

On myalgia : its nature, causes, and treatment : being a treatise on painful and other affections of the muscular system, which have been frequently mistaken for hysterical, inflammatory, hepatic, uterine, nervous, spinal or other diseases / by Thomas Inman.

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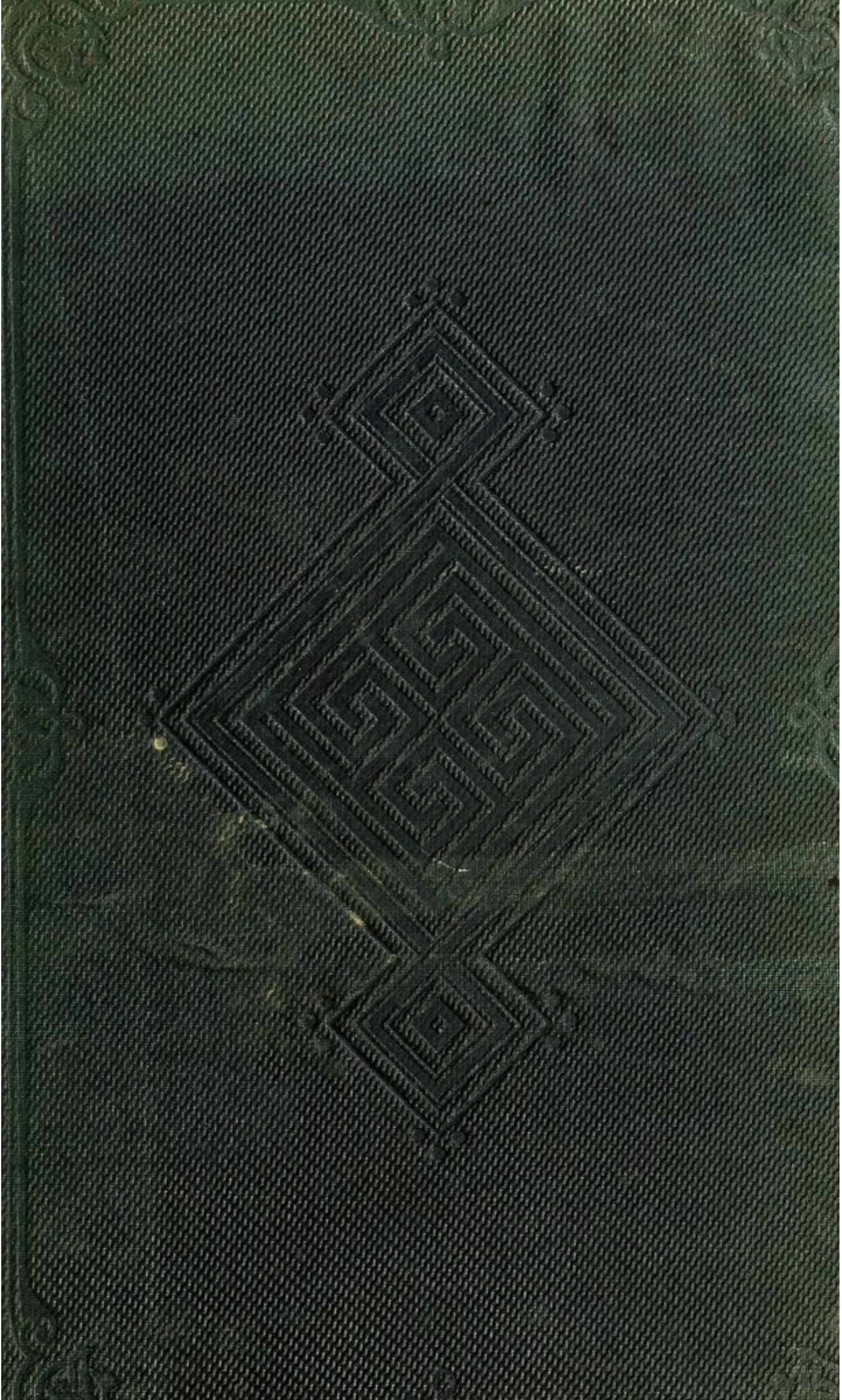
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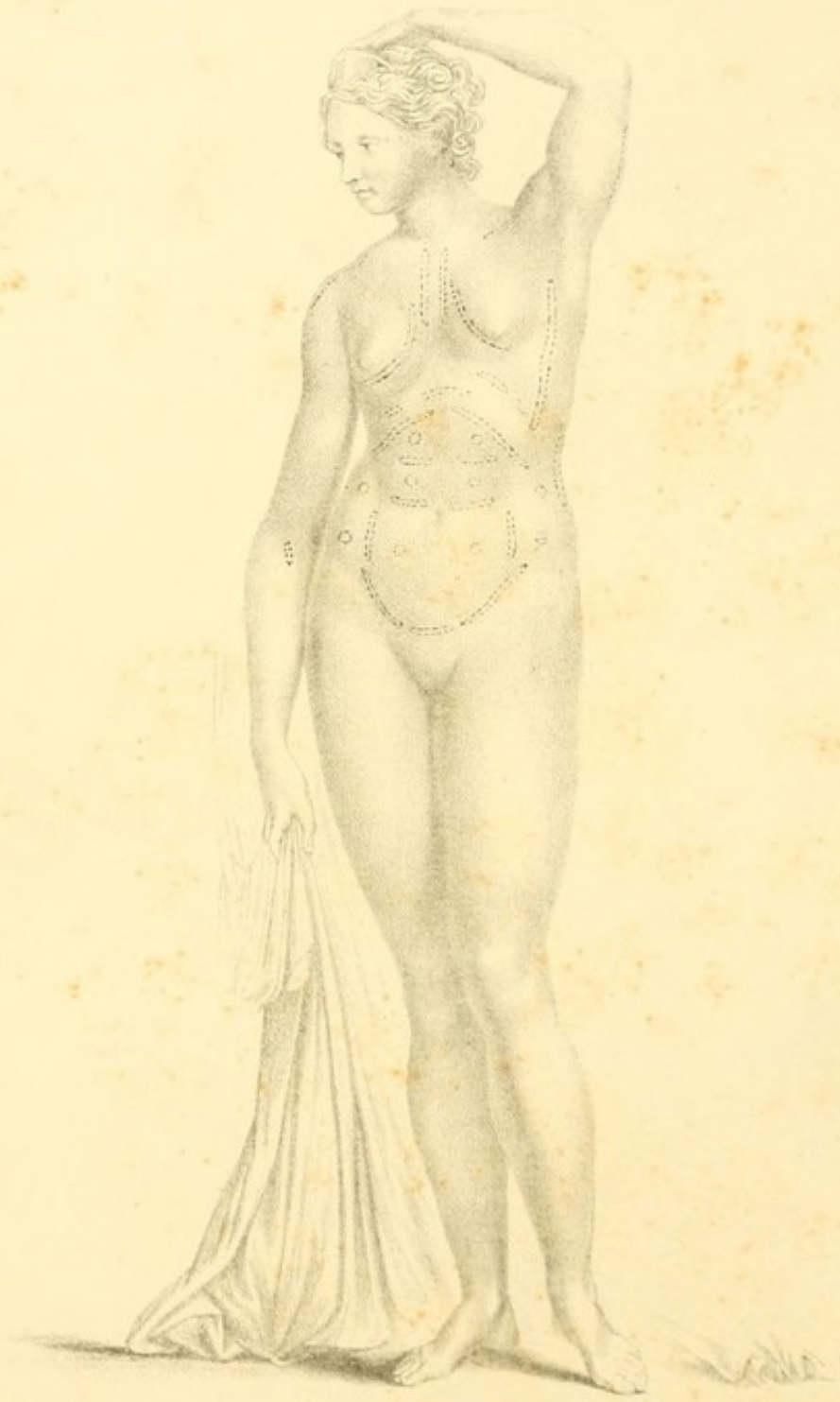
ON MYALGIA:

ITS NATURE, CAUSES, AND TREATMENT.



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Fig 1.



ON MYALGIA:
ITS NATURE, CAUSES, AND TREATMENT;

BEING

A TREATISE ON PAINFUL AND OTHER
AFFECTIONS OF THE MUSCULAR SYSTEM,

WHICH HAVE BEEN FREQUENTLY MISTAKEN FOR HYSTERICAL,
INFLAMMATORY, HEPATIC, UTERINE, NERVOUS, SPINAL, OR OTHER DISEASES.

BY

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TO

PROFESSOR GEORGE BUDD, M.D.,

A LECTURER WHO

PRE-EMINENTLY TEACHES THE STUDENTS IN HIS CLASS TO THINK

FOR THEMSELVES ;

THIS ESSAY

Is Respectfully Inscribed,

BY

THE AUTHOR.

PREFACE TO SECOND EDITION.

IN presenting what is, in reality, a third edition to the Profession, the Author must explain his reason for abandoning the titles originally adopted, and selecting in their place a word hitherto but little known.

When the subject first presented itself to his notice, he thought that he had to deal with a number of simple cases which could readily be recognised as being purely muscular in their origin, and he described them under the title of "Certain Painful Muscular Affections," in 1856; but he soon found that the information he had gained was capable of a wider application, and threw much light upon the mysterious subject of *Spinal irritation*, and he published an extension of the former book under the title of "Spinal Irritation Explained," early in 1858.

A more extended experience proved that the subject had far wider ramifications than were at first dreamed of. The Author has met with a great number of instances in which patients have been under treatment for months for a supposed *uterine* disease, while, in reality, they have been suffering from pain in the pubic insertion of the "rectus abdominis." He has been able to show that a great number of those pains habitually spoken of as *hysterical*, have no real connexion

with that disease ; and that the very signs relied on were, in reality, proofs that the symptoms were of a purely muscular origin. He was further enabled to throw considerable light upon some of the prominent symptoms of pleurisy and peritonitis, and to show that many cases called by the latter name were purely myalgic in their nature. This being so, it was clear that the subject of muscular pain had as important a bearing upon hysterical, inflammatory, and uterine diseases as it had upon spinal affections : and to designate his work simply "An Explanation of Spinal Irritation," would imperfectly describe its tendency.

Considerable difficulty still remained in selecting an adequate title. The Author was guided to the choice of the word "Myalgia"—first, because it had a familiar look about it, as resembling neuralgia ; secondly, because it implied no other theory than that the muscles were the seats of pain ; thirdly, because it had a more classical sound than the more homely phrase "muscular pain," which, by its frequent repetition, would suggest to some facetious patient to dub the doctor by the ignominious title of Muscle-man.

At one [time it occurred to the Author that a complete treatise upon muscular affections would be acceptable to the Profession. The withering of certain muscles after typhus, scarlatina, and other diseases, is one upon which much mystery hangs. The subject of infantile paralysis and shaking palsy is equally curious. The severe spasms which attend Asiatic cholera, and the convulsions that so often accompany infantile diarrhœa, are not yet thoroughly understood. But to have included these, and kindred topics, would have swelled the book to an unnecessary length, and called attention away from the main points he has endeavoured to establish.

Besides this, he found that the gap indicated was partly filled up by the valuable treatise of Dr. Roberts, on Wasting Palsy, and the more extensive work on the Pathology and Treatment of Muscular Disorders, by Dr. Friedberg, of Berlin; consequently he abandoned his intention. He would only add, in conclusion, that the subject of Myalgia is by no means exhausted; much yet remains to be done; the very cause of the pain, in many instances, is by no means clear. In investigating this, he has found himself in regions where he little thought the inquiry could possibly have brought him. He has been led to the belief, that many of our most cherished notions respecting the nervous system require complete remodelling; that a new train of thought and nomenclature is required both in Pathology and Therapeutics, and that a far more comprehensive view of Medicine (in the widest sense of the word) than has ever yet been taken, is necessary, before our art or profession can take the stand which the growing intelligence of the age demands from it. If, therefore, he offends the preconceived ideas of his readers, he must assure them that he does not do so with the wanton and flippant spirit of innovation, but as the result of long thought and close clinical observation.

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EXPLANATION OF THE PLATES.

FIG. 1, FRONTISPIECE,

INDICATES the situations in which we most commonly meet with muscular pains.

The oval marks occupy the fibrous parts, or else the origins or insertions of muscles. Pain in these localities is often severe, and frequently though not constantly aggravated by pressure.

The circular dots indicate the fleshy parts of muscles ; they are occasionally the seats of "tumours," *i. e.* more or less persistent cramp. At these parts it is that we have most commonly severe pain and extreme tenderness on pressure.

The mark on the shoulder is intended to represent the insertion of "trapezius" and the origin of the greater pectoral and deltoid. It marks the position of the pain in the "shoulder" so often complained of in consumption, incipient or confirmed.

The mark across the mammæ marks the origin of the lesser pectoral.

The long one at the side is intended to mark the extent to which we may have pain in the intercostal muscles.

That in the loins is due to over-exertion of the obliquus externus, internus, and transversalis.

The position of the infra-mammary pain corresponds with the lower origin of the pectoral, or with the commencement of the

linea semilunaris. It is commonly connected with pain referred to the origins of serratus magnus and external oblique.

The lowest marks indicate very common seats of pain ; but the existence of suffering in these points is frequently suppressed by females, from natural feelings of delicacy. When they are spoken of, they are too frequently considered to be due to some affection of the uterus. The Author has met with many instances in which the pubic pain has been extremely severe in men.

FIG. 2

Indicates the most frequent situations of pain in the back.

The whole length of the spine may be tender, but it was not considered necessary to mark it throughout. The most common seats alone have been selected. As in the preceding figure, the oval lines correspond with fibrous structures, and the circular ones indicate the seat of spasm. Those in the middle of the loins indicate the fleshy part of longissimus dorsi.

FIGS. 3, 4, 5, 6

Are intended to show the origin and insertion of those muscles and fibrous parts which are the most common seats of pain. Figs. 4 and 5 are intended specially to show the number of muscles which are inserted into the spinous processes.

Fig. 2.

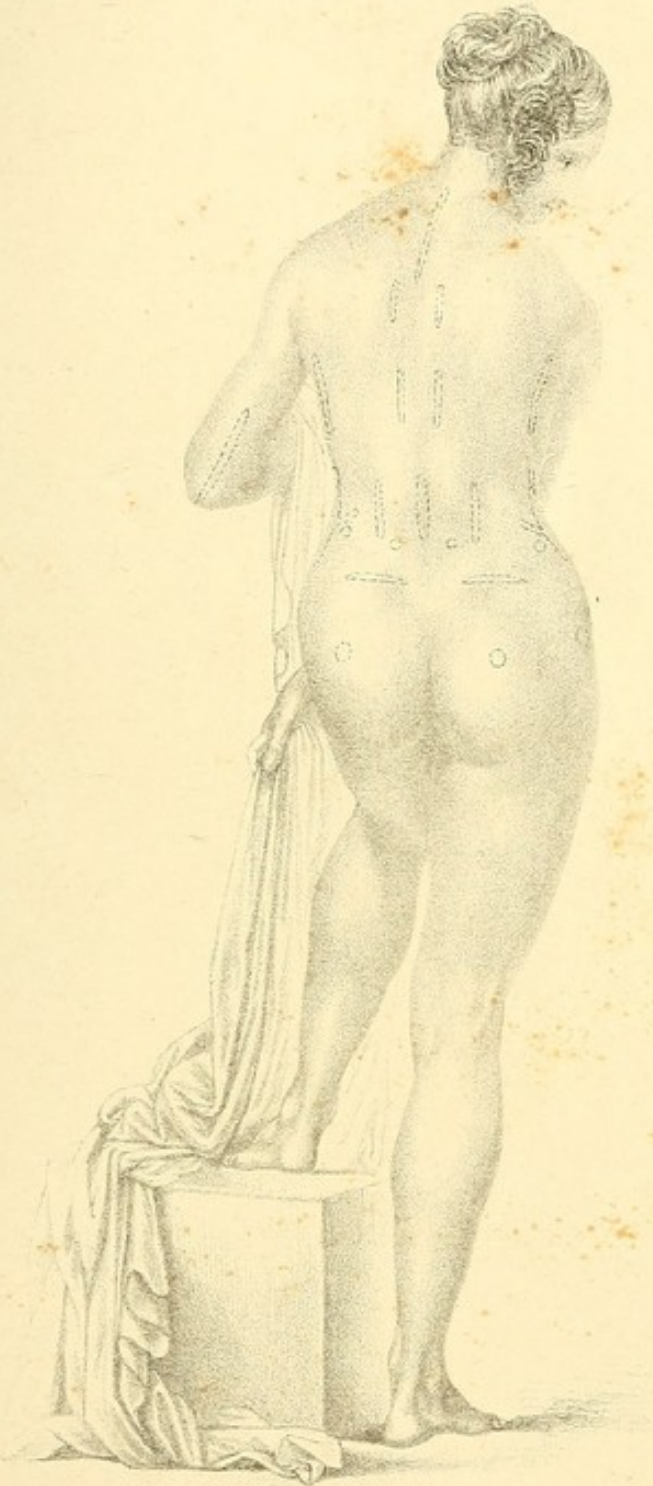


Fig. 5.

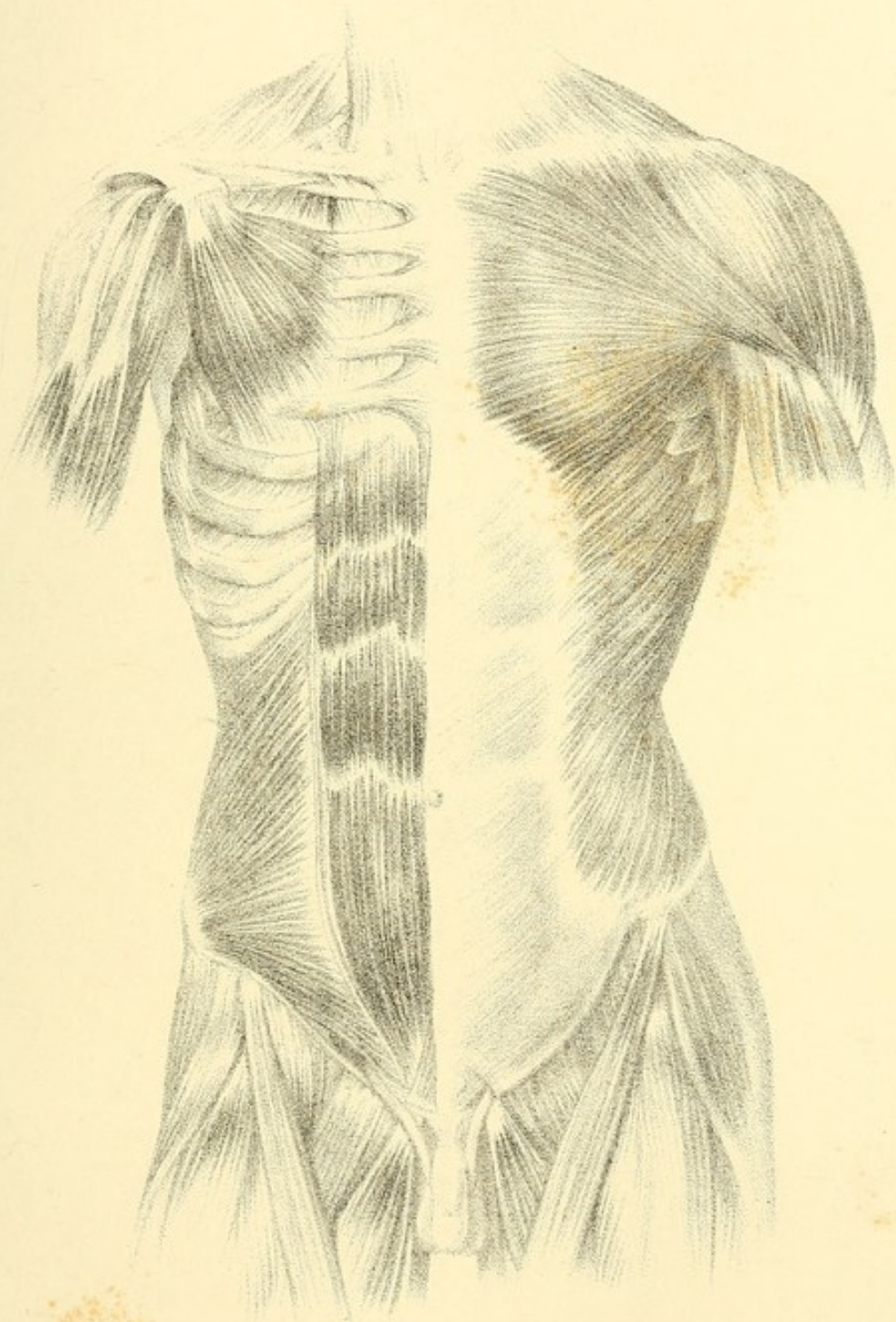


Fig 4

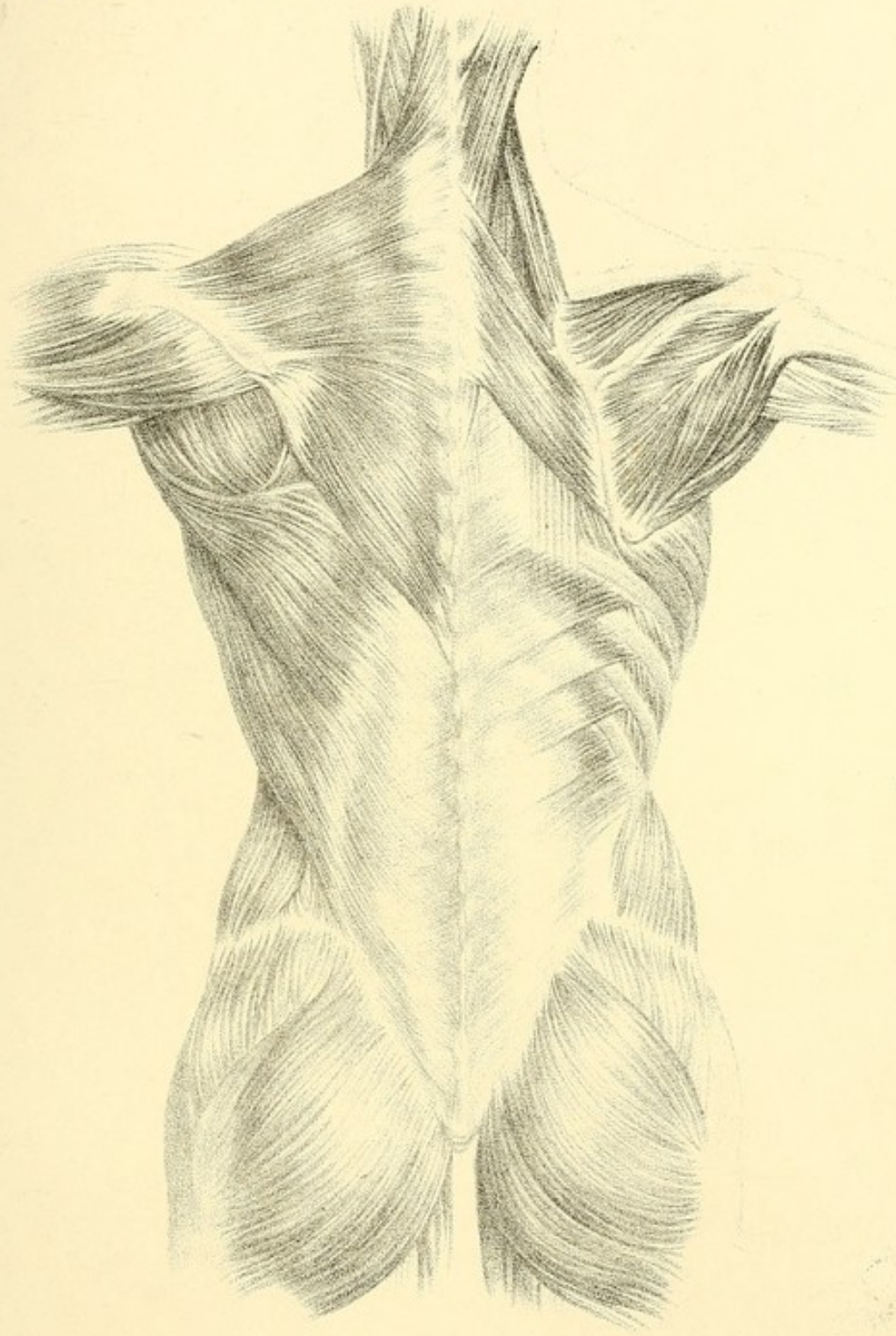


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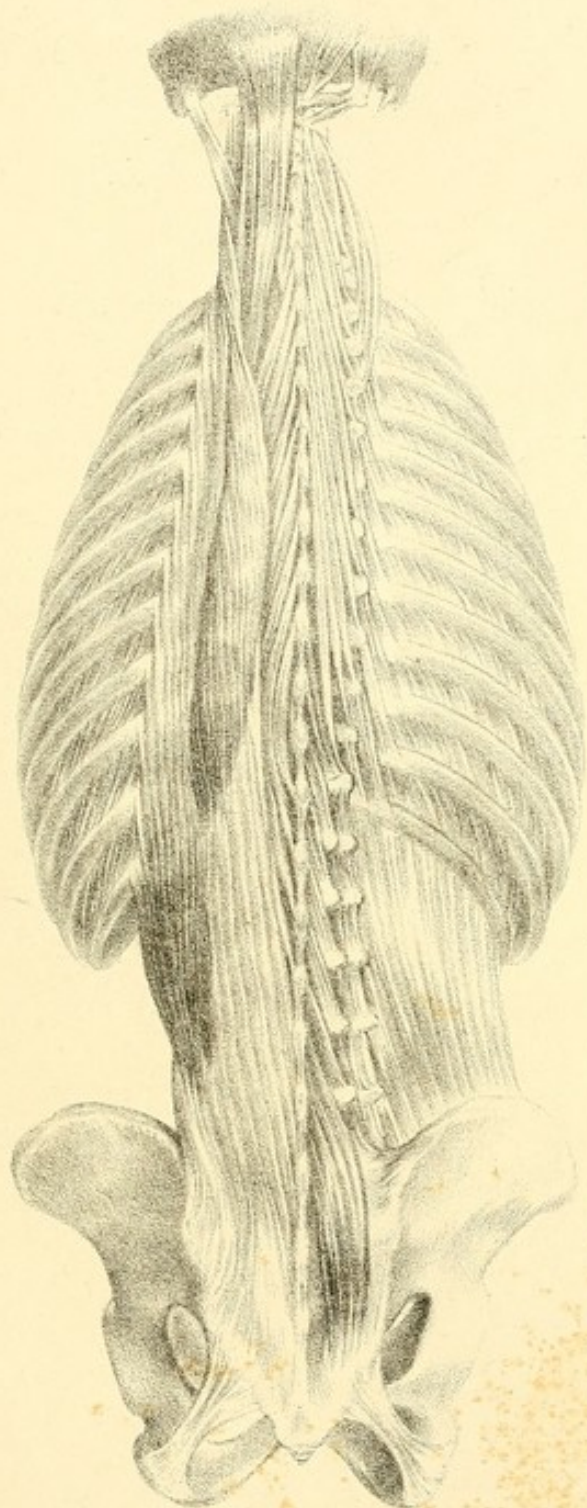
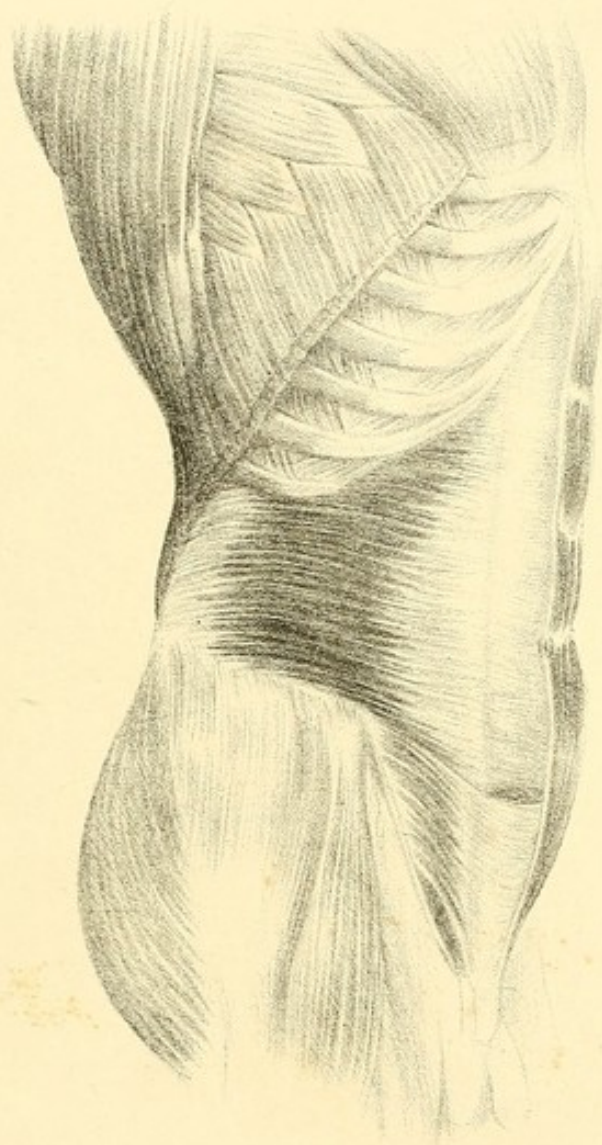


Fig 6



TREATISE
ON CERTAIN
PAINFUL MUSCULAR AFFECTIONS,
ETC.

PART THE FIRST.

CHAPTER I.

INTRODUCTION.

Introduction—Muscular affections well known in the healthy—Ignored in the delicate—Reason why—The word muscle defined—Reason why pain is so frequently referred to the fibrous portion—Sensibility of fibrous tissue exalted by disease—Case of Mr. A. H.—Case of Mrs. J., illustrative of the danger attending non-recognition of muscular pains—Familiar examples of muscular affections in healthy individuals—Cutaneous tenderness or soreness accompanies muscular pain—Truthfulness to nature with which patients describe muscular pain, though ignorant of its cause—Various names given to degrees of stiffness, &c.—Pain is rarely referred to both ends of a muscle at the same time—The mode of invasion—Cramp—The circumstances under which it comes on—Physical condition of muscles during myalgia.

HAVING had my notice directed, both frequently and forcibly, of late, to certain painful affections of the muscular* system, I venture to call the attention of the Profession to the subject. I am the more desirous to do this, as I have met with many cases where deplorable results have followed

* It must be understood that, in using the word muscle, I consider it includes tendon, fibre, or fascia, as the case may be, also the insertions of the muscles into the bones.

the non-recognition of the phenomena referred to, and as I am not aware that any medical writer has treated of them systematically.

The affections I allude to are particularly common—few persons, if indeed any, escaping them altogether.

In the healthy individual they are spoken of under different names—cramp, spasm, stiffness, soreness, or aching. In the invalid they are always designated under the generic term of *pain*.

In the former, it is so common an occurrence to be stiff, or sore, after exertion, that the phenomenon is never examined into,—the connexion between cause and effect is so clear, that as soon as the one is felt, inquiry is instituted into the other; and after a few years' experience, even the schoolboy knows how to estimate the probable duration of his stiffness, by comparing it with the muscular efforts he has made.

In the weakly and invalid, on the contrary, where there does not *appear* to be any unusual exertion made, the idea of soreness and cramp from muscular *fatigue* occupies no place; and even if it did, the difference of sensation arising from similar causes in a strong man and a delicate woman, naturally leads the majority of persons to believe that the soreness of one has nothing in common with the pain of the other. It is easy, therefore, to see how symptoms which are clear in the one, may be obscure in the other.

The pain complained of by the weakly girl is supposed to indicate nervous irritation, neuralgia, inflammation, indigestion, or disease of some internal organ; and, in the endeavour to cure it, the practitioner has too often treated it in a way to insure its continuance. There is scarcely any part of the body which is absolutely free from these affections, for they are to be met with wherever there are voluntary muscles or their tendinous prolongations. But some parts are, however,

more frequently attacked than others, the trunk more commonly than the extremities, the abdominal walls oftener than the thoracic, and the legs more constantly than the arms.

On the whole, the tendinous parts are more frequently the seat of pain than the fleshy; but where the affection is of a spasmodic or inflammatory nature, the fleshy parts alone are implicated. The parts of the tendons most commonly affected are the spots where they are inserted into bone, or where the tendinous joins the muscular fibre. The reason for this is to be sought by inquiry into the minute anatomy of muscle. We know that almost every muscular fibre terminates at each end in being attached to a tendinous fibre; that these, again, are, singly or collectively, inserted directly into the bones. Whenever a muscle contracts, there is a strain upon all parts of it, and a direct effort to tear it from the bone, or to separate itself into its integral parts. There are, therefore, *two* strains upon the tendinous fibre, at *each* end of the muscle: one where it joins the muscular fibre, the other where it is inserted into the bone. In addition, however, to this consideration, it must be borne in mind that (speaking generally) the muscular fibre is much longer than the tendinous one, and the strain which is divided over a long space in the former is concentrated in a small space in the latter. In corroboration of this view we may add that, where the muscle has a long tendon attached to it, as the gastrocnemius for example, the pain arising from over-stretching or over-exertion is confined almost exclusively to the origin and insertion of the tendon, as in tendo-Achillis, at the lower end of the calf of the leg and in the heel, the intermediate parts being free from pain. By many I have heard it doubted whether white fibrous tissue could be the seat of pain in consequence of the paucity, indeed almost total absence, of nerves in it. This is certainly incorrect, and any one who wishes to ascertain for

himself the pain attendant upon the stretching of a fibrous structure, should stand with his feet close together, and then, without bending the knee, try and stoop forwards until he can touch the ground with the tips of the fingers. When first this is tried successfully, the pain in the popliteal region is excessive; by practice the feat can be performed with scarcely any suffering. This natural sensitiveness of the fibrous tissue is wonderfully increased by an inflammatory condition, as the following case will show.

Mr. A. H., æt. 35, was attacked for the second time with a severe fit of rheumatic gout in both feet. He was of spare build, languid circulation, and had always led a temperate life. In addition to the feet, the ankles, knees, wrists, and hands were frequently painful and tender. Business compelled him to leave his bed daily, but he gave himself as much rest as possible. At the end of five weeks the disease gave way, the local pain and inflammation subsided, and he was able to get about with some comfort during the day. His nights now became almost intolerable; for no sooner was he in bed, than a series of intensely painful twitches came in the foot, which were always the most severe as he was falling asleep. Opium had no effect on them. He had had similar sensations during the time of the severe symptoms of gout, but they had never been so bad as they were now. In describing the pain, I noticed that he passed his hand directly along the course of the tendons of "Flexor longus pollicis" and "Tibialis posticus;" and on my making more particular inquiry, his finger indicated these tendons and no other part. There was no pain in the calf of the leg, nor was he conscious of any twitching there. Considering that it was possible that the state of things was not very dissimilar to the condition of the leg after a sprain, and that it was likely that the muscles of the calf had been strained more than they were able to

bear after their long repose,—remembering, too, that few can fall asleep without having a faint convulsive attack, I concluded that it would be the most judicious to apply remedies to the calf of the leg. This was assiduously rubbed before bed-time with oil and laudanum in equal parts, and from that period the pain in the foot disappeared.

By and by, however, he began to walk about much more than usual, and the same painful twitching recurred, without any apparent aggravation of the gouty symptoms.

In this instance it was clear that there was suffering in the tendinous part of a muscle where none existed in the fleshy. Unfortunately I was unsuccessful in affording relief, and the gentleman despairing of cure left town to live in the country. I saw him two years afterwards, and he told me that he had been benefited immediately by the change of air, had recovered perfectly in a month, and had since remained perfectly well. We request the reader to bear this case in mind, as it illustrates a point to which we shall refer by and by, viz. the greater stretchability of white fibrous tissue during debility, and the severe pain consequent on such stretching. There are many delicate women who suffer very similar pains to the above from prolonged walking.

I am acquainted with two other individuals, in both of whom there is strong suspicion of a gouty tendency, who suffer acutely after any unusual pedestrian or fishing excursion, which involves a prolonged action of the lumbar muscles. They are both liable to be seized with intensely painful cramp, but the pain is referred exclusively to the fibrous origin of the longissimi dorsi, and not to their fleshy parts.

If further illustration were wanting, I would point to the excessive pain which the parturient female complains of from the terrible strain upon the sacro-sciatic ligaments, produced by the passage of the child's head, and the relief given by

counteracting the distending force in front, by pressure of a firm hand on the back of the sacrum; and I may add, that the common reason alleged for the pain of the lower animals during parturition being less than in our own species is, that in the former there is a relaxation of the ligaments tying the pelvis together, while in the latter this provision is absent.*

As an illustration of the importance of a due recognition of muscular pains, I give the following case—the first that I met with—and one which naturally laid the foundation for more extensive inquiries:—

Mrs. J., a near and dear relative, æt. 44, or thereabouts, had been confined to bed a long time for what was said to be congestion or inflammation of the liver. For this she was cupped and leeches, blistered, purged, and

* It is not uninteresting to remark here, that the process of stretching is an acutely painful one in other tissues besides those which are purely muscular or fibrous. All are more or less familiar with the suffering which arises from over-distension of the bladder, and from an inordinate distension of the stomach; and possibly some of my readers may remember that some of the sufferings of the “question, ordinary and extraordinary,” as torture was named in the old judicial French courts, were due to violent stretching or distension of some portions of the body. Thus one of the tortures applied to the Marchioness of Brinvilliers was the following:—She was fastened upon a short bench, the face being upwards, and the arms and legs tied as far below the level of the body as possible, so as to put all the muscles of the anterior part of the body on the stretch. The mouth was then forced open, and a funnel placed far back over the tongue, and water poured into it in large but definite quantity. The agony of impending suffocation compelled the victim to swallow this until the stomach was fearfully distended. At the end of this period, no satisfactory confession taking place, wedges were driven between the bench and the small of the back, and a still larger quantity of water forced down the throat. The agony of this torture appears to have been more intolerable than that of any other.

Again: all of us are familiar with the pain of a boil upon the finger or any other part where it involves a considerable stretching of the skin; and we all know the relief which follows as soon as a free incision puts a stop to the cutaneous tension.

starved on low diet : and, as she was able to leave her bed at the end of two months, it is charitable to conclude that the diagnosis was correct, and the treatment unimpeachable. Unfortunately, new troubles arose. The first day she sat up, she began to suffer pain between the shoulders, and in the head. These being mentioned to the doctor, were pronounced to be proofs of a relapse ; “bile was at the bottom of them,” and it would be necessary again to bleed, blister, give blue pill, and to confine the patient to bed. The treatment seemed triumphantly successful, for the pain did not return during the week, and the patient, consequently, once more ventured to sit up. But, alas ! the symptoms returned with increased severity, and she was once more condemned to bed, bleeding, blistering, and blue pill. The pain once more was cured, and the patient was allowed to get up again. The attempt was more disastrous than before. The suffering returned with renewed violence, and her friends now despaired of her recovery. The husband now determined to try change of air, and to see what nature unaided could perform. Though *he* was satisfied to do without further professional assistance, she was not, and confided all her troubles to the author, who was then in his second medical year. The terrible pain in the head, and between the shoulders, was the most complained of ; she could not read in consequence of strabismus ; vision was double from the same cause ; and it was clear that the patient was in a deplorable state of debility. On being requested to point to the chief seat of suffering, the aponeurosis of the trapezius, and the occipital insertion of the same muscle, were mapped out. It was soon ascertained that the pain came on only after the patient had been sitting up, *with the head unsupported*, and that it went away as soon as she lay down, or rested her head on her hand.

In consequence of its continuance, she could not be induced

to give up the use of aperients and low diet, and these, combined with a very natural depression of spirits, almost brought her to the grave. I succeeded, however, at last, in inducing her to believe that the pain was entirely muscular, and had nothing whatever to do with the liver. I prescribed the almost habitual use of a high-backed arm-chair; frequent rest in the recumbent posture; an abstinence from everything but kitchen physic; a generous diet; a liberal use of wine, porter, or ale; and had the satisfaction of seeing the patient mend at a rapid rate. She had been, however, reduced to such a pitch of weakness, that many months elapsed ere she was able to support the weight of her head without pain.

Since then, I have had abundant opportunities to learn that this pain in the trapezius muscle is an almost constant concomitant on convalescence, unless care be taken to provide the patient with a comfortable arm-chair, on which he can rest the head and *arms*; the weight of the shoulders being almost equally onerous with that of the head.

Returning from this digression, let us consider the phenomena presented in a healthy individual exposed to unusual and excessive muscular exertion. We are familiar with the expression, "laughing till our sides *ache*;" and I need not remind my readers of the soreness, pain, or abdominal *tenderness* that follow on the next day after a night spent with any irresistibly comic actor; yet I have often, too, found the cause ignored, and the individual unable to see the connexion between a similar cause and effect, whenever the soreness has occurred in an unusual place, as we show at length hereafter.

Everybody is familiar with the *stiffness* that follows a first fencing, dancing, or broadsword lesson. The school-boy remembers his first ride, the athlete his first day's training. The seaman remembers how his eyes have

“burned” after many an hour’s weary look-out for land, especially at night.* The seamstress, too, often stitches till her eyes *ache* with watching her needle—*i. e.*, until the muscles that move the ball are thoroughly weary. The traveller remembers the weariness he experienced at the termination of a long journey in a jolting carriage; and the enthusiastic card-player may be able to recal the burning ache he has felt at the pubic insertion of the rectus abdominis as the morning approaches.†

Those who have visited mountainous districts for the first time, and ascended some conspicuous height, in which, of course, they have made extraordinary use of the abdominal muscles, will recal the soreness they feel in the same muscles in the descent. When going up the hill, they were contracting them; in coming down, their attitude necessarily stretches them; and the two effects combined, leave a painful ache for at least two days.

To take familiar examples from the other sex, let me remind my readers of the back-ache complained of by the pregnant woman, who has to keep erect all day with an extra burden to support; of the severe pain known by many ladies as a “cutting-out pain,” because it is produced by the unusual strain thrown upon the erector muscles of the back, while they are leaning over a table to cut out patterns.

Every midwife is familiar with the excessive *tenderness on pressure and soreness* complained of by women after delivery,

* This fact was communicated by the Australian friend hereafter referred to, who told me he had often noticed how his own eyes had “burned” after a long watch on a dark night, and especially when looking out for land. He had never been able to explain it until we had our conversation together on muscular pains.

† This is so severe that it is aggravated by a very small amount of urine in the bladder; and as the individual feels obliged to urinate often, he naturally refers the pain to something connected with that organ. I have met with a similar pain in coopers, who have a great deal of stooping work.

and which arises from the immense muscular exertion required to propel the child into the world ; yet few, when a similar pain is complained of by the virgin, can see any relation between one and the other ; a subject we shall revert to at greater length by and by.

Speaking from personal knowledge, I would say, that if any one is desirous of knowing to what a pitch of severity this muscular ache will reach,—if he wishes to know what is meant by the expression, a “burning pain between the shoulders”—if he wishes to have an idea of how a pain may go on gradually increasing from hour to hour until it becomes positively unbearable—let him sit day after day for fourteen hours consecutively, working with the microscope, making specimens, taking notes, raising and lowering the head continually, and he will then find that not even a new beauty, of intense interest, can keep him from his arm-chair, the sofa, or some other contrivance for supporting the head. He will experience relief as soon as ever the strain is removed from his muscles, and may resolve to return again to his work ; but the old enemy soon attacks him ; he determines not to give way, but the *wearing* nature of the pain compels him once more to succumb. The spirit is willing, but the flesh is weak. If a physician were once to become familiar in his own person with the nature of muscular or fibrous pain, he would readily recognise the great truthfulness with which it is described by his patients. He would never fall into the idea that the pain was due to fancy, hysteria, or the love of sympathy ; that it became unbearable, simply by being thought upon, or could be mitigated by the notion that it had no real existence.

If we analyse particularly the phenomena to which we have alluded, we find that there are varieties both as regards degree and kind in myalgic pains. There are sensations

which are only felt *during* or shortly after the time when the muscles are in an active state, and which go away as soon as ever the strain upon the fibres is relieved; others which are only felt *after* unusual exertion, and when the muscles have been for some time in a state of repose; others which we feel under the same circumstances when the muscles are called into renewed activity. We have, for example, very different sensations when lying on a sofa the day after some tremendous mountain excursion, or other excessively fatiguing exertion, to what we have when we try to walk off our stiffness by constant exercise. These sensations are of greater or less duration according to circumstances, but they very rarely come on until a period of repose and sleep has followed the exertion, and they are always most severe at the first, and gradually *diminish in intensity*. The sensations due to the continuous action of a muscle *increase in intensity* until the strain is taken away. They may be followed next day by pain and tenderness on pressure.

As a general rule, when the sensation is referred to a tendinous part it is spoken of as pain, and when to a fleshy part as an ache.

In strong and healthy individuals, the pains rarely last beyond four days; in those who are delicate, however, they are much more persistent, especially if they are situated in those muscles which are frequently called into action, as the abdominal or respiratory.

If we examine into the circumstances under which these sensations are produced, we shall be able, in all cases, to trace them to severe and unusual exercise of a muscle or set of muscles. The well-tried pedestrian can laugh at the stiffness which the sedentary student experiences when he suddenly throws off his quiet habits for more active work. The mason and the blacksmith work with ease for a period quite impos-

sible to the uninitiated. But set the first upon horseback, and the last to do duty as hod-carriers, and they all will experience some stiffness next day.

The habit of muscular exertion does not always give immunity from ill effects in man, any more than it does in women. We shall speak elsewhere of the assistance given by a corset or elastic belt to the abdominal and other muscles of the trunk in women. We wish here to call attention to the frequency with which workmen employ artificial supports to assist those muscles or fasciæ that are violently strained in their occupation. Navvies, who have daily and habitually to wheel heavy barrow-loads of earth, have to place a strap round their wrists to assist the annular ligament. Washerwomen who have much wringing of clothes adapt a piece of ribbon to the same place and the same purpose. Labourers who have much standing-work employ a belt; and the pedestrian uses a strap or handkerchief round his waist to prevent stitch (or cramp). The swimmer will use a tight garter round his calf, with the same intention.

It is a matter of some interest to know, that although a great many muscles may be overworked, all do not equally participate in the suffering. One patient complains of the left external oblique, another of the right, another of the rectus abdominis alone. One refers all her suffering to the pectoral, another to the trapezius, another to the rhomboids. The left infra-mammary region in females is the one most *complained of*, but the pubic region is quite as frequently the seat of pain, though it is rarely referred to. Again: one lady goes to a ball, and to use an ancient saying, "dances herself into a pleurisy," or as we should read it, brings on pleurodyne; another lady only brings on cramp in the thighs, or calves of the legs. One man from walking is laid up with pain in the plantar fascia; another from pain in the "peronei" tendons;

another from pain in "gastrocnemii," "adductores cruris," or "glutei." One is laid up from the same cause with "lumbago;" another with the signs of peritonitis, pleurisy, or pneumonia. All the muscles are equally overtasked, yet all do not suffer in anything like the same proportion.

It is also a curious fact, that we rarely find in the same patient pain complained of in both ends of a muscle, although the strain upon each must be nearly, if not absolutely, equal. Thus we may have pain either at the occipital, spinal, or scapular attachments of the trapezius, but rarely in all three at once. We have pain at the thoracic attachment of the pectorals, but not at the other end. In like manner, we may have severe suffering at the pubic insertion of the rectus abdominis, and none at the epigastric, or *vice versâ*.

Sometimes, however, the pain is not thus confined; and as far as I have been able to ascertain, this occurs in those cases where the greatest amount of exertion has been combined with the greatest debility. It is an equally curious fact, that the fibrous pain will sometimes only last a few minutes, and then disappear, even although the patient should be unconscious of any change in position or motion. Thus I have known an individual tormented to such a degree by the inter-scapular pain while playing whist, as to be repeatedly on the point of giving up the game. Yet by and by the pain has gone entirely without there being any reason to account for it (such as resting on the table, taking wine, &c., getting heated, &c.).

A patient, J. H., whose case is detailed further on, stated in his account of himself, that the pain never remained in one spot for more than ten minutes together.

I am not able satisfactorily to explain these things, but I notice them to call attention to the bearings they have upon "hysteria;" for pains such as I have described, shifting daily

and hourly in their seat, coming and going without apparent cause, have been considered as characteristic of that disease, whereas they have in reality no more to do with it than another sign we have adverted to—tenderness on superficial, and tolerance of steady pressure.

The muscles are severely exercised during the occurrence of cramp in them, and soreness follows this as surely as after a more prolonged but gentler use.

As a general rule, the more perfect the development of the muscular system, the less is the amount of stiffness following exertion; and *the feebler the individual, the greater the pain*. Thus, the hardy countryman can go through an amount of labour with comparative ease, which would lay up his town cousin for a week. The records of the guides to Mont Blanc, or any other mountain, would infallibly show a similar result. Of five gentlemen who go up, apparently under similar circumstances of previous training, &c., one will be unaffected, while the others will have various degrees of stiffness during one or more days. I shall have occasion repeatedly to demonstrate that stiffness, &c., may be produced by exertions which are habitual to the person, in case he is pulled down by any exhausting disease.

It is therefore improper to assume that myalgia cannot have been produced in any given case by such and such "work," because the patient has done that work all his or her life without ever suffering from it.

We may next say a few words upon another well-known muscular phenomenon, viz. cramp.

Cramp is an intense spasm or contraction of a muscle. It comes on suddenly, and is attended, as in all muscular contraction, with apparent swelling and great hardness. It is usually accompanied with severe pain, is of variable duration and intensity, and passes off slowly, with a vibrating, twitch-

ing, or creeping sensation. During its continuance, the same action is produced that would be by a voluntary use of the muscle, but the sufferer has no power to suspend or modify its condition directly. Its persistence rarely exceeds a few minutes, but occasionally it lasts for days, and even for weeks.

Experience shows that a forcible extension is more efficacious than anything else in relaxing the spasm. Shampooing is next in value.

When a muscle has been once seized with cramp, it is very liable to other similar attacks.

Experience still further teaches—and the lesson is of great importance—that cramp rarely, if ever, comes on in a muscle until it has been in some way debilitated. That condition may have been produced by unusual, excessive, or too long sustained exertion, or by long inaction, or the whole system may have been “pulled down” by loss of blood, or food, or rest; by diarrhœa, or other causes of weakness. Thus, for example, after walking for a whole day, we are attacked with cramp just as we point the toe to take off our boots. And when it attacks the bather, it is not until he has been swimming for a long time, and is, too often, far from land. It is to be remarked, too, that these victims of cramp are commonly persons whose frames are not inured to the immense and continued exertion put forward in swimming. It is more common in the townsman who visits the sea or river side, and indulges in a bath after long inaction, than in the countryman who has a daily swim, and whose muscles are more developed and more accustomed to fatigue.

I shall have, in the ensuing pages, many opportunities to show that constitutional debility predisposes to the occurrence of “cramp.”

I am, of course, aware that cramp may be produced by

what, for want of a better term, we must call nervous irritation, as in tetanus, &c. ; but I hope hereafter to show that, even in these cases, the condition of the muscles, as regards vital power or vigour, has a great deal to do with the phenomenon.

I purposely omit all those cases in which cramp is produced by some peculiar condition of the blood—as in cholera and other diseases.

We must now say a few words about

THE PHYSICAL CONDITION OF THE MUSCLES
DURING MYALGIA.

A knowledge of the physical condition of the muscles during myalgia is not absolutely necessary to enable us to understand the symptoms of this disease, but it gives us a most important insight into the *reality* of those signs which have been for so many years spoken of as “hysterical,” and thought of as “fanciful,” “unreal,” and the effect of a too vivid or “sympathy-seeking” imagination.

Two means are open to us—one to investigate the condition of the muscular system in cases of tetanus; the other, to examine it in animals hunted for a long period before death. In the former the muscular contraction is intense, long-continued, and unintermitting; in the latter, the muscular action is intense, but there are natural intervals of rest between the contractions.

In the former, we know that myalgia is present to an intense degree; also that a very long period elapses before the muscles recover their ordinary condition when the patient recovers. In the latter, huntsmen inform us there is such an amount of stiffness, that the animal not only cannot move the day after the hunt, but that it often dies with such rigidity of body as leads to the belief that it has died from tetanus.

I will extract Mr. Bowman's description of the muscles in tetanus, as being a fair exposition of facts irrespective of theory. "He has found" (I am using a quotation found in Dr. Copland's Dictionary) "some muscles in tetanus apparently healthy, whilst others presented a pale appearance, in many parts like the muscles of fish—arising, probably, from the blood having been squeezed out of the vessels. In other parts they had lost their fine filamentous structure, and presented a soft, spotted mass, which was easily torn. Extensive ecchymoses were frequent, and contrasted strongly with the pallor of other parts. Under the microscope, the primitive fasciculi exhibited here and there the characteristic signs of extreme contraction, fusiform swelling, and a closer approximation of the transverse striæ than usual. In other parts these fasciculi were reduced in size, and the striæ were either far apart, or *had disappeared entirely*. In many parts they had burst with the sheath."

Here, then, we have unequivocal testimony that over-exertion ruptures muscular fibre and intramuscular blood-vessels, and that it produces softness of substance and a physical change in the sarcine. Let us now turn to the animal which has been over-exerting itself in a natural manner.

By the kindness of a friend, I obtained a hare which had "coursed" an unusual length of time. It had knocked up the dogs, and the huntsmen had continued to put the hare up from time to time, until the greyhounds had recovered strength for another run. Twenty minutes elapsed from the first to the final run. On examining its body afterwards, I found the following appearances:—The neck had been broken by the dogs' teeth, and there was much blood effused around the wounds. There was little change noted about the shoulders, except that they were a great deal *whiter* than

usual, as was, indeed, all the muscular system, with the exceptions hereafter noted, the flesh looking more like that of a turkey's breast than anything else; it was also very easily broken into fragments. There were spots of ecchymosis, about the size of a sixpence and a shilling, on the back between the shoulders. There was a thick layer of blood above the loins, and all over the abdominal muscles, below the skin. The muscles of the back and loins were purple-red throughout their whole substance, and as soft as butter; the abdominal muscles were intensely purple (looking black); there was extravasation of blood between the two layers, and the peritoneum was universally black with effused blood, and had a granular appearance. Extensive ecchymosis existed in the substance of all these muscles. The thighs were very white, except in parts, where they were marked by blood extravasated in the substance of the muscles. No change could be detected in any portion of fasciæ or tendons, except that they were bathed with bloody serum in some parts, and that they were very readily separated from the muscular fibres.

On examining the muscles microscopically, I found that the fibres broke under the gentlest manipulation. The transverse striæ were almost universally absent; or so indistinct as not to be easily recognised.

In the dark-coloured muscles every fibre was surrounded by a layer of coagulated blood. In some parts, batches of fibres were ruptured through, and a mass of blood interposed between the broken ends; in others, individual fibres were found ruptured *through the sarcine only*, the sarcolemma remaining entire. In some instances, these fractures were attended by a "bulb" of blood around the broken ends, outside the sarcolemma: no single fibres were found ruptured through both sarcine and sarcolemma. The result of this examination proves that there is little essential difference

between the appearances presented in a tetanic man and a hunted hare.

We may, then, fairly assume that *over-exertion in a muscle* produces rupture of fibre, change in physical quality, with destruction of blood-vessels, extravasation of blood in some parts, and an emptying of the intramuscular vessels in other parts.

Our next business will be to define what is meant by over-exertion in a muscle ; and it is upon this that the whole of the subsequent observations will hang.

Over-exertion, we hold, is necessarily a comparative word ; and whenever it is employed in the succeeding pages, the standard of comparison is the individual's powers—not the power of the average of mankind. I will take a very commonplace illustration to show my meaning. A. B. C., when a growing lad, was weak and indolent, and sore and stiff after a long day's play ; a walk of ten miles would lay him up for two days. By and by his strength increased, and he could bear a pedestrian excursion of twenty miles, without other result than foot-soreness. After a few more years pedestrianism became a pleasure, and fifty, or even seventy miles in the four-and-twenty hours did not produce fatigue. But fever came on, and the stout walker was stricken down ; it left him in three weeks, and with an idea of pristine vigour the patient sat up in bed to shave. The feeble muscles completed the job in half an hour, but the effort was not recovered from under two days. At length the man stood up and strove to walk ; with tottering gait he contrived to walk about ten yards, and then sank down exhausted. We need not pursue the history ; for it is sufficiently apparent that what was “ child's play ” at one time, might have been fatal over-exertion at another. The records of McClure and McClintock's Arctic expedition abundantly illustrate the same fact.

But the question now very naturally arises—can the small exertion implied in performing the ordinary duties of life, produce a physical effect on the muscles similar or analogous to that noticed in a tetanic patient and a coursed hare? The answer would seem to run thus: If it can be demonstrated that in any individual the muscular system is unusually soft, the fibre unusually brittle, the sarcine unusually granular (or without striæ), and the blood-vessels unusually liable to rupture, we should expect that the same absolute effect would be produced by a smaller absolute cause in such a person than in one whose system was normal. To apply this consideration to the cases we shall have to relate subsequently, we must ascertain how far the conditions referred to in the above answer are present in cases of myalgia. In doing so, we shall be obliged to anticipate considerably, and enunciate as facts deductions drawn from cases not hitherto before the reader.

1. We remark that the strength of a muscle is proportionate to its healthy firmness and its red colour; its weakness may be judged of by its softness and its whiteness. In the former, myalgia from over-exertion is rare—almost impossible; in the latter it is common, and from apparently trivial causes.

2. We remark that, in some corpses, the pectoral and other muscles are far more readily torn across (liable to rupture) than in others. These are the bodies of those who have died from marasmus, phthisis, cancer, or other cachexia. In such bodies the muscles are always *paler* than they are in healthy men.

