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RAILWAY INJURIES:
IN THEIR
MEDICO-LEGAL AND CLINICAL ASPECTS

HERBERT W. PAGE





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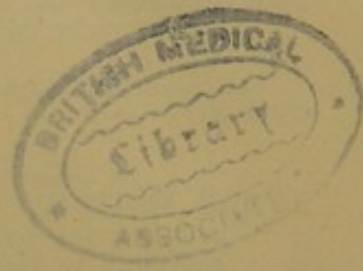
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WITH

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IN THEIR

MEDICO-LEGAL AND CLINICAL ASPECTS.

BY

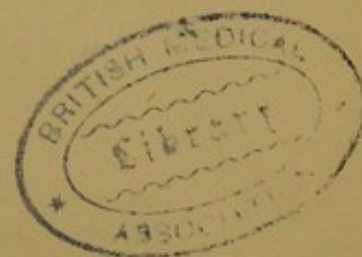
HERBERT W. PAGE, M.A.,

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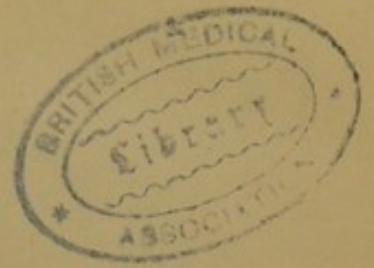
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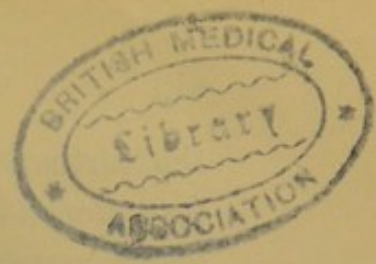
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INTRODUCTION.

THE aim of this book is to give an account of the injuries sustained in railway and similar accidents which become the subject of medico-legal inquiry. In a book published in 1883, "Injuries of the Spine and Spinal Cord and Nervous Shock" (Churchill, 2nd ed., 1885), the results of my experience up to that time, together with the views I had been led to form of the nature of railway injuries, were placed on record. While this work is to a considerable extent founded upon the book of 1883, and draws largely from it, the scheme is somewhat different, for it is now no longer necessary to say wherein I had come to differ, and that very widely, from the opinions then prevailing as to the nature of these injuries. The task of preparing the former book had not been undertaken, it is right to say, without ample personal observation of the cases and injuries described. I had indeed been seeing them frequently during a period of nine years, and from the beginning I had resolved that I would not write a line upon the subject until after, at least, five years' experience. The four years devoted to the preparation of that book afforded time for an inquiry into the after-histories of a large number of injured persons, and a table of cases formed no inconsiderable part of it. It has been impossible again to undertake the extraordinary and systematic labour which that inquiry involved, the labour of travelling thousands of miles and the inconvenience of frequent absence from London. The length of time which was spent over the preparation of the former work has, moreover, been fully justified, for although I have more to say in the present work than I said before, yet I have nothing to unsay as being out of accord with the later experience of eight additional years. And I have

the further satisfaction of knowing that the views which I then propounded have been practically accepted by all who are familiar and have to do with injuries of this class, both in this country and in America, as well as in France, Germany, and elsewhere. It is unnecessary, therefore, again to travel over the ground which was formerly occupied in dealing with concussion of the spinal cord and "concussion of the spine." The theory which attributed the nervous symptoms after railway injury to meningo-myelitis of the brain and spinal cord no longer meets with general acceptance,¹ and it is hardly likely to regain it in the future, unless it has the support of more pathological and clinical facts than were originally adduced in its favour. The consequences of railway injury are happily not so grave as that theory demanded, but they are none the less deserving of attention because of the serious, albeit usually transient, effects which are wrought upon the nervous system by this form of accident.

Renewed attempts have been made in recent years to unravel and explain the complex nature of collision injuries; and by many writers in this country and abroad, by Thorburn, Dreschfeld, Ross, and Collier here; by Weir Mitchell, Dana, Hodges, Putnam, and others in America; by Charcot and many of his disciples, by Guinon and Berthez, Moricourt, Terrier, and Vibert in France; by Oppenheim, Strümpell, Bernhardt, and Westphal in Germany, and by a host of others, fresh light has been shed upon the traumatic psycho-neuroses and on the hysterical and neurasthenical conditions which are prone to ensue from the profound mental disturbance, and the shock to the whole nervous system, which a railway accident causes. This practically was the view which I sought to uphold, that most of the strange nervous symptoms so commonly seen after railway accidents were not due to physical injury sustained by the spinal cord, but were the more or less immediate concomitants of the profound mental emotion aroused by the unquestionably special features and incidents of every collision. And I endeavoured to show how the accompaniment of some form of injury to extra-spinal, muscular, and ligamentous structures

¹ "Est définitivement abandonnée" is the expression of a French writer, Dr. Dutil.

was at the root of the entirely erroneous notion that the nervous symptoms were due to lesion in that part of the central nervous system which has its seat in the spinal column. The further experience gained since I last wrote has confirmed the opinions which I then expressed; and the extensive opportunities which I enjoyed of studying this class of injuries during my seventeen years' tenure of the office of Surgeon to the London and North-Western Railway Company, warrant me now in laying before the profession in a more comprehensive manner what I have to say on the subject of Railway Injuries.

The book makes no pretension to be a text-book of nervous diseases. It is simply one chapter in their history; and if for convenience' sake it is itself divided into chapters, it is as one chapter on the subject of which it treats that it must be read. The various parts of it are meant to hold together, and if the statements made are not every one of them supported by the published record of individual cases, none the less are they founded on actual experience and observation. I have throughout endeavoured fairly and evenly to hold the balance, bearing in mind that no work upon such a subject can be, as I am desirous this should be, of use to others, unless it is conceived in a judicial spirit, and is free from partiality and bias.

In conclusion, I have to express my thanks to my friend Mr. Thorburn for many valuable suggestions.

HERBERT W. PAGE.

146 HARLEY STREET, W.,
December 1890.

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STREET

RAILWAY INJURIES.

CHAPTER I.

INJURIES OF THE BACK.

SUMMARY.—1. Their frequency.—2. Mode of occurrence.—3. Association with “nervous shock.”—4. Stiffness, pain, tenderness.—5. The small spinal joints.—6. Pseudo-paralysis.—7. Real difficulty in micturition and constipation.—8. Fear of moving.—9. Character and duration of spinal pain.—10. Hyperæsthesia of the back.—11. Peripheral sensations after spinal injury.—12. Need for absolute rest.—13. Concomitant nerve lesions.—14. Myelitis and meningitis.—15. Syphilis and pachymeningitis.—16. Risk of future spinal cord degeneration.—17. Associated neurasthenia and the influence of compensation on recovery.

1. THE object of this chapter is to give an account of the spinal injuries which are so frequent in railway collisions. It is, of course, true that injuries of all kinds and degrees are caused by railway accidents, but they differ in no respect from those which are seen after any and every form of violence. Nor indeed do injuries of the back received in railway accidents differ from injuries of the back received in many other ways, but their frequency, and above all the character which they impress on the features of many other forms of railway injury, especially on those which will be dealt with in the succeeding chapters, demand for them a place by themselves, and a separate chapter for their consideration. Their frequency is a matter of no question. It has been attested by Riegler,¹ by every one, in fact, who has ever written on the subject of railway injuries, while amongst my own cases more than 60 per cent. of the injured persons made some complaint at some time or other of having been hurt in the back. The influence of

Their frequency.

¹ *Ueber die Folgen der Verletzungen auf Eisenbahnen, insbesondere der Verletzungen des Rückenmarks*, Berlin, 1879. Riegler gives statistics which show that, since the passing of a law in Germany for the compensation of persons injured on railways, the number of injuries or complaints of injuries had enormously increased, and that, moreover, of thirty-six complaints after injury no fewer than twenty-eight were of the back.

such injuries upon the more purely nervous effects of railway accidents it will be one purpose of this book to teach, and those who do more than merely skim its pages will find how true it is, that the complexion of the other injuries to be described may be at times affected, or even changed, by them.

I will speak in the first place of the more common injuries of the back received in collisions on railways or in other similar accidents, and will refer afterwards to those conditions or symptoms, which indicate that there may have been injury to one or other of the nerve elements of the spinal column. And it may be well to premise that in none of the cases quoted was there any reason to suspect the perfect *bona fides* of the injured persons. The following is a very frequent occurrence. A man has been in a collision; he was perfectly conscious at the time that he met with no blow—knows, in fact, exactly what occurred to him when the accident happened, and yet he finds that within a few hours, occasionally much sooner, he is seized with pain in his back. What has happened to him? Let us look at a case where the symptoms were simple and unobscured by other injury.

CASE 1.—*Simple lumbar sprain—Traumatic lumbago.*—M. A., a strong and active man, was riding in a first-class carriage, when a slight collision took place. He was, at the moment, leaning forwards reading, and was not even moved from his seat. He felt a little upset and shaken, and had some brandy in consequence, but he was able in a few minutes to set off and walk to his business. The next day he felt some pain in the lumbo-sacral region, which on the following day became acute, especially on movement, and on the third and fourth days after confined him to the house. He was ordered a belladonna plaster, and in a week he began to improve, though having occasionally sharp pain. There was no local tenderness, and it is evident from the history that the injury in this case was a simple sprain of the muscles and ligaments about the lumbo-sacral region. It was, in fact, a “traumatic lumbago.”

Mode of
occurrence.

2. In a slight collision like this it is very common to hear that the passenger was thrown backwards and forwards in the carriage, and although this man had hardly been moved, the sudden arrest of the train is frequently the means of jerking the traveller from his seat, and perhaps landing him upon the floor. Now it is that the physical structure of the spinal column exposes it to

this form of injury. Endowed with extreme mobility in every direction, forwards, backwards, in rotation, and from side to side, as provided by its many articulations and by its thousand muscular and ligamentous attachments, it nevertheless has to guard the spinal cord within its central canal. To do this well, both conscious and unconscious effort is made at the moment of the collision to hold the column rigid, and as a result of the violence and of the sudden resistance induced by "setting" of the muscles and ligaments, the ligaments and muscular attachments are strained, overstretched, and, it may be, even ruptured in the dorso-lumbar or lumbo-sacral regions of the column. The injury is precisely the same as that which is met with every day, where a man complains that while lifting a heavy weight he suddenly felt a severe and acute pain, which almost prevented him from moving, in the lower part of his back. You examine him and can find no external sign of injury, but he hesitates to stoop when you ask him, he holds his back unnaturally stiff, he finds it difficult or impossible to rise from his seat, and very likely there is some local tenderness in the muscular mass on either side of the lumbar vertebræ. We may meet with the same injury in very different degrees of severity, and the pain may be felt at an altogether different part of the spinal column.

CASE 2.—*Cervico-dorsal sprain*.—A man aged forty-two was in a train which ran (without time for warning) at fifty miles an hour into a coal train standing on the line. He was thrown suddenly forwards, and instantly felt acute pain in the cervico-dorsal region. The pain was never again acute, but a weary aching was felt at the part for several weeks, both over and on each side of the spine. There were no other indications of injury, and the nausea and feeling of faintness experienced at the moment of the accident soon passed away. Obviously the injury in this case was of precisely the same nature as the traumatic lumbago already named. The spinal injury may, however, be even more widespread.

CASE 3.—*Sprain of the whole vertebral column*.—A rather smart collision caught a man, aged fifty-eight, sitting upright in the carriage with his head slightly turned to one side. He was thrown back, and his head was knocked against the partition, the brim of his hat fortunately saving him from a severer blow. He felt shaken and sick, but did not vomit. Within a couple of hours of the accident he was seized with pain, and *tenderness* was felt in the lower part of the back, especially over the two lower

dorsal and two upper lumbar vertebræ. He was taken home and put to bed, where he lay for a month suffering at first from such severe pain *throughout the whole spine*—cervical, dorsal, lumbar and sacral, regions—that he was barely able to move. There was never any acceleration of pulse, elevation of temperature, or peripheral pain. At the end of the month he began to improve, and was able to move his arms and his head without pain, and occasionally to sit up in bed. In a couple of months he was able to get up, and in three months to move about so well as to do a little business. He gradually recovered, and five years after the accident was reported to be in good health, although he still felt an “uncertainty” when travelling, and unless he carefully supported himself was liable to have a return of pain in the lower part of the back.

Association
with
“nervous
shock.”

3. These cases afford good examples of the same kind of injury, though affecting different parts of the spine. It is unusual, however, to meet with cases such as these where there is no other complication. “Nervous shock” in its varied manifestations is so common after railway collisions, and plays so prominent a part in all cases which become the subject of medico-legal inquiry, whether they be real or feigned,¹ that we are almost sure to meet with the symptoms of it in association with pains in the back, and with points of tenderness along the vertebral spinous processes. It is this frequent combination of the symptoms of general nervous prostration, neurasthenia, or shock with pains in the back, such as these cases presented, which no doubt laid the foundation of the erroneous views which were at one time prevalent as to the nature of the common injuries of the back received in railway collisions.

A man has a general nervous shock, and at the same time he is alarmed himself, and gives continued alarm to others by the pain and tenderness, often very severe, which he suffers at some part of the spinal column, or of the structures lying contiguous to it. In the first two cases recorded there can be no question that simple muscular or ligamentous strain was the sole cause of the

¹ In the *Times*, of Saturday, February 19, 1881, a case was recorded of an action against a railway company for injuries received by a man in accidentally putting his leg through a hole whereby he was thrown down and hurt his leg. The Judge commented strongly on the fact that the symptoms complained of bore a strange resemblance to those heard of so frequently after railway collisions. The symptoms, I think, in such cases ought properly to be termed “litigation symptoms,” as I shall subsequently show.

pain; and the entire absence of any indication of other injury shows that the cause of the pain, which extended throughout the whole spinal column, and made every movement of trunk and limb almost intolerable, was exactly the same in the third and more serious case. Cases like the last are rarely met with in ordinary practice, but railway collisions provide the conditions which determine the possibility of such extensive strain of the vertebral column. Now one part, now another, is sprained in the jerks and jolts which accompany most collision accidents, and the pain, more commonly situated in the lumbar region alone, may thereupon affect other parts of the column. And very variable may be this pain both in range of distribution and in character; and variable also the time when it may begin.

CASE 4.—*Lumbar sprain—Very acute pain.*—A young man who was in a bad collision began three days afterwards to feel pain and stiffness across the loins, so that he moved with difficulty, and felt easiest when flat upon his back. The pain in his back gradually increased, and, to use his own words, he thought all was over with him, and that he was going to be paralysed, for when he tried to stand up a sharp pain seized him in the back like a knife cutting into him, and shot downwards and upwards from the loins like an electric shock, so that he dropped upon the floor. This state of things lasted for about three weeks, during which he lay almost helpless, and had the greatest difficulty in defecation and micturition. There was at the same time considerable local tenderness, but never any outward sign of injury. This description is almost characteristic of an attack of acute lumbago.

4. Stiffness, however, and local pain are not the only indications of spinal sprain. There is very often some degree of local tenderness as well, felt on pressure over one or more spinous processes, or occupying a wider area on each side of the spine, and it is important to inquire whether this is evidence of some graver injury than I have said is ordinarily signified by the local pain. My own experience lends no support to this supposition. Local tenderness is often found in cases of simple sprain of the back from lifting heavy weights, and it would be very strange if the same symptom were not found in those cases, where the spinal sprain has been caused by the severe wrenching and straining suffered in a railway collision. In the worse cases

Stiffness,
pain,
tenderness.

the same conditions are in all probability produced as are to be found around an ankle or other joint which has been sprained, but you cannot see the swelling about the small joints of the vertebral column and about the muscular and ligamentous attachments, simply because the structures sprained are more deeply situated, and are much smaller in size. A deep-seated discoloration, however, may be sometimes seen, even where there has been no blow. Tenderness is thus a more or less inevitable consequence of the injury, but is it by itself a more dangerous symptom than the pain on movement? Let us ask if tenderness of the back is a prominent symptom in cases of spinal cord disease which we see in our hospital wards? Is it not rather conspicuously absent, and is not a diagnosis made by a totally different train of symptoms? Any one who has ever looked at a vertical section through the centre of the spinal column, and has noted how far the spinal cord is from the surface, how the spinous processes overlap each other, and how thick is the mass of muscles on either side, must have felt convinced that all ordinary pressure on the column can have little or no effect upon the structures within. Tenderness by itself is therefore not to be regarded as an indication of grave injury to the contents of the spinal column; it is a symptom, which, if of any value at all, ought rather to reassure, as pointing to the kind of injury which we are here considering.

The small
spinal
joints.

5. But although local tenderness may be of small value as evidence of intra-spinal lesion, its long continuance at one spot is very decidedly suggestive of some inflammatory affection of one of the small spinal joints. "It may be deemed singular," Mr. Shaw writes in Holmes' "System,"¹ "that numerous as are the small joints formed by the opposing surfaces of the oblique processes, in the posterior segment, disease is scarcely ever witnessed in them." Yet we know that these joints may be very seriously affected in rheumatoid arthritis, and that they do not escape suppuration in pyæmia. There is no inherent reason why one or more of them should not occasionally be affected by a simple synovitis, such as is seen in other and larger joints as the result of injury. Traumatic synovitis of a spinal joint is doubtless extremely rare, but it may be occasionally the cause of otherwise inexplicable tenderness and pain.

¹ Holmes' System, vol. iv., 2nd ed., p. 103.

6. The three most prominent and distinctive signs of simple sprain of the back commonly met with are stiffness, tenderness, and pain, and we have seen that these may be present at any part of the spinal column, or may even involve the whole of it. This widely distributed "lumbago"—if the term may be allowed to indicate the aching and the pain on movement throughout every part of the spinal column—may of itself give rise to a form of pseudo-paralysis, which, if unrecognised, may cause unwarranted alarm. The pain in *all* movements may be so great, whether the movements be of the limbs, of the body, or of the head, that the patient is really afraid to move at all. This well-grounded fear of moving may soon assume the importance of an absolute inability to move, especially when the sprain has chiefly affected the lumbar and lumbo-sacral regions. Ask any man who has had a severe lumbago, whether from a sprain, from rheumatism, or from cold, if he has not at the same time felt a strange sense of difficulty in moving his legs. Brisk walking becomes impossible; the effort needed to put one leg before the other must be unnaturally great; fatigue comes early, and the patient complains to you that his legs feel weak, and as if he could hardly move them. The injury may frequently be diagnosed by the peculiarity of the gait alone.

7. Micturition may at the same time be interfered with, from lack of the natural support and help which the lumbar muscles provide when this act is being performed. The patient, perhaps, cannot completely empty his bladder, and there is a certain amount of dribbling at the close of the act. It thus appears to himself that his "water runs from him," and if, as a consequence of slight retention, there be added some irritability of bladder, symptoms of somewhat ominous import seem to be developed. Many men find it practically impossible to empty their bladders when they are laid upon their backs, and "residual urine," recognised as perhaps the most frequent cause of cystitis, is very prone indeed to occur as the indirect result of any injury which dooms a man to bed. And this may arise quite independently of any retention due to shock, to which reference will be found at p. 45. It is obvious, therefore, that sprains of the lower back provide the very combination of conditions likely to lead to this result, and every now and then we find that trouble with the bladder may rise into considerable prominence. Especially is this likely to happen when the nervous system has been much

Pseudo-paralysis.

Real difficulty in micturition and constipation.

upset by the shock of the accident, and you may find a condition of "nervous bladder," in which the patient has a frequent desire to pass water, with inability at the same time to perform the act perfectly, and consequent slight dribbling at its close. Constipation also arises from the same muscular incapacity, and becomes an almost invariable feature in the case. Thus it is nothing more nor less than natural for the friends to say that the patient is "paralysed," and paralysed from severe injury to the spine. If you do not avoid these fallacies, and do not correctly interpret this state of things, you will add greatly to the dread, which after railway collisions is strangely real, that "paralysis" is going to supervene.

Fear of
moving.

8. This very natural fear of paralysis is still further increased by the abnormal sensations incidental to the muscular and ligamentous incapacity. There is a strange feeling of weakness in the legs, and the patient complains to you that he cannot walk, or that his legs give way when he makes the attempt to do so. Repeated observation, however, leaves no doubt in my mind that these results are more dependent on the fear of moving¹ than on any real inability to move because of nerve lesion; and the personal knowledge of many hundreds of cases, together with the absence of any record of such a consequence in medical literature, enables me to allege that there is no more cause to anticipate real paralysis after a sprain of the back received in a railway collision, than there is after the thousand and one different kinds of injury which fall under the notice of the surgeon.

