck me that it is a waste of time and bad policy to thoroughly examine a claimant who admits that he has recovered, and I commend this little manoeuvre as a time and labour-saving expedient.

This remark does not, of course, apply to cases sent for medico-legal examination, but only to those where an opinion is sought, by large employers of labour, as to the continuing disability of their employees.

There are occasions when one is quite convinced that there is absolutely nothing the matter with a man, but the positive proof required to demonstrate the fact is lacking. In such cases, if one is in a position of authority, a good result may sometimes be obtained from a frank avowal of the position and the offer of a bargain. Let the man know your difficulty, tell him candidly you have not for the moment the requisite proof in your possession to report him as a malingerer, hint that in the event of his speedy recovery the case will be treated as a recovery, and that no adverse report will in that case be made. He should be given to understand, however, that the alternative implies, of necessity, a renewed effort on your part, and the inexorable exercise of your powers when successful, and that this is only a matter of time. My experience is that this offer is often readily accepted and a graceless retreat is made from a position which it is appreciated is really untenable. The plan has the obvious advantage that the real sufferer is at no disadvantage, for should the case be a genuine one, continued investigation would demonstrate the truth of his allegations.

The almost transparent device of accidentally dropping a pencil in the hope that the patient will unconsciously pick it up, or the more artful method of surreptitiously dropping a coin or small article of the patient's clothing on the floor, often shows the functional activity of the extensors of the spine in a way which more scientific methods fail to elicit.
Sir John Collie

The trap, however, into which the most hardened malingerer will sometimes fall is (his trousers and pants having been during the examination dropped to his ankles) to indicate in a tone of relief and finality that the examination is at last concluded. The examiner should at this moment turn his back on the patient; if a mirror should happen to reflect the movements of the patient much satisfaction will often be caused by seeing the man stooping to reach his clothes with an agility which no amount of coaxing had previously produced.

Simple ruses such as these will often succeed, though their chances are becoming more and more remote, as applicants are now too often coached in the parts they have to play.

A patient who is alleging pain at a definite spot in his back, which does not exist, may be detected by the simple expedient of asking him to place the point of the forefinger of his right hand on the spot, and marking it, and subsequently after another part of the examination has been undertaken, asking him again to indicate the spot, but this time with the point of the forefinger of the other hand. The result is often edifying, because he may point to a spot several inches away from the first one. When the area affected by the pain has been indicated, with more or less exactitude, complaint will probably be made of the lightest touch in that region; it is therefore necessary to resort to various devices for withdrawing the attention from the locality presumed to be affected.

It is seldom that the spine is forcibly bent forwards, but such an accident might follow a severe weight suddenly falling on the shoulders. In this case the posterior common ligament, the supra-spinous ligament, or the ligamenta subflava may be torn.

When an injured muscle is actively put into contraction, or when it is stretched, pain is produced. If the erector spine is injured and the patient actively tries to straighten the back, or if the spine is flexed, thus stretching the injured muscle, pain will be complained of.

The man who complains of severe pain in the erector spine or its prolongations, and keeps his back bent many months after an injury lays himself open to grave suspicion.

When patients allege a tear in the neighbourhood of the erector spine, instead of complaining as so many do when the back is straightened they ought to be grateful, for if any of the fibres of this muscle are really injured the effect will be to relax the fibres.

Sometimes the following experiment is of use. The man who declines to assume the erect position may be induced to do so
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unwittingly, by being asked to kneel on the floor and rest his elbows upon his folded clothes, in such a position that his back is straight.

A good deal may be gained from a careful consideration of which muscles are used for the purpose of bending the spine. It must never be forgotten that the muscles which produce lateral movement are exactly the same muscles as those which produce extension, and therefore, if a claimant says he cannot straighten his back, but is able to touch the ground first on one side and then on the other, it is obvious that the disability, if genuine, is not in the erector group of muscles of the back. On the other hand, if he persistently complains that he cannot straighten his back, and in addition that he cannot bend it, let us say to the left side, whilst he admits that bending it to the opposite side is painless, the presumption is that one of the erector group on the left side is in fact strained or in some way injured.

Working men are, of course, unaware of the anatomy and action of the muscles involved, and I have seen a malingerer pretend, a year after the happening of a slight accident, that his back muscles were so painful that not only could he not straighten them, but any attempt to passively extend the spine produced the most intense pain. The whole back was bent forwards, but it was evident that the spinal column was bent forwards from the hip joints, and this was demonstrated by putting the hand on the lower part of his abdomen and at the same time attempting forcibly to straighten the back, when the powerful abdominal muscles which are the flexors of the spine were found to be in violent contraction.