3. We remark that in fatty, weak, or atrophied hearts, the muscular fibres have almost entirely lost their striæ, and that they are pale, soft, and friable under manipulation. Patients with such hearts die from syncope, from trifling

causes, and such hearts occasionally rupture during life, from a very slight over-exertion, and sometimes without any unusual cardiac effort.

4. We remark that some individuals are far more liable to vascular lesions than others; a tap, a squeeze, a shake, will produce ecchymosis in one person, while twenty times such force will not effect it in another. The former are invariably delicate, phthisical, or cachectic; the latter are the robust. We all know the tendency to "ruptured blood-vessels" in the consumptive, purpuric, and scorbutic diathesis.

5. We next remark that myalgia and myositis—such as might be supposed to exist in the tetanic patient and the coursed hare—are common or otherwise, in direct proportion to the patient's cachexia.

6. We remark that there is no class of patients in which there is more muscular softness and vascular brittleness than in those who have sea-scurvy, and that there are none who suffer more severely—*a*, from muscular pains and stiffness; *b*, from extravasation of blood in and around the muscles; *c*, from fracture of muscular fibre; *d*, from tetanic muscular rigidity; *e*, from genuine myositis implicating all the parts around.

Next to the scorbutic, those most subject to myalgic affections are they of consumptive or cancerous diatheses.

Hence we infer, that a very small apparent exertion in the weakly may produce a similar result to that produced in the strong by a very great exertion, in consequence of the *relative* effort being the same in each.

This being granted, we have no difficulty in seeing why myalgia is most common in the delicate—why it occasionally passes on to genuine inflammation; just as in the cachectic a bruise is often followed by inflammation, abscess, or even gangrene. We can see a reason for tenderness and pain;

we can see that there is a physical cause for suffering, and that the pain of myalgia is not due to "nerve debility," as Dr. Handfield Jones supposed.*

That the nerves contained within the muscles are bruised and injured by the violence which fractures both fibres and vessels, we can well conceive; but the effect of this would be to modify contraction rather than sensation; and we should anticipate *muscular disobedience to cerebral orders*, rather than alteration of common sensibility. This disobedience we have personally experienced; but whether it arose from the bruised nerve not transmitting the brain's command, or the bruised muscle being incapable of obeying, or from both combined, it was impossible to say: one thing, however, was certain, that the effect was produced by excessive muscular, and not by excessive nervous, exertion.

* Since the above was written, I have met with two instances in which the "rectus abdominis" has been ruptured during life.

The first was in a poor mulatto, who spoke French, and was imperfectly understood. He was a patient of my friend Dr. Collingwood; had bronchitis, and was confined to bed for ten days before death; he died very suddenly after steady apparent improvement. Both recti were torn across, and a large coagulum extended from the umbilicus, the level of the rupture, to the pubes. I examined the ragged ends, and found the fibres free from transverse striæ, and many ruptured through the sarcine. They were, too, very brittle, and resembled those of the lumbar muscles in the hare.

The second case was reported to me by my friend Mr. Fletcher: he recognised it in a "subject" in the dissecting-room. The right rectus was torn across between the umbilicus and the pubis, and much blood had been effused and coagulated. The man had died of pneumonia.

As he told me of this case, we were standing besides another "subject," both of whose pectorals had been torn through during the dissection of the axilla from the weight of the arm, and I noticed that every fleshy fibre of the rectus was torn from the transverse tendons; the muscles did not stretch—they gave way. The patient had died from bronchitis.

CHAPTER II.

“Unusual exertion” defined and explained—Ordinary exertion in the strong is extraordinary in the weak—Formula—Pain probably increases in a progressive ratio—Circumstances under which the muscular power is diminished—The spirometer a test of muscular power—Transient debility will produce transient muscular pain—Muscular pain—Muscular pains after fever—Cases, M. J., and James S.—Habitual exercise does not necessarily give strength—Case, Mrs. T.—Remarks on the influence of exercise—If exercise is excessive in proportion to the patient’s powers, it is prejudicial and exhaustive.

It cannot fail to be remarked, the great stress we have laid upon the fact, that the soreness, &c., depends upon a *severe, excessive, or unusual* exertion of the affected muscles.

It is now necessary that we call particular attention to what we mean by excessive or unusual exertion, and how it bears upon our subject.

So long as a man is in a healthy condition, and is not subjected to extraordinary exercise, he is almost unconscious that he has any muscles at all. Each one performs its duty quietly and silently (so to speak). The muscles are equal to the work they have to do—the work is constant—the head and the shoulders are always of the same weight, or nearly so—the abdomen contains an almost unvarying amount, and the trunk does not change its relative weight to the limbs. As long as the relation *between the work to be done and the power to do it* remains the same, the exertion of the muscles is not excessive. *But whenever muscles reduced in power are obliged to do the same work as when they were strong, the*

exertion they put forth is excessive for them, and the severity of the exertion is proportionate to the weakness of the muscles.

To put this into an algebraic proportion formula: Let M stand for the muscles at their ordinary rate of strength, and W for the work they have to do. If the muscles do double work, they are sore and pained; the same is the result if the muscles lose half their power and do ordinary work. Thus—

$$M : 2W :: \frac{M}{2} : W$$

In addition to these considerations, there is very strong reason for believing that the pain arising from over-exertion in a muscle is not proportional simply to the weakness of the muscular structure, but that it increases in a steadily increasing ratio—that is to say, that the pain felt by an exhausted muscle in a very debilitated individual far exceeds the pain felt in an exhausted muscle in a strong man, and that the severity of the pain will be more in proportion to the general weakness of the individual than to the weakness of the muscular system, as such. For amplification of this part of the subject, *vide* Chapter X., last two pages, and Chapter XII., sensitive nervous system.

It is a matter of importance to remark the connexion between myalgia and the tubercular diathesis, inasmuch as the presence of the former very frequently attracts our attention to the latter, and as very few cases of consumption pass through all their stages without being attended by severe myalgic suffering. The most severe and long-continued cases which have come under my notice have been in phthisical families. The following is a good illustration of this type:—

Mr. E., æt. 38, of medium height, spare frame, but fresh and healthy-looking complexion, consulted me for severe pain in the back, which had lasted upwards of twelve months, and had obliged him to give up his ordinary occupation. His

business was that of inspector of iron at Sheffield, and this implied not only much walking and standing, but much stooping, and often a long continuance of a bent posture. The pain began in the loins, at the upper part of the sacrum, and gradually extended itself all along the spinal region; it was peculiarly bad between the shoulders. He had been under treatment for it repeatedly, and had on one occasion been salivated. The pain always left him as soon as he lay down, but at the time of his consulting me he could not take a walk of ten minutes' duration without the suffering coming on. I ascertained that his digestion had been habitually bad for many years, but I could find no other cause of weakness until I inquired of his parentage, when I learned that his father had been a very drunken dissipated character, that two brothers had died of phthisis, and two sisters were now very ill with it. He improved greatly under the treatment recommended, but I lost sight of the case before the cure was complete.

A few days after this I had two patients in the Northern Hospital, who came in suffering from what they called bad rheumatic pains. One man was a seaman, aged 20; the other an errand-boy, aged 14. I soon ascertained that both were suffering from myalgia; the former principally in the abdominal muscles, the latter in the thighs and calves of the legs. In both the muscles were soft and flabby, and the countenance was expressive of extreme weariness. In neither could I discover any reason for the muscular system being weak, until I inquired into their family history, when I learned that in both cases one parent and two or three brothers and sisters had died from consumption.

These cases introduced to my notice phenomena connected with muscular physiology of sufficient interest to be recorded here. In both it was noticed that the muscles were soft and

flabby, and yet the seaman was habitually exercising his limbs, and the lad was on his legs for at least fourteen hours a day. If exercise alone were sufficient to develop the muscles, surely there was enough of it here; but notwithstanding the daily exertion, the limbs were as soft as those of a bedridden female.

This naturally led to the induction, that something more than exercise was required to ensure muscular vigour; and a recollection of some cases of wasting palsy recorded in Dr. Roberts' valuable treatise, where muscular paralysis had followed protracted exertion, induced a reference to that work, in which we found our own ideas completely endorsed. "It is not difficult," he says (page 144), "to understand why undue toil should affect the nutrition of the muscles. An overstraining of the bodily powers, whatever class of them be regarded, invariably results in a prostration of their activity. Up to a certain point increased exercise of a muscle quickens its nutrition, and enlarges its volume, as we witness in the oft-quoted blacksmith's arm, or in the jockey's crural adductors; but if exercise be carried to fatigue, and proper rest be not accorded to the wearied muscles, their force declines, and they become an easy prey to fatigue."

As the subject was interesting, I next made inquiries respecting the experience of those who undertake to "train" young men for the University boat races, and other athletic employments. From them I learned that a great number of individuals break down at once, *i. e.* during the first week; that the increased exercise of their muscles makes them weaker instead of stronger. Others improve in strength steadily, perhaps for six weeks, and then break down completely in power, or are the victims of fever, or have hæmoptysis. Others, again, continue in a high condition for a long period, and then suddenly go off in most rapid consumption. Two

such cases have come to my own knowledge. One was a young man, upwards of six feet high, who was the "stroke" in the first boat on the Cam, and one of the most powerful men in the University of Cambridge, yet in a fortnight he was too weak to walk up stairs, and after a long struggle he remained a wreck of his former self, and with a large cavity in the left lung. The other was a youth who had developed his muscles to such an extent in the Gymnasium, that his biceps and deltoid were physiological curiosities: like the former, however, he suddenly gave way, and was dead of consumption in a fortnight.

The frequency with which athletes die of phthisis has often been remarked before; but I am not aware that any one has yet called attention to the difficulty, and even danger, that exists in the attempt to develop to any great degree the muscular system of those who inherit phthisis. The most formidable case of consumption which I ever saw recover, was in a man who two days before had been racing two miles against time and had won his wager.

It is also a matter of importance to pay attention to other circumstances under which the power of the muscular system is reduced, and to the great rapidity with which the reduction will occasionally take place. Of the latter fact everyday experience gives us illustration. The young tobacco smoker suddenly finds himself, when under the influence of the drug, almost unable to stand: fright will equally take away the power of limbs, the sphincters, and even of the tongue and throat, in a few moments. The strong man finds that he is trembling like an aspen leaf, and speechless—"steterunt comæ et vox faucibus hæsit." Fever will in an hour or two convert the athlete into the helpless invalid. The explanation of the phenomenon has been sought for in the nervous system, and it does seem at first sight that the sug-

gestion is a good one. A further consideration may lead us to doubt, however, whether that system alone is concerned. The business of the nervous system is to make a muscle contract, not to give it contractile power. Nerve and muscle stand in the relation to each other of general and army; the latter does not move without orders, the former directs its motion, but he cannot supply his men with bone, sinew, thews, and strength. Both may be inactive—the general because the army is prostrated by disease or exhaustion, the army because no orders are received. In like manner the muscular system may be inactive because the contractile power is gone, and it is unable to obey orders sent from the brain; or because, though its contractile power remains intact, no orders for action ever arrive at it. If then in any case we find the *will to do*, without there being a corresponding power of action, we must conclude (unless we can show that the orders never reach the muscles) that the result is due to the muscular system alone, and not to the nervous.

In seeking for illustrations to prove that the contractile powers, or *tone*, as it is sometimes called, of the muscular system vary greatly according to circumstances, we find one in the flesh of a young child which is firm and robust, according to its general healthy condition, but which becomes soft, relaxed, and flabby, as soon as it is reduced in strength by diarrhœa, foul air, or any other depressing cause.

We can see, too, the varying power of the muscular system during life in the condition of the “cremaster.” In high health and vigour, we see it firm and comparatively short; but as soon as, from any cause, the system has been weakened, it is long and flabby, and not contracting, even under the greatest stimulation, to the dimensions it habitually possessed in health.

We see evidence of the same truth after death, the rigor

mortis being a tolerably good measure of the muscular power during life. The stronger was the individual when living, the firmer is the rigidity, and the longer does it last after death, and *vice versâ*. An actual examination of the muscles themselves indicates the same thing; the fibres being far more easily torn across after decease from typhus, &c., than after sudden death from accident, &c.

Again, in influenza, we may often see a strong man deprived of almost all his power in the course of a few minutes. Antimony and other medicinal agents are equally swift in their operation. Calomel and blue pill have similar effects, though they are not so immediate. We have, too, abundant proof that, when a person is already feeble, a single purge or an attack of diarrhœa will prostrate the powers completely. A single day may change the firm fleshed athlete to the flabby invalid, and an attack of ague may bring the lion-hearted Richard to the level of the lowest of the Saracen soldiery.

The varying contractile power of the muscular system is readily recognised by any one who has had much personal experience with the spirometer. This instrument is made to indicate the quantity of air which can be taken into or expelled from the chest by a forced inspiration and expiration. Supposing the lungs and other organs to be sound, it is evident that the amount expelled must depend upon the power of the muscles of ordinary and extraordinary respiration. If then the amount expelled at one time is much more than that expelled a day or two subsequently or before, it is clear that the diminution is due to deficient muscular power, rather than to reduced capacity of the lungs.

We may then interrogate the spirometer, and ask its experience when used under various circumstances. It tells us that the same man can blow up the meter higher after the

night's rest than after a day's work, after a good dinner than on a very empty stomach; that a night's debauch will diminish his powers to a marked degree; that diarrhœa will pull his force down still more; that influenza, catarrh, and prolonged indigestion will have a similar effect. With this experience, we can readily understand how in incipient phthisis there is a great diminution in the quantity of air expired, even before there is any proof of pulmonary change. It is not so much that the lungs are weak, as that the respiratory muscles are enfeebled. It is in incipient phthisis exactly that we have muscular pains from over-exertion more commonly and more severe than in any other disease, and in this disease the departure from the standard number of cubic inches respired varies from $\frac{1}{20}$ to $\frac{1}{2}$.

The following is an example of the manner in which a transient cause of debility may operate in producing pains which remain only as long as the debility lasts. An adult of my acquaintance had a lathe at which he worked some hours daily, but never to fatigue; after some six weeks' practice, he was attacked with diarrhœa to a considerable extent, lasting for four days, and attended with total loss of appetite, and other causes of debility. He, however, continued his daily work of "turning" as usual, and now began to suffer from severe pain in the muscles of the leg and thigh, and especially in their insertions about the knee. He still continued his occupation; the diarrhœa ceased, a great appetite followed, and the muscular pain disappeared. Here there can be little doubt that the contractile power of the muscles was alone in fault, for there was never perceptible the smallest diminution of nervous energy. The fact that a willing horse, or an active soldier burning to revenge the wrongs of his countrymen, will continue in active and energetic motion till they drop dead from fatigue, surely points to the same conclusion.

Sun-stroke too often means death, caused by the willing head overtaxing the weak heart and other muscles.

It must at once be apparent, then, that what is an *ordinary* exercise for the muscles of a healthy man, would be *extraordinary* or excessive to the same man when suffering or recovering from typhus, scarlatina, or any other debilitating disease. Thus, in three cases which have come under my notice, the first sign of the scarlatina was pain in the "sterno-mastoid," of such severity as to make the children cry for some hours. Nothing could then be detected wrong about the fauces; the tongue was clean, and no rigor had occurred. After an interval of complete rest the pain subsided, but it was brought on again by any motion of the head. After the severity of the first symptoms was over, and the children began to laugh and talk again, they began to suffer from exquisite pain and tenderness in the "omohyoid," "sterno-thyroid," and "sterno-hyoid" muscles, which lasted for twelve hours, recurring from time to time according to the amount of laughing and talking done. The first day of sitting up in bed was followed by three or four hours of acute pain in the lower insertions of the "external oblique" and "recti" muscles, and so much soreness the next day that sitting up was not attempted. The next position adopted was a lounging one, similar to that adopted by the Romans at table. This involved continuous exertion of the sterno-mastoid and trapezius on one side, and the result was some hours of acute pain and tenderness in both. When the boy was allowed to sit up in a chair, his vivacity was punished by such distressing pain in all the cervical muscles, that he could scarcely move his head for twenty-four hours, and had great pain both in talking and swallowing. As far as could be judged by inspection and palpation, the muscles were in a cramped condition, and much

swollen. Ear-ache was very common after much laughing; was aggravated by talking, and was referred to the "attollens" and "retrahens aurem," which were tender to the touch. The sufferings were sufficiently severe to produce crying for many hours at a time, and the *superficial tenderness* was so extreme, that few local applications could be borne. As the convalescence became more established, the strength improved, and the muscles lost their excessive irritability. I may add, that the treatment which seemed to afford more relief than any other was the use of an ointment containing eight grains of muriate of morphia to an ounce of spermaceti ointment. When the tenderness was extreme, this was thickly smeared over the part, and covered up; but when this could be borne, it was gently rubbed into the skin. Relief always followed in about half an hour, and the pain subsided gradually. Occasionally, enough was absorbed into the system to produce temporary narcotism.*

It is probable that those painful affections occurring during the early stage of convalescence from scarlatina to which the title rheumatic has been given, are in reality myalgic, and due to fatigue in muscles preternaturally sensitive and excitable. Thus I have known a little girl, æt. 11, who was unable to leave the house till the end of the fifth week of her illness, become so universally sore and tender in consequence of a railway journey, with the getting down and up stairs, walking from the car to the station, &c., that her friends were seriously alarmed for her, the impression being that she had acute rheumatic fever. A week elapsed ere the stiffness went away. The loss of muscular power, not only during the scarlatina, but for some time after it, is so well marked in the majority of cases, that these myalgic attacks may always be

* These cases will be referred to hereafter, and the inflammatory condition of the muscles discussed.

anticipated; and it is well for them to be understood, for, without a full comprehension of their nature, serious mistakes may be made in the treatment and the convalescence indefinitely prolonged.

In the following case myalgia of the upper segment of the rectus was mistaken for inflammation.

M. J., *æt.* 7, had been suffering about ten days from a severe attack of scarlatina, which reduced her strength so greatly that she had to be kept alive with wine and other stimulants. As convalescence approached she began to suffer from a constant irritable cough, accompanied with severe pain in the chest. It was at this period I first saw her. I found that the pulse was quiet, the skin cool, the breathing easy and free from wheezing, or moist râles. The cough was short and sharp, as if from irritation about the throat. The pain in the chest was referred to the origin of the rectus, and entirely confined to it. On pointing this out to the medical attendant, he considered that either the girl or I was fanciful, and he endeavoured to show that pain was felt in other parts of the chest. But as he moved his hand from part to part, it was curious to see how steadily his questions were answered in the negative until he drew his finger along the line corresponding to the origin of the muscle we have named. We now ascertained that the pain had come on subsequent to the cough; that it was increased by an effort to sit up; was relieved by lying on either side, with the knees drawn up, &c. The result of the consultation was the recommendation of an opiate, and a single warm epithem to the epigastrium. The former relieved the cough in twenty-four hours, and the pain diminished "*pari passu.*"

James S., *æt.* 28, had a mild attack of typhus fever, from which he recovered in about a month. He did not regain his strength, however, as fast as he could wish; and, contrary

to my recommendation, he persisted in taking a good deal of exercise in the open air. The result was as I anticipated,—daily complaints of pains referred to the legs, thighs, shoulders, abdomen, and other places. I told him their cause, yet still he persevered; and as he was really getting stronger, I did not remonstrate any more. One day, however, his complaints of pains were unusually bitter, and I requested him to point out their seat. He at once mapped out the origins of all the abdominal muscles, and the diaphragm, commencing at the ensiform cartilage, and going backwards, along the margin of the ribs. “What have you been doing?” was my next question. “Nothing, sir.” “Yes, but he has,” said the nurse, who was standing by; “he told us that he had been *running*.” Of course this explained the pain, and no further notice was taken of it.

So again, we can in health support the head, during the day, without fatigue; but, when debilitated in any way, we can no longer do so, for the weight of the head remains the same, while the muscular fibre is reduced in power. This is familiar to us all by the manner in which a “heavy head” and “heavy eyelids” are used as symbolical of fatigue—*i. e.* the head feels heavy, not because it has increased in weight, but because the power to support it is diminished. The country people have a proverb, “that if you carry a lamb all day it becomes a sheep by night,” which they explain in the same way.

It costs us no suffering, while we are in good health, to walk erect, or to sit over our books and papers; but when illness has reduced our powers, when a refractory stomach has refused the necessary supplies of food, or when we have been brought low by accidents, loss of blood, diarrhœa, hunger, or other privations, we find the exertion excessive,

painful, or too great for our powers. As long as the school-girl is healthy and strong, she can sit erect for hours, and at the end feel *weary* only; but as the influence of sedentary life, mental exertion, deficient appetite and digestion, a crowded sleeping apartment and school, begin to be felt, the weariness is changed to *painfulness*; she is no longer *fatigued*, she is *suffering*. Even though the habit of erect sitting may be continued for a number of years with impunity, the exertion may become too great at last. The following case, which suggested the writing of this treatise, illustrates this point forcibly. Many similar ones will be given hereafter.

Mrs. T., aged about 54, came under my care, suffering from bronchitis and asthma. She had been under medical treatment during thirteen years, and informed me that she had, in addition to her other ailments, enlargement of the liver, and a tumour in the uterus. Her severest sufferings, however, arose from intense pain between the shoulders, and in the occipital region of the head; it was, she said, for all the world as if somebody was burning her with a hot iron. She had, too, pain in the loins and small of the back; and, she added, suiting the action to the word, that there was a continual grasping pain all over the abdomen, as if somebody was always drawing her up, and so severe was this when she walked, that she was often obliged to lay hold of the palisades in the street, to draw herself up by, and relieve the pain. Bed alone gave her a degree of ease, but her troubles pursued her there, for at every turn the abdominal walls were drawn up into lumps on one side or the other. A severe nettle-rash, for the last two years, added to her suffering. Life was a burden to her; during the day her wish was, "Would to God it were evening," and

then, "Would to God it were morning." She had a fixed idea that her case was hopeless, and that she would die ere the year was out, and she was nothing loth.

It was not until my third visit that I obtained all these particulars, from the disinclination she felt to talk of them, and some further time elapsed ere she spoke to me of the treatment that had been adopted. She told me that she had been blistered on almost every part of the back and head; had had leeches to the nape, and between the shoulders; that the abdomen had been covered with them, in different batches. She had, she said, had blisters by dozens, and leeches by hundreds; and that she had been kept low in consequence of the presumed disease of the liver. In fine, all the usual counter-irritants had been used, in abundant succession, whenever the pain became more than ordinarily severe, or was more than usually complained of. On one occasion the uterus had been considered the seat of the mischief, and she had been examined with the speculum; and on some abnormal appearance being found around the os, it was thought her sufferings were due to uterine sympathy, and a gloomy prognosis was given. By this time, however, I had seen sufficient of her habits to account for the majority of her symptoms. Originally a healthy woman from the country, she had married a gentleman who had a profound contempt for any lady who indulged in luxurious habits. She had ever after acted as affection dictated, and sat erect, without using any artificial support. As long as she was strong, the exertion brought no suffering; but when menorrhagia, diarrhœa, and the like had pulled her down, the muscles refused to do their work without pain. The bronchitis kept up debility; wine and other stimuli were not adequate to give the necessary strength, and she neither had the inclination, nor had she even been directed, to give her muscles less work

to do. The pulse was feeble, respiration gasping; there was frequent and distressing cough, and an occasional expectoration of tenacious mucus; the appetite was poor, digestion bad, flatulence occurred nightly, and the bowels were torpid. There were the usual physical signs of bronchitis over the lower halves of both lungs, but percussion showed that the liver was natural in size, and it seemed possible that the supposed enlargement had been nothing more than a cramped state of the external oblique, on the right side.*

I ventured to assure her that all her pains were muscular, that they were to be cured by indulging in a greater amount of repose, and by a still further development of the strengthening plan of treatment.

* The subject of tumours from muscular over-exertion is one of great interest. I have attributed the one here to simple cramp in the fleshy fibres, and there is no doubt this is a frequent cause; but it will be seen hereafter that the characters assumed are different to those we should anticipate in cramp. On mentioning this subject to a non-medical friend who has been all over the world, mingled with all sorts of people, and who was for many months a miner at the Australian diggings, he assured me that he had very frequently seen large and painful swellings—white and shining as if they were going to form abscesses—situated over the radial insertion of the pronator quadratus. The swelling followed severe twisting or wringing motions, and went away entirely after rest. He had heard it attributed by surgeons on the spot to effusion under the periosteum. The use of a strap round the wrist used to prevent its recurrence. It is tolerably clear in this case that the swelling could not have been from cramp in the fleshy fibres of a muscle, for none exist at the point indicated. The appearance of *whiteness* negatives the idea of the swellings being purely, if at all, inflammatory. Their tenderness and painfulness would lead to the belief that there was great stretching of some fibrous structure. I have not any personal experience on the subject, but I would suggest the possibility that, in these cases, the periosteum has in reality been torn from the bone, and an effusion of serum and blood poured out between the two, which is readily absorbed under favourable circumstances.

Mr. Syme has related some cases where, from excessive and long continued exertion of a muscle, the portion of bone to which one end was attached has been killed and subsequently exfoliated.

A sofa and comfortable arm-chair were to be frequently used during the day; tea was to be eschewed; steel took the place of some of the wine; a mild expectorant relieved the cough; colchicum diminished the urticaria, cod-liver oil gave strength rapidly, and at the end of a month the lady was once more able to enjoy life, and enter into its pleasures. A party of attached relatives, who had come to condole with her, remained to congratulate. The pains, and aches, and spasms had all gone; the cough was all but well; and she, who had previously risen at eleven and retired at eight, now rose at eight o'clock and retired at eleven. She has since had attacks of bronchitis, but the cramps in the abdominal walls have never returned.

This case affords another example of the powerlessness of habitual exercise to produce strength. The subject is of sufficient importance to demand a few more remarks. There is a general belief that air and exercise give great tone to the system, and are amongst its most powerful roborants. But this is true to a limited extent only, for it is clear that if these are not combined with a healthy appetite, and digestion, and a sufficient amount of food, they are simply *exhaustive*. All muscular exertion tends to a rapid waste of the tissues of the body, and a corresponding decrease in their powers. We are not the same individuals mentally and physically at the end of a long day's toil, carried on without food and drink, as we were when we started in the morning; we are *exhausted*, and this exhaustion shows itself equally on the brain, the heart, and the stomach. The exhaustion is more or less permanent, according to the supply of food, &c. that we take. Whenever, then, there is loss of appetite or of digestive power after exercise, it becomes positively as prejudicial as aperients, bleeding, mercury, or antimonials would be.

Each individual appears to be able to undergo a certain amount of exertion before he is too much exhausted to eat and digest, but this amount varies so materially, that no one man can be taken as a type of another. In some the amount is practically illimitable, in others it is excessively small. The following cases are all of them interesting as bearing on this point :— W. J. H. could not travel in a railway or other carriage for twelve hours, although he slept the greatest part of the time, without having a fit of flatulent indigestion and consequent asthma. As his strength increased this went off, but though he could bear a twelve hours' journey, he could not manage one of twice the duration ; it produced the same effect as the shorter one did at first.

Miss C. had a fatty or weak heart. Every day she found her locomotive powers decrease : at last she could not walk across a room without faintness, a gasping respiration, lividity of surface, &c. She was then confined to bed ; while at rest she was comfortable, could adjust the bed-clothes once, but not twice at a time ; prolonged conversation would bring on a paroxysm. Under the use of cod oil she recovered to a great extent, and was able once more to go about and attend to household duties. When at her best she could walk four miles without exhaustion, but any attack of diarrhœa, influenza, and the like, curtailed her powers ; prolonged attendance on a sick friend brought on a recurrence of the symptoms ; and a very formidable attack of fainting, asthenia, &c., lasting for three days, was brought on by a long walk up hill. Whenever she was exhausted, the stomach was reduced in power quite as remarkably as the heart, and the appetite and digestive power were quite gone.

Mrs. B., æt. 55, had pains in the back and side, which she referred to the liver ; to remove them she took a great deal of walking exercise, and she got worse. Ignoring the cause,

she took longer walks, and undertook more tiring labour; she still found her sufferings increase: she consulted her doctor, who pointed out that the pain was muscular, and arose from her having overtaxed her powers. He simply recommended her to breakfast in bed, and to lie occasionally upon the sofa, and she was cured at once.

Instances of a similar kind have been already referred to, and others will be found in subsequent pages; but I may specially note the frequency with which I have been consulted for muscular pains, &c., by nursery maids, who are much in the air, and have plenty of exercise in the carrying of children: as long as the appetite is good they can stand the work; when this fails they become progressively exhausted.

The following are interesting examples of muscular pain, accompanied with exquisite tenderness, arising in the male sex from excessive exertion: they occurred in the practice of some of my friends:—

Mr. —, aged about 45, of very tall and slender figure, went to pay a visit to Bowness. He had not been there long before he had so intense an attack, as he thought, of rheumatism, that he summoned his medical attendant from Liverpool. He was found in bed, unable to move without severe pain. There was excessive tenderness to touch all over the body, but particularly over the abdomen and chest. The skin, however, was cool, and the pulse quiet. On being interrogated as to what he had been doing the day before, his reply was, “Nothing particular; nothing that he was not accustomed to do.” The inquiry, however, was persisted in, and it was at length elicited that he had, with his sons, been rowing a distance of some twelve miles, an exercise to which he was not at any time accustomed. The cause was apparent at once, and time and quiet soon wrought a cure.

A. B., a labourer, had a severe attack of bronchitis, with

which he was laid up about two months, and which reduced his strength sadly. He lost his ordinary occupation, and as soon as he was able to work took what he could get, and had a day of digging, &c.; next day the doctor was summoned, as the patient considered he had an acute rheumatism. He could not move for the severity of the pain which was all over the body, and the skin was so sensitive, that he could not bear to be touched. "He resembled an hysterical woman." A careful collation of facts induced the doctor to consider the case one of simple soreness arising from over-fatigue, and "rest" alone was recommended. Three days, however, elapsed, ere he was free enough to move about comfortably.

I may take this opportunity to state that a very large portion of the patients commonly said to be suffering from chronic rheumatism are in reality suffering from pure myalgia.

Such individuals when once admitted into our hospitals get rapidly well from the *rest*, independent of treatment; and, from my recollections of the past, I feel convinced that this error in diagnosis has very materially augmented the difficulty which exists, in ascertaining the most appropriate treatment for genuine rheumatism.

When once our attention is alive to the distinction between the two complaints, their diagnosis is easy.

CHAPTER III.

Diagnosis of muscular pains, with illustrative cases—After the diagnosis has been arrived at, a further inquiry is necessary to ascertain the reason why the muscles are painfully affected—Myalgia implies too much work or too little power—Conversation between doctor and patient described.

It will now be necessary to say a few words respecting the diagnosis of those pains which we designate as muscular, but which may be equally well spoken of under the title of *myalgia*, or *myalgic* ($\mu\upsilon\sigma$, a muscle; $\acute{\alpha}\lambda\gamma\acute{\epsilon}\omega$, I suffer pain).

Before entering upon the subject, we must state that, in speaking of muscular pains, we include those which are due to stretching of tendons, fibres, fasciæ, and the like; parts commonly associated with muscles.

It is not professed that the diagnosis is perfect, but it approaches as nearly to correctness as is possible in the present state of our knowledge.

1. In describing the pain, the patients almost invariably press their hand upon the affected part; sometimes they pat it with the fingers, or the fleshy part of the wrist; most commonly they lay the open palm upon it, push the hand forward, and raise it up, so that the wrist leaves the surface last. Though the patient herself taps the spot, she shrinks if the doctor should attempt to do so. This seems, to me, to be a pathognomonic and a certain sign.

2. The pain is spoken of as wearing, aching, burning, or

“hot ;” it is occasionally spoken of as a “soreness,” or a “weakness.”

3. In labourers and others who have much bodily fatigue for six days, and a perfect rest on Sunday, the pains are always better, if not absent, on Monday morning, and very bad on Friday and Saturday. The same cannot be said of domestic servants or housewives.

4. As a general rule, the pains are absent in the morning, begin about noon, and increase in severity up to bed-time. They commonly cease entirely when the patient lies down in bed. In bad cases they are only relieved by the recumbent posture.

5. When they follow excessive exertion of muscular power, they are present when the individual awakes, and continue with diminishing intensity for a varying period. The pains are persistent, more or less, according to the amount of exertion used, and whether the kind of exertion is one the patient is unaccustomed to.

6. The pain is commonly attended with superficial tenderness, which often exists to such a degree, that even the contact of the clothes is almost unbearable, and the patient will flinch, and sometimes scream at the lightest touch ; notwithstanding this, steady, sustained, and equable pressure gives marked relief.*

* A very intelligent friend, to whom I have before referred, made some valuable observations on this point. He said it was very common to find many persons in an Australian journey suffer intensely from muscular pains. “We scarcely ever thought of calling anything a journey,” he remarked, “unless it lasted at least a week or ten days. They were made in drays, carts, or wagons, with the men, mostly on foot, carrying their guns, revolvers, or other light things. The tracks or roads were so heavy, that we could only compare the fatigue we underwent to that experienced after long walking over a newly-ploughed field after rain, or over deep dry sand. The travellers planted their feet apart, and walked with a rolling gait. The first day all went well : people were tired, and that was

7. The pain is not referred to parts where nerves are abundant.

8. It is referred to some part of a muscle or set of muscles, the fleshy part or the fibrous insertions, and is aggravated considerably by bringing the affected parts into active operation.

It is important to note this fact in connexion with what has gone before, for I have known many patients declare that their pains were as bad when they were in bed, as when they were up. A remark like this seems antagonistic to the fourth point in the diagnosis. It is, however, reconciled with it at once, when it is ascertained that the pain is absent when they lie perfectly still, but that it comes on again every time the patients move in bed.

9. The pain can be traced to unusual exertion in a strong person, or to a weak muscle having to do the work of a strong one.

I do not know any point in the diagnosis that requires a more ready power of appreciation than this. Unless the mind is imbued with the possibility of such and such an occurrence being "too much" for the abdominal walls—unless it is prepared to believe that a walk of a few yards

all. Next day, those not inured to fatigue had frequent stitches in the side, and could not make a long day's walk. At night they could not sleep on the side, only on the back; and ideas of liver disease and pleurisy were discussed at the camp-fire. The next day the pain in the side terribly augmented, and the day's work was shortened accordingly. By this time, *the whole sides were so tender that all sorts of plans were resorted to to keep off the shirt from touching the skin* (of course, had this been met with in a woman, it would at once have been called hysterical by the doctor). Those who had previously led a sedentary life were the greatest sufferers. Many threw away all the goods they had to carry. Two or three days' rest, without other appliances, completely cured them." I shall have occasion by and by to refer at some length to this particular point.

In Part II. will be given the case of a housemaid who had similar cutaneous tenderness from over-exertion.

could overpower them—that sitting or standing may produce epigastric or pubic pain—the real cause of the complaint will not be discovered. Many of the cases I shall hereafter detail will illustrate this point. I append four here, which are the more interesting, as two occurred in physicians, one of whom was in full possession of my views on the subject; the last of the four occurred in a personal friend of Mrs. T., and in the practice of a medical man with whom I had had many a discussion on muscular pains:—

G. O. F., a young medical man, *æt.* 26, tall and healthy-looking, though with a contracted chest, came to consult me at the Northern Hospital, Liverpool, respecting a severe and harassing pain two or three inches on the right side of the lower end of the sternum. I learned that two years ago he had had measles, which left him weakly: he had then had what he assured me was pleuro-pneumonia, for which he had taken a great deal of mercury; he had continued very weak for some time, but in other respects had recovered perfectly; he remained well until six months ago, when he had an attack of influenza, which was attended with some cough and expectoration; since then he has been getting thinner, and has suffered much from pain in the side. To regain his strength he had been travelling, being always on the move for the last two months. His daily average of travelling was about eight hours, and his longest rest two or three days,—but that was only when he felt knocked up. He had latterly been pedestrianising in Scotland. His diet was bread and milk: stimulants he fancied made his side worse. His family connexions were all healthy. His pulse was 84 (standing), his breathing easy, and his complexion healthy. A careful examination of his chest failed to detect any abnormal phenomenon. A further investigation elicited that the pain was worst after a day's

fatigue—that it was relieved by pressure (although the part seemed very tender when percussion was made over it)—by pressing with a firm hand over the place a deeper breath could be taken than without: the stitch-like pain only came on when the intercostal muscles were strongly contracted, and it went off just in the same way as cramp elsewhere does. I further ascertained that while pedestrianising he had made very free use of a walking-stick, which he was often obliged to transfer from the right hand to the left, on account of the fatigue of the shoulder it produced. He was always better on Sunday and on Monday morning. I ventured to assure him that the pain was purely muscular, and required little more than generous living, tonics, and rest, with the addition of some local anodyne liniment.

Another case of a precisely similar description occurred in a distinguished physician who had been threatened with phthisis. The pain in this case was referred to the same part as in the preceding one, but it was supposed to be more formidable, as it was accompanied by a considerable amount of expectoration, and perspiration at night. The pulse, however, was only 80. The skin was cool. The nature of the pain was similar to that in the last case. There was no physical sign of pleurisy, but the patient had been for some days living very abstemiously, and had been occupied for many hours daily in overlooking and arranging papers, &c., in which he had, of course, to employ his right arm principally. A few glasses of wine extra, and some steel, with more rest, set him right again in a short time. Here, as in so many other instances, there was no suspicion that the pain might be muscular, because it was supposed that there had not been unusual exertion. The exertion had in reality been unusual only because the muscles had been, when weak, called upon to do the same duty as when they were strong.

A day or two after this case was seen, I was called in to see a gentleman who had a cavity under the left clavicle, and was exceedingly anxious about the right side, as he had had severe pain in it, which he could not refer to any one spot. There was no physical sign of pleurisy or disease of the lung, and no tenderness on pressure. The pain came on after a long railway journey—and it “caught his breath.” “I think, however,” added his ordinary attendant, “that it is only a muscular pain, for if he draws in his breath *slowly through the nostrils*, he does not have the stitch; but if he opens his mouth and takes in a full breath *rapidly*, he is at once drawn on one side, with *his hand on the seat of pain*.” This medical *ruse* is well worth remembering.

The following case illustrates the severity of the suffering, and the uselessness of antispasmodics to relieve it:—

Mr. B., æt. 40, of sedentary habits, very thin and pale, and of small build, consulted me for a distressing spasmodic affection. The history was this. About five weeks ago he had a serious attack of hæmoptysis, which reduced him considerably. He took for it some turpentine, which checked the bleeding, but its administration was followed by intense pain in the right hypochondrium, vomiting, and constipation. These symptoms were relieved by copious enemata, and he then began to suffer from spasms, referred to both sides. He had been suffering latterly from irritable cough, and had not been able to lie down for three weeks, the attempt producing violent cough and spasmodic action of all the muscles of respiration; and during the whole of that time he had not had an hour's continuous sleep. His ordinary attitude was sitting in the erect posture, or stooping forwards. On examination, I found faint crepitation under the left clavicle, and absence of any respiration over the lower lobe of the right lung. The pulse was feeble, the voice weak, the

appetite gone, and the bowels, as was to be expected, were generally constipated. As there were no signs of inflammation present—as there were all the requisites to produce muscular pain and spasm, *i. e.* a debilitated frame, and unusual exertion of the muscles in keeping the body constantly erect, and in the action of coughing frequently—and as the spasmodic nature of the affection was well marked, the diagnosis appeared easy, and the indications of treatment plain: morphia was given in quarter-grain doses, to reduce the irritability of the chest and of the muscles, and a liniment, composed of laudanum and camphorated oil, was used freely over both sides, from the arms to the pelvis. The treatment was eminently successful. He slept four hours the first night without awaking. The next night he was able to go to bed. The cough ceased, the spasms left the intercostals, and were confined now to the external oblique, &c., and were reduced greatly in intensity. In ten days he slept in bed for the whole night without awaking, had a return of appetite, and increased strength, and was declared convalescent, and able to go into the country for the benefit of change of air. The phthisical symptoms, however, shortly returned, and he succumbed under them. It is worth noting in this case that ether, chloroform, and assafoetida had been freely tried before the morphia was used, but they had not given relief after the second day's use.

10. The pain is relieved by relaxation of the muscular or tendinous fibres, or by artificial support. The assistance which this observation gives to the diagnosis is immense, though, as may readily be understood, it is not always available. The following case was one of great uncertainty, until it was cleared up by attention to this sign.

J. G. O., æt. 48, a gentleman of stout, tall frame, strong looking, and of great energy, complained of severe

and sometimes intense pain, referred to a small spot corresponding with the tendinous portion of the rhomboideus major on the left side. This was at times so agonizing as to preclude any attention to business. He then went to bed, and almost immediately "felt himself in heaven"—the relief was complete. He was the editor of a newspaper, and worked indefatigably with his pen; had suffered from this symptom for many years; had had it referred by one medical adviser to the liver, by another to the gall-bladder, by another to indigestion, &c. A close examination could detect nothing wrong in the chest, in the region of the liver, &c. The pain was described as frequently changing its seat, now being on the right side, now on the left, but always confined to a space between the spine and scapulæ. He had pain sometimes, though rarely, in the spine and occiput: there was no tenderness on pressure. Blisters, opiates, &c., gave no permanent relief. I considered it to be myalgic in its nature, arising from the contraction of the rhomboids, a thing of which every one must be painfully conscious who writes for a long period without resting; but the case was by no means clear. I was called in a second time, and made still fuller inquiries than before. The only new fact I could elicit was that there was loss of appetite and great abstinence from stimulants, and that the time occupied in writing was at least twelve hours a day. The pain had shifted once or twice since my first visit, from the left to the right side, and back again, and once again to the right; and he had tried change of air, without any advantage. I found him writing in bed, lying on his side—the only position, he said, in which he could now do so comfortably. Being a man of great intelligence, he was asked to put himself into the attitude which gave him the most relief. He immediately threw his head and arms back as far as he could, and said, "There, that

position gives me instant relief." It was thus clear that his sufferings arose from too great and constant a strain upon the trapezius and rhomboid muscles; but when the cause was detected, we were still a long way from the cure. The patient could not give a sufficient amount of rest to the muscles without injuring his business; and we were obliged to content ourselves with recommending such means as we could suggest for relieving the habitual strain on the muscles, and improving the general tone of the system.

I subsequently ascertained that this patient, after trying every other plan, was cured by the use of prolonged hot baths.

11. However severe the pain, the pulse is unaffected in frequency, although it may be softer and weaker than natural. But if the exertion producing the pain has been excessive and exhaustive, as in parturition, the pulse is commonly very rapid and usually small, and feverishness may be present. This is a point of no small assistance in our diagnosis, especially in some of those cases where the pain is so severe and persistent as to lead to a doubt respecting the presence of inflammation, as the following case will show:—

Mr. M., æt. 28, a student in medicine, and in business as a druggist, of strong frame, and of perfectly correct and temperate habits, sent for me one day, under the impression that he was suffering from peritonitis, affecting the cæcum and the ascending colon principally. The following was the history he gave:—A few weeks preceding my visit he had had sore-throat, which ended in quinsy; for this he took aperient medicine, and lived very abstemiously. As soon as he was able, he went, as usual, to attend lecture, walking about two miles and a half; and this, in addition to a good deal of standing, necessitated by his business, was too much for him in the impoverished condition of his system. At night he

was seized suddenly with pain in the right iliac region and in the loins. He now put himself under the care of a surgeon, who treated him as for inflammation, with mercury to salivation, low diet, &c. He was confined to bed, but was after a short time able to go about. He then went again to lecture, in a car. He was only able to stand it for three days, and was then as bad as at first, and in very low spirits. Without further advice, he applied a blister to the seat of pain, took more mercury, purged himself dutifully, and continued on low diet. I found him pale, with anxious features, perspiring freely, with a clean tongue, and a pulse 64 when lying down, 74 when sitting up. The seat of pain was the junction of the right obliquus externus, with its aponeurosis. There was some pain on the left side, but not much. The pain had always been relieved by lying down, but it came on as bad as ever after he had been sitting up, or going about for a few hours. He felt so weak, "that if he had had any cough he would have fancied he was going into decline." His appetite was good, but he dared not to indulge it. Whenever he had taken a good meal, "he always fancied he was better for it." I easily persuaded him that his pain was entirely due to over-exertion of the abdominal muscles while he was in a weakly condition. Steel, cod-oil, moderate exercise in the open air, and as full a diet as his digestion would bear, were recommended. The freedom from his fear of peritonitis acted at once as a stimulant, and ere my visit was over there was a change for the better in his features, and in a week he was perfectly restored.

12. The patient, in describing the seat of pain, when it is extensive, almost invariably, though of course unconsciously, moves the hand in the course of the fibres of the affected muscles. It was this that, in the case of Mrs. T., afforded me the clue to the cause of her suffering. In giving me an

account of the way the pains ran, her hand mapped out, as clearly as if she had been an anatomist, the ascending, descending, and horizontal fibres of the trapezius, the perpendicular fibres of the quadratus lumborum and rectus abdominis, the oblique course of the external oblique, and the horizontal course of the transversalis. With the idea of spinal disorder or nervous irritation before his mind, the practitioner would naturally seek to find in the nerves supplying these parts the true cause of the peculiar sensations: and knowing that the nerves are not distributed in that manner, would be puzzled how to account for them on any adequate hypothesis; but on a muscular hypothesis they are as plain as possible.

Where the pain is a fixed one, it almost invariably occupies a spot which is more or less tendinous, or where the muscles are attached to the bones; and this should at once enable us to distinguish it from neuralgia. There is, however, one exception to this point of diagnosis, to which I must refer.

A woman cannot be expected to point to the pubic insertion of the rectus—she always points to the hypogastric region instead; but, as far as my experience goes, the practitioner will have no difficulty in gaining the information he requires by indicating on his own person the precise seat of pain. I find, too, that many women suffer pain at the origin of the lesser pectoral, which they do not tell of, lest it should necessitate an examination of the mammæ. One patient, who described all her other symptoms fairly, omitted this; but when I questioned her, she answered that “her breasts were often so acutely tender, that she could not bear to touch them.” She was a very stout, florid-looking girl, with abundance of energy and spirit. The cause of the debility and muscular exertion was in her case excessive vomiting.

I suspected pregnancy, and heard that she subsequently aborted.

13. The pain of cramp often comes on suddenly during the night, while the patient is moving.

This point is one of great physiological interest, as well as of pathological importance. It is curious that a muscle which has been thoroughly fatigued should not generally become cramped until it had been rested to a greater or less extent by sleep.

The explanation of this is not perfectly satisfactory ; but we may refer to the facts that cramp is often produced during sleep from some cerebral cause, that there is frequently a faint general convulsion as soon as sleep comes on (as many persons nodding in church discover to their annoyance), and, as we have before noticed, that stiffness rarely comes on after great exertion until sleep has intervened.

But whatever the explanation may be, it is, as far as my experience extends, an undeniable fact, that in a weakly person cramp will come on in a fatigued muscle during sleep ; and that the pain attending it will be more excessive, and its duration—generally intermitting for a few minutes at a time—will be more considerable than if it had come on by day.

I have known a lady affected in this manner after a comparatively short railway journey, and be almost on the scream from three o'clock one morning to the ensuing midnight, and that, too, in spite of large doses of morphia. The nature of the case was not detected by the surgeon who was summoned, or by the usual physician who was sent for by telegraph ; and as soon as the pain abated she was recommended to go home again ! The second journey had a more disastrous effect than the first, and she was laid up with a far more serious attack. The muscles of the back were excessively cramped, and all

motion was intensely painful. The nature of the case was still considered obscure, the treatment was not appropriate to the true cause of the complaint, and the lady was confined to bed for nearly seven months before even a partial recovery was effected. A similar instance, where the lady had been only riding about four miles in a car, will be given by and by. In both cases the patients had only partially recovered from severe illness, and were very weak.

We have stated as a general rule that myalgic pains are unattended with feverishness. This proposition is not, however, universally true; and the exceptions are sufficiently interesting to demand special consideration, as they lead to very important general deductions.

The following cases bring into prominent notice the points I wish to allude to:—

Miss R., æt. 10, a frail and delicate child, who had just recovered from measles, was, after an unusual amount of play, seized, whilst practising at the piano, with acute pain in the side. A medical man was called in, who, under the notion that inflammation was present, ordered antimonial wine, and recommended low diet. His directions were carried out, but the pain recurred every evening, and was *at the end of three days* attended with well-marked *feverishness*. At the end of the fifth day the fever seemed to be of the infantile remittent type, and a slight wheezing was heard in the lower part of the lung of the affected side. On the next morning, when called in consultation, I found the child very pale and feeble, but free from pain and fever. The pulse was excessively weak and fast. The tongue clean, the skin cool. The bowels regular. There was no thirst. Respiration was easy. There was a “catch” in the breath at the end of each deep inspiration. A physical examination did not demonstrate the presence of any pulmonary mischief. The fever I was told

came on about six or seven o'clock in the evening, and lasted till near morning. *The child had only had two pieces of toast as solid food for five days.* I readily induced the medical attendant to conclude that the original pain was muscular, and that the *fever*, coming on as it did *after* the antimonials and low diet and *increasing with the debility*, was in reality related to *Hectic*. It was agreed to give up medicine for the present, with the exception of very mild doses of citrate of iron, and to give egg and wine, jelly, blancmange, cream, &c., every three hours, and I was to see the patient again in two days. I then found that the directions had been strictly followed, that *the fever had not returned once*, and that my little patient was so much better that it was not necessary for me to continue my attendance.

My friend and late pupil, Mr. F. Oldham, gave me the particulars of the following case:—

Mrs. R., æt. 27, a delicate and poor woman, was seized two days after her confinement with feverishness and intense pain in the abdomen. The skin was hot and dry, the tongue furred. There was great thirst. The pulse was 140, the countenance anxious and collapsed. The respiration was hurried, and the abdomen so tender that she could not bear the slightest touch. At first sight he thought it a case of peritonitis; but when he considered the severity of the previous labour, the absence of food which had followed, and the great cutaneous sensibility, he ventured to treat the case in the first place as one of muscular pain. His judgment was correct. Relief followed the opium he prescribed, and in two days his patient was well. It is extremely probable that had he administered a single dose of calomel, or taken any blood, the patient would have succumbed.

My friend Mr. Grimsdale told me the following cases:—

Mrs. —, an inmate of the Lying-in Hospital (Liverpool),

was found by him *sitting up* by her bedside and nursing her baby *the day after her confinement*. He at once ordered her back, and we may naturally infer that at that period she did not suffer from pain or feverishness. Next day the nurse informed him that Mrs. — was “very ill.” He found her with hot dry skin, furred tongue, very rapid pulse, anxious countenance, hurried respiration; no milk was in the breasts. There was great tympanitis, and extreme pain and tenderness all over the abdomen. Notwithstanding the presence of so many of the *book* symptoms of peritonitis, he considered the case as *myalgic*, and that the suffering was due to the previous day’s exertions. She was treated accordingly, and was well in two days.

Miss —, a milliner, suffered from severe pain in the region of the liver, for which a druggist gave her some aperient medicine. This doing her no good, he recommended six leeches, which she applied. These she thought made her worse, and she now sought my friend’s advice. He found her with the usual symptoms of febricula, to which were added many of the signs of pleurisy. The pain in the side was very severe, and the appetite gone. A careful examination convinced him that the sufferings were muscular. He recommended a bandage and the local application of morphia, and the patient was well in three days.

These cases naturally suggest the inquiry, Had the muscular exertion, the debility, or both combined, the most to do with the feverish symptoms? If by way of answering this question we investigate the circumstances under which feverishness is present, we find the following. It attends extensive inflammations; it attends the exanthemata generally; it is present in the early stages of catarrh; it is present, under the name of Hectic, during the latter stages of phthisis, hip-joint, and other chronic diseases. Hunger and want will run

into typhus, and prolonged mental exertion will induce feverishness as well in an adult as in a child. In all these cases there is a steady diminution of weight as long as the fever lasts. In whatever manner we read these things, we cannot fail to recognise the broad general fact, that *fever indicates a more than usually rapid combustion of one or all of the tissues of the body*; for if the animal heat be produced by the slow combustion of our integral parts, it follows *ceteris paribus* that augmented heat indicates augmented combustion. In other words, the bodily heat is an indication of the expenditure of the bodily fuel. Now it is tolerably clear that expenditure of fuel may take place under other circumstances than those of simple inflammation. Prolonged muscular exercise involves a great expenditure of combustible material. Is that attended with augmented heat and feverishness? The answer is simple. We know, firstly, that nothing "warms" us more completely than exercise, as long as that is not excessive and "beyond the strength;" and, secondly, that individuals of delicate constitutions frequently pass *a feverish night after a fatiguing day*. Dr. Williams, in his Principles of Medicine, gives available evidence on this point. When speaking of long-continued bodily exertion, he says,— "Hence the low typhoid or adynamic fever which sometimes follows prolonged fatigue." "A serious part of such disturbance is the sleeplessness which after extreme fatigue brings the patient into a state nearly resembling delirium tremens." "In these conditions diffusible stimulants are the best narcotics."—Pages 44-5.

The next question that suggests itself is,—What is the reason that excessive muscular exertion does not always induce feverishness? to which our reply unhesitatingly would be by another,—Does not muscular exertion always produce a feverish condition whenever it is prolonged beyond due

bounds? The limit of course varying materially in different individuals.

However tempting the subject is, we must not now pursue it further: enough has been said to show, firstly, that feverish symptoms do sometimes attend muscular pains; secondly, that feverish symptoms are not necessarily indicative of the presence of inflammation; thirdly, that they do indicate increased expenditure of animal fuel; fourthly, that they may be arrested at once by an adequate supply of nutrition, with a corresponding check upon exhaustion. The corollaries to be drawn from these considerations are numerous. Those who are interested in the subject will find them discussed at greater length in the author's small work referred to in the note.*

14. In forming the diagnosis of muscular pains (myalgia), I would strongly caution the observer not to be led away by any false appearances of health and strength in his patient, and thus fall into the error that no intrinsic weakness can possibly be present. Appearances are proverbially said to be deceptive, and they certainly are so in a medical point of view. I am at the present moment familiar with many ladies whose ruddy countenance, cheerful manner, active habits, and *embonpoint* impress a hasty observer with the notion of rude health, robust strength, and superfluity of blood. Some of them have already suffered much from this fallacious estimate, and have been bled, leeches, blistered, and kept on low diet when they required in reality the most nutritious food, and the strongest tonics that could be procured. Mrs. L., whose case is recorded further on, is a good example of *embonpoint* and activity covering great constitutional debility. Where

* The Nature of Inflammation, and the Principles on which it should be Treated, examined from a Common-sense Point of View. (H. Greenwood, Liverpool.)

there is such danger of making mistakes, it is necessary to try and find out some sign which will help to correct our first impressions. I know of none so certain as the state of the circulation generally, and most especially the condition of the heart. If with the appearance of vigour there is a feeble cardiac action under ordinary circumstances, and a tendency to palpitation on unusual exertion, this is a sure indication of real systemic and muscular debility, and is certain to be attended more or less with some of those other marks of weakness, such as flatulence, sighing, low spirits, tendency to cry at night, &c., which we advert to elsewhere. Now, if appearances are deceptive in the female, it is possible that they may be equally so in the male. The following case will show this very forcibly. J. H., æt. 44, of very square, firm-looking build, a little below the medium height, with a clear skin, healthy-looking countenance, and bright eye, called upon me complaining of pain in his side. He told me that he had already been under the care of many different persons and had taken large quantities of aperient and other medicine, but he had been steadily getting worse, until now he was so weak he doubted whether he would have been able to walk to my house. His last dose had been one of calomel and jalap, given him by a druggist the previous evening. On being asked to describe his pains as closely as possible, he placed his finger or hand successively on the origin or insertion of every muscle of the trunk of the body. The pains were, he said, shifting, never being at any one place for more than ten minutes at a time. He spoke of them as "burning," said they were produced by sneezing and sickness, and if present in the side when he was coughing it was necessary to press his hand against the ribs, &c., to relieve its severity. The sufferings had, it was clear, a muscular origin, yet I could scarcely bring myself to believe that they had in him a similar

cause to what they have in a delicate woman, for he seemed to be a man of herculean power, and one that no amount of exertion could tire. In prosecuting my inquiries I found, in addition to his habitual purgation, that he lived low under fear of apoplexy—that two brothers had been consumptive—that he had himself lived very hard, drinking to excess, &c. He was at the time a traveller for a wholesale beer-house, and very frequently took gin to ease his pains. He suffered from giddiness and vertigo, occasionally reeling as if drunk, and sometimes falling down when turning round suddenly; the heart's action was very feeble; there was palpitation on the slightest exertion, and great flatulence after meals. His sufferings increased in severity as the week wore on, but were always least on Monday morning. The pain in his side and back were bad when he was in bed: after he had had a cold for a few days, he felt his arms and chest as sore as if he had been beaten.

It is a significant fact, but one upon which we cannot now dwell, that whenever he had purged himself more than usual, or felt unusually weak, his left eye became bloodshot to a remarkable degree between the inner canthus and the cornea.

All these facts being taken into consideration, I concluded that his sufferings arose from muscular fatigue; that his muscles were deficient in power, owing to his method of living, his antecedent and present habits of intemperance; that the purgatives had been productive of serious mischief; and that the only way to improve him was to use such means as would restore him to the health he had lost, but which nevertheless he still *seemed* to possess.

I recommended him to give up all aperient medicine, to take steel and cod-liver oil, and to indulge in a full and generous diet. In ten days he again presented himself, and reported that he was perfectly well; all the pains had abated

gradually, he was stronger on his legs, had lost the dizziness which troubled him so much before, and he could enjoy a good night's rest. On this occasion he entered more fully into his previous habits, &c. He told me that he had taken purgatives to such a degree that he had gone to the closet six times before breakfast, and twenty times during the day! that the average of his visits was about fifteen times a day for the last three months! that he had often been so weak that he had to rest on the bed while dressing, and had been unable to get up stairs without assistance after the day's work was over. The dizziness in the head was, he said, always the worst when the back was bad—an interesting fact; for as the one was an evidence that the lumbar muscles were underpowered to do their work, the other equally showed that the cardiac muscle was in a similar condition.