In the absence of other signs of injury for which, of course, full search will be made, do not therefore let undue weight be given to this pain and tenderness at one or more points of the spinal column, or to the stiffness and pseudo-palsy which accompany them. In cases of real damage to the spinal cord or its membranes, both pain and tenderness may help to localise the point at which mischief is going on, but they do not indicate the mischief itself, nor are they in any sense patho-

¹ This *fear of moving* was strangely shown by a man who had received such injuries as have been described, who was confined to bed in consequence, and who needed three persons to help him out of bed every time he wanted to pass water in the daytime. To himself it appeared wholly unaccountable and extraordinary that whenever he woke in the night he could jump naturally out of bed without any help for the same purpose. It need hardly be said that the case was perfectly genuine.

gnomonic symptoms of spinal cord disease. In no wise would I undervalue the real importance of these vertebral sprains. They may be exceedingly distressing to the patient; the pains may last for a very long time; there may even be occasional reminders of pain for months or years under suitable conditions; but it is right that we should attach no more import to them than they deserve, and their existence should not entail a needless dread of serious injury to the structures within the spinal canal.

9. The long continuance of pain in the back is very naturally the cause of alarm to the patient, and of doubts as to his ultimate recovery; but if the pain be rightly estimated, and its real value as a symptom of spinal disease be recognised, there will be less reason for these fears. Look at it in connection with maladies other than simple sprain. In spinal caries, for example, we know that local pain at the site of disease is not one of the most pronounced symptoms, and that it is of much less value in diagnosis than pains at the periphery, instinctive dread of leaving the recumbent posture, or an absence of natural flexibility in the spinal column when the patient moves. The pain, indeed, is indicative of nothing more serious than muscular or ligamentous strain. In character, moreover, it may be said to be almost typical of this form of injury. Aching, weary, and more or less constant both over and near the spine, and in the muscular masses on either side of it, it is liable to be rendered acute by movement, so that the patient dreads to move at all; or if he be able to go about, it is likely to seize him suddenly and sharply, to make him cry out for the moment, and to be followed by renewed aching of the back. The spinal pains are, indeed, very like the pains which may affect any contused or sprained joint, and there is precisely the same indication for treatment. Exercise—and not fixation of the whole back in poroplastic jackets—is essentially the best thing for relieving them, after adequate rest has been given to recover from the immediate effects of the shock, and to avoid what risk there may be from too early movement of the bruised and strained parts. True, the effort necessary to move for the first time may have to be very great, and the pain on first getting out of bed or attempting to walk may be so acute as to drive the patient back to bed again, yet if this initial pain will be endured, and a little perseverance and determination be exerted, it is pretty certain that the pain will daily be lessened, and that greater freedom of

Character
and dura-
tion of
spinal pain.

movement will be gained at the same time. In a sprained joint we know that stiffness and pain go frequently *pari passu* together, and the same associated phenomena in these injuries of the back form an additional aid to the diagnosis that the spinal pains are not of more serious import, than those due to muscular and ligamentous strain elsewhere. They share this feature likewise in common with them, that they have a tendency to last obstinately for a long time; to recur after intervals of comparative or entire ease; to be induced by changes in the weather, or by any extra exertion; and so, by their very nature, they unduly alarm the patient, and encourage him in the belief that his injuries have been greater than they really are, and that the prospect of his recovery, without permanent damage or disablement, is very remote indeed. It behoves us not to share in his alarm, but rather to use every influence to induce the patient to take those steps which alone can ensure his recovery—to leave his bed, to have change of air, if need be, to improve his general health, and to allow of greater opportunities of movement than were he to stay at home. Be careful, however, before all things, not to overlook any symptom which is a real indication of injury of the spinal membranes or of disease of the spinal cord.

Hyperæsthesia of the back.

10. Not for this reason only is it desirable to make a correct diagnosis as soon as possible, but also because there are few things worse for a patient, whether man or woman, than for the back to be constantly examined, and for pain and tenderness to be elicited over and over again at the injured parts. Repeated examination is the very way to develop a state of undue nervousness, and to bring about a hyperæsthesia of the surface which is often most distressing. Just as hyperæsthesia over a wide region of the skin of the hip may be seen in cases of so-called hysterical coxalgia, so a widely diffused sensitiveness of the skin of the back may arise in many cases of simple sprain unassociated with other disease of the spinal column. Its onset and development may occasionally be observed, and its real origin be thus made manifest.

CASE 5.—*Sprain of the dorsal and lumbar vertebræ—Great surface hyperæsthesia.*—A young man was slightly shaken in a collision of no great severity, and in a few days had pains about the vertebral column such as have been described. He gradually recovered from the effects of the shake, but the aching in the back continued, and the spine was therefore more especially examined,

not much attention having been paid to it hitherto. The examination revealed a point of tenderness on pressure over one of the dorsal vertebræ, at the point in fact where the sprain had probably been most severe. Within a day or two his back became so sensitive that he complained of, and shrank from, the very lightest touch of the finger on almost every part of it, whether over the spinal column or over the muscles at the side. He was so sensitive to touch that he endeavoured to avoid being touched at all, seemed even afraid to have his back looked at, and moved himself away with so much contortion, as in itself to afford evidence of the absence of any serious mischief about the vertebral column or its contents. The hyperæsthesia was doubtless perfectly genuine; but in addition to the mode of onset, observe the inconsistencies of the hyperæsthesia itself. So great was it, that had it been real and not *imaginary*, it must have been unbearable for the man either to have rested against his couch, or even to have borne the contact of his clothes.

This is the hyperæsthesia so often found superadded to the pain which is a real consequence of the vertebral sprain; and yet too frequently the inconsistencies thereof are ignored, and the hyper-sensitiveness is regarded as another, and more telling, symptom of some inflammatory condition of the membranes of the spinal cord. It has little in common, however, with the hyperæsthesia or the "excentric" pains which are a result of irritation of the sensory nerve-roots, whether by thickening of membranes or otherwise; and it is unlike the zone, or girdle of hyperæsthesia, which may feel to the patient like a cord, or some other abnormal sensation at the periphery. The hyperæsthesia is too widespread over one area, and is at the same time too limited to the area which is the chief seat of attention. It is, moreover, unlikely that real irritation of the sensory nerve-roots should give rise to hyperæsthesia upon the back alone. It is rather the natural outcome of that alarm, which, both in hospital patients and in those more especially who have been in railway collisions, seems to be inseparable from injuries to the spine or back; and although undoubtedly a real condition to the patient himself, it is yet unreal, and the product of his disordered imagination alone.

It is hardly necessary to dwell upon the pain and local tenderness of which there is no sign when the attention of the patient is otherwise engaged and directed away from the affected part. These may be of the same nature as the hyperæsthesia, though much more often they have no real existence, and are heard from those persons only who are purposely exaggerating the effects of

the injuries they have received. Let it be remembered that a far more important sign than variableness of the pain under examination, is the very fact that the attention of the patient *can* be so easily diverted from the affected part. Call to mind a case of severe inflammation of the knee-joint, and ask whether it is not well-nigh impossible to divert the patient's attention from his knee when being examined, and whether he does not guard it with all the more conscious care, because he is being asked questions wholly unconnected with the painful limb. The very readiness with which the attention can be diverted from the tender back is of greater diagnostic import than the spinal tenderness or pain.

The hyperæsthesia and tenderness just alluded to are of a nature akin to the tenderness which is observed in the cases of so-called "spinal irritation," a malady with which the brothers Griffin dealt very fully in 1834, in their interesting and well-known work, "On Functional Affections of the Spinal Cord." They there point out (p. 201) how spinal tenderness is a "common attendant on all hysterical complaints, on numerous cases of functional disorder where the hysteric disposition is not so obvious, and in many nervous or neuralgic affections." The tenderness might be both local and general over the spine, and in their judgment it was enough to throw doubt on any other symptom suggestive of intraspinal lesion or inflammation.

Peripheral
sensations
after spinal
injury.

11. Passing, then, from the pain, tenderness, stiffness, and hyperæsthesia which are the more immediate signs of that kind of injury which the back most frequently receives in collisions, I proceed in the next place to speak of other symptoms or complaints which occasionally accompany them, and which may be regarded as evidence of damage to structures other than the bony, the ligamentous, and the muscular of the vertebral column.

And in the consideration of them it is necessary to bear in mind that however well the spine itself, and the muscles and ligaments which bind its various parts together, may be adapted for protecting the intraspinal structures from injury, even at their own expense, it is simply a question of the degree of the violence whether muscles and ligaments are alone injured by forces which tend to overbend the spine. Up to a certain point these soft structures may succeed in keeping safe the parts within, even though they themselves may suffer in the attempt; beyond that point their resistance is overcome, and there may, as a consequence, be separation of parts which it is their business to hold together. This is, of

course, much more likely to happen when the violence has fallen upon one part, instead of being widely diffused, and a not uncommon way in which the cord may be locally damaged, is by overbending of the spine.

The pseudo-paralysis of muscular incapacity has already been described, but abnormal sensations of tingling¹ and numbness, or of "pins and needles" in some parts of the limbs, are not very uncommon after severe collisions. All such complaints ought rightly to be regarded as worthy of attention and anxiety, especially if they last for any length of time after the accident, or if it can be definitely asserted that the spine alone received injury. It is rare, however, for the injuries received in severe collisions to be limited to a single blow on one part of the spinal column, and it is important to determine whether these abnormal peripheral sensations are not really due to some blow sustained by the limbs themselves, before deciding that they are the manifestation of central damage. When this obvious fallacy has been excluded, the remaining proportion of cases in which these complaints are made is found to be very small.

CASE 6.—*Severe general vertebral sprain—Sensations of numbness and tingling.*—E. H. D., aged thirty-five, received in a severe collision "a blow," as he expressed it, "down his whole back," and also on the back of his head from a falling carpet-bag. He did not consider himself much hurt, although from the account of his appearance there must have been a considerable degree of shock. He proceeded on his journey, but three-quarters of an hour after the accident he felt compelled to stop and go to bed at a neighbouring inn. He then began to suffer from severe pain in the head, and from pain down the whole of the spine, but more especially about the sacrum and the lower cervical region. There were no marks of bruising. He also complained of "numbness and tingling" in his limbs, with some difficulty in moving them. He suffered for three days from extreme nervous prostration; dreaded the least noise; spoke only in a whisper, and lay in a darkened

¹ Abnormal sensations described as "tingling" or "pins and needles" are, although purely subjective, much more trustworthy terms than "numbness," which the laity use with a signification wholly different from that in common use amongst ourselves. Dread of moving the limbs without causing pain, bodily weakness and stiffness from confinement to bed, or the sensations produced by general bruising of the limbs, may each and all be described as "numbness," even when we find, and the patient admits, that there is no real anæsthesia nor true loss of muscular or sensory power. Thus, for example, a man described his leg as feeling "numb" after having received a slight blow on the side of the knee.

room. There was, however, no disturbance of pulse or temperature, and he had been able to sleep without narcotic for a few hours on the night after the accident. On the following days his limbs felt more natural, and the tingling and sensation of numbness had very much lessened. In five days these sensations had completely disappeared, but he still suffered from much pain about the vertebral column, and movements of the neck and trunk were painful to him. He was excessively nervous, and much dreaded any examination of his back. The pulse and temperature were throughout normal. He continued steadily to improve, and in three weeks was able to be moved. In three months he was going out daily, walking slowly about three miles a day, but complaining much—especially under examination—of pain in and about his vertebral column, the movements of which were evidently stiff and painful. He was still very nervous and felt generally weak, but there was no impairment of motion or of sensation in his limbs. He returned to work in about seven months. Five years after the accident he was at work and in good health, though often complaining of his back, “especially when lifting heavy weights.”

It is obvious both from the history at the time and from the long-continued pain afterwards, that there was here precisely the same kind of injury, as far as the spinal column was affected, as in the two previous cases, but with the important addition of some abnormal sensations in the limbs, coming on synchronously with the pains, and disappearing after a few days. These sensations were general, and were not confined to any one limb or part of a limb; and although it is impossible to define their cause with certainty, there are good grounds for believing them to be due to some effect produced by strain or blow upon the nerve trunks proceeding from the spinal column to the limbs. In severe collisions, where there is a risk of the body being suddenly bent and strained in many different directions, it is, indeed, highly probable that every part of the spinal column is subjected to muscular and ligamentous strain, and it is not inconceivable that the nerves which permeate the column at both sides should be involved in the same injury.

Need for
absolute
rest.

12. No one will dispute the wisdom of absolute rest in all such cases, even though there is no warrant for thinking that the symptoms will be followed by some less dubious indication of central nerve lesion. In themselves they are rare, and found

only after the more serious accidents in which there is a risk of extensive bruising and straining of the whole body. Whether the result of definite structural lesion or no, the symptoms of nerve disturbance leave no trace behind; in other words, recovery from the condition on which they depend is complete: and although the *precaution of absolute rest is imperative*, there is no evidence so far to show that they are of more serious import than is the sensation of tingling in the ulnar distribution after a blow upon the elbow.

Their presence, however, does not militate against the broad conclusion that the spinal cord is very securely protected from injury in its osseous canal, and that we shall probably find more definite symptoms when there has been undoubted lesion of the marrow itself. No matter what be the organ or structure, the severity of a lesion may differ vastly in degree, and it may perhaps be that these abnormal sensations are the symptoms of a disturbance which, in cases of more obvious local injury, amounts to actual damage—discoverable and giving rise to less transient symptoms—of the spinal cord or of the nerves proceeding from it.

The record, however, of a large number of injuries indisputably proves that the cases are few and far between, in which there has been unquestionable lesion either of central or more peripheral parts of the nervous system. Lesions of the spinal cord are met with only in a few isolated cases, and it is essential that this fact should be duly recognised if a right estimate is to be formed of the much larger class of cases, in which the injury and symptoms are rather those of general nervous shock, variable in degree, protracted in time, where it may be held by some that there has been concussion of the spinal cord, even though there has been no evidence of blow upon, or of damage to, the structure of any one organ or part of the body.

CASE 7.—*Severe lumbo-sacral sprain—Probable injury to cords of sacral plexus.*—S. V., aged forty-eight, the mother of several children, gave the following account of the injuries she received in a severe collision which occurred at night, and in which a great many persons were hurt. She had no distinct remembrance of what happened to her, but after she had been carried home and put to bed, marks of severe bruising were found between the eyes, at the back of the head, on the chest, and more extensively about the lumbar and sacral regions of the vertebral column. Beyond the bruising there were no physical signs of injury to the spine.

She was in bed for three months, suffering chiefly from pain in her back, so bad at first that she could not move in bed. She also had what she described as a "numbing pain down the left leg." At the end of three months she was so much better as to be able to get out, and shortly after to be moved to the seaside. Ten months after the accident her chief complaints were of pain in the back, especially on movement, and of a partial loss both of motion and sensation in the left leg. She was then using the leg as much as she could, though obliged to go about with crutches. There was *very slight* wasting of the limb, all the movements of which, it may be said, were sluggish and defective in power. There was diminution of ordinary sensation, slight only, but yet undoubted. There was no dragging of the limb in walking, the leg being rather held stiffly, and conveying the impression of injury having been received about the hip. There could, indeed, be no doubt that, in addition to the paresis, there was injury to the muscular and ligamentous structures about the hip and pelvis, injury which led to much of the stiffness about the thigh, such as might have been remedied by freer movement than the patient could give to it. There was never any paralysis of bladder or bowel. From the time when this patient was seen she steadily improved. Thirteen months after the accident she was able to abandon her crutches, though the report of her then was that "sensation is still very feeble in the injured leg, but there is still progress made." Two years later, or three years after the accident, this last report was sent by the surgeon under whose care she had continuously been:—"The case you saw two years ago has resulted in a complete cure, and she is now able to walk about almost as well as ever."

Concomi-
tant nerve
lesions.

13. It must, I think, be regarded as very highly probable that the impairment of motion and sensation in this case was due to some injury to the nerve trunks, but it is impossible to say with certainty whether that injury was after the nerves had formed the plexuses outside the vertebral column, or when they still were individual cords in the cauda equina. If the paresis was due to traumatic lesion of the nerve trunks within the spinal canal, it is almost inconceivable that the effects could have been confined to the nerves of one limb only, and on this ground it seems more reasonable to conclude that the injury to the nerve trunks was outside the vertebral column. The length of time, moreover, that elapsed before the recovery of the patient, seems further

to confirm this opinion, whether the essential lesion was of the nerves themselves, or, as is equally probable from the character of the blow, was hæmorrhage lying around and pressing upon them.

CASE 8.—*Lumbo-sacral sprain*—*Probable injury to, or hæmorrhage round, pelvic plexuses*.—A strong and healthy man, aged twenty-nine, was thrown down on the floor of the carriage in a sharp collision, and knew that he had had a severe blow over the right sacro-iliac region. He almost directly afterwards had sensations of pins and needles all over him. These soon passed away, but he was in bed more or less for four months, suffering from great pain in the lower part of the back, and numbness and heaviness in his legs. For three months his pulse was as slow as fifty-six. Eight months after the accident he was still quite unable to attend to his work, and suffered at times very much from pain in the back and from weakness in the legs. This weakness more especially involved the right leg, and although every required movement could be performed, it was evidently done with difficulty, and there was some impairment of common cutaneous sensation. There was no wasting, and the reflexes were normal. His gait was distinctly suggestive of lumbar stiffness, but there was clearly in addition some defect in the innervation of his right leg; and five years after the accident, although he was well and at his work, there was still said to be pain about the sacrum and right hip, made worse by walking or long standing, and the right leg was described as being not as large as the other. This statement, however, there was no opportunity of confirming by a medical examination, and it must remain a matter of doubt whether any and what injury had been incurred by the pelvic plexuses.

It is never easy, in cases like these, to separate the symptoms which are due to interrupted or damaged nerve function from those which depend on muscular, ligamentous, and osseous bruise and strain. These last may be very severe, and may give rise to great mechanical impairment of motor power, producing the pseudo-palsy to which earlier reference has been made; and only a very careful examination of the limb, and of all the attendant symptoms, will enable one to decide that there has or has not been injury to nerve structures. In the great majority of these cases of general lumbo-sacral strain, they usually escape direct injury; but there is no question that this form of traumatic lumbago, due to violent wrench of all the ligamentous structures of the ilium, sacrum, and lower spine, of all others is the most painful and the most incapacitating, and the pain is very prone

indeed to radiate widely from the part where it has its original seat. It is by no means uncommon, in cases of ordinary lumbago, for the pain to spread to the lower abdomen, to the testes, and down the legs, but there is no reason to think that the pain which radiates in this way, whether in simple or in traumatic lumbago, is due to any gross lesion in nervous structures. Help in diagnosis will always be had by learning the character of the blow which has been received in the collision, or the precise mode in which injury has been inflicted upon the back. My own inquiries and experience leave no doubt in my mind that any local lesion of nerve centres, or of nerve trunks, has its origin in injury at or close to the part, and that the general concussion of the accident is inadequate to bring about so grave a result. The cases already given exemplify this, but not so markedly as the following.

Myelitis
and men-
ingitis.

14. CASE 9.—*Late myelitis following obscure spinal injury.*—T. L., aged twenty-nine, a thin, delicate man, was in a very bad collision in which three persons were killed, and in which a large number were injured. He could give no clear account of the accident, saying he was dazed and could not stand. He was confined to bed for about a fortnight, suffering much from pain in his back and legs. He then improved a little, and was able to go to a hydropathic establishment in the country, where he stayed for two months. His back continued to trouble him very much (this is in his own words), but otherwise he improved. Towards the close of this two months the weakness which he had all along felt in his legs became a much more definite loss of power, and in a week or ten days he was quite unable to walk. Ten months after the accident there was no mistake as to his condition. Loss of power to move, and almost entire loss of sensation in his legs, paralysis of bowel, paralysis of bladder with alkaline urine, bed sores, and reflex spasms of the lower limbs, undoubtedly pointed to softening of the spinal cord. His pulse was frequent, and his temperature above normal. He complained of pain in the lower part of the back, but there was no marked tenderness. He lingered for some months without improvement, and then died.