In old-standing cases, if a patient complains of pain when an attempt is made by the surgeon to extend the spine, the injury, if any injury there be, is in the flexors of the spine, i.e., psoas, rectus abdominis, external oblique, internal oblique, transversalis, or the anterior common ligament.

On one occasion a malingerer who had kept his back persistently flexed from the lumbar region for many months, when lying on his face on the examination couch, permitted the pillow to be gradually raised. The position not only straightened his back, but actually curved it in the opposite direction without any complaint of pain either in the flexors, extensors, or in the spinal column itself!

Torn Muscles.—In cases of accident, the most usual injury is a tearing of the fibres of some of the lumbo-sacral muscles, or a
sprain of one of the numerous vertebral joints, or of the sacrolumbar joint. It is, however, ridiculous for anyone to allege, as I have known done, that a sudden wrench tore a muscle or produced a sprain in the back, the pain of which only manifested itself after an interval of some hours. Anyone who has torn a few fasciculi of one of his own muscles will have no sort of doubt about this. On two occasions patients who suddenly ruptured a few fasciculi of the gastrocnemius have told me that they were confident that someone had thrown a stone from a distance and suddenly struck them on the calf of the leg, and that they were wholly incapacitated then and there. If a rupture of a muscle is recent there are certain conditions which must inevitably accompany it; sudden pain, a gap at the seat of rupture (especially when the muscle is put on the stretch), a hematoma with consequent swelling, pain, tenderness, and loss of function. The pain is likely to last, if at all severe, several weeks.

A torn muscle of the back produces a considerable amount of swelling and effusion. The injury may involve other structures, such as ligaments or nerves, and the patient suffers severely. At this stage, no dispute as to the condition ever arises, for employers and Insurance Companies seldom suggest simulation at the acute stage of a disability following an accident, and as a rule it is only many months afterwards when the condition may be termed more or less chronic, and when the difficulty is greater, that the medico-legal expert is called upon to make a diagnosis.

It should be borne in mind that a muscular tear or rupture is invariably single, and therefore unilateral. A strain is merely a stretching of tissue beyond its physiological limit. The lumbar fascia has this in common with all muscles and ligaments, viz., that there is a point which can be definitely located where a tear or strain has taken place, that is, there is always a point of maximum tenderness or pain. Notwithstanding the fact that the belly is the point at which there is the greatest tension when a muscle is brought into action, yet the mechanically weak spot is where muscular joins fibrous tissue.

The latissimus dorsi is the chief muscle used in giving a downward blow or thrust. When this muscle is injured, pain is produced on moving the arm, or in drawing it backwards. Backward movement of the shoulder is also painful.

It is possible that a sudden strain may tear some of the slips of origin from the vertebral column of the trapezius or latissimus dorsi.
Mr. Morley has pointed out in his paper on "Injuries to the Back in their Medico-Legal Aspect" (XVIIth Internat. Cong. Med. Trans., Section of Forensic Medicine) that, when muscles other than those of the back are torn, the correct surgical treatment—that of fixing the limb in a position of relaxation of the muscle—is always followed. But these surgical principles are seldom, if ever, applied to torn muscles of the back. The usual treatment for a patient with a torn erector spine is to put him on his back with pillows under his head and shoulders. This, by flexing the back, puts the injured muscle on the stretch, leaves it in the worst possible position for repair, increases the tendency to hemorrhage at the seat of rupture, delays absorption, and renders massage impossible. The prone position with sandbags under the shoulders and pelvis is obviously the correct physiological position for injuries of the muscles of the back, and, as he points out, this position admits of the employment of massage from the very beginning, without undue disturbance of the patient, for it is as unjustifiable to keep an injured muscle of the back fixed without treatment as it obviously is to keep a sprained ankle or a fracture immobilized.

The following is an almost daily experience with those who see much of medico-legal work:—

A working man falls whilst at work, injures his back, or it may be he sprains it whilst lifting a weight. The pain at once compels him to keep his back in a stiffened position. He consults a doctor, who enjoins the most complete and absolute rest, and perhaps prescribes the recumbent position in bed. Now, it is obvious that during the first few days, when the exudation in the fibrous tissue is being poured out, rest is essential, but, if massage and movement are not soon systematically and daily performed, the absorption of the exudation will not be encouraged. The longer the rest, the greater will be the subsequent pain and the difficulty in resolving it. The difficulty, as already explained, is that movement and massage, even after the acute stage, at first, but only for a short time, increases the pain. Unless, therefore, the patient has great confidence in his medical adviser and the masseur, has some pluck and a really genuine desire to be cured, this method of treatment fails because it cannot be properly carried out. The principle involved is really well-known, and is, indeed, carried out daily in the modern method of treatment of a sprain of the ankle-joint. Everyone now knows that, apart from the rest necessary during the first few days, the earlier natural movements are resorted to the shorter will be the duration of the disabling effects. Yet one finds strong, healthy, able-bodied men who have had a strain of the muscles
of the back keeping their back rigid for weeks, months, and sometimes even for years, for no other reason than that the steps above indicated have not been taken. They could be rapidly cured by active, vigorous and intelligent treatment.