In this case the recovery was rapid, as it generally is when the patient has a good sound constitution, and the digestive and assimilative powers are strong. In other cases, however, where there is any consumptive, or other personal taint present, recovery from severe muscular pains is more protracted.

When the practitioner has come to the conclusion that the pains from which his patient is suffering are of a purely muscular origin, his business is by no means finished. He has next to investigate the reasons why it is that in the particular case before him, and at that particular time, pain should be complained of after muscular exertion.

This portion of the inquiry is by no means difficult: muscular pain implies excessive muscular exertion. Now muscular exertion may be excessive absolutely or relatively: as we have before attempted to show, it may be excessive by a person using some unusual exertions in addition to his ordinary work, or by a person continuing to do his every-day business

with diminished muscular power. *The presence then of muscular pain involves the idea either of increase of work or loss of strength.*

A few well-directed questions serve to show in which category the particular case before us is to be placed, and we must then depend upon our medical acumen to ascertain the real cause. The cause once being ascertained, the treatment is comparatively simple.

It would swell the book to an unnecessary length were I to detail all the circumstances under which muscular pain has been induced. They are sufficiently indicated in the various cases brought forward. It will, however, help my readers materially if I sketch a dialogue between the doctor and the patient which actually occurred.

The patient, a young woman aged about 22, of good colour, healthy appearance, correct manners, complains of pain in the right side, at the same time spreading out her hand and covering the "pectoralis major" as nearly as she could.

Doctor (mapping out the pectoral muscle).—That's the place, is it not? *Patient*.—Yes. *D.*—But you have pain elsewhere? *P.*—No, sir. *D.*—Have you never pain here and here? &c. (touching successively the origins and insertions of the trapezius and other muscles of the upper part of the trunk, and pointing in his own person to the insertion of others.) *P.* (wonderingly)—Yes, sir, I've had pain at all those places, but it is the worst here now (pointing to the right side as at first). *D.*—Your right breast is very tender, is it not? *P.*—Oh yes, very; and sometimes there's a lump in it. *D.*—I suppose it is sometimes so tender that you can hardly bear your stays on? *P.*—Yes, sir, I've been obliged to give them up for a long time. *D.* (slowly)—Now try and remember; are your pains the least troublesome on Monday or on Saturday? *P.* (briskly)—I scarcely ever have them

on Monday. *D.*—How long have you been such a sufferer? *P.*—For six weeks. *D.*—What business are you? *P.*—An upholsteress. *D.*—What have you to do? *P.*—To sew fringe to curtains, make up hangings, and so on. *D.*—Has that been your business for a long time? *P.*—Yes. *D.*—What are your hours? *P.*—From 8 A.M. to 6 P.M. *D.*—Have you any time for dinner? *P.*—Yes, an hour. *D.*—What do you do then? *P.*—Take a walk. *D.*—Have you any cough? *P.*—No. *D.*—Have you ever spat blood? *P.*—No. *D.*—Or got thinner lately? *P.*—No. *D.*—Have you a good appetite? *P.*—Pretty fair. *D.*—Are your parents healthy? *P.*—Why, they are not to say ill, but they are not very strong. *D.*—Have you indigestion? *P.*—No. *D.*—Are you regular? *P.*—Yes. *D.*—Do you lose much blood? *P.*—No. *D.*—Do you suffer from piles? *P.*—No. *D.*—Are you much purged? *P.*—No. *D.*—Do you sweat much at night? *P.*—Not much. *D.*—Now tell me, have you not a good deal of pain here? (touching the sacrum). *P.*—Yes, sir. *D.*—And you suffer a great deal from whites, do you not? *P.* (with rather open eyes)—Yes, sir, and they weaken me very much indeed. *D.*—One more question: you have had them for two months or thereabouts? *P.*—Yes, sir, and I never had them before.

The influence such a dialogue has upon the patient may be readily conceived, and the fidelity with which the directions will be carried out may be relied on. In the case of which the above is an absolutely faithful outline, I recommended the patient to sit daily in a washhand-bason with some cold water in it, so as to ensure a purely local cold bath, an astringent injection if necessary, rest at the dinner hour instead of walking, as generous a diet as could be afforded, and steel was to be taken as a tonic. If these things were assiduously employed, I ventured to promise a cure in about three weeks. My

patient called occasionally to report progress, and stated that she was perfectly well at the end of a month.

I have selected this case because in it the dialogue was unusually long, and the diagnosis was formed by a system of exclusion.

The points respectively established were :—

1. The pains are myalgic.
2. They have been of recent origin.
3. They have not been produced by increase of work.
4. They have been produced by loss of power to do the work.
5. The loss of power has not been occasioned—
 1. By a development of an hereditary taint.
 2. By anorexia or dyspepsia.
 3. By loss of blood in any way.
 4. By diarrhœa.
 5. By night sweats.
6. The loss of power then has been occasioned by another drain.

That drain is probably leucorrhœa.

7. If so the leucorrhœa must have been antecedent to the myalgia.

8. To cure the myalgia the leucorrhœa must be diminished and the strength increased, or the daily work suspended.

The result justified the reasoning.

In other instances, the appearance of the patient at once leads us to direct our questions directly to incipient phthisis, chlorosis, prolonged lactation, onanism, starvation, mental anxiety, pregnancy, struma, gout, too rapid growth, influenza, syphilis, the presence of mercury or lead in the system, or any other of those maladies which involve a debilitated condition of the vital powers.

The following exemplifies this :—Patient is a seaman admitted into the Liverpool Royal Infirmary ; he complains of

pain on the right side, corresponding to the upper attachment of the linea semilunaris. I see that the man has had a mustard plaster applied, and is apparently in good condition. I touch in succession the pectorals, and the insertions of all the abdominal muscles, and find he has pain everywhere. In stooping over him I detect a very foul breath, and seek for the history of scurvy. I find the man has had it once, has recently come from sea, has been very hard-worked and very badly fed upon his voyage (six weeks); that the gums are red and spongy, though not tender; that he felt that the pains were produced and aggravated by work, not benefited by the sinapism, but apparently cured by lying in bed. Here the diagnosis is, first, myalgia; next, scurvy.

The plan of investigation is in all cases essentially the same, though it necessarily varies in detail.

In the next chapter we shall point out the various seats of myalgia.

CHAPTER IV.

The parts of the body affected—The occipital region—Extension of pain along the occipito-frontalis—The pectoral and scapular regions—The sterno-mastoid and temporal sometimes affected—Pain in insertions of trapezius—Case of Mr. T.—Pain in interscapular aponeurosis, and attachment of ligamentum nuchæ—Longissimus dorsi affected—Pain wrongly referred to the kidneys—Cases of Nurse and Mrs. W. J.—Cause often apparently very slight—Case of Mrs. L.—Advantage of stays in giving artificial support—Quadratus lumborum affected with others—Gives rise to suspicion of disease of liver—Case of Mrs. N.—Pain in sacrum—Glutei muscles and erectores spinæ affected—Case of Mrs. B.—Mr.—Pectorals and intercostals affected—The pain often attributed to phthisical pleurisy—Stitch in side—Its cause—Pleurodynia—Case of Mr. R.

WE have said that every part of the body is liable to muscular pains (*myalgia*). We will select now those that are the most common seats; premising that we shall notice them in the order of convenience, rather than of their frequency.

It is not often that we are called upon to treat myalgia in the pectoral muscles, but the following case is so interesting as illustrating important points, that it will take the place of numbers.

Mrs. J., æt. 64, a stout, heavy lady, living in the country, summoned me in some haste to visit her, as she was suffering very severe pain across the upper part of both sides of the chest. I found her lying on her back, breathing as a person does with pleurisy, and having those short, suppressed coughs we so commonly notice where there has been a recent frac-

ture of the rib. A full breath was impossible, as it aggravated the pain materially. The suffering had begun at six o'clock in the morning, after a night of refreshing sleep. Ether had been freely administered ere I arrived, and an opiate liniment had been used. On examining the patient physically, it was clear that there was no disease of the heart, lungs, or pleura; and the state of the pulse, skin, tongue, &c., showed that there was no fever present. I now asked the patient to point out exactly the seat of the pain, and she mapped out directly the outlines of the larger pectorals, and tapped both with the ends of the fingers in a manner peculiar to myalgic cases. I now ascertained that any motion of the shoulders increased the suffering. A few words suffice to say that the lady had been under my care for many weeks with jaundice; that she had been very weak, but had improved sufficiently to be on the sofa for an hour daily, and had been unusually brisk the day before the attack.

As it was clear to me that the suffering was myalgic, my next effort was to ascertain what had been done to overwork the pectorals. After suggesting everything I could think of without hitting upon anything, the nurse remarked thus:—
“Mrs. J. has hitherto been so weak, that when she has wanted to drink anything, or to sit up in bed, we, the two attendants, have had to raise her, but yesterday she felt so much stronger, that she would not let us do it. *We gave her the curtain to pull at, and every time she sat up she pulled herself into the sitting posture by her arms.*” Here was a valid explanation at once. The exertion was small, yet the debility of the muscular system was so great, that the exercise was greatly in excess of the patient's power.

I have only once before met with severe myalgia in the pectorals, and then it was in a seaman who had sea-scurvy, and who had nevertheless been obliged to haul on ropes, &c.;

but at the period when I saw him I had no idea of the true cause of the pain.

The most curious case which has yet come under my notice is the following:—

Mary C., *æ*t. 32, a maid of all work, came into the Liverpool Royal Infirmary with pain in the right shoulder, December, 1859. The pain was referred exclusively to the origin of the deltoid, and of the biceps, and was so severe as to prevent her sleeping. In fact, for many days she was actually crying with it. I could detect no redness, heat, or swelling in any part, nor were there any distinctive signs of disease of the joint. There was no fever. The woman I learned had been working very hard, and had been badly fed. The only diagnosis I could form was, that it was an unusual form of myalgia, and I treated it accordingly, but without success. In spite of opiates in large doses, and every local application I could think of, including the actual cautery, the pain continued. In the course of a month it began to abate slowly; she could sleep, and her features showed less distress. No perceptible change had taken place in the shoulder, except that from long inaction the deltoid was less in bulk. The pain was still referred to the same spot, and was aggravated by any attempt at motion. At the end of another fortnight, pain was referred to the olecranon and the tendinous part of the triceps; to relieve this the arm was slung and mechanically supported. This gave relief, and was continued. The suffering continued to abate, and the patient ventured out of bed, and now found that the right leg and the right side of the body generally was semi-paralysed. Tonics, generous diet, cod-oil, glycerine, &c., were all tried. Galvanism was also adopted, but all without result. At the end of three months, the pain was still referred to the origin of the deltoid and the short head of the biceps, but there was no appearance to lead

to the belief that there had been inflammation of bone or periosteum. I now recommended her to leave the Infirmary and try change of air. She did so, and called a fortnight later to say she was much better and stronger, and that the pain had materially abated. She still wore the arm in a sling.

The occurrence of this case forcibly called my attention to the cases of Wasting Palsy so well described by Dr. Roberts; and on consulting his book, page 119, I found the following:—“Pain is by far the commonest of the symptoms. . . . When present it varies greatly in degree and kind in the part it affects, and in the period of the disease at which it prevails. Sometimes it is a slight wandering pain in the neighbourhood of the wasting muscles; at other times it is sharp and lancinating, shooting down in the course of the nerves, having all the characters of neuralgia; or it may be of an aching kind, *affecting the joints*, [the italics are our own,] and the substance of the muscles, resembling and often called *rheumatic pain*. In one patient it was so trifling as scarcely to attract attention; in another it was so violent that the patient felt as if his arm was coming off. In several instances it marked the onset of the disease, and passed away as the atrophy set in in good earnest, but more frequently it followed the steps of the morbid agent, and served to point out its presence.”

Nothing has struck me more in my researches upon myalgia than the irregularity of the phenomena. We may yet discover some subtle points which have hitherto eluded us, but I cannot find the clue. Many guides have presented themselves, but none on trial have been found trustworthy.

As we have already given some illustrations of the pain referred to the interscapular aponeurosis, we may pass on to other parts of the trapezius. The first case recorded will serve to show that the occipital attachment is often the seat

of pain: I would invite particular attention to this, for instances are perpetually occurring where, during convalescence, or under other circumstances, the patient complains of severe *headache*, and the practitioner is misled, especially if his mind is pre-occupied with some particular idea; the danger is the greater, inasmuch as the pain, which commences in the occipital region, sometimes seems to be prolonged into the "occipito-frontalis." The pain is sometimes referred to the insertion of the sterno-mastoid, and the origin of the temporal. Mistakes may readily be avoided by requesting the patient to put her fingers on the seat of pain.

Pain is also referred to the claviculo-scapular insertion of the trapezius, and it is exceedingly probable that this occurs to a far greater extent than we have hitherto supposed. How many must have noticed the frequent occurrence of pain in the shoulder in phthisical subjects—so common indeed as to be considered by many as a characteristic sign of chronic local pleurisy—and yet how strong must have been the feeling of surprise in many to find that the patient refers the pain to a part distant from the apex of the lung, and that there are no physical signs of mischief. I must confess to having long known the symptom, yet I was never able to recognise its true significance until the following case came under my care.

Miss I., æt. 23, a milliner, of very spare frame, came to consult me with all the symptoms of incipient phthisis. There were, however, no well-marked physical signs to be detected on an examination of the chest. She was very weak, and unable to pursue her occupation. Under the use of steel, cod-oil, &c., she improved considerably. But she now began to complain of a pain in the shoulder, similar to what she had experienced when first she had been taken ill. I once more examined the thorax, and finding no sign of

pleurisy, made further inquiry respecting the pain. She pointed out as its seat the trapezius muscle, in its course from the occiput to its claviculo-scapular attachment. My next inquiry was, what had she been doing? She had been able to return to sewing and knitting! and both of them brought on the pain. When the pain came on, which it never did till an hour or two after she had risen from bed and begun to sew, she commonly laid down her work and went out for a walk: this increased her sufferings—the pain increased till bed-time, and she was not easy in bed unless she lay with her head still. She had also pain in the infra-clavicular region from excessive use of the pectoral muscle. She did not use an arm-chair, never went to rest during the day, &c. Here it was evident that the trapezius was over-worked in having habitually to support the weight of the head and move the shoulders in knitting, &c. I scarcely need add that my only prescription was the use of an arm-chair. I cannot leave this point without recalling to those of my own sex the difficulty they have in reading in a carriage for any length of time, walking arm-in-arm with a friend, carrying a gun, a great-coat, or any other thing which brings the trapezius into action, without feeling thoroughly weary in the “shoulder.” Is it, then, to be wondered at that females, whose sensibility is so much more exalted than ours, should have pain from similar causes?

The following case illustrates the scapular pain and other phenomena very well.

Mr. T., *æt.* 50, came under my care for chronic gout, which had crippled his hands and had left both legs bent at right angles, with great pain about the knee joints. Under the influence of treatment he steadily improved in health, spirits, and vigour, and was at length able to extend his lower extremities so as to form an obtuse angle. I now strongly

urged the advisability of steady friction to the extensor muscles of the thigh, and as much exercise of them as my patient could bear. This exercise consisted in pushing his wheel-chair backwards by the power of the rectus femoris, the feet being fixed on the ground. In addition to this, my patient began to rub his thighs himself. The result of this was, that in two days he had such severe and continuous pain in the insertion of the ligamentum patellæ, and in the scapular insertion of the trapezius, that I had the utmost difficulty in persuading him that his gout had not returned. The diagnosis was, however, very simple; he could use and had used his right hand the most for rubbing, and the left leg the most for locomotion; and though he had disagreeable feelings in all the extremities, it was in these alone that he had downright pain and soreness. On reminding him of shooting days and the effects of equestrian labours, he recognised at once the similarity of his present sensations to those following great fatigue, and was contented to wait patiently until they left him.

Next to the trapezius, the longissimus dorsi, or erector spinæ, is the most frequently affected with myalgia—as might readily be anticipated by the work which it has to perform in keeping the body erect during sitting, standing, and walking. We are all familiar with pain in this muscle after having had a long ride on horseback, a long stand in a crowd, and the like. It is to be noted, too, that a continued stretching of its strong fibrous aponeurosis is productive of as much inconvenience as over-exertion of the muscular structure,—thus, digging or weeding in a garden, or working in any position that requires much stooping, becomes almost intolerable after a certain time. In these instances the return to the upright posture is quite as painful as the continued stooping. This phenomenon is to be explained by supposing that the con-

tinual stretching has exhausted the muscle and made its contraction as painful as if it had been debilitated by scurvy, &c.

In practice I have found pain in this muscle is brought on by railway travelling, by the patient having to carry a heavy infant or other great weight a large portion of the day; and, as might be expected, it is extremely common in pregnant women, upon whom there is so great an additional burden thrown. This pain in the back attends many diseases, especially those which are not severe enough to make the patient "lie up" altogether, and yet are bad enough to diminish the strength materially. Thus we find it common in hysterical subjects and in chlorotic females. It is almost always present in cases of renal disease with albuminuria. It is equally constant in oxaluria, the phosphatic diathesis, and when the patient is passing habitually much lithate of ammonia.

The connexion between pain in the back and a peculiar state of the urine is indeed so common, that the pain is by general consent referred to the kidney. The complete cure effected by the recumbent posture, and the daily renewal of the pain after long sitting or standing, entirely preclude the idea of its being simply *sympathetic*.

The same kind of pain is present in individuals of a strumous diathesis, and leads occasionally to a suspicion of caries of the spine. A bad case of this, occurring in a young man who had to wield a heavy hammer in boiler making, will be given further on.

Referring to works on spinal irritation, and reading cases detailed there, we may add, that the practice of carrying heavy weights upon the head, such as water, stones, fish, &c., has been a very fertile source of pain in the lumbar muscles.

The following are good illustrations of the phenomena resulting from excessive action of the *erectores spinæ*, &c.

I was consulted, a short time ago, by a lady, respecting her nurse, an elderly woman, upwards of 50, who had been brought home in a sort of fit, and who had ever since been complaining of severe pain in the back. Inflammation of the spine had been feared, and she had been recommended to apply blisters, and to take aperient medicines. The woman had taken the latter, but refused to apply the former, till she had seen me. A short inquiry elicited that she had lost her appetite for some time back; that the child she had to carry was very heavy; that the fit resembled an ordinary fainting one, and that the pain in the back had existed long before the fit, but had been more severe afterwards. *It was compared to hot water poured down the back, getting hotter and hotter, till bed-time.* It rarely came on before noon, was always relieved by throwing the head and shoulders back, and was well the instant she lay down. The pain, I found by manipulation of various parts, was the worst in the *erector spinæ*, on both sides, and in the aponeurosis of the *trapezius* muscle. I recommended simply a tonic, rest during the day, in the recumbent posture, for half an hour, and an abstinence from all depressing agents, and when I next heard of her she was perfectly well.

Mrs. W. J., *æt.* 30, of spare build, of very active habits, and living in a healthy part of the country, was suddenly seized with intense pain in the small of the back, on the right side. Her husband, fearing some deep-seated inflammation, sent for me. I elicited the following account:—She had been, for the last ten days, complaining of lumbar pain, which was especially severe at night, but went off when she lay down. She had been exerting herself, more than usual, in carrying water to her husband's room, who was laid up with

an accident, and had much stooping over him. There was company in the house, and she could take no rest during the day. Her appetite failed. On the night in question, she had been carrying away a heavy slop-pail, and, on her putting it down and rising again, a sudden and intense pain in the right lumbar region seized her; a lump came, the size of a small lemon, in the fleshy part of the longissimus dorsi, evidently cramp; she almost fainted; was pulled by her husband on to the bed, and was then seized with a severe rigor. On rising for a necessary purpose, the pain returned with renewed violence, and it was with difficulty another fainting fit and rigor were staved off. By rest the pain was relieved, but did not go away entirely; coughing, laughing, and any attempt to turn, brought it on again. The pulse was quiet. It was not difficult to explain the phenomena; it was evident that the affection was myalgic, and it was easy to prescribe for its cure.

Rest in bed for a few hours, a more frequent recourse during the day to the sofa, and a diminution of work, together with a few doses of steel, brought the patient round rapidly.

In this case the cause was readily detected; in others it is a little more difficult to find. This arises chiefly from the preconceived notion that the exertion must necessarily appear to the patient and the doctor as extraordinary. If, however, we bear in mind that the commonest efforts may become excessive, in consequence of diminished strength, we shall never be at a loss. Who, for example, would consider that riding four miles in a car would prove an extraordinary exertion to one who had been riding almost daily for a week; yet, that it was so, the following case will prove, in which the abdominal muscles were implicated, as well as the erector spinæ, &c. :—

Mrs. L., æt. 38, a lady of considerable *embonpoint*, but of somewhat delicate constitution, of active habits, and one who had never worn stays,* came under my care for hemicrania. She had been much harassed by servants leaving her, and had to undergo great exertion in managing her large family and household. She had also at the time profuse menorrhagia, and subsequently an attack of diarrhœa. She had every morning a very suspicious cough and distressing sickness, and was in very low spirits, as she dreaded an attack similar to a preceding one, which nearly brought her to the grave. She gradually grew worse, and lost all appetite; the cough increased, and there were fits of excessive despondency. Change of air was recommended, and she went out daily for a drive, but came back exhausted. She then went for a time to Bootle. She felt revived at first, and slept comfortably for a few hours, but was then awakened by intolerable pain in the right flank, where she noticed a swelling, the size of an egg, referred to the fleshy part of the *longissimus dorsi*, and attended with vibrating sensations. The acute pain soon left her, but was constantly recurring in mitigated degrees, both

* I mention this circumstance because it is clear, from another case which I shall relate, that a well-made corset does give a great deal of artificial support to the body. This is evident from the greater length of time that women can sit upright compared with our own sex—from the atrophied condition of the *longissimus dorsi* in the female compared with the male—from the excessive difficulty women accustomed to stays have in dispensing with them during the day—and the frequency with which spasm or cramp comes on in some of the erect-keeping muscles when the stays are laid aside. An individual, therefore, without any artificial support, is more obnoxious to muscular pain in the trunk than one who does not attempt to keep the body upright without assistance. When stays are not worn, a simple elastic belt is of great service. It has been objected, that stays impede respiration by interfering with the action of the diaphragm; but this does not hold in the female sex, for, as Dr. Walshe has shown, they breathe with the upper part of the chest habitually, and, not like man, with the lower.

when she moved and lay still. She tried chloroform externally, and sinapisms, without effect. No position could be found which gave relief, except the curious one of lying across the bed with the face over one side and the feet over the other, or with a hard pillow under the affected side (*i. e.* to stretch the cramped muscles as much as possible). The pain now extended towards the median line, with a swelling under the right ribs, and a drawing or grasping feel in the external oblique. From previous experience, she felt assured that the pain was inflammatory. I had no hesitation in assuring her that the pain was muscular; that it was on the right side only, because she had used that side most in leaning against the car (her husband sat on the left). It was, however, with great reluctance that she accepted this solution of her case. Instead of punishing her with severe remedies, I applied a strong solution of morphia sprinkled on cotton wool to the part affected, and kept it in its place by a long roller towel applied as it is after confinement. A soothing and tonic plan of treatment was kept up, and this, with the rest, quiet, and change, speedily restored her to comparative health. I have since ascertained that she had previously been a victim to muscular pains in many other parts. Her first attempt at walking, after her long illness, was attended with intense cramp in the rectus abdominis and external oblique, which came on immediately on leaving a car in which she had been taking an airing, and for some time prevented progression. She had suffered habitually during pregnancy from aching in Poupert's ligament, and has often had to rest her head for an hour at a time to escape from spasm or burning ache in the trapezius. She has had pain in the tendinous expansion of the triceps extensor cubiti, from resting her head on her hand, &c., and is no stranger to pain in the pubic insertion of the rectus. Having never

recognised the cause of these pains, she had been labouring under the idea that she had a disease that medicine could not touch. The dissipation of this perpetual dread formed no slight element in the cure.

The quadratus lumborum is sometimes the seat of myalgia; and from its position, both patient and doctor too often assume the existence of disease of the liver.

The following illustrates the amount of mischief produced by such a mistaken diagnosis:—

Mrs. N., æt. 64, came to consult me one day respecting the manner in which she was to take a mercurial pill and saline aperient that had been prescribed for her by her last medical adviser, but which had been accompanied by rather ambiguous directions. Having known her for many years, and being greatly shocked by her altered appearance and extremely feeble voice and manner, and having heard much from her relatives about the pertinacious manner in which she had dosed herself with aperients, I took the opportunity of inveighing against so much medicine, and pointed out a variety of mischiefs that had already occurred to her, and others which might be anticipated. She was, however, for a long time deaf to my advice, for she was convinced, from certain sensations in her right leg and thigh, that she was threatened with apoplexy. She suffered, too, from pain in the right side, which all her doctors, and she had had many, assured her was "liver;" and to crown all, *these pains were always improved, she assured me, the day after she had taken her pills, &c.* I told her she ran a risk of purging herself into an apoplexy rather than out of one, and ended by recommending cod-liver oil. Circumstances gave me full opportunities for noticing her habits, and in them I fancied I could see the cause of her ailments. I found her sensibly weakened in voice and muscular power after every pill she took, and that

on that day, as a natural consequence, *she passed an unusual long time on the sofa.* In about a fortnight she began to take the oil and leave off blue pill, &c., and in another fortnight there was so wonderful a change that she was never tired of talking of it. She could now dress in one hour instead of two, and walk four miles instead of one. The oil came in for unbounded praise, and she again came to consult me, to ascertain whether I could effectually convince her of the non-existence of disease of the liver and threatened apoplexy—the ghosts that had been so long haunting her. Her first question was, “Do you think that I have not diseased liver? I have so much pain here,” (placing her hand over the right quadratus lumborum muscle,) “and every doctor I have yet consulted has told me that I had.” My answer was a decided *no.* I ran over, rapidly, the signs of real disease of the liver, none of which she presented. I told her that there was no liver at the part she pointed to; and then seeing her sitting in her usual posture, I told her that *the cause of all her suffering was the habit she had of sitting erect, without assistance or sufficient support.* I told her she would always find relief from lolling in an easy chair, or lying on a sofa—called to her memory how that her medicine days were always followed by this increased repose of body. I expatiated on the freedom from pain in the morning, and its steady increase till bedtime; and then its sudden cure, and was proceeding to further demonstration, when I was interrupted by the remark, “You’re right; and now I can explain the pain in my thigh and leg, which I so long supposed was a sign of apoplexy. I am,” she continued, “in the habit, when I sit, of balancing myself just on the edge of my chair, and rocking myself towards the right side, and am constantly using the right leg to steady myself, and when the pain is very bad I sit back, and throw my foot on to a stool, and it always relieves me. How stupid

never to have thought of this before!" My patient left me as light-hearted as she had become strong-bodied, and, in the warmth of her feelings, told me that she had thought she was coming to Liverpool to die, an idea that was now dissipated. She left with a large bottle of cod-oil, and bore a long journey better than she had done for twelve years or more, and has continued well up to the present time.

I have met with two instances where gentlemen, otherwise healthy, are subject to sudden, severe, and intensely painful cramp of the muscles of the back, the seat of the suffering being chiefly in the broad aponeurosis of the "latissimus dorsi." In both there is something of a gouty tendency, and both attribute their first attack to a very long (pedestrian) day's journey. In one the attack is renewed by long standing, and walking will stave it off. In the other, walking will bring it on. Both have remarked that they have always found it worse after taking blue pill, or other aperient medicine.

The pain referred to the sacrum, so common in oxaluria, in hysterical females, in those who suffer from leucorrhœa, appears to be due in many instances, if not in all, to the strain on the lower attachments of the latissimus dorsi.

The glutei muscles, which have a great deal to do in keeping the body erect, and raising it up after stooping, &c., may be affected by myalgia in the same way as others, as the following case will show:—

Mrs. B., æt. 45, summoned me to see her for what she deemed was an attack of inflammation of the spine, &c. I found her confined to bed, with intense pain at the lower part of the back and over the left gluteal region, and from her history I learned that the complaint had come on two days before, *during sleep*; that it had gone off again ere morning, but had returned with such violence at the end of a long

walk in the evening, that she had been for two hours unable to move. She had reached home, in a car, with great pain. She had had a painful night, the suffering returning with every turn she made. Towards morning the pain left the one side and attacked the other, though with less severity. She was easy when she lay still, but the slightest movement brought on her suffering. There was no fever; the pulse was quiet—80; the tongue was clean and moist, and the appetite good. On making particular inquiry, I found that the day before the attack she had been for some hours engaged in rubbing down tables, chairs, &c., a thing she was not accustomed to, and which, of course, involved frequent stooping and rising. She had been living more poorly than usual for a week before, and she had felt knocked up ere she went to bed, and had been much jaded by her walk. I ascertained the seat of the pain to be the glutei; and when the suffering was at its height, she was obliged to lie in such a position as would best relax their fibres. I had no scruple in assuring her that the pain was not inflammatory, that it entirely arose from the peculiar nature of her exertions, and that it would soon go off. I prescribed more generous living, an opiate at night to procure sleep, an opiate liniment for local use, and complete rest, and I had the satisfaction of knowing that my patient had recovered by the next evening.

This case is another illustration of the severity of the crampy symptoms when they first come on during sleep.

This individual consulted me on a subsequent occasion for what she feared was an attack of pleurisy. There was severe pain in the right side, and it extended down the arm. In describing it, she mapped out the course of the larger pectoral and latissimus dorsi muscles. The region between these two was free from pain. There was no fever; the attack was a sudden one. Before I had an opportunity to ask what she

had been doing, she remarked that she thought it might have arisen from her having strained herself in lifting a heavy pot from the fire, and carrying it some distance at arm's length. There was no reasonable doubt that her explanation was the correct one.

In July, 1857, I was consulted by a gentleman attending the hospital and my class in medicine, respecting what he feared was a disease of the liver. The following was the history he gave:—He was a druggist, and had served his time with a surgeon. His hours then were from seven in the morning to eleven at night. After he had been at it for three or four years he had an attack of black jaundice, which was attributable to hard work,* and he was cured soon by aperients and tonics. After about another three years he began to suffer from pain in the right hypochondriac and epigastric regions, for which he consulted a physician, who told him that he had considerable enlargement of the liver, and had ordered blue pill, &c., which made him worse. He had then gone away for change of air, and recovered. He was married, and had always lived, in every respect, a very temperate, well-regulated life. At present his chief complaint was referred to the region of the right quadratus lumborum, &c. His urine was high-coloured and lithatic. He was half “moldered” on lying down in bed, and felt faint and dizzy when he got up in the morning, and saw in the glass that he looked yellow about the eyes. He was not overworked now, as he had an assistant in his business. His skin was sallow, cool, and moist; the tongue particularly clean, the pulse small, 85 when standing. He had been taking soda powders

* I have now met with three different cases in which jaundice has been distinctly and unequivocally due to over-work, mental worry, and debility. In one the gentleman assured me he had always found that blue pill, taken even in the earliest stage, seemed to make the motions of a lighter colour, and to make him feel sensibly worse.

regularly, and the bowels were open, and the motions healthy. He had lost all appetite, and was doing the same work as usual on a diet of tea and an occasional sup of ox-tail soup! The pain I ascertained rarely came on early in the day; it increased in severity towards evening; it was always relieved by lying down, though it sometimes caught him in his sleep, and when turning in bed. I had little difficulty in convincing him that his sufferings arose from the muscles of the back, &c., being called upon to perform, in a weakly condition, what they were barely able to do when he was strong. I recommended rest; a frequent recourse to egg and brandy beaten up together, until the healthy appetite returned; the use of quinine, as a tonic; and, if that was not sufficiently strengthening, to take steel and cod-oil, and by all means to have some pure fresh air as soon as possible. Under this treatment the symptoms rapidly disappeared.

I have already referred to the fact that the "pectorals" are frequently affected with muscular pains, and have given some cases in which they were conspicuously so. A knowledge of this is particularly important, inasmuch as these pains materially complicate the diagnosis in diseases of the lungs. A glance at figure 3 will show the extensive connexion the larger pectoral has with the clavicle, and the sub-clavicular regions in which we so commonly meet with the first indications of consumption. We can recognise, too, the origin of the lesser pectoral as corresponding with the locality of the mamma in females and its insertion, and a spot to which pain is so frequently referred in phthisis. These muscles are brought into operation very extensively in our daily avocations, but they are occasionally used *excessively*. This may be, simply, in what we will designate as *the gymnastic way*, or in the repeated act of *coughing*. From both causes the same results will follow. But pain from the former is rare, and

the appearance of the complainant would at once lead the physician to infer that it was unimportant. Pain, on the contrary, from constant efforts of coughing, is a very common occurrence. It may be shown to be unconnected with pleurisy by a careful physical examination. Though almost constantly present in phthisis, at one time or other, it has nothing essentially to do with that complaint, for it may be found equally in bronchitis, pneumonia, and common catarrh. It may be demonstrated to have a muscular origin, for it never comes on until after the coughing has been severe, and it goes off as the cough abates. However severe it is, relief is always experienced from steady pressure. In females the pain is usually accompanied *with extreme tenderness of the mamma, sometimes even with a slight swelling*. The pectorals are also brought into excessive operation in dyspnoea and in vomiting, and we find therefore the same kind of pains complained of after or during these affections. An inquiry into the particular duties performed by particular muscles often facilitates our diagnosis, and enables us to see connecting links in a chain of reasoning which would otherwise escape our notice. Now amongst the many bodily acts performed by the pectorals, that of sawing in the man and sewing in the woman brings them in most constant use; and it is after sawing, where the individual was unaccustomed to it, and after stitching heavy materials, such as coarse calico, linen, canvas, &c., that I have met with the most marked cases of pectoral muscular pain. Where the patient is a female with a bad cough and a delicate constitution, and who has much sewing to do, the occurrence of "hysterical breast" is nearly certain to be met with. In this manner we are able to trace the occurrence to the patient's avocation, rather than to her fancy, and are able to believe that she is suffering from a real

affection, and not an hysterical phantom. A further reference to this subject will be found in subsequent pages.

There is another form of myalgia of extreme interest, and one which, from its close resemblance to pleurisy, might readily be, as indeed it too frequently is, mistaken for pleurisy. Its ordinary name is pleurodynia, and it consists essentially of spasm, fatigue, or cramp in the intercostal muscles. There are few individuals who are not acquainted with it under the name of "stitch in the side;" and there are few who do not know that it is brought on by running, an exertion that involves the fullest action of which the intercostals are capable, both in the "working" (to borrow a nautical term) of the body, as it sways about with the alternate flinging of arms and legs, and from the great efforts made to aërate, by full respirations, the increased quantity of blood thrown upon the lungs. There are few, too, who do not know that stitch is most common in growing lads, and those who are not strong; that it does not come on till the muscles have been long worked, and that as they increase in vigour by practice the tendency to stitch diminishes. The observations made in note (page 37) show that pain in the side, resulting from prolonged action of the intercostal and other muscles, is attended with exquisite tenderness of the skin.

But there are few who recognise the fact that the intercostals have a great deal of work to do in keeping the body erect, and turning it from side to side, as well as in assisting respiration, and that this business may be too much for them to perform without pain, when they are reduced in power from any general debility. Persons threatened with phthisis are in a state of great weakness, and are therefore particularly obnoxious to these pains; and the same remark applies to

growing children, delicate individuals, and others pulled down by any exhausting discharge. (See Mr. B.'s case, page 47.)

These pains commonly come on at night, or towards evening, or after some unusual exertion, such as sneezing, coughing, laughing, &c.; and as they often come on in the act of turning round in bed, they interfere with sleep. They resemble the pain of genuine pleurisy to such a degree, that no correct diagnosis can be made between the two without a physical examination, and even then we must bear in mind that there may have been pleurisy months or years ago, the physical signs of which may still remain to confuse us.

How intensely severe these intercostal pains may become, the following case will show:—

Mr. R., æt. 30, an attorney's clerk, who had been for some time under my care, with all the symptoms of incipient consumption, summoned me at five o'clock one morning. I found him in intense suffering, from pain referred to both sides of the thorax. The pain had come on *during sleep*, and was so severe that he could not take a breath or answer a question without its returning. He kept his hands firmly fixed on both sides, as if to stay its acuteness while he was in the act of speaking. To attempt to take a deep inspiration was agony. The apparent dyspnoea and pain led me to anticipate the occurrence of pleurisy, but there was not a single physical sign of its existence. A further investigation proved that the intercostal muscles were the seat of pain; and the next inquiry into the probable cause of this elicited the fact, that after his usual day's work was over, at ten o'clock at night, he had gone out at midnight to join a set of "choice spirits," with whom he had remained till three, and they were all such "funny dogs," that he had been in a constant roar of laughter all the time. He had felt nothing on his return, soon fell asleep, and awoke in an hour in the con-

dition in which I found him. It was tolerably clear that he was suffering from intercostal cramp; but in spite of antispasmodics, æther, and hot fomentations, some hours elapsed ere he got any relief. Had I been then more experienced in these affections, I should have applied a bandage to the thorax, and given an overpowering dose of opium.

The whole subject of pleurodyne, pleurisy, &c., is one of such importance, that it demands a separate consideration. I shall therefore devote a chapter to the consideration of the cause of the pain in pleurisy, peritonitis, &c., which will involve incidentally an inquiry into the influence produced on muscles by the presence of inflammation.

CHAPTER V.

Cause of the difficulty of diagnosis between pleurisy and pleurodyne—
Doubts whether serous inflammations are peculiarly painful as such—
Circumstances under which the pain comes on—Other circumstances
under which it occurs—The means adopted for relief by the patient—
The surgeon—The physician—Deductions—Effect of inflammation on
the muscles of the glottis and of the heart ; of the thigh after amputa-
tion ; of the ankle after sprain—Effect of gout—Effect on the involun-
tary muscles—Deductions.

It is well known that the main difficulty in the diagnosis between pleurisy and pleurodyne, and between “hysterical” and genuine peritonitis, is to be met with in the simple element of *pain*. It is well, therefore, to ascertain the real value of the symptom, and specially to examine whether there is any truth in the dogma, that “*inflammation of serous membranes is characterised by sharp and severe pain.*” (Watson.)

The substance of the succeeding remarks appeared originally in the “British Medical Journal.”

If we investigate the phenomena of pleurisy, with especial reference to the symptom of *pain*, we are first struck with the undeniable fact that *post-mortem* examinations prove the existence of a vast number of pleurisies that have never been suspected during life. We may see before our eyes adhesions of great or small extent ; we may even have circumscribed abscess, or complete filling up of the cavity of the pleura with lymph and serum, and the mediastinum pushed over to the other side ; or we may see false membranes, as thick as sole leather, covering both the lung and ribs ; and even, in some

rare instances, a bony concretion of great size enveloped in old adhesions : and yet, to our certain knowledge, the individuals in whom these appearances were found, never had such signs of pleurisy as to call their attention to it ; they never had pain in the side, &c. We know, moreover, that amongst the living there are many cases in which some amount of hurried respiration has been the sole physiological sign of pleurisy, and in which no proof of its presence would exist were it not for those physical signs generally considered as characteristic.

A more extended inquiry supplies us with the equally significant fact, that pericarditis will, like pleurisy, exist without the patient being conscious of any local pain. Nay, moreover, that the presence of pain is exceptional !

We conclude, from these considerations, that the pain of pleurisy does not arise simply because there is inflammation of *a serous membrane* ; that it is not purely due to inflammation, but depends upon something *superadded* to it. A rapid *coup d'œil* over the phenomena of inflammation elsewhere, proves that the process may go on from the beginning to the end, without any suffering being complained of. We are entitled to assume, therefore, that if pain does exist in cases of inflammation of the pleura, it must depend upon some cause which is not generally in operation in inflammations elsewhere, as of the pericardium, lungs, and liver. The dogma, that inflammation in serous membranes is more painful than in other parts, simply *because they are serous*, is one which has long occupied the schools, just as the dogma, that "Nature abhorred a vacuum," held them in days gone by ; but as the latter, when tested by rigid experience, was found wanting, so the former, when tested by close observation, will also be found to be untenable.

After discarding our old guide on suspicion of having led

us falsely, it becomes necessary for us to find the track to truth ourselves, from such landmarks as our observation leads us to recognise. How shall we pursue the route?

I propose to consider—

1. The circumstances under which the pain is complained of, when genuine pleurisy actually is present.

2. Whether similar pains come on under other circumstances, when no pleurisy is present.

3. The means Nature or the patient adopts to relieve the severity of the suffering, when it is present.

4. The means most successful in the hands of the medical practitioner.

5. The deductions necessarily drawn from the foregoing considerations.

1. Whether we refer to printed books, or to the broader page of hospital and other experience, we find that wherever the pain of pleurisy is situated, it is always increased, and sometimes only noticed when the patient *takes a deep inspiration, coughs, sneezes, talks much, or moves the body in any way requiring fixation of the chest.* Where the suffering is severe, even ordinary respiration is painful, and is effected chiefly by the diaphragm. *While the patient is at perfect rest, the pain is commonly absent.* It is increased or produced by percussion, especially in the intercostal spaces, the pain then being commonly acute and stabbing, and compelling the patient to wince or contract the thorax on that side; *broad and steady pressure is borne, and generally gives relief.* The pain complained of is not confined to the thorax; we have it occasionally “in the right hypochondrium, and extending even as far as the flank.”

Again, we have pleurisy without any pain at all; and these cases are almost always, if not invariably, *unattended with much cough.*

It is well known, too, that after pleurisy has gone on once to effusion, and the effusion is sufficiently extensive to reduce the lung to a minimum, without at the same time distending the chest to maximum, pain is commonly absent, though it may still be produced by direct percussion, or by any motion implying action of the intercostal muscles. If the observation ended here, it would be of little significance; but when we find that the patient has absolutely a return of pain after the effused fluid has been so far absorbed that the lung is again in contact with the ribs, *a tolerably good proof that the inflammation is at an end*, it is clear that some other causation besides the inflammation must be sought.

A moment's reflection serves to tell us, that when the thorax is nearly full of fluid the intercostals do not act, except in coughing, sneezing, and turning the body; but that whenever the lung becomes once more permeable to air, as is evidenced by its rising to its natural condition, there is *as full and frequent respiration as in health*. There is then reason to believe that the pain recurs, not because there is renewed inflammation or even contact between inflamed surfaces, *but because the motions of the thorax, for a time suspended, are again performed*; and we may add, that this secondary pain will often continue, in weakly or delicate subjects, *after all signs of genuine pleurisy have passed away*.

2. We have pains similar to those of pleurisy from fracture or other injury to the ribs or intercostals; from *herpes zoster*; in that complaint to which the learned name of pleurodynia has been given; and in cases of parietal abscess. So similar are the pains in the side after any blow, fall, or other violence, has been inflicted, to those arising in genuine pleurisy, that the surgeon has always his attention on the *qui vive* to detect as early as possible the first physical sign of that complaint; but he generally seeks in vain. He is aware that the pain is

aggravated by motion, coughing, sneezing, and the effort of defæcation, or turning round. He knows that when the patient is at rest he is free from suffering; and in his own mind the idea of *motion* in that side of the thorax is inseparably connected with the causation of pain.

When we turn to a description of pleurodyne or stitch in the side, we find it so closely resembling in its character the pain of pleurisy, that we have authorities like Cruveilhier and Watson enunciating the opinion, that "pleurodyne (in many cases, at least) is nothing else than adhesive pleurisy." But, at the same time, we find that, as a general rule, there is nothing in common between pleurodynia and pleurisy, beyond the pain. Now we find pleurodyne common both in children and delicate adults after any exercise which has brought into excessive operation the intercostal and other muscles concerned in extraordinary respiration. It is common in phthisical patients who have excessive cough; it is common in bronchitis, pneumonia, catarrh, or in other cases where cough is frequent and the bodily frame enfeebled. I have given a case where pleurodyne has proceeded from prolonged sitting. I could multiply instances now in which it has been produced by even a smaller amount of fatigue.

The next point in connexion with this same subject is, that very severe pleuritic pains precede and follow the occurrence of *herpes zoster* for a considerable period.

Now, *herpes zoster* bears the same relation to the intercostal muscles as does inflammation of the pleura. The latter is disease in close contiguity with their *inner*, and the former with their *outer* surface; and if pleurisy and herpes are attended with the same style of pleurodyne, we must naturally infer that they both operate in a similar way. But herpes is not inflammation of a *serous* membrane. We may infer, therefore, that the pleuritic pains accompanying pleurisy are

no more due to its being inflammation of a serous membrane, than those of herpes are due to the skin being analogous to a mucous membrane.

Again, the pain of *herpes zoster* is, like that of pleurisy, independent of the actual presence of inflammation. It exists long after the cutaneous eruption has ceased, and it is always aggravated by the very same motions that increase the stitch-like suffering complained of in pleurisy.

However, then, we choose to explain it, it is clear that there is something in common between the two affections.

The parallel may be extended to a much greater extent than we are justified in attempting here; but we may state generally, that the continuance of the pain both of pleurisy and of herpes depends upon the original, vital, or constitutional powers of the individual, the extent to which the intercostal and other thoracic muscles are used or implicated in the disease, and the severity of the depleting or otherwise lowering style of treatment which has been adopted. The greater the debility of the patient, and the greater the demand upon his respiratory muscles, the greater and more prolonged will be the pain both in one case and the other. When we consider that both the diseases under notice are attended with very marked debility, we can readily understand the long continuance of the local suffering, or, as we should read it, of the painful local muscular excitability.

The views here set forth receive remarkable corroboration by the phenomena presented by those rare cases where abscesses form between the muscles of the back, abdomen, or side. I have had three patients under my care at different times, in one of whom there was excessive pain in the loin on one side, continuing incessantly for weeks, and at last ending suddenly with a copious discharge of purulent urine. In another, the pain was referred to the upper origin of the

external oblique, and was so severe as materially to interfere with respiration. Pleurisy was naturally suspected, but no distinct proof of its presence could ever be found. The diagnosis was very obscure until fluctuation could be felt externally, and it was clear that an abscess had been forming in the parietes of the chest. The third case was still more puzzling, for the suffering was all referred to the lower margin of the ribs on the right side, where either the pleura, liver, and peritoneum, any or all, might have been diseased. The pain was very severe; there was great tenderness on pressure, excessive agony from coughing, sneezing, defæcation, &c. No diagnosis was formed beyond the negative one—of what the complaint was not. In the end, it proved to be an abscess situated between the external and internal oblique.

There was no pretence, in any one of these instances, that there was inflammation of any serous membrane; and yet the pain in the two last individuals equalled, if it did not exceed, the sufferings met with in the worst cases of pleurisy. The muscles, however, were clearly implicated; they were possibly inflamed, and really in a state of excessive excitability, contracting into cramp or spasm at the smallest motion.

3. The very close resemblance between pleurisy, pleurodyne, and the pains resulting from some mechanical injury to the side, being once established, and the idea started that the suffering is in some way *connected with the apparatus of motion*, we pursue our inquiry into the methods adopted by nature to relieve the pain when present, or to prevent its occurrence when absent. We may shortly sum these up by saying that they all go upon the principle of keeping the side perfectly quiet. The patient will not use the intercostals of the affected side; he carefully avoids long sentences when talking, long drawn sighs, deep inspirations, coughing,

sneezing, laughing, and vomiting. If perforce he must move or must cough, he tries if possible to fix the chest by steady pressure of the hand. He attempts to control the natural propensity to defæcate; he avoids any effort to empty the bladder, except by the vesical contraction alone. He curtails his conversation, remains rigidly on his back, or whatever other position he first assumed. In fine, he feels that quietness is for him synonymous with comfort.

The current of observation therefore still setting strongly towards the muscles as the chief seat of pain, we pursue the inquiry still further, and consider the next point.

4. The means the medical practitioner adopts to relieve the pain when present, may be shortly summed up. They are directed *to prevent motion* and to reduce the excitability of the muscular system. The surgeon, when he has to treat an injury to the side, whether pleurodyne is present or not, applies his strapping, rollers, or dextrine bandage; if cough is present, he tries to check it by opium, *not because the cough will produce inflammation of a serous membrane*, but because it exercises a set of muscles rendered excessively irritable from injury or from the extension of an inflammatory process. He orders *rest*, from a similar consideration; and I can remember more cases than one in which these means have partially failed from no other reason than because *the strapping has not been sufficiently substantial*. The patient has been better when first the plaster was applied, but has relapsed as it became creased and supple. The application of *three* layers of "emплаstrum resinæ" has succeeded completely, where a single one has signally failed.

The physician has not hitherto learned his lesson so perfectly as the surgeon; he has had no definite principle to guide him; and has, consequently, only accidentally got hold of a valuable remedy. He has sometimes bled his patients

until they have been too weak to breathe with anything but the diaphragm—too feeble to cough, to sneeze, or to move. He has administered antimony, which has relaxed their muscles until they have been too enervated to act at all. He has blistered the skin till it has been too sore for the patient to stir it. He has varnished the cuticle so completely that the patient has found motion almost impossible. He has put on large heavy linseed-meal poultices, which have comforted the muscles, at the same time that they have rendered motion at least inconvenient. He has administered opium with signal relief. He has done his best to allay cough, sneezing, and vomiting. He has, in fine, recognised the importance of preventing motion; and yet throughout all this he has continued to attribute the pain to the simple fact that there is inflammation of a serous organ!

But the very same remedies are recommended for simple pleurodyne, with the exception of venesection, antimony, and other powerful depressants. We conclude, therefore, from a consideration of his methods of treatment, that the physician does, in his own mind, make a distinction between the symptoms purely due to inflammation and those others that may be considered “episodical;” that when the inflammatory symptoms, as evinced by the physical signs, predominate, he attacks them alone; and that where much pain is superadded he enlarges his battery, and possibly varies the nature and calibre of his guns.

5. The foregoing considerations lead us to doubt more strongly than ever whether the pain of pleurisy is due in any way to the simple fact that the pleura is a serous membrane.

My personal experience has furnished me with cases in which there has been inflammation of the arachnoid so severe, that the membrane has been found universally coated with pus as thick as clotted cream, but where no pain whatever had

been complained of during life—where the pericardium has been densely covered throughout its whole extent without the patient having the smallest idea of suffering, although the muscular structure of the heart has been affected, and its rhythmical action altered—where the patient has had peritonitis to an extreme degree, with an equal freedom from pain, and where the tunica vaginalis testis has been extensively inflamed, without the individual experiencing anything beyond a sensation of weight or of faint heat. Other allied membranes, such as the synovial and the bursarial, may be largely inflamed and secrete large quantities of pus, without any perceptible suffering to the patient.

As, then, we give up the serous idea, we adopt another; and, as regards the particular symptom under consideration, enunciate that the pain is *due entirely to the muscular apparatus in the vicinity of the inflamed part*. Ere, however, we venture to repose ourselves in this belief, we must inquire whether it is possible or likely that the muscular system can be the seat of such severe pain as is felt in pleurisy. Now I have already given an account of a case in which, from simple indulgence in immoderate laughter, more intense pain was produced than I had ever seen in pleurisy; and many others of a similar kind, showing that an immense amount of pain may be felt in other parts, where it can be traced solely and unmistakably to the muscular system. The experience of others will amply confirm this statement; the occasional intensity of muscular pains being thoroughly known to every observant physician.

The muscular origin of the pain in pleurisy being conceded, if only for the sake of argument, we must next proceed to inquire *how* it is that the same class of pains may occur from injury to, or inflammation of, the pleura—from herpes zoster, or from simple debility or over-exhaustion.

We have shown elsewhere, that whenever the muscular system is weakened from any cause, it becomes much more excitable than in health; that it is sooner thrown into spasmodic action, the cramp being invariably attended with pain—a pain which seems to be in direct proportion to the weakness of the sufferer. Thus a weak growing lad suffers more with stitch in the side from running and breathing rapidly than a strong one. The abdominal or other cramps so common in delicate women are productive of a comparatively greater amount of pain than similar cramps occurring in the strong—a thing very rare until the muscle affected has been thoroughly wearied. But the excitability of any organ may be exalted from other causes than simple debility, and amongst those causes may be reckoned inflammation. We know, from the experience of abscesses and other complaints occasionally met with in or near muscular structures, that when the latter are affected, they are not only peculiarly excitable, but that their contractions are unusually painful. A similar remark applies to direct injuries; for example, every one is familiar with the painfully spasmodic attacks to which the stump of an amputated limb is subject for many hours after the operation; and with the horrible twitches in the calf of the leg which accompany gout, or follow after a sprain of the ankle. We know how an abscess in the neck may produce a more or less persistent and painful contraction of the sterno-mastoid or other muscles; how a diseased bone may produce a stiff joint from throwing one set of muscles into a continuous cramp. We know that any abnormal condition of an organ shows itself in perverted function; and as contractility is the function of muscle, we ought to be prepared for some alteration in that function whenever the muscle has been in any way impaired. That alteration is occasionally shown in a total suspension of contractility, as in paralysis; but it is

much more frequently shown in diminished contractile force, with increased inclination to contraction and propensity to cramp. Impairment of function being produced equally by inflammation, injury, or great debility, we can well understand how "stitch" in the side may be the result of any one of them. But it has been observed that pleurisy, &c., may be present *without the existence of pain.* *What is this, but the expression of the fact that we may have pure inflammation of the pleura without its being extended to the intercostal or other muscles concerned in respiration, just as we may have an inflammation of the urethra without its extending to the corpus spongiosum, or of the conjunctiva without its extending to the sclerotic?*

When the muscles are not so inflamed, they perform their duty without suffering the pain of cramp; when they are, they can only do the smallest amount of work without being thrown into distressing spasm. This being so, we can readily understand how it is that coughing, sneezing, or any other motion shall produce or aggravate the pain, and how any plan for keeping the thorax at rest shall relieve it.

If this explanation be true, we shall find that it is equally applicable to inflammation of the peritoneum, whether it covers the diaphragm, or lines the abdominal walls. Practically it is so. I have myself met with cases where muscular pain, closely resembling pleurodyne in everything but its name and locality, has been mistaken and treated for peritonitis. In pure peritonitis I have seen the muscles in a permanently cramped condition, and every movement accompanied with intense suffering. I have seen even more severe pain from a permanently cramped condition of the abdominal walls than in the worst forms of inflammation. I have also seen very severe and fatal peritonitis, arising from perforation of the bowel, accompanied by so little pain, that the patient declared she had none to speak of.

The importance of these observations may be made more apparent if we pursue closely the history of the pain in acute peritonitis. Turning to my note-book at random, I extract a case occurring fourteen years ago, and of course reported without any reference to my present views.

CASE.—George R., æt. 27, had Bright's disease, and amongst other symptoms great debility, intermitting pulse, a good deal of tympanitis, but no particular tenderness on pressure over the abdomen. A day or two afterwards he had constant *hiccup and vomiting*, and *now there was tenderness* over the abdomen, and especially over the region of the liver. He died next day; and on examination very extensive peritonitis was found, the lymph glueing the intestines together.

What have we here? First, peritonitis, with little pain; secondly, extension of inflammation to the muscular tissue of the diaphragm, producing perverted function, frequent cramp (*i. e.* hiccup); extension of inflammation to the stomach, producing vomiting, this producing excessive action in the abdominal walls, and that action producing pain and tenderness.

We think these considerations are of great importance, as they enable us to reconcile many conflicting ideas respecting the relative value of various plans of treatment. Thus some physicians of the French school have held that pleurisy is best managed by large cataplasms of linseed meal, or by varnishing the side, or by strapping it with adhesive plaster. Others have decried this plan as being culpably inert; the reply to which is, that it is a very successful one. There can be no doubt that the success is due to the fact that pleurisy is not present in the majority of cases, but that the complaint is myalgic in its nature, dependent on over-exertion, and consequently is relieved by anything which gives *rest* to the side.

Again, Dr. Beau, in Paris, has been lauding *quinine* as of the utmost value in acute peritonitis; and I have on many occasions been told by general practitioners that they have cured puerperal peritonitis by the free use of turpentine externally and internally. Of the former, I can only say that a careful examination of the symptoms described, lead irresistibly to the belief that the complaints classed as peritonitis were purely myalgic, and independent of any peritonitis. And where I have made special inquiry into the proofs of peritonitis alleged by the latter, I have found that one constant element in the case was, that the patients had been attacked after getting up too soon after delivery. In these cases the occurrence of fever is very common.

We have been assuming here that inflammation in the substance of a muscle, or in close proximity to its surface, produces a propensity to take on spasmodic action, and that that spasm is of a very painful kind. It is advisable that we fortify this position by a more extended inquiry. We turn, in the first place, to the throat, which in childhood is frequently the seat of severe inflammation. If we inquire into the subject of croup, we find that there is the same difficulty in diagnosticating between the true and false as between pleurisy and pleurodyne, and "hysterical" and true peritonitis; that the difficulty arises from the fact that the most prominent symptom—spasm of the glottidean muscles—is produced by inflammation of the mucous membrane, or by "nervous irritation" indifferently. Were the muscles on a large scale, the spasm would doubtless be attended with pain.

Another instance where we have muscular fibre in close proximity to inflamed tissue, is in pericarditis and endocarditis. How does the heart behave under these circumstances? As we should anticipate, we find its rhythmical action destroyed, and its motions irregular in the highest

degree. Nor is it without interest that we note here the difficulty that exists in ascertaining whether the irregularity of action is due to absolute "inflammation" alone.