It is unfortunate that no post-mortem examination was allowed in this case, for it would have been in every way desirable to have learned exactly the nature of the injury, if any, which the vertebral column sustained, and how it came to pass that the

cord became affected. The precise train of events can therefore be a matter of conjecture only. Two months elapsed between the receipt of the injury and the onset of definite symptoms of inflammation and softening of the spinal cord itself, and there is unfortunately no more accurate record of what his condition really was during this period. The mode in which he was injured, however, seems to render it not improbable that there were symptoms which should have made a fortnight's stay in bed altogether inadequate, and so early a move to the country most unwise. For the accident really happened in this way, as was learned from another person who was with him at the time. The patient was thrown on his face on the floor of the carriage, and a very "heavy man then fell on the top of him, right in the middle of his back." There was thus no doubtful history of a blow, of obscure injury to a remote part, or of a general shake of the whole body, but a clear account of an accident so happening, that, without any visible signs of damage to the spine, there may well have been some separation of vertebræ, or some undue bending of the column, which, damaging at the same time the membranes of the cord, or causing slight intraspinal hæmorrhage, was the real starting-point of the mischief which supervened.

I would suggest the following as a very probable sequence of events:—A small localised injury of the membranes, or hæmorrhage, at the site of the injury to the vertebral column, followed by a meningitis which was at first too limited in extent to give rise to any precise symptoms, but which preceded, and, having implicated the cord, was the cause of the myelitis which had a fatal issue. If this be the explanation, the meningitis must have at first been exceedingly limited, because *traumatic* meningitis does not usually follow an unobserved course. Sometimes it is acute, spreads rapidly, gives rise to definite symptoms, and has a fatal result. At other times a less violent inflammation leads to local thickening and adhesion about the spinal roots, causing peripheral symptoms of impaired innervation; or similar pathological changes may involve the cord itself, and setting up degeneration therein, present very definite indications of structural disease. But acute myelitis at so long an interval after injury is most uncommon. Still further doubt, however, surrounds this case, for at the time when the symptoms of spinal softening were becoming marked, the man had epididymitis. It is true that gonorrhœa was altogether denied, and that the epididymitis may have been caused by the frequent use of the catheter; but it is to be remembered that myelitis of the

cord may be the result of thrombosis of the pelvic and vesical veins, a direct consequence of the same urethral inflammation which had produced epididymitis. It seems, therefore, within the range of possibility that the myelitis and the fatal result were not due to the injury at all.

I have seen no case of acute traumatic meningitis following railway injury, nor any in which I could satisfy myself of the presence of subacute or chronic meningitis as the basis of the symptoms of general nervous shock which are frequently seen after railway collision, and which will be described in a coming chapter. I have often heard "subacute meningitis" put forward as the cause of the localised pains in the back which are common after sprains of the vertebral column, more especially when such pains have been associated with general bodily weakness due to long confinement in bed or in the house, and with the nervousness and emotional disturbance which are inseparable from severe shock to the system. The history and course of the cases, however, and the entire absence of the real symptoms to which meningitis gives rise, have convinced me that no such serious mischief could exist. For meningitis of the spinal membranes is a serious organic lesion, and it is hard to believe that if subacute meningitis of traumatic origin were as common as some would seem to believe it to be after collisions, we should not much more frequently meet with cases of meningitis running an acute course, or with cases where there is likewise degeneration of the spinal cord.

Syphilis
and pachy-
meningitis.

15. Injuries to the cervical spine are, for obvious reasons—its lesser strength and its greater mobility—more likely to be followed by local meningitis than are injuries to the lower parts of the column; but wherever the lesion be, it should never be forgotten how frequently syphilis¹ has a share in

¹ See paper by Dr. Buzzard on "Cases of Syphilitic Paraplegia," *Lancet*, vol. i. 1879, p. 469. After detailing a case of paraplegia, with strangely variegated symptoms, cured by anti-syphilitic remedies, he writes: "With the clear history of syphilis before us, we can well imagine that the meningitis was gummatous, and that it probably involved especially the internal surface of the dura mater (pachymeningitis), but extended also to the contiguous soft membranes. . . . Note, also, that there was no tenderness on percussing the vertebral spines. The absence of this symptom is too often regarded as being almost inconsistent with the existence of serious lesion of the cord or its coverings. Nothing can well be less founded in fact. If we put aside cases in which the vertebral column itself is diseased, we shall find that the existence of very marked spinal tenderness points strongly in the direction of a functional nervous affection of comparatively little importance, and does not indicate a serious organic lesion of the spinal cord."

keeping up any chronic inflammation of the membranes of the spinal cord. In a case under my own observation not long ago, the symptoms of a scattered meningitis—to wit, slight wasting and partial loss both of motion and sensation in the legs—had been attributed to an injury to the spine; but as a matter of fact there was a very distinct history of syphilis, the symptoms had more than once been lessened and almost removed by the administration of anti-syphilitic remedies, and careful inquiry proved that the supposed injury was altogether trivial. And although, from a medico-legal point of view, the presence of a syphilitic taint does not debar the patient from compensation for injuries received, such taint must of necessity be acknowledged if we are to form a correct estimate of the probabilities of recovery in any particular case.¹

Happily there is no doubt of the exceeding rarity of spinal meningitis as an immediate result of localised injury to the vertebral column. The same remark applies with especial force to the results of the injuries which have been considered in the early part of this chapter; and I know of no case in which meningeal inflammation has been caused by injury to some part of the body remote from the spine.

16. While then the victims of railway collision are not by any means exempted from liability to suffer from any and every form of lesion of the spinal cord and its membranous coverings, accumulated experience leaves no longer any doubt that these grave results are most uncommon, and that though the back is especially prone to suffer injury in this form of accident, it is the extra-spinal structures which, in ninety-nine cases out of a hundred, bear the brunt of the violence and suffer from it. Such is the immediate consequence, but in every medico-legal inquiry the future as well as the present has to be considered. What is the prognosis; and what risk is there that after the receipt of some such obscure injury of the back as we have been dealing with, there shall supervene, as a consequence of the injury, the symptoms of degeneration of the spinal cord? No more vital question can be asked in treating of railway injuries. It has from the first engaged my very careful attention, and I have

Risk of
future
spinal cord
degenera-
tion.

¹ "Inasmuch," says Dr. Ross (*Diseases of the Nervous System*, 2nd ed., vol. i. p. 293), "as there is no severe organic disease affecting the nervous system in which the results of treatment are so often satisfactory, so there is no disease which deservedly brings so much discredit upon the practitioner who overlooks its presence."

endeavoured to learn of cases where there has been degeneration of the spinal cord as a remote consequence of spinal injury. My inquiries have either been singularly unsuccessful—and they have been made by direct oral and written communication with many professional brethren in all parts of the country—or it must be admitted that secondary and remote degeneration of the spinal cord, in cases where there has been no distinctive evidence of injury, is very rare indeed. Nor have I been able to discover any grounds for thinking that the injured in railway collisions, numbering many thousands since the first accident happened, have afforded a larger proportion of those degenerative system-diseases of the spinal cord, which in recent years have so much engaged the attention of neurologists and pathologists, than have those persons who have not been exposed to the same influences. It is perfectly true that in some recorded cases the onset of a system-disease has had no more obvious cause than injury, and there is nothing inherently improbable in such a sequence of events; but cases of the kind are wholly exceptional, and are too few in number to call for the introduction of any account of them in a chapter devoted only to the common and everyday forms of spinal injury as seen after collision accidents.

Associated
neurasthenia and
the influence of
compensation on
recovery.

17. A survey has thus far been taken of the common spinal injuries of railway collisions, but there is nothing in all that has been said to suggest that these injuries differ in any way from spinal injuries received in other forms of accident. Their frequency is, however, unquestionable; and this, as we have seen, is due to the special nature of railway collisions, whereby the back is very liable to be sprained. Given a case in which a mere sprain of the back is the only injury sustained, there is not, and there ought not to be, much difficulty in diagnosis; but again, the nature of a railway collision determines a liability to other forms of health disturbance, which, in company with a spinal sprain, may make the diagnosis far from easy, and may be the source of needless alarm. Here step in to perplex the clinical inquirer those so-called functional, emotional, and hysterical disorders, which have yet to be considered, which are really due to the fright and mental shock incidental to railway accidents, but which have been too often looked upon as the result of injury to the spinal membranes or the spinal cord. Here also in very common association are the symptoms due to severe general

nervous shock, which are seen even when there has been no evidence of injury to any one organ of the body, or of a blow having been inflicted on any single part. They may come on soon after the accident, or be delayed for many hours; they are characterised by enfeebled function both of body and mind, and are not uncommon in those who have received no bodily injury whatever. As I shall have to point out, they are the continued expression of severe nervous exhaustion. Picture a case of this kind, and add to it sprain of the muscles and ligaments of the vertebral column, with the resultant pain on movement, so obstinate in its duration, and the tenderness—sometimes acute—on touch, and it is neither more nor less than natural—though a natural mistake—that the whole condition should be attributed to some alteration or morbid change of the spine and spinal cord which have been concussed.

The jar or vibration of a collision must doubtless shake the spinal cord as much as the brain and every other organ of the body, but there is scant reason for an explanation of the symptoms of general nervous shock in degenerative changes of the structures lying within the spinal canal, simply because the patient has a painful, stiff, and tender back. However alarming such cases may be, the tendency is towards perfect recovery after a longer or a shorter time. And, inconsistent though it may at first sight appear that anything apart from the injury and the bodily condition itself should influence convalescence, it is none the less a fact, which daily experience confirms, that the period of recovery very frequently begins at the moment when all mental anxiety and worry are at an end as to the legal aspects of the case. The settlement of the patient's claim for compensation has a potent influence in bringing about convalescence, not necessarily because there has been imposture or a lack of perfect genuineness in the facts and features of the case, but because, as a very symptom of the malady itself, there must have been an inability to bear the strain of a medico-legal inquiry. The strain removed, the anxiety lessened, there is nothing now in the way of a hopeful effort being made to return to a more natural and healthful mode of life, and each returning day of improved mental tone forges one more link in the chain of progress towards recovery. I am not referring here, be it remembered, to cases which are not strictly genuine, and where there is grave reason for suspecting the *bona fides* of the patient. Examples of this kind are not uncommon, where the prospect of larger pecuniary gain acts as a temptation to keep up the invalid state; but we must be careful

that the absence of objective signs of nerve lesion does not lead us into the error of throwing doubt on the integrity and veracity of those who are really suffering from the symptoms of general nervous shock. There is a vast difference, however, between the false and the true, and the one can be distinguished from the other without much difficulty.

CHAPTER II.

GENERAL NERVOUS SHOCK.

SUMMARY.—1. Nature and signs of shock or collapse.—2. Fright a potent cause, especially in railway accidents.—3. Delayed symptoms.—4. Different degrees of shock.—5. Neurasthenia different from hysteria, but often associated with it.—6. Thorburn's classification.—7. Symptoms of protracted nervous shock: Sleeplessness.—8. Disturbances of the circulation.—9. Headache.—10. General nervousness.—11. Sweating, polyuria, menorrhagia, diarrhoea.—12. Defects of vision and size of the pupil.—13. The optic discs.—14. Loss of memory, so-called.—15. Catamenial derangements and pregnancy.—16. The genito-urinary system.—17. Disorders of digestion and nutrition.—18. Prognosis and exceptions to the usual rule.—19. The complex of symptoms.

1. HAVING thus far given an account of the injuries of the back which are commonly met with after railway collisions, my next duty is to turn to the cases vastly more numerous, and even more important, to which I have already referred under the name "general nervous shock." This term is applicable rather to the whole clinical circumstances of the case than to any one symptom which may be presented by the injured person. It is a phrase which, in its very lack of precision, appears suitable to describe the class of cases which we must now consider; for we shall see that the course, history, and general symptoms indicate some functional or dynamic disturbance of the nervous equilibrium or tone, rather than structural damage to any organ of the body.

We are all familiar with the term "shock" as synonymous with the collapse which accompanies all profound and sudden injuries, whether inflicted upon the head or upon some other part of the body. And this collapse or shock we are wont to regard as the immediate expression of lowered, or annihilated, function of the great nerve centres which preside over the vascular system; paresis of the heart and of the peripheral parts of the circulation being the essential factor in inducing the pallor and coldness which affect the whole surface of the body, and the mental enfeeblement which is due to impaired flow of blood within the brain.

This, however, is not the place to enter into any lengthened

description of the nature of true shock or collapse.¹ No matter how the injury may have been inflicted, provided only it has been sudden and severe, whether by railway accident or by the more ordinary casualties of everyday life, shock or collapse in greater or lesser degree is invariably recognised as one of the features of the patient's general condition immediately after the injury has been received. The collapse may be lasting and profound, or it may be slight and transient, but in every case it is an immediate consequence of the injury, which, by its suddenness and severity, has induced the paresis which primarily affects the great central organ of the circulation. Nor need any description be given of the history and symptoms of cases of shock or collapse, with which all are doubtless familiar in hospital practice. There is, in fact, no condition which is more obvious or more striking than that of the seeming lifelessness, which is an indication that some severe impression has been made by injury upon the nervous system.

The term "lifelessness" is indeed an appropriate one to give to the state of shock from injury in its more serious degrees. There is a lowering of the vitality of every organ and function of the body, from mental activity and capacity to that of the least important function in the animal economy. And that which probably lies at the very foundation of many of the symptoms of shock or collapse is temporary paresis of the heart, and of the whole circulatory system. The slow, feeble, or almost annihilated pulse, the pallor of the lips and coldness of the extremities, the mental hebetude, the anæsthesia of the surface, the relaxation of the sphincters, the lessened secretion of the urine, the impaired muscular action, each and all are dependent in varying degrees on the paresis of the heart and vascular system, and on the impression upon the whole nervous system of which that is the first and most immediate result.

The collapse may be so profound as to be a source of greater danger to the patient than the bodily injury which he has sustained. The issue may be rapidly fatal, although death is the exceptional rather than the usual result of uncomplicated shock. The heart, under the appropriate treatment of quietude and warmth—masterly inactivity—or if need be, of stimulants—alcohol, strychnine, and digitalis—regains its normal power, and the functions are once more naturally performed. The collapse is frequently succeeded by a period of "reaction," in which the temperature and

¹ Mr. Savory's article in Holmes' System is known to every one, and in Groeningen's *Ueber den Shock* will be found a full account of all the symptoms and of every theory upon it.

pulse are slightly raised until the equilibrium of health has been established; but whether there be reaction or no, the symptoms pass away, and except as an indication for treatment, as a rule, they give us little more concern. Patient and surgeon are far more interested, after the subsidence of the initial collapse and its incidental risks, in the successful issue of the needful operation, or in the usefulness restored to the limb or organ which has been damaged. If these results be satisfactory, the patient leaves the hospital gratified at the recovery which he has made, and thankful perhaps that his injuries were not more severe. What has become of the collapse which on his admission into hospital was a striking feature in his case? Has it no after-symptoms, or has it, as we thought it had, completely passed away? Important questions these; but as a matter of fact we know so little of the after-history of hospital patients, that from their cases we can draw but little help in elucidation of the general nervous shock which is met with after railway collisions, and whose after-symptoms may perhaps be far more prominent than those which immediately followed the injury. Our hospital patients, as we believe, recover, and rarely or never do we hear of the symptoms, nor do we meet with the class of cases to which I shall direct attention now.

2. Surgeons are pretty well agreed that the collapse in cases of accident brought into hospital is usually very profound after the injuries—crush of limbs, for example—which railway servants meet with at their work, and which often call for operative interference. Compare two cases of like injury, the one received by accident on a railway, and the other by being knocked down and run over in the street, and there is great probability that the manifestations of shock will be much more marked in the former case than in the latter. The difference I believe is this, that in the one case there is an element of great fear and alarm, which has perhaps been altogether absent from the less formidable and less terrible mode of accident. How largely fright may of itself conduce to the condition recognised as shock is well shown by a case communicated to me by a surgeon of large experience, who, summoned to a railway station to see and conduct to the hospital a railway servant who had had his foot, as was supposed, run over on the line, found him in a state of collapse, and in greatest alarm as to the injury to his limb. Upon examination it was discovered that

Fright a potent cause, especially in railway accidents.

the only damage was the dexterous removal of the heel of his boot by the wheel of a passing engine. And medical literature abounds with cases where the gravest disturbances of function, and even death or the annihilation of function, have been produced by fright and by fright alone.

It is this element of fear, this great mental shock, which in railway collisions has so large a share—in many cases the only share—in inducing immediate collapse, and in giving rise to those after-symptoms which may be almost as serious as, and are certainly far more troublesome than, those which we meet with shortly after the accident has occurred. The reasons for this are not far to seek. The incidents indeed of almost every railway collision are quite sufficient—even if no bodily injury is inflicted—to produce a very serious effect upon the mind, and to be the means of bringing about a state of collapse from fright, and from fright only. The suddenness of the accident, which comes without warning, or with a warning which only reveals the utter helplessness of the traveller, the loud noise, the hopeless confusion, the cries of those who are injured; these in themselves, and more especially if they occur at night or in the dark, are surely adequate to produce a profound impression upon the nervous system, and, even if they caused no marked shock or collapse at the time, to induce a series of nervous disturbances at no distant date. “The principal feature in railway injuries,” says Mr. Furneaux Jordan, “is the combination of the psychical and corporeal elements in the causation of shock, in such a manner that the former or psychical element is always present in its most intense and violent form. The incidents of a railway accident contribute to form a combination of the most terrible circumstances which it is possible for the mind to conceive. The vastness of the destructive forces, the magnitude of the results, the imminent danger to the lives of numbers of human beings, and the hopelessness of escape from the danger, give rise to emotions which in themselves are quite sufficient to produce shock, or even death itself. . . . All that the most powerful impression on the nervous system can effect, is effected in a railway accident, and this quite irrespectively of the extent or importance of the bodily injury.”¹

Delayed
symptoms.

3. In these purely psychical causes lies, I believe, the explanation of the remarkable fact that after railway collisions the

¹ Surgical Enquiries, 2nd edit., p. 37.

symptoms of general nervous shock are so common, and sometimes so severe, in those who have received no bodily injury, or who have presented little sign of collapse at the time of the accident. The collapse from severe bodily injury is coincident with the injury itself, or with the immediate results of it, but when the shock is produced by purely mental causes the manifestations thereof may be both prolonged and delayed. Warded off in the first place by the excitement of the scene, the shock is gathering, in the very delay itself, new force from the fact that the sources of alarm are continuous, that they may recur for days, and for a time be all potent for evil in the patient's mind. "In certain temperaments, wrought into a state of extreme excitement, a comparatively severe injury may not be attended with that degree of shock which, under other circumstances, would be seen. In those cases, however, shock is usually deferred, and not altogether averted; and it may be all the more severe, seeing that reactionary mental exhaustion, itself a kind of shock, is superadded to the effects of bodily injury."¹

Due weight must, therefore, be given to alarm and profound mental emotion as causes of the symptoms of general nervous shock so frequently seen after railway collisions. Sufficient importance, indeed, has not been attached to them, and many errors in diagnosis have been made, because fright has not been deemed of itself sufficient to bring about the train of symptoms which will be described. On the one hand, we may hear the condition regarded as evidence of serious and irremediable pathological change in the chief centres of the nervous system; and on the other hand, no clear history of pronounced shock or collapse at the time of the injury being forthcoming, the symptoms are deemed unreal, and the *bona fides* of the patient is called in question. The mistakes are at opposite ends, and I hardly know which is the worse for the patient, who, really suffering and ill, lies in the condition in which we find him because his whole nervous system has received a shock, not so much from severe bodily injury which shows itself in unmistakable signs, as from the impalpable element of alarm, which has to be measured by the events of the accident itself, and by the temperament of the individual who has been affected thereby.

4. The indications of collapse at the time of accident are very variable. The profoundest grades are occasionally seen after the

Different
degrees of
shock.

¹ Furneaux Jordan, *op. cit.*, p. 27.

worst accidents, where there has been in all probability destruction of life and limb. In these circumstances it is no marvel that we should meet with examples of most alarming collapse, associated with definite structural injury, an injury such as would be commonly marked by collapse, however and wherever it had been received. The collapse, however, which in these railway accidents accompanies serious bodily injury, such as laceration of limb or fracture of bones—always excepting the collapse from severe concussion of the brain—is very rarely followed by the train of after-symptoms indicative of general nervous shock. This is a fact of great interest and importance, which will help to throw light upon those symptoms of general nervous shock which are often seen after the slightest degrees of initial collapse.