Shufflebotham has for a long time advocated the employment of systematic exercises, and, where there is much wasting, electrical stimulation. Passive movements and early massage promote absorption of effused blood, relieve pain immediately, improve nutrition, and certainly effectively prevent adhesions. The patient after a little time should be encouraged to perform gradually increasing movements, and later the use of light dumbbells, exercises, such as touching the toes, extending the shoulders, etc., should be practised.

The late Mr. Edmund Owen suggested that to paint tubercular glands with iodine is as likely to be successful as would be an attempt to please the Dean of St. Paul's by stroking the dome of that edifice; and I think to keep a patient who has injured one of his back muscles in bed for a lengthened period in a semiflexed position, to apply porous or "poor man's" plasters, is likely to be equally unsuccessful.

It must never be forgotten, in dealing with pain in the back after an alleged accident, that long after the physical phenomena have disappeared, the psychic effects of unintelligent treatment, misplaced sympathy, and sick pay, often leave their effects of a perverted mental outlook and a morbid introspection which can only be eradicated by isolation from sympathising friends and the usual concomitants preparatory to legal proceedings. Treatment in a hospital is undoubtedly the best means of bringing this about.

The actual tissue inflamed in lumbago is the fibrous tissue surrounding the fusiform nerve end organs which lie between the muscle fibres. This explains the severity of the pain and its close relation to movement.

Lumbago is not accompanied by a rise in temperature, and no clinical examination can, after the first few days, distinguish between lumbago and injury, unless there is external evidence, such as bruising. Unfortunately, many of the cases of alleged pain in the back where the question of compensation has arisen, are seen many weeks, or it may be months, after the accident, by those who are called upon to examine them at the instance of employers or insurance companies.

In the fibrositis (lumbago) which follows a sprain, it is always extremely painful for the patient to rise from the stooping position.
by his own exertion, whilst if the movement is performed passively, through the intervention of another, it is much less painful. At the onset, there is no maximum point of tenderness, but after a few days, if the condition persists, the pain is localized, and indeed, there is, as time passes, frequently a spot that is very tender on pressure. This is almost invariably so after two or three weeks.

In the very early stages of a ruptured muscle there is a maximum point of pain.

The persistence of pain in muscles and in the neighbourhood of joints, long after the happening of an accident, often makes prognosis difficult.

Rheumatism is often spoken of as "chronic." True rheumatic fever runs a definite course and never becomes chronic. Certainly it has such sequelae as a leaking valve of the heart, or chronic pain in the fascia or the aponeurosis of a limb, generally in the neighbourhood of a joint, but acute rheumatism cannot become chronic. What the acute rheumatic fever has left is a thickening of the white fibrous tissue either of the valves or other structures.

When a joint is said to be rheumatic it is not the cartilage or the bone which is affected with rheumatism, but the fascia, and more often the fibrous insertions and aponeurosis, of surrounding muscles.

The essential pathology of this variety of rheumatism consists in an inflammatory overgrowth of the white fibrous tissue which enters so largely into the composition of muscle. This overgrowth or hyperplasia, is probably brought about by the action of toxins conveyed by the blood, and multiplication of the white fibrous tissue cells is produced, which is followed by serous exudation. Hence it is that tendons and sheaths of muscles, and the fibrous and ligamentous structures of the joints become affected, and produce what is so often called "chronic rheumatism." These exudations if fairly large, can be felt, more especially at such places as over the sternum or tibia, or other thinly covered bones, and are tender and painful on pressure.

If early treatment is resorted to they may be made to resolve readily enough, but the older and more fibrous they become the greater the difficulty in treatment, and the less likelihood of cure.

The actual form of these hardened swellings, or nodules, as they are called, varies; the most common form is a definite, circumscribed, hardened spot the size of a split pea or a small shot, but they may be as large as an almond, or even half the size of a walnut. Often they are rounded or flattened and may sometimes
be felt like a beaded chain along the fibrous edge of a muscle or aponeurosis.