We now examine the behaviour of the muscles when they have been the subject of such direct violence as would be likely to involve an inflammatory condition. We ask the surgeon how the muscles of the thigh demean themselves after amputation; of the leg after sprains; of the trunk after burns, or other injuries. He reports that for some hours after the operation one muscle after another takes up a very painful spasmodic twitching, which is so severe as to awaken the patient from sleep, and which cannot be entirely cured by large doses of opium, or any local application.

He reports that after an individual has sprained his ankle severely, he is for many hours the subject of acutely painful twitches of the muscles productive of violent pain. The report of the muscles of the trunk is the same.

The physician next turns to his observations on the influence of gouty inflammation on the muscles of the foot and hand, where the disease is present in the toe and thumb. We find Dr. Copland writing:—"It (the gout) is very generally attended by violent cramps or spasmodic contraction of the muscles of the affected limb. Almost any change of posture produces this spasmodic action and the *severe pain* attending it. Sir C. Scudamore states, that of 120 cases cramps occurred in 90 with more or less severity, either upon the accession of the paroxysm, or during its height, or at its close, or even during all these periods." ("Medical Dictionary," article "Gout.")

If we turn to the same systematic author, article "Inflammation of Muscles," we find the symptoms described thus:—"Extreme pain, soreness, and tenderness, the pain being so much increased by contraction as to render all attempts at

motion most difficult, or altogether impossible, increased heat, &c., sometimes subsultus of the tendons or rigid contractions or spasms of *adjoining muscles*," &c.

We now turn to the diaphragm, a muscle we know to be frequently inflamed by the extension of hepatic or pulmonary disease, and inquire into the symptoms noticed by authors as characteristic of its presence. They are just as we should anticipate: acute pain augmented by inspiration, by physical efforts, by vomiting, or even the eructations of flatus, and seated at the base of the thorax, or about the attachments of the diaphragm; anxiety, difficulty of breathing, orthopnœa, frequent spasm, *i. e.* hiccup and the like. Sometimes, as in a case related at the Liverpool Medical Society, the painful contraction is so severe, that the patient has to be kept for hours under the influence of chloroform to enable him to breathe sufficiently for existence.

These phenomena are not confined to the voluntary muscles. We find the same thing in the muscles of organic life. Thus, if the mucous membrane of the stomach is inflamed, as it is in gout, and after the imbibition of poisonous fluids, &c., we have painful spasmodic contraction of the muscular coat, as evidenced by constant suffering and frequent vomiting. The same may be said of the bladder. A case has come under my notice where the patient had paraplegic anæsthesia, and could only empty the bladder with great difficulty. Yet, under the influence of inflammation of its mucous membrane (produced apparently by the exhibition of bichloride of mercury by the mouth), the muscular coat was painfully and spasmodically contracted, and would project the urine with considerable force, independent of the abdominal muscles. The suffering was quite as intense as that accompanying the worst forms of peritonitis, and ultimately caused the patient's death.

We see the same thing in dysentery, where a painful spas-

modic condition of the muscular coat of the colon is produced by an inflammatory condition of its mucous membrane. In the rectum the same truth is apparent, nor is there much doubt that inflammation of the bladder or of the rectum will produce spasmodic pains in the uterus, whether the patient be a virgin, a married woman, or pregnant.

These things, then, being taken into consideration, we conclude—

1. That pain is not a necessary accompaniment of serous inflammation.

2. That the pains of pleurisy, peritonitis, &c., are not due simply to the part affected being serous membranes.

3. That the pains are due to the muscles being implicated in one way or other.

4. That the pains produced by inflammation are not essentially different in their character from those found after excessive exertion in debilitated subjects.

5. That the pain affords no absolute proof of the presence of inflammation or otherwise.

6. Consequently, that the pain is not a trustworthy evidence of the nature or extent of the disease, of the amount of the danger, or of the necessity for "active" remedies.

It is interesting to find here, as we so frequently do in other parts of the animal economy, that apparently different causes have the same apparent results—that weakness and over-work will produce a class of symptoms once attributed to plethora and strength; and that the differences between the effects of one and the other are so slight, that a critical discrimination is difficult in the extreme. If a fact so important were habitually present to our minds, it would make us far less hasty in our generalizations, more careful in our diagnosis, and infinitely more cautious in our treatment. We should more frequently give our patients the "benefit

of our doubts," and abstain from attempting to cure an inflammation by plans which, if not immediately successful, would be nearly sure to produce a condition they were intended to cure.

After this digression, we return once more to the subject of muscular pains affecting the trunk of the body, &c.

CHAPTER VI.

Diaphragm affected—Abdominal muscles frequently the seats of pain—
Epigastric pain—Case, John W.—Infra-mammary pain—Common during pregnancy—Digression to inquire whether fibrous tissues are more stretchable at one time than another—Pain often referred to the pubes—Cases, Mr. M., Mrs. P.—Quotations from authors to show that these pains have been attributed to other causes—Abdominal pains follow excessive vomiting (Case, Mrs. L.)—Attend sea-sickness (Case, Mrs. S.)—Attend severe cough (Case, Ann B.)—Attend convalescence after long illness—Case, S. S.—Cases, Sarah Mc G.—Case of excessive pain, Miss M.—Cases, Miss L. C., Mrs. F., Mrs. S., Miss K.—Cases of universal soreness, Mr. M., A. B.

LEAVING for a time the consideration whether the heart, an organ with all the characters of voluntary muscle, may or may not be affected in a manner analogous to others, we come to the diaphragm, and inquire whether it is subject to muscular pain, or other affections, similar to the intercostals, which it resembles, in being a muscle of respiration.

Our first consideration is, what are the diseases in which the diaphragm is unusually exerted? The reply is, asthma, in which it has to work with greatly increased force to distend the chest; bronchitis, in which the same phenomenon is to be noticed, and some other diseases of the lungs, attended with dyspnœa, &c.; excessive cough, vomiting, difficulty of defæcation, parturition, &c. Our next investigation is, whether in all these cases there is any symptom not fairly traceable to the diseased condition of the organs themselves, to neuralgia, or to other muscles. We find it in the constrictive pain round the body, the pain shooting from back

to epigastrium, and from side to side ; in the painful respiration referred to every part of the diaphragm's insertion, and the sudden catch in the breath following a full inspiration—a catch not referrible to the intercostals or the abdominal walls.

The abdominal muscles are very commonly the seat both of pain and cramp or spasm—as much so, probably, as those of the back. The locality and intensity of the affections vary with the strength and occupation of the patient. Complaint in some is most urgent at the epigastrium ; in others on the left side ; in others on the right ; some complain equally of all these spots. In other instances, the suffering is referred to the iliac and hypogastric regions ; and in others, the hypochondria and the umbilical regions are the seat of pain, &c.

J. M., æt. 10, a lad of delicate parentage, complained one morning of very severe pain referred to the region of the heart. This naturally produced great anxiety in his parents, who had been informed by a metropolitan physician that he had cardiac disease. I was, under these circumstances, requested to meet the ordinary attendant, who took a different, and, as it seemed to me, a correct view of the case. The following was the medical history :—The parents were both somewhat delicate ; an only brother had died of mesenteric disease, and the patient had been very weak and puny when younger. In figure he was slightly built, and had been growing rapidly. The pupils of the eye were large ; the muscular development very imperfect. He was much subject to rheumatic or “growing” pains in the lower extremities ; his appetite was very indifferent, his bowels capricious, his breath foul ; the pulse was feeble, and the circulation languid. On examining the heart a very distinct systolic bellows-sound was heard, which was most audible at

the base of the heart. There was no sign of either dilatation or hypertrophy. On making particular inquiry about the exact locality of the pain, the lad placed his hand over the origin of the external oblique muscle; and a little further investigation elicited that, on the day before he had the pain, he had been leaping with a pole, jumping, and otherwise exercising himself; that he had felt very "rheumatic" during the evening, and had had a warm bath, which relieved the muscular pains completely as far as the arms and legs were concerned. The next morning, however, there was such great pain in the external oblique, and tenderness on pressure, as to cause alarm, but that went away in the course of the day without special remedies. Taking all the circumstances of the case into consideration, it seemed tolerably clear that the bellows-sound was the result of debility, and that the pains were myalgic, and that the treatment should be one of a roborant character. The result proved the truth of the diagnosis.

When the pain occurs on the left side, it is commonly pooh-poohed, for the spleen is not very liable to inflammation, or it may be called neuralgia; but when it occurs on the right side, where there is a large organ, it is supposed to indicate disease of the liver, inflammation, congestion, or abscess; fæcal or other distension of the colon; or a new growth, cancer, hydatids, &c.

When the pain occurs at the epigastrium, it is referred to inflammation of the stomach, gastrodynia, dyspepsia, spinal irritation, or some other cause. The following is a good example of this form of the complaint and its origin:—

John Williams, æt. 45, labourer in a white-lead works, and of tall, spare build, and sallow complexion, was admitted into the Northern Hospital, complaining of severe pain at the epigastrium, supposed to be the result of the baneful influence

of lead. The pain was described as a dreadful weakness, and was referred entirely to the ensiform cartilage. He had been repeatedly under treatment for it, and had been blistered and leeches without relief. At his admission he was wearing a large strengthening plaster. A close examination of the heart, lungs, and abdomen failed in detecting any disease. There was no blue line round the gums, the tongue was clean, digestion indifferent, the bowels regular, both legs were very remarkable from the number and size of varicosities in the veins. Failing to ascertain any serious complaint, I asked him how he was on Monday morning (*i. e.* after the rest of Sunday). "Quite well, sir," was the answer. "And on Saturday night?" "Quite done, sir; so bad, I can scarcely reach my home; it often takes me half an hour" (to go half a mile), "and I am sometimes fairly doubled up with pain." I next inquired what his work consisted in; and found that it was to raise from the ground and throw up to a stage above him heavy materials, which involved frequent contraction, and a frequent stretching of the recti muscles of the abdomen. I ascertained that towards the end of the week the different segments of the rectus were frequently cramped, that he had about the same period "lumps"—*i. e.* isolated cramps—in the left external oblique, and that he had occasionally pains in the region of the erector spinae. I considered the case one of simple over-exertion, directed the man to remain in bed, gave him steel and cod-liver oil, and on my next visit, two days after, the man declared himself quite well. He remained in the house, however, until he was sufficiently improved in health to bear the hard work he had to get through without painful results.

The myalgic pain complained of in the side is so very common, that there is scarcely one young woman in three who escapes it altogether. It is, as we have mentioned, some-

times situated on the left and sometimes on the right, and is occasionally met with on both. It may or may not be attended with swelling—*i. e.* muscular cramp. The sufferings it involves are often very severe, and occupy the patient's thoughts, to the exclusion of everything else. By some the pain is considered to be neuralgic, and it is constantly adduced as one of the symptoms of spinal irritation. It has its seat under the mamma,* at a spot corresponding to the commencement of the sheath of the rectus muscle, but it is also to be met with along the margin of the ribs extending along the origin of the external oblique.

I have already spoken so fully of the diagnosis of this form of pain, that I need not recapitulate the grounds on which the opinion of its being muscular is based. It seldom exists alone. As far as my own observation has gone, I should say it is invariably attended with muscular pains in other situations, *e. g.* the shoulders, back, or pubic regions.

I have met with many instances in which an inflammatory origin has been assigned, and the unfortunate patient has

* This infra-mammary pain well deserves the closest examination by the practitioner. I would suggest the following experiment:—Let any one stand or sit before a mirror with the chest and abdomen bare, and then attempt to approach the ribs as closely as possible to the crest of the ilium—a position always assumed by an individual who has become weary of standing or sitting upright. He will see one spot, corresponding with one of the interdigitations of the serratus magnus and external oblique, where the skin seems more firmly adherent to the parts below than at any other spot. This spot is precisely the one to which the pain is generally referred. The left is more frequently complained of than the right side, because a person naturally leans more towards the former than the latter. The tenderness is only cutaneous, and such as we have described elsewhere; for the pain is relieved by steady pressure, and in describing it the patient almost always presses the part with the hand, as if it gave relief. It is to be explained by reference to the facts recorded in the notes pp. 37 and 44, to the effect that a long-continued strain on a tendinous part will produce tenderness on pressure as well as steady pain.

been bled from the arm, leeches, cupped, or blistered, purged with blue pill, and starved on water-gruel. As from the severity of the supposed disease, and the quality of the treatment, the patient has been confined to bed, an apparent cure has followed, and the success of the treatment is so marked, that when the symptoms occur on the invalid's moving about as usual, the same treatment is insisted on; it is again successful, from the same cause, and this may go on until the health is broken altogether. I have myself had a patient who was so firmly convinced of the value of the plan, that, though already anæmic from repeated bleedings, she came to me to be bled again. It was in vain I urged that every bleeding had really made her worse; she persisted in her view, and went elsewhere.

Pain referred to a small spot below the mamma, commonly the right, is frequently complained of by women during pregnancy. The spot is about the size of a shilling, and is very tender on pressure. It corresponds with the upper termination of the "linea semilunaris." The pain is pretty constant, slightly relieved by the recumbent posture, but greatly increased by lying on the affected side; it may come on during the third month, and continue to the time of parturition; and its "wearing" character greatly depresses the patient's spirits. It is not relieved by leeches, blisters, or sinapisms; warm fomentations do some good, but rest is of the utmost importance. Occasionally a similar pain is felt in the lower end of the linea semilunaris, and apparently from the same cause. It seems to be due to a stretching of the fibrous tissue, from the gradual enlargement of the uterus, unattended with any inflammatory condition.

One case has come under my notice where a lady suffered most severely from it during one pregnancy, considerably during the next, and not at all on a third; and the only

difference that could be detected was, that on the first occasion she was very weak, on the second was stronger, and on the third was in good health throughout.

And here, without violating materially the plan we have laid down for ourselves, we may enter upon the question—Are not the fibrous and other tissues more easily “stretchable” when an individual is in a weakly condition than in a strong? We see, for example, the strong ligaments of the knee-joint give way in the weakly children of strumous parents, and the individuals become “in-kneed” or “bow-legged.” We see in the same class the powerful ligaments of the spine give way, and allow the person to have great lateral curvature. From a similar cause we find the bones yield to pressure and become unusually curved: we find the skin give way, and the scrotum become even more than double its ordinary length. The bowels readily allow themselves to be distended by flatus in the weak—a most unusual occurrence in the strong. The veins are no exceptions to this rule, for we find them distended and varicose in those only whose constitutions lack vigour; and we further find that an individual will suffer from painful distension when they are weakly, while a restoration to firm health will, while it enables the fibrous coats of the veins to resist more, reduce the pain complained of. In illustration of this particular consideration, it may be added that the lady whose case has just been recorded suffered during the first and second pregnancies most severely from excessively distended veins in and about the vulva; but on the third occasion there was scarcely any distension and no suffering. The man, too, whose case is recorded at page 108, had a more varicose condition of the veins than I have ever seen.

Pain in the plantar fascia, and sometimes so complete a stretching of the fascia and the ligaments of the foot as to

destroy the plantar arch and make a person flat-footed, is common in the weak from too much walking. Weakness of the ankle is not unusual from a similar cause; and I have heard many pedestrians complain of the frequency with which they "put their ankle out" on descending a mountain at the end of a long day. It is remarkable that in these circumstances, though the pain is very intense for a time, it goes off without other symptoms of sprain. On speaking of this subject to a friend, he informed me that he suffered very much every evening from twisting his ankles in walking over rough roads or parts paved with large round boulder stones. He did not suffer equally in the morning. He told me that he attributed this entirely to the fatigue of standing all day, which weakened the muscles of the leg, and the tendons and ligaments about the ankles.

In many instances we see facility of stretching unaccompanied by pain, but when the distension is in a fibrous tissue, and suddenly produced, the suffering is often severe. Whether the greater pain complained of by those of weakly condition in the fibrous structures, from a muscular strain, is due to their being more stretched, or to their being in a more exalted state of sensibility, or from both causes combined, it is difficult to say with certainty; but the broad fact is certain, that pain in the tendinous parts of muscles is both more common and more severe in direct proportion to the debility of the individual.

Infra-mammary pain is commonly accompanied with another, referred to the hypogastric region; and these, singly or combined, are most common in housemaids, milliners, seamstresses, and others, who have much stooping and using of the right hand and arm. The symptoms which accompany the pain are usually loss of appetite, palpitation, failing strength, sometimes diarrhoea, more commonly constipation;

some disorder of the uterine function is usually to be detected, the discharge being either painful, scanty, absent, or profuse, and there is abundant secretion of urine. Were it not for the pain, the case would seem one of atonic dyspepsia only, or simple debility. It was a long time before I could fully comprehend the nature of the hypogastric pain. I could not satisfactorily refer it to the bladder, uterus, colon, or small intestines.

The difficulty was at last solved by a young medical man, Mr. M., who came to consult me for what he considered was inflammation of the bladder. "The pain," he said, "is here" (pressing on the pubis), "right in the bone at the top." A careful examination of all the other signs showed that there was nothing wrong in the bladder, and that the pain was confined to the insertion of the rectus and the inner end of Poupart's ligament. His case was one of great interest: he had had gonorrhœa, but had been perfectly well for months when he began to feel this pubic pain; but he was so convinced that it was produced by vesical inflammation, that he became perfectly miserable. He was house-surgeon, however, to a dispensary, and had an amazing amount of work to do both in the surgery and visiting patients: he lived abstemiously, and was low in health and spirits. The pain only came on in the evening, and it made him wretched, for that was the very time when he was the least able to forget it, and unable from fatigue to take up any active exertion. I recommended tonics, and rest during the middle of the day, and he soon forgot the pain; but his mind had dwelt so long upon the one idea, that a long period elapsed ere he recovered perfectly the *mens sana in corpore sano*. Since then I have had several opportunities of finding that female patients, from natural feelings of modesty, point to the hypogastric instead of the pubic region, and that in a

great number of instances the existence of the pain is suppressed altogether from a similar cause. The following case illustrates the connexion between the lateral and pubic pain :—

Mrs. P., æt. 27, came under my care for severe pain in the right side, which she considered to be inflammatory. On examination, I found that it was confined to the costal origin of the external oblique ; that she was free from it (except in certain positions) while in bed ; that it came on after she had been walking, standing, or sitting ; that it was always worse at night, and sometimes prevented her sleeping ; that when severe, it came on suddenly, and went off with a twitching sensation ; pressure and warmth relieved the pain ; the pulse was weak and quiet ; the bowels rather confined ; the tongue was slightly furred and indented at the edges by the teeth ; the catamenia were regular. The appetite had entirely failed, and she had for some time been low and easily excited to tears. I informed her that the pain was not a mark of inflammation ; that it arose from weakness, and endeavouring to make a debilitated muscle do the work of a strong one. I prescribed tonics and a very generous diet, with daily rest and gentle exercise in the open air, and soon found the pains disappear. When subsequently conversing on this subject with my patient, with a view to ascertain whether she had had any other pains of a similar origin, I found out that she had two years previously been under medical care for severe pain referred to the region of the groins and the pubis ; that she had been repeatedly leeches under the impression that it was inflammatory ; that the leeches had done no good ; that the pain was of a hot, aching, or burning character, and was of such daily occurrence that it seemed to wear her down with low spirits. On particular inquiry, it appeared that the pain was confined to Poupart's ligament and the insertion of the

rectus muscle, and she was always relieved by rest in bed or lolling in an arm-chair with the legs raised.

In narrating the case, she laid peculiar stress on the mental depression produced by the perpetual recurrence of the suffering, and this forms a not uninteresting feature in this class of cases generally. The despondency does not arise simply from the pain, but from that condition of body upon which the pain depends. We all know that when an individual is weakly, either from loss of blood, diarrhœa, or dyspepsia, low spirits are as common, if not as constant, as are joyousness, enthusiasm, and exuberance of spirits when a person has recovered health after fever, or when, emancipated from town influences, he breathes the pure air of the Cumberland or Switzerland mountains. The effects of tonics are not confined simply to improving the condition of the muscular system: they affect to a similar extent the mental nervous system, and thus the patient experiences a twofold advantage; but this advantage can never be fully consummated until the patient is able to understand thoroughly the cause of the pain; for if she remain ignorant of this, at every return of the suffering there is an increased depression of spirits, from a mental being superadded to a physical cause.

In consequence of the character of the pain and the appearance of the patient, a neuralgic origin is frequently supposed, and, speaking generally, where such a view gives rise to the adoption of a tonic plan of treatment, little harm is done, and the patient will get slowly better. The advantage, however, of *increased rest* and diminished labour is such that a correct diagnosis materially hastens the cure.

The nature of the pain in the pubis can readily be understood by any one who has sat up all night reading, writing, or playing at any game. Few enthusiastic travellers escape

it, and the accoucheur who sits for many a weary hour at his patient's bedside is constantly its victim. It is too frequently attended with the idea of irritability of the bladder, which induces the belief of there being something wrong with that viscus. Men suffer from the unusual strain upon the muscle which is required to keep the trunk erect or bending forwards; and can we wonder, if the strong man feels pain that the poor milliner, the ill-fed seamstress, the chlorotic or weakly housemaid, or sickly cook, whose muscles are badly developed, suffer from a similar cause? Not knowing the origin of the pain, they take either no measures to relieve it, or those measures are misdirected; they try aperients, leeches, and low diet; they fancy the womb is at fault, and perchance get examined with the speculum and duly causticed by some one who sees the uterus in every female ailment; they grow miserable with the continual daily ache; their mornings are bearable, their evenings are all but intolerable. I have met with many instances in which ladies, married and single, have suffered very severely both in purse and person from the assiduity of speculum doctors, whose sole ground for suspecting uterine disease has been the severity of the pubic pain complained of, and whose treatment has materially aggravated the sufferings. Dr. Lee's book gives evidence of the frequency with which the mistake has been made. Once explain the cause, however, and improve the patient's strength, and relief soon follows by simple indulgence in the recumbent posture, or supporting the back in a comfortable chair.

Isabella C., æt. 23, was admitted into the Liverpool Royal Infirmary, complaining of abdominal pain; and stating that she had been told by a distinguished physician that she had a bearing down of the womb. On making a careful examination, however, I found that there never had been "prolapsus,"

nor was any other sign of disease referrible to the uterus to be detected. The pain was referred almost exclusively to the pubic insertion of the rectus abdominis and to Poupart's ligament, and was always relieved by stooping forward or lying down. The following was the history elicited. The patient's parents had died young, and she had only one sister living, who was very delicate; and though she looked stout, she felt herself weak and not fit for her work. She was a Roman Catholic, and had been a servant-of-all-work in some religious house, where she not only had to get through her ordinary duties, but had to attend mass at an early hour in the morning, and sometimes during the night. The diet, too, was meagre, and she soon lost all appetite. The pain at the pubes had come on while she was kneeling at morning mass, and it affected the whole of the abdomen first, and then seemed to extend all over her, so that she became first rigid, then insensible. Since then the pain had settled in the lower part of the abdomen. It was aggravated by walking, standing, stooping, or long sitting, and was described as being of a burning nature. She was ordered to remain in bed for a few days, to take strengthening medicines, &c., and was able to go out at the end of a month, quite free from pain.

The following is a somewhat amusing instance of that pain which is referred chiefly to the pubic insertion of the rectus muscle:—

Sarah McG., æt. 28, a tall, well-made Irishwoman, with considerable *embonpoint*, and at the time acting as maid-of-all-work in a house where the duties were very severe, and who had been a former patient in the Northern Hospital, where she had suffered from intense debility, called upon me, complaining of a "burning pain at the bottom of her belly, which seemed as if a hot coal were always there." "Her changes, too, were of a bad colour; and she could not tell

what was amiss with her." She attributed everything to "having sat down in the dark on a very dirty privy." As I had some doubts about her moral propriety, I imagined that she had contracted venereal disease, and made an examination. Everything being perfectly correct, I instituted further inquiries, and satisfactorily ascertained that the burning pain was confined to the tendinous insertion of the rectus and inner end of Poupart's ligament; that it came on towards night, and was not present in the morning, &c. It was evidently due to exertion beyond her strength. Of course I recommended tonics, rest when practicable, &c.; but I subsequently ascertained that she had retired from "service" to the "streets," and I never heard anything more of the case.

DURATION OF MYALGIA.

Ere we leave this part of the subject, I would wish to say a few words concerning the duration of the suffering in cases of myalgia. When first the subject was started, I anticipated that the duration of the pain, after the "unusual exertion" was over, would not be longer than it is in those who are stiff and sore from any new exercise; that as stiffness in a healthy man rarely lasts during a whole week, so a similar condition would not last much longer in the delicate. At first, a number of facts and cases which came under my notice sanctioned this conclusion. A prolonged experience, however, has negatived this deduction, and I have now learned that the duration of myalgia is sometimes extreme. It is generally more persistent in the offspring of consumptive patients than in any other class of patients. I have had individuals under my care who have been three months under treatment without their owing to any relief. I have now a young man under treatment, a boiler-maker by trade, the son of consumptive parents—the last but one of a family of ten, all dead of consumption, and himself affected with fistula

in ano—who came into hospital with myalgic pains of the dorsal muscles. He has been resting almost continually for six weeks in bed, and yet the pains are only just sufficiently abated to enable him to sit up comfortably. Each day has brought improvement, but of so small an amount that it was only perceptible to himself.* Another patient has come under my care in whom myalgic pains in the cervical region have lasted for two years. He has been a patient of mine for two months, but I am unable as yet to report any improvement. The pain goes as soon as he is resting his head in bed, or on the back of his arm-chair, and comes on as soon as he has been walking or standing more than half an hour. The suffering is confined to the spinal attachments of the trapezius.† In another instance now under my care, the patient, a young lady, has had myalgia, referred to the hypogastric regions, for upwards of three years; it is never absent, and is always aggravated by a trifling amount of exertion, *e. g.* riding out in a carriage, walking about the room, vomiting, defæcating, &c.‡

These cases suffice to show that, however simple may be the diagnosis and comforting the prognosis, the treatment is not uniformly brilliant or rapidly successful.

After having satisfied ourselves upon the real nature of these and other pains, it is very interesting to turn back and examine the writings of older authors who have treated on the diseases of women, or of the nervous system, and to find how well they have described the symptoms we have referred to, though they have attributed them to a totally different cause. In the account of “hysteralgia” given by Gooch, a

* He went out cured after being in the Hospital for ten weeks.

† This patient was under notice for four months, and was not a whit better when he left me.

‡ This lady is now so much better that she can take more than double the exercise she could when the above was written.

majority of the symptoms are clearly due to muscular fatigue and consequent soreness or aching. Let us take, for example, "pain in the loins and round the brim of the pelvis, which, while it is incessant, yet is subject to aggravations, especially after mental excitement or *bodily exertion*. The constant uneasiness, &c., soon induces the patient to give way to the relief afforded by repose, and to stir rarely from the sofa." "The exciting causes are generally some undue exertion, at a period when the uterus is susceptible. *Violent jolting, long standing when the catamenia are present (i. e. when the patient is weakened by loss of blood)*, will give rise to the malady." The italics are our own. "The various joints, *the spine, the breasts*, may be the seat of acute pain, more or less constant, enduring for many years, and yet never interfering with health of structure." "*Active purgation never failed to induce a paroxysm of pain,*" i. e. it debilitated the patient more, and the defæcating efforts added to the muscular pain. After long experience of different classes of remedies, that Dr. G. adopted was the very one we advocate, viz., every means possible to husband existing strength, and to increase it as far as practicable.

In Dr. Laycock's treatise on nervous diseases of females we find remarks of great significance. Under pain in the left side we read—"It is very common for young women, apparently in robust health, but *who have fatiguing domestic and sedentary employments, to suffer from a pain in the left side*. It is described as a gnawing, bruising sensation; is sometimes accompanied by spinal neuralgia and other hysterical symptoms. . . . It occurs in paroxysms, but taking food, *fatigue*, especially the *erect posture*, anxiety, and *all depressing agents exasperate it*. It is an obstinate affection, and is usually aggravated by any other treatment than the hygienic, and will often wear itself out." Again: "In cases of hysteria,

in phthisical diarrhoea, and in most diseases of an asthenic character, *the surface of the abdomen is exquisitely tender*, and the patient shrinks from the slightest touch."

We gain some peculiarly interesting observations respecting the pains we are describing, and even an extension of the subject, from the Jacksonian prize Essay on Neuralgia, by Dr. Downing. In speaking of intercostal neuralgia—for which, of course, we read muscular pain or spasm—after describing the character of the pains, he says, "*The slightest movement of the body will bring them on, and the effort of coughing induces them violently. The patient holds her breath as much as possible in order to lessen the agony.*" Compare this with the case of Mr. B., page 47. "There is usually considerable tenderness on pressure, *and the skin over the ribs and intercostal spaces is excessively sensitive, as if it had been severely bruised.*" Compare with note, page 43. "The sensibility is often so excessive that the slightest touch or movement of the skin will cause the patient to shrink with anguish." "These cases are met with every day at the public dispensaries, and not unfrequently puzzle, by their anomalous character, the most acute and experienced practitioners." "It is an ephemeral disease"—"most common in winter." Dr. Downing then describes the infra-mammary pain as neuralgic: "It shifts occasionally its seat a little downwards below the ribs, or over to the other side, and may continue for weeks. It is often attended with palpitation," &c. His cases are, *mutatis mutandis*, precisely similar to those we are familiar with. "Ellen M., æt. 16, a nurse-girl—pains in left side—paroxysmal—*most common in the day*; went round from spine to sternum, extended to the loins, and even went down to finger-ends. There was considerable *tenderness* of the integuments of the affected side. *The patient was out of health*—had just recovered from quinsy. She was cured by

tonics." Here it is evident that her work was too hard for her weakened muscles, especially the external oblique. Miss B., a *dressmaker*, æt. 23, had similar symptoms, intercostal pain from back to sternum, and over the whole side the pain seems sometimes to have shot from the vertex to the toes. The patient was tall, thin, anæmic. No account is given of her work, but the symptoms lead us to infer that she had an excessive amount of sewing, and hanging down the head in stitching, &c. Three other cases are given, all occurring in young women whose avocations were active, and whose strength was small. They all appear to be due to pain in the tendinous parts of the abdominal muscles from over-exertion.

Perhaps the most serious form in which we meet with intense muscular pains, is that occurring after prolonged and excessive vomiting. The healthy man may feel something of this after a voyage in which he has suffered much from seasickness. He speaks of it only as extreme soreness; and he is tolerably able, from having had similar pains elsewhere, to trace it to its true cause; but where violent sickness comes on under other circumstances, and is followed by severe pain, the connexion is too often either unsuspected or ignored. The violence of the suffering suggests the idea of its being dependent upon inflammation, neuralgia, or hysteria; and it is looked upon as a symptom of great importance, as it is attended with rapid pulse, strong evidence of disorder of the stomach and bowels, and great tenderness of the parietes of the abdomen.

The following is an instructive example of a case of this kind, in which the sufferings were said by the patient *to be far more severe than those she had undergone in any of her confinements* :—

I was called in consultation to see Mrs. L., æt. 38, the lady

whose case I have previously referred to (page 76), and the history I obtained was the following:—After being unusually well, she was induced to take a drive on a cold day, by which she was thoroughly starved, and the catamenia, which were “on” at the time, were stopped abruptly. On her return, she had sat by a warm fire, and taken some hot negus; but the discharge did not again come on, and she gradually became weak, faint, and sickly, and when I saw her, she was vomiting almost incessantly. She seemed low and extremely weak; the pulse was fluttering and variable, at one minute 104, at another 120 and upwards. There was great restlessness—the patient constantly moving from bed to a couch, and changing her position on each every few minutes. She only spoke in whispers. It was with difficulty we could see the tongue. The vomiting and retching came on every half-hour, and were aggravated by the patient putting her finger to the fauces. The ejecta were small, consisting of mucus only. Nothing she took remained on the stomach, and she had not had any sleep for some time. Champagne, brandy and soda-water, and morphia, were prescribed, with arrowroot and brandy, in small quantities, every hour. Next day the symptoms had undergone only the slightest amelioration; the arrowroot alone stayed on the stomach; and there was superadded severe pain in the left hypochondriac region, and some tenderness at the epigastrium. For this a strong solution of morphia was applied, and subsequently a large poultice, consisting of scalded hops. This produced complete numbness of the parietes and some cessation of pain. Some sleep was procured; the restlessness diminished; the pulse became stronger and less variable; the sickness abated; and the bowels were relieved by an injection of warm mutton-broth: the arrowroot and brandy still stayed, and beef-tea could be taken pretty well. On the fifth day the vomiting had ceased

entirely ; but the patient complained of intense pain in the trunk, which shot up to the neck and head, and down the hips to the knees. She was constantly moaning from its severity. She described it as if starting from a focus ; it rushed along in radiating lines to all parts and in all directions. Up and down along the erector spinæ, vibrating, twitching, and tearing, the pain was constant, but there were exacerbations of increased severity. It was also described (by the motions of the patient's hand and the words she employed) as being equally severe in the external oblique, the internal oblique, the transversalis, the rectus abdominis, the quadratus lumborum, the latissimus dorsi, the pectorals, and the gluteal and crural muscles. The attachments of the diaphragm were also mapped out by the painful spots. There was soreness of the skin, and tenderness on pressure. The pulse, however, was reduced to 98, and was steady, and there was some refreshing sleep at night. The lady had considerable *embonpoint*, and seemed to be in good condition.

The question now to be decided was—Are the pains hysterical, or are they muscular? It was clear that they were not inflammatory. If the former, experience would lead us to expect that they would be difficult to cure, and that the effect of direct and active local treatment would be prejudicial. If, on the other hand, they were muscular, there was reason to believe that they would soon wear themselves out, now that the vomiting had ceased. Considering that all the seats of pain complained of were occupied by voluntary muscles brought into operation by severe vomiting ; that the pains had not come on until these muscles had been unusually, and even intensely, exerted ; that the pain was described as following the course of the fibres of different muscles, rather than the course of any nerves ; that even the pharyngeal muscles did not escape ; that there was no neuralgic pain in

the face or head; that the pain was moreover paroxysmal, and existed in the intervals as intense soreness; that it was aggravated by any motion, as, for example, the effort to expel flatus; and comparing all these symptoms with those that follow prolonged sea-sickness, I ventured to predict that the pain would be gone, or nearly so, by the next day, and that its nature was analogous to the soreness that a strong man feels after unusual exertion. A mild tonic was ordered as medicine, and a stimulating and strongly odorous liniment was prescribed, with directions for it to be used in shampooing and friction frequently. In twenty-four hours the pains had all but disappeared, and I took my leave on the seventh day, the patient then being convalescent. She died shortly after of inanition, arising from a total absence of digestive power. The *embonpoint*, however, continued to the end of her life.

The following case, communicated to me by the lady, illustrates well the uselessness of the so-called counter-irritants to cure myalgia so long as the causes of it are operative:—

Mrs. S., a lady of somewhat delicate constitution, was a passenger in one of our large Atlantic steamers to America. At first she suffered occasionally from sea-sickness, but at last her stomach became so irritable, that she was vomiting almost incessantly for two days. At the end of that period she was seized with intolerable pain in the abdomen, the muscles were everywhere drawn into knots, and she could only compare the sensation to some gigantic hand grasping the flesh as if it were an orange. This was attended with severe pain all round the ribs at the sternum and the back, as if the diaphragm were implicated as well as the other abdominal muscles. Large doses of laudanum were tried unavailingly, and turpentine epithems were applied to such an extent as to vesicate the lower half of the body. Nothing gave relief, however, but the pain gradually went away. After this

attack anything which disagreed with the stomach and provoked vomiting or flatulence, brought on a return of the spasmodic action of the abdominal muscles. No relief was experienced when the voyage was over. The patient was advised to take large doses of laudanum every two days, with aperient medicine in the intervals. She was almost confined to the sofa. Notwithstanding these measures, the spasms returned daily, generally coming on about two o'clock in the morning. She was treated with hot applications locally, and warm baths sometimes hot enough to scald her, without advantage. The stomach was now so irritable that the most insignificant error in diet would bring on flatulence and spasm, and her case was considered almost hopeless. Dr. Meigs, of Philadelphia, was then called in consultation. He recommended the discontinuance of all medicine, a generous diet, and the free use of wine or other stimulant to enable the stomach to digest solid food. From that time she began to improve, but the muscles still remained in a very irritable condition for many months, and she was liable to a relapse whenever anything occurred to pull down her strength.

In detailing her symptoms, she attributed them all to indigestion, and had never thought of associating them with the previous prolonged vomiting at first, and subsequently with bodily exertion. As soon, however, as these things were suggested, she was able readily to trace the cause of almost every attack.

The following are cases, by no means uncommon, of cramps in the abdominal muscles productive of great suffering:—

Ann B., æt. 30, an exceedingly delicate-looking woman, who had been confined about two months, and was still nursing, was admitted into the Northern Hospital, March 29th, 1857, with “tumour of the abdomen, situated at the right

side." On examining her by percussion, no tumour could be detected; but I noticed that every stroke of Piorry's hammer on the pleximeter produced local spasm. I found that she had a severe cough, and that when this had lasted a little time there was such an intense pain in the abdomen that it doubled her up, and she had to go upon her hands and knees for relief. On asking her to describe the seat of pain, she mapped out all the fleshy parts of the abdominal muscles and the course of their fibres, in her description of the accession and departure of the pain. The severe pain was always attended with "a lump," which went away with a beating sensation. The woman had no appetite; had been living very badly; perspired freely, and had still a profuse lochial discharge; she was intensely weak, and could with difficulty move about, except when under the influence of the terrible pain.

There was little difficulty in the diagnosis. The abdominal muscles had been overworked. The treatment adopted was rest in bed, cod-oil, steel, a cessation from nursing, &c. The severe pains never came on after the second day of her admission; but the first day after she was able to sit up, she had pain at the epigastrium, the pubis, on both sides at the infra-mammary regions, in the loins, at the back of the head, between the scapulæ, and at the shoulders. As she slowly gained strength these subsided, and she left the hospital entirely free from them at the end of two months.

Here is another case, in which the sufferings were less severe:—

One of the nurses of the hospital was admitted as a patient into the ward, July 27th, 1857; her appearance and manner were nervous and hysterical. For the last four days she had had diarrhœa, attended with violent abdominal pain, and frequent "cramps, which had made her roll about in every direction for ease:" they had, however, ceased since she had

been confined to bed. On making definite inquiry, I found that she had for some time had a burning or hot pain at the epigastrium, at the right infra-mammary region, at the pubis, and along Poupart's ligament; the catamenia were all right, the appetite good, tongue clean, and pulse natural. There were no special signs of hysteria. It was tolerably clear that she had been for some time only just equal to her daily toil, and that as soon as she was pulled down still more by diarrhœa, the muscles had become more irritable than before, and had suffered from cramp where they had previously only been weary.

The following is a similar instance, in which great suffering was complained of, though, in consequence of the author's limited knowledge of Italian, he is unable to give the precise meaning of the adjectives employed in the description of the pain:—

S. S., æt. 40, a native of Lugano, had been labouring for three years in Australia, as a gold-digger, and contracted dysentery. He came to England excessively ill, and was admitted into the Northern Hospital, Liverpool, in a very emaciated condition. The means adopted for his cure were successful, and after eighteen months' confinement to bed—in Australia, on the passage, and in hospital—he was able to sit up and to walk about the wards. He now began to complain of pain, which he referred to the superior insertion of the rectus and the external oblique, and occasionally to the linea semilunaris and the groins. This continued for many days, with some tenderness on pressure, as is common in the so-called hysterical pains of the abdomen. No special treatment was adopted, and the pains very gradually left him as he increased in vigour, and the muscles in strength to do their work.

The following is a case in which the sensibility of the

abdominal parietes was raised to an extraordinary pitch, but which does not seem to have followed the ordinary course of muscular affections:—

Miss M., æt. 21, of pale complexion, delicate appearance, and consumptive family, yet of remarkably active habits, and taking horse exercise for some hours daily, complained of a severe paroxysmal pain in the abdomen, for which she took a satisfactory amount of opening medicine. As this produced no abatement, I was summoned. The strictest examination could detect nothing beyond pain and loss of appetite. There was no feverishness, no spinal tenderness, no uterine disorder, no flatulence or indigestion; the bowels were habitually regular; there was no blue line round the gums, and there were no signs of hysteria; there had not been any unusual bodily exercise, or any exciting mental emotion. She slept well, and seemed cheerful. There was little difficulty in ascertaining that the suffering was confined to the abdominal muscular parietes (including the levator ani): but it differed from the ordinary myalgic pain, inasmuch as there was no shrinking from pressure in any form, until it had attained sufficient force to stretch the muscles, and it was increased by any twisting motion. Warmth and antispasmodics were prescribed, but without marked effect, and the pain gradually increased in intensity. The efforts of talking, coughing, sneezing, defæcation, and micturition became all more or less acutely painful, and she could only speak in whispers. The pain was now referred principally to the groins and Poupart's ligament. Any pressure was unbearable; she was unable to get any rest; the respiration was entirely thoracic; the pulse remained steady at 84; the tongue clean and the skin natural. The ordinary position of the body was extended and supine. The pain and loss of sleep produced great debility. The treatment consisted of anodynes locally

applied, large doses of morphia internally, nourishing diet, and tonics. After having increased in severity during the first four days, the pain became stationary; in two days more it began to subside. The bowels were now relieved, the dose of opiates was diminished, the tonics were continued, and in eighteen days from the commencement she was perfectly cured.

As her mother had previously had a similar but milder attack, which yielded to morphia in a few days, the drinking water they used was analysed to ascertain if it contained lead. None of this metal was found, nor could the closest inquiry point to any other mode in which it could have been introduced.

The following interesting case was communicated to me by my friend and former pupil, Mr. John Glover, of Dorrington, Salop. It shows how a simple contrivance may cure pain of very long standing:—

Miss —, æt. 58, had suffered for between twenty or thirty years from a pain on the right side of the abdomen, about midway between the anterior superior spinous process of the ilium and the outer side of the rectus abdominis. She informs me that years ago she had been told that her liver was very much enlarged, and the pain was caused by the increased size of that organ. When I first saw her she complained of flatulence and other symptoms of indigestion, with constipated bowels, and the old pain, as she called it, which she supposed she would never get rid of, for she had consulted several medical men, but had never found much benefit from anything they had prescribed. After the use of a little blue pill and colocynth, and a mixture containing gentian, soda, and Tra. hyoscyami, her symptoms of indigestion were removed, but the pain still continued. I then ordered her a belladonna plaster, which relieved her for two or three days, but she soon

found herself in the same state again. Some weeks after this she had an attack of acute bronchitis; the cough, she said, aggravated the pain very much; at length it became unbearable, and I was summoned once or twice to see her in the night. She was then recovering from the attack, with symptoms of debility; and the most urgent symptom was the pain in the side. I gave pulv. opii gr. ss, made up with ext. conii, three times a day, from which she found relief. My opinion was that the pain was muscular, for she found it worse after taking much walking exercise. I then advised her to wear an elastic abdominal belt, to give support to the lower part of the muscular parietes of the abdomen, which I procured for her; and to her astonishment she has remained free from the pain ever since, which is over a period of eighteen months.

It is not often that we are consulted respecting muscular pains in the lower extremities. I have, however, met with an instance where there was such acute suffering in the back of both legs as to lead the patient to the belief that she was beginning with rheumatic fever. The cause was simply in her having walked a long way to church on a wet Sunday in a new dress and petticoats; for, to save these, she had gone on tiptoes!

I have been informed by a medical friend that he has been summoned at three o'clock in the morning to see a young lady who was suffering from most excruciating cramp in the thighs, and in the leg—one muscle taking an action after another as rapidly and as severely as in cholera. The only cause was that she had been at a ball, where she had been dancing with great spirit for six hours, during which time she had rarely, if ever, sat down, except at supper.

I have since been informed by my lady friends that such

occurrences are not rare, though the sufferings are seldom sufficient to induce them to summon a medical man from his bed, or at any rate they consider that rest will do quite as much good as a professional visit and the imbibition of nauseous medicines.

The following, of a different class, was one involving very severe suffering :—

Miss L. C., æt. 21, stout, and florid, and healthy-looking, and who, I was told, had long suffered from a curious affection of the knee-joint, came to consult me respecting a pain referred to the posterior part of the knee. The affection had come on suddenly *during the night*. I ascertained that the day before she had been quite well, enjoying herself at a picnic party, to which she had gone and returned in a pleasure-boat, having had, in all, six hours' sitting in a cramped position in a boat, and three hours' sitting in a carriage where there was no room to stretch the legs. On examination, I found intense tenderness over the tendinous portion of the *biceps cruris*, and that any attempt either to bend the knee or to extend the leg produced increase of pain. She had been wearing a knee-cap, tightly laced, and that joint was less than the other by an inch and a half. The pain was constant; but at times there was a twitching or creeping referred to the fleshy part of the muscles.

I found that she was not constitutionally strong, and that she was living rather low, to prevent too great *embonpoint*. On learning these particulars, I considered that the complaint was due to an unusually long sitting, in a cramped position, in a pleasure-barge—that it was muscular, and not nervous, and that it would soon go off. I ordered, locally, a strong solution of hydrochlorate of morphia, to be used like water-dressing, an opiate pill at night, quinine, and generous diet. The pain was relieved by the anodyne in half an hour; and

in two or three days the patient was perfectly recovered, and gave up, at my request, the use of the knee-cap.

She had previously suffered, she informed me, from similar attacks, and had been repeatedly leeches in consequence, and laid up for some time.

When once, however, she understood their nature, she avoided the causes producing them; or, when present, cared little for them. At any rate, she has never complained of them since to me or any of her friends, though nearly three years have elapsed since the last attack.

The following cases have recently come under my notice:—

Mrs. F., æt. 30, a florid and strong-looking lady, the wife of a clergyman, living in a healthy part of the country, and of extremely active habits, requested my advice respecting an enlargement of the right side, about and below the iliac region. It was attended with much pain; had lasted for two years almost without remission; was referred to the consequences of her first confinement; and was so distressing that it preyed upon her spirits and made her melancholy with the idea that there was a tumour growing in her abdomen. Notwithstanding her healthy look, I ascertained that a sister had died from phthisis, that her brother was in a doubtful state, and that her mother was delicate. She herself had leucorrhœa to a trifling extent, always increased by any unusual pedestrian exercise, and no other cause of weakness beyond loss of appetite. On careful examination, I found that the abdomen was free from anything like a tumour; percussion was everywhere resonant; and there was much flatulence. The right side appeared fuller than the left, but this was due to a trifling amount of lateral spinal curvature in the lumbar region; when measured from the spine, there was little appreciable difference between the sides. The pain was distinctly referred to the whole of the

insertion of the external oblique, Poupart's ligament, &c. Considering that these were all the elements calculated to produce muscular pain, I rapidly passed my finger over the spots marked in Figs. 1 and 2, and found that my patient had at various times had pain in them all. As each after the other was pointed at, it was clear from the patient's face that a load was being removed from her mind; and the relief at length showed itself in smiling tears of joy. Having satisfied her of the real nature of the pain, she readily believed me when I told her that she was undertaking duties beyond her strength at the present time. I urged the use of steel and cod oil, if it could be borne, a generous diet, and a rigorous adherence to a daily recumbency for an hour at least. I had, a few months after, the satisfaction of knowing that my recommendations had been followed, and had been successful.

Mrs. S., æt. 64, with a well-marked arcus senilis round each cornea, came under my care September, 1857, suffering from long-continued lumbar, hypogastric, and iliac pain on the right side. She had always, she told me, been a healthy woman till about three years ago, at which time she underwent a great deal of mental trouble from loss of relatives; since then she has had indigestion, feverishness, jaundice, &c. She got tolerably well again in eighteen months, when she again experienced the loss of valued relatives, and had to nurse them during their illness, and to arrange their affairs subsequently to their death. This naturally produced much depression of spirits, and brought in its train total loss of appetite, excessive flatulence, progressive emaciation, languid circulation, and pain referred chiefly to the lower insertion of the external oblique, but sometimes extending quite round the lower limit of the abdominal walls. The pain was constant, relieved by pressure, of an aching character, and attended occasionally with starting or pricking sensations.

She had been repeatedly treated for hepatic disease, both in London and the country, without success. I could not, on the most careful examination, detect any evidence of organic disease in any part of the abdomen; the pain I could only refer to over-stretching of the abdominal walls from flatulence. (A similar pain frequently accompanies pregnancy when the uterine distension is great.) It was evident, from the state of the pulse and the total loss of appetite, that my patient was extremely debilitated; a conclusion to which she had herself come, from the excessive fatigue produced by a very short walk. There was strong evidence of fatty degeneration, or at any rate very great weakness of the heart. I recommended a variety of tonics, one after another, without apparent success; she had abundance of wine, &c., but could take no nutriment beyond a small supply of bread and milk twice a day; cod oil was not borne. At the end of two months the flatulence had increased, the pain round the lower part of the abdomen was constant, and after a trifling amount of exertion became almost intolerable. The indigestion and loss of appetite continued; diarrhoea and constipation alternated with each other. The secretions were all healthy, but the mouth was parched, and there was a constant eructating hiccup. Galbanum, assafœtida, &c., were not tolerated by the stomach, and as a last resort change of air to a warm and dry locality was recommended. No advantage was gained by the change, and I learned that she shortly after sank and died from pure exhaustion.

Miss K., æt. 20, came under my care, complaining of severe pain in the stomach, and great debility. On examining her closely, I found that in addition to the symptom most complained of, she suffered severely from pain along the upper edge of the spine of the scapula—about the shoulder, the loins, and in the abdominal walls. The mammæ were often

excessively tender, and the infra-mammary pain was almost constantly present. It was clearly a case of muscular pains, arising from a weak lot of organs having to act the part of strong ones. On the closest examination I could detect no adequate cause for the debility, which had been progressively on the increase during the last eighteen months; nor could I discover any hereditary taint of the constitution. While under my care she took a walk to see St. George's Hall, &c., which involved about three hours' pedestrian exertion; the result was that the muscles were so excessively painful and tender, that she was unable to sleep that night, and was quite unable even to move in bed. She improved slowly under the influence of steel, which was the only tonic she could bear, and the diet was generous in the extreme; yet when she returned home at the end of a fortnight, she was unable to bear the fatigue of travelling without a return of the abdominal and other pains. This case, like so many others of a similar nature, proves how much more difficult a matter it is to give strength than to take it away.

CHAPTER VII.

Digression to the subject of hysteria, &c.—Diagnosis between hysterical and genuine peritonitis discussed—Our present notions fallacious—Cases—What is hysterical pain?—Hysterical pains spoken of by authors are in reality muscular—Their position corresponds to the insertions, &c., of muscles, not the course of nerves—Case, Jane B.—Hysterical disease of joints, their nature—Objections discussed—Muscle cannot feel—muscular pains are varieties of nervous irritation—Answer—The muscular pains are real—Pain cannot be produced or cured by mental efforts—Case of Mrs. B. and Mrs. R.

THERE is one feature of these muscular pains to which I have already incidentally referred, and to which I now desire to call special attention, namely, that they are frequently attended with tenderness of the skin, although they are for the most part relieved by steady pressure. A reference to the note on pp. 43-4, and to the two cases on pp. 40-1, will show how exquisite this cutaneous soreness may become, even in the male sex, from very prolonged or very severe muscular exertion. We may ourselves remember something of the same kind occurring after rowing, running, leaping, or other violent exercise. The accoucheur meets with the same thing after a long and tedious labour. He finds as a general rule after confinements, that the abdomen is so tender that the patient complains of simple contact with the hand, but yet she experiences great relief from the sustained pressure of the abdominal bandage. So common is the occurrence that it is never heeded; it is considered as the natural result of the labour, and certain to go off in a few days. Yet what is it

but the expression of the fact that excessive action of the *abdominal muscles* will produce tenderness of the skin.

This cutaneous sensibility, however, has been unfortunately attributed to the parturient efforts of the *uterus alone*, and consequently whenever a similar symptom is met with in the male, in virgins and others, its connexion with muscular efforts is not thought of. It is attributed to inflammation or hysteria, and the practitioner, in estimating to which of these the symptoms are to be assigned, judges mostly by the appearance and circumstances of his patient. If the individual is a married woman, hard-working, and with nothing on her mind to agitate her, he considers that inflammation is present.* If, on the contrary, the individual is a virgin and of somewhat delicate appearance, the symptom is put down to hysteria, possibly hysterical peritonitis.

* The following case tends to show the correctness of this statement; and it is of importance, as showing how completely a false diagnosis gives an erroneous experience of the value of medicines, &c.

One of the foremost Homœopathic physicians of the present day, attended, about 20 years ago, a healthy countrywoman in her confinement. She had a "hard time," but recovered fast, and was going about at the end of five days. On the sixth day she was seized with symptoms which the doctor considered indicated peritonitis, and he treated the patient in the manner then usually adopted. He accidentally, however, mentioned the case to a Homœopathic practitioner, who induced him to suspend his active measures, and to use globules. He did so, and, to use his own words, he never saw or read of a case of puerperal peritonitis recovering so rapidly. From that time he gave up his practice, went to Germany to study Homœopathy, and came back a most ardent disciple of Hahnemann.

Remembering how highly turpentine was praised in my student days by some, and abused by others, in cases of puerperal peritonitis, I have endeavoured to ascertain whether the opposing ideas might not be reconciled by supposing one party referred to myalgia, or false peritonitis, and the other to the genuine disease, and after prolonged investigation have found this to be the truth.

From some remarks which have been communicated to me by one of my former pupils, I feel convinced that a false diagnosis of peritonitis is and has been very common, and that many patients have succumbed under the active treatment once so common in that disease.

The following cases which have been communicated to the author by medical friends, are apt illustrations of the truth of the former remark :—

A married woman, who had recently been confined, considered herself well enough to get up and go about at the end of a week and do her work as usual. In a day or two after this she complained of intense pain in the abdomen, with exquisite tenderness on pressure, the contact of her clothes even being oppressive. The idea of hysteria was out of the question; that of muscular fatigue was not present to the mind, and the natural diagnosis was "peritonitis." With this view of the nature of the disease, antiphlogistic remedies were adopted. Fortunately, however, for the patient, the attendant mentioned the case to a gentleman who was perfectly cognisant of the author's views, and he at once pointed out the probable muscular origin of the pain, &c. The treatment was at once altered, and the woman soon got well.

The second case occurred in London, and I never heard the result. The history was this. A widow who had a large family dependent upon her exertions, was seized suddenly one night with intense pain over the abdomen and great tenderness on pressure. She was treated by her doctor as for peritonitis, with local bleeding, mercury, and hot fomentations. Being no better next day, a second opinion was called in, who advised a continuance of the treatment with the addition of opium. As she did not improve, she was recommended to go into an hospital. When there, the diagnosis of the first attendants was confirmed, and their treatment continued, the woman steadily getting weaker, &c. At this period my friend saw her, ascertained that the character of the disease was precisely that to which I had so often called his attention, and that the woman had been engaged for sixteen hours prior to the attack in washing clothes in a tub,

stooping and rising constantly, and irritating the abdominal muscles by direct pressure upon the edge of the tub. Instead of peritonitis, she had simply cramp and soreness in the rectus abdominis and "obliqui externi."

If we turn to the description given by our classic writers of hysteria, we find that *superficial tenderness and tolerance of steady pressure is considered as a tolerably good proof of "hysteria,"* whenever those symptoms occur *in young women "in whom the process of menstruation is in some way or other disordered, and who either are naturally of a feeble constitution, or have been debilitated by disease, or by their habits of life."* One writer, when speaking of the diagnosis of peritonitis, says: "Unless these symptoms (pain, &c.) present themselves in an hysterical female, in whom the neuralgic pains which closely simulate peritonitis can only be distinguished from that disease by a careful investigation of the previous history and constitution of the patient, by the pulse wanting hardness, and by pressure being sometimes well borne when the attention of the patient is diverted, as by engaging her in conversation at the time of making the examination of the abdomen,—we may infer that the disease is peritonitis." (Barlow.)

Another author (Symonds) says: "The *hysterical imitation* of peritonitis may often be detected by the *superficial tenderness*, which, although greatly excited by *slight pressure*, and even to a more intense degree than in peritonitis, is sometimes *alleviated by deeper pressure*. In many instances we must depend principally upon the history of the case, the expression of the countenance, the mental phenomena, the connexion with menstrual irregularities, the fugitive character of the symptoms, and the thousand anomalies appertaining to hysterical cases." (Cyclopædia of Practical Medicine.)

It is unnecessary to multiply quotations, which we might

readily do ; enough has been said to prove the position we started with, that certain signs are considered inflammatory or hysterical, according to the condition of life, &c., of the patient, &c.

The importance, however, of the subject is not limited to hysterical peritonitis, for the same symptoms—superficial tenderness, &c.—are supposed to be the characteristics of *hysterical* pains in all parts of the body.

Amongst the irregular and anomalous states of hysteria, Dr. Copland describes “altered sensibility or pain of a truly hysterical nature,” and the localities of the pains he describes are the very parts where we have been attempting to prove muscular pains are generally seated ; pains which are as common in delicate and growing lads, children, and married people, as in sickly virgins. One of the hysterical signs he gives is, “pain below the left mamma and above the margin of the left ribs ;” another, “pain in the region of the stomach and spleen ;” another, “pain in the course of the descending colon and in the left iliac region ;” others are, “pain above the pubes,” “pains in various parts of the abdomen, or in the abdomen generally,” “pain in the region of the kidneys,” “pain in the dorsal and lumbar vertebræ,” “painful affection of the breast.” “The patient shrinks from pressure, and cannot bear even the skin to be slightly pinched. The examination of the part often produces twitches or motions resembling those of chorea ; yet if her attention can be engaged otherwise, neither much pain nor these motions will be occasioned. The morbid sensibility *frequently extends to the axilla* and down the arm.” “Pain is sometimes complained of in the region of the liver and margin of the right ribs.” “Tympanitic distension of the intestines.” What are all these signs but marks of the various abdominal muscles having been overworked ? The irritable breast is due to

undue exertion in the lesser pectoral, and the tympanitis is unmistakable evidence of great constitutional debility. Holding the views on these subjects that we do, we can readily endorse the author's further statement. "When hysteria appears in the course of other maladies, it is generally owing to the temperament and constitution of the patient, and to debility or exhaustion of nervous power from disease or from treatment. Hence its occurrence after excessive or inappropriate depletions, after hæmorrhages, after parturition, and after fevers,"—the very circumstances under which muscular pains are almost invariably present.