More numerous than the cases of profound immediate collapse are those where the accident has been less severe in its effects upon life and limb, and where the earliest signs of shock have been comparatively slight. "I was thrown forwards and backwards in the carriage; I felt myself shaken, but did not think I had been much hurt; I got out of the carriage, and was able to help some of the other passengers, and I came on home by the next train:"—such is perhaps the simple story of the man who finds himself in a few hours, it may be only after two or three days, compelled to take to his bed because he feels so unnerved, and shaken, and ill. You make inquiry as to the more immediate effects of the accident upon him, and you perhaps learn that he felt shaken and was obliged to have some brandy, that he felt sick and faint for a few moments, or that he even vomited. He thought little of it, however, and gave help to others. A few hours elapse, and he finds he cannot sleep; he has aches and pains in various parts of the body, most likely in the back; he feels as if he had been beaten all over; he is thirsty, feverish, and ill; and, gathering fresh alarm from the very fact that he thought he had happily escaped all injury, he sends for his doctor, who sees that the symptoms of nervous disturbance and prostration have already begun. The prominent symptoms, however, do not always arise so soon. Conscious that he has sustained no bodily injury, the man continues at his work, and days go by before it is brought home to him that he is not so ready or active at his business, that he is soon tired, and has to leave off and lie down in the middle of the day. It is an increasing worry and annoyance to him to write his letters, or to talk with people on business affairs; the back of his head feels heavy, and his appetite

deserts him. Nevertheless he struggles on, each day not feeling quite as well as on the day before, until at last the necessity is forced upon him of completely abstaining from his work. With varied modifications in detail, such stories as these are often heard of the effects which an accident has had on numbers of persons. It is clear, from what happened at the time, and from the early symptoms of reaction afterwards, that there was undoubted shock immediately after, or within a short time of, the accident. Its early manifestations were slight, and were disregarded as little more than a feeling of faintness or of being dazed, but it was enough to show that the alarm of the accident produced an instantaneous or early result, and to be the starting-point of that disturbance of the nervous system which may assume an aggravated form, and continue for a very long time. It will be one aim of this work to explain how it is that the after-results of even very trifling initial shock from railway accident are often more lasting and serious, than are the later nervous symptoms of those in whom the early collapse, with extensive bodily injury, was originally more profound.

Lastly, at the other end of the scale are the cases where there is no evidence whatever of injury or of collapse, no faintness, nausea, or vomiting, no early reaction from an initial stage of depression, but where the after-history very closely simulates that of the more numerous cases which fall under our care. These I shall consider by-and-by, for few are commoner than cases of spurious nervous shock.

Let me now illustrate the kinds of symptoms with which we have to deal.

CASE 10.—*Severe general nervous shock—Prolonged symptoms—Physical injuries slight.*—S. W., aged forty-six, a tall, somewhat powerful man, was in a very severe and destructive collision. He received bruises over both arms and legs, and also a blow upon the face which abraded the skin over, and fractured the bones of, his nose. He was not stunned. He lay for several days after the accident in a state of great nervous depression, with feeble and rapid pulse, and inability to eat or sleep. He suffered at the same time much distress from the fact that a friend sitting beside him in the carriage had been killed; and this seemed to prey constantly upon his mind. The bodily injuries proceeded rapidly towards recovery, and in seventeen days after the accident he was able to be moved home. Nine weeks after the accident he had fairly well recovered from his local injuries, and made no com-

plaint of bodily sufferings. Examination at this date discovered no structural disease, but he was evidently in a most feeble and wretched state. The ordinary functions of the body were natural, but his mental condition showed extreme emotional disturbance. He complained that he had suffered continuously from depression of spirits, as if some great trouble were impending. "He is easily upset and prone to cry. He says he used to cry whenever he spoke to any one, but that now he has rather more control. He has been out of doors for a few yards, but was stopped by a sudden sensation as if his breathing were very short. His voice is very weak and indistinct, and occasionally he says it is almost inaudible. There is no disease of the larynx or adjoining parts. He sleeps very badly, waking frequently, and being constantly troubled by distressing dreams. His pulse is weak, 104. He occupies himself by a little reading and by occasionally going out, but he feels so shaken and weak that he is unable to do anything more. In many respects, however, he is improving. The weight he lost is being regained. He can walk rather further, is not so ready to cry, and his voice is stronger." He remained in much the same condition for several months, though with undoubted tendency toward improvement. Fifteen months after the accident, several months, that is, after his claim had been settled, I learned that he was better, though yet very far from right, and he was considered wholly unfit for work. His history, given four years after the accident by his medical attendant, is as follows:—"In my opinion he will never be anything like the same man again. His appearance is much altered. He looks much older, haggard, and has become very bald. His voice is very weak, almost gone at times. For some time he went about in search of health, but improved very slowly, if at all. Lately he has obtained two posts, the work at which is of a very light nature. I just jotted down the following symptoms as he mentioned them, and I feel sure he would not wilfully exaggerate them. Very depressed spirits, sometimes palpitation, loss of sleep, bad dreams, very easily tired, can't walk more than two miles, then gets very tired and quite loses his voice. Did nothing for two years after the accident. Has lost all his energy. Sometimes has a great dread of impending evil. He *can* travel by railway without feeling nervous, but can't drive without feeling frightened all the time. I may add that his heart sounds are rather feeble, but not otherwise abnormal. Pulse 72. No special spinal symptoms; no paralysis; no bladder symptoms; always gets much upset if dining in company or if many people are talking near him. I knew him well before the

accident, and he was a very energetic and very honourable man." Three years later his symptoms were still subsiding. Since he began regular work he had continued more markedly to improve.

It must be pretty obvious from his history that this man's prolonged illness was due in only small measure to the *bodily* injuries which he received. From these injuries, indeed, he had recovered, as soon as if they had been inflicted in any other accident and in any other way. The cause of his illness and of his altered condition, even after the lapse of several years, was the mental shock, call it fright or what we may, which the whole circumstances of the accident wrought upon him. There is no reason, in such a case, to believe that the condition is due to any gross pathological change, such as the unaided eye might see upon the post-mortem table, and certainly there is not meningo-myelitis of the brain and spinal cord.

Evidences of the immediate effects of fright alone are, of course, not often obtainable. In the following case, however, it was recorded in the official report of the accident that "a man, name unknown, was so frightened, and trembled so bad, that he had to be detained all night."

CASE 11.—*General nervous shock—Great fright.*—B. J., aged forty-four, a thick-set, somewhat robust-looking man, was in a carriage which ran off the line when the train had just left a station, and which, after jolting along off the rails for a few yards, was turned over on its side. He says he was far more shaken, "terribly shaken" was his phrase, by the previous jolting than by the overthrowing of the carriage; and when he had got out, his condition was that mentioned in the official report. On the following day he travelled home alone, presenting on arrival so dazed an appearance that his doctor was immediately sent for. Ten days afterwards he was suffering from muscular pains, increased by movement, in various parts of the body, and due, no doubt, either to bruising or straining when the carriage had been jolted and overturned. "He can hardly get any sleep, having before his mind a constant *fear* of the railway accident, and he becomes occasionally 'light-headed' at night. He is lying in bed with his eyes closed and the blinds down, complaining that he dreads the light. He gets very low-spirited, and frets about his business, the thought of which pains his head. He is much alarmed at the pains which he suffers, says he is afraid to move on account of them, and that he fears he has received internal

injury. The bowels are confined. His temperature is 99° F., and his pulse is 102." Notwithstanding his expressions of fear, he was able to sit up in bed without sign of suffering, and in talking he moved his head naturally from side to side. He very soon also seemed quite content to have the blind drawn up, and gradually opened his eyes. There was no evidence of his having received any bodily injury other than muscular bruising and strain, and his condition was regarded by all who saw him as essentially one of general nervous shock likely to pass away after a time. When seen again at the end of two months, he had a somewhat worn and anxious expression, but said he was better, his "nervousness" being not so great as it was. "He complains of being easily upset and startled, and that the least excitement brings on a sharp pain in the head. The muscular pains are better, that which still troubles him most being a pain in the muscles of the left side of the neck. He sleeps better, though he occasionally has disturbed nights. He could walk two or three miles perhaps, but would be very fatigued. His pulse is 100." He had evidently much improved, and it was advised that after further change he should begin his work. Several weeks more elapsed, and I then found him neither looking nor feeling as well as before. He was very nervous about himself, felt unable to do his work, was depressed and melancholy, and losing heart from the thought that he would never get well. He had been attending to his business for two or three hours a day, and the anxieties of it were very distressing to him. He was, moreover, very anxious to arrange his pecuniary claim for compensation, as both he and his doctors felt that that was now beginning to prey upon his mind. In bodily health he seemed well. Eighteen months after his claim was settled, I again had the opportunity of seeing him. He was then in perfect bodily health, able to follow his occupation as usual, and to endure as much physical exertion without fatigue as before the accident. He could not, however, remain as long at his desk without feeling worried, and his wife said that he was more irritable than he used to be. In these respects, nevertheless, he was admittedly improving, and he himself felt confident that before long he would be absolutely well.

CASE 12.—*Slight general nervous shock*.—A case of lesser severity is the following:—M. F., aged forty-four, a man, to use his own expression, of "excitable temperament," was in a sharp collision which the whistling of the engine had warned

him was going to happen. He had thus been able to prepare himself for the crash. He was conscious of having a blow on the back of the neck. He did not, however, think that he had been hurt, and was able at once to help the other passengers. This work over, he walked a mile to catch a train at another station, finished his journey, and completed the business which had called him away from home. On the following day he felt "queer," and sent for his doctor, who found him agitated and depressed, unable to occupy himself, and complaining that he felt shaken. His pulse was, however, natural, and his temperature normal. He subsequently suffered from sleeplessness, and he had pains in various parts of the spinal column, where it was supposed he had been sprained or bruised. There was never any evident disturbance of the organic functions, but for some months he suffered from sleeplessness, from much depression of mind, from inability to occupy himself, and from a constant sense of weariness in the small of the back. After change of air he found himself better, and then complaining that want of work was distressing to him, he attempted to resume his business, but found that it made him worse, more nervous and depressed, and more sleepless at night. Further change of air, however, did him good, and in nine months he arranged his claim. In twelve months he was again at his ordinary work, having "entirely recovered" from his illness. He continued at his business for some years afterwards, and then retired.

CASE 13.—*Neurasthenia induced by fright.—Previous anæmia.*
—A lady, aged twenty-four, was in a collision which took place at night without the slightest warning. The luggage fell all about the carriage, and her husband was thrown against her, but she herself was neither moved from her seat nor injured on any single part. As soon as she got out she was much alarmed at seeing a carriage had been smashed to pieces, and then she watched a man being rescued from the débris in which he was buried. She went on her journey, and the next day felt, to use her own words, as if she had passed through something terrible, and from that time onwards she became sleepless, lost her appetite and strength, suffered from pain in the back of her head and at several spots down her spine, and was quite upset by any attempts at household work, or by reading and writing. Thinking she had not been hurt, her friends urged her to do as much as possible and not to give way, but she steadily got worse rather than better, and although not in the least hysterical, it was

not until proper treatment was begun that improvement set in. The case was complicated by previous dysmenorrhœa and anæmia, both of which were increased for a time by the accident.

Neuras-
thenia dif-
ferent from
hysteria,
but often
associated
with it.

5. These examples give a good idea of the history and class of symptoms which cases of general nervous shock usually present. They were all of them, I believe, free from the taint of conscious exaggeration or imposture, but it must be abundantly obvious how largely the reality of many of the symptoms, lacking all vestige of objective sign, depends upon the veracity and good faith of the patients themselves. On this account it is that the cases are so difficult to describe, and that it is almost impossible to convey an adequate impression of them to those who may have never seen them. I propose, therefore, to bring together and to say something about each of the various symptoms which are commonly met with, or of which the patients complain, when suffering from "general nervous shock." And here it may be well to premise that I draw a broad distinction between the condition to which this name is given and that in which genuine hysteria is a pronounced symptom. General nervous shock is not hysteria. It is frequently met with in those who show no hysterical disturbance whatever, as likewise there may be much hysteria without any symptoms of general nervous shock.

Thorburn's
classifica-
tion.

6. Nevertheless, while I see much to agree with, and that I cannot improve upon, in Mr. Thorburn's tentative classification¹ of the post-traumatic functional neuroses—

" 1. *Acute effects.*

- (a.) General nervous depression—'shock' or 'collapse.'
- (b.) A more localised and defined disturbance of cerebral (cortical) origin—'acute hysteria' or 'hysterics.'

2. *Chronic after-effects.*

- (a.) General nervous depression—'neurasthenia.'
- (b.) A more localised and defined disturbance of cerebral (cortical) origin—'chronic hysteria'—"

it is by no means uncommon in my experience for the two states—hysteria and neurasthenia—to be associated together. Both are originated by the same cause, but the symptoms due to each can usually be determined. Should there be any tendency to

¹ A Contribution to the Surgery of the Spinal Cord, p. 186. Griffin & Co. 1889.

hysteria, the state of general nervous depression is clearly one likely to develop and maintain the purely hysterical disorder, and it is frequently obvious that the hysterical disturbance protracts the symptoms which are really dependent on the general nervous exhaustion. To cure the one is very often the best and only means of removing the other.

Thorburn writes:—"The symptoms of neurasthenia arise from a general defect in the nutrition and action of the nervous system. . . . The symptoms follow those of shock, and are the expression of an exhausted nervous system. They are generally transient, and will pass away under conditions and a line of treatment which may be briefly described as 'tonic.'"¹ Neurasthenia—to use the word now commonly given to the aggregate of symptoms of an exhausted nervous system—is, in my own experience, very much more common than hysteria. It is characterised by some or all, in varying proportion and degree, of the symptoms which I shall now describe, placing them merely in the order of their frequency, after a careful survey of many hundreds of cases personally observed.

7. Sleeplessness.—The physiological value of sleep is unquestionable, whether we merely look on it as the time for rest, or as an indication that no bodily or mental disturbance is there to prevent it. Inability to sleep, wakefulness during the whole or part of the night, is a sign of considerable import in estimating the amount of injury and of shock which the nervous system has sustained. It shows that something has happened to break the most regular habit of life, and to interfere with the healthy equilibrium and function of the whole nervous system. This continued sleeplessness may be a source of the greatest possible distress to the patient. He goes to bed tired and worn, and ready to fall asleep, but no sooner is his head on the pillow than he is seized, as it were, with an unnatural and dominant wakefulness which positively prevents him from closing his eyes. Or he falls asleep, and soon wakes again, and has to pass through a night of intense wretchedness, nervous and alive to the slightest sound. The furniture creaks or the mouse gnaws. Night after night this goes on, and he tells you that if he could only sleep he is sure he would be well. And what he says is very true, for not only has there been no serious shock to the nervous system of the man who can sleep comfortably and well after a railway accident, but on the other hand also, the return

Symptoms
of pro-
tracted
nervous
shock.
Sleepless-
ness.

¹ *Op. cit.*, p. 185.

of sleep, after it has been long absent or disturbed, is a very certain sign that the nervous system is regaining its equilibrium and tone. It must not be forgotten, however, that sleeplessness may be due to other causes than the original nervous shock, and that it may form a prominent complaint in those cases where convalescence is being prevented or retarded by circumstances of which I shall speak at a future page. Its value is thus to some extent impaired as a diagnostic symptom of general nervous shock from railway collision, unless it be at periods not remote from the time of accident; and, furthermore, there is frequently no means of knowing whether sleeplessness is undoubtedly present, for the reality of its existence may have no other basis than the uncorroborated statement of the patient himself.

Disturbances of the circulation.

8. Disturbances of the Circulation.—Disorders of the circulation, whether of the heart itself, or of more peripheral parts of the circulatory system, play a no less important part in the nervous derangement than inability to sleep, and are very commonly to be met with in cases of general nervous shock. It has been pointed out already that the shock originally showed itself by some degree of cardiac paresis, by smallness, feebleness, or slowness of the heart-beat. It is a natural consequence, therefore, that in the more serious cases of nervous shock, especially where continued mental terror and emotion tend to perpetuate the nervous disturbance, derangements of the circulation should be frequent and long-continued. The patients complain of palpitation, and palpitation from altogether trifling causes. The cardiac innervation may be so disturbed as to induce great frequency of the pulse, which may vary from 100 to 150; but far more commonly the palpitation is occasional, and it is only from exciting causes that the pulse-beat is increased. It is important to remember this in the examination of patients, for if you count the pulse only at the beginning, and omit to count it at the end of examination, you may be led to believe that the cardiac disturbance is more serious than in reality it is; and by the opposite error you may fail to discover any cardiac disturbance at all. A perfectly steady pulse throughout the whole examination tells its own tale. Nay, the rate, the character, and the excitability of the pulse form an almost metrical indication of the amount of disturbance of the nervous balance, strength, and tone; and the pulse is often the only sign there is to guide us to a right estimate of the patient's condition. It is important, how-

ever, to learn as far as possible the character of the patient's circulation before the accident, and the existence of any constitutional states or diseases, of which gout is perhaps the most common, which may give rise to functional cardiac disorder.

But while the state of the pulse may form the test of what we may call the grosser circulatory disturbances, there are yet other symptoms which are by no means uncommon. The whole vaso-motor system may be deranged; and when you hear the patient complain of alternate sensations of heat and cold, or of flushing of the face and head, or when you find that at one time his hands and feet are unnaturally warm, and at another unnaturally cold, there are evidences of disturbance in those peripheral parts of the circulatory system which are not necessarily or immediately under the same nervous influence or control as the heart itself. The functional strength of the vaso-motor system has been weakened—it has lost its nervous tone or healthy balance; and the loss is shown by the symptoms which have been named, as well as by the occasional presence of well-marked *tache cérébrale*. These disorders will be referred to again, for they seem to me to have some share in giving rise to the abnormal sensations of which complaint is often made, and whose obscurity tends to cast doubt upon the *bona fides* of the man who feels them, and who can only describe them as they seem to him. With returning health and nervous tone these various symptoms disappear, although, as will be presently shown, they are liable to be maintained by those influences and circumstances which tend to retard convalescence.

9. Headache.—Intimately connected with the foregoing symptoms is the complaint of headache, rarely amounting to actual pain, unless indeed there has been concussion of the brain. "Pain" is so relative a term, however, that it is difficult to estimate it at its true value, depending so largely as it does upon the idiosyncrasy of the individual. More common than actual pain, or the sensation to which the word pain would be applied, is a sense of weight or oppression. This feeling of heaviness may be at any part of the head, but is most common at the back of it, over the whole occipital region. Occipital oppression or pain is, indeed, the headache *par excellence* of neurasthenia. It may be always present, or be brought on by attempts at mental occupation—by reading, talking, agitation, or want of quietude. Alcohol nearly always increases it. These sensations are doubtless to some extent

dependent on the irregularities of circulation which have been named. The exciting causes of palpitation, or of alternate sensations of heat and cold, may at the same time indirectly give rise to morbid feelings of weight and heaviness in the head. Hence, also, have origin the sensations of giddiness and swimming in the head when the patient suddenly rises from the recumbent posture, sensations not uncommonly experienced by those who are first beginning to move about after serious and weakening illness. These various abnormal sensations are, moreover, largely due to the sleeplessness which is so common, and which invariably shows itself in impaired mental power, as long as the brain is deprived of natural rest. Occupation of the mind very early induces brain fatigue, and this fatigue is revealed to the patient by pain or oppression of the head and by an indefinable sense of worry. And as long as the general prostration leads to lessened bodily activity, derangements of digestion, constipation, and the like, tend in a still further degree to make headache a not uncommon complaint of those who are suffering from general nervous shock. Bring about sleep and natural rest, improve the cardiac tone by restoration of the general health and strength, and it will be found that the headaches and the brain fatigue soon pass away.

General
nervous-
ness.

10. Nervousness.—Under this heading must be placed a variety of complaints and symptoms which are very indefinite in character, and which often have no more substantial basis than the statements of the patients themselves. But they are the kinds of complaints which, in my judgment, display the alliance between the state of general nervous depression and true hysteria. Not that this association is always to be found or is always obvious in cases of hysteria, but that in this particular series the one is very much dependent on the other, owning a common cause, and possibly due to the same underlying condition of the nervous system. Complaints of being easily startled, of a sense of depression and melancholy, of trembling under excitement, of a desire to be alone and to avoid all noise, of hopelessness as to future prospects and the possibility of recovery, of agitation in the presence of others, of *globus hystericus*—these are often heard, and their nature is sufficiently obvious; and beside them may be placed in the same category sighing and panting, screaming at night, irritability of temper, stuttering and stammering, feebleness of voice, and the other hundred and one complaints and

symptoms which may be taken as evidence of nervous prostration and loss of tone, of the patient having been reduced to a more or less emotional or hysterical state, wherein loss of control is a prominent feature, whether it be as cause or effect, of the strange condition in which the patient seems.