In the lumbar region, or in the fascia lata, large portions of subcutaneous fibrous tissue, or of an aponeurosis, may become uniformly thickened and form a more or less prominent induration at certain parts. Sometimes these thickenings are deep, sometimes superficial. Occasionally those on the surface pucker the skin. When pressed upon they are always tender, and if vigorously rubbed they swell and become temporarily more painful.

When the white fibrous tissue becomes inflamed and proliferates, the condition is known as "fibrositis." As a result of the strain of a tendon or ligament a local fibrositis is often brought about, which may persist for weeks; for instance, the fibrous tissue of the muscles of the arms and back are sometimes the subject of a local fibrositis, the result of a sudden strain whilst playing tennis or golf. A stiff neck and lumbago are milder forms of the same condition.

Lumbago is, in fact, a very typical form of fibrositis, the milder type being confined to the fibrous elements in the lumbar muscles. A severe type, however, is that which starts as a localized affection of the insertions of the great erector muscles of the back at their fibrous attachments to the sacrum and neighbourhood of the sacro-iliac joints. This, as is well known, sometimes even finds its way to the sheath of the great sciatic nerve, producing the sciatica, which so often follows lumbago.

In conducting the search for these nodules it is necessary to smear the skin with oil or vaseline and to see that all muscles are relaxed. If the thumb or tips of the fingers are then passed over the skin with firm but gentle pressure, the nodules or indurations can sometimes be readily felt, but they are not always easy to locate, even on deep pressure, which is often required. The most frequent sites are the lumbar aponeurosis, the fascia lata, and tendinous expansions of the thigh muscles, the trapezius muscle just above the supra-spinous region, and the soles of the feet.

Weakness of the back and symptoms of what is sometimes called "spinal irritation" are often due to nothing more serious than these fibrous thickenings. I believe that the persistence of fibrositis in this region is a common cause of the refusal to work sustained for long periods—sometimes extending to years—by working men who have had accidents.

Many women who are considered hopeless neurasthenics or martyrs to neuralgia, and who, on account of continuous aches and pains, gradually develop ill-health, have these fibrous thickenings to thank for their condition.
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The condition is familiar, and, indeed, is often seen in an ordinary sprain or rupture of a muscle where the fibrous hyperplasia gives rise to what are called “rheumatic” symptoms, which vary from time to time and under different conditions, such as cold, damp, meteorological changes, muscular exertion, or even an acute attack of indigestion. The swellings probably exert pressure on the filaments of the sensory nerves; hence the pain. Hard nodules, if they involve a nerve, sometimes cause aching and shooting pain over a wide area.

Treatment.—Now that the pathology of this troublesome affection is understood, and the old theory of a uric-acid diathesis and what not exploded, we may reasonably hope for good results from a rational and scientific method of treatment.

General massage is unnecessary. The massage movements should be confined directly to the painful parts, that is, where there are nodules and indurations. As a rule, it is best to shave the skin and smear it with some oleaginous substance before beginning the treatment. The massage should be gentle for a few days, and gradually made more and more vigorous day by day. In a few days the fibrous thickenings swell up and become both more obvious and painful. It is at this state that it requires some fortitude to withstand the temptation to give up all treatment, because the inconvenience may last for ten days or even longer. The nodules immediately beneath the skin are particularly liable to become tender, and the treatment has to be carried out very judiciously, until the patient appreciates the undoubted benefit which is to follow.

At the acute stage, therefore, only very gentle manipulations are called for in order to promote the removal of exudation, and Luff holds that even this should not be employed where it causes pain at the acute stage. However, after this stage has been passed, there is no question that very vigorous, even painful, massage, pressure, and friction are eminently successful in removing the tension of the tissues, and therefore the stiffness. It undoubtedly in time makes the swollen fibrous nodules disappear.

Stockman, to whose writings on this subject I am much indebted, writes—

"After a time they (the nodules) begin to shrink in size and become more fibrous and callous; much more pressure can then be exerted on them, the fist or knuckles being used, and in process of time they become quite small and hard, and ultimately disappear entirely. The massage should be carried out daily, ten or fifteen
minutes or more being devoted to each region affected; at the beginning and end about two minutes of gentle effleurage should be given, as it soothes the part and removes serous engorgement."

Muscular movement relieves the tension and temporarily relieves the pain, and although at first this returns, after a few hours, daily repetitions of more and more vigorous muscular movement, combined with massage, have their effect.

The difficulty in the treatment is to get the patient to submit to massage and to movements which are painful, and the less intelligent the subject, the greater the difficulty. Septic absorption from pyorrhœa alveolaris is well known to be a fruitful source of fibrositis, and, as already pointed out, when present at the occurrence of an accident frequently retards recovery.