We naturally inquire how it has come to pass that these pains have so universally and so long been classed as hysterical. It seems to have arisen entirely from a chain of reasoning and observation as faulty as was the dogmatism which Bacon overthrew; but as this is referred to elsewhere, I will not pursue the subject now.

The most striking case of severe muscular pains simulating hysteria that I have seen, occurred in a young girl. Jane B., æt. 21, whose plump, florid, bouncing appearance seemed to indicate an unusual amount of health, an idea to which her vivacity and great activity gave considerable force, had been for some weeks complaining of severe pain at the epigastrium, for which she had been repeatedly leeches and blistered without relief. She had in addition exquisite pain and tenderness in both mammæ, very marked suffering in the infra-mammary regions, at the pubis, groins, and elsewhere. Borborygmi, flatus, &c., were abundant. She had frequent "globus" (*i. e.* travelling spasm along the œsophagus); the catamenia had been suspended for one period only; the bowels were moderately regular, and she had no leucorrhœa. A little inquiry elicited the following facts. She was servant-of-all-work in a shopkeeper's family; had to attend upon a sick mistress, a delicate

family of children, the shop, and the master, with whom there was no doubt she had very intimate relations. There were no certain signs of pregnancy, but it was ascertained that the sufferings had been consequent upon an attack of vomiting six weeks ago, which had recurred at frequent intervals every day up to the time I saw her. It was tolerably clear that the sufferings were all due to hard work, frequent vomiting, and deficient supply of nutrition, and I endeavoured to put her upon the best track for recovery; she was, however, unable to pay attention to herself. Three months after the vomiting began, she had a miscarriage. The sickness now left her, and the pains went a few days afterwards.

It has been suggested to me by medical friends in whose judgment I have full confidence, that "hysterical affections of joints" may be traceable to the same causes which produce myalgic diseases. In the absence of personal experience (unless the case of Miss L. C. may be considered in this light; *vide* page 133), I have consulted authorities to ascertain whether in the expressions employed by the author, or in the history of the patient, I could find the ordinary antecedents and concomitants of muscular or fibrous pain (myalgia).

It is difficult to say on which side the balance of testimony preponderates. The class of patients in whom the diseases are met with; their following a blow or wrench; their being attended with superficial soreness rather than by pain on steady pressure; their severity during the day and their absence during night, or when the patient is in bed; their close connexion with the so-called spinal disorders; the relief consequent upon rest; the increase of pain following exertion; the diurnal invasion of the pain at noontide, and its steady increase till bed-time; its absence during the early morning; the state of the general health, and the advantage derived

from change of air, and other roborant hygienic means, lead us to the belief that the complaints in question may be *myalgic*.

Other symptoms, on the contrary,—especially the occasional rapidity of cure under the influence of strong mental emotion,—would lead us to consider that the affections were not dependent upon the muscles simply.

Probably it will be found in practice that in these cases genuine myalgia comes first; then the nature of the pain being misunderstood, and the muscles getting inadequate rest, the suffering will increase in intensity, until the patient, feeling every motion acutely painful, will be obliged to lie up entirely. When once an invalid she will continue to be so, not from actual present disease, but *from the fear of motion, which previous experience has taught her to dread*. A careful collation of cases leads to the belief that this explanation is the true one in nine-tenths of the patients that come under the notice of medical men.

I have had it objected against the views I am advocating, that “muscles do not feel,” and consequently that, after all, the phenomena I have described are nothing more than varieties of “nervous irritation.” Such an objection is important, where it springs, as it does, from a metropolitan physician of considerable medical fame.

If this means anything, it means that it is not the muscle that feels, but the nerve within the muscle. We may dispose of this in various ways. We may say that a muscle may feel just as much as a tooth may ache and an eye may see. We are all in the habit of speaking of the *pain of cramp*; would it be proper instead of that to make use of the roundabout expression,—“the pain produced in some part of the nervous system by the contraction of a muscle to which the name of cramp is given”? Only fancy how strange a paragraph would

look—"Drowned while bathing, from the effects of nervous irritation, John Jones, Esq.," instead of "Drowned while bathing from the occurrence of cramp." And when a person was sore after excessive fatigue, would it be the proper thing to say that the nerves connected with his muscles and the skin over them were in such a state of peculiar irritation, that he was very hysterically tender to the touch? Such pedantry would be perfectly insufferable.

But there is another way of answering the objection,—that it is itself entirely based on unsupported assumptions. It is not yet proved that muscles are supplied with sentient nerves; that they *must be* is a physiological dogma, not an established fact. Muscles, under ordinary circumstances, are not sensible of pain; even when firmly contracted they are insensible, yet when they are in the condition of cramp, they are the seats of acute suffering; and after prolonged and violent exertion not only are they sore, painful, and tender, but the skin over them is equally susceptible.

Again, I have had a case of complete anæsthesia under my care which involved the whole of the lower extremities, and in which after death softening of the spinal cord was discovered, implicating principally the posterior columns as high as the middle of the back. The skin was entirely insensible, and yet the man suffered severely in the legs from painful cramp and rheumatic pains about the foot, ankle, and knee, which were all relieved by local friction.

It is, however, too large a physiological heresy to pursue this point further, and we must content ourselves with remarking, that whether or not it is the nerves alone that feel, the sensation of pain is almost as various as its seats. The pain of a cut differs from that of a bruise. The soreness of the stump at a first dressing is by no means a similar sensation to what was experienced when the limb was amputated.

The pain of toothache differs from that of neuralgia, and that of rheumatism from that produced by stretching a fibrous structure. The pain of dyspepsia differs from stomachic cramp; that of peritonitis differs from lead colic. The pain from scirrhus, condylomata, and other growths in which the presence of nerves has not yet been demonstrated, and in which we can scarcely suppose it possible for them to exist, without at the same time alleging that the new fibrils must be prolonged along the great nervous trunks into the spinal cord or brain, is quite as intense, and sometimes even more severe, than pain occurring in the skin or elsewhere where nerves are plentiful. Again, the pain of headache differs with its cause. The pain of toothache may be mitigated by quinine, by local warmth, by opiates, or by some mental shock. Opium, chloroform, and some other drugs, deaden the sensibility of the system, or of a part, and this though only locally applied. Cold, which after a long application produces anæsthesia, gives great pain from a shorter exposure. Taking all these and many other things of similar import into consideration, we conclude that it is *not to the nerves alone* we must look for the production of particular sensations, and that *to refer all pain to "nervous irritation" is to mistake a shadow for a substance.* The profession generally seems to have adopted the idea of Cities of Refuge from the Mosaic law, and to have apportioned one or more in each great system of the body. "Nervous irritation" and "hysteria" are the Cities of Refuge for the nervous; "inflammation," for the vascular; and "dyspepsia," for the digestive system. To them every doubtful symptom is assigned, and the consequence is that the population of each is so large and varied, that few are able to classify them.

It has been objected to by the same writer that the pains I have referred to the muscles and their fibrous prolongations, or

to fibrous elements solely, "increase till they become unbearable, merely by being thought of and dwelt upon; and that in this consists the explanation of the cutaneous tenderness, which finds no explanation in the muscular theory!" and "that for the doctor to lay any stress upon the gratification expressed by the patient when she finds that her physician can lay his finger on all the seats of pain, is to lose sight of the main principle of correct diagnosis!"

It seems to me that the doctrine involved in these remarks is a most dangerous one; it involves the idea that a patient may create a pain by an exercise of the mind, and by parity of reason may destroy it! It involves the idea that the physician must be always antagonistic to his patients' statements, and that he must refuse to believe in the existence of any pain which he cannot explain; that an hysterical patient, whether male or female, rarely tells the truth; and that a pain described by an individual as unbearable has in reality no existence! It goes still further, for it involves the idea that there is tenderness which is not tenderness, pain that is no pain, suffering that is not suffering. This seems pre-eminently unscientific; nor is it made less so by saying that the pain exists only in a hysterical (we had almost written *Pickwickian*) point of view!

Now pain is pain, and not simply an idea; it cannot be produced by any amount of thought or attention, nor can it be cured by that means. No one can, by his utmost effort of mind, bring a pain into his great toe; nor can any one, by the most intense mental abstraction, cure the pain of gout.

The author knows, from personal experience, the real nature of the pains and their unbearable character. To ignore them, or to attribute them to fancy, is as absurd as it would be to say that there could be no pain in pleurisy, peritonitis,

orchitis, and the like, because neither the pleura, peritoneum, vas deferens, &c., could feel under ordinary circumstances.

As regards the tenderness on pressure disappearing when the attention is distracted being a proof of the non-existence of pain or tenderness, it is as untrue as would be the assertion that a cut finger did not hurt a child because he put it into his mouth to suck it; that in hernia humoralis the organ was neither tender nor painful because the steady pressure of strapping procured relief! As for the tenderness of the skin not being accounted for on the muscular hypothesis, I must refer my readers to the cases I have already recorded.

That pain and tenderness of the skin may be due to excessive excitability of the nervous system chiefly, a case given hereafter will fully prove; but that is no reason why it may not occur under other circumstances, and why, when it does, it is to be neglected or pooh-poohed. The doctor never thinks of ignoring *a spasm* because it is hysterical, and he ought not to treat *a pain* differently. Hysteria, using the word in its true sense, is as much a disease as insanity, to which we believe it is closely allied, and as such ought never to be ignored. Yet physicians are too much in the habit of saying such a pain is *only* hysterical, as if that not only accounted for it, but made it more bearable for the patient!

A case has recently been reported to me as occurring in the metropolis, of a young woman who had been under the treatment of two or three practitioners for twelve years for spinal irritation and hysteria; she had been repeatedly leeches, blistered, cupped, and purged, and at last took refuge in an hospital. The hysterical *spasms* were recognised, but all *the pains* were put down to fancy! They were simply hysterical! They were, however, due, it was subsequently ascertained, to the strain on the erector muscles of the back. The patient was a sempstress, and hard worked, and the muscles were not

strong enough to bear without painful fatigue the weight of the head and the constant action of the shoulder, &c. A single case of this kind illustrates the danger of regarding too lightly our patients' sufferings, or flippantly putting them down to simple hysteria.

It is very natural for one who does not go further than "fancy" and "nervous irritation" in his investigation of disease, to consider it prejudicial and contrary to the main principle of correct diagnosis, for the doctor to point successively, on the patient's body or his own, to the ordinary seats of pain, and thus encourage her or him to believe that non-entities have a real existence; but when once the real nature of these pains is recognised, and their cause can be pointed out, the objection falls to the ground.

Before concluding the chapter, I must call attention to the following cases, which show how the tenderness which so often accompanies excessive muscular exertion may be made useful in elucidating doubtful points, and ensuring correct diagnosis and appropriate treatment:—

Mrs. B., *æ*t. 65 or thereabouts, was attacked with severe diarrhœa, which lasted for three days before she applied for advice. She was never very strong, and the purging pulled her down so much that she was confined to bed. The diarrhœa was soon arrested, but it left very serious irritation of the rectum, which soon spread to the bladder. She was in almost constant suffering, and obliged to start up every half-hour to sit on the night-stool; a little bloody mucus and purulent urine were alone discharged. In two days' time the abdomen was the seat of pain, of which the patient complained greatly; there was, too, great tenderness to touch, but a steady pressure was comforting; a pressure, however, sufficient to stretch the muscles always produced spasmodic pain, &c. This pain was most severe in the hypogastric region; but it

existed more or less in every part of the abdominal walls. There was no feverishness, and the pulse was simply weak. A variety of applications were tried in succession, but none gave relief. At the end of a day or two another complaint was added,—intense pain in the lower part of the calf of both legs, which made her unable to walk (she yet persisted in getting up to the night-chair in preference to using a bed-pan); this pain only existed when she was up, she never felt it in bed. On examining the limb nothing could be seen, but there was very great tenderness on pressure at the origin of the tendinous parts of the gastrocnemii and solei. This painful affection was evidently muscular, and due to the exertion of walking being too much for the enfeebled legs. To alleviate it, both limbs were strapped very firmly from the toe to the knee, and the pain was relieved. This suggested the idea that the abdominal pain might have a similar origin, and the progress of the case proved the correctness of the surmise. The irritation of the rectum being checked for five days gave the patient a rest, and the pain during that time went gradually off. When the irritation, and consequent motions came on again, the pain again returned, not *with*, but two days subsequent to, the irritation; and as the irritation again subsided, the suffering in the abdominal muscles diminished too. The lady ultimately recovered perfectly, but had an occasional attack of abdominal pain whenever she sat up longer than her strength would bear.

At the same time that I was attending the preceding case I was called to see another, in which it was considered doubtful whether the complaint was peritonitis or rheumatism of the uterus. The following was the history:—Mrs. R., æt. about 30, of very delicate constitution, and four months advanced in pregnancy, had been dining out some six miles in the country, going and returning in a car. That night, and

subsequently, she complained of very severe pain in the head, from the occiput to the frontal sinuses. The pulse was very rapid, and the tongue somewhat furred. Some mild alterative was first given without relief, and subsequently castor oil was ordered. This operated very smartly, and the lady was at the night-stool for some time, straining; suddenly she complained of intense pain in the abdomen, and fainted, and was with some difficulty got into bed. The oil still continued to operate, but she did not again rise up. There was much irritation of the bladder, and constant but generally ineffectual attempts to relieve it. There was complete anorexia, as there had been from the commencement of the illness, and total loss of sleep. After the purging the abdomen was painful and very tender, and the pulse rose to 150. There was jactitation and occasional nausea. At the time I saw her first she was very pale, unable to speak above a whisper; the headache was constant, but referred to the tendon of the occipito frontalis. The abdominal pain was most severe at the origin and insertion of the various muscles, and the original pain appeared to have been connected with cramp in the rectus. The pulse was weak and rapid, the stomach irritable; the bladder was in much the same condition as stated above; the secretion from the bowels was healthy. The plan of treatment adopted was sedative and roborant; opium, however, failed so completely that inhalation of chloroform was tried; this procured sleep. A steady perseverance now in mild tonics, and as generous diet as the stomach would bear, brought her completely round. As her strength improved the abdominal pain diminished; the headache left her soon after the first night's sleep. She has subsequently been confined, at her full time, without any return of the abdominal disorder or other casualty.

CHAPTER VIII.

Cramp—The circumstances under which it comes on—Case of Mrs. R., affected when support of “stays” withdrawn—Cramp simulates “tumour” cases—Occasional influence of galvanism in cramps—Severity of pain—Its comparatively transient character—Cases.

WE have hitherto spoken chiefly of that myalgic pain which is relieved by suspension of action. We now come to speak of cramp, and the circumstances under which it comes on. Attention to this is of the utmost value in practice, as it enables us at once to recognise certain symptoms, and forthwith to understand their cause.

We have already said that cramp rarely takes place in muscles until they have been exhausted from one cause or another. That cause may be purely local, as when cramp attacks the gastrocnemii and solei after a long walk, or the glutei and crural muscles after a prolonged swim; or the cause may be general, and the muscles be weak simply because the whole body is so. Still further, it is occasionally true that the cramp depends upon some peculiar condition of the nervous system or of the blood, as in cases of tetanus and cholera.

If we inquire into the physical condition of the muscles during cramp, all we can say is, that there is strong reason to believe that they resemble the same organs in tetanic patients: they are bloodless or ecchymosed, and there is more or less rupture of fibres.

This state of things is, as most people are aware, generally attended with acute pain ; but there are, I find, a considerable number of cases in which no pain is complained of.

Cramp, like other myalgias, generally comes on after a period of muscular repose, and very frequently during sleep ; when, from some cause or other, the patient brings the muscles most fatigued during the preceding day into operation. Very frequently, however, the muscles are so irritable, that cramp is induced whenever they are brought into operation.

The involuntary muscles may be the seats of cramp, like the voluntary, but we shall treat their affections in a separate chapter. In these cases, the organs being supplied from the sympathetic system, and to a great extent withdrawn from the style of innervation which governs the voluntary muscles, we are justified in considering that the cramps have certainly more of a local than a cerebral origin.

If this be true, and we can detect no difference between the circumstances under which cramps come on in the involuntary and voluntary muscles, we infer until the contrary is proved, that cramps are more constantly due to a muscular than a nervous origin.

We have said that cramp is most commonly brought on by attempting to use a weak muscle as if it were a strong one. We have already given some cases in which this was conspicuously the case ; we now add a few others bearing upon the same point. The most remarkable I have met with, was in Mrs. L., whose case I have before given. Many years ago she was the subject of a severe accident, which bruised the back considerably, and materially debilitated its muscles. One morning, shortly afterwards, as she was stooping forward to arrange her hair, the head bended on the chest, and both hands at the back of the head, a painful cramp seized

the muscles, and in that condition she remained for three days, in great suffering.*

Mrs. R., æt. 38, a well-made, strong-looking woman, above the medium height, after two or three miscarriages, which had pulled her down considerably, was obliged to nurse a sick child on her knee for three days, during which time she never took her stays off, and never lay down. The child being out of danger, she took off her stays, and went to bed; *the artificial support of the corset being now taken away*, she felt excessively weakened and weary. At the first attempt to turn, the whole of the abdominal walls became the seat of cramp, one muscle after another taking up the spasm. The muscles of the back were affected in turn, and she spent a night of the utmost agony, which profuse inhalation of chloroform failed to relieve. There was a suspension of her sufferings when the stays were again put on, and a renewal of them on undressing. Her husband now consulted me, and I suggested the habitual use of an elastic belt, more frequent rest during the day, and as generous diet as possible; and under this plan the cramp almost immediately left her.

Mary James, æt. 25, a pallid young woman, was admitted into the Northern Hospital for a supposed attack of inflammation of the liver. On examination, the following particulars were made out. Her chief complaint was of severe pain in the right side, between the ribs and ilium; this was so severe as to prevent her lying on either side, or turning in bed; she had had it, at various times, for the last three years. The parts were tender to the touch, and there was distinct hardness—a tumour, with well-defined margin,

* I have since met with another instance where cramp has seized a lady while arranging the back hair. In this case the patient was a school-girl, and the suffering was intense and prolonged.

anteriorly; percussion was acutely painful. There were no signs of genuine hepatic disease, and careful percussion showed that the liver was not increased in size. There was no jaundice—no fever; catamenia, scanty; appetite, *nil*; no diarrhœa; no mark of phthisis. A more prolonged analysis of the symptoms proved the absence of any internal disease. Attention was therefore concentrated to the seat of pain. It occupied the fleshy part of the external oblique, and ended abruptly at the spot where the muscle becomes tendinous. It was a case of cramp, of a persistent kind. The next question was—after this conclusion was arrived at—What brought the complaint on? Hard work. What at? The “dolly” (an apparatus for washing, that involves a strong twisting movement of the body on the loins). How long were you at work on it? From 6 A.M. to 2 P.M. And what then? Common washing, till bed-time, at 9 P.M. My first prescription was “rest, steel, and good diet;” but they were of no avail. There was no appetite, and a steady diminution of strength. Things remaining in the same state for a fortnight, cod oil was tried, but with little advantage at the first;—the strength did not improve, nor did the painful cramp diminish. I now, at the end of a fortnight, began to use frictions with oil and laudanum, in equal parts; and the relief was so great that she left the hospital in two days, at her own request, although far from being well enough to commence any laborious occupation. (See Mrs. T.’s case, p. 35.)

While this patient was under my care, I took the opportunity of examining her as to the localities of the sufferings to which she had at times been subject. I pointed, in succession, to all the spots indicated in figs. 1 and 2, and found she had had pain or spasm in all the localities I had marked, with the sole exception of the transverse lines of the rectus abdominis.

I was sent for to see Miss H., aged 2 years, a somewhat delicate child, under the following circumstances. For the previous week she had been complaining a good deal of pain in the stomach, and for the last three days this had increased to such a degree, that she often stopped in her play to cry, placing the hand on some portion of the abdomen. For the last two days she had been unable to pass water; for as soon as she sat down to try, the pain came on so severely as to prevent her doing anything. The mother had given her some active aperient medicine, which had operated freely, but prejudicially as regards the suffering. The child was always well when in bed, and if taken up during the night could micturate freely enough. There was nothing unusual in the urine. On examining the abdomen, I could not detect any tenderness. The child looked lively, the tongue was clear, she seemed active enough—almost restlessly so; the skin was moist and cool, and the eye bright and clear. On inquiry, I elicited that the pain came on suddenly, and seemed “spasmodic;” that the nursemaid and others in the house had had influenza about ten days before; that the child had had a slight running at the nose at the same time, and had been “off its food” ever since. Taking these things into consideration, I concluded that its sufferings were myalgic, and due to transient cramps in the abdominal muscles, which were invariably excited by the efforts required to micturate, or by romping at play. I prescribed a small dose of morphia, to be taken occasionally, and some saccharine carbonate of iron, to be continued until the appetite was restored. At my next visit, I ascertained that the pain had not returned after the first dose of morphia, and that the child continued well.

The next case shows the persistence of the crampy condition, when due care is not taken to improve the muscular tone. Some years ago, a middle-aged woman called upon

me, with a homœopathic dispensary "paper" and a polite message from one of the doctors, that she had come to give me an opportunity of seeing a very interesting case. She told me she had a tumour in the abdomen; the ticket indicated the same, and I learned that she had been under treatment for about eight months. On making percussion, however, on the abdomen, over her dress, I found it resonant everywhere, and I could make a tolerably deep thrust without meeting with resistance. When I expressed a doubt about there being a tumour, she made the remark, that "it was not always there." This gave me a clue, and after a lengthened inquiry, I elicited the following facts:—

The woman had a great deal of washing to do once a fortnight, or thereabouts, and used a high tub, over which she was then constantly stooping; the tumour occupied the position of the rectus abdominis, sometimes one segment, sometimes another; it was attended with pain, and seemed to double her up; stretching backwards, and strong pressure, gave it relief. Any heavy day's work would bring it on. If she had been reduced by diarrhœa, or any other cause, it was always more severe and long-continued; it was independent of the bowels, except that, if they were costive, the effort of defæcation would bring it on. Its size was always the same, and its hardness considerable.

I could, under these circumstances, have no reasonable doubt that the case was one of cramp in the rectus abdominis, produced by a debilitated condition of the muscle and too great an amount of work. The sequel I am unable to give.

The following case occurred in the Liverpool Infirmary during the time I was house-surgeon, A.D. 1843:—

A young woman was admitted, under one of the then physicians, with what was represented as a tumour in the abdomen. On making an examination, I found a swelling

about the size of the palm of the hand, occupying the left hypochondriac region ; it was elevated above the surrounding level, very firm, and painless to the touch, though the patient declared it hurt her when it first appeared. Percussion showed some dulness, but not much. I considered that it *was not* a tumour, but could not form a definite idea of *what it was*. She remained in the ward some six weeks, during which time no change was apparent, and she was then transferred to the surgeon's care. A blister was now applied, and the tumour left that spot ; but another appeared on the opposite side, and again succumbed to a blister, and the so-called tumour travelled, successively, over every part of the fleshy walls of the abdomen ; blisters pursued them unrelentingly, and at last the patient was cured. There could then be no doubt that the tumour was nothing more than cramp in isolated parts of the external oblique rectus, and probably other muscles.

This case suggests a reference to what have been designated by Dr. Gull, *phantom tumours*. Amongst the causes he assigns to them, one is spasmodic rigidity of a part of the abdominal parietes ; he considers that this is the most frequent source of deception, and he further states that such a condition *is common in hysterical patients, but may exist in men*. As far as my own experience has gone, I should say that the phantom tumours have *always* a muscular origin ; but instead of discussing this point, it will be preferable to devote ourselves to the circumstances under which they come on. We have already mentioned incidentally, and shall dwell more fully on the subject by and by, that whenever the muscles are debilitated they are more excitable and more readily thrown into spasmodic action than under ordinary circumstances. Now a muscle may be debilitated either by constitutional causes or by prolonged exercise ; and when in this condition, cramp may be

the result of *the natural contraction* (*i. e.* instead of contracting painlessly, the fibres are made spasmodically rigid), or of some *direct irritation, such as manipulation*. In the cases that have come under my notice, both these causes have been in operation, individually or collectively. The following are specimens:—I was told by a medical friend of a case in which he considered his patient, a young lady, “had a tumour connected with the right ovary.” She was sent up to London; the jolting and shaking of the railroad journey evidently had some effect upon it, for the physician she consulted said, “There was no ovarian tumour, but that there was enlargement of the liver!” She had a deal of exercise in town, and before she came down consulted another practitioner. He said that there was “no disease of liver, and no ovarian tumour, but there was enlargement of the spleen!” When the patient came down again to Liverpool, nothing could be detected except an enlargement of the uterus!* It is as difficult to explain why isolated parts of the abdominal parietes should be affected with cramps as why muscular pains should exist at one part and not at another of the same muscle, but the fact remains unimpeachable that it is so.

I was called in consultation to see Mrs. G., a delicate woman, who had come from a distance to be under the care of a friend of mine. She had travelled by rail, though very weak, and he saw her *a few hours after her arrival*. An examination of the abdomen led him to suspect that she had aneurism of the aorta. I went with him the next day, but the patient by that time had had a long rest in bed; no tumour could be detected; yet after manipulation it returned very distinctly, though it was not so well marked as on the preceding day.

* I have a case under my care, at present, which has been pronounced as psoas abscess, by one; pelvic abscess by another; and phantom tumour by a third.

The cases of Ann B., p. 127, and Williams, p. 128, were instances in which the tumours were produced by over-exertion. In the former case I could, however, bring them on by manipulation.

In going through the wards at the Liverpool Northern Hospital in 1857, the House Surgeon drew my attention particularly to a coloured man, who had, he informed me, an immense tumour in his abdomen, dependent, as he thought, upon the results of ague. The man at the time had phthisis, and was excessively weak. On making a quiet examination with the pleximeter and hammer I could detect no tumour, nor could I do so by *quiet* manipulation. To demonstrate its presence the House Surgeon now dashed his hands on the abdomen with a view to get the advantage, as he thought, of deep-seated pressure ere the abdominal walls contracted and prevented him. It was interesting and curious to notice how under this rude kind of handling the "recti" and "obliqui" became swelled and rigid, their margins being as distinct as the sides of a fatty tumour. A little inquiry elicited the fact, that the man could never sit up without severe abdominal pain, and that he had just been sitting up prior to the first examination.

In forming the diagnosis of these tumours I find Piorry's hammer and pleximeter of the utmost use; but I must note one point which at one period perplexed me considerably. On making percussion over these so-called tumours a very marked dulness is perceptible, and there is the perception of great firmness conveyed to the fingers. The dulness, however, is relative only, and is readily accounted for by the contracted muscle being in reality *double the thickness* of the muscle in a state of repose.

Another case, also occurring at the Northern Hospital, was of great interest. I was requested by the House Surgeon to

examine a young woman whom he admitted with a tumour in the abdomen, and say whether or no her case was a medical one.

I found the patient, *æt.* about 23, had been very weak for some time, was consumptive, had very recently been suffering from diarrhœa, and was also the victim of menorrhagia. She had been a domestic servant, but had left her place from debility, and she had for some time been too poor to procure sufficient food. She was miserably thin and pale, and looked almost moribund. I examined the abdomen with the utmost gentleness of manipulation, yet I could feel the excitable muscular fibres moving and vibrating under my fingers, as if they had been worms or snakes, but I found no tumour. The House Surgeon now dashed his hand down to find it, and did so at once, but it was only a tumour like the lump in the arm (*biceps*), which our fathers used to make for us by bending the arm when we were wondering boys. It was simply a cramped condition of the *rectus abdominis*. I now asked about the presence of cough and its effects; the ready answer was, that "she did not cough more than she could help; for it drew her belly into knots, and was so intensely painful that she had to get on all-fours till the pain abated,"—more characteristic evidence of the presence of abdominal cramp it would be impossible to get.

Next day she had hæmoptysis; nevertheless, rest in bed, tonics, generous diet, and cod oil, set her up again, and she went out at the end of six weeks in pretty good condition.

The question has occasionally suggested itself to me, and has been often put to me by friends, whether the abdominal or other muscles may not be affected from some irritation within the bowels, &c. Of this there can be no doubt; we constantly see the pharyngeal and laryngeal muscles affected during inflammation of the mucous membrane of the fauces and larynx in *cynanche* and *croup*. We see the *sterno-mas-*

toid affected by extension from the pharynx; we see the intercostals affected by pleurisy, and the abdominal muscles from peritonitis. But that is not all; we are all familiar with the fact, that irritating material in the stomach will produce irregular action of the diaphragm (hiccup), that disease of the liver and spleen will make the abdominal muscles contract until they are as hard as boards. In like manner, acrid matters in the bowels* will provoke spasms in the rectus, and the presence of scybala in the colon may produce similar effects. We know how severely the unhappy victim of irritable ulcer of the rectum suffers from cramp in the levator ani, and sometimes in the uterus and bladder. So also we see the cremaster affected by calculus in the ureter, while renal calculi will produce myalgic pains in the quadratus lumborum, psoas, &c. But experience tells us that these sources of irritation may be present without myalgia being recognisable: this is readily explained by a reference to the law of muscular irritability—viz., that it is in direct proportion to muscular debility—consequently myalgia is only produced from the preceding causes in those who are weak and delicate, *e. g.* the hysterical, the phthisical, the overworked, and the underfed.

About two years ago, a man, *æt.* 24, entered the Northern Hospital, suffering acutely from cramp in the abdominal muscles, and occasionally in the arms and legs. He told us he had had a similar attack previously. He had been much exposed to cold and privation. A variety of anti-spasmodics, sinapisms, &c., were tried without relief. On the third day, galvanism was adopted, and with such complete success that he went out next day cured.

Not long after, an Italian, *æt.* 25, came in. From what I

* It has been stated that Joanna Southcote used to produce travelling abdominal cramps, simulating the motions of an intra-uterine foetus, by eating sour apples.

could make out, he was a seaman, and had suffered from abdominal pain for six weeks. He looked feeble, and had no appetite. The recti muscles were excessively irritable; any manipulation produced a painful contraction; and sitting up, or walking, gave rise to decided cramp, almost doubling him up. Rest, cod oil, steel, and full diet, restored him in twelve days.

The sufferings from cramps are often very severe. I was once summoned in great haste to the Waterloo Hotel to see a gentleman, *æt.* about 40, whom I found in bed writhing in agony; he was half tipsy; could scarcely speak three words consecutively, from a fresh accession of cramp; the abdominal muscles were contracting and relaxing with amazing rapidity, and the appearance was as if some large ball was rolling about, bulging all parts successively. I could get no history. I recommended hot bags of scalded bran to be prepared and applied, and in the mean time strong friction to be used. The patient refused to take anything. I called next morning, and found him dressing, and quite well; but so apparently unconscious of ever having seen me before, and so indignant that I should have entered his room, that I felt rather happy to make my escape without any further explanation, and with nothing but my labour for my pains.

Mrs. C., *æt.* 30, of great stoutness, after having been well for many years, consulted me for severe pain in the loins and left groin. She had previously been under my care for what was then considered atrophy or fatty degeneration of the heart; she had also had erysipelas of the face and head, followed by dropsy and albuminous urine, and during this last attack had complained much of the same kind of lumbar pain. She was apprehensive that disease of the kidney had returned,* and was naturally very anxious about herself.

* I have elsewhere stated, that there is strong reason to believe that the

The pain in the groin I ascertained had come on suddenly in the evening, when she had been sitting up for some time teaching a child its lessons; it drew her downwards, was relieved by pressure, went off with a twitching sensation, and left her sore next day: it extended towards the ribs. The pain in the back came on while she was sitting up playing at whist, and was very acute, drawing her backwards; it was relieved by stretching to the other side. The urine was healthy. I found that she had been weaker than usual of late, from loss of appetite, and that she still, though feeling unable to do it with comfort, went through the same amount of exertion as when she was strong. This was the origin of the suffering; wishing to keep down her size by continued exertion, she taxed her muscles beyond their strength, and they became irritable, cramped, and sore. Tonics and rest relieved her, and a knowledge of the cause of her symptoms took away all anxiety from her mind.

Mrs. G., æt. 34, a publican's widow, above the medium height, but thin and pale, sent for me one evening for what she thought was an attack of pleurisy. She informed me that she had had pain in the right side for some days, which had been gradually increasing until it had been so severe as to prevent her sleeping. The night before she had been awaked by it, and was unable to find a sufficiently easy posture to sleep again. The pulse was very weak, her voice was feeble, the skin perfectly cool, and there were no physical signs of inflammation. She had had a similar attack ten years previously, for which she had been bled and confined to bed for a fortnight. I ascertained that the pain came on towards evening, gradually increasing in severity; that when

pain in the back so frequently met with in renal disease is due entirely to a muscular cause (excepting cases of renal calculi, &c.), and indicates general debility rather than a specific alteration in the kidney.

severe it was twitching or pulsating; that it was always relieved by rest; that it extended to the abdominal parietes, and to the groin, and to the "latissimus dorsi" posteriorly. I found that she had been greatly harassed by having to attend both to her family and "the bar;" that she had lost all appetite, and was almost living upon tea and muffins; that she had been "unwell" rather profusely, and that when the pain was present it was increased *by using the beer engine*. There was no difficulty in recognising the milder pain as muscular, the severe pain as cramp in the intercostal muscles. More frequent rest was prescribed, with tonics and generous diet; but some time elapsed ere she was strong enough to get through her work without pain.

In all cases where we meet with cramp in the extremities, it is necessary to make particular inquiries as to whether it is due to a muscular or a nervous cause.

R. H., æt. 43, cook, entered the Northern Hospital with a painful swelling in the right leg; it was simply cramp in the calf, arising from too much standing; she was weak, but otherwise healthy. Rest in bed for a few days, and a few doses of steel, enabled her to go out cured.

Miss D., a tall, overgrown young lady, æt. 17, consulted me, through a friend, respecting severe cramp she suffered in the calf of the leg and in the thigh, and which invariably came on in the night, often awakening her from sleep. The nervous system was healthy, and all the functions correct; but she was a great walker, very active, and fond of standing instead of sitting. I recommended steel and quiet, and in a fortnight she ceased to complain.

CHAPTER IX.

Inflammation in muscles—Circumstances under which it comes on; its signs, at the first, closely resemble ordinary myalgic attacks—Results of the disease, fibrinous infiltration, rigidity, abscess—Cases.

IN treating of this portion of our subject, we have little to advance beyond what is already known, for the article on "Myositis" in Dr. Copland's Dictionary of Medicine almost exhausts everything that can be said upon it. He points out the difficulties of diagnosis between genuine inflammation and rheumatism, and gives a full description of the causes of the complaint, its course, termination, and treatment. There are, nevertheless, some points of sufficient interest to justify our attempting to enlarge upon the subject.

We have already adverted to the fact that pleurisy and peritonitis are not diseases accompanied with *pain* unless the muscles of the thorax and abdomen are implicated in the inflammatory process, and that the pain during herpes zoster, and afterwards, is due to a similar cause. We have also adverted to the fact, that the presence of gouty inflammation of the toe makes the muscles of the corresponding leg and foot very tender, irritable, and painful; and that a similar result follows the occurrence of severe sprains or bruises.

But in all these cases the inflammation (if such really be present) does not terminate in suppuration, or in any other result recognised as a sequel to phlegmasiæ—except recovery. We are, therefore, in some difficulty as to what is the true physical condition of the muscle.

This difficulty is considerably increased by the fact, so often before referred to, that pains similar to those of myositis result simply from over-exertion, and we naturally inquire whether there is evidence to show that excessive or long-continued muscular action will induce genuine inflammation.

The answer appears to run thus: Excessive action will produce myositis under certain circumstances, but simple myalgia does not necessarily imply the presence of inflammation.

The simple truth seems to be this. Debility, mal-nutrition, or loss of vital power in any organ predisposes it to inflammation; this therefore is the first step of the inflammatory process, but the part may be repaired without this morbid process actually being set up; consequently we may have the first phase of inflammation without any other.

Still further, when we see inflammation follow a certain injury, or at one time and not at another, and that one man has myositis after an accident which produces no such disease in another individual, we are driven to seek for other causes for it than local injury alone.

A few cases will make our meaning clear. Two children, aged 8 years, were at play together, going through the same exercises. From this play one suffered no pain or inconvenience, but the other was laid up with excessive abdominal pain and fever, followed by a large abscess situated between the left external and internal oblique. The first child was robust and strong, the latter very weak and strumous.

E. H. J., æt. 8, had scarlatina very severely; on the 15th day the throat was well, and the other symptoms so much improved as to enable him to sit in bed. As the nurse sat at his right hand, and he rested much on his elbow, the left cervical muscles were most used in supporting the head.

During the night, and for the whole of the next day, there was exquisite myalgia of the left side—cervical region,—with dysphagia, and secretion of dense mucus from the throat, and this was soon followed by swelling and brawny hardness, which lasted for a fortnight, and slowly then disappeared. At the period of the attack he was very feeble, and had otorrhœa, sickly breath, purging, and hæmaturia. As he recovered strength he again sat up and had attacks of myalgia in the laryngeal muscles from talking, in the abdominal parietes from sitting too long, and in the intercostals from laughing. In the preceding case the presence of scarlatina, and the propensity to sore throat in that complaint, might cast some doubt upon the idea that the inflammatory affection began in the muscles, and extended from them to the mucous membrane. In the following narrative this doubt has no existence.

Mary C., æt. 25, a very sallow, delicate woman, was admitted into the Liverpool Royal Infirmary with all the signs of extreme debility. This appeared to be due to an ulcer of the stomach. She had suffered much from various myalgic pains before her admission, but these left her after she had been in bed for a fortnight. They recurred again after she began to sit up. After she had been under treatment about six weeks, she considered herself well enough to go down two flights of stairs to chapel ; she sat there the whole time of service (an hour), and then walked back. Next day she complained of intense soreness in the lateral regions of the neck, and when I saw her the next day I found the left sternomastoid muscle as hard as a board, and exquisitely tender, and motion of the head produced severe pain. The right side was not so much affected. At that time she was just beginning to complain of sore throat, but there was no fever or increased heat of skin. In the course of a few hours more, the throat

was so painful that she was quite unable to swallow, and she took little else but water for the next two days. On examining the fauces they were seen to be inflamed, but not ulcerated. On the fifth day the pain and hardness of the sterno-mastoid began to abate, and with these the sore throat and dysphagia left her, and in a week the local suffering had ceased. The sole treatment adopted was rest in bed, and the use of morphia ointment.

These cases naturally suggest the inquiry whether dysphagia is commonly consequent upon such prolonged actions of the muscles of the neck as are recognised in reading aloud, practising long at the organ, or piano, or harp, in sea-sickness, daily retching or vomiting, the efforts to part with flatus from the stomach and the like. In all such cases a mild inflammatory condition is induced.

CASE 1.—Miss R., æt. 35, a very delicate but strong-minded woman, complained, *inter alia*, of very severe *dysphagia*, which at times entirely precluded swallowing; and this, by preventing her taking nutriment, aggravated greatly her other symptoms. On making special inquiry into this symptom, I found that it was attended with soreness, pain, and stiffness of every part of the neck. I still further ascertained that it came on after she had been driving herself about more frequently than usual in her pony carriage, whenever she had been conversing or laughing much, or after she had been bending her head forwards, as in reading a heavy book resting perpendicularly on the abdomen, when lying down. The pain in the muscles of the neck invariably came on *before* the dysphagia, and was attended by hardness of the sterno-mastoids especially. The dysphagia was attended with sore throat, and invariably continued until she was driven to take absolute rest in bed. It then left her, *pari passu*, with the cervical tenderness.

Apropos of these cases I may mention another, which completely puzzled me some ten years ago, but which seems now to be perfectly clear.

Miss J., æt. 27, consulted me for a severe and harassing cough, which more closely resembled a series of grunts than anything else; each paroxysm lasted about ten minutes, and ended in a discharge of about four ounces of thin saliva. There was no fever or emaciation, but the patient was of a highly strumous diathesis, and had lateral spinal curvature. The state of the throat could not be examined internally, as some malformation of the lower jaw prevented its adequate depression. Externally, however, the neck was much swollen and tender. In the course of a few days after the cough began, the throat swelled considerably, and was exquisitely tender to the touch, and the act of swallowing became first difficult, then intolerable and impossible; for four days nothing whatever was taken. The cough, which was productive of exquisite suffering, continued, and the salivary secretion became tenacious and ropy. Another physician was now called in, who succeeded in inducing the patient to swallow milk; and opium, which had before been tried, was again resorted to, and cod-liver oil recommended; both the latter disagreed with the stomach and had to be abandoned. The patient was now taken to London, and placed under the care of two eminent physicians, to whom the case seemed as inexplicable as it had done to me. The change of air was attended with benefit, and the vehement cough subsided steadily but slowly. The throat and neck became less and less swollen and tender, but recovery was not complete until after the lapse of eighteen months or thereabouts.

From time to time slight relapses have occurred, the cough always preceding the swelling and tenderness of the throat

for two or three days, but in none of these instances has any sign of inflammation followed.

This patient again came under my care while preparing these pages for the press, and I have been able to ascertain— (1) that the cause of the cough is a very relaxed condition of the uvula and soft palate; (2) that the swelling of the neck arises from myositis; (3) that this is attended with inflammation of the faucial and pharyngeal mucous membrane and increased secretion of saliva; (4) that it is accompanied by myalgia of the pharyngeal muscles and consequent dysphagia; (5) that the myalgia is relieved by morphia ointment; (6) that the relaxation of the uvula may be cured by the use of cayenne lozenges.

Dr. Sandwith, of Beverley, has informed me of a somewhat analogous case, in which the sterno-mastoid was so much affected that a permanent wry-neck was produced. For this the muscle was cut down upon and divided, and the operation demonstrated that it had been converted into a structure of gristly hardness.*

I have already adverted to the fact that myalgia is both common and severe during the convalescence from scarlatina. The above case shows that if the constitutional powers are very low, the first phase of inflammation may pass on into the more advanced stages.

The following cases which came under my care, all at the same time, are good examples of genuine inflammation in muscle.

Mary S., æt. 20, a waitress at an hotel, was admitted into the Royal Liverpool Infirmary, suffering from acute pain in

* Since the foregoing was in type, I have seen some remarkable instances in which the most severe dysphagia has been produced after diphtheria, by the extension of inflammation from the mucous membrane to the subjacent pharyngeal muscles. After a certain period the muscles become thickened, and apparently semi-cartilaginous.

the posterior parts of the leg and thigh. She had previously suffered severely from infra-mammary pain, which had compelled her to leave her work, but from that she had recovered perfectly. I ascertained that she was all day long upon her legs, and that her chief business was standing at a dresser "washing up" glass and crockery. This, as any one can ascertain for himself, involves a great strain upon the back part of the leg and thigh. She had borne her work very well until she lost her appetite; after that her sufferings began, and gradually increased until she was obliged to leave her place. On examining the legs I found them swollen, hard, and brawny, exquisitely tender to the touch, and acutely painful when moved. The pain prevented her bending them, and they were kept rigidly straight. Her general health was indifferent, but I could discover no cause of debility beyond over-work and consequent loss of digestive power and appetite. Complete rest in bed was ordered and a tonic prescribed, and in a fortnight she left, of her own accord, with full power over both legs, and the muscles restored to their normal condition.

Jane P., æt. 20, a milliner's apprentice, was admitted three days before the preceding case, with precisely the same symptoms. She, too, had to stand all day, or to parade the shop to show off dresses, &c. Like the former, she had borne her fatigues well until her appetite failed, and with debility came myalgic pain. My treatment of her case was the same as in the foregoing, but she would not follow it up, until she heard the remarks upon her fellow-sufferer's case which I made to the pupils attending hospital practice. She then took to bed, and the hardness, pain, and tenderness began to disappear. The left leg soon got well, and the right calf improved up to a certain point; the skin then became red and inflamed, and in the course of a week distinct fluctuation was apparent. The abscess was shortly opened, and ere it healed

a long sinus passing deeply along the fibres of the gastrocnemius towards the knee was discovered, distinctly proving the locality of the previous inflammation, as it corresponded to the spot which remained hard and tender when all the neighbouring part was soft.

The third case was in a married lady, *æ*t. 50, and the following was the history. About ten days before I saw her she had been driving out in her carriage, but had been so alarmed by some careless trick of the coachman, that she abandoned it and walked home, a distance scarcely exceeding two miles. Next day she suffered very severe pain in both legs, for which her doctor prescribed friction with a stimulating liniment, under the impression that the pain was simple rheumatism. Two days afterwards she travelled by rail to Liverpool; and the small amount of walking involved in getting from her bed-room to the carriage, and from this again to her lodgings, laid her up so completely, that the next day she was unable to move either leg, or to stand upon them. A medical man was sent for, who prescribed an anodyne liniment and rest, and then as he was obliged to leave town he left the case in my care. I found both calves, but especially the right one, were exquisitely painful and tender, and as hard as cartilage, resembling in fact the hardness so very common in the ham in scurvy, or in the thigh in phlegmasia dolens. The patient thought the suffering had been exasperated by the rubbing; and as this accorded with my previous experiences, I thought she was right in her estimate of the liniment. Now it is tolerably clear that a walk of two miles would not affect thus ladies in general, however luxuriant they might be in their habits; and as the patient reported herself to be a very active bustling woman, I sought for some information to account for so great a result from a trifling cause. It was readily found; she took habitually from three to six doses (the actual amount

in each she did not know) of morphia daily, and aperient medicine every night. She habitually suffered from sickness, bilious diarrhœa, and had an almost total loss of appetite. She was, in fact, excessively weak and feeble, notwithstanding her restless activity, and she was, systematically, pulling her strength down by purging to overcome her "biliousness."

As may be expected, the treatment of this case was very difficult, and it was rendered the more so, from the determination of the patient after the third day to use the legs, for she both dressed and walked down and up stairs. Under the use of a strong solution of morphia to the calf of the right leg (the worst), it slowly improved. After a short time the patient consented to give up her anodyne, which she took to relieve orbital tic-doloureux, and to take quinine in its place. She also remitted her use of aperients; under this plan she improved rapidly for four or five days, but she then renewed her pill-taking, and all her so-called "biliousness" returned, and the appetite which had gradually been reappearing again was lost. At the end of the fortnight she was in the same condition as when I first saw her, both as regards the leg and the general health. I now succeeded in inducing her to abandon her pills altogether, and from that time she steadily improved, and when at the end of ten days more she returned home again, I had the gratification of being assured that she had not been in so good a condition and so free from biliousness, sickness, tic, and anorexia for many years.

The following case has interested me much:—

Mary G., æt. 22, a remarkably florid, healthy-looking, broad-shouldered, large-limbed young woman, but whose muscles were very soft and flabby, came under my care at the Liverpool Royal Infirmary, with the most exquisite pain and tenderness of the right arm, from the finger ends to two inches

above the elbow joint. The whole was double the usual size, and very red and dry. There was much feverishness, a furred tongue, and great thirst. The left ankle was also tender, but not to a great extent.

The case was supposed to be one of acute rheumatic fever. Lime juice was given internally, and the parts affected were wrapped in cotton wool, profusely sprinkled over with camphor. Opium was also given to procure sleep. There was no change noted during the next three days, the inflammation being confined to the original spots, and no other signs of rheumatic fever present. The tongue was still furred, the pulse fast, and the patient feverish.

She now, on being specially questioned respecting any probable local cause, informed us that she had been for a long time a watch polisher, but had within the last three weeks been servant to a butcher. The day before her attack she had been very busy helping him to weigh meat, and was constantly moving half-cwts. to and from the scale. The pain and swelling in the arm came on during the ensuing night, and had continued until her admission, three days after. The ankle began to be tender at the same time. As the local application of camphor did no good, the arm was painted over with tincture of the sesquichloride of iron, and again enveloped in cotton wool.

Three days afterwards the swelling was much reduced, the redness was masked by the steel, the tenderness of the skin was abated, and all feverishness was gone.

But the ankle joint had become swollen, as if from a sprain, and most exquisitely tender to the smallest motion of the foot. Steel drops were now used in place of lime juice, and the painful part was gently bandaged by strips of calico steeped in a ten-grain solution of morphia to an ounce of water.

Three days afterwards I found her sitting up in bed sewing, the right arm of its natural size, quite free from pain or tenderness, but rather livid in colour, as if there was stagnation in the venous circulation. The ankle was also much better, though still swollen.

The patient was cured seven days after this.

Within the last few days I have been consulted by an elderly lady for acute pain in the forefinger and thumb, which prevented her using them for sewing, writing, or any other purpose. They were slightly swollen, and her own doctor had considered the case one of sub-acute gout. The movement, however, by which the patient described her pain (*i. e.* by pressing the tips of the thumb and finger together, remarking, "There, that hurts"), gave me the idea of its being muscular; and the chief seat of pain being in the ball of the thumb aided the diagnosis. I then ascertained that the pain came on while the lady was picking the flowers of cowslips, to prepare for making wine. She had been working for some hours before she felt the pain, and when it did come on it obliged her to desist. I recommended the use of an anodyne liniment, local warmth, and rest for the hand, and the patient was soon well.

I have also met with an instance in which severe myositis came on in the palm of the hand, from the patient, a clergyman, employing himself for some hours in cutting up old papers with a large pair of scissors. The case was misunderstood; purgatives were given, low diet enforced, and leeches were used largely. Some months elapsed ere he could use the hand again, and when he could, he employed himself assiduously in gardening. The first day's work brought on the local inflammation, and six months more elapsed ere he could use the hand again, and do with it out of a sling.

About twenty months ago I was called into Shropshire to see a young lady, aged 18, who had been suffering from severe abdominal pain, and whose complaint had baffled her medical attendants—one fearing chronic peritonitis, the other a malignant growth. The following were the facts I elicited:—The lady was the daughter of a wealthy farmer, had led an active life, was a handsome, well-made girl, without any expression of suffering in her features, and spoke pleasantly, though in short sentences. Her mother, I was told, had died of consumption, and she had lost four sisters from the same cause. The pain had been gradually coming on, and was now very severe; but her aunt, who was residing with her, remarked, “that she did not think the suffering could be very great, for the lady had only a few days before my visit left her bed, to ride on her pony a distance of four or five miles.” Since that period, however, she had been so bad as to be unable to turn in bed without assistance. The pulse was good, the tongue clean, and there was complete absence of fever. The bowels were moderately regular, but there was an almost total loss of appetite. On making a physical examination of the abdomen, I found it universally (*hysterically* as older authors would have said) tender, and on being asked to point out the most painful parts, the patient mapped out the lineæ semilunares and the transverse fibrous bands of the recti. Percussion was everywhere resonant, but duller than natural, and a firm, resisting sensation was communicated to the plessimeter, as if it were struck on the other side, at every stroke of the hammer. Manipulation was much complained of; and, ere we left the room, the pain was said to be much aggravated, and, on renewed inspection, we could see all the abdominal muscles as distinctly marked as they are in the Farnese Hercules. Taking all things into consideration, I thought the case one of myositis, which had

been temporarily aggravated by the equestrian exercise referred to by her aunt. A treatment was adopted accordingly. Little improvement, however, took place for many weeks; but after that she gradually recovered. About a year afterwards, I saw her in Liverpool; she was then able to take a certain amount of exercise without pain, but if she exceeded that she suffered in direct proportion to the excess. Thus she could go to church in the afternoon without subsequent pain, but not in the morning; but she could endure this, if she *rode* there and back. She had had to lie down a great deal, and her favourite posture was a similar one to that assumed by Turkish ladies while sitting on their carpets and cushions.

I have recently ascertained that the young lady is now quite well, apparently quite strong, and about to be married.

The fifth case occurred in a young woman, *æt.* 22, who came into the Royal Infirmary suffering from intense abdominal pain. The whole muscular parietes were exquisitely tender and hard; the smallest motion produced pain. She was a nursemaid, and had very fatiguing duties. She was pale in complexion, slight in figure, and had lost a mother and sister in consumption. The pain and tenderness had come on suddenly, after having carried a heavy child for an unusual time. There was total anorexia, but no diarrhœa, cough, or menorrhagia. She was ordered to lie in bed, to have morphia and quinine internally, and to use a solution of morphia, eight grains to the ounce, as water-dressing over the abdomen. A fortnight elapsed ere there was the smallest improvement in the pain and hardness, but at the end of that period the obliqui were soft, and the recti a trifle more yielding; in another fortnight the latter had become generally soft, but were thrown into cramp on the smallest exertion, or from too heavy manipulation. She was able to sit up at the end of six weeks after her admission, but the exertion of dressing, &c.

brought back all the symptoms, and six weeks more elapsed ere she could bear to sit up for more than a few minutes at a time. Three months after her admission her appetite was regained; from that period her recovery was rapid.

In some cases the difficulty of diagnosis of abdominal pains is rendered more than usually difficult by the fact, that there is myalgia in other muscles besides the "recti" and "obliqui," and that this is due to some organic change rather than to "over-exertion." Thus I remember a case occurring in a young lady in which there was intense inter-abdominal suffering. It happened long before I had had my attention called to the muscles, yet I then came to the conclusion that the pain was seated in the "psoas" and "iliacus." The patient got worse, and died, I was informed, of a malignant tumour involving both these muscles.*

Another case, whose details are but indifferently imprinted in my memory, as I only heard of them at the *post mortem*, is worthy of note. A young woman suffered from very severe abdominal pain, which for a long time was supposed to be hysterical; after continuing with great severity, this was followed by a large evacuation of matter from the rectum, and apparent recovery. The symptoms again came after a long interval, and the patient died July, 1843. The following are my notes of the morbid appearances. The right ovary was distended into a large sac, which filled the pelvis, being adherent to the rectum, the colon, the uterus, as well as the pelvic fascia, which was thickened and almost cartilaginous. The cyst communicated with the cæcum.

It is reasonable to infer that the so-called hysterical pains

* I find that myositic affections of the abdominal muscles are common, and severe in cases of malignant growths within the abdomen, and they materially complicate the diagnosis, but they rarely, if ever, go on to suppuration. It has been ingeniously suggested also that much of the pain in lead colic has its origin in a myalgic condition of the abdominal walls.

were myalgic and due to inflammation of the psoas, iliacus, and other muscles.

Another bad case came under my notice about the same time, in which the most prominent symptoms were intense abdominal pain, tenderness on pressure, and inability to move one thigh. For a long time no diagnosis could be made; after a long period, however, the man was found to have had caries of the ilium with myositis of the "iliacus."

About eight years ago I well recollect being completely puzzled with a case occurring at the Liverpool Northern Hospital. The patient, a young woman, complained of great abdominal tenderness, which I then supposed to be "hysterical," but there was in addition great pain, and apparent swelling above Poupart's ligament on the left side, which could not be explained away. A less amount of suffering was present on a corresponding part on the right side. The nearest approach to a diagnosis I could then make was ovarian inflammation and abscess; but as the patient recovered perfectly without other treatment than rest in bed and tonics, I think the affection was due to myalgia of the "iliacus" on each side, and of the other muscles of the front of the abdomen.*

The two following cases are probably due to inflammation of the "iliacus" from over-exertion:—

Rev. Mr. C., æt. 44, after an attack of continued fever, which reduced him very much, recovered sufficiently to move about his room, and after another interval of some weeks he was just able to go out of doors; as he enjoyed his walk, he prolonged it under the impression that the air and exercise would help to invigorate him. He did not feel much fatigue,

* This woman I ascertained was a prostitute, and a reference to the account of "Colica Scortorum," spoken of by some continental writers, leads to the supposition that myalgia of the psoas and iliacus is common amongst that class.

but he complained of soreness in the calf of the right leg. This continued unheeded for two days, and he then found the whole limb swelled, very painful, and of a dark red colour. I shortly after this saw him in consultation, as, from the appearance of the skin, gangrene of the whole lower extremity was feared. I found the patient tranquil and comfortable, with a quiet weak pulse, without thirst or fever, and with cool skin. The swelling of the limb was excessive; there was brawny hardness; the pain in it was considerable; the skin seemed distended with venous blood, and its temperature was cool. Pulsation was faintly perceptible between the first and second toe, and nowhere else. There was no tenderness along the course of the femoral artery, but there was considerable tenderness on pressure over and above the groin. The case was looked upon as one of phlegmasia dolens with unusual cutaneous venous engorgement, and was treated by simply raising the leg so as to allow the fluid to gravitate to the body, by covering the groin with a warm poultice, and by giving opium. In two days the swelling had abated considerably, and the limb "pitted" upon pressure everywhere; the tenderness in the groin abated, and the skin had almost resumed its natural colour. Recovery was complete in six weeks.

Ann C., æt. 35, a charwoman of very cachectic appearance, was admitted into the Liverpool Royal Infirmary, December 21, 1859, with severe pain in the left leg. She had recently been much occupied in scouring out some large school-rooms, and attributed her illness to this cause. On examining the leg I found the calf hard and tender to the touch, but she informed us that the whole limb had been much swelled and universally tender. She was kept in bed and had tonic medicines given her, under which plan she improved for a few days. After the left leg had quite recovered she was seized with diarrhœa, which obliged her to get up and go to

the closet almost every quarter of an hour, and was attended with much straining. Two days after this began the right calf became tender to the touch, and on the next day the whole lower extremity on that side was in a state of phlegmasia dolens. At the same time great tenderness existed at and above the groin. There was no fever. As at this period I had never thought of associating these symptoms with myositis of the iliacus, I ordered leeches to the groin; but the patient refused to have them, alleging that the other leg had been quite as bad as this, and had got well. Wishing to see the upshot of this I acceded to her wish, and simply ordered astringents to check the diarrhœa. In two days it was apparent that the "brawniness" was giving way to œdema; but the improvement in the limb was associated with very severe pain, referred to the lower part of the abdomen, with constant desire to pass water and disposition to go to stool, which were probably due to an extension* of the inflammatory process from the iliacus to the bladder and rectum.