11. Disorders of Secretion occupy no small place in the clinical picture of cases of general nervous shock. *Excessive sweating* is one of the most common, and is an objective sign of wrong somewhat less vague than the subjective symptoms last referred to. It is an evidence of impaired nerve function, and is a symptom, when it occurs without obvious exciting cause, of general weakness and prostration, and of disordered and weakened function of the nerves which control the action of the sweat-glands.

Sweating,
polyuria,
menor-
rhagia,
diarrhœa.

Here also, in all probability, we should rightly include those vaso-motor disturbances which, limited to special regions or tracts, may also give rise to very obvious symptoms. Of these *Polyuria* is the most pronounced, and may be the starting-point of much future trouble with the bladder, for the frequency of micturition which it necessitates may continue as a nervous affection long after the original cause for it has been removed. *Menorrhagia* is also not uncommon, coming on within a few hours of the accident, and wholly independent of any normal menstrual period; and in several cases profuse *Diarrhœa* has begun almost immediately after a railway collision. These also must be regarded as kindred signs of vaso-motor disturbance, dependent, in all probability, on some exhaustion or paresis of the vaso-motor centre—if there be but one—in the upper part of the spinal cord, or of the vaso-motor centres—if there be many—in different parts of the cerebro-spinal system. How strange and inexplicable the symptoms may sometimes be, was well shown by the case of a woman who was terribly frightened by the thought that an accident was going to happen to her child, and who was herself knocked down on the platform at a railway station. She had had polyuria some years before, and it now came on again soon after this accident. It lasted for several weeks, with one exception of twenty-four hours, during which it was replaced by an enormous flow of milk from the breasts. She was not at the time suckling. Cases such as this seem to support experimental observation as to the presence of vaso-motor centres in the cerebral hemispheres, and better to explain the intimate association of emotional and vaso-motor disturbances than if the centres lay in the spinal cord alone.

Defects of
vision and
size of the
pupil.

12. Photophobia, Asthenopia, and Size of the Pupil.—In some of the worst cases of general nervous shock we may occasionally meet with a considerable degree of photophobia. This is usually a transient symptom in the days soon after the accident, and is merely an evidence of the severity of the shock and of the need for absolute quiet. The patient finds a strong light unbearable, just as he cannot bear any loud noise. Far more common is the subsequent complaint of defect of vision, even when there has been no damage to or near the eyeball. "I can read for a short time, and then the lines all seem to run together," the patient tells you; and he thus describes a symptom, like those which have gone before, of prostrate nerve force. The asthenopia is due in nearly all cases—whether there has previously been ametropia or not—to loss of accommodative power, a result of the general weakness and depression which render any sustained effort difficult or impossible. It is merely another sign of easily induced fatigue; and in those persons who have neither error of refraction nor presbyopia, the asthenopia will disappear—as the general muscular fatigue and the brain fatigue will disappear—with returning health and strength. The asthenopia is precisely the same as that which is a not uncommon symptom of hypermetropia, and which may be felt for the first time after an exhausting illness or during the weakness induced by prolonged lactation. In vigorous health the accommodative power is adequate to overcome refractive error and to prevent fatigue of vision; reduce the strength, and asthenopia ensues as a direct consequence of weakened power of accommodation. It is very doubtful whether this power will ever be perfectly restored to its original strength in those who have abnormal refraction, or in whom presbyopia is either imminent or advanced. Thus you find it occasionally happen that persons, who have suffered from the shock of a railway collision, must in future years wear glasses to correct the refractive error of which they had not been conscious before. It is in these cases of induced asthenopia that *muscæ volitantes* are so commonly seen, and so often alarm the patient. They are of no pathological significance whatever, and as a matter of fact there are singularly few persons to whom they are not at times apparent.

The size of the pupil often affords valuable evidence of the state of the nervous tone. A widely dilated, sluggish pupil is incompatible with a healthy tone of the nervous system, as, conversely, a small pupil, which readily varies according to the degree of light, is a rare accompaniment of exhausted nervous

strength. Whatever be the physiological explanation of these facts, the size and activity of the pupil should always be taken into account in endeavouring to estimate the amount of general nervous prostration.

13. *The Optic Discs.*—At this point it may be well to consider ^{The optic discs.} whether, in addition to these various ocular phenomena, there is a risk of any more definite pathological change arising in the deeper structures of the eye. In my former work I entered at some length into this question, and the conclusion, drawn from my own observations and the records of published cases, amounted practically to this, that there was no evidence of pathological change being common in the cases of spinal injury and general nervous shock, such as are seen after railway collisions. I had often heard the retina described as congested—whatever that expression might mean—but I felt sure that too little account had been taken of the innumerable varieties of shade and colour presented by the normal fundus in perfect health, and still more, I will now add, of the appearances produced in healthy discs when refractive errors, hypermetropic astigmatism, and the like, had not been taken into proper account in ophthalmoscopic examinations. I emphasise these conclusions now, not alone because further experience supports them, but also because the matter has been more recently and very fully investigated anew by Mr. Thorburn, to whose work the reader must refer. He is in substantial agreement with what has been said here. Thus he writes:—"Slight spinal injuries are very common, but there is no evidence that they tend to be followed by changes in the optic disc. Such injuries are, however, in rare cases" (he himself having met with two only in 400) "followed by chronic meningitis or myelitis, and in the latter condition there is an *à priori* probability that optic neuritis may supervene. Both of these affections are, however, very rare, and with the exception of Dr. Clifford Allbutt's eight cases, in which we have not the material for an accurate diagnosis, there is but one recorded instance of this conjunction."¹ Furthermore, speaking of the traumatic neuroses, he says—"Here changes of the optic disc are so rare that among the numerous railway injuries which have come under my own observation, and which include many severe cases of traumatic neurosis, I have seen but one doubtful case of lesion of the optic disc." In no instance has he seen

¹ *Op. cit.*, p. 178.

the functional eye symptoms followed or accompanied by organic changes, although examination of a few recorded cases makes it "appear that there is an *à priori* probability that the functional traumatic neuroses may give rise to changes in the optic discs." These changes are indicated by transient vascular disturbance.

The sufferer from spinal sprain and its frequent accompaniment, nervous prostration, has therefore small cause for anxiety on this point; while at the same time every care must be taken that any pathological changes discovered are not the result, to use Dr. Gowers' words in writing of this very class of cases, "of an affection of the mind of the observer, rather than of the eye observed."¹

Loss of
memory,
so-called.

14. Loss of Memory.—Complaint of "loss of memory" is common, and yet the phrase is hardly an appropriate one to convey an accurate description of that which the patients usually mean by it. This so-called loss of memory is not an inability to recall the events and incidents of past life, but is rather an incapacity for sustained thought, and for continued application to the work which may be taken in hand. It is a lack of the power of volitional attention, and is an indication of easily induced fatigue. It is not a symptom of serious import, nor is it evidence of mischief in the brain. The nutrition of the brain, as of the rest of the body, is for the time impaired, and there is failure in the power of concentration and attention. It is merely another phase of the general weakness, and of the inability to apply himself to any settled occupation, which a patient very naturally feels under the sense of weakness and depression incidental to the nervous state in which he is. That this is the true explanation is frequently shown by those who make the most complaint. They can relate every incident of the accident, and of the events which followed it, and they are perfectly accurate as to the dates of many occurrences in their lives both before and since, but they are unable to apply themselves to work, or to collect their thoughts, or even to engage in conversation.

Catamenial
derange-
ments and
pregnancy.

15. Catamenial Derangements.—Menorrhagia has been already named as a not uncommon and immediate consequence of the nervous shock. Suppression of the catamenia, either at the moment of the accident, or as a subsequent concomitant of the general

¹ Medical Ophthalmoscopy, 2nd ed., p. 169.

nervous prostration, is likewise not unfrequent. Who shall say what determines the one or the other? The catamenia may thus be suppressed for several months—in fact, until the neurasthenical condition has passed away. At any rate the return of the periodic flow is usually coincident with a marked improvement in the general condition. As to pregnancy, this may be pointed out as a remarkable fact, that railway collisions rarely produce abortion or premature labour—strong evidence that the concussion is not as violent as it is often thought to be, for disturbance of the uterine contents is one of the recognised causes of induced labour. But although the fear of miscarriage need hardly be entertained, it is only natural that the injured woman should feel more than ordinary anxiety as to the coming labour. As a matter of fact, the neurasthenia keeps this anxiety alive, while the anxiety in its turn keeps up, or even in the circumstances develops, the neurasthenia. Suffice it that it is very unusual for any marked improvement to be noted until after the confinement. Then follows the natural result, from joy that a man is born into the world.

16. The Genito-Urinary System.—Every one is, of course, familiar with the risks of retention of urine in all cases of profound shock, and this should never be lost sight of in the case of persons injured in railway collisions. Unrelieved hyperdistension of the bladder may be the cause of much subsequent trouble from the atony thus induced. The general muscular feebleness, which is a marked feature of the state of neurasthenia, may also in both sexes be a further reason why the bladder is not completely emptied in micturition; and if, as has already been remarked, to these causes be added an inability to get out of bed, there is almost certain to be some residual urine—the commonest and most generally acknowledged cause of cystitis.

The genito-
urinary
system.

As to sexual matters, this only need here be said, that, as long as the neurasthenia lasts, there is not likely to be either the desire or the will. Both will return in due time, but before that time neither should be gratified, for the smallest degree of sexual exhaustion is sure to be most prejudicial to recovery. Conjugal isolation should be rigidly enforced as a matter of treatment.

17. The Digestive System is ordinarily much deranged. The nausea, and even the vomiting, which have accompanied the

Disorders
of diges-
tion and
nutrition.

early collapse, are both prone to continue, and the patient acquires an absolute loathing for food. The bowels are costive from the confinement to bed or the house, and the tongue becomes thickly furred. All this is obviously most hurtful to the neurasthenical state, and it has a large share in producing the wasting and muscular flabbiness which are soon developed. The wasting, however, is not due to this alone. The general nutrition is interfered with because of the nervous depression, whereby the proper and requisite nervous stimulus is withdrawn from the digestive and nutritive processes. Admittedly this is theory only, but there can hardly be much question that the health and vigour of the nervous system are essential for the orderly working of every other function in the body, and the action of the nervous system in connection with the functions of nutrition and digestion is not more, nor is it less, incomprehensible than is its action in connection with the circulatory or reproductive systems. At any rate, marked general wasting is often a striking phenomenon in cases of neurasthenia, and impaired nutrition may frequently be the cause of bad sleep.

Prognosis
and excep-
tions to the
usual rule.

18. Prognosis—Exceptions to the usual rule.—There have thus been brought together a number of the symptoms and complaints which make up the condition to which the term "neurasthenia" is nowadays commonly applied. It is synonymous with that of "general nervous shock," which has been used so often in these pages; and though there are many objections to it, it is on the whole a convenient clinical phrase. It has at any rate no underlying suggestion as to the pathology of the condition which it is meant to indicate. Of the pathology of the varied complex of symptoms which we call neurasthenia nothing indeed is known. We say there is general depression of nervous force, a dynamic not a structural change, resulting for a time in the manifestation of one or all of the symptoms which have been named. For a time only: because, however severe the symptoms may be, the prognosis of these cases is usually favourable; and with appropriate treatment, and the avoidance of all things likely to foster the nervous depression, there will come a restoration of the nervous strength and tone, and the evidences of its former depression will pass away.

This is the ordinary rule, but the gravity of the condition is attested by occasional, by happily very rare, instances, in which the result is different. The history of nervous shock would be

incomplete were no mention made of the fact that death sometimes ensues as a consequence of uncomplicated nervous exhaustion. No case of this kind has fallen under my own observation, but the following examples were communicated to me by a surgeon of large experience in railway injuries, the only cases, it may be said, which he had met with in a period of more than thirty years.

CASE 14.—*Severe shock—Death from general nervous prostration.*—A man, forty years of age, of exceedingly delicate physique, was in a collision at night. The accident was a slight one, and he was the only passenger injured. He was said, in the official report, to be “violently shaken,” but he was able to go on home. The next day he was delirious, and on the third day he was still talking somewhat incoherently. He complained of being much shaken, and of feeling seriously injured, but there was no evidence discoverable of bodily hurt. He improved for a time, and his condition was not thought to be serious. He never seemed, however, to make any marked progress, and four weeks after the accident he became more prostrate, and greater anxiety was felt about him. From this time he gradually got weaker and weaker, and died on the thirty-seventh day. No organic disease whatever was found on post-mortem examination in any of the viscera. The lungs were greatly congested, and the cavities of the heart were distended with blood, as if death had occurred from failure of respiration and circulation.

The accident was regarded as the unquestionable cause of the death. Though moderate in character, it no doubt exercised a very unusual influence in depressing vital powers—never very strong naturally—and finally induced such an amount of nervous exhaustion as to terminate fatally, even though there were no evidences before or after death of physical injury to any one part.

CASE 15.—*Severe shock from fright ending fatally.*—The other case was that of an apparently strong and healthy girl, nineteen years of age, in good position in life, who was in a most serious collision. She received no bodily injury, but on the night of the accident she woke screaming that the engine was rushing into the room. Her illness followed much the same course, and she died in about five weeks, no structural disease whatever being found after death. The brain and spinal cord were examined in both instances.

Cases such as these are happily most rare. They are not peculiar to railway accidents, and similar examples of death from mental shock, without any organic change discoverable, are recorded in works on nervous diseases.

The complex of symptoms.

19. The Complex of Symptoms.—Taking a final view of the symptoms and cases recorded, one can hardly fail to see how indubitably all of them point to a state of lowered nervous action or tone, and that there is a weakening and depression of every function which is under nerve control. In other words, the function of every organ and structure in the body is affected. There is mental weakness and there is physical weakness; weakness of will, of attention and power of thought; weakness, or easily induced fatigue, of the special senses which minister, both consciously and unconsciously, to the processes of the mind; feebleness of voluntary muscles and general lack of muscular tone; and feebleness of the involuntary, as shown by the character of the circulation both central and peripheral, by want of tone in the bladder wall, and by feeble peristalsis in the intestines; depression of the secretory apparatus indicated by sweating and other vaso-motor disturbances; impaired digestion and nutrition, and loss of sexual vigour—each and all bear witness to the nervous exhaustion and depression, to the widespread weakness which results from the nervous shock, and is expressed in the convenient word “neurasthenia.”

CHAPTER III.

GENERAL NERVOUS SHOCK—(*Continued*).

SUMMARY.—1. Alliance of neurasthenia and hysteria.—2. "Hysteria" in men.—3. Protraction of symptoms and delayed recovery.—4. Combination of mental and physical states.—5. The organic sensations.—6. Fixed attention, anxious reflection, and exaggeration.—7. Baneful influence of litigation and causes of chronic invalidism.—8. Importance of the previous state of health and habits of life.—9. Absence of prolonged symptoms in cases of fracture.—10. The prospects of the future health.

1. I SHALL now consider some of the causes which contribute to prolong the symptoms which have been described in the last chapter, and shall endeavour to show wherein there is an alliance between the state of neurasthenia and the development of conditions which are more distinctly of an hysterical type. For although on paper it may be an easy thing, and for purposes of clear understanding a useful thing, to separate the different effects of railway collision into distinct classes, I yet entertain no doubt that neurasthenical and hysterical, or so-called functional, disorders of the nervous system are closely linked together, and are very often to be found side by side in the clinical picture presented to us. They have a common exciting cause, and both may begin at the moment of the accident, as those cases show in which an outburst of "acute hysteria," to use Mr. Thorburn's phrase, has occurred immediately. More commonly, however, the signs of hysteria are developed at a later period, and are developed, I believe, through and by the intermediate agency of neurasthenia, which, as it were, prepares the nervous system, or puts it into a suitable state, for the origination of true hysterical disturbance. The profound psychical shock of a railway collision may there and then determine some grave hysterical disorder of the emotions only, or of some more definite function, such as that of common sensation; or it may do so only after there has been sufficient time for the nervous system to reach that condition of functional weakness in which hysterical disturbances are prone to arise. Neurasthenia is that condition; and a

Alliance of
neurasthenia and
hysteria.

very common sequence of events is for hysterical disturbances to be grafted on to the neurasthenical state—grafted on to it, and thereafter growing with it. I mean no more than this when I say that they are linked together, and although I have sought to convey the impression of a close alliance between the two conditions and their respective symptoms, I am yet in substantial agreement with Mr. Thorburn in his opinion “that neurasthenia and hysteria are distinct, and that, often as they are found in combination, neurasthenia is common without hysteria, and hysteria is at least not unknown without neurasthenic symptoms.”¹

“Hysteria”
in men.

2. Sex plays but a small part in the association, and although in ordinary life women are more commonly emotional than men, it is nevertheless true, that as the direct and indirect outcome of the nervous shock of a railway collision, men may become no less emotional and hysterical than women. “The frequency of hysteria in men is not fully recognised,” Mr. Furneaux Jordan wrote² some years ago; but we all know now that a condition closely allied to, nay identical with, the hysteria of women, is commonly developed in men after the great psychical shock of a railway collision, or through the neurasthenia induced thereby. I shall waste no words in academic discussion as to the use of the term “hysteria” as applied to men. When a better is invented it shall be used, but in the meantime we have to consider the why and the wherefore of the distressing condition to which a strong and healthy man may be in time reduced—a condition in which all control of the emotions is well nigh gone; in which he cannot sleep because he has before his mind an ever-present sense of the accident; starting at the least noise; lying in bed almost afraid to move; his heart palpitating whenever he is spoken to; and unable to hear or say a word about his present condition and his future prospects without bursting into tears.

Protrac-
tion of
symptoms
and
delayed
recovery.

3. The long continuance of such a condition forms an obvious exception to the ordinary rule—to the rule, with which all are familiar in everyday practice, that convalescence is soon entered upon, and that the symptoms of the original shock become gradually less severe, and in the course of a few weeks or months glide almost imperceptibly into a state of health, so that the man is able once more to resume his business, and to

¹ *Op. cit.*, p. 189.

² *Op. cit.*, p. 27.

engage in the pursuits of life. Convalescence, however, may be unduly delayed after the shock of a railway collision, the symptoms and their duration seeming to be out of all proportion to the injury sustained; or, convalescence having once set in, and the patient being almost well enough to resume his work, the symptoms may recur in all their severity, and the period of recovery be much delayed. What are the reasons which conduce to this protraction of the illness, and which conduce also in great measure to delay in convalescence, when all the circumstances, the amount of injury, and the evidences of initial shock, pointed in the direction of very early recovery?

4. Comparatively little has been said hitherto of the bodily injuries received, and it has been assumed throughout that the causes originally at work to bring about the shock and its after-consequences were essentially psychical. The fact, however, must never be lost sight of, that there are few cases of nervous shock after railway collision, in which *some* bodily injury has not likewise been sustained. The mode of accident, as we have already seen, has a tendency to cause injury of the vertebral column, an injury which in the majority of cases is a simple sprain of the spinal muscles and spinal ligaments, with severe vertebral pain as an inevitable consequence. Sprains are, moreover, not unlikely to have been received in other parts of the body, even when the patient was perfectly conscious at the time that he had no blow, and not a mark is subsequently to be seen. Hence it comes to pass that from the inherent nature of the bodily injuries themselves, pain in various parts of the body—in the trunk and in the arms and legs—is very liable to come on some time after the accident, to be severe in character, deep-seated in position, and, from the absence of all bruising, seemingly most obscure. Psychical causes are again at work to aggravate the patient's condition. His mental balance has already been upset by the shock of the collision, and it is disturbed still further by the onset, the character, and the obscurity of the pains which supervene. And this result is most likely to occur in those cases where the appearance of the pains has been delayed for two or three days. They renew the alarm of the injured man, his attention is thereby more closely directed to them, and their import becomes gravely aggravated in his mind. These pains, moreover, are prone to increase in severity during the first few days, and to last for a long time, and their very duration

Combina-
tion of
mental and
physical
states.

tends to maintain the exaggerated estimate which has been formed of them by the patient himself. Nor does familiarity with them lessen his alarm, for the original psychical disturbance has laid the sure foundation for an altogether erroneous estimate of the sensations which he feels. And thus you find that before very long the mind of the patient, unhinged by the shock, and directed to the pains and other abnormal sensations of his body, tends as it were to run riot with the symptoms which he feels. Dwelling constantly on his bodily sensations, he is on the lookout for any new sensation that may arise, and is alive to and makes discovery of sensations, which to the healthy have no existence at all. Perhaps he even keeps a chart of his back or of his whole body, and marks down from day to day the precise spots where he has had some queer sensation, ache, or pain.