* The occurrence of these cases has led me to read up the history of "swelled leg," and the results of such investigation are sufficiently interesting to be recorded.

1. Phlegmasia dolens is produced by an inflammatory affection of the veins and lymphatics of the pelvis and lower extremity.

2. Such inflammation is generally due to extension of disease from the uterus, rectum, bladder, or bowels. It may extend to the "iliacus" and "psoas," as well as to the pelvic veins.

3. It frequently occurs at so long a period after delivery, typhus, or other disease, that we are bound to believe it is not directly produced by any of these causes.

4. In the exceptional cases above alluded to, the disease is brought on by some bodily fatigue, which has produced inflammatory myalgia of the "iliacus" and "psoas magnus." In them it is attended with muscular pains in other parts of the body.

5. Extension of an inflammatory condition from a muscle to neighbouring parts is common, in cases of myositis, in cachectic individuals; and there is nothing improbable in the inflammation passing from the muscles to the veins in phlegmasia dolens. [6. That

They shortly subsided under the use of opiate injections. Tonics were subsequently given, and the woman left the house quite well in about a month.

The following are cases of muscular abscess. A delicate-looking man, *æt.* 25, came under my care in the hospital, suffering from pleurodyne. The symptoms, however, were so peculiar, that I could not refer them either to pleurisy or intercostal myalgia. The pain and tenderness were well marked and circumscribed, and there was no change from day to day. Palliative measures alone were resorted to. After six weeks' suspense, a large superficial abscess was detected and opened. It proved to have been formed originally under the "latissimus dorsi," where it remained circumscribed until it emerged from its anterior border, and thus became superficial. The man rapidly recovered, and was discharged cured.

The fourth was in a young strumous girl, *æt.* 8 years. I saw her in consultation. At that time there was a very large fluctuating swelling a little in front of and below the lower angle of the left scapula, and I was able by a careful use of Piorry's hammer and plessimeter to ascertain that there was fluctuation under the whole of the external oblique on the same side. I ascertained that about two months previously the child had "sprained herself" in some of her violent childish plays, and that she had suffered from pain in the left side of the abdomen ever since. The swelling had appeared suddenly at the last, and at the spot where the "latissimus dorsi" overlaps the upper margin of the external oblique. The tumour was punctured, and about a pint of pure pus evacuated, pressure upon the abdomen on the left side materially augmenting the flow. Means were taken to keep

6. That the pain in the groin and pelvis, so common in phlegmasia dolens, is due quite as much to an affection of the "iliacus" as of the veins alone. It is this which produces the necessity for flexure of the thigh on the body.

this vast abscess constantly drained, and tonics were abundantly given, and the patient got rapidly well.

James Y., æt. 20, seaman, was admitted into the Liverpool Northern Hospital with a tumour situated on the right side. He was very weak, thin, sallow, and anxious-looking, with a squeaking voice, rapid and feeble pulse, total loss of appetite, but beyond debility and the swelling there was no specific disease recognisable. The tumour was large and well defined, about the size of an eight-ounce bottle, and situated over the right side of the large lobe of the liver. It was firm and apparently of gristly hardness, and was so exquisitely tender that manipulation could scarcely be endured. There was no doubt that it was external to the ribs. All the history we could obtain was, that it had grown very rapidly about a fortnight before his admission, and that he could assign no cause for it. The treatment adopted was simple. Tonics were given to increase his strength, and good diet as soon as his appetite returned; and after trying many palliatives for the local pain, the tumour was let alone.

No change was apparent until the end of about two months, when the skin over the swelling became red, and in a week more suppuration took place. The abscess was now opened, and the state of things below the skin explored. The ribs were healthy, and no communication with the liver could be detected. The part after this rapidly healed, and the sequel gave us no reason to doubt that the tumour had been inflammatory cramp of the upper half of the "external oblique," the result of over-work in a debilitated frame.

These cases are sufficient to show—1. That excessive use of a muscle may produce an inflammatory condition; 2. That this condition may subside without suppuration or organic change; 3. That "resolution" is favoured by absolute rest; 4. That this condition is induced by what appears to be very

slight exertion; 5. That *slight* exertion becomes *excessive* when beyond the patient's strength; 6. That the existence of myalgia, from apparently trivial causes, implies the presence of debility or cachexia; 7. That this cachexy may be constitutional or accidental—*e. g.* from anorexia, from prolonged use of aperients, or from scarlatina; 8. That the diagnosis of a case is not completed when "myalgia" is made out, but that it is necessary still further to investigate the circumstances producing it. They *suggest* the idea—*a.* That the severe pains so common in scurvy, and the brawny hardness so constantly met with in the hams, calves, and thighs, in that complaint, are due to myositis, from over-exertion in individuals weakened by scorbutic cachexia; *b.* That the hardness of the abdominal walls, so common in cancerous affections and in inflammation of the liver, may be due to myositis, the result of over-exertion in a cachectic subject, or from the spread of inflammation from the liver to the recti and obliqui; *c.* That the few cases in which myalgic pains are relieved by local bleeding are those in which over-exertion has produced a quasi-inflammatory condition in the affected muscle; *d.* That the condition of the abdominal walls referred to must always complicate the diagnosis of abdominal tumours; *e.* That in all cases of suspected abdominal disease the examination must be made with the greatest possible gentleness, so as not to provoke the irritable muscles to contract.

CHAPTER X.

Is the heart subject to myalgic affections?—Significance of palpitation—
The nature of angina pectoris discussed—Valvular disease of the heart ;
cause of its sudden termination — Effect of digitalis — Influence of
debility—Stomach and uterus affected—Anteversion—Retroversion.

AN inquiry of great interest now forces itself upon us, which is, do the heart and other muscles removed from the influence of volition, participate in the affections we have been describing ?

Let us commence with the heart. We know that in its minute structure it resembles voluntary muscle, that its fibres are striped, and that many of them terminate in tendinous prolongations. Is it affected by debility in the same way as the muscles of the abdomen, for example ? We have seen that constitutional or local debility produces irregular action in a muscle ; that when excessive, cramp is the result ; and that cramp is almost invariably attended with severe pain. The irregularity of action in the voluntary muscle is evidenced by pain more frequently than by spasm ; but as the heart cannot feel the former, except under exceptional circumstances, as in angina pectoris,* we can only anticipate the

* I am indebted to a medical friend, who has for a long period been the victim of general myalgia, and whom I have occasionally seen when suffering from cardiac spasm, for the following characteristic remarks. I take the liberty of italicizing those words which seem to me to be most important. Speaking of the heart, he says, “ You state that the heart cannot feel pain. I wish it could not ; but, alas ! let a person once feel spasm of the heart, he will not require second proof. In my own experience, cold, *mental*

latter. In reality this is the case. Palpitation of the heart is an evidence of increased muscular excitability, precisely in the same way as muscular pain or spasm is an evidence of debility (*i. e.* where it does not arise from absolute over-exertion); it is produced under the same circumstances as myalgia would be, and consequently it is rare to find a patient complaining of one without the other being present. Without, then, unduly stretching a point, we may fairly state, that palpitation of the heart is the analogue of *pain* in the muscles under the immediate influence of volition.

Now we still further find in the voluntary muscles, that the tendency to disordered function is generally in direct proportion to their state of debility. We ought, therefore, to anticipate that an irregular action of the heart would be present whenever a patient was unusually enfeebled, and to understand readily why an irregular pulse coming on at the

depression, or bodily exertion, will bring it on. The heart feels as if confined in a box and a knife run through it; the pain extends down one or both arms, generally the left; the respiration is about four in a minute; the pulse is small, often imperceptible, sometimes intermittent—it beats from ten to forty times in a minute, but I have known the pulse stopped for thirty seconds. The suspended circulation brings on swimming in the head, and occasionally insensibility; the feeling is that of death. The symptoms sometimes continue for one minute only, at others for three hours or more, and go off with a full inspiration, *leaving the most dreadful feelings of irritation both of mind and body*, and a great dread of a return. Relief is obtained from warmth from ether, seldom from wine or brandy, and *especially from the horizontal position*. The attacks will often come on in bed *after a sleep*, and are then most painful; with cold sweats, dreadful gasping for breath, but with *no desire to move or be moved*, for being raised in bed makes the pain more severe. Sometimes being moved to one side gives relief, and a hot bottle between the shoulders does good. I have seen one very acutely painful case in acute rheumatism. I examined the body and found both pericarditis and endocarditis, with very rigid muscular fibre. (This statement tallies with the remark we have made in page 99, respecting inflamed muscles and their tendency to cramp.) I have seen one fatal case where death occurred in half a minute; in it there was no time to speak of pain," &c.

termination of an illness is looked upon as a proof that exhaustion has reached the heart; we can equally comprehend why this irregularity should cease under the influence of stimulants, and why, if the patient regains strength, it does not return. Still further, we can understand why, in the debilitated, we may have the heart beating regularly as long as it has only a small amount of work to do; and why, as soon as a small additional labour is imposed upon it, as in fast walking, going up stairs, &c., its action should at once become irregular, its contractions strong and impetuous, or sometimes ceasing altogether, from spasm of the ventricle, or, what would produce the same effect, temporary paralysis, and producing more or less prolonged syncope. So generally now is this fact understood, that it only remains for us to refer to the law—"The feebler a muscle, the greater its irritability"—to gain for it an unhesitating assent.

It is a question of no little interest, Can the heart be affected with painful spasm, or perfect cramp? There seems little reason to doubt that it can. The stomach and uterus, both involuntary muscles, are subject to those diseases, and there is no special reason why the heart should be exempt. It is, however, important to bear in mind, that cramp in those organs is not incompatible with life, and a patient has opportunity for complaint; whereas, cramp affecting the entirety of the heart must prove suddenly fatal, giving the victim no time to utter a word indicative of suffering.

There is reason to believe that a portion of the heart may be affected with painful spasm without its rhythmical action being entirely suspended. This seems to be the case in "angina pectoris." In that disease we find the attack coming on suddenly; it follows any exertion demanding increased cardiac exertion, is attended with a sense of constrict-

tion, intense cardiac pain, the breathing being unimpaired ; it imperatively demands the cessation of all muscular actions which would accelerate the circulation.

What is this but the expression of the fact, that causes which would produce palpitation in others produce spasm here?—that the heart is in too feeble a condition to do increased work without suffering from the effort?—that its *quasi* involuntary fibres are in a similar condition to the voluntary muscles in the cases of Mrs. L., Ann B., and others previously described.

Now, if this explanation be the true one, we should expect to find, supposing that the cause producing the disease continued in operation, that the heart would become more and more excitable, until at length the partial spasm would be complete, and life be suddenly cut short ; we should also expect to find evidences in other parts of the body *of that debility which the tendency to spasm pre-supposes*. We should further find, that by judicious treatment the attacks might be greatly mitigated in severity and frequency, and possibly altogether cured. These deductions are amply confirmed by experience : we know that the victims of “breast-pang” do almost invariably die suddenly if not cured ; we know that they suffer from general debility, whose most prominent sign is indigestion and its concomitant flatulence. The circulation is always more or less languid, and their arteries ossified—a sure sign of defective nutrition. Dr. Copland, in speaking of its protracted continuance, says—“The vital energies of the frame, particularly as they are manifested in the digestive and circulating organs, give way. Marked disorder of the chylopoietic viscera, attended with various dyspeptic symptoms, occasionally with great irritability of the stomach and bowels, impeded respiration, anxious and pale countenance, *flabby state* of the integuments and *muscles*, marked derangement of the circula-

tion, œdema, dropsy, &c. supervene." Such being the condition of the patient in confirmed cases, we next turn to the predisposing causes of the disease. We find the same author stating—"It is most prevalent in the gouty and rheumatic diatheses, in those who lead an indolent, studious, and sedentary life, or who have been subjected to much and continued anxiety and distress of mind, or indulged in much food, spirituous or other liquors. Nearly all the cases that have come under my notice were more or less referrible to mental causes, particularly to disappointment, anxiety, or other *depressing* passions."*

All these considerations tend to prove that angina pectoris resembles, *mutatis mutandis*, other muscular affections; that the same causes which predispose to spasmodic diseases elsewhere are equally operative on the heart; and that the greater severity of the symptoms produced by cardiac spasm is due solely to the vast importance of the heart in the whole economy. We see that the disease comes on in those whose muscular power is small, whose vital powers are low; it increases in severity according to the progress of the patient's exhaustion; it is aggravated by losses of blood, purging, or excessive labour; it is mitigated if not cured by insuring to the organ, as far as possible, a maximum of power and a minimum of work. Here, as elsewhere, we see the truth of the axiom—*The more healthy the condition of an organ, the more perfect will be the performance of its functions.*

It has long appeared to me that it is of the utmost importance to bear this law in mind in cases of organic disease of the heart, and especially of the valves. It is impossible to be long in practice without remarking the fact that a great

* For a series of interesting remarks all tending to show that angina pectoris is cramp of the heart, see a paper by Dr. W. B. Mushet in the "British Medical Journal," Oct. 15, 1859.

number of persons die suddenly from disease of the heart—struck down in an instant—while others die a death of lingering pain. It is clear that there must be some reason for this which we ought to discover. We find the following facts to guide us in our judgment:—

1. Individuals may have valvular or other disease of the heart, and yet be unconscious of any inconvenience from it.

2. They may live many years in this condition.

3. They may have symptoms of cardiac disease, recover from them, and again continue during a long period unaffected.

4. In those cases where people live comfortably with valvular disease, there is almost always a good state of general health, and hypertrophy of the muscular walls of the heart.

5. Hypertrophy signifies an increase of power to make up for loss.

6. The causes that determine a paroxysm of cardiac disease are—

a. An excessive action of the organ itself, which for a time diminishes, what we may call, its standard or permanent strength.

b. Something which diminishes the power of the system—
e. g. diarrhœa, loss of blood, loss of appetite, anxiety of mind, bodily exertion, &c.

Both of these may be included in the terms “local and general debility.”

7. The plan of treatment most successful in cardiac disease is one which restores the heart to its usual “tone”—

a. By diminishing the resistance it has to overcome and the work it has to do;

b. By increasing its power through the constitution generally.

8. The spasm in angina pectoris is produced by unusual exertion, as in going up stairs, walking fast, running, going up hill, &c. ; and, as we have seen, its recurrence is fostered by local or general debility. These considerations induce us to believe—

a. That as long as the constitution is sound, and the muscular system is in good condition, disease of the heart is compatible with tolerable health.

b. That when the heart is diseased, death may be sudden, either from the ventricles (one or other, or both) being unable in consequence of their weakness to contract upon the contained blood, or from their being spasmodically affected—*e. g.* an individual may die suddenly on rising from the recumbent to the erect posture, or he may die from a sudden effort, as of going up stairs, or straining at stool.

The same result will be produced if the heart is *debilitated*, whether there is valvular disease or not. I have known a case where after great loss of blood the patient died from the simple act of turning round in bed. I have known sudden death ensue from a jump when the patient was under the influence of digitalis. Such occurrences used to be common in scurvy, and after severe mercurial courses.

This subject is important from its bearings upon practice. Digitalis is a very favourite remedy in cardiac disease, but it is a very depressing drug, and can only be employed with safety when the patient is quiet, or in the recumbent posture. If used in full doses while the patient goes about as usual, it will produce faintness, irregular pulse, and sometimes sudden death. I have known calomel and opium given for rheumatic carditis produce extreme faintness and irregularity of the heart's action, which went off on the administration of brandy and the suspension of the drug. The symptoms returned when the mercury was renewed, and disappeared finally on

its abandonment. I may also call to recollection Mr. Pearson's cases of "mercurial erethism," in which it is evident that the drug had produced so intense a general debility, that any sudden or violent exertion, especially in the erect posture, could not be sustained by the enfeebled heart without giving way under it.

c. That the proper treatment is rest and quiet, as far as possible the removal of obstructions, and the administration of such tonics as are available. In a great number of instances I have found that rest and adequate nutrition alone suffice for (comparative) cure.

If we now turn our attention to the other involuntary muscles, we shall find a series of important facts which show that they are, equally with the voluntary, liable to myalgia or cramp. But as under very few circumstances can they be said to *over-exert* themselves in proportion to their powers, it is clear that we must find some other cause for their exhaustion and consequent suffering. We have already recognised the fact that spasms may be produced by such local injury as a sprain, or simple extension, bruises, or from the presence of some direct irritant, by the extension of inflammation from neighbouring organs or parts, and, we may add, from morbid growths. Any one of these may equally be the cause of cramp or myalgia in the involuntary muscles.

Let us take a few examples of this. Any one who will notice his sensations closely will find, that if after eating as largely as his appetite induces him, he drinks rapidly a tumblerful of ale or water, he will have this followed by severe stomachic pain. The knowledge of this fact seems to have suggested the water torture to which the infamous Marchioness of Brinvilliers, which we have before mentioned, was subjected. The pain from sudden stretching of the stomach soon passes away in a healthy person. It does not do so, however, in the

delicate, for in them all the muscles are very irritable, and liable to excessive and exaggerated action. Consequently we find the sudden stretching produced by the rapid formation of flatus, is very often followed by prolonged and painful cramp, which will in some instances continue for thirty-six or forty-eight hours.

Similar stomachic myalgia may be produced by the presence of some local irritant—*e. g.* undigested curd, cheese, orange peel, cayenne pepper, raw brandy, and the like; or by such acrid poisons as arsenic, cantharides, croton oil, &c.

Myalgia of the stomach, again, is often due to the extension of inflammation to its muscular coat, from the mucous or peritoneal covering. We see this eminently in cases of gout in the stomach, and in the severe stomachic pain attending the union between an inflamed liver and stomach prior to the bursting of an abscess from the former into the latter.

The only instance in which the stomach can be said to over-exert itself in proportion to its power, is during prolonged sea-sickness; and in that distressing malady it often happens that the vomiting is preceded by a peculiarly painful grasping sensation in the stomach, which seems to indicate that the contraction of that organ is no longer a painless effort.

Passing from the stomach to the bowels, we find abundant evidence of myalgia in the latter, and from a similar variety of causes. Thus we have pain from flatulent distension, producing spasm; from bile, or irritating purges, producing “griping;” from arsenical, saturnine, or other poisons, producing cramp; from dysenteric inflammation, extending to the muscular coat from the mucous; from local irritation, as from intussusception, and various kinds of “rupture.”

The rectum is equally liable to myalgia. Thus, from fæcal distension and from sudden rectal flatulence, we have pain of greater or less severity; from arsenical preparations, or acrid

secretions, we have similar results ; and, as is well known, there are few myalgic pains more severe than those resulting from irritable ulcer of the rectum and fissure of the anus, these being frequently attended by analogous pains in the bladder, uterus, and "levator ani."

The bladder is not often the seat of myalgia. It becomes so, however, after a rapid distension, and when it is irritated by the presence of a calculus, or of urine of an acrid nature, or of any other material. We may note here an interesting fact in physiology, viz., that as each organ is specially adapted to a purpose, it suffers if, by accident, it is appropriated to another purpose. Thus the gall bladder is tolerant of bile, but the same pure bile is not borne either by the stomach or bowels. The intestines tolerate fæcal matters which (as in cases of artificial anus) will excoriate the skin. The rectum can tolerate its load ; but if by any fortuitous occurrence the fæces pass into the bladder, they produce intense irritation. In like manner the rectum is intolerant of urine. The vagina will tolerate the presence of semen, but if (as in a very remarkable case which has recently come to the author's knowledge, though not yet made public) such discharge is deposited in the bladder it will give rise to excessive suffering.

Vesical myalgia is occasionally produced by the extension of inflammation. Thus it is by no means an uncommon occurrence to find that a patient has all the symptoms of inflammation of the rectum after excessive purging, and that this spreads in a short time to the bladder. The presence of cystitis then becomes evident from intolerance of vesical distension, pain during micturition, and the occurrence of pus globules in the urine. Cystitis implicating the muscular coat may be induced in like manner from the extension of inflammation from the urethra. The most severe case of vesical myalgia I ever witnessed, occurred under the following cir-

cumstances. J. H., æt. 36, had paraplegic anæsthesia, from excessive sexual indulgence. As the complaint was steadily progressing, and had already implicated both arms, he sought medical aid from all available quarters. As a *dernier ressort* mercurials were adopted in consultation, the preparation employed being the bichloride, and the dose the twelfth of a grain thrice daily. At the commencement of the trial of this drug, the bladder seemed to be insensible to the presence of urine, and it was only emptied by pressure and the use of the abdominal muscles. The case was most closely watched. On the fourth day, pain was complained of in the bladder, and the mercurial at once suspended. It was too late. The pain increased in severity till it precluded sleep day and night. At this period the patient was obliged to sit with his abdomen uncovered and an "utensil" between his legs, as the bladder was spasmodically affected every three or four minutes. As I sat by him I constantly was attracted by a sudden closing of the mouth, grinding of the teeth, clenching of the fists, nasal breathing, and other marks, such as one who nerves himself to bear suffering without a groan would show; and at times to demonstrate the connexion between his agony and contraction of the bladder, he would raise the covering and show me a jet of urine rising from the penis, and which he said was independent of any effort of the abdominal muscles. This urine was nearly half composed of pus and blood. The man subsequently died, and the bladder was found universally inflamed and thickened with spots of ecchymosis all over the inner surface.

That the uterus is a frequent seat of myalgia, there can be no doubt.

We recognise it in the "after pains" so common after "confinements." We note that these are most common after second, third, &c., deliveries, when the uterus may be sup-

posed to have lost its tone; that they are severe or otherwise, according to the patient's general or local debility; and that they are prolonged according to the poverty of the diet employed after the child has been born.

We recognise it in the "false pains" of later pregnancy, produced by irritating matters in the intestines, or in the blood, or by direct violence or injury.

We recognise it in the dysmenorrhœa produced by the local irritation of an inflamed vagina, of an irritable ulcer, a fibrous or other tumour, of a contiguous fissured anus or rectum, inflamed bladder or inflamed ovary. We recognise it equally in retroversion and anteversion, according to the views of my friend Mr. Grimsdale, of whose practical knowledge I have the highest estimate; and there can be little doubt that the monthly pains complained of in cases of imperforate hymen, and referred to the uterine region, are due to the sudden stretching of the uterus by the sudden increase in its contents, and are strictly myalgic in their nature.

We have already recorded some cases to show that the pharyngeal muscles are frequently the seat of myositis, from extension of an inflammatory condition, from the sternomastoids, or simply from inflammation of the mucous membrane they are in contact with.

There is no doubt but that the œsophagus may be similarly affected, and the pain of swallowing is described as if the food went along a burning track in front of the spine. The same part may be affected in a lesser degree, and exhibit a spasmodic condition only. When it is so affected, the muscles' ordinary action being *vermicular*, the spasm is *vermicular too*. Cramp, we know, is attended with a swelling of the muscle and a corresponding contraction in its length. Is there nothing that these considerations suggest? Undoubtedly they drive us to the belief that the *globus hystericus*, so familiar

in description to us all, is nothing more than a spasmodic action of the œsophagus. As such it is not pathognomonic of hysteria, for it is common in delicate men. There are few men, probably, who have not themselves experienced it when a prey to some intense sorrow or anxiety. All know then how the "throat rises" at the idea of food, and how a sensible lump at the root of the neck seems to prohibit the possibility of deglutition. But "globus" is a common accompaniment of hysteria, in consequence of the great debility and consequent muscular irritability common amongst those who suffer from it; it has therefore often served to confirm a wavering diagnosis.

Here again we see another indication that the symptoms grouped under the name hysteria, have no real connexion with the uterus, or even the sex of the patient necessarily; but that they are due in the main to a condition of the system which, amongst other things, renders the whole muscular system peculiarly susceptible.

CHAPTER XI.

Causes which predispose to muscular disorders—Aphorisms—The irritability of a muscle is proportionate to its debility—Muscular action exhaustive—Various causes of muscular exhaustion or debility—Uterine disease a common concomitant, not necessarily a cause, of muscular disorders—Hysteria; the vague use of the term; its necessary connexion with the uterus doubted—Can gout be referred to the testes?—Comparison of reasons.

LEAVING for a time these special manifestations of muscular disorder, let us examine into the causes which predispose to them.

In doing so, I must acknowledge my obligation to Dr. A. Wood, of Edinburgh, who has so ably handled the subject in the "Monthly Journal" for February, 1853. The following are the most important aphorisms I have derived from that source :—

1. Contractility is the function of a muscle,—the more perfect the organ the more perfect the function, and *vice versâ*.
2. A muscle is exhausted by action; it therefore requires an adequate amount of nutrition (*i. e.* the harder a man works the more food he requires).
3. It receives its nutrition from the blood; the healthier, therefore, the blood, the more complete the nutrition. There must be, then, a direct relation between the supply and healthy quality of the blood sent to a muscle, and its power.
4. A supply of pure air is of importance in keeping up the healthy condition of a muscle in man.

5. The law of reaction on a stimulant is the reverse of the law of contractility. That is to say—*the stronger the muscle, the more firmly it will contract; the weaker the muscle, the less its contractile power, but the greater its irritability* or tendency to contract.* We may add, too, that inflammation in a muscle generally renders it preternaturally excitable.

A stimulus which scarcely affects a strong muscle will produce spasm or cramp in a weak one.

This, which is *the most important of all the laws which govern muscular action*, richly deserves every embellishment that experience can heap upon it.

It would be easy to show that it is not the strong-limbed, firm-fleshed child of the country which is the most frequent victim to convulsive disease; but that the mortality from this cause is greatest amongst the puny, weak, soft-fleshed, ill-fed denizens of our crowded courts and narrow alleys, the children of consumptive parents, &c.

It is easy to show why, when fed with colocynth, calomel, and Epsom salts, and a diet that would suit a juvenile Brahmin, the sufferer from chorea continues ill for weeks and months, and even ultimately dies; while, on a generous and tonic treatment, he or she recovers rapidly. *With increased muscular power comes less muscular irritability.*

If we turn to the epileptic, we find the same law carried out; the feebler the muscular system, the more severe and frequent the fits.†

* By "irritability" I mean a tendency to take on action from insufficient cause. Some authors prefer the word "excitability," confining the use of the word "irritability" to the contractile power of the muscle. I have used the two words indifferently, as contra-distinguished from healthy contractile power.

† I had a patient under my care, Jane S., æt. 20, who had fits of a very extraordinary character; they were neither epileptic nor hysterical, and were attended by frightful headache both during the attack and the intervals. After a variety of plans she was treated with ten-grain doses of

I may well illustrate this by the following case:—Mary G., æt. 11, came under my care at the Liverpool Royal Infirmary for epilepsy. This she had had for many years, but the fits had latterly become very frequent and severe, five or six often coming on during the day. She told us that her mother was also subject to them, and she believed that all her brothers and sisters had them too, though not so badly as herself. Her head was of that peculiar shape so often noticed amongst epileptics, and her complexion was very pallid. She was evidently badly nourished. I now specially called the attention of the students to the muscular system, showing them how soft and flabby the biceps and triceps muscles were, and told them that for the future I should judge solely of the progress of the case by feeling the arm.

Good diet and tonics were ordered; nothing more. The patient steadily improved, the muscular system regained its tone, and the fits left her for so many days that she was taken home; the arm then being firm and strong.

In about three months she came in again as bad as ever, the arms soft as if the skin covered loose bran, and the fits coming on three or four times during the day. The same plan of treatment was adopted as before. Not a single fit came on after an improvement of the tone of the muscles was apparent. This occurred in a week, and at the end of a month she again left the house.

How often do we find a child, ill with convulsions, recover immediately on being taken to a pure air, where its blood is duly oxygenated, and relapse again the day he returns to town.

quinine, and the fits left her the next day. The headache remained. As she had occasional threatenings of a relapse, I suspected the presence of tænia, and administered koussou. A very large tape-worm was expelled, after which she lost all suffering.

Tempting as this subject is, we must not pursue it, but continue the special subject of our essay.

If it be true that muscular action is exhaustive, it necessarily follows that any muscle which has been severely tried is *pro tanto* in a weakened condition, until it has had a period of repose, and an adequate supply of nutrition; and it follows that if, in addition to this natural exhaustion, any depressing drugs are used, and nourishing food denied, the muscle will become more and more exhausted.

With increased exhaustion comes greater irritability. *Great muscular irritability must then be considered as being caused by, and dependent upon, great general and local debility, and to demand for its cure a generous diet, tonic medicines, and pure air.*

The predisposing causes, then, of the muscular affections we have spoken of, are *a want of tone in the system, and a diminished strength in the muscles.* In all myalgic cases we find plenty of other proofs of debility; a large pupil, an irritable pulse, a tendency to sigh frequently, a disposition to cry on the slightest occasion, a difficulty in restraining laughter, snoring during sleep, with heaviness on awaking, sometimes sleeplessness, giddiness on turning out of bed, yawning while at the toilette, &c., anorexia, nausea vomiting, indigestion, jaundice, torpid bowels, borborygmi, flatulence, lithatic or phosphatic urine, which speedily becomes ammoniacal, foul breath, bad taste in the mouth, headache, languor and lassitude during the day, and perhaps nervous excitement at night, and a variety of other symptoms which are usually attributed to hysteria. If the patient be a female, there is almost sure to be, if she have arrived at the age of puberty, some uterine disorder, most commonly menorrhagic or leucorrhœal, added to the other symptoms.* Yet, as a general

* It is this which has, for so long a period, kept the Profession on the wrong scent. The reasoning of the majority of medical writers seems to

rule, the severity of the muscular pain is so great, that it alone engrosses the patient's feelings, and the practitioner too often prescribes for it, without considering the totality of the symptoms and their significance.*

Guided by the light of these principles, we can thus see our way clearly along many a path that once was dark, and elicit a definite principle where all before was empiricism. We see why an individual with dyspepsia is so often troubled with anomalous pains, once called sympathetic; why another be something like this:—Hysteria and hysterical affections are more common in women than in men; women have an uterus and men have none; women are more frequently affected by hysteria after the age of puberty than before, and when they have hysteria, the doctor can find, or fancies that he can, in three cases out of seven, something wrong with the catamenia—in one case out of seven, an ulcer on the os uteri—in another, engorgement—and in the other two, although he can find nothing wrong, it is concluded that it is only because he is not clever enough!! As long as there is an uterine affection, it matters little to such reasoners what its real nature is!—whether ulcer, congestion, leucorrhœa, menorrhagia, dysmenorrhœa, or chlorosis; whether the discharge is too profuse or too scanty; whether the woman is a virgin or a wife. If there are hysterical symptoms, the womb has produced them! The proof is irrefragable, for if you cure the uterus you cure the other symptoms! Every now and then it is true that hysteria occurs in the male sex, in children whether male or female, and in the female who has never menstruated, and possibly has no womb; but these exceptions are too few and too insignificant to upset the beautiful uterine theory! and the womb is still to be the organ blamed for everything, although it may only be suffering in common with all others in the body. By and by we may expect to have a theory that the beard and whiskers are the cause of gout! We know that men have gout far more frequently than women; that these have no whiskers; that men rarely have it until after the beard has begun to grow; that those of the male sex who, from an operation performed in youth, never have beards, have gout as rarely as females; and that when gout is not inherited it does not come on until the whiskers have begun to grow grey, indicating that they are not as young as they used to be! And when it is further urged, that the first paroxysm often comes on after a debauch in which the beard has been plentifully manured by wine or porter, the train of argument may be considered complete!

* Of course if the uterine disorder is a debilitating one, it may be the predisposing cause of myalgia, simply by reducing the patient's strength.

with menorrhagia is subject to spasmodic affections and hysterical pains; why rhubarb and magnesia are valueless for the cure of chorea, and calomel is hurtful in epilepsy. We can understand why leeches so rarely cure and so often kill in infantile convulsions, and why laryngismus stridulus is so common in the ill-fed and worse nourished. We can see how by a mistake in diagnosis blue pill fails to cure "congestion of the liver," and why the apostles of the speculum can show so little success, as they attempt to cure symptoms which the womb has no influence over. We can see how it is that a so-called hysterical patient gets worse and worse in proportion to the "activity" of the treatment adopted for her benefit. We can understand why that disease is so common amongst a sickly town population and so rare in the country, and why excessive drinking, "all sack and no bread," produces a trembling hand and shaky muscles.

We can understand how it is that a growing—that is to say (for the two words are in this respect practically synonymous), a weakly—child has "growing pains" (*i. e.* muscular aches); why it is that palpitation always accompanies debility, and prostration is marked by an irregular pulse.

We can equally comprehend how it is that a system like that of homœopathy, which does no positive harm, is more frequently successful in these disorders than the more vigorous plan of practice adopted by the older practitioners, whose right arm was bleeding, and whose left was calomel, blisters, antimony, or croton oil ointments, and the like.

Ere we quit this part of our subject, we would guard ourselves against the imputation that we are forgetting the influence of the nervous system in the production of spasms. We by no means wish to ignore the fact, that spasms are frequently and unequivocally due to some disorders of the great nervous centres; our wish, on the contrary, is to gain

such exact knowledge as shall enable us to assign to any particular symptom its true significance. Dr. Wood, in the paper before alluded to, remarked, very judiciously, that there were two elements in the phenomena of convulsions—the nervous and the muscular. Up to that time the medical mind had thought only of the former; he introduced the latter element to their notice, and, by his judicious remarks, originated a new era in the history of spasmodic diseases. He showed that weakly muscles were more excitable than strong ones. I have endeavoured to prove, in addition, that they are peculiarly obnoxious to pain—a fact which has long been known without its true significance being recognised. It is quite unnecessary to enter into any dissertation upon the nature of the nervous stimulus in obedience to which muscles contract; for I do not profess, in the present treatise, to treat upon any points which have not a direct bearing upon myalgia and the diseases with which it has been confounded.

CHAPTER XII.

The plan of treatment proposed—Artificial support—Rest—General tonics—Sedatives, general and local—Case of laryngismus stridulus cured by the latter—Galvanism—Exercise, its value discussed—The necessity for pure air—Local depletion—Its doubtful value.

THE remarks we have already made are sufficient to indicate the plan of treatment to be generally adopted in all these painful muscular affections.

1. For immediate relief the muscles must have rest or some artificial support, such as a bandage, elastic or otherwise, strapping, and the like. They must have, too, as much rest as is compatible with health, &c.

2. For a permanent cure the whole system must be strengthened; and where it agrees, there is no medicine fulfils this indication like glycerine or cod oil, with or without tincture of iron, in full doses.

3. Where the cramps are severe, morphia, internally and externally, is of the greatest benefit.

The most interesting example I can give of the value of this remedy is the following:—

I was called in consultation, during May, 1857, to see a child who was suffering severely from convulsions. I found that it was one of twins, and that the two had been nursed by the same woman; that they had often suffered from flatulence; that the motions had been intolerably fetid, and that this symptom was always worse whenever the nurse was unwell. They were eight months old; no teeth were near;

they had been weaned a few days at the time I saw them. One was pretty well, but whooped at times, as in whooping-cough; the other child was large, pallid, and lay on its back with the eyes half open, but did not scream, or show any marked symptoms of disease of the head. The head was, however, of large size, and the anterior fontanelle projecting. Ten or twelve convulsions occurred daily, and they seemed to be gaining ground. Prior to my seeing her the treatment had been directed to improving the secretions, and giving an adequate amount of digestible food; the secretions had come right, but the symptoms remained unabated. During our visit we witnessed a fit, and it was clear that it was "laryngismus stridulus"* the child was suffering from, and that complete closure of the glottis took place for a few seconds. The treatment was not materially altered, but a solution of morphia (a grain to the ounce) was directed to be applied as water-dressing to the throat, and kept on pretty constantly. The child was relieved within half an hour of the first application, and had no more convulsions: it was subsequently applied, in the same way, to the other infant, and was equally successful in preventing the whoops. A few days sufficed to prove that the children had not caught whooping-cough, and the good diet used soon put the parents out of anxiety.†

Forcible extension of the affected muscles gives almost immediate relief, if the cramp is recent.

* *I. e.* cramp or spasm of laryngeal muscles.

† While on this subject I may add, that I have known both laryngismus stridulus and general convulsions, of an extremely formidable nature, come on in young infants and children from beef-tea, meat-gravy, and even from the yolk of a single egg. In some instances the convulsions have been fatal. I have met with two cases of epileptic seizures coming on in patients (adult males) who had been too well fed on meat diet after surgical operations. A cessation of the diet was followed by a cessation of the fits, and a return to the good living by a return of the convulsions. In none of the cases was there any predisposition to the complaint. I was reminded of

4. Galvanism* is sometimes of service in restoring "tone;" friction does little good; shampooing relieves, but rarely cures; strychnine is too slow in its operation to be trusted to.

5. Exercise is of no use unless combined with fresh air, a keen appetite, generous diet, and good digestion, and, at first, the use of such medicines as tend to improve the constitutional powers. Exercise may improve the muscles of those who reside in the country, but it commonly debilitates in a town like Liverpool, of which we have given many examples.

6. Local depletion, blisters, or sinapisms, very rarely if ever give relief; if they do, it is only temporary, and the next attack is more severe: the exception is when the spasmodic condition is permanent.

these facts by an observation I elicited from the mother of the little child whose case is detailed above. The twin sister of the patient saw some beef-tea brought for an elder brother, and insisted on having some; she took a good drink, and in a quarter of an hour a severe attack of general convulsions came on!—the only one she had! It would be out of place to pursue the subject further.

* I have had in the hospital, on three occasions, to resort to a series of galvanic shocks to restore the tone of the affected muscles, when other means have failed. The most striking one was that of a servant who suffered from cramps in the abdominal walls. Rest in bed, opiates, tonics, friction, morphia locally applied, &c., were adopted without any abatement of the symptoms. The first application of galvanic shocks was followed by relief, and in three days she was free from spasm. At the same period I had another young patient, who had cramps in the back from excessive labour as a washerwoman. These had to be treated with galvanism ere they gave way. I have already alluded to the third.

PART THE SECOND.

SPINAL DISORDERS

AND OTHER

FUNCTIONAL DISEASES OF THE NERVOUS SYSTEM

EXPLAINED.

CHAPTER XIII.

Spinal disorders—Their nature, as defined by recent writers : as Dr. Copland, Dr. Griffin, Mr. Teale, Dr. Brown—Similarity of the symptoms described by them to those we have described and ascribed to another source—Cases quoted—Duration of symptoms—Days, months, or years—Exciting and predisposing causes—Treatment recommended.

HAVING now attempted to demonstrate that the muscles and their fibrous prolongations may be, and very frequently are, the seat of severe pain, a pain to which we have given the generic name of *myalgia*—having stated the characters by which those pains are distinguished, the circumstances under which they arise, the causes which determine their occurrence, and the individuals in whom they are most commonly met with—we now proceed to investigate the manner in which the whole subject bears upon that class of diseases known under the name of “Spinal Disorders,” “Spinal Irritation,” and “Functional Diseases of the Spine.”

Before anything satisfactory can be said upon this topic, it will be necessary at the commencement to examine into and define what are the phenomena we have to explain.

Lest I should be suspected of colouring the views of various authors to suit my own convenience, I shall take the liberty of quoting their own words. I do this the more readily, as it was in consequence of the expressions they employed that I was enabled to seize the thread by which so many apparently discordant elements might be joined together. Referring to Dr. Copland's "Dictionary," as being the best enunciator of the present state of our knowledge, we find the following definition:—"Pain in some part of the spinal column, generally accompanied by neuralgic or hysterical affections, unattended by fever or by other indications of inflammation, injury, or structural change of the vertebral column or its contents."

Further on in the same article ("Functional Diseases of the Spine," vol. iii. p. 862) we read, "It is *characterised* by pain, increased by pressure on the spinous processes, in the chief seat of pain, and often accompanied by painful, anomalous, or hysterical symptoms in parts supplied with nerves from the seat of pain in the spine."

In speaking of the diagnosis, quoting from Dr. Griffin, he says:—

"The complaints, whatever they may be, are *usually relieved by the recumbent posture* [the italics are our own], *always increased by lifting weights, bending, stooping, or twisting the spine, and amongst the poorer classes often consequent on the labour of carrying heavy loads, as in drawing water, carting manure, &c.*"

We find Dr. Griffin remarking ("Observations on Functional Affections of the Spinal Cord," p. 202), "Spinal tenderness is seldom or never met with in cases of pure inflammation. . . . The functional disorders connected with spinal tenderness are very often attended by some disturbance of the functions of the uterus, but they are by no means always so, since they occur in those who are regular in this respect—in

girls long before the menstrual period of life, in women after it has passed, and, lastly, in men of nervous, susceptible habit, and in boys.... They are not necessarily dependent upon the disorder of any one organ, since they are found indifferently coexisting with disturbance of the digestive organs solely, or the uterus solely, or of the circulating or respiratory systems.... *Affections are occasionally met with, presenting all the marks of the hysteric character, and perfectly resembling cases described as those of spinal irritation, but unattended by spinal tenderness or any other direct indication of a morbid state of the cord.*"

In a treatise upon neuralgic diseases dependent upon "Irritation of the Spinal Marrow and Ganglia of the Sympathetic Nerve," by T. P. Teale, we read in the introduction, "The term *neuralgia*, which was originally employed to designate certain affections of nerves, attended with severe pain, has of late, with great propriety, been extended.... to many other morbid affections of nerves, which are not characterised by pain, but by some other perverted state of their functions."

"The skin, for instance, may be the seat of every degree of exalted or diminished sensibility.... The voluntary muscles may indicate in a variety of ways a morbid condition of the nerves with which they are supplied. They may be affected with weakness, spasms, tremors, or a variety of other disordered states within the two extremes of convulsions and paralysis.... The secretions may also undergo alterations both in quantity and quality, from a perverted agency of the nerves upon which they depend."*

Quoting from Dr. Brown's essay, he continues, "The spinal affection may perhaps be considered as the consequence

* The reader is particularly requested to note these quotations. They all unequivocally prove that muscular pains, and those arising from the stretching of fibrous tissue, have been completely ignored.

of disease, but of its existence at the commencement any one may satisfy himself; and this circumstance, combined with the success which has attended the employment of topical applications to the tender parts about the vertebræ, appears to indicate that the *cause may* [*sic in orig.*] exist there." After a few more remarks, he gives a case in illustration:—"A young lady, æt. 17, had for more than a year complained of pain, situated below the left mamma. This had been fixed to one spot during the whole time. It was a *gnawing, bruised feeling, increased materially by fatigue of any kind, and after fatigue was attended with restlessness. It was relieved by reclining in the horizontal posture. It was not sore to the touch.*" These very terms at once suggest the idea that the pain was muscular, and not in any sense neuralgic.

Again, "When the affection of the spinal nerves is situated in the lumbar vertebræ, it is apt to occasion severe pain in some part of the abdomen. I have seen it of a spasmodic nature, attended with flatulency, and *occupying apparently the arch of the colon; and in one case it seemed to be fixed in the caput coli*" (*i. e.* transverse lines of "rectus," "linea semilunaris").

Another case is given of pain below the mamma, "sometimes *extending down the side to the crest of the ilium.* It was accompanied with *pain at the top, and towards the back part of the left shoulder (i. e.* insertion of trapezius), which she described as *a sensation of burning, not interfering with the movements of the joint, but so tender to the touch that she could not rest on that side in bed,*" &c. These pains were clearly muscular.

Again, quoting Dr. Darwell, Mr. Teale remarks, "The following is the description of a form in which cerebral and spinal irritation is frequently exhibited, particularly in young females:—It is attended by severe and constant pain in one

or both hypochondria, extending to the shoulder and arm of the affected side, not always aggravated by pressure, and *ceasing immediately upon, or in a short time after lying down.* It is this pain of which the patients generally complain, *and it frequently endures for several years.*" After giving a number of symptoms, all referrible to debility, it is added, "Attending these affections are, *pain in the side in the course of the descending colon, and difficulty of breathing, sometimes so great as to induce fear of organic mischief having taken place in the lungs*" (*i. e.* muscular pains or cramp in the abdominal and intercostal muscles, stretching of the linea semilunaris).

Again, and the words are pregnant with meaning :*—

"Many individuals, as young females and mothers, are often accused of indolence when labouring under the state of *muscular debility* to which I have alluded. They have felt an unconquerable disinclination to exertion, &c., without even themselves being aware of the cause of this inertness."

Again, "These neuralgic diseases frequently assume *an intermitting form, the paroxysms generally occurring in the evening.*"† Pain in the insertion of the trapezius is described, though not sufficiently distinctive for quotation; and it is added in a note, "Vertigo frequently attends this neuralgia of the scalp, and is sometimes accompanied with tinnitus aurium" (a tolerably good sign of debility).

"Occasionally the pain is fixed at some point *near‡ the clavicle, scapula, or shoulder-joint, at the insertion of the deltoid, or near the elbow*" (triceps extensor). "Females of sedentary habits appear to be particularly subject to these affections of the upper extremities; and it is not uncommon for them to complain of being scarcely able to feel the needle, when it is held in their fingers," &c. (a tolerably good proof of their

* *Vide* Aphorism 5, p. 201.

† *Vide* p. 43.

‡ *Vide* pp. 67-8; 70-1, *ante*.

great exhaustion, and that an overpowering amount of stitching, &c., has been the cause of their upper extremities being the chief seat of pain). "There is often a fixed pain in some part of the intercostal muscles* and when this has existed a long time there is tenderness on pressing the part. The pleurodynia, when it exists, is felt in the lower intercostal muscles; frequently there is a sensation of a cord tied round the waist; various pains, fixed and fugitive, are also felt in the parietes of the abdomen; the pain is frequently fixed in some portion of the rectus muscle, and not unfrequently in the oblique muscles and transversalis. The patients also complain of instability in walking, their knees totter, and they feel scarcely able to support the weight of the body. In some cases *very considerable relief is found from recumbency*, the pain frequently being diminished as soon as the patient retires to bed, independently of any paroxysmal remission." This paragraph might almost have been dictated by ourselves, so pregnant is it with meaning when rightly interpreted, and so distinctly does it point to sufferings having their origin in an enfeebled condition of the muscular system, which is called upon nevertheless to do the ordinary daily amount of work.

Mr. Teale then records cases of spinal irritation characterised by pain in the occipital insertion of the trapezius, in the occipito-frontalis, in the temporal muscle, the mastoid origin of the sterno-mastoid. The following might, *mutatis mutandis*, have served for an illustration of pain and cramp in the muscular system:—Mrs. B., æt. 53, mother of a large family, and long afflicted with rheumatism,† now suffers from pain *in the neck and head*, pains about the clavicles, difficulty in

* It is quite evident from these remarks, that a prolonged stretching of the fibrous portion of the muscles will ultimately produce tenderness on pressure.

† *Vide* p. 41.

moving the arms, which feel fixed at the shoulder-joints; the pain in the neck and *between the shoulders* is fixed and constant, being nearly the same both day and night; *it is a little alleviated by supporting the back against a chair.* There are also darting pains, extending from the cervical portion of the spine upwards over the occiput, and downwards *across the neck and over each shoulder.* Both arms are affected with aching pains over their whole extent, and *with a sense of soreness on pressing or rubbing the skin,* pricking sensations, *cramps* and numbness in the fore-arms, hands, and fingers, frequent sudden *twitching pains* in the neck, arms, and trunk, occasional pains *in the abdominal muscles, relieved by recumbency; appetite poor;* there was tenderness of two lower cervical and six upper dorsal vertebræ. Leeches, a blister, and *recumbency* were enjoined, and in three weeks she was well.

Other cases are given. One headed "Intercostal Neuralgia" is worth extracting:—Mr. H., æt. 40, had been out of health for several months. He complained of a constant pain in the right side of the chest, occupying the intercostal spaces between the fourth and seventh ribs. These spaces were *tender on pressure,* and the pain was increased *by deep inspiration.* The *intercostal muscles* at this part were occasionally affected with *spasm.* His most intense sufferings, however, were caused by acute pains shooting through this part of the chest, extending to the back and darting thence towards the shoulder; these would sometimes dart through the left side also, and then the chest felt completely encircled by the pain. The *dull, fixed* pain was constant during the day, and became a little *relieved by recumbency;* there were *anorexia, flatulence,* and *cough.* Has had the pain in the side for ten years, off and on; has been *leeches* and *blistered* frequently, without relief. There was tenderness of third and fourth dorsal vertebræ, and he recollected that it had often been the seat of a

sensation of heat, and of some uneasiness. The treatment was local depletion, antiphlogistic remedies to the tender spine, and *recumbency—subsequently quinine*. The duration of treatment was a month; recovery was perfect. It is clear from these particulars that the gentleman was very weak, and his muscles irritable, and that those most engaged in the act of coughing, *i. e.* the intercostals and diaphragm, were the seats of myalgia.

I had marked many other cases and observations for quotation, but these will probably be deemed sufficient.

Dr. Copland remarks, respecting the duration and cause of functional spinal disorders:—"The duration of this disorder may be only three or four days, or as many months, or even years, according to the severity, causes, and treatment of individual cases. There is every reason to infer that the more obstinate cases, especially where the treatment has been judicious, are perpetuated, either by the continuance of their causes, or some chronic or recurring inflammatory condition of the spinal cord. . . . The most common exciting causes are excessive sexual intercourse, uterine disorder, sudden muscular efforts, &c. It is, too, most common in the nervous and lymphatic temperaments;" and, we may add, from other sources, in those who from any cause are weakly or delicate.

The treatment recommended as most judicious is "local bleeding by a few leeches, or cupping, occasional blisters, liniments, &c., applied to the spine about the tender spot, medication of the uterus where necessary, chalybeates where the neuralgic affections predominate, *and in severe cases a general tonic and restorative plan of diet,*" &c.

Such is a short epitome of the views held by many distinguished authors and practitioners on the subject of functional disorders of the spinal cord. Those who have done me

the honour to follow my observations thus far, will not fail in recognising in the prominent symptoms described all the characters I have assigned to affections of the muscular system; they will readily recognise, under the word neuralgia, the pain due to overstretching of the fibrous element of the muscles; and in the twitching spasms, the convulsive movement so common when these organs are in action after fatigue, or when the body generally is weak. And they will recognise, in all the cases, one or other of those proofs of local or constitutional debility to which we have so frequently called attention as being the predisposing cause of painful muscular affections.

It will, however, be objected, that a simple similarity of symptoms is not sufficient to establish so important a change in medical belief, as that spinal disorders are almost entirely independent of the nerves;* it is necessary, therefore, to address ourselves to a more cogent line of argument.

* I have hitherto assumed that the pain in the tendinous or fibrous portions of muscles, which is produced by stretching, is to a great extent independent of the nerves. By some this may be considered a physiological heresy. The subject is too long for discussion here, and I shall not enter upon it. It will be quite sufficient for all practical purposes if it be conceded that the pain arising from the stretching of a fascia, or other fibrous structure, *is essentially distinct and different from the pain of tic-doloureux*, or other *genuine neuralgia*,—different in its cause, different in its history, and different as regards the treatment required for its cure.

CHAPTER XIV.

General sketch of the proposed explanation—1. What spinal tenderness is not—The tenderness no proof of organic spinal disease, either in the bones or in the spinal cord—Spinal tenderness may attend caries—The reason why—Arguments—Its connexion with hysteria—What hysteria is not—What it is.

IN investigating the subject of “spinal irritation,” with a view to its elucidation, we find that the main points we have to explain are the spinal tenderness, the occurrence of certain symptoms when the tender spot is touched, the occurrence of similar symptoms when there is no spinal tenderness, and the close intimacy between spinal disorders and hysteria.

Bearing in mind that spinal tenderness has been, and still is, considered as the chief and characteristic symptom of functional disease of the spine, we will consider it first, and we shall most probably find that, in explaining it, the explanation of the other phenomena will naturally arise.

I propose to consider—1. What spinal tenderness is not ; 2. What it is ; 3. To show how the various symptoms attributed to it may be explained on a strictly physiological basis, quoting and annotating a severe case from Mr. Griffin’s book ; 4. To demonstrate the plan of treatment necessarily deduced from the new considerations, and to show that this is the only one which has hitherto commanded the confidence of the medical profession ; or, rather, the one which has been successful when all other things had failed.

1. *What spinal tenderness is not.*—Our task here is lightened by the fact that those systematic writers who have made

it their study, frankly allow that the tenderness is no proof of real disease.

It is not due to any inflammatory affection of the vertebræ themselves. Its invasion is too sudden, its duration too fleeting, its seat far too migratory, and the pain on pressure far too severe to allow us to believe that it has anything in common with genuine disease of bone. It is not due to inflammation, congestion, or other affection of the spinal cord. We conclude this—(1.) Because the pain is superficial, and confined almost exclusively to the spinous processes of the vertebræ; (2.) Because the spinal column is so strong, the arch so formed, the length of the spinous process so considerable, and the cord so cushioned in fat, that no pressure on the spinous process with the finger *could produce any effect* on the cord or its membranes.

It is not due to caries of the spine; for we know from experience that when real disease in the bones does exist, it is neither attended with the signs of spinal irritation or tenderness externally.

In speaking thus, we do not mean to assert that spinal tenderness *never accompanies* caries of the spine. It may do so under certain conditions, as the reader will readily anticipate. The presence of caries of the spine bone involves the idea of the strumous diathesis. The presence of the strumous diathesis involves the idea of constitutional debility. Constitutional debility predisposes to muscular pain. We have, therefore, only to imagine that a patient with incipient caries has overworked the latissimus dorsi or other muscles attached to the spinous processes, and we can at once understand the occasional connexion between caries and spinal tenderness.

The following case, formerly under the author's care, illustrates this point satisfactorily. Mary P., æt. 18, a strumous-looking girl, whose mother had died of consump-

tion, entered the Northern Hospital, April, 1857, complaining of severe pain, referred to the three lowest dorsal and two upper lumbar vertebræ. There was great tenderness on pressure, and the bones were slightly bowed outwards. She had not been confined to bed. There was no difficulty in ascertaining the existence of caries of the spine. She was ordered steel and cod-oil, and to remain in bed. The pain soon abated, but did not cease altogether. At length it went away entirely. She has continued under notice up to the present time. The spine is now very gibbous; her health is tolerably good. No matter has ever appeared externally, but whenever she sits up for any long time to sew, or goes out of the hospital to undertake work, or move about the wards actively, she complains of pain in the back. Combined with it there are, as might be anticipated, myalgic pains elsewhere.

After a while the strength entirely gave way, and the spine became very gibbous; as it did so there was intense pain complained of, which seemed entirely due to the stretching of the intervertebral muscles and ligaments. This was partially relieved by the local use of morphia and belladonna; matter subsequently presented in the groin, the abscess was opened, and the patient slowly sank, dying about twelve months after her admission.

Pain in the back may, then, accompany gibbous spine independently of muscular exertion, and yet be dependent upon the stretching of the fibrous tissue attached to the spinous processes. In the natural condition the spinous processes are not distant more than about half an inch or so apart, and they are connected together by strong bands of white fibrous tissue; but as soon as the spine becomes gibbous, the distances between the tips of the spinous processes increase materially, and the ligaments uniting them are stretched to double, or even quadruple their original length. We have

already pointed out the fact, that the stretching of fibrous tissue is productive of severe pain, and sometimes of tenderness on pressure. We have also shown as a general rule, that fibrous tissue is more readily stretched in the weak than in the strong. We may infer, then, that the presence of pain in gibbous spine is due—1. To muscular exertion; 2. To stretching of the spinous ligaments; 3. That when pain is not present it is to be accounted for by the want of tone in the system permitting painless extension of fibrous tissue.

There is no reason whatever for considering the pain, when present, in any way dependent upon the spinal cord or the spinal nerves.

It is not due to conjoint inflammation of the canal and its contents; for where these exist, though pain is the rule, tenderness on pressure is the exception; and in many instances where the inflammation has been excessive, the tenderness has been insignificant.

Again, it is to be remarked that the spinal tenderness, superficial as it is, is not accompanied by redness or heat; (the *sensation* of heat spoken of by the patient is altogether different from genuine increase in temperature;) the pain, when it exists, is hot and aching, not throbbing, &c., and local bleeding unaccompanied by rest is of no service.

In speaking on this subject to some medical friends, they have assured me that they have seen cases of spinal irritation in which there was a white, puffy, sometimes a brawny, swelling over two or three spinous processes; that it was exquisitely tender to the touch, and was relieved by leeches. In the absence of direct personal experience, I must refer, for an explanation of this matter, first to the note, page 37, where an account is given of tumours produced in connexion with muscular insertions; secondly, to the knowledge derived from the following case.

C. J., aged 36, broke the tendo Achillis of the *right* leg while dancing, in the year 1828. After the usual period he was able to move about again, but from that time to the present he has complained of severe pain, referred to the tendon of the *left* leg. He has often called my attention to it, and pointed to the fact that the parts over it were swollen and tender. The suffering is invariably produced or aggravated by pedestrian exercise; it is relieved by rest and steady pressure. The only feasible explanation of the phenomena seems to be, that in consequence of the injury to the right tendon an unusual strain is thrown upon the left, a strain that has never been compensated by additional strength. From these and some other similar observations it would appear, that a prolonged strain upon a fibrous tissue will produce a swelling, accompanied with exquisite tenderness; and I have met with one instance where a swelling, which I inferred (from the description given of it) was of this character, was cured by the application of a single leech. The leech produced most agonizing suffering during the period of its suction, but the pain left the part immediately afterwards, and did not return.

Whatever the true nature of the swelling, there can be little doubt that it is in no way connected with changes taking place in the spinal canal, &c.