The
organic
sensations.

5. Is it possible that a large number of the abnormal sensations which are thus discovered, and of which patients so frequently complain while the mental balance and tone are thus perturbed, can be due in any measure to a conscious perception of the sensations of organic life? The "hysterical" condition is essentially one in which there is loss of control and enfeeblement of the power of the will, and amidst the various ways in which these may show themselves, there is loss of the habitual power to suppress and keep in due subjection the sensations, which are doubtless associated with the various functions of the organic life of the individual. In the process of evolution towards a higher state of intellectual activity and endowment, man has become more and more unconscious of the sensations, which of necessity accompany the functional activity of the various organs and structures of his body. That the stomach, for example, the liver, the heart, the ovary, the œsophagus, are, as are the organs of special sense, represented somewhere and somehow, though in less degree, in the sensorium, is highly probable on *à priori* grounds, and is, moreover, established by the experiments of morbid physiological action, in originating those abnormal sensations, which may affect these and other parts by an *aura* at the commencement of an epileptic discharge. And if in perfect health of body and stability of mind these varied sensations play little part in the sentient life of the individual, it is because the intellectual development of man has enabled him to control them, and to allow them neither lot nor share in the sentient consciousness of active life. In the lower

animal, whose brain is hardly differentiated from the other parts of its nervous system, or which has no brain at all, the organic sensations doubtless have a more important part in the economy, and probably in the enjoyment of life; but as we step higher and higher in the scale of development, with increasing size and complexity of brain, the organic sensations have a proportionately smaller representation in the centres of intellectual activity. Let some sudden, profound psychical disturbance arise, such as may be induced by the shock and terror of a railway collision, forthwith the intellectual control is lessened, while the organic sensations declare their being, and force themselves into the conscious life of the individual. "If the nervous system," writes Sully, "has been slowly built up, during the course of human history, into its present complex form, it follows that those nervous structures and connections which have to do with the higher intellectual processes, or which represent the larger and more general relations of our experience, have been most recently evolved. Consequently, they would be the least deeply organised, and so the least stable; that is to say, the most liable to be thrown *hors de combat*."

"This is what happens temporarily in the case of the sane, when the mind is held fast by an illusion. And, in states of insanity, we see the process of nervous dissolution beginning with these same nervous structures, and so taking the reverse order of the process of evolution. And thus, we may say that throughout the mental life of the most sane of us, these higher and more delicately balanced structures are constantly in danger of being reduced to the state of inefficiency, which in its full manifestation is mental disease."¹

And thus it is, it seems to me, that when by the profound shock of a railway collision the "higher intellectual processes" are thrown *hors de combat*, these organic sensations, which, as the same writer says, "constitute for the most part in waking life an undiscriminated mass of obscure feeling, of which we are only conscious as the mental tone of the hour," and which form "'as the vital sense' an obscure background for our clear discriminative consciousness, and only come forward into this region when very exceptional in character,"² step out of their natural obscurity, and become the foci of the uncontrolled and misdirected attention of the mind.³

¹ Illusions, p. 122.

² Ibid., pp. 148, 149.

³ The reader will find some interesting and philosophical remarks on the subject in Dr. Mercier's able work, *Sanity and Insanity*, pp. 85-94. 1890.

Not one of the abnormal sensations has any organic lesion as its basis, but that there is some physical substratum seems highly probable. Continued disorders of the circulation are the most obvious after-signs of shock, and it is not at all unlikely that many of the morbid sensations which form the burthen of the patient's complaints have a real, not an altogether imaginary, basis in transient flushing, or in transient anæmia, of the affected part. Some such cause as this must be at the root of many of the sensations which afflict peripheral regions of the cutaneous surface, and not improbably of those also which are felt in the central or in more vital parts.

Fixed
attention,
anxious
reflection,
and exaggeration.

6. And as the mental state may be influenced and deluded by the abnormal sensations, so in an even greater degree may these be affected by the mind. The results of attention, of anxious attention concentrated on a part, are seen in their most aggravated forms. Pain and other morbid sensations are thus made more acute and more oppressive; they become more dominant in the mind, and less under the control of the already weakened will. Small wonder that the patient, alive to every new sensation which may arise, should tend to exaggerate its import, to describe it in terms which to the healthy man seem almost absurd, and that exaggeration should be a pronounced feature of the morbid state which is called hysteria, no matter which be the sex affected.

Baneful
influence of
litigation
and causes
of chronic
invalidism.

7. And out of this very exaggeration itself arises another cause of prolongation of the illness. The exaggerated estimate of the symptoms themselves leads to an erroneous estimate of the present incapacity, and to an increasing belief in the impossibility of future recovery and usefulness. Hence it is only natural that differences of opinion should arise between those who are entitled to receive compensation for the injuries and for their prospective consequences, and those who have to provide it, and who take a wholly unsentimental view of the value of the patient's health and life. Months perhaps are thus wasted in disputing about the claim; or, worse than this, the man is drawn unwittingly into litigation, and is subjected to the anxieties and worries which a lawsuit involves. What surer means than this for aggravating his symptoms? Is recovery possible under such an influence; is there not, indeed, every likelihood that the symptoms will get worse and worse, or at best will undergo no change, and is it not more

appropriate now to call them "litigation symptoms," than those of general nervous shock?

And herein also lies the explanation of the great majority of those cases where improvement has advanced to such a stage that return to work seems on all hands desirable, and yet nevertheless when work is suggested or attempted improvement stops; and even in some instances the patient seems from that very moment to fall back and to become worse than he was before. For, as a matter of fact, it is very rare to find the patients return to work while the question of compensation, and the possible disputes attending it, remain unsettled. Now and then you may meet with a patient, over whose plans and resolves the time and matter of compensation have little influence, who returns to his business with every benefit to himself at the moment when he has sufficiently recovered to do so. Such instances, however, are the exceptions to the rule, and occur probably in those only whose mental balance has never been very seriously upset, in whom the symptoms of general nervous shock have not been severe, or who have the good judgment not to allow these matters to weigh upon their minds. The experience of hosts of cases establishes this fact, that patients will not, or cannot, make the necessary effort to resume work so long as the settlement of the pecuniary claim has been uneffected. And thus, in addition to the worries and anxieties of litigation and dispute, there arises another very potent cause for continuance of the symptoms, and for inducing a state of chronic invalidism, which is far more dependent upon the circumstances of the moment than upon the original nervous shock received. This cause is the want of occupation. Can anything be worse for a man—is there anything more likely to lead to irritability and fretfulness, to sleeplessness and loss of appetite, to nervousness and anxiety about himself, to hopelessness as to the future, to a lack of power to concentrate his attention upon anything which he may have in hand—is there anything more fitted to disturb the relation between the *mens sana* and the *corpus sanum* than want of healthy occupation? And when this goes on for months and months, each month more wearisome and more wasted than the one before, is it to be wondered at that the picture which these patients present is often lamentable indeed? Still more wretched is it likely to become if, in addition to the want of occupation, the patient has remained altogether indoors, and has been deprived of the good which healthy bodily exercise might have done him.

Make all the allowance that may honestly be made for the special circumstances of terror attendant upon a railway collision—and I would not for a moment seek to lessen their real influence—and compare the state of one waiting for compensation, whom for the nonce we will call a railway patient, with the state, as nearly similar as may be, of a hospital patient who has had no compensation to look forward to, and who has been *compelled* to resume his work as soon as he was able, and then see how different is their lot, and how infinitely less wretched is the one man than the other. The hospital patient has long ago been well, while the railway patient has been waiting, for months it may be, until compensation has been paid him, verily believing that he could not return to work and to a natural and more healthful mode of life. “Settle your claim and get to work,” is the best advice which can be given a man in these circumstances. Get to work and you will soon find you have the strength for it, and will forget the gloomy prognostications of those who say that you never can tell what may happen after a railway accident, and that you ought to wait and see how things turn out.

Importance of the previous state of health and habits of life.

8. Quite apart, however, from these various causes, the condition, life, and habits of the patient before the accident have no small share in determining the severity of his symptoms and the rate of his recovery after it. It is evident that the man who has been in feeble health, or who is in a state of convalescence from some recent illness, is likely to present the symptoms of neurasthenia in an extreme degree; as also does the man who, although in perfect health, has been living a life of hard and constant work at the high pressure which everyday competition entails. He has an extensive business, with numbers of subordinates, and widespread interests in connection with it, which he must himself look after, and which he cannot delegate to another. He has been in good health, but this has been his life, and he has had no holiday for the past five years. He is much terrified and slightly shaken in a collision. He does not know he has been hurt, but not many days go by before he is completely prostrated, unable to eat or sleep, and feeling thoroughly ill. His business still compels his own attention, and so perhaps weeks go by before his obviously broken health and unfitness for work necessitate complete rest. It is difficult to say how he could have acted otherwise, but all the circumstances conduce to make

his illness a long one, and to delay the period of convalescence and recovery. For however good his health may have been to all appearances before the accident, his nervous system was in such a state of tension that it was likely to give way unduly from an adequate exciting cause. This is the unvarnished story of an actual case, and there are numbers like it. So, also, we may find a nervous system ill-prepared to bear the brunt of a railway shock in those of intemperate habits—habits of intemperance not in matters only of food and drink, to which the word is supposed commonly to apply, but habits of intemperance also in regard to the sexual desire. This is in my judgment a far more powerful predisposing cause of the neurasthenical state than errors in diet and alcoholic excess. At any rate, such causes as these must be borne in mind if we would seek for the reason why the symptoms are severe or are being unduly prolonged. Treatment is little likely to be of use unless they are recognised and put out of the way.

9. It is a striking fact that in cases where there has been serious injury to limb, such as simple or compound fracture, even if at the time of the accident the collapse was extreme, it is most unusual to meet with the protracted after-symptoms, which have been described as due to general nervous shock.

Absence of prolonged symptoms in cases of fracture.

CASE 16.—*Severe bodily injuries—Absence of prolonged after-symptoms of shock.*—A man, aged forty-seven, was in a very bad collision at night, and in addition to severe bruises and burns about the face and body, he had a simple fracture of one fibula, and a compound fracture of both bones of the other leg just above the ankle. There was naturally great collapse, but he rallied in the ordinary way and did well. Six months after the accident his general health was good; he was well nourished, he had no nervous symptoms, his pulse was quiet, and sleep and appetite were both excellent. Nor were there any after-symptoms, for at the end of five years he was reported as feeling no ill effects whatever from the accident, save a little pain and stiffness in the ankle when the weather was cold. Never at any time were there neurasthenical symptoms.

What is the reason that in a case such as this, and in others like it, there should be so marked an absence of the after-symptoms of general nervous shock, when originally the collapse was very severe? In psychological conditions lies, I believe, the explanation

of this seeming anomaly. In the very definiteness of the injury there is something on which the mind of the patient can dwell with a certain measure of satisfaction, for, as far as he knows, the usual result after fracture is perfect restoration of health and bodily usefulness. The collapse subsides, and the patient finds himself with an injury not more obscure, it may be, than that of a broken leg. He knows that he has been doomed for a time to his bed, and that as soon as he is allowed to be up he will begin to move about again and to get well. The injury is definite and precise, its symptoms are obvious from the moment it was received, it lacks the seeming obscurity that is a feature of those symptoms which only supervene after several hours or days, there is probably less pain as time goes on, and all the circumstances combine to induce a repose of mind, which is absent from the commoner cases which have been considered. And there is also the necessity of complete bodily repose from the moment that the patient can be placed in bed. The enforced rest is good both for body and mind. Confinement to bed at an end, the patient is only too thankful that he is able to move about again, and gradually begin to walk. Returning strength goes hand in hand with returning possibility of exercise, and there is less excuse for staying indoors because of the fear that the after-consequences of some wholly obscure injury may turn out very serious. There is, moreover, less likelihood of dispute arising as to compensation, and the money calculation becomes all the easier and the readier, because the nature and extent of the injury can be definitely appraised. Thus the absence of the symptoms of continued nervous shock in cases of bodily injury, where the amount of true collapse may have been originally severe, throws light on the symptoms which the more ordinary cases present, and tends to support the view that those symptoms are due to mental causes rather than to the bodily injury or to any vibratory jar sustained.

And how largely the continuance of the symptoms is due to mental influences is shown, perhaps even more conclusively, by the speedy recovery which often ensues, when the exciting causes of the symptoms are removed. It is all very well to say, it is a diagnosis easy enough to make, that so-and-so, who recovered as soon as his claim was settled, was shamming, and that his symptoms were altogether untrue or wilfully exaggerated; but this will hardly suffice in explanation of the symptoms which have caused so much anxiety and trouble, and have been so little amenable to treatment. Suspense is at an end, and there is

nothing any longer in the way of his making the requisite and successful effort to resume his work. "How long I have been ill, how little I improve, how small seem the chances of my recovery," have been the uppermost sentiments in his mind, and they speedily give way to this one, which is wholly different and far more hopeful, "How soon shall I be well."

10. It remains to be considered to what extent recovery is possible in these cases of nervous shock, and how far the patient regains the mental and bodily vigour which he had before the accident. Happily the record of cases known to me is conclusive upon this point, that recovery is usually complete, and the patient is able to resume his occupation and to carry on his business as well as he did before. There are, of course, exceptions to the rule, exceptions which show that some alteration has taken place in the bodily physique, and very possibly in the mental vigour also. Thus you may hear that the man is less able to bear prolonged fatigue, either bodily or mental; that he is more susceptible to the influence of alcohol, more irritable and easily excited; that he lacks that complete self-control which he may formerly have had in his business relations with his fellow-men; that he is nervous when travelling, is afraid to ride or drive, and has been compelled to give up his hunting and shooting; that he is a more nervous man than he was before, and more subject to headaches; and in the severer cases, that his hair has turned grey, and he looks prematurely aged. Some years have been added to his life, and he is never quite what he was before.

The prospects of the future health.

And here very appropriately arises this important question, How far does the course of the protracted illness, apart from the nature of the original injury and shock, conduce to imperfect recovery hereafter? Remember that the symptoms have been largely those of emotional disturbance, that loss of control and feebleness of will have been at the foundation of many of them, and there can be little doubt that an unconscious or wilful yielding to every sensation that may arise, the abandonment of the conscious self to the thralldom of the morbid state, the enjoyment, so to speak, of the luxury, not of woe exactly, but of gloomy forebodings and feelings and fears, pave the way for the impossibility of regaining, even in the best of circumstances, that complete mental stability and continuous self-control, which are the happy appanage of perfect bodily and mental health. A vicious habit is being impressed upon his nervous system, from which the

sufferer will find it difficult to rid himself. If he thus allows the various influences conducive to the morbid state to have the mastery over him for weeks and months, because he thinks it better to "wait and see how things turn out," unable, or making no determined effort, to resume his natural occupation and mode of living until some wholly impossible compensation has been received, depend upon it he will suffer in the future. Or worse than this, if he keeps up the morbid state by wilful means, his moral and his physical nature are subjected to a long spread-out shock, from which it will be hard to rally. As he sows so also shall he reap.

CHAPTER IV.

THE FRIGHT NEUROSES—TRAUMATIC HYSTERIA.

SUMMARY.—1. Neuromimetic disorders following injury.—2. Use of the term “functional.”—3. The temperament and previous health.—4. Acute hysteria.—5. Chronic neuromimetic and the accompanying cerebral state.—6. Suggestion in hypnosis.—7. Charcot and traumatic suggestion.—8. Auto-suggestion and fear of paralysis.—9. State allied to hypnosis after railway accident.—10. Oppenheim’s views.—11. The cerebral state induced by fright.—12. Dangers of its continuance.

1. I PROCEED, in the next place, to the consideration of a class of cases to which the name “traumatic hysteria” is now very commonly given. In my former work they were dealt with as examples of so-called functional or neuromimetic disorder, and although I shall still have to insist that that is their essential nature, the term traumatic hysteria has come into such general use in more recent years, that though I should prefer to call them the “fright neuroses,” I intend to adopt it here. Objection has from time to time been made to the use of the word “hysteria” because of its etymology, and still greater have been the objections made to it when in company with the word “traumatic.” Nevertheless I doubt very much whether it will ever be possible to get rid of the word hysteria, or if we should gain much by doing so; and if it be ever used to signify the nature of the symptoms presented by nervous disturbance occurring in the male, there is, I venture to think, no insuperable difficulty in so using it without thinking of the womb. Nor can any reasonable person doubt, after perusal of the works of Charcot, Oppenheim, Strümpell, Guinon, Thorburn, Dreschfeld, Weir Mitchell, and many others, that hysterical disorders are prone to follow and to be the result of injury. No better phrase for their description has, as far as I know, been suggested than “traumatic hysteria,” and I suppose there is not a single neurologist of experience or repute, who nowadays will be found to deny that the gravest disturbance of nerve function, to which the term hysteria is more or less applicable, may be met with in the male sex, and

Neuromimetic disorders following injury.

be the result of injury. Examples will be given here in support of this contention, but if any one doubts the possibility of hysteria in the male, let him turn to the authors who have been named, and there he will find unquestionable instances which will surely carry conviction to his mind.

Use of
the term
"functional."

2. Do not let it be thought, that in speaking of symptoms as hysterical or functional, there is any desire to minimise their importance and it may be their gravity. Far too often, it is true, the symptoms of nervous disorder have been placed in the category of hysteria, and been forthwith regarded as of small concern; but it may be questioned whether the treatment of a case has ever been found much easier because of the diagnosis of hysteria, and it is tolerably certain that we are not much nearer the correct understanding of its nature because it has been so described. That has never been my own feeling with reference to the so-called functional disturbances of the nervous system, which are common after railway accidents. It has always been my opinion that some material and morbid change must underlie the nerve disorder, but it seems to me most unlikely that such change can be of the same nature as the coarse pathological lesions, which we are wont to see in the post-mortem room, or which are shown us by the microscope. For all we know the change may be a chemical one, and the nervous disturbance be altogether secondary. The course of the symptoms themselves, and their rapid and often very sudden disappearance, form well nigh conclusive evidence that they cannot be due to gross pathological lesion. Nevertheless, if, at the present day, we are unable to say what is the precise morbid change underlying the so-called functional disorders of the nervous system, and must acknowledge with Guinon that, as far as known pathological lesion is concerned, they are disorders *sine materiâ*, we are not debarred from their clinical study; nor is the hope denied us that a close observation of the symptoms displayed may lead in time to a knowledge of their pathology, whether the change be in the affected parts of the nervous system themselves, or in their nutrition and blood supply.

The temperament
and previous
health.

3. From the clinical point of view, then, we may take it as an accepted fact, that fright is a common and powerful determining cause of the onset of hysterical phenomena, and it is that element in them which makes railway collisions so fertile in functional

neuromimetic disorders. Apart, however, from the immediate effects of fright, which is not always or in all cases followed by injurious consequences, there are certain predisposing conditions in the individual which have to be considered. The constitution of the nervous system may be itself at fault, either because of inherited instability, or as the result of causes which have had injurious influence upon it. Inherited weakness may show itself in what is called a nervous temperament, such as may be obvious even to superficial observation, or as may be brought to light only by illness or disease. We all know how very variable are the effects of illness upon the nervous system, and how often it happens that those who are free from any trace of nervousness during health reveal their nervous temperament when ill. And even if the hereditary instability has never been manifested in themselves, the family history may afford strong grounds for suspecting it.¹

Moreover, in addition to the hereditary predisposition, there are predisposing causes incidental to the individual himself. Recent illness and the consequent weakness, sexual excesses, overwork of body or brain, alcoholic intemperance, the gouty diathesis with its chronic mal-assimilation and impaired nutrition, the existence of some definite nervous disease—all these things and many others predispose a person to suffer from the great mental shock which appertains to a railway collision, and to almost every serious accident whether by land or sea. For more detailed information on the manifold predisposing causes of functional nervous disorders, the reader may turn with advantage and profit to Georges Guinon's recent work, *Les Agents provocateurs de l'Hystérie*. He will there learn that many of these disorders arise, not so much as the result of an *immediate* cause, but from the state of the nervous system being such, that an *exciting* cause is able to provoke it to the manifestation of functional disorder. It is in this way that railway accidents very often lead in time to functional hysterical disturbance, in that by them there is induced that condition, which has been dealt with in previous chapters, and to which the term neurasthenia has been applied.

It seems, therefore, an almost natural step to pass from the consideration of general nervous shock to the consideration of the cases of nervous mimicry and traumatic hysteria, because the

¹ In his classical work on hysteria (*De l'Hystérie*, p. 396), Briquet records that in only ten out of 396 women subject to hysterical disorders could he discover no evidence of predisposition. Thorburn, Oppenheim, and others, however, have had a somewhat different experience, and do not regard hereditary predisposition as so common.

shock has been, in many instances, the means of inducing that very condition of the nervous system, which predisposes to the manifestation, and underlies the origin, of these functional nervous disorders. The cases which will be quoted, moreover, show that in the worst instances there is frequently some evidence of mental disorder in the previous history of the patient himself, or that he comes of a stock in which mental or emotional disturbances and peculiarities, not necessarily amounting to insanity, have been recognised as prominent in the family record. It has been impossible in every case to obtain evidence of the kind, but, in the absence of discoverable predisposing tendency, there is a sufficient cause for the origin of the hysterical disorder in the profound nerve exhaustion, prostration, disturbance, or whatever we may like to call it, which the moral and physical shock of the accident and its varied consequences have had upon the nervous system. We need not seek further than this for a cause of the functional disorders—the paralyses, the spasms, and the convulsions—which are mimicries of grave disease.

Acute
hysteria.

4. We may now consider in greater detail the different varieties of hysteria which are the result of injury. In the first place, and of infinitely less moment than those which have to be spoken of presently, are the convulsive sobbings, cryings, and laughter of *acute hysteria*, such as may come on immediately after or within a few hours of the accident. Every one is familiar with these sorts of attacks, and I say they are of comparatively small moment, because they are usually transient. They very probably give relief to nervous tension, and are thus productive of good; and experience tells that they are not followed by, or commonly associated with, those hysterical manifestations, which, copying the symptoms of real disease, are more determinedly fixed in, and are with greater difficulty eradicated from, the disordered nervous centre. They lack that fixity which is one of the most serious and troublesome amongst the characteristics of hysterical disorder of the chronic, as distinguished from the acute, variety. The prognosis is distinctly more favourable, and I shall say nothing more about them than this, that they are to be met with in both sexes in almost equal degree, and that it is of importance to ensure perfect quietude and to avoid all reference to the exciting cause of the hysterical seizure. Condoling friends had better keep out of the way.

5. Passing, therefore, to the more chronic, rarer, and more imitative forms of traumatic hysterical disorder, the multiplicity and variety of the symptoms, and the very nature of hysteria itself, render it impossible to draw up any comprehensive classification. Suffice it that the symptoms very commonly consist of disorders of motion and sensation; paralyses or contractions of a limb; diminution or other impairment of common and special sensation; convulsive epileptiform seizures; vaso-motor derangements; and more markedly psychical troubles. The varied symptoms are, I think, best studied in the record of individual cases, but I propose in the first place to say something as to the possible origin and nature of some, at any rate, of the symptoms which may be seen. In my former work I expressed my "belief that the primary seat of functional disturbance lies in the brain itself, and that, as in the hypnotic state induced by a profound mental impression, there is a temporary arrest in the function of that part of the sensorium which presides over and controls the movements and sensations of the periphery." There can, I think, be no question that the underlying cause of the neurotic symptoms, even of such as "functional paraplegia," is to be found in the cerebral cortex. The disorder has had its beginning in profound mental disturbance or shock, and the presentation of the symptoms seems to direct one entirely away from the periphery of the nervous system in search for an explanation. In paraplegia from organic disease, other than that of absolute destruction of the cord, the loss of motor power and of common sensation is rarely absolute, and the patient, at any rate, is only too anxious to show how much power of movement he has. In functional paraplegia, on the contrary, the paralysis is usually absolute, nor can any movement be elicited at all. The thing at fault is obviously the power of initiating movement. The mandate from the brain is in the one case checked by lesion in the cord, beyond which it makes its way with difficulty. It makes it, however, and some movement is the result. In the other case the mandate never leaves the cerebral cortex at all—no impression reaches the limbs, and there is no movement. When we come to consider individual cases, we shall see the same sort of defective power of the cerebral cortex in initiating movement in such a simple act as that of putting out the tongue. Asked to put out his tongue, the patient is wholly unable to do so. Vigorous effort is made—the facial muscles and the muscles of the trunk and limbs are called into play as if *they* could determine the result; and the result is entirely abortive, or the tongue perhaps reaches no further than the teeth or lips. But if such

Chronic
neuro-
mimeses
and the
accom-
panying
cerebral
state.

a patient be carefully observed, it will be noticed that there is no impairment whatever in the movements of the organ itself: speech is unaffected, and if by any chance the automatic and involuntary act has to be performed of removing a particle of food from the outside of the lip, out goes the tongue in a perfectly natural way. This was a striking phenomenon in one of the cases to be presently recorded, in which there were symptoms of functional neurosis, such as we may conceive could not possibly be feigned; and it is the presence and co-existence of such other symptoms which enable us to establish it as tolerably certain that these defects in motor power are not fraudulent, but are likewise due to a real inability on the part of the patient to call his cerebral centres into the activity requisite for the particular movements desired. It may be difficult or impossible, mere conjecture, to say wherein the cerebral defect lies, but there seems to be neither more nor less difficulty in the case of sensory, than there is in the case of motor disorders. Both are alike inexplicable; but if defect of the will power of the higher cerebral centres be indicated by inability to perform desired movements, is it altogether inconceivable that the same cause is at work in the abolition of common sensation and in impairment of the special senses? Automatic movements continue unimpaired, purposive desired movements are those alone which fail; and it has often occurred to me, when in the presence of a case of functional anæsthesia, that the loss of sensation may be quite as much a phenomenon of the moment, as is inability to put out the tongue a phenomenon of the moment when that particular and specific act has been desired. May not sometimes the very examination of a hemianæsthetic patient largely determine the hemianæsthesia, which forthwith disappears as soon as the examination is at an end? Common sensation, for all we yet know, may be quite as much both voluntary and automatic as is the power of ordinary movement; and although we talk about a patient not choosing to do this or that, the psychical condition which determines his inability to put out his tongue may equally determine his inability to feel, and the loss of the one power may be as much, or as little, dependent on the brain activity which we call Will, as is the loss of the other. At any rate, both defects have a common exciting cause, and that is the state resembling hypnosis which is induced by fright.

lead to the manifestation of various motor and sensory disturbances. The examination of a patient may, therefore, it seems to me, sometimes provide the suggestion whereby anæsthesia results. Looked at in this light, suggestion and expectancy are very much the same thing; and underlying each, whether the same or different, is an abnormal, and, for the time, unhealthy condition of the higher cerebral centres, whereby a change is brought about in the ordinary relations of mind and body. Let it be granted to the full that the severe psychical disturbance of an accident, in which there has been reason for fright, is responsible for all the evil consequences which ensue, yet I have little doubt that the resultant symptoms are not altogether independent of the method of procedure which is adopted for discovery of the symptoms present or expected. To take a specific instance. If it became the custom to test forthwith the sensation of every person who has been injured in a railway collision, we should presently find the opportunities of studying hemianæsthesia enormously increased; much as in the same sort of way, when it was the custom to examine everybody's spine, injured or no, complained of or no, spinal tenderness and surface hyperæsthesia of the back were very much more common than they are at the present time. This is no merely idle speculation. Those who have had the opportunity of seeing large numbers of cases of railway injury cannot help observing how much there is of fashion in the symptoms which are seen, and a word of warning is not, in my judgment, out of place to-day.

7. Students of the works of Charcot know how close in his judgment is the alliance between many of the phenomena of hysteria and those which may be purposely induced in the hypnotic state. Recognising the ease with which many conditions, such as palsy or contracture of a limb for example, may be developed by oral suggestion during the hypnotic sleep, he sees a close analogy between the origin of those phenomena and the origin of many of the phenomena of traumatic hysteria. In place, however, of oral suggestion, it is the injury which suggests the special form of neurotic disorder, and traumatic suggestion takes the place of oral suggestion in hypnosis. But as oral suggestion is followed by the desired result only when the higher regions of the cerebral cortex are in the hypnotic state, so traumatic suggestion has no influence unless the centres are in a condition allied to that in which they can be put in hypnosis. The circumstances

Charcot
and traumatic
suggestion.

in which the injury was sustained provide the requisite condition. Speaking of railway collisions, he says that nervous troubles often occur in such cases apart from any traumatic lesion, and simply as a result of the psycho-nervous commotion produced by, yet frequently not appearing immediately after, the accident. It is the state induced by the psycho-nervous commotion which renders traumatic suggestion possible. Turn to one of his most typical cases of hystero-epilepsy ("Diseases of the Nervous System," vol. iii., 1889, New Sydenham Soc., tr. by Dr. Savill, p. 226, *et seq.*), where all the prolonged symptoms had had their beginning from a severe cut on the arm, on the receipt of which the patient had fallen to the ground with hæmorrhage and fright. Was the wound, he asks, sufficient to provoke the development of the nervous symptoms? No, he answers; and he would have us bear in mind that "along with the injury there is a factor which most probably plays a much more important part in the genesis of these symptoms than the wound itself. I allude to the fright experienced by the patient at the moment of the accident, which was betrayed shortly afterwards by a loss of consciousness, followed by a sort of transitory paralysis of the lower extremities." The same nervous condition, which formed the psychical substratum of the hystero-epileptic phenomena in that instance, exists in all probability in those cases where some trifling injury, in the neighbourhood of a joint, for example, has led to palsy, contracture, or anæsthesia of a whole limb, or to the physical signs and symptoms which imitate disease of a joint. The injury was the cause of some abnormal sensation which in a healthy nervous condition would have been totally disregarded, but which to a nervous system, the victim of psycho-nervous commotion, fright or mental shock, becomes suggestive of serious wrong. This, in other words, is "traumatic suggestion," and having expressed similar views in 1883, I am now in full accord with Charcot when he says that in railway collisions a "peculiar mental condition is often developed, which is intimately connected, in my judgment, with the hypnotic state. In both of these conditions, in fact, the *mental spontaneity*, the *will*, or the *judgment*, is more or less suppressed or obscured, and suggestions become easy. And thus the slightest traumatic action, for instance, directed to a member may become the occasion of a paralysis, of a contracture, or an arthralgia. It is in this way that one so often sees after railway accidents cases of monoplegia, paraplegia, or hemiplegia simulating organic lesions, although they are no other than dynamic or psychical paralyses, very

analogous, to say the least, to hysterical paralyses." This condition, so closely allied to the hypnotic state, may be developed by the nervous shock, but I believe that it may be the result also of the neurasthenia which the nervous shock has initiated.

8. It is in such cases that the term auto-suggestion is, I think, more appropriate than traumatic suggestion to indicate the origin of the nervous phenomena. Nevertheless, there is no material difference between them. The thing essential for suggestion to have any influence is the special psychic state, induced immediately by nervous shock or through the intermediate agency of the general nervous depression, which, for the sake of brevity, we call "neurasthenia." And in many other ways than in affections of the limbs and joints, auto-suggestion has, in my opinion, much to do with the origination of symptoms which are clearly of the nature of hysteria. That some form of local paralysis should be a very frequent result of suggestion is not a matter of surprise, when we remember how very commonly local injuries, and local injuries of no great severity, as has been previously pointed out, are met with by the sufferers in railway collisions. The sense of heaviness and numbness which follows a blow, more especially if in the excitement of the moment the person has been unconscious of having been struck on any one part, is very likely indeed to suggest the notion of paralysis. It is astonishing how often after a railway accident one hears the fear of paralysis expressed, and has to recognise how very real this fear may be to the patient, and how difficult it is to eradicate it from his mind. There is much truth in Mr. Thorburn's remark (*op. cit.*, p. 219) that "in the case of railway accidents, at any rate, the general public of this country has been educated to *expect* 'concussion of the spine' with paralysis, and that, in the minds of the laity, the very mention of a railway accident calls up the required idea." If the reader will recall what has been said as to traumatic lumbago, and the symptoms which frequently accompany it, he will have no difficulty in appreciating Mr. Thorburn's remark; nor will he find cause for surprise that hysterical affections of the spine should be common after railway collisions, having as their basis the fascial and muscular injuries which have been described.

9. Touching on the subject of hypnotism, the same writer sees an alliance to it in the unconsciousness of which patients often speak, as having affected them at the time of the collision. It

Auto-sug-
gestion and
fear of
paralysis.

State allied
to hypnosis
after rail-
way acci-
dent.

is a familiar fact that a period of transient unconsciousness, or a period, at any rate, in which there is no conscious impression of events, is by no means uncommon, even when those who tell of it have had no blow upon the head, and there has certainly not been concussion of the brain. I have myself regarded this as a dazed condition, the result of fright, and have never thought it strange that some persons should have been wholly unable to give any account of what transpired, or what they themselves did after a collision, when one bears in mind how terrible may be the accompanying events of a severe collision, and how vast and appalling is the contrast between everything before it and everything after. Mr. Thorburn, however, goes further than this, and is inclined to regard this state of daze as of the same nature as the state of hypnotism, and thereby he finds an explanation of the many strange and unremembered acts of persons thus affected, and of the imaginative and altogether incredible stories which they may tell of what befell them, but which they themselves, nevertheless, implicitly believe. He records examples of this nature, to one of which I may refer here, because it is the history of a man known both to Mr. Thorburn and myself, and because there was no question of compensation to throw doubts on his veracity.

"A gentleman while travelling with me," writes Mr. Thorburn, "allowed the train in which he should have proceeded to leave a side station without him. Seeing the train already started, he ran after it, attempted to get on, and fell on the line, sustaining fortunately no serious injury. He afterwards described minutely how he had tried to get on to the third carriage from the rear of the train, but failing, had fallen behind it, and how the remaining coaches had then passed over him. To this account he always adhered, although several railway servants who saw the occurrence noticed that he jumped at and missed the *last* carriage, and fell *behind* the whole train, nothing passing over him."

Clearly in this instance there was the psychic state in which auto-suggestion might have played a part in the development of some symptom of traumatic hysteria had there been any local injury to determine it. This is what happened in the case of one of Charcot's patients, the history of which is recorded in the appendix to his lectures. Omitting many of the symptoms, it may be said that this was a case of paraplegia following an injury, severe contusions to the thighs and lower abdomen, which the man described as having been caused by a heavy van passing

completely over him. The occurrence, as he believed it to have taken place, came before him often in his dreams; but it was known, as a fact, that he had not been injured in this way at all, but that he had been violently knocked down on the footpath while he was drawing his barrow. He lost consciousness immediately, remained comatose for several hours, and afterwards for two or three days was in a state of intellectual torpor, in the condition suitable for the efficacy of suggestion. And the suggestion here was made by the abnormal sensations in the limbs which were the consequence of the local injury. The mental condition which this man presented is precisely that which, in varying degrees of duration and severity, may be induced by the profound psychical commotion of a railway collision. In it the affected person may do things of which he has no subsequent recollection, he may be led to believe that things happened to himself which are altogether contrary to fact, and any local injury may thereby be made the starting-point, through suggestion, of some definite hysterical disorder.

10. The all-powerful influence of psychical commotion and emotion is the very root and foundation also of the teaching of Oppenheim, in his short but most valuable work on the traumatic neuroses (*Die traumatischen Neurosen*, Berlin, 1889). The physical injury, he tells us, is only in part answerable for the consequences which follow. "*Die Hauptrolle spielt das psychische: der Schreck, die Gemütherschütterung.*" His cases were mostly those of hospital patients, and although they were regarded from a somewhat different point of view, in that he looks on the symptoms of each case as indicative of a more definite psychoneurosis, yet this author is in practical accord with what has been written in the last chapter. It was there insisted that the psychical disturbance was the reason why the pain of some trifling injury became so magnified as to suggest all sorts of grave and enduring disorders. The injury has, of course, as Oppenheim says, a direct result; but as a rule this is of small and transient moment, unless the mental disturbance should alter its usual character and impress on the bodily disorder the features of a lasting disease. The influence of fright at the time of the accident is so great as to induce a long-continuing psychical disturbance, and this it is which determines and governs the phenomena of the traumatic neurosis. A very careful study of his writings leads me to the conclusion that there is no very great difference

Oppenheim's
views.

between the views of Oppenheim, and those which have been advanced by myself. He lays greater stress, perhaps, on the psychical element in the neuroses and less on that of nerve prostration, but both, it must be remembered, are *neuroses* of traumatic origin.

The cerebral state induced by fright.

11. "*Die Hauptrolle spielt das psychische: der Schreck, die Gemüthserschütterung.*"—The whole sensorium, apparently, may be thus affected, and may pass into a state of slumber, as is shown by mental hebetude, by lessened volitional power, by anæsthesia and analgesia, and, on the other hand, also by excessive activity of the lower automatic centres from lost or torpid cerebral control. The abnormal condition is allied in all probability to that of the hypnotic sleep, and it is, moreover, akin to it in the readiness with which the symptoms may pass away when the requisite stimulus has aroused the brain from its torpid state. The stimulus may be some profound mental or bodily impression; it may be exerted only by the more tedious influence of re-education of the movements of the affected part; but in either case the activity of the sensorium is once more alert, and the cerebral control can be exercised in its normal and healthy way. Not less mysterious than slumber of the sensorium, whether it be of the whole or of a part, is the fact that daily familiarity with the morbid process seems to give the individual patient the voluntary and more facile power of putting the affected region of the sensorium into the state of torpor, or of voluntarily abandoning himself to the easily induced influence of the abnormal condition. Repetition and perpetuation of the morbid condition of the sensorium make the symptoms easier of production than they were before. The man who has once been hypnotised can be more readily hypnotised again, and thus it is that in course of time the "medium" of the mesmerist or of the so-called spiritualist can be reduced by the most trumpery and frivolous influences to the hypnotic or cataleptic state, and so becomes the most pitiable of mortal men.

Dangers of its continuance.

12. It has been said already, in speaking of the symptoms of general nervous shock, that the man who voluntarily abandons himself to the morbid state submits both his moral and physical nature to a long spread-out shock from which he will find it hard to rally, and the same remark may be here reiterated with even

greater force in connection with the functional disorders which are results of the unnatural nervous state. For there can be no doubt whatever that many neuromimetic conditions are more or less under the voluntary control of the patient; and that, as may be seen in cases of convulsion, the mimetic seizures—*in themselves typical in character*—may be brought on by the will of the patient himself. And this can be done with greater ease as time goes on. Herein lies the explanation of those happily-timed convulsions which occur when it is most important that you should see them, and should be impressed by their severe reality. The seizure itself—*qua* seizure—is typical of its kind, and its phenomena lie outside the conscious control of the individual. But within his control has been the commencement of the seizure at the precise moment when it began. Thus, in speaking of the ease with which the hypnotic state may be induced in those who have been often hypnotised, Heidenhain writes: “Many of the gentlemen upon whom the above experiments have been made, need only to sit down, close their eyes, and think intently—other thoughts being excluded—that the hypnosis is coming on, in order to, as it were, voluntarily submit themselves to the charm.”¹ And, as of the hypnotic state, so of other neuromimeses also, the patients may voluntarily submit themselves to their exhibition, and the manifestations thereof become in themselves not less real. The existence of a certain amount of control is shown, moreover, by the disappearance of the mimicries, when all cause for their representation is removed. The matter of compensation, as we have seen, exerts in many cases a very favourable influence on the symptoms of general nervous shock. It does so in these cases also, and examples are not few in which typical neuromimetic phenomena came to an end, shortly after settlement of claim had secured for the patients complete repose of mind, and had freed them from the necessity of any longer *allowing* themselves to be their victims and exponents.

In speaking of the objections made to hypnotic experiments, Heidenhain seeks to show that the repetition of them does not appear to be fraught with danger or evil, but he mentions cases where attacks of convulsions constantly accompanied every hypnotic experiment, and one patient who suffered after every experiment from a certain degree of nervous irritability which lasted twenty-four hours.² I have myself no doubt that the risk of permanent damage to the stability of the nervous system and tone must be very considerable in all persons who repeatedly

¹ Animal Magnetism, p. 86.