But perhaps the best arguments we can make use of are the statements of the authors we have quoted, "that we may have spinal tenderness without any marks of spinal irritation, and symptoms of spinal irritation without spinal tenderness." Nothing could more emphatically prove that the various spasmodic and neuralgic phenomena spoken of, do not depend upon "a peculiar condition of some portion of the spine."

There are, however, those who hold that spinal tenderness and its concomitant symptoms are nothing more than signs of hysteria. Ere we can combat this idea, we must form some

definite notion of what hysteria is. Hysteria is not a disease intended by nature to include every curious symptom in the female which we are not able definitely to explain; nor can we allow ourselves, without great detriment to our mental powers, to attribute every pain, spasm, or ache which occurs in a delicate virgin, a neglected or anxious wife, or an over-taxed widow, to something wrong in her womb, depraved in her mind, or faulty in her education. Hysteria, as a word, ought to be restricted to that congeries of symptoms which betoken a peculiar condition of the system generally, and of the nervous system in particular; and as soon as any symptom once supposed to be hysterical can be explained without any special reference to the nerves, it ought to be removed from that congeries. Whether we can remove spinal tenderness in that manner, remains now to be discussed. We have already demonstrated that many spasmodic and painful affections, once considered hysterical, and still spoken of as such by the vast majority of practitioners, are due, in reality, to over-exertion of certain sets of muscles, and have no more connexion (necessarily) with the uterus in the female than they have with the whiskers of the male! and we hope to show that spinal tenderness itself is nothing more than the result of over-exertion of those very muscles, whose aches and pains we have already described in their more movable insertions.

CHAPTER XV.

What spinal tenderness is—Anatomical relations of the spinous processes—They form the starting-point for almost every muscle of the back, and, to a great extent, of the trunk, head, and extremities—Examples—Strain upon the more movable insertions of muscles produces pain and tenderness on pressure—It may do so equally on the more fixed insertion—Reason why the cause of spinal tenderness may be traced in some and ignored in others—Why the symptoms of spinal irritation may be present without spinal tenderness, and *vice versâ*—Why pressure on certain regions produces apparently definite symptoms—Effect of the examination on the patient's equilibrium—Recapitulation.

WE proceed now to examine what spinal tenderness is. We inquire—

First, into the anatomical relations of the spinous processes of the vertebræ.

Secondly, whether there is anything in those relations which will explain the pain.

When we rake up our reminiscences of the dissecting-room, and refresh our memories with any work on anatomy, we find that the chief, if not the sole, use of the spinous processes is *for the insertion of muscles*. The spine forms the *point d'appui* for nearly every muscle in the body. Is the head to be kept erect, the muscle springs from the spine; are the scapulæ to be drawn back, the arm to be raised, the shoulder to be moved, the muscles by which the operation is effected have the spinous processes for their "stand-point." Is the body to be kept erect or to be turned, still the muscles use the spine for their centre of operations. Are the thighs to be raised by the psoas, the antagonistic muscles on the other side of the

vertebræ must be brought into operation, that the spine may be fixed (if not, the body would be bent on the thighs). In fine, *there is scarcely a single motion of the body in which one or more muscles attached to the spinous processes are not brought into operation, and there is, therefore, throughout the whole day (except during absolute rest) a constant and unremitting strain upon the fibres by which the muscles are inserted.*

We know, as a law of dynamics, that when a strain is laid on any cord, or similar material, uniting a movable to a fixed body, the same effect is produced in the one as in the other attachment, but that the heavier body will not move towards the light one with the same velocity as the light one goes to the heavy one. In the same way, when the shoulder is moved by the trapezius muscle, as great an effect is produced by the muscular strain on the origin as on the insertion of the muscle; but the shoulder is the most movable—the lightest so to speak, and it moves while the back remains still. This can readily be demonstrated to the tyro, for he has only to fix the shoulder-joint artificially, and he may then move the trunk by the same muscle.

Whenever a muscle makes a feeble effort, as, for example, in carrying a hat on the head, the strain is so small as to be imperceptible; but when it makes an unusual exertion, as in carrying a canful of water on the head, the stress is tremendous.

The strain, then, laid upon any muscle, *i. e.* the force it exerts, is to be measured by the result produced.

But we have attempted to show that what is an ordinary and easily borne effort, when an individual is strong, becomes a severe and extraordinary exertion when he is weak.

We have shown that a large amount of suffering, often of a very intense kind, arises from muscular strains in various parts of the body. We have shown, and might still further

illustrate the fact from histories of torture by the rack and by strappado, that the fibrous portions of the muscles are the chief seat of pain, and that after the strain has been long continued there is absolute tenderness on pressure.*

Is there, therefore, anything unphilosophical in the deduction, or extraordinary in the assertion, that *the spinous origins of various muscles are as frequently and as painfully affected as are their insertions elsewhere?*

We have shown that the pain, either in the fleshy or the fibrous parts, has been in some cases produced by long continued exertion of a debilitated muscle, in others by excessive exertion in one of ordinary strength. We ought, therefore, to be able to recognise the same phenomena in cases of spinal tenderness. We should expect to find one class of patients tracing their complaints to some powerful and unusual muscular exertion, and another unable to give any account of its origin; as they would not be aware that they had been doing anything out of the common way. I need only refer to what Dr. Copland says respecting the causes of spinal disorders (p. 217, *ante*) to show that this is practically the case.

It is further to be noticed that we may have all the symptoms of spinal irritation without spinal tenderness. This is readily explained by the consideration that other muscles may have borne the chief brunt of the bodily exertion employed, while the spine, either from the use of well-made stays, or from the use of an arm-chair, has not been extraordinarily taxed. I am conscious that this suggestion alone is by no means sufficient to account for the fact alluded to; I shall, therefore, refer to this question again by and by. I merely call attention to it here in a "muscular" point of view.

Again, we may have spinal tenderness without any other sign of spinal irritation: a fact which is explained by stating

* *Vide* notes, pp. 37 and 43.

that it is most probable that in these instances the trapezius, latissimus dorsi, rhomboidei, splenii, and erectores spinæ, have been more used than the muscles elsewhere. A glance at Fig. 4 will at once show the value of this explanation. There is another thing to be explained, and one on which writers on functional diseases of the spine, and medical practitioners in general, lay great stress: viz. that certain symptoms attend pressure in the cervical region, certain others in the lower cervical and upper dorsal, others in the dorsal, lower dorsal and lumbar, and lumbar and sacral, &c.

The first answer we give to this objection is to deny the fact, not in the general sense, but in the particular one; that is to say, we assert that an invariable set of symptoms do not attend tenderness in any one spot, for the same set may be found where there is tenderness in the cervical, or dorsal, or lumbar, in all of them, and in none! That, as stated above, there may be tenderness, and no other marked symptoms, and *vice versa*.

The next answer is, that it is natural, when the cervical region is the one in which the tenderness exists (which we attribute to excessive use of the trapezius, rhomboid, and splenii muscles), that the other (muscular) pains of which the patient complains should be in the upper parts of the body, with which the head and arms are intimately connected in motion. Thus, for example, we anticipate that with pain referrible to the trapezius, we may have pain in the "occipito-frontalis," in the sterno-mastoid, in the splenius colli, and capitis, in the shoulder, in the pectorals, probably in the deltoid, in the serratus magnus, and in the abdominal muscles.

Is the tenderness in the dorsal region, the cause of the suffering is most probably due to over-action of the muscles of the trunk, rather than of those in the extremities, and we

shall have pain in the intercostals, the abdominal muscles, the diaphragm, the serratus magnus, &c.

Is the tenderness in the lumbar vertebræ, the cause may be presumed to be connected with the lower extremities; the patient probably has much stooping and rising, is fond of gardening, dancing, organ* or pianoforte playing; or her occupation may involve carrying heavy weights, long standing or sitting, a good deal of twisting motion, as in using the dolly while washing, in ironing, or turning a mangle. The exertion required in all these exercises necessitates the lower part of the spine to be fixed, and this as certainly produces pain and tenderness at the insertion of the muscles into it, as we have pain at the pubic insertion of the rectus from frequent stooping.

It may still be objected, that when certain important symptoms, such as palpitation, pain arising with telegraphic rapidity, and shocks comparable only to those produced by powerful batteries, do arise instantly upon pressure on a tender spot, it must be conceded that there is a direct connexion between the cause (spinal tenderness or disorder) and effect.

* I have had numerous instances brought under my notice in which considerable myalgic suffering has arisen from excessive practice at the pianoforte, and can readily understand how organ-playing must be much more severe. The individual commonly sits upright on a stool, without the slightest artificial support (except the corset in women); both hands are in perpetual motion; the body is swayed from side to side, according to the exigencies of the tune and "time;" the legs are called into exertion to work the pedals: and as singing is often joined to playing, the muscles of ordinary and extraordinary respiration are forcibly occupied. The interest of the musician during the practice diverts her thoughts from herself; and it is not, usually, until she has long left the piano, and has begun to exercise herself in another manner, that she is conscious of pain, aching, or fatigue. In these cases, the presence of spinal tenderness is the rule, and it is generally in the cervical or lumbar region. A similar cause might produce "hysterical hip-joint disease."

To this mode of putting the argument, our answer differs little from that given before. In the first place, it is not true in the main, and when true, a different and far more satisfactory explanation may be given.

It is not true in the main ; for out of every twenty cases of spinal irritation not more than one has any result followed from pressure upon the tender spot, except local pain. We find, also, both Teale and Griffin themselves laying great emphasis upon the fact that where the electric-like results do follow pressure on the tender vertebræ, *they follow equally from pressure on any other tender spot.*

That in these points we have not been guilty of mis-statements, we quote the following from Dr. Griffin, p. 217—"With respect to the tenderness of the spine in diseases of irritation, we have been anxious to ascertain what symptoms might be considered as peculiarly belonging to any one portion of the cord ; but in this we have found much difficulty, and have not had in fact a sufficient number of cases before us to draw absolute conclusions from." *Yet he had 148 in all !*

"In examining the spine, we shall often find that the tenderness does not reach so high up or so low down as the symptoms would lead us to expect," p. 218.

"It happens that when great tenderness prevails at a particular part of the spine, pressure on which excites cough, or oppression, or distant pain, these symptoms may be equally brought on by pressure for some distance above or below the tender point."

"Instances may even be met with of such extraordinary susceptibility, that pressure on any of the large nervous trunks, or any portion of the person which happens to be morbidly irritable, may excite or aggravate the same symptoms (as those produced by pressure on the spine). A case is detailed where pressure behind the trochanter, or the knee,

excited distressing pain at the ensiform cartilage,* with a disposition to syncope !”

The explanation of these remarks is very easy for any one who has paid strict attention to all the phenomena of muscular action, and who is aware to what a pitch of excitability the muscles may be brought by constitutional debility. The following recommendation will most probably enable any one to understand it.

Let me ask my readers to request a medical friend to examine whether their spine is tender, and to note, *most closely and minutely*, the effect produced on the trunk and extremities by pressure upon the various parts of the spine. Supposing that the examination is made in any of the usual ways, either by direct pressure upon each spinous process, or by a thump on many at once, or by stroking the finger heavily and continuously over each, it will be found, whether the patient is sitting, standing, or lying when the examination is made, that pressure in the cervical region has a tendency to bring the head back or push the body forwards, and excite the trapezius, splenii, sterno-mastoid, &c. ; in the dorsal region, to push the body forwards or to bring the shoulders back, and to irritate the trapezius, the rhomboids, the pectorals, the serratus magnus, and abdominal walls in the lumbar region ; to bring the latissimus and longissimus dorsi, the quadratus lumborum, psoæ, rectus abdominis, obliqui, &c. &c., into action. After this examination, it will not be difficult to see that the results following pressure on the tender spine may be *simply the*

* Does not this pain, evidently referrible to the insertion of the rectus abdominis, lead us to infer that, in making the pressure described, the body of the patient was involuntarily pushed forwards, thus suddenly irritating the excitable muscle? The disposition to syncope may have been from the upright posture, supposing, as seems probable, that it had been adopted during the examination ; but we have not data enough to explain it thoroughly.

effect of the patient moving naturally in some way, or shrinking from the painful infliction, a motion which calls into sudden operation muscles rendered peculiarly irritable from the effects of general debility. It would be difficult to make any examination of the spine in which this source of fallacy would not have to be borne in mind. I may add, that it is only in cases of *extreme debility* that the electric-like results follow. I must also add, that as a person is generally in the erect or semi-erect posture when the examination is made, many symptoms—such as syncope, headache, and palpitation—are put down to the spine, which in reality are due to feebleness of the heart.

Supposing, however, that these explanations may not be satisfactory to every one, and wishing to heap up proofs of the truth of our position, we may add that the electric-like shocks produced by pressure on a tender vertebra may be simply due to the fact that the spot is tender, and the system in a peculiarly excitable condition. The practitioner is no stranger to the probability of such an occurrence. How often, for example, do we read of a breath, a footfall, a whisper exciting the most distressing paroxysms in hydrophobia! How common in tetanus is it for the spasms to be re-induced by a current of cold air, or by the faintest touch! When a frog has been dosed with strychnia, how it starts at a prick of his toes! Even man, when under the influence of the same drug, may have a spasmodic exacerbation, produced by a touch at any spot. Dr. Abercromby “relates the case of a lady who was subject for two years to convulsive action of the muscles of the back, and twitchings of the arms and legs. These were much increased by touching her, especially on *any part of the back.*” After describing more extraordinary convulsions, &c., it is remarked “that if the head or neck were touched, the motions were increased to a most extraordi-

nary degree of rapidity." (Quoted from Dr. Watson's "Practice of Physic.")

To recapitulate—

We believe that the vast majority of the symptoms usually considered to be the result of spinal irritation, arise from over-exertion of one or more portions of the muscular system in debilitated subjects.

That the spinal tenderness itself has a similar origin.

That the other symptoms—*i. e.* those of a neuralgic character, commonly considered as *resulting from* spinal irritation—are *concomitants of spinal tenderness* only, and referrible to a common cause.

It remains for us next to show the connexion between hysteria and spinal irritation.

We anticipate that it will be found in the constitutional debility which is common to both.

CHAPTER XVI.

Connexion between hysteria and spinal irritation—Definition of hysteria, quoted from Dr. Copland—Constitutional debility the cause of hysterical phenomena—Constitutional debility defined—Consequences of constitutional debility—Law—The more debilitated the individual, the greater is the irritability of the nervous system—How irritability of the nervous system shows itself—Multifarious functions of the nervous system—Artificial division into mental, sensitive, motor, and organic functions—One or more of these may be affected—There may be rapid transitions from one to the other—Sometimes all may be affected—Over-action, a cause of exhaustion of muscle; may be so in nervous affections—Over-action in one part of nervous system is not always followed by symptoms referrible to that particular division.

ERE we attempt to demonstrate the connexion between spinal disorders and hysteria, let us turn to Dr. Copland (article Hysteria), and take the measure, as it were, of the latter—the disease we have to fit. Definition—“Nervous disorder, often assuming the most varied forms, but commonly presenting a paroxysmal character; the attacks usually commencing with a flow of *limpid urine*, with uneasiness or irregular *motions*, and rumbling noises in the left iliac region, or the sensation of a ball rising upwards to the throat, frequently attended by a feeling of suffocation, and sometimes with *convulsions*, chiefly affecting females from the period of puberty to the decline of life, and *principally those possessing great susceptibility of the nervous system.*” (The italics are our own.)

We continue the same article, and find what we have previously alluded to—“Altered sensibility or pain, of a truly hysterical character, in” various parts, which we need not

recapitulate, having already adduced them as instances of muscular pain independent of hysteria.

Again, Dr. Copland remarks—

“Hysteria will give rise to and simulate various *spasmodic* affections—asthma, cough, hiccough, sneezing, dysphagia, colic, hydrophobia, trismus, opisthotonos, or pleurosthotonos.”

“It gives rise to various comatose, cataleptic, or soporific states.” “It may simulate paralytic affections.” “It may manifest itself chiefly by disorder of the *mental emotions* and faculties.”

Hysteria will also give rise to various functional changes in secreting organs. Thus we find profuse urination a common sign; and, in some individuals, curious alterations have taken place in the skin, for which no other origin can be assigned than the disease in question.

If we pursue our inquiry into the predisposing and exciting causes of hysteria, we ascertain that it is produced by causes which debilitate the body or which exhaust the nervous system. Loss of blood, loss of appetite, exhausting discharge of any kind, prolonged anxiety of mind, overpowering mental emotions, loss of sleep—all are powerful agents; to which we may add the strumous diathesis, or that condition of body and mind inherited from drunken or insane parents. We consider, then, that there are *primâ facie* grounds for considering that the connecting link between hysteria, spinal irritation, and myalgia, is that there is in all cases general and very readily recognised constitutional or acquired debility,*

* I have so frequently used the words “constitutional or acquired debility,” that it is necessary, to prevent misunderstanding, to state the meaning I assign to them.

Constitutional debility is used to indicate deficiency of strength in the system, rather than of strength in the will, the mind, or the muscles. The debility is inherited from one or both parents, and is necessarily inseparable from the strumous, scrofulous, tubercular, and gouty diatheses. In short,

and that in hysteria the debility shows itself by disorder of the *nervous system*. In the other instances we have described, debility has shown itself by disorders of the *muscular system*.

We have already enunciated the law that—

“*The more debilitated the individual, the greater is the irritability, or excitability, of his muscular system.*” We now enunciate the corresponding one—“*The more debilitated the individual, the greater is the irritability of the nervous system.*”

To many this may seem a truism, but we entreat their attention while we try to develop the important bearings it should have upon pathology and practice.

We may assume it as a medical axiom, *That when an organ is in a state of disease, the disorder shows itself in some modification of its special function—i. e.* if the eye is diseased, sight is affected; if the ear, hearing; if the lungs, the breathing; if the heart, the circulation; the liver, the secretion of bile, &c. &c.

We have seen how when a muscle, whose special business is *contraction*, is disordered, spasms frequently ensue (it is out of our province to refer to paralysis, except when it occurs, as it sometimes does, from over-stretching or from very prolonged exercise).*

wherever there is hereditary disease, there must be constitutional debility, as disease cannot exist without the vital powers having been overcome. Constitutional debility is more or less persistent through life. Acquired debility is more or less transient, according to its cause. It may be produced by bad air, poor diet, exhausting diseases, excessive discharges, loss of blood, loss of appetite, indigestion, depressing drugs, incessant mental or bodily labour, prolonged grief, mental excitement, loss of sleep, and any other circumstance, hygienic or otherwise, likely to deteriorate the vital powers.

* It is an interesting observation to make here, that prolonged contraction will at last exhaust the contractile power of muscle so completely that it does not even respond to a galvanic stimulus. Its contractility is, however, soon regained by a few hours' repose, provided its nutrition is perfect. It would seem that the sensitive nervous system is capable of exhaustion

But when the nervous system is diseased, in what way are we to anticipate that its functions will be affected?

The cerebro-spinal nervous system has not a simple function, like the heart, the stomach, the liver, kidneys, &c. On the contrary, its functions are at least fourfold.

1. It has to originate, direct, control, &c., thought, memory, the will, &c.

2. It has to appreciate impressions, special or otherwise, and interpret them to the mind as sensations.

3. It has to generate, use, or direct the application of that "something," which, when it reaches a muscle, compels it to contract.

4. It has an influence over the body generally, assisting or modifying in some way secretion, assimilation, growth, &c. &c.

To save time and circumlocution, we propose designating these different functions as—1. Mental; 2. Sensitive; 3. Muscular; 4. Organic.

Whenever, then, the nervous system is diseased in any way, we infer that the complaint will manifest itself by some change in one or other of these functions. We may have the mind alone affected, or the sentient nerves; or we may have disordered muscular action, or some organic change. It is not, however, necessary that the alteration be confined to one function, it may extend to all indifferently—a fact we see

in the same way,—a thing may remain in contact with the skin until the sentient nerves become unconscious of its presence; and we have frequent accounts from poor needlewomen that they go on working until not only are their arms weary, but their fingers cease to be able to appreciate the materials in contact with them. They have tingling, and an idea of utter want of tactile power.

This, like the muscular contractility, is renewed by repose and adequate nutrition.

The same remark applies to the mental nervous system; as we know that long, unintermitting, intense mental application will for a time completely exhaust the mental power, and reduce the learned sage to the condition of an imbecile.

well exemplified in the perverted sight and hearing, the epileptic fits, and the rosy saliva so frequently met with in the insane.

In like manner, in hysteria (which, whatever its real cause, is essentially a disease of the nervous system) we may have disorders in any or in all of the nervous functions: at one time the mental functions will be pre-eminently affected; at another, the sensitive; at another, the motor; at another, the organic. Very frequently, all are affected together or successively. It is this which has given to hysteria the name of the Protean malady, and thrown such an air of mystery around its manifestations.

Yet when we look upon its symptoms in this light, it loses this character, and becomes amenable to the same laws which guide us in our recognition of diseases of other organs.

This subject is one of extreme interest to the philosophical physician, and I doubt not that many of my readers will be able to recall cases like the following:—M. C., æt. 25, had hysterical attacks daily, which lasted usually about two or three hours; they were characterised chiefly by laughing, shouting, and crying, and continued with increasing severity during a period of about ten months; by the treatment adopted these were cured in three days, but (according to prophecy) they were followed by *tic-doloureux*. J. H. had fits of a convulsive nature, which were mistaken for epileptic. She came into hospital; their nature was ascertained; they were cured in a day, but the next day they were replaced by *tic-doloureux*. Harriet P. had hysterical fits daily. These were cured, but immediately replaced by a very painful intermitting spasm of the masseters and temporal muscles. These are only very small illustrations of the Protean character of hysteria, and the rapidity with which its symptoms may

be transferred from one portion of the nervous system to another.

In our inquiry into the causes of muscular weakness, we were able to trace *over-action* as one; and in our remarks upon cramp, we showed that it was due to excessive previous exertion in a muscle, as well as to general debility.

We ought, then, to be prepared for the fact, that excessive nervous action (whatever its nature) will produce nervous exhaustion.

Theory might lead us to infer that excessive mental action, or emotion, would produce excitability of mind, but experience shows us that it may produce any or all of the following—viz., Insanity, spectral or aural illusions, tic, chorea, convulsions, catalepsy, coma, urination, vomiting, diarrhœa, or jaundice. Theory might say that intense sensitive emotion, whether arising from the eye, the ear, or other parts, should produce some disorder of sensibility; experience tells us that it often disorders the mind. Whether, then, we have exhaustion of the nervous system, from general debility or from over-action, it shows itself by disorder of one or other of the nervous functions, or of all.

Let us see how the remarks of modern authorities bear us out in this view, as regards the nervous system.

CHAPTER XVII.

Insanity an affection of the mental nervous system—Hysteria and insanity compared—Its causes : shipwreck, hunger, misery—Experience drawn from asylums—Influence of generous diet on the insane—Dr. Conolly's opinion of cod-liver oil, &c.—Mania not a disease of strength—Sensitive nervous system—Its susceptibility increased by exhaustion—Effect of noise, light, strong odours, &c., on those weakened by losses of blood—Sensibility of the skin in hysteria explained—Cases—Neuralgia—Its causes—Its proper treatment—Muscular nervous system—Cause of tetanus—Fatal case of idiopathic tetanus—Epilepsy—May be produced by bleeding or excessive debility—Case of Mrs. T.—Infantile convulsions—Its chief victims—Its causes—The danger—The cure—Chorea—Its cause—Its victims—Their condition of health—The danger—The cure—Cases—Influence of a tonic plan of treatment—Influence of mental emotion on a weakened heart—Organic nervous system—Effects of debility on the milk—On digestion—Emotion produces vomiting—Question how far anxiety operates in the production of tubercle or cancer.

WE commence with insanity, a disease showing itself principally in the mental nervous system, although we find it affecting, to a greater or less extent, both the sensitive, muscular, and organic, as is evidenced by the aural and ocular delusions, the catalepsy, the convulsive diseases, and the modified secretions so common in that complaint. There is no disease to which hysteria is more nearly allied than it is to insanity. We find that the most obstinate cases of hysteria occur in patients whose parents have been "strange," "excitable," "drunken," or insane; whose brothers or sisters are affected with epilepsy or insanity. We find hysteria produced by the same set of causes which operate in the production of insanity. We find in both the same class of

symptoms, which vary only in degree, not in kind. We find the curative agents applied to the one equally applicable to the other. In fine, if it were not from a natural disinclination to believe that so many of those we admire, honour, respect, and love, were occasionally *non compos mentis*, we should as philosophical physicians not only compare hysteria and insanity together, but actually consider them as identical, and differing only in the degree to which the general nervous system was implicated. We should make no distinction between the "morbid fancy" of the hysterical and the "monomania" of the insane patient.

What are the common causes of insanity? Dr. Copland sums them up thus:—"A certain conformation derived from parents, an original predisposition not so derived, a state of the constitution gradually acquired, or arising out of the continued operation of causes *which deteriorate, or otherwise change, the organic, nervous, and vital powers.*" We turn to the accounts of shipwreck, and other terrible scenes, where human beings have been long subject to anxiety, labour, distress, cold, and starvation, and we find that most of those who succumb "go mad" ere they die, and that many of the survivors are insane and never recover their reason. The form of their insanity is various; sometimes they are optical delusions, at others a raving mania.* We turn to the individuals who are the victims of insanity in our asylums, and we find that they are chiefly poor people who have long suffered privation. Misery and drink are the causes assigned for a

* "They who were most ravenous in the act
Went raging mad. Lord! how they did blaspheme,
And foam, and roll with strange convulsions racked,
Drinking salt water like a mountain stream;
Tearing and grinning, howling, screeching, swearing,
And with hyæna laughter died despairing."

Don Juan.

full half of those attacked ; and the other causes are analogous, such as prolonged lactation, sexual excess, loss of rest, incessant toil, losses of blood, loss of health, disappointment, anxiety, distress of mind, &c. Our poetry teems with references to the "o'er-wrought brain," "the carking cares that lead to madness," "the misery that crazes," how one "may weep in vain till memory leaves the agonizing brain." We find nearly the same thing in the more prosaic. In the "Report of the Commissioners of Lunacy for 1844," p. 118, we read :—
 "It is indeed evident that nothing can be effected without an ample supply of proper food, in the restoration of the patients from that state of *physical weakness* and *exhaustion* which is the condition of the majority among the inmates of pauper asylums."

"It is worthy of remark, that in Middlesex and Dorset Asylums the diet of the patients was some time since improved by an *increased allowance of food*, and that in both of these asylums *there was recorded after this alteration* an increase in the number of recoveries."

We find Dr. Conolly, than whom few men have laboured harder, observed closer, or reasoned more philosophically, writing thus :—

"It is desirable to keep in view that the preternatural excitement of a patient affected with acute mania, his violent action, and his loud voice, *are not indications of strength*, and that the more violent the symptoms, the greater is the danger of sudden prostration and death. In young persons, maniacal symptoms are not unfrequently the first in the train of those belonging to pulmonary disease. In old persons, an outbreak of mania is often the mere precursor of general decline and death." (Conolly on the "Treatment of the Insane," pp. 69, 70.) Again, p. 76 :—"There will soon be accumulated, I believe, in many asylums, very singular proofs of the general

benefit of a *tonic and nutritive plan of treatment*, in most of the forms of chronic insanity, and in all cases attended with debility, in consequence of the recent extensive introduction of cod-liver oil into practice." Again, pp. 77-8:—"All practitioners in medicine, whose experience extends, as my own does, to more than thirty years, must have observed, even within that short period, a striking change in the extent to which ordinary means, formerly considered remediable and even indispensable, are employed. Large and frequent bleedings, once so common as almost to be universal, are now wholly unknown. Violent purgative medicines, and the excessive employment of mercury, have been desisted from in all climates where scientific practice prevails." The "Medico-Chirurgical Review" remarks, in addition:—"Many instances (of mania) have come to our knowledge, in which, to the best of our judgment, acute and once hopeful cases have been rendered the reverse by general bleeding, into which the surgeon has been misled probably by delusive appearances of plethora," &c.

From insanity we turn to a peculiar form of it, delirium tremens, in which we have both the mental, sensitive, and muscular nervous systems affected. We find that this is produced by debility, the debility commonly arising from deficiency of food and the abuse of ardent spirits; a fit is often determined by diarrhoea, loss of blood, an accident, &c. The danger is death from exhaustion; and the best treatment is, opiates to procure rest, combined with appropriate food and stimulants to support strength.

When we leave the mental for the sensitive nervous system, we see the same law hold good:—"The greater the debility, the greater the irritability." We are all of us familiar with the fact, that when a person has suffered from an exhausting illness, from hæmorrhage, or other causes of debility, the

sensibility becomes wonderfully exalted; one patient faints at a strong odour, another cannot bear the light of day, or the common sounds that go on hourly in our working-day world. A woman, after menorrhagia or "flooding," cannot endure the prattle of her children, once her greatest delight; she is painfully sensible to a footfall, and can scarcely bear contact with her clothes. This extreme sensibility of the skin has long been spoken of as a symptom of hysteria, and has commonly been considered an almost certain diagnostic mark. *Its true signification has been overlooked.* We have contented ourselves with establishing the diagnosis rather than investigating the connexion. How important does the sign become when we recognise in the preternatural sensitiveness of the skin a proof of general and special debility.

The following cases are interesting specimens of this form of sensitive nervous irritability. The first I met with casually in conversation; the second occurred in my own practice:—

A lady in wealthy circumstances, not subject to any particular emotion or excitement, or mental or bodily labour, passing her time, in fact, almost exclusively in bed or on the sofa, was the victim of most extraordinary sensitiveness of the skin; to such a degree did this extend, that a touch on any part of the body would produce paroxysms, which could only be compared to those resulting from a touch or current of air in hydrophobia. The very idea that she was going to be touched produced a fit of shuddering, as does sometimes the sound of running water in that disease. There was no exhausting discharge present, but the patient lived almost exclusively on tea and toast-and-water!—a diet certainly by no means sufficient to keep up the natural or vital powers. There was exhaustion from deficient supply, not from excessive demand.

M. I., æt. 27, of delicate appearance, came under my care

for pain and tenderness of the whole of the back. She was a housemaid, had an easy place, and a kind mistress, who gave her every facility for relief. She was chlorotic, but there was no sign of organic uterine disease, or other depressing disorder. There was complete loss of appetite, the bowels were inclined to be costive, the pain was so severe she could not sleep, contact with her clothes was painful, and it required all her energies to go through the smallest exertion. The spine was exquisitely tender throughout its whole extent; there was soreness over the abdomen and chest to a limited degree; she had pain in the hypochondria, the epigastrium, the iliac regions, and in the pubis; had cramps in the rectus, oblique, longissimus dorsi, &c.

My recommendations, which were strictly followed, were a belladonna plaster along the spine, morphia at night, rest for an hour or so in the afternoon, with steel, cod-oil, and generous living. The oil soon disagreed; the other remedies seemed powerless. The sensibility increased to such a degree that she could not "sleep a wink" day or night. She was obliged at last to leave her place, and took lodgings with the full intention of taking care of herself. She abandoned all medicine, indulged in bed for the greatest part of the day, lived as well as her means would permit, and at the end of six weeks was perfectly recovered. As I did not attend her after she left her place, I can give no history of the gradual cessation of any special symptom. I can scarcely refrain from adding that, had she placed herself under the care of a homœopathist, she would have formed a most astonishing (though of course fallacious) proof of the value of the new over the old style of medicine.

To these cases we may add other illustrations with which all of us must be more or less familiar. We can bear testimony to the irritability of temper, the impatience of harsh

sounds, the disinclination to thought, and the positive headache, or other pain of which we are conscious after a long day's work on an empty stomach. We know how under those circumstances children seem endowed with unusual power of teasing, how very harsh their shouts appear, how peculiarly boisterous their play. We feel how hard the task is to bear, with the semblance of equanimity, the trials we are under.

But when dinner is over and our veins are full of generous wine, how different are the sensations! We are then ready to laugh with the merry, to condole with the grieved. A sore hand or foot loses half of its pain, if not all. A shout no longer grates on our ears, and even the harsh sounds of a hurdy-gurdy can be tolerated. Surely, when we are conscious of these occurrences in our own persons, we ought to be full of charity to our female patients who are probably equally jaded with ourselves, but who, unlike us, rarely enjoy a full meal and luxuriant repose.

When we consider the causes of those painful diseases of the nervous system to which the word neuralgia ought specially to be confined, as "tic," "sciatica," "megrin," &c., complaints which so often baffle our best-directed efforts, and subsequently go away of themselves (resembling in this respect the fury of a maniac, which continues intense as long as he is coerced by gyves and other restraints, but goes off at once when he is placed alone and unshackled in a padded room), we find them to exist chiefly in local or general debility.

Dr. Copland, in treating upon the subject of neuralgia, remarks, vol. ii. p. 884:—"Chronic or prolonged debility, the exhaustion consequent upon acute diseases, influenza, prolonged or neglected dyspepsia, the puerperal states, exhausting discharges, prolonged or improper lactation, excessive venereal indulgences, anxiety of mind, menorrhagia, &c., are

amongst the most influential of predisposing causes of the complaint."

We see the same broad truth evinced in the influence of treatment upon these diseases. Whatever tends to keep up or increase debility keeps up or aggravates the pains: whatever tends to invigorate the system, such as quinine, steel, cod-oil, glycerine, &c., has a direct tendency to cure them.

From diseases of the sensitive, we may pass to the muscular nervous system. We have already considered the muscles themselves as being rendered more irritable by debility: we have now to consider the nervous stimulant which impels them to contract, being rendered irregular, excessive, or deficient from the same cause. We have little that is satisfactory to say of tetanus, except that it is most common in those who, after having been exposed to great heat, exertion, and probably loss of blood, are exposed for a considerable period to severe cold. How potent is this cause, the following case of idiopathic tetanus will show:—

"Mrs. G., æt. 38, of nervous temperament, mother of seven children (the youngest of whom was twenty-two months old, and still at the breast), and residing in a crowded, unhealthy street, lost her appetite a fortnight ago, was languid, and suffered from palpitation; in a week she had 'flooding' and faintness, was laid up a few days, and then resumed her domestic duties; on the 2nd of August went to rest on her bed in the afternoon, and fell asleep with the window open, the left side of the neck being exposed to a current of cold air, and the body exposed to the full influence of a powerful sun. She had giddiness on rising; on the next evening the neck was stiff; on the 4th all the signs of tetanus were well marked, and she expired on the evening of the 5th." (Sinclair, in No. I. of the "Liverpool Medico-Chirurgical Journal," p. 130.)

If we turn to epilepsy, we see the same fostering effect of

debility on the growth and severity of the complaint. We find that patients may be bled into epilepsy; that it is the most severe in the poor, the ill-fed, and weakly; that it occasionally accompanies exhausting diseases; and that when it is dependent upon some organic cause in the brain, the number and severity of the fits depend upon the general health of the system.

The following case is useful, as illustrating many of the points we have brought forward and some which we shall hereafter refer to:—

I was called in consultation to see Mrs. T., æt. 38, who was at the time insensible, and had just suffered from severe epileptic fits. She had been ailing a long time, and was supposed to be under the influence of lead. The most prominent symptoms were intense pain in the head, strabismus, partial loss of sight, daily bilious vomiting—the bile being of a bright grass green—pulse 84, skin cool and pale; at times she was sufficiently well to sit up, but soon relapsed, becoming weaker on every occasion. A variety of treatment had been resorted to, including a blister to the nape and aperients. The epileptic seizure came on after the administration of a turpentine enema (which was retained). The treatment now adopted was to abandon medicine, and support the system; as the stomach refused to retain food or stimuli, injections of beef-tea were given: in four days the patient returned to full consciousness. Morphia appeared now to relieve the headache; food was cautiously given, and everything seemed to go on well for a time; a relapse, however, ensued, attended with the same bilious vomiting; another, and another, and at last one with a slight return of the epilepsy, insensibility, and delirium. By a very close attention to the circumstances under which these came on, they were clearly traceable to *mental emotion* in a terribly debilitated frame, or to

the exertion of talking for a short period to sympathising friends. Comparative seclusion was then adopted in the sick room for a week, and as generous a diet given as the stomach would bear, and from this time the patient steadily recovered, until she was perfectly restored. The headache and strabismus diminished in direct proportion to her gain of strength. The weak vision (due to the dilatation of the pupil) went with the other symptoms, and the "biliousness" disappeared.

From epilepsy we pass on to infantile convulsions. Who are its chief victims? Those who inherit consumption, struma, or debility—the denizens of our crowded courts and alleys—the pale, puny, and ill-fed. They carry off those who have been weakened by diarrhœa or loss of blood. They are the bane of the town infants, but rare amongst the families of the healthy, well-to-do peasantry. What is the danger? Death by exhaustion. What is the cure? Good air, good diet, comfortable condition. When does *subsultus tendinum*—a variety of convulsions—come on? When the patient is dying of weakness. What is its cure? Wine and other stimuli.

Again, in chorea and allied disorders; what is the most common cause? Excessive fright. And what is fear? The most depressing of all the mental emotions (people die of fright sometimes, without any further cause). What are the individuals it chiefly attacks? The weakly and delicate, whose flabby muscles give tolerable evidence of their want of tone. What is its cure? The most powerful tonics, the most digestible and generous food it is possible to employ. What is the danger? Death by exhaustion.

The two following cases are of great value in illustrating these points:—

M. A. R., æt. 13, was admitted into the Liverpool Infirmary, July 20, 1843, under the care of one of the then physicians;

said she had always been well till she had been thrown violently against a wall by her father a month ago; twitching came on the next day, and continued increasing in severity up to the time of her admission. The motions were excessive, and the laryngeal muscles were affected in common with others. As she had once passed worms, castor-oil was ordered, which operated unsatisfactorily, and calomel and jalap, with another dose of oil to follow, were prescribed. The jactitation was so incessant that she had no sleep, and the skin of the nates became excoriated. On the night of the 21st the motions ceased; she fell asleep about five o'clock of the morning of the 22nd, and was dead at seven. The *post-mortem* showed as healthy a body as it was possible to examine. She had died of simple exhaustion.

M. J., æt. 13, was brought into my consulting-room one morning, August, 1847, in the arms of her mother. She was suffering so severely from chorea that she could not be retained upon the knee, and was utterly unable to walk. The history was similar to the last. (The late Dr. Todd had, in the meantime, published a case in which a tonic, &c., plan of treatment had been most conspicuously successful.) I recommended full doses of the tincture of iron, and as much egg and wine as the stomach would bear. In *three days* my patient walked into my room without a greater amount of "nervousness" than many healthy girls would show on visiting a stranger.

There is scarcely a muscle in the human body so much influenced by mental emotion as the heart; and in this, as in every other instance, we recognise the influence of debility. The fact is so well known, that I shall only bring forward one illustration, which, though it borders on *persiflage*, yet contains "a moral."

One young man, timid and diffident, when he "pops the question," finds his heart palpitate from the combined influ-

ence of *fear* and *mental emotion* ; another, under the Bacchic influence of wine, goes through the same ceremony without a qualm, and has the palpitation *the next day*, when he thinks over what he has done.

We turn, lastly, to the organic nervous system, and inquire into the results of debility upon it. Our ground here, unfortunately, is somewhat treacherous, as we are not sufficiently acquainted with the real influence the nerves exercise over the different organs of the body.

We therefore put the following forward with diffidence and hesitation. Debility deteriorates the quality of the milk in a nurse, and makes it "windy" for the child. Intense mental emotion will make the milk absolutely poisonous, and produce convulsions or death.

Debility, fear, anxiety, or other intense depressing mental emotions, check digestion, *produce vomiting*, often of a severe type, purging, profuse urination, lacrymation, &c. I have met with one instance in which certain mental emotions would suddenly produce a "foul breath," which would continue for hours.

Debility encourages ill-smelling stools, fœtid eructations, and fermentations in the stomach and bowels.

Disgust will check an erection. Anger or anxiety may produce jaundice. It may equally be produced by extreme physical exertion ; and in these cases mercury is positively as prejudicial as it is in Bright's disease of the kidney. I have known a bride on the wedding morning delay the ceremony from an attack of vomiting, and a bridegroom who could only attend to the business of the day under the influence of brandy-and-water. Vexation will produce asthma. A case has recently been reported in one of the medical journals, where a combination of anger, vexation, and fear was invariably productive of hæmaturia in an adult male. I am myself

acquainted with a lady in whom any sudden mental shock produces hæmoptysis;* and another, in whom jaundice has been produced from a similar cause on three different occasions.† Fright suspends the secretion of saliva; and there can be no doubt that debility is a fruitful source of dyspepsia, flatulence, menorrhagia, &c.; and that grief and anxiety have much to do in the formation of tubercle and cancer.‡

* While correcting this page for the press a medical friend called on me, stating that he had recently suffered from hæmoptysis, which he attributed to anxiety alone; and, from his general health and appearance, I think his deduction is a sound one.

† In the lady here referred to, the first attack was treated as if the disease was due to disease of the liver. She was kept low, and was seriously ill for six months. The second attack was treated with champagne and turtle soup, and the recovery was rapid. The third attack came on about ten hours after a trifling vexation, and passed away in a few days without any other treatment than champagne and very mild diet.

‡ Ten years ago I had two cases of cancer under my care. The patients were elderly ladies of about the same age. In both the disease occupied the mamma, and was in its earliest stage. There was no apparent difference in the constitution of the two, and their position in life was a comfortable one. One, however, was not only excitable, but suffered from a constantly-operating cause of deep anxiety; the other was composed, and had no cares beyond what her complaint produced.

They were both treated in the same way, simply by a belladonna plaster over the seat of the disease, good and generous diet, and an occasional tonic. The first steadily got worse, and died in a few months. The second is at this moment perfectly well. The scirrhous mass slowly withered, and after a lapse of five or six years separated from the rest of the mamma like a huge black wart. This at last fell off, leaving a deep depression in the mamma, and giving it the appearance of an inverted cone.

There was little reasonable doubt that the wearing anxiety to which the other patient had been subject was the reason for the rapid march of her complaint.

CHAPTER XVIII.

Application of foregoing observations—Law—The word irritability defined—Corollary when there is debility—The symptoms will be referrible to the muscular or nervous systems according to circumstances; or the two may be combined—Case from Griffin, in which both muscular and nervous systems were intensely affected—Annotations—Summary of views.

AFTER these remarks, we venture once more to enunciate the following law, which deserves the highest place that memory can assign to it:—

The greater the debility of a patient, the greater is the irritability of his nervous and muscular systems.

By irritability, we mean propensity to take up diseased action, or tendency to perverted function. It would not be difficult (though foreign to our present purpose) to show that this law is capable of more extended application; for we think that there is not any philosophical physician who would deny the truth of the proposition—

“The healthier the individual, the less he is predisposed to disease.” Or the converse, “When an individual is not in perfect health (*i. e.* when his natural or vital powers are deteriorated), he is predisposed to disease of one or more organs.”

I find a very general idea prevalent amongst the community, that the weaker an individual is the less “hold” can disease have upon him. This notion has evidently descended from our predecessors in the profession. It may be said to be exploded amongst ourselves, as a rule, yet there are many who appear to act upon it at the present day; but whether

they do so from ignorance, indolence, or routine, it would be difficult to say.

Having thus shown that when any individual is in a debilitated condition, he is particularly subject to affections of the nervous or muscular system, or both together—and that these do not come on unless there is some constitutional or acquired debility, or reduction of the vital powers—it remains for us to remark, that the symptoms of one or other will predominate, according to the circumstances in which the patient is placed. If the patient be an overworked and feeble man, a servant, a milliner, a sempstress, the mother of a family, or otherwise actually engaged, the muscular system will be chiefly affected. If, on the other hand, the patient be in a good position in life, sedentary in habit of body, but active in mind, the result of debility will be shown in some form of disease of the nervous system. It may be that the complaint may manifest itself by some curious crotchet of the mind—(*i. e.* in the mental nervous system), such as a morbid appetite, a vitiated taste, the love of sympathy, feigning disease, possibly some form or other of insanity, &c. ; or by neuralgia—(*i. e.* in the sensitive nervous system), ocular spectra, strange noises in the ears, &c. ; or in strange contortions of the body—(*i. e.* in the muscular nervous system), in tremendous fish-like springs, in curious antics, in gyrations, in dancing or leaping ; or in the total absence of muscular power, in travelling spasm of the œsophagus, “globus,” and the like. Or we may have the organic nervous system affected chiefly, as evidenced by the sudden generation of flatus in the stomach and intestines, in excessive urination, in the production of strange pigment in the face, strange smells from the uterus and lungs; depraved condition of the milk, of the bile, of the saliva, catalepsy, and coma, or the appearance of apoplexy.

If mental labour and great anxiety are combined with

bodily fatigue, we shall have painful muscular affections added to the hysterical or neuralgic ones, thus complicating the symptoms, but not obscuring for a moment either the diagnosis, or rendering the plan of treatment doubtful.

The intense amount of suffering occasionally produced by a non-recognition of the principles we have laid down, and the persistent use of a false method of medication, is well shown in the following case, which we quote from Dr. Griffin's work ("Spinal Irritation," p. 7, *et seq.*). As might naturally be supposed, we consider the report of the case incomplete, many important points (in our estimation) being omitted.

A young lady, *æt.* 21, who had always before enjoyed good health, received a slight blow on the chest from her mother, during her convulsive struggles while dying of apoplexy. She spat up a little blood at the time, and felt pain for some days.*

After this it suddenly removed to the abdomen, affecting the left side, about the situation of the descending colon, and was accompanied by frequent pulse, tenderness, and the most incessant vomiting.† The pain was abated by bleeding, blistering, and aperients, but nothing could allay the vomiting, which was brought on by the smallest quantity of anything solid or liquid taken into the stomach.‡ This came

* The patient had evidently been exerting herself to hold her mother; had nursed her, and had been much shocked or agitated at her sudden death. Had she lost her appetite? Where was the pain in the side—in the pectorals, the intercostals, or the oblique? Most probably the former, as they would be greatly strained in lifting the sick woman.

† The sequence of symptoms is probably not strictly maintained here. The first would be pain in the left external oblique, vomiting from anxiety or mental emotion, then tenderness of the muscles, one or more, from the effort of vomiting, rapid pulse from debility.

‡ The vomiting produced by excitement is now kept up by debility. The pain is diminished by blisters, &c., whose soreness is such that they compel muscular quiescence below them for a time. Rest in bed, though

to be attended with flitting pains in the head, with throbbings of the temples and intolerance of light, attributed to the straining, the continuance of which made it difficult to move the bowels. Even when medicine did operate, it gave no relief.*

She remained many days in this state, suffering much from the want of rest and the distressing retching,† after which she was attacked with frequent oppression,‡ occurring at intervals through the day, and usually terminating in fits of insensibility.§ In these she usually lay for ten or fifteen minutes, with her hands fast clenched,|| or sometimes shutting and opening them with great rapidity. There was considerable rigidity of the tendons of the wrist while the fit lasted, and the first symptom of amendment was always a gradual relaxation and opening of the fingers, when she fetched a long deep sigh,¶ and recovered. These oppressions proved as intolerable as the vomiting, and were very distressing. Repeated blistering,** ether, assafoetida, opium, and other antispasmodics were had recourse

not mentioned, was coincident with the blister, &c. In the bleeding, blistering, and purging we have direct means adopted for debilitating the vital powers. We anticipate, therefore, to meet with disorders of the nervous system in their fullest extent, and painful muscular affections in addition. We have them in the succeeding symptoms.

* Sensitive nervous system now very irritable, organic muscles weak, purgatives increasing the mischief.

† Both exhaustive.

‡ As women naturally breathe with the upper part of the chest, and not with the diaphragm as men do, they experience a far greater sense of "oppression," or difficulty of breathing, when the muscles are weak, than we; for it is far more difficult to move the whole thorax in every inspiration than to move the soft bowels, &c., as any one may satisfy himself from the smallest experience.

§ Respiratory muscles are now so feeble as to be inadequate to perform the ordinary motions of respiration well, and the imperfectly aerated blood produces partial coma.

|| The muscular nervous system is now affected.

¶ Fully aerating the blood.

** Still further diminishing power and increasing irritability.

to without relief, except of the most temporary kind.* At the end of three weeks, however, the more severe symptoms of the complaint, without any very obvious cause, and after resisting every kind of treatment, began gradually to decline; the oppressions, throbbing at the temples, fits of insensibility, and vomiting, manifestly abated; and the digestive organs, the state of which had never been lost sight of, improved rapidly under mild aperients and bitters. In short, she soon after recovered a sufficient degree of health to permit her going to a party, and even joining in the amusements.†

The reprieve was but of short continuance. A return of the oppression brought with it cough, pain in chest and left side; the former slowly disappearing as the latter symptoms advanced and became more formidable. The cough was loud, dry, convulsive, and became at last so incessant, that she had no intermission of the fits day or night.‡ The convulsive expirations followed one another with such rapidity, that one can only conceive the suffering by imagining the fits of a severe chincough following one another without interval. To heighten the distress, it increased considerably the pain in the chest and sides,§ and the respiratory muscles *became so sore and tender*, from the eternal convulsive action, that *she could scarcely bear to have a finger touch them.*||

* None of these gave more than transient strength—the other remedies (!) were diminishing the permanent strength.

† We have here the first indication of a correct plan of treatment, but unfortunately the “principle” is not recognised—the success seems to have been considered as accidental: a flaw now ensues in the philosophical history of the case, and we are left to imagine there may be a period of activity, and possibly gaiety, before a relapse comes on.

‡ Irritation of organic nervous system, followed by symptoms evincing excessive irritability of muscular system, both in the larynx, diaphragm, and other respiratory muscles.

§ Pectorals and intercostals.

|| The reader is particularly requested to notice this fact, as affording a clue to the cause of the spinal tenderness afterwards discovered.

After much time had passed in vain attempts to remove or alleviate it, she became affected with swelling and pain in the anterior part of the right lobe of the liver, which increased rapidly, and formed a round circumscribed shining tumour, bearing all the appearance of an abscess.* This was very painful, and the torture produced by the constant coughing was extreme.†

A course of blue-pill was now prescribed at a consultation . . . copious ptyalism followed . . . the cough was now first relieved, and in a week or two ceased altogether.‡

The young lady, however, remained in a very weak, complaining state, troubled much with occasional pain in the head,§ intolerance of light,|| and eventually, as the soreness of the gums diminished, the terrific cough evinced a disposition to return.¶ It was not considered advisable to persevere in the mercurial pill, which seemed to be the only preventive likely to be employed with success, as she had suffered much from the salivation, and was greatly debilitated.** The consequence was a renewal of her sufferings, if possible, to a more intense degree than before. New symptoms week after week supervened, or alternated with the old, and were only more distressing on account of their strangeness and suddenness of attack: at one time she had oppressions; at another, headache, with fits of insensibility; at a third,

* Cramp in the oblique muscles.

† This answers the description given me by Mrs. L. (p. 76), of a tumour she once had in the back, which was in like manner considered an abscess. *Vide* case of Mrs. T., p. 35, and the note, p. 37.

‡ Query, from the blue-pill?

§ Occipito-frontalis?

|| Irritability of sensitive nervous system.

¶ Query—is it possible the uvula was relaxed?

** We anticipate now a great aggravation of symptoms, as increased debility must have produced increased irritability, both in the nervous and muscular systems.

the old pains traversing different parts of the colon and ileum with their former violence. She was attacked, too, with severe pain and tenderness in the hypogastric region, followed by retention of urine,* obliging the introduction of a catheter. But little was drawn off, however, as the secretion was almost entirely suppressed, and did not return for three or four days,† when the soreness and pain in the hypogastric region subsided. During all this time the pain and tenderness of the chest, and the dry loud cough, were never for a moment absent.‡

The case was now looked upon as quite hopeless; the distress occasioned by such complicated disorder destroyed all rest and appetite, and induced extreme emaciation. Solid food could no longer be borne; it was either instantly rejected, or excited violent spasmodic pain in the stomach, and sometimes the oppression.§ The slightest motion (she was now continually confined to bed) brought on similar paroxysms; after which she usually became almost insensible, with suppressed convulsive efforts at coughing, her voice gone, and her pulse rapid.|| This state generally lasted for some hours, sometimes much longer; and as the strength gradually returned, the eternal hacking cough resumed its attack.

It would be tedious to enter into a minute history for the succeeding two or three years. The disease successively assumed the appearance of organic disease of the lungs, heart, and abdominal viscera. . . . On an accidental visit of the medical attendant he was struck with the connexion between

* Debility of the bladder.

† Disorder of organic nervous system.

‡ It will be scarcely considered necessary that these symptoms should be explained at length after what has gone before.

§ How can we expect a debilitated stomach to do the work of a strong one?

|| Inanition.

the pains and the distribution of the spinal nerves.* An examination of the spine was made. There was neither deformity, unevenness, nor prominence. There was tenderness over the whole column. Pressure on any of the spinous processes excited instant convulsive fits of coughing, and pain at the corresponding point anteriorly, or oppression.† The slightest curvature in any direction was intensely painful; attempting to turn in bed during the examination (which, however, she could never accomplish or permit)‡ occasioned a sensation as if her back was breaking; raising the head from the pillow and bending the neck forwards brought on a burning§ pain at the middle of the dorsal vertebræ, which shot down to the extremity of the spine,|| and thence to the limbs, knees, and toes, followed by a sort of general cramp!¶

It seemed extraordinary how little the patient directed attention to the back in so intense a case of spinal disease; she frequently complained of pain there, but as it was never constant like those felt at the extremities of the nerves, and was only excited by pressure or motion of the spine, and was then generally accompanied by or occasioned extreme sickness

* Query—did he think at all of the muscles?

† *Vide* p. 231. We presume the tenderness is from constant strain upon the tendinous fibres of muscles attached to the spine. We “query” whether the act of pressure shook the body, and with it a relaxed uvula, of which we have no notice. The oppression is due to the fatigue of sitting up, &c. We shall see from other symptoms whether this interpretation is borne out.

‡ A good proof that the spinal tenderness was due to the cause we assign to it.

§ *Vide* p. 42, No. 2, *ante*.

|| We surely need not explain this!

¶ It must be remarked here that a person cannot bend the head forwards, when sitting up in bed, without stretching not only the fasciæ, &c., of the back, but of the buttocks, thighs, and legs as well—as any one may convince himself of by a ten minutes' experiment of the position.

of stomach, retching, and eventually insensibility,* it claimed little notice in the train of symptoms.† The complaint now clearly developed itself. (!) The various affections to which she had so long been a sufferer were obviously attributable to some disease of the medullary column.‡ (!!) All the complicated, and it would appear whimsical, attacks of this strange malady seemed now simple and necessary results, and their alternations with one another merely indicated the shifting of the diseased action to new points of the vertebral chain.§ As issues or blisters to the spine were almost the only untried remedies which the state of the patient suggested, and these seemed wholly inadmissible, &c., the case was again left to the efforts of nature.||

The bowels were attended to, and narcotics were used for violent pain. The disease was, nevertheless, slowly progressive, and as it advanced declared its true seat to the most careless observer; the whole spinal column was, if possible, more acutely tender; the slightest pressure or motion brought on pain, cramps, or fits of retching; drawing the sheet or arranging the bed, or the sudden falling of a piece of furniture, excited an instant paroxysm, commencing with cramps

* Was the patient told to sit up in bed when the examination was made? If so, these symptoms are readily accounted for.

† It is, of course, an assumption that spinal tenderness existed from the commencement of the complaint, but the assumption once being established as a matter of fact, we are not surprised to read the following.

‡ I need not copy the rest of the paragraph, with the exception of the last sentence.

§ As we dare not suppose that the present generation is more infallible than the last, we leave the appreciation of this medical reasoning to each individual reader.

|| The disease now slowly progressed, and as it did so the "nerves" became irritable to an almost incredible degree, the sensitive, mental, and organic being all affected; the muscular system was affected equally, and to such a degree, that any unusual or unanticipated motion produced a new and painful symptom.

of the chest, sense of suffocation in the throat, with low, crowing inspiration,* not ringing and stridulous as in croup, and terminating in extreme debility, with total loss of power and tremulous, convulsive motion of almost every muscle in the frame. The affection of the head and pain in the throat became more tormenting; there was a constant distressing pain in stomach, with rawness, soreness, and sometimes a burning feeling extending up the trachea to the larynx.† There was a variable pain in the chest or left side, and a sore sensation as of a cord or band stretched across from the superior bone of the sternum to a point corresponding with the anterior part of the fifth rib on the left side.‡ This never permitted her stretching back and making the chest prominent: she had also apprehensions that it would rend or snap in the violent fits of coughing. She had also a frequent feeling as if the spine were seized internally and drawn to the sternum or stomach:§ when to the former, the sensation was succeeded by convulsive spasms, with oppression; when to the latter, by violent cramp extending upwards to the sternum and shooting down to the limbs, knees, and toes. At times, when the cough was extremely violent, and shook the frame much,|| or when the patient was lifted on a sheet to have her bed arranged, she felt as if the articulating surfaces of the spinal bones were inflamed, sore, and glided or rubbed upon one another in the loose ligaments. This feeling was so excruciating, that whenever she was about to be removed on a sheet, she was accustomed to throw all the extensor

* Spasm of laryngeal muscles.

† Muscular pains in the sterno-thyroidei and sterno-hyoidei, and others, induced either by talking or by the habitual or instinctive act of swallowing.

‡ Insertion of the lesser pectoral.

§ Spasm of the diaphragm.

|| Ample cause for fatiguing the muscles.

spinal muscles into action, and by a violent effort bring the whole spine into a state of rigid extension, to preclude the possibility of the slightest motion. An approach to syncope always followed the exertion, in which she lay on the bed for days, unable to speak, or swallow, or even move, though conscious of what was passing around her.* Although so seemingly still and breathless, that it might have been imagined she lay in an utter state of relaxation and exhaustion on these occasions; if a hand was laid on hers it was found in rigid spastic action, and instead of reposing quietly on the chest, as it appeared, pressed firmly and almost convulsively against it, as one does to prevent the elevation of the ribs in painful breathing.† The breathing, too, although so apparently easy as to be almost imperceptible, was found on close observation difficult and suffocating. There was a subdued working of the muscles of the throat, and inspiration was either wholly suspended at times, or occurred in short and indistinguishable catches, until a deep sigh brought with it general relaxation and relief. It was usually a full week before she recovered from the ill effects of these attempts to move her from her bed, but even turning her head on the pillow for a few minutes brought on such convulsive coughing and subsequent sinking, that she could not utter an audible whisper, and would lie for hours in a state of the most extreme exhaustion.

As it seemed that her sufferings could now at all events admit of little increase, an issue was inserted at each side of the second cervical vertebra, by which the pain of the forehead, face, and scalp was considerably relieved. All the parts above the issue, she remarked, were better; the other symptoms were little altered. The fourth year of her suffer-

* Good evidence of her deplorable state of debility.

† Persistent spasm after the effort to make the body rigid.

ings, while drinking one evening, she felt a sensation as if something gave way in her chest—as if the band from the upper part of the sternum, before spoken of, had snapped.* She was instantly attacked with oppression, a sense of burning and pain in the throat and chest, croupy breathing, total loss of speech, and blindness of the left eye, with numbness and paralysis of the left arm; she had also a sense of numbness extending from the point in the chest where she felt the band snap, across to the shoulder, and down the left arm to the fingers. She had, too, difficulty in swallowing,† and violent pain, straining, and retching when the smallest quantity of food or drink reached the stomach. There was some swelling and excessive tenderness of stomach, with violent cramp at intervals, which extended down to the limbs and knees. The secretion of urine was suppressed, no more than half an ounce having passed in twenty-four hours.‡ There was no tenderness or fulness in the pubic region.

After the lapse of some days, during which croton oil and other diuretics had been freely used, the eye partly recovered its power, and the action of the kidney was restored. Blisters to the throat and neck were of very little advantage; but on applying one to the occiput, some degree of voice was manifestly recovered, and the power of swallowing perfectly; the fingers of the paralysed arm also seemed to acquire a little motion. The paralysis had been discovered to affect the whole side. In six months the arm had attained much strength, and she could speak in a low whisper, though with pain and difficulty, &c. &c. Five years after this, the lady was mending, and spoke well, was cheerful, and anticipated a perfect recovery.

* Paralysis of lesser pectoral.

† Pharyngeal muscles affected.

‡ Organic nervous system affected.

I have quoted this case at great length because it shows better than any other I could meet with, the immense amount of suffering entailed on a patient by a faulty diagnosis and consequent misdirection of the plan of treatment. The patient at the first was simply suffering from debility and fatigue consequent upon nursing, and from agitation of mind produced by witnessing the convulsive struggles of her dying mother; and a few days' perfect quiet, with an opiate occasionally to produce sleep, would have cured her effectually. But the depressing measures adopted had the effect of reducing her strength, and keeping up the irritability of the nervous and muscular systems to such an extent as to produce new symptoms of alarming severity; and from this period the history of the case is a record of pains produced in one set of muscles or another, of signs indicating irritability of the sensitive, muscular, organic and mental nervous systems, of irritability of the stomach, heart, bowels, bladder, &c., of spasms of the respiratory muscles and diaphragm, and it terminates in giving evidence of cerebral hæmorrhage or softening, occurrences to which constitutional debility eminently tends. Thus, by mistaken views of diagnosis and treatment, the patient instead of finding relief from medical skill became a perfect wreck. The means adopted for her cure were those most calculated to increase and prolong her sufferings, and we should not have been at all surprised if the report had terminated by saying that the patient had at last abandoned medical aid and recovered her health at some seaside residence.

Nor is it uninteresting to note how steadily the sufferings augmented in proportion to the patient's debility. It would seem as if, with the exhaustion produced, the processes both of digestion and assimilation were defective, and the patient was undergoing the pains of a lingering death, by what

Liebig calls "eremacausis," or slow combustion, a process which may be accompanied by sufferings quite as intense as those produced by a literal burning up of the body.

We have thus attempted to show :—

1. That the symptoms attributable to "spinal irritation" have nothing to do with the spinal cord, or the nerves arising from it.

2. That the majority, if not the whole of them, are due essentially to a cause similar to that which produces the spinal tenderness.

3. That the spinal tenderness results from over-straining of the fibrous origins of the muscles attached to the spinous processes.

4. That the spinal tenderness is analogous to that experienced at the origin and insertion of muscles in other parts of the body.

5. That the weaker the individual is, the greater is the tendency to fibrous pain.

6. That the most common causes of the pain and tenderness, in any part of the muscles, are constitutional or acquired debility, coupled with too great an amount of work. Therefore, that as soon as the diagnosis of muscular pain is made, the next inquiry should be into the causes which have produced the debility, supposing that no extra exertion has been made.

7. That debility increases equally the irritability of the muscular and the nervous systems.

8. That before hysteria can manifest its presence there must be debility from some cause or other.

9. That that debility may show itself in the muscular or nervous system, or both.

10. That debility affects the nervous system as a whole or in sections—*i. e.* mental, sensitive, motor, organic.

11. That functional affections in any one or more of these parts have long been recognised as emanating from deficient vital power.

12. That anything which deteriorates the vital power has a direct tendency to aggravate the complaints referred to.

13. That muscular and nervous irritability are subject to the same laws, and that the remarks applicable to the one are, *mutatis mutandis*, applicable to the other.

14. That many symptoms hitherto supposed to be due to hysteria, spinal irritation or nervous irritability, to pleurisy, peritonitis, uterine, hepatic, or stomachic disease, are essentially muscular in their origin, and are produced by fatigue in enfeebled constitutions, and that the general opinions respecting the diagnosis of hysterical symptoms require a complete remodelling.

15. That the link connecting hysteria with spinal disorders is constitutional or acquired debility.

16. That, as regards curious mental phenomena, excess of sensibility in the nerves of common or special sensation, or a propensity to spasmodic actions and to irregular organic phenomena, there is no essential distinction; they are simply different facets of the same die.

17. That the essential distinction between genuine hysterical and muscular affections is, that a large amount of bodily rest is necessary for the cure of the latter, while it is not so absolutely requisite for the former. That the former are difficult, the latter comparatively easy of cure.

18. That, for the future, it will be necessary to discriminate between pain arising from muscular fatigue, cramp, or fibrous stretching, genuine neuralgia, and hysteria, and that there will be neither precision in diction nor clear idea of treatment until the distinction is made.

We may now proceed to consider the plan of treatment necessarily resulting from these views.

CHAPTER XIX.

The value of a medical theory judged by the treatment it involves—The treatment proposed in accordance with recognised facts—Sydenham's maxim—Danger of departing from it—Embraced by the homœopaths—Principle embodied in their theory—Reference to "sympathetic powder"—Law enunciated—Treatment in recent cases—In confirmed—In recent cases, to husband strength—To increase it—Difficulty in persuading patients to do so—Causes—The amount of labour or exertion is to be reduced—An increased amount of rest is to be enforced—Amount of work gone through by women in their households—Rules regarding rest—It must be in the recumbent posture, and not too prolonged—Opiates, if necessary, at night—Elastic belt or corset—Any drain upon the system to be checked—The strength to be increased—Change of air—Its value considered—Change of habits as well as of scene required—Exercise in the open air—Its importance discussed—Difference between the open air of towns and the country—The diet must be generous and nutritious—The supply of food should equal the demand of the system—A weak stomach cannot digest strong foods—Influence of tonics, wine, steel, &c.—Wine assists the vital powers—Is not a substitute for food—Food recommended—Things to be avoided—Tea often prejudicial—Why baths, &c.—Purgatives to be shunned as a rule—They produce flatulence—Observations on their use—A daily motion unnecessary—Cod-oil, steel, bitters, quinine, and opium combined—Any special sources of irritation are to be investigated, and if possible cured.

WHENEVER any author propounds a new medical theory, the Profession commence their examination into its value by ascertaining the influence it has upon "treatment;" and if the latter seems to be inconsistent with previously reliable knowledge, they reject the former almost without a single consideration. If the new theory merely leads to a novel classification of facts, or a fresh nomenclature of disease,

without attempting to meddle with treatment, the speculations of the author fall upon equally careless ears. But where the treatment proposed is one evidently based upon principles of known worth and universal application, the theory generally receives a fair hearing, and is discussed in an anxious spirit of inquiry.

It was not, therefore, until I had instituted a full investigation of the bearing of the preceding views upon the treatment of nervous affections, and had made a careful annotation of the plan I proposed, with the circumstances under which bad nervous complaints have hitherto received their cure, that I ventured to indulge the idea of promulgating them to my professional brethren.

I have already so frequently referred to the present most approved modes of treating neuralgia, insanity, convulsions, chorea, hysteria, and the like, that I need only recapitulate and "codify" them, by saying that they all are intended to *give vigour to the constitution*.

This is precisely the plan to which the foregoing observations and reasoning tend. *We must medicate the constitution and restore it to health*. This must be the great end always in our minds, rather than the conquering of some particular symptom.

At the risk of being thought irrelevant, I will tell the following anecdote, as illustrating a frame of mind we frequently meet with in practice:—A late physician in this town, of great reading, and one who aspired to literary fame, was called in consultation to see a patient who was very ill. The tongue was greatly furred. "We must clean the tongue" was the medical dictum. Some medicine was ordered with that special end. In three days after, the surgeon meeting the physician, remarked, "Well, doctor, our patient is dead!"—"Never mind," was the reply, "we cleaned the tongue!!"

I believe it to be by no means an uncommon thing for the practitioner, in his attempt to cure a symptom or a disease, to lay the foundation of another, and the patient actually dies that he may live ! Thus, for example, I have heard a sexagenarian surgeon remark of a mutual friend, deceased, " Ah, poor fellow, he had an attack of pneumonia ; you know I was obliged to bleed him, and he had not stamina for it, so he sank under it !"

It is a maxim in the world, " Don't kill yourself to keep yourself ;" and it certainly ought to be so in physic (reading " your patient" for " yourself").

Sydenham, the English Hippocrates, laid down the law—" Primum est ut non nocere ;" or, to translate freely, the physician must do as little harm to the constitution as he possibly can.

Unfortunately for the advancement of true medical science, the so-called allopathists have neglected this principle too much, and a most formidable heresy has consequently sprung up, the more dangerous as it comes under a semi-scientific garb. In it the patient is left to nature, but not to poor unaided nature, whose propensity during illness is to despond and make matters worse, but to bright, sparkling, hopeful nature, whose fond propensity it is to see, in every " medicine" swallowed, a step made in advance towards health. " A rose by any other name would smell as sweet ;" and to a sick man " medicine" is still " medicine," whether it be a grain of mercury, or its twentieth dilution by the homœopathists. " Graphite," " kali carbonicum," and " calx carbonica," of any dilution will operate as " medicine," if ordered by a " doctor" and dispensed by a " chemist ;" but the *same dose* taken by licking a smooth oyster-shell or a bit of mother-of-pearl, or by touching the tongue with a lead pencil, would be utterly inert !

But the homœopathists not only do no mischief (of course I am speaking generally), they attempt, in addition, to do good, by giving cod oil and other tonics, which are introduced under the specious pretence of getting the patient into condition for the other medicines to operate! The result is a great amount of success; and this is attributed to the drugs, notwithstanding their infinitesimal dilutions. But false as is the theory, it enwraps a great truth—a truth which must force itself, ere long, on the minds of all thinking people. The old “weapon-salve” was used with wonderful and mysterious success for a whole century, ere the principle of healing wounds by the first intention was recognised; and it may be a century from the rise of the system of homœopathy before its principle is understood and generally recognised—namely, *that as deficient or defective nutrition, or overpowered vital force, is the cause of the manifestation of disease, so a restoration of the healthy tone is necessary for recovery; and that everything which deteriorates the constitutional powers necessarily protracts the period required for restoration.**

* In speaking thus of homœopathy, I wish to steer equally clear of the appearance of unfairly ridiculing it on the one side, and of the idea that I have the smallest leaning towards it on the other. In my capacity of lecturer, first on materia medica and therapeutics, and subsequently on the principles and practice of medicine, I honestly endeavoured to study the subject, both by reading and conversation with its professors. One of them, who is now a most popular homœopathic physician, was, as I have before stated, made a convert from Allopathy, in consequence of being induced to try globules in a case of what he considered puerperal peritonitis. The woman rapidly recovered. From the history of the case, and from having now met with many similar ones, I feel sure that the disease was purely myalgic, and therefore one which would be benefited by simple rest, and which would have been aggravated by the very severe measures once so much in vogue for the treatment of puerperal peritonitis. I ascertained, that where I had been in the habit of administering no medicine at all, “the doctrine” prescribed globules; where I recommended generous living and tonics, “the doctrine” did so too; where there was a possibility of art doing good and not harm, I found that art was used,

In the treatment of affections of the nervous system, these principles must never be lost sight of. They must form the main trunk, and all other things must be considered as branches solely. The physician must resemble a guide who has to conduct his patient across a difficult country to a certain goal—health; it may be that his route will at times deviate, as he has to turn this rock, or cross that river, but every *détour* ought to be subservient to the end in view. How miserable the guide who leaves his convoy further away from his destination at the end than at the beginning of his journey!

The broad stream, the main channel of “principles” is easily discovered; it is far more difficult to steer with a pilot’s

quite irrespective of Hahnemann. I also found that the principle of “laissez aller” was frequently productive of great evil; but these cases were so numerically few, in comparison with the others, that they were considered as deplorable accidents (as are deaths by chloroform), and not necessary occurrences. It was clear that homœopathy shone brightly only when it was contrasted with the so-called heroic treatment of the hospital, army, and naval doctors of its early days. Its own light resembled the electric one, which requires a constant adjustment of the charcoal points to keep it up. At one time the infinitesimal dose, with the “virtue of the drug, magnified by trituration,” was the sun of the system; but by and by it paled its fire, and gave way to another, which is already on the wane. Harvey’s memory, and the opposition made to Jenner’s views, were used as a lever to move the world; but a recollection of Sir Kenelm Digby (*vide* “Lay of the Last Minstrel,” note 8 to canto iv.) broke the fulcrum. Nevertheless, it was clear that there was a truth to be sought, as a diamond amongst quartz pebbles. Error may bring us truth just as an icy glacier may bring with it a precious stone. What was it? It was this: Did we know, in reality, as much as we ought of the natural history of disease? This seemed to afford a clue by which to enter the labyrinth of error. I sedulously followed it; and I can assure those who choose to take up the same thread, that it will bring them out at last into a fair hall, where there are no “Mene, Mene, Tekels” which require a Daniel to interpret; where the cobwebs of false theories cannot thrive; and where the most stylishly dressed system must immediately depose its finery, and stand in naked guise of truth or falsehood. Outside that hall many a “pathy” will stand and look in, but never enter.

nerve through all the varied shoals so constantly occurring in the nervous branch of the river of life.

We propose, in the first place, to consider the principal line of treatment to be adopted in ordinary cases ;

And, secondly, the one most likely to be successful in cases like the one we have quoted from Griffin ; or where the practitioner is not consulted until the disease is fairly rooted, and the strength of the constitution greatly impaired.

1. The broad principles of treatment to be adopted in the affections we have referred to are—

a. To husband the existing amount of constitutional strength as far as possible.

b. To increase it.

a. It is far easier to know the desiderata than to induce our patients to comply with our recommendations. For this we must be prepared. One cannot take sufficient rest, for the household duties fall upon her, and she is unable to give them up, or it may be that she is naturally fidgety, anxious, or active; or, even if she is willing to intermit her duties for a time, she may be too poor to provide a substitute. Another will continue to nurse till she is physically incapacitated, putting, in her own estimation, present suffering against a probable future contingency, involving greater pain and more expense. Another patient (a very common occurrence) has formed her notions from some domestic medicine-book, some nurse, or some newspaper paragraphs, whilst she has been in health. When she is in any way debilitated, she is too weak to think, and the mental labour required to take up a new train of thought, hopes, and confidence is too great for her intellectual powers, reduced as they are from their pristine vigour. In her own idea the patient is firm, in the opinion of the healthy lookers-on she is obstinate in her resolves, and actually prefers pain and mental quiescence to relief and

mental violence. Those who have had much practice will readily recognise this as a main obstruction to complete success.

(1.) The strength is to be husbanded by diminishing the amount of labour undertaken, whether that is mental or bodily, or both.

In this the physician can do little more than advise with the utmost weight of his professional character; but he may effect the same object by insisting *upon an increased amount of rest.*

Few persons, till they give their unbiassed attention to it, have any definite idea of the amazing amount of work women in the middle and lower classes of life get through day by day. From six or eight in the morning till ten or twelve at night they are incessantly at work,—washing, dressing, scouring, carrying, cleaning, making beds, shaking carpets, sweeping floors, ironing, sewing, darning, knitting, nursing, playing with children, teaching infants to walk, carrying them in their arms, cooking, &c. All these require muscular exertion, and this is sometimes excessive in degree, yet their very insignificance and their daily occurrence cause them to be ignored. The labourer, the man of business, the doctor, know little of them, for they are performed out of his sight. We all see our rooms pretty nearly in the same condition, our linen, &c., in the proper state, and never care about—for we do not know—the trouble required even in these small details.* A woman herself, knowing that some of her companions in sex get through their duties without suffering, imagines that the same duties can have no influence over her health or feelings, and she attributes her complaints not to

* As the proverb says—

“ Man’s labour ends at set of sun,
But woman’s work is never done.”

what she has to do, but to something that prevents her doing them, and which may be removed by art or skill ; and as the abdominal muscles are commonly affected, the patient fancies the liver or the bowels must be out of order, takes blue pill and other aperients, and thus makes matters worse. The only way to lighten labour for those who have such constant occupation is to insist on a daily rest in the recumbent posture for at least half an hour, and more if necessary, in the middle of the day.

Rest, like all other means of cure, is liable to abuse in various ways.

When excessive and long-continued, it weakens the muscular system from simple want of exercise (*e. g.* the muscles of a paralysed limb ultimately become fat, and lose all contractility whatever, when they are allowed to remain quiet, but continue healthy if they are stimulated daily by galvanic shocks).

Rest, on the other hand, may be insufficient ; it may be taken in a chair, or on a sofa, instead of on a bed, and with such a style of reading, writing, or conversation, to fill up the time, that the mental exertion is actually greater in its effects on the system than the bodily fatigue it supplants. For rest to be of any use, the patient should retire to her bedroom, at two o'clock every day, and lie on her back on the bed for a good half-hour, with no other companion than a readable book. If there is much constitutional debility, another such rest is required about seven o'clock.

This method of husbanding strength is the greatest possible assistance and comfort to those who are nursing or are pregnant, and prevents that severe back-ache which so distresses ladies under these circumstances.

The use of a well-made corset or elastic waist-belt gives great support and assistance.

Sleep at night is indispensable, and, if necessary, must be secured by opiates. In procuring nocturnal sleep, it is very useful to remember that a person may be too weak to sleep, and consequently that a light repast, with some ale, wine, or spirit and water, is of great service. Where these are objected to, it is well to combine an opiate with quinine or some other tonic.

The use of an arm-chair during the day should be recommended.

(2.) The strength is to be husbanded by diminishing discharges of any kind, such as diarrhœa, diuresis, menorrhagia, loss of blood in any way, leucorrhœa, prolonged lactation, and the like, into the particulars of which it is not necessary to enter.

b. The strength must be increased if possible. To effect this the means we have at our command are comparatively few; they consist—

(1.) Change of air and scene, which operates in two ways,—by removing the patient from exhausting labour, and by placing her or him in the most favourable condition for improving health. It is the common opinion, and in the main the most correct one, that the change must be from a bad air, as that of a town, to the purer air of the country or the seaside; but experience shows that a change from the country to a comparatively unhealthy town is productive of good, whenever it is attended with absence of excessive mental or bodily labour, and the presence of pleasant associations and companions. Change of air is of little use when the patient carries with him all the habits, &c., of home. It is of small advantage for a worn-down mother to go to the seaside for her own health, and to take with her the most chargeable of her young ones; or for an author to resort to the Lake district with his pens, ink, and paper in undiminished array.

Equally useless is it for the victim of hysteria to change the ball-rooms, theatres, concerts, and operas, &c., of the town, for the assemblies, dinner parties, picnics, &c., of the country.

(2.) Adequate exercise in the open air, and in a locality where the atmosphere is pure, is advisable.

Every clause in this sentence is important; for if the exercise be excessive, the strength is overtaxed, the power of digestion reduced, old muscular pains increased, and new ones produced; if the exercise be taken in the house, it is simply exhaustive, and of course likely to increase the troubles already existing. There is no difficulty in persuading oneself of this fact; for amongst the chief sufferers from spinal irritation, and other nervous and muscular affections, housemaids are the most prominent, and the amount of exercise they have daily is almost proverbial. Exercise in the open air of a large town is equally exhausting with that in the house, as is readily proved by the lassitude and debility shown after the day's labour by most of those who lead an active life in towns. In Liverpool there must be many who have felt jaded and tired out while walking in the streets, but who, as soon as they have reached New Brighton, or have "topped" the Bidston range of hills, away from smoke and other town influences and associations, immediately forget their fatigue, and enjoy an evening stroll. They may then come home, pleased with their excursion, and meditating a return; but as soon as they re-enter the old familiar streets, weakness seizes them, and they recognise at once the difference between town and country air. Exercise in a town produces muscular weakness, loss of appetite, indigestion, and a craving for stimulants. In the country it produces a healthy appetite and a good digestion; it promotes the circulation, increases the oxygenation of the blood, exalts the vital powers, and increases muscular strength.

Exercise must invariably be adapted to the condition of the patient; and where walking is too much for the strength, a carriage or quiet horse must be used.

(3.) The diet must be generous, adequate, and digestible, with such intervals between meals that, while there is sufficient time on the one hand for the stomach to rest, there is not sufficient to enfeeble it on the other. The principal meal of the day must be taken early, *i. e.* at one or two o'clock, before the stomach is weakened by fatigue and fasting. This rule holds good for all persons, except those whose appetite and digestion are so good that they can take at breakfast time a meal sufficient to last them for six or seven hours. Females can both eat more and digest better when they dine early, than when they lunch lightly and put off dinner till late in the afternoon. The stomach being in better condition to digest in the early part of the day, can do it with far less "oppression" and "drowsiness" than that at a subsequent period, and a person at an early dinner can dispense with stimulants which he can scarcely do without when his meal is put off until evening. Exercise or work can be done after an early meal, but prolonged rest is necessary after a late one. Long fasts are very prejudicial. This rule is of the utmost importance, and well deserves all the attention the profession can bestow upon it. Nothing is of greater moment than so to regulate the supply of food that it may equal the demand created by muscular exertion and the other exigencies of the body. A young lady whose habits are sedentary requires far less food than another whose habits are active to a high degree; and yet it too often happens that the former feeds largely, and the latter very sparingly. When the body is exhausted by labour, the stomach takes part in the debility, and is unable to digest the ordinary food employed; the want of appropriate nourishment, in its turn, increases the patient's

weakness, and thus the two may go on gradually aggravating each other.

Whenever the stomach is thus weakened, it must be our endeavour to try and increase its digestive power, and to employ such food as will be both nutritious and digestible.

The first end is best attained by the use of wine, steel, bitters, &c.* The administration of wine must ever be regulated by the effect it produces. At first, when the patient is exhausted, a very small quantity is sufficient to produce uncomfortable feelings in the head, and it is therefore too often cast aside as "not agreeing;" this, however, forms no impediment against its continued employment, but it must be combined with water, or given with some comparatively solid food. The most favourite plan appears to be to beat it up with the yolk of an egg and a little sugar. This makes the wine less likely to intoxicate, as the patient is taking food as well as stimulus.

It must ever be borne in mind, that wine alone is not strengthening, except to a limited extent. It should be given to assist the powers of nature, not as a substitute for food; to effect this a certain amount, varying in every patient, is necessary; beyond that amount wine is of no service. As a medicine, wine is to be used quite irrespective of the time of day or common conventional rules; it should be taken shortly after the morning meal, before or at the noon meal, and again at or after the evening one.

The choice of the wine may safely be left to the patients; but it must be borne in mind that, as a general rule, the

* When there is indigestion as a prominent symptom, it will be well, in addition to other means, to administer a dose of pepsin with each meal. That made from the stomach of the pig is considered, from physiological considerations, to be the best.

French and Rhenish wines are not sufficiently strong to be stimulating.*

Where wine "turns sour" on the stomach, a proportionate quantity of brandy with water may be used instead.

On the whole, wine or other alcoholic stimulant is preferable to, and far more palatable than steel or bitters.

With regard to the choice of food, it is to be remarked that eggs, bread, and milk, in the various forms that the artistic cook is able to present them, are the most digestible and nutritious of our ordinary viands; that soups† are preferable to farinaceous slops, and solid food to liquid nourishment. But there are certain things to be avoided, amongst which, unfortunately, comes woman's greatest luxury—tea; of all the articles of diet in common use, tea is the most prejudicial to the delicate stomach. It produces flatulence, and weakens the digestive powers. It is to be doubted whether this effect

* Whenever there is much flatulence and a tendency to vomiting, champagne or other sparkling wines are preferable to any others. The amount required varies from a pint to a quart bottle daily.

† Of all fluid nutriments, beef-tea is the most popular; but it is one which varies in value according to the skill and experience of the cook. After having given great attention to the subject, I venture to put forward the following directions as being the most certain of success; they were communicated by a young lady who was nursing her delicate mother with consummate judgment:—

Two pounds of *good* lean beef-steak are to be *minced* small and placed in a brown jar; two pints of boiling water are then to be poured over them, and the whole well stirred: *add nothing more*. Cover the jar, and stew in a slow oven, stirring frequently: an hour or two suffices. If the beef-tea is required very strong, the water is allowed to evaporate, and the stewing process is prolonged, say from six to ten hours. Stir up and pour off the fluid, not straining. Skim off the fat.

To prepare for use, add salt and an onion to the quantity required, and raise it to the boiling point.

If an onion is unpalatable, celery, ketchup, or any other flavour may be added; or salt alone may be used.

The deliciousness of beef-tea thus prepared exceeds anything I have yet seen in a sick-room.

is due to the heat at which the fluid is generally imbibed, to the milk, the sugar, or to the tea itself. The first is the most probable; for, as far as my experience has gone, those who have suffered most from tea have taken it very hot and very weak. Cocoa, or coffee, or milk-and-water, answer for substitutes.

It is very prejudicial to drink large quantities of cold water, which has a direct tendency to produce emaciation.

(4.) There are few things more popular for increasing the tone of the system than baths, and the variety of these is infinite. We find persons advocating sea-bathing, bathing in salt or sea-water, the plunge-bath, the sitz-bath, the douche, the wet sheet, the hot-bath, the warm-bath, the cool-bath, the vapour-bath, and the like. Others eschew bathing, and plead for cold sponging daily.

All do good when appropriate, and when not carried too far: they do positive harm when abused. Thus, one lad gains benefit from a plunge-bath when he remains in it a few minutes only; another, who remains in it for an hour, swimming or otherwise exerting himself, is positively injured. The same may be said of sea-bathing: one lady has her single dip, and feels a warm glow follow; another enjoys a closer acquaintance with the waves, and does not leave them till starved and blue with cold.

Cold sponging is open to the same remarks: it does good to the strong, but is prejudicial to the weak, whose small natural heat it diminishes for half the day. If there is much vigour in the system, judicious bathing will increase it; if there is little, it will reduce it still more.

Of all baths, the shower-bath is the most useful, especially in hysteria. A person cannot immoderately indulge in it—it is soon over; it produces a gentle shock to the nervous system, is commonly followed by a pleasant glow, and tends more

than any other thing to restore tone to the constitution generally.

It never, however, does good when the patient is habitually "cold-blooded," and is made colder by its use.

In general terms, we may say that the value of any bath is proportionate to the reaction it produces; it will improve constitutional power, but will not generate it.

c. With respect to medicines we need not say much: *purgatives* are to be scrupulously avoided, or, if administered, they must be of the mildest form and combined with bitter tonics, and not given oftener than once in three or four days; they may for a time relieve the bowels, but after their stimulus comes corresponding debility, and the patient suffers from flatulence and intestinal atony.* If the bowels are extremely

* It was my lot, two winters ago, to travel on the Continent with a gentleman who was in search of health. He had been seriously threatened with phthisis, and suffered frequently from spasmodic asthma. His appetite was good, but his stomach and bowels were flatulent. As long as we were quiet at any town the asthma was absent, but it came on invariably the first night after we had migrated to another locality, and then subsided. At first he used to treat himself by aperients and meagre fare, and with apparent success, but the influence of this gradually diminished, and at last, during a "vetturino" journey of ten days' duration, it was clear, even to himself, that the principle adopted was unsound, for the asthma was habitual and the weakness extreme. By this time I had learned to read the symptoms aright. A day's journey fatigued the system, without, however, inducing the sensation of weariness; the debilitated stomach could not do its ordinary business; the French wines were not stimulating enough to give it transient tone (brandy was distasteful). The result was flatulent indigestion. His purgatives were irritants, and compelled intestinal contraction and the evacuation of the flatus and feces; with diminished flatulence came increased mobility of the diaphragm and less distress in breathing. But the second, third, and fourth days after the aperients, the amount of general flatulence increased, being the greatest at first, and gradually going away. At first the milder food, being easily digestible, prevented the recurrence of flatulence and asthma; but when the use of purgatives had been continued for some time, everything was too much for the debilitated digestion. Despairing now of his own plan, my companion adopted mine. After each meal he was to have a glass of brandy-and-

torpid, they must be "solicited" by large draughts of pure or slightly saline water taken in the morning on an empty stomach, and by kneading or shampooing after breakfast; by the use of bran-bread, figs, or oatmeal; or they may be relieved at stated intervals by warm-water enemata.

The dogma of the ancients, that the bowels ought to be "opened" daily, is one of by no means universal appliance. As a matter of comfort it is true, inasmuch as a prolonged sojourn in the rectum makes the *fæces* so hard and bulky, that much pain and inconvenience result from it when the evacuation does take place; but, as a matter of health, there are many who can go for two or three days without discomfort; some in whom a daily evacuation has a debilitating effect, and others who have remained without any "motion" for ten days or more, and yet have not experienced any prejudicial effect.

Whenever experience proves that a patient is better or more comfortable for a "daily visit," and this cannot be pro-

water as a "dram," to give up aperients, and live generously. Fortunate circumstances enabled him to substitute port wine for brandy, and the benefit of the change of plan was immediate. A residence for a few weeks at Nice repaired his strength, and for the next six months, though our amount of travelling was undiminished, he had neither indigestion nor asthma, except on one occasion, when, after having had a long day's sight-seeing, he followed it by a good dinner and twenty hours' riding over a long and rugged mountain pass.

After his return to England he remained well for about five months, but his vigour slowly diminished. After a dinner-party a fit of asthma came on with great severity, and he resorted to aperients once again; they gave him a day's comfort, but were followed by three days' discomfort. He took more pills, had a few hours' relief, and then so serious an attack that he sent for me to meet his ordinary attendant. It was the old story over again. We "tided over" the bad days produced by the medicine, with fetid spirit of ammonia, &c., and then began cautiously with generous diet, and had the same success as before.

Irritating aperients are to weakly bowels as a spur is to a jaded horse—they give a momentary briskness, to be followed by increased exhaustion.

cured without medicine, Dr. Rigby speaks very highly of Dr. Jephson's laxative—a combination of sulphate of iron, sulphate of magnesia, and dilute sulphuric acid. It keeps the bowels comfortably “open,” and at the same time increases rather than diminishes the constitutional powers.

It must ever be borne in mind that constipation, “*per se*,” is not a disease, and that a daily “visit” is not a proof of health; consequently, we must not treat a patient with the former as if he were about to die of hernia, or consider that he cannot get well unless his bowels are moved daily.

Tonics are of more general application, but they are, at best, mere substitutes for such hygienic remedies as change of air, &c.

Amongst the most valuable are glycerine, cod-oil, and steel, singly or combined. Where the stomach can bear their united administration there is no medicine at all to be compared with them.

It may not be considered impertinent if I give an account of the manner I recommend for the conjoint use of cod-oil and steel:—One wine-glass is to be prepared with fifteen minims of the tincture of the sesquichloride of iron and an ounce and a half of water, and another with five minims of the tincture with about six drachms of water, and the dose of oil (varying from a tea to a table-spoonful). The patient is then to sip from the first glass, swallow the contents of the second, and then finish off the first. In this way the oil is taken without leaving any disagreeable taste, &c., in the mouth. Where the steel is not borne in any quantity, brandy and water may be advantageously substituted.* The dose should be taken

* It is necessary that I should add here that steel, though the most useful of all the tonics, is not entirely free from inconveniences. Its taste and the effect it has upon the teeth make some dislike it, but this may be obviated. The worst effect I have seen from it is that some are as susceptible to its presence as others are to mercury. I have now collected

three times a day, and shortly after a meal. Where the oil is not borne, the quantity of steel may be increased. Glycerine, which can now be procured very pure and scentless, is I find as superior to cod-oil in value as a tonic, as it is superior to its pleasantness as a medicine.

Next to these two remedies comes quinine; when genuine neuralgia is present, it may be advantageously combined with opium or morphia. In the use of these remedies there is still room for considerable improvement. In small doses they will produce their effect slowly; in full doses, such as three grains of quinine, and a quarter or a third of a grain of morphia, repeated every six hours, they will commonly cure simple neuralgia in a day. If they fail to cure in two days, or if from any cause the complaint returns after apparent cure, the ultimate recovery will be slow, and the cause of the neuralgia is to be sought in an offending tooth or some local irritation.

That *opium* in excess is weakening we see from the "seediness," nausea, and faintness which follow its primary action, by the general condition of opium-eaters, and the intense and sometimes fatal exhaustion that follows a day or two after a poisonous dose has been taken and recovered from. It must not, therefore, be indulged in more than can be helped, and when administered must be combined with stimuli, nutriment, or quinine.

Hyoscyamus, conium, belladonna, &c., are by no means equivalent to opium, and I have never met with a single instance in which their internal use has been followed by results similar to those following the use of opium: they are useful as outward applications.

accounts of six cases in which it has produced salivation, attended with *all* the symptoms attending mercurial action. In one case a tannin gargle was used, and the patient for about three weeks spat it out again black as ink—showing the long retention of the ferruginous substance in the salivary glands.

A strong solution of morphia—one, two, three, or four grains to the ounce of water—applied as “water dressing,” is of great service in the relief of local pain. If a blister be previously produced, and morphia be applied to the raw surface, the effect is greater, for the patient is often narcotized, but the pain is considerable in the sore, and lasts for half an hour or more. An injection of the solution beneath the cutis has been recommended, and may be adopted with advantage when lighter means have failed. When there is no horror of “instruments” it would be well to commence with it.

After these remedies come the more indifferent ones, tannin, gallic acid, zinc, valerian, manganese, &c. &c.

The next point to be attended to, is to remove any morbid condition of the uterus, or any other thing that may act as an irritant.

Bad teeth are very common causes of neuralgia. The following is an instructive case, in which are exemplified some points we have before laid stress on; for here was a lady with an ever-present cause of irritation, suffering at long intervals only, and cured for a time by medicating the constitution, *the irritation still remaining*. A married lady, of somewhat delicate constitution, complained of hemicrania; no cause could be detected; there was no loss of appetite, no exhausting discharge. Under the use of quinine she was cured in twenty hours. In a few weeks she had tic-doloureux in the eyeball, which assumed an intermitting character. This gave way to warmth, steel, and the use of Pulvermacher's chain. In a few weeks more the tic attacked first one cheek and then the other. A tooth was now found to be tender, but to the eye it appeared perfectly healthy, and there was no purulent discharge from the alveolus. Quinine and galvanism again effected a cure. In a few weeks more the tic affected the lower jaw, and was cured in an instant by an electric shock.

By and by the whole teeth ached, and were excessively tender. Steel in full doses cured this (morphia was tried, but disagreed with the stomach). At the end of about two years, from the time the first symptoms were complained of, the patient was induced to part with the tender tooth, a back molar; a curious round, smooth hole was found on the posterior aspect, and out of sight, which went as far as the pulp. The pains at once disappeared, and never returned. I have known many other instances in which sources of irritation (in one case there was an ulcer on the os uteri) have remained inoperative for a long period, and have at last given rise to certain hysterical or neuralgic symptoms, which have subsided under the use of tonics and narcotics, the source of irritation still remaining.

An irritant may be compared to some morbid poison, such as the typhoid or erysipelalous, which is readily resisted by the strong, while the weak succumb under it. Ninety thousand men before Sebastopol were exposed to the cause of typhus, yet not more than 16,000 died during the whole campaign of actual disease. The first winter thousands were in hospital, the second saw the army more healthy than at home. In the one case the constitutional forces of the men were at a very low ebb, in the other they were at their highest. In like manner a source of irritation is only an irritant when the system is low and weak.

These words seem to imply a contradiction in terms, but there are few who do not readily recognise the fact, that what would seriously annoy and vex them at one period, would have no influence upon them at another, and for all practical purposes we may consider a person's temper and his nervous system to be closely analogous.

If any organic uterine affection exists, appropriate remedies must be employed; but as a general rule, constitutional

means are to be preferred to local ones, and the latter only resorted to when the former have failed.

Profuse leucorrhœa is a common cause of debility, muscular and nervous affections. This is best treated, when habitual, by the cold hip-bath and the daily use of astringent applications. The best method to employ these is to use a sponge fastened on a sufficiently strong rod of gutta-percha, having a button at the end like that of a fencing-foil; the gum, being yielding, is far preferable to a piece of wood; the button prevents the sponge coming off. The instrument is first to be introduced moistened only with water, so as to clean the passage of all mucus; it is subsequently to be immersed in a strong solution of alum (an ounce to a pint of water), and slowly passed to the end of the vagina and withdrawn. The advantage of this plan over the use of injections is very marked.

Where the leucorrhœa comes on after the catamenial discharge, and is very profuse, a blister to the sacrum, and the internal use of copaiba in full doses, will often operate an immediate cure.

For fuller information on all these points, we must refer to obstetric writers.

CHAPTER XX.

Treatment of confirmed cases—Necessity for tact, knowledge, experience and confidence—The advantage of giving *definite* hopes—To impart these the doctor must have definite ideas—Influence of hope and despair—Examples—Influence of new remedies in the hands of their discoverers—Of their adopters—Application—Rest of body—Mind—The senses—Rest for the bowels—The stomach—The uterus—Nausea and vomiting to be relieved by champagne, chloroform, &c.—Anti-spasmodics are only of temporary utility—The mind is to be supported—Method of management—The proposed treatment in a bad case detailed—Conclusion.

WE now come to speak of the treatment of those cases in which the patient has been a long time suffering before coming under our care, and is in an extremely enfeebled condition, or the victim of some sort of indigestion, vomiting, &c.

Our mission here is one of extreme difficulty, and requires the greatest tact, knowledge, and firmness in its execution.

We must form to ourselves as accurate an estimate as possible of what art and medicine can effect; we must form a similar estimate of what medical science cannot do; and, above all things, we must consider the duration of time which must elapse ere the patient can be restored to perfect health; in other words, the physician must make a survey of the ground, and, like a medical Todleben, make his dispositions accordingly. As the engineer knows that fortifications or siege-works require time for their execution, which time he can estimate with tolerable precision, notwithstanding the probable frequent occurrence of sallies from the enemy, so

the practitioner ought to be able to tell with comparative accuracy the length of time required to regain health, even though he has to make allowances for accidents.

When this estimate has been made, the patient should be informed of it; and the grounds on which the judgment is formed should be explained, for mystification breeds mistrust in the patient's mind, either of ourselves or our profession. The advantage of a straightforward plan of proceeding has scarcely yet been sufficiently recognised. The practitioner has been contented with the expression of vague hopes of recovery; he says, perchance, to the sufferer, "You will be better *soon*," if you do this or that. His interpretation of the word, however, differs from that of the patient; his ideas are vague, and he feels he must clothe them in vague words. She, on the contrary, wants a definite idea, and suiting her thoughts to her wishes, she anticipates a restoration in a week, a fortnight, or a month. He has no fixed limit at all. With her, *to-morrow* is the day after the one in which the word was uttered; with him, *to-morrow* always means a day in prospect, and which may never come.

The effect of this practically is, that so long as the supposed definite period has not been reached, there is hope, confidence, and bright anticipation; as soon as it has passed without marked relief, there is distrust, depression, and distress.

If you tell the sufferer that she must expect one, two, or three months to elapse ere she recover; if you sketch the various phases of the complaint likely to be noticed; tell her the difficulties attending each new symptom, and the determination you have of still piloting her in an almost un-deviating line to health, you will receive a sustained confidence up to the period you have named. With a definite end in your own mind, you will soon generate a similar sted-

fastness in your patient, and this of itself is no slight element of cure.

The importance of the two opposite emotions, hope and despair, have long been recognised in the abstract; but they have not hitherto been sufficiently regarded in the treatment of disease.

We could give cases from our own experience in which patients given over, by their own doctor, to death, have gone steadily on the road thither, sped chiefly by his dictum, but who, on the apparition of another, whose face, at first grave, has become bright and confident, have incontinently left their beds, and entered with joyous vigour into the world again.

We could tell of the mortality of retreating armies, the tenacity of life in the victorious soldiery. We might recal to memory the wonderful influences of fanaticism and saintly intervention in the arrest of plague, fever, and "black death," and the heart-thrilling accounts of Lieutenant Pim's arrival on the scurvy-stricken seamen of M'Clure's ship; but we prefer dwelling on the more strictly practical points which so nearly concern "the Profession."

Let us turn to any book we will, which promulgates a new doctrine, or proposes a new means of curing disease, and we invariably find that the author has a larger amount of success than any of his followers. No matter whether the novelty consist in the use of some new medicine, such as hemlock, creosote, antimony, calomel, prussic acid, aconite, lobelia, ipecacuanha, cotyledon, brandy-and-salt, taraxacum, or the like,—or whether it consist in the adoption of a new system of cure, such as metallic tractorism, animal magnetism, electricity, galvanism, hypnotism, mesmerism, homœopathy, hydropathy, kinesipathy, the grape cure, the rarefied or condensed-air cure, Coffinism, Morisonianism, &c.,—or whether it is a reference of all complaints to a want of bile, or of

gastric juice, or to a redundance of bile, to irritation of the kidney or disease of the heart, to repressed itch or ulcer of the uterus,—it is of no matter whatever, so long as the patient is ignorant of the theory (or at any rate unable to judge correctly about its truth or falsehood), and the apostle of the new doctrine is ardent, enthusiastic, and confident! But when the theory is no longer a novelty, and its expounder lacks the fanatic energy of its founder, it naturally sinks, and often never to rise again. This unbounded trust reposed in every new doctrine is a frailty so well known, that it is a source of astonishment that so few practitioners recognise the truth it contains, or, if they do, act in accordance therewith.

Doctors too often visit their patients as a veterinary surgeon does a horse; they examine the symptoms, say a few words stereotyped on their tongue—"Oh, you will soon be better; I am going to send you some physic, which you will take according to directions;" and then, after having said to the friends whether or not there is danger to life, they go away, thinking that *the medicine* is to do the rest. The patient, knowing nothing herself of the cause of her suffering, and getting no explanation of it, broods over her troubles in her mind, and at the first failure of the drugs gives way to a species of despair. It may be there is no distrust of the physician—but there *is* distrust of *his art* or his medicines.

No wonder that disappointment follows.

For a doctor to be successful in nervous affections, he must be bright, firm, confident, and explicit; he must show that he knows the value of every symptom, and is able to explain it without a mist of words that mean nothing; he must prove that he knows what he has to do, and how to do it, the time it will require, and the difficulties he will meet with.

Such an one gains unlimited confidence; and his voice, his

face, his manner, are all of them worth many a dose of the most vivifying medicine.

Without this confidence success is extremely doubtful.

The bearing of this view is not, in some points, so satisfactory as could be wished for our profession, for it would dictate that the doctor who has not the power to inspire his patient with confidence, whether in himself or his art, is bound at once to consign him to another in the same or in a different line who has the envied faculty. The allopath must be willing to give way to the hydropath, the homœopath, or the Coffinite; and he will sometimes have to swallow the bitter pill of knowing that they have succeeded where he has failed. Under these circumstances, however, it is no small consolation to know that the confidence of a patient in a new system affords no valid argument in favour of its truth.*

* An amusing proof of this is to be seen in an episode in the history of nitrous oxide, or laughing-gas. Its wonderful properties led to a very natural expectation that it would be useful in medicine. A very distinguished physician, having first well primed his patient with accounts of the amazing results to be expected, brought a paralytic to the laboratory of Dr. Priestley, its discoverer. Many learned men were present, and amongst others (if I remember rightly) Dr. Wollaston. He wanted to ascertain if there would be any increase of temperature in the blood or body by the inhalation of a large dose of oxygen, and placed, for this purpose, a thermometer under the man's tongue. He, thinking that this was the process he had come for (it was in A.D. 1776), started, and said he felt the influence already, and could move his arm slightly. The doctors "tipped the wink" all round, and looked on with increasing interest and gravity. The *séance* lasted fifteen minutes, the thermometer was then removed, and the man went away improved. Every second day he came to have the same process repeated, and in six weeks was considered cured. Of course, had the man happened to have inhaled the gas, that would have got the credit.

The homœopathists are constantly putting forward the success attending their plan of treatment as a proof of the value of the globules they employ. But a great many instances have come to the author's knowledge where waggish friends have substituted inert globules for those the patient was in the habit of taking. [In

In the treatment, then, of confirmed nervous affections, we consider that confidence and hope hold the foremost place.

It is so difficult to assign the second place, that we must give the heads of other supplemental plans of treatment, without any very definite order.

Rest is of great importance—rest of body—even from conversation; rest of mind, rest for the nerves of special sensation, and rest from all irritants whatever; rest for a time from medicine.

For the first week “kitchen physic” alone is to be resorted to, and this is to be of the most judicious kind. Egg and wine, soup, beef-tea, fruits, good toasted cheese, Madeira, champagne, ice, soda-water and brandy, cream, jelly, blanc-

In one instance success followed the cheat for three months. The inert globules were made potent by *faith*. The patient was then told of the deceit; her faith was gone, and the potent globules became inert.

In another instance a cheat was *announced*, and the globules at once lost their power; but no substitution had been made! The infinitesimal dose was there in reality, but the *faith* in its value had departed.

In a third, a friend, weary of hearing the virtues of “nux,” and “calx carbonica,” and “mercurius,” provided himself with a lot of sugar-of-milk globules, and took an opportunity to empty the whole of the medicine armoury of his friend, and to replace the stock with his equally harmless supply. The zest with which he now listens to the marvels of “bryonia,” “graphite,” “arnica,” is a rich treat, and one that he has not yet spoiled by telling the secret.

The impossibility of really knowing whether any of the globules vended by the druggist or furnished by the physician are potent or not—*i. e.* whether they contain any of the medicine supposed, will, when the world has had a little more time to get reasonable, afford a strong argument against the claims of so extraordinary a doctrine as that the strength, influence, and persistency of action of a medicine increases in direct proportion to its proximity to nonentity!

It is an interesting fact, that the most ardent disciple of one new “pathy” becomes, after a variable period, equally ardent respecting another, and another; showing that his confidence in each wanes in proportion to his familiarity with it and the amount of pretensions of the new one with which familiarity has not bred contempt.

mange, tipsy cake; anything tasty, light, and digestible is to be adopted in small quantities and at short intervals.

If the stomach is irritable, it must have a rest too, and the patient be sustained by enemata of beef-tea, mutton-broth, &c.

The bowels, too, must be let alone; and if the vagina or uterus have been invaded with the speculum and caustics, they, too, must have a holiday. Opiates are for a time to be shunned. Entertainment is to fall to the lowest point of dullness. Excitement is to be quenched by "wet blankets." Sympathy is to be frozen up; complaints are to fall on serpents' ears which are deaf to pity; and, to sum up, the patient must be put into nearly the same position as a plant. She must be tended, cherished, fed, and watched. At the end of a few days the powers remaining in the system may be estimated, and the tendencies of the constitution ascertained.

When medicines are administered, they must be confined to the tonic class,—five minims of tincture of the sesquichloride of iron in plenty of water, about every four hours; glycerine in such quantities as the stomach will tolerate; or any other medicine not peculiarly unpalatable. Mercury is to be carefully avoided. When there is nausea and vomiting, champagne, brandy and soda-water, chloroform with or without an alkali, or opium, are of great service. Special medicines are to be shunned, as distracting attention from the main point. Anti-spasmodics will relieve stomachic or intestinal cramp or spasm, but are only of temporary utility; by repetition they lose their efficacy, and they should therefore be reserved for great occasions. We have already stated that, where there is a tendency to muscular affections, great relief is obtained from artificial support; *mutatis mutandis*, the same is true of nervous affections, especially of a mental kind. The patient must not be left to herself; her will,

though it may be obstinate, is actually weak; it must not be expected to originate a change. She is essentially to be compared to a naughty or wayward child, who, so long as he is unchecked, is unhappy in himself and a burden to others; but who, as soon as he feels under the eye of a strict parent or schoolmaster, can and does check himself, and follow any lead proposed to him. He requires the support of a stronger mind, and is not comfortable till he has it. So it is with the so-called hysterical people; they suffer in many a form, painful alike to themselves and others, until some master-mind teaches them unequivocally that they are under control; they are like young saplings, which require the help of a stake to keep them upright till they are strong enough to stand alone.

How this control is to be acquired and exercised must necessarily vary with the nature of the symptoms and the tact and experience of the medical man. The great point to be attained (as it is with children) is that the doctor must be superior to the patient in every point where they come in contact, and let it be well known too. He must be able to read the truth or the falsity of every new symptom; detect and punish by a few words of well-timed irony or good-humoured badinage, every attempt at imposition; he must never give way while administering the cold-douche, &c., until he is victorious; his word, however silky it may sound to the ear, must be law; he must show little medical sympathy, and that of the most patronizing kind: in fine, he must be metaphorically the strict father, and he will soon influence his patient to be the happy child. The remarkable success of the late Dr. Jephson, of Leamington, is to be mainly attributed to the power he had in this respect.

To pass from generalities to particulars, let us inquire into the treatment most likely to be successful in the case we

quoted from Dr. Griffin's work. We will take it up at the period when lifting the patient in a sheet produced such intense suffering as to make her half insensible for a week.

We have to manage an intensely irritable cough, a very delicate stomach, and an extraordinary tendency to spasm in the voluntary muscles; we have so much agony from motion that the administration of enemata is out of the question. We examine the throat, and anticipate finding a relaxed uvula, or some other affection capable of local medication; we find no evidence of disease of the lungs, of the heart, &c.

Once satisfied on these points, we assure our patient with all that earnestness and confidence which our complete understanding of the case entitles us to use, that she will be perfectly well in three months, if she will obey our orders implicitly; that the complaint arises entirely from the state of debility in which she is; that as her system regains its powers, her sufferings will lose their hold: but that, as she has doubtless read of persons who have been nearly dead of starvation, and who have really died from over-gorging when they were in a land of plenty, so she must expect that for her own sake the progress towards restoration should not be too rapid; that it will be very slow at first, progress only being perceptible from week end to week end, or even at a longer interval, but that when once begun it will go on with gradually increasing rapidity, until she will be able to say she is better and better every day. If the patient is of a phthisical stock, we cannot reasonably entertain a hope of a rapid cure, even if it can be accomplished at all.

She must remain perfectly quiet in bed, without talking or other excitement. She is to have the throat medicated (by a solution gr. x. to ζ i. of nitrate of silver, applied every day, if anything is found which requires such treatment) by a solution (gr. ij. to ζ i.) of muriate of morphia applied over the

larynx, to reduce the irritability of glottis, &c. A piece of lint wetted with the solution is to be covered with gutta-percha and applied to the unabraded skin. For medicine, two minims of the tincture of iron is to be given every four hours in half an ounce of water.

The yolk of an egg is to be beaten up with equal parts of water and half an ounce of sherry or Madeira, and the half to be administered every hour and half, or two hours, both day and night. In a day or two, as the egg palled upon the taste, a thin gravy soup should be substituted, care being taken to avoid all very decided flavours. In a few days more, indeed at any period the patient fancied it, cream and water sweetened should replace the other aliment, the quantity given at each time being kept very small. The wine, in half-ounce doses, should be continued at intervals, as it seemed to be required. When given alone, champagne should have the preference. Jelly, blanc-mange, &c. &c., might at any time replace any of the above. No matter what the aliment, it should be administered *without the slightest fatigue to the patient*. The medicine-spoon, or cup, answers well, but in practice I have found a long tube, bent at right angles, to answer better (they can be procured at any glass-blower's): the long leg should be about a foot long, the short four inches; the diameter of the tube one-third of an inch. To use it, the short leg is placed in the cup or glass, held *above* the level of the mouth, the long leg in the mouth. The smallest amount of suction converts it into a syphon, and the patient drinks without greater trouble than an infant at the breast when "the flow" comes.

In addition, we should suggest gentle friction of the body with oil, having first ascertained that the idea was not nauseous to the patient.

If vomiting come on, the stomach must have a rest, and

then we must begin our dietary again with champagne, sparkling Hock, Moselle, or brandy and soda-water, or ice. If persistent, opium internally and an epithem of solution of morphia to the epigastrium will be most appropriate.

We should be content to leave the bowels alone for the first fortnight, or even a longer period.

As the patient increases in strength, she should augment the quantity of food taken, and increase the intervals between the meals. The dose of iron should be doubled. Solid food, well mixed, should at last take the place of liquids. The wine should be increased in quantity, and reserved for meal-times. Longer sleep should be allowed, and visitors to the sick-room might be encouraged.

The doctor's visit should be a daily one for the first week, that he might cheer up his patient, and encourage her through the first dreary steps of recovery; afterwards he must act according to his discretion.

As soon as the body could be moved without pain, enemata of beef-tea, &c., might be used;—and here we must suggest a modification of the ordinary apparatus, which is of the greatest convenience; it is simply to substitute for the ordinary pipe and nozzle a tube of vulcanized india-rubber of the same diameter, but *at least a yard in length*, and a bulbous ivory nozzle. The bulb at the end, being passed beyond the sphincter, is retained by it, and the length of tube attached enables the attendant to give an injection *without the patient turning on her side*, the tube passing over or under one thigh; the water-basin may be on an adjoining table, and the bed-pan, if necessary, may be introduced ere the instrument is withdrawn.

As soon as the stomach was likely to bear it, cod-liver oil should be tried in full doses with the steel; or, dropping this, with brandy and water. When the patient could bear to be

moved, she should have complete change from one room to another, and, if possible, have a different room for day and night. The old bed-chamber, associated with so much misery, should be discarded altogether. At first any attempt at exercise should not exceed such as an infant takes when learning to walk, and it should be increased very slowly, for the smallest over-exertion would reproduce the cramps. When the patient is able to sit up for a few hours, and the weather was fine, a short drive would be of service, but it must be in the recumbent posture. As soon as short drives could be borne, a complete change of air might be adopted; and where such a spot is accessible, there is no watering-place near here so favourable as New Brighton, where, in addition to pure air, there is the mild excitement of seeing ships perpetually passing by day, and listening to the steamers thrashing the water at night. With the change of air, the tonics may probably be suspended, the food will gradually be increased in quantity, and ale or porter substituted for wine. The bowels must now be regulated by some very mild aperient and bitter. The daily amount of exercise may be increased, care being taken to alternate with it rest in the recumbent posture. If the patient is a female, exercise is to be moderated during the presence of the catamenia. Pleasant occupation is to be found, if possible, which will interest without exciting the mind, or will occupy the hands without fatiguing the arms, shoulders, or back.

When the Profession shall have recognised the principles we have attempted to lay down—when they begin to look with jealousy at every dose of calomel, antimony, or digitalis that they order—when they take for a starting-point the axiom that “disease implies debility,” and that “everything which weakens a patient must impede his restoration to health”—when bleeding shall have been dismissed to the

limbo of scientific fallacies, to be recalled only by some medical judge of supreme knowledge—when blisters become the rifle-shot of the experienced hunter, who never fires without a definite aim, rather than the grape, canister, or the shrapnel-shot of the artillerist, who fires them comparatively at random—when purgatives are not considered panaceas, and salivation is not a refuge for the destitute of ideas—when active treatment gives way to scientific, and the general health of the body is considered superior to the apparent health of any of its members—when medicines are considered as means to an end, and not as so many doses of bottled comfort surreptitiously stolen from the apocryphal *custodier* of the “Elixir vitæ”—when the doctor recognises in recovery the result of a natural process rather than the imbibition of so many ounces of physic—when there is a thorough knowledge of what medicine can do, as well as what it cannot—when a discrimination is made between the effects of a disease and the effect of presumed remedies—when the natural history of each complaint becomes more generally known,—not only will the science of medicine be fixed upon a firm basis, but it will command a confidence that it has never yet fully deserved.

Heresies may be possible, but they never will be captivating.

At present the tendency of medical authors is to hold a magnifying-glass before particular organs, to discriminate between the minutest phases of their complaints, and to discuss the best plans for the relief of this or that symptom. What is wanted is a broad and comprehensive classification, in which life, health, vitality, and nutrition will form the genera, and diseases the species only.

The question that the physician will then propose to himself will be, How shall I restore the patient to health? not

How shall I attack the complaint? When an organ has gone wrong, or an inflammation has set itself up, instead of punishing the former, and knocking down the latter, the system will be helped to put the one right and to get over the other. A difficulty will be "tided over" instead of being crushed; rapidity of cure, rather than an ultimate result, will be the test of successful theory; and, oh! conclusion most disastrous, the more scientific the physician the smaller will be his emoluments!

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