² *Op. cit.*, p. 102, *et seq.*

submit themselves, whether voluntarily or involuntarily, to the hypnotic state, even though it is not accompanied by convulsions or is not followed by "nervous irritability." The hypnotic state is not a natural, it is a morbid state; to repeat it is to perpetuate it, and make it an abiding part of the organisation of the individual. Not less does risk of permanent damage to the stability of the nervous system lie in long continuance of any functional mimetic disorders. The longer they exist the more prone are they to give rise to lasting nervous disturbance, and to the phenomena which may be the result; and even in cases where the neuromimeses pass away under returning cerebral control, the risk is by no means small that from some exciting cause the conditions may be very readily reproduced. The lesson to be learned from this is obvious, that the sooner any cause for the representation of the phenomena is removed the better, and that the patients should as far as possible be freed from the hurtful sympathy of friends. There is little chance of improvement or cure as long as the patient need not make the necessary effort to get well, and as long as his friends, in ignorance of the real nature of his malady, foster by misdirected sympathy and kindness those very symptoms whose continuance is fraught with danger to the stability of his nervous system. The question of diagnosis is thus all-important, and once established it is doing him a grievous wrong if his sufferings and symptoms are to be made the occasion of litigation and prolonged dispute.

CHAPTER V.

THE FRIGHT NEUROSES—(*Continued*).

SUMMARY.—1. Examples: Functional paraplegia in women.—2. In men.—3. Hysterical seizures suggested by syncope.—4. Vomiting and its suggestion.—5. Hemianæsthesia in men.—6. The moral aspect of hemianæsthesia.—7. Hypnotic catalepsy in men.—8. Three types of the fright neuroses.—9. Occasional mental disorders.

1. I SHALL now illustrate the foregoing remarks by the brief record of several cases, the symptoms of which will suggest various comments as we go on. I adopt this plan because the multiplicity and variety of the so-called functional disorders prevent any suitable classification of them, and because this is not a text-book of nervous diseases. Information is at hand, and must be sought elsewhere, as to the condition of the reflexes, for example, in the different diseases of the nervous system, organic and hysterical, and only passing reference will be made to these and other indications of nervous disorder.

Examples:
Functional
paraplegia
in women.

CASE 16a.—*Case of functional paraplegia—Rapid recovery after settlement of claim.*—V. S., a widow, aged thirty-eight, the strong and healthy mother of seven children, was in a collision. There was no history of her having been much hurt at the time, but within a few hours she began to have a pain, or a sensation which she described as “opening and shutting,” in the small of her back. The next morning she continued her journey of nearly 200 miles, and finding that in a few days the pain in her back was a good deal worse, she went to a hospital. She was an in-patient in the hospital for six weeks, during the first three of which she was in bed, suffering from pain and stiffness in the small of the back and from general weakness. For three weeks she was up and moving about the wards, and she then made a journey of 330 miles in order to take one of her children to school. This business over, she then travelled home to the place where the accident had originally happened. This was

exactly two months after the accident, and as soon as she got home she at once took to her bed, suffering from great pain in the back, from much hyperæsthesia in the dorsal and lumbar regions, and from general prostration. She remained almost entirely in bed until about fifteen weeks after the collision, when it was accidentally¹ discovered that she had lost all motion and sensation in the legs. She had complete control over both bowel and bladder, and there was neither wasting of the legs nor bed-sores. The paralysis of motion and sensation seemed absolute. The woman was at the same time exceedingly "hysterical," and complained fearfully of pain in the back and of innumerable queer sensations in different parts of the body. The opinion was given that this paraplegia was not dependent upon organic disease; that it was not feigned; and that, although there was every prospect of her recovery, it was quite impossible to say how long she might suffer from the paralysis, or how soon she might be well. She was attended throughout this illness by a trustworthy nurse, and there was never any suspicion that the woman was wilfully maintaining her condition. No material change took place in her condition up to six months after the accident, when her claim was settled. Within a fortnight she left the house where she had been staying, and in three months she was walking about without assistance in perfect health. Further account of her cannot be obtained. It is open, of course, to any one to remark that this was a case of malingering. I do not take this view, and I think it of greater interest to consider what were the "circumstances conducive to the paraplegia, and what were those which brought about her recovery. There can be no doubt that the woman received a sprain of her vertebral column, and that she had some "shock"; but of greater moment in the history of the case is the fact that the long and fatiguing journeys, which she took within a short time of the accident, must have been largely instrumental not only in preventing complete recovery from the early prostration, but even in increasing the general weakness from which she suffered. After the first journey she was compelled to go to a hospital, and after the second and longer journey she was so much exhausted that she had at once to take to her bed.

¹ "Accidentally," because this is just what so frequently happens in hysterical affections. "It is necessary to bear in mind," Charcot says, "that hemianæsthesia is a symptom which requires to be sought for, as M. Lasègue very judiciously remarks. There are, in fact, many patients who are quite surprised when its existence is revealed to them."—Charcot, *Diseases of the Nervous System*, New Syd. Soc., 1877, p. 250.

In two other cases of paraplegia, occurring in young girls, there was very much the same sort of history. One of them was remarkable in this, that after the collision the girl lay in a dazed, semi-unconscious state for a couple of hours, having received no injury beyond a slight bruise on the middle of her back by the fall of a box from the carriage rack. Movement was painful, and she took to her bed, gradually losing thereafter the use of her legs. They became extremely cold, but there was no other alteration in nutrition, and the reflexes were quite normal. No improvement took place in this case until the patient had been taken from home, placed in a hospital, and there put under suitable treatment. It is probable that the feebleness of circulation and coldness of the extremities often noted in these cases, together with the pain induced in moving the legs, provide the "suggestion" to the sensorium which results in loss of motion and sensation. And let it be noted that the effect of the accident was to produce that condition of daze to which reference has been already made, and to which, in the ætiology of such affections, considerable importance must be attached. The legs of the other girl were equally cold, and in addition to the paraplegia, she presented this characteristic symptom, flexion of and inability to extend the fingers when asked to do so, although in all automatic movements there was no impairment or defect.

The way in which cases of this kind frequently recover shows pretty conclusively that the morbid seat is in the brain. A sudden impression which compels the automatic use of the legs may in a moment arouse the torpid sensorium, or a process of re-education, beginning at the very beginning, as it were, may be needful to restore the lost movements of the limbs by reawakening the brain to a full sense of its responsibilities in the circle of the will. Cases like these may look like fraud, but I feel sure that Paget is right when he says that in many of them the "fault is rather in weakness of the will than in its perverse strength." The patient says, "as all such patients do, 'I cannot;' it looks like 'I will not,' but it is 'I cannot will.'"¹

2. The cases of functional paraplegia which have been recorded In men. were very typical of their kind, but we shall do well to draw remaining examples from patients of the sterner and, usually, less hysterical sex.

¹ Clinical Lectures and Essays, pp. 188, 189.

CASE 17.—*Case of functional motor paraplegia—Extreme emotional disturbance—Ultimate recovery.*—T. B., aged forty-one, a man of gouty family, naturally very excitable, and able, as he said, to hear a pin drop in the next room, was in a very severe collision in which the carriage he was in was smashed to pieces. He crawled out of the débris as best he could and went on his journey, but in about half-an-hour he began to have retching, pains in the abdomen, and shivering. He therefore returned home. There were slight bruises about the limbs, and one on the forehead; and the next day, when in bed, he complained of pain in the right side of the abdomen and the lower part of the back, but at neither of these places was there mark or tenderness. For the next few days he seemed very ill, had severe pain in the head, occasional retching, and at night he wandered. For three days his temperature was raised. He was in a highly nervous state, and spoke frequently of a dread of lock-jaw and paralysis. Three weeks after the accident he still complained of severe pain about the sacral region, but there was no tenderness. He complained also of "numbness" in his legs, a word used by him to express not impaired sensation, but a difficulty which he felt in moving them. There was no hyper- or an-æsthesia, but his walking, in which he helped himself by holding on to the furniture, was done with apparent fear and effort. He could stand quite well with his eyes shut, and there was no spasm of the muscles of the legs. His temperature and pulse were normal, and the bodily functions were naturally performed. His general condition improved, he was able to eat and sleep better, and even to get out of doors in a chair. He still suffered, however, from extraordinary emotional disturbance, was very irascible, and frequently cried. He continued to dwell on the fear of paralysis, and steadily lost the power of moving his legs. He made for himself an ingenious contrivance whereby he was able to move about by the support of his arms, but his legs were hardly used at all in progression. Eight months after the accident he was quite unable to walk, and failed entirely to make any requested movements of the legs or feet during examination. The attempt to move his legs produced great mental agitation. There was no paralysis of bowel or bladder, and sensation of the legs was but very slightly, if at all, impaired. There was no material wasting. The cremasteric reflex¹ was normal. There was no rigidity or spasm, and no sign of bed-sore.

¹ This case was seen before the value of patellar and other reflexes was known, and the cremasteric alone was tested.

Nine months after the accident he had an attack of aphonia, brought on suddenly by hearing of the death of a friend. The aphonia lasted for three weeks, and then disappeared as suddenly as it began, when startled by one of his children rushing into the room. He also suffered from frequent nausea and retching, the least excitement, such as the visit of a friend, almost certainly making him sick. It is indeed very difficult to express in words how extreme was the emotional disturbance in this patient. He had always been a man of highly nervous temperament, likely, so it was said, to suffer severely from the shock of a railway accident.

I satisfied myself that the paralysis was not dependent on organic lesion, and eleven months after the accident reported to the railway company that the "cause of the paralysis seems to lie rather in the directing power of the will than in lesion discoverable of the brain or spinal cord." I had, moreover, no doubt that the case was perfectly genuine, but felt that it was impossible to say how long he might be ill, and that litigation would be exceedingly detrimental to him. The man himself was advised to make every effort to use his legs, and to re-educate the movements of them by daily practice. Litigation was avoided, and the claim, naturally and rightly a large one, was amicably settled thirteen months after the accident. By the kindness of his medical attendant I had frequent reports of this man after his claim was settled. For long he did nothing, and remained in a nervous hysterical state, and it was not until four years after the accident, when he made a complete change in his living and occupation, that he began to get well. Seven years after the accident, in the course of the year 1882, this was his own story, and it speaks better of his condition, past and present, than any other words. He considers that he was ill for between four and five years. He used the appliances for walking for about two years, and then began to use sticks. Two years and a half ago he took a public-house in the country, and began to lead an outdoor active life. When he first began this, he could not get up from his chair alone, having either to be helped up, or to pull himself up by getting hold of something in front of him. Suddenly one day he got up without knowing it, and his son said to him, "Why, father, look what you've done!" "Good God!" he replied, "I have got up myself." From that day forth he was able to get up without difficulty. He still has great fear about his spine, and only a few weeks ago, when a friend struck him in the back in joke, he was terribly alarmed,

and for two days could hardly walk. He can walk nine miles without fatigue and ride all day, he has gained weight, and is altogether stronger and better than he was before, regarding his recovery as due to change of life and scene. In appearance he was at this time the picture of health, and as far as his legs were concerned there was not a sign or symptom of anything whatever amiss with them, reflexes and nutrition being perfectly normal. I saw him again in 1890 in perfect health.¹

CASE 18.—*Supposed spinal injury—Spasmodic twitchings of one arm, &c.*—S. B., aged thirty-three, was in a railway collision at night, when a large number of persons were more or less shaken and hurt. He himself was not injured, as far as he knew, at any one place, and no marks of external injury were at any time discoverable. He complained, however, of being shaken, and looked pale and ill. He took to his bed, and in a few days complained very much of his back, and was in a continued state of alarm about his "spine." Beyond appearing shaken and nervous about himself, he had no sign of structural injury to any one part of the body. He remained in this negative condition for some weeks, and then began to move about the house, and once or twice he went out of doors. About this time there came on a peculiar twitching in the left arm, which is thus recorded in the notes:—"To-day on my arrival he was lying dressed on his bed. I asked him to go into the next room, and he got up without apparent difficulty and did so. He sat down in an easy chair, when his left arm and hand at once began to jerk with sharp clonic spasms or twitchings, not unlike the movements of chorea. The movement kept on when his arm was held, and he said he could not control or arrest it. It was noticeable, however, that it ceased entirely when he began to undress, partially ceased when he engaged in conversation, and altogether stopped when his attention was specially directed to some other part of his body. Coincident with this movement of the arm was a continuous jerking of the head. There was no wasting nor any sign of loss of power in the limbs." He complained greatly of his back, and evinced tenderness on touch at the mid-dorsal and upper sacral regions. The temperature was normal, and all the bodily functions were naturally performed. He continued in much the same condition for nearly a year, a

¹ See a remarkable case recorded by Dr. Webber (*Boston Medical and Surgical Journal*, vol. x. p. 44, 1872), "Recovery after four years' paralysis following railroad injury."

severe injury to the "spine" being made the basis of a demand for large pecuniary compensation. There was, however, neither history nor sign of lesion in any central structure, and the whole condition was regarded as one of neurotic disturbance, which might be very much controlled if the patient would only choose to exert his will. This view of the nature of the case received strong support from his previous history. He had been in a railway collision twelve years before. He then received no bodily injury, but he was very nervous about himself, and four months afterwards began to suffer from spasmodic wry-neck, which lasted for four months, and which recurred again for a short time after an interval of two years.

There was no reason in this case to attribute any want of *bona fides* to the man in the presentation of his symptoms, although the largeness of his claim and the sequel of his case would rather tend to throw doubt upon its perfect genuineness. When compensation was settled he very speedily lost all the spasms and returned to work, and it was even said by one who had taken a friendly interest in his case that he had recovered with indecent haste. But his recovery, in my judgment, was due rather to the fact that settlement of his claim enabled him to make the requisite effort to do some work, and that healthy occupation provided the means of diverting his attention from himself and his ailments, so that the spasms were unconsciously forgotten and forthwith disappeared. Five years after the accident the report ran that he was in good health, although he had been shaky and nervous for some considerable time after his claim was settled.

Both these cases present examples of undoubted predisposition to neurotic disturbance. It is impossible to say why the disorders should have assumed the forms they did, but it is interesting to note that in both of them there was a genuine dread of spinal injury, and that in the second case the wry-neck after the former accident, and the chorea-like movements of the arm and head, after an interval of no less than twelve years, were disturbances of the same kind. The cases, moreover, show of how much importance it is to know something of the previous history of the patients, and their special liabilities to disease, in order to arrive at a correct diagnosis.

3. CASE 19.—*Shock to nervous system—Hysterical seizures beginning in syncope.*—R. C., aged thirty-nine, an officer in the army,

Hysterical
seizures
suggested
by syncope.

was in rather a severe collision at night. He was awake at the time, and was thrown backwards and forwards in the carriage. He had no knowledge of being hurt, and helped the stoker, who was much injured. He then finished his journey, the "excitement," as he supposed, "keeping him up." The next morning he felt very ill and vomited, and he soon began to suffer from pain across the loins, queer sensations all over the body, nausea, giddiness, and want of sleep. On the third day he took a long journey of several hundred miles to be with some friends; and on the twelfth day after the accident he suddenly fell and struck his nose against the corner of a table. He soon became conscious and screamed violently. To use his own words: "The fit came on about three in the afternoon; I fell down and screamed, and then began to cry and sob violently. During it I was unconscious, although I knew that people were around me, and that I must use all my efforts to restrain myself and to keep quiet. When all was over, I did not know what had happened." He called this fit an "hysterical attack," and the doctor who saw him immediately afterwards, and who found him more or less unconscious, thought that this was its nature. Six weeks after the accident he complained of pain in the back, loss of memory, inability to apply himself, occasional giddiness, nausea, and want of sleep. He looked anxious and worn, and his doctor, who had known him for some time, said that he was undoubtedly much changed in manner and appearance. He had lost flesh, but all the bodily functions were natural. He described the fit in the words which have been given, and said that he had had two or three since, though not so violent as the first. A few minutes after this I had the opportunity of seeing him in a fit. It had begun with screaming, and he was found lying on the sofa with his eyes closed, his face very pale, and a small pulse. He took no notice of my entry into the room, but occasionally sighed. Asked how he was, he opened his eyes and looked wildly about. He was then very sick. After vomiting he roused himself, asked how long I had been there, and said he was better. Before leaving him he was apparently asleep. Within the next two months he had three or four attacks of the same kind, though of gradually lessening severity. His claim was settled six months after the accident. Twelve months afterwards he still suffered in a slight degree from the effects of the injury, but it did not prevent him from attending to his work. No later record than this can be obtained, that six years after the accident he was still on active duty. It has some bearing on the history that

this patient wrote repeated, and what might almost be called "hysterical," letters about his condition and future prospects, and that he made an enormous claim, thrice the amount which he ultimately received, without resort to litigation.

Nothing is known of this patient's previous history, other than that he had always enjoyed good health; and it is worth asking, what was the origin of these hysterical seizures? It seems to me that in all probability they began with syncope, which was a direct result of weakened cardiac power from the nervous shock, and that they assumed the form they did from the very fact that the accident had produced a profound impression on the patient's mind. He was reduced to a condition in which he was ready to be alarmed, and when, after the fainting, he became partially conscious upon the floor, he screamed hysterically in very natural and increased fear. And each subsequent fit began in the same way, by a sensation of syncope—not perhaps amounting to actual fainting—which by the alarm it caused him at once determined the screaming and sobbing which were characteristic signs of each attack. With returning strength and cardiac tone the seizures lessened in frequency and severity, until they came to an end. In other words, the sensations induced by syncope provided a suitable and adequate "suggestion" for the attacks from which this man suffered. Just as a blow on the shoulder may cause sensations which provide the suggestion for palsy of motion or sensation in the affected arm, so in disturbances which are apparently more purely psychical in character, there is need of some suggestion which shall determine the particular disorder manifested in any given case.

4. A like explanation seems to me to account for such a symptom as continued vomiting, the origin of which is otherwise obscure, and which may be erroneously regarded as due to some grave central or other disease.

Vomiting
and its sug-
gestion.

CASE 20.—*Nervous shock—Continued vomiting.*—A healthy woman, aged twenty-nine, the mother of one child, was in a very slight collision in shunting. She was thrown suddenly forwards, and a box fell from the rack and inflicted a minute punctured wound on the left frontal eminence. Until she felt the blood trickling on her forehead she did not know she had been hurt. An hour and a half after the accident, when she arrived at home, she vomited, and from that time onward vomiting followed

immediately upon each attempt to take food. Never at any time was there the smallest indication of injury about the stomach. Four days after the accident she had an attack of acute hysterical laughter and crying, and in the course of the next four weeks attacks of a like character were repeated several times. She complained of shooting pains in the neck and head, and of pain, hyperæsthesia, and tenderness over the dorsal region of the spine. Nevertheless there was no spinal rigidity, nor any difficulty in moving her limbs. When I saw her a month after the accident, no evidence of local injury was anywhere discoverable, but her pupils were sluggish and wide, the knee-jerks were decidedly exaggerated, and there was well-marked though not sustained ankle clonus, such as is frequently seen in similar cases of so-called functional neurosis. The vomiting was still going on, but without pain, and with a perfectly clean tongue. All this time she had been in bed, and had become extremely weak. There was no rise of temperature. A new line of treatment was now begun, the object of it being to improve the nutrition, by often repeated small quantities of milk or other light food; and if possible, by the smallness of the amount taken at a time, to baulk the vomiting habit. The lapse of another month saw a considerable improvement in her nutrition, she was able to be up and out of doors, the pupils were smaller, the knee-jerks were within the normal range, and the ankle clonus had entirely disappeared. There was not, however, any great improvement in the vomiting, for an endeavour to take an ordinary meal immediately made her sick. The reason for this was not far to seek. The patient had now become an object of special sympathy in the village, and her only return for the bounty of her neighbours, both rich and poor, was to go on vomiting. One thing was now essentially called for in order to bring about her recovery, and that was isolation from her friends. Accordingly she left home, was placed in the charge of a nurse, and treatment suitable for her condition was forthwith begun. It would be untrue to say that she never vomited again, because in the course of the next three months she did vomit twice, and twice only, in the old purposeless way; but this may be said, that her convalescence began from this time, and that she ultimately, within nine months of the accident, was quite well.

This case is, to my mind, a very instructive one. Almost uninjured at the time of the accident, it is certain that there must have been an amount of shock sufficient to cause the vomiting within an hour and a half, and the psychological effect

was indicated by an outbreak of acute hysteria on the fourth day. The reality of the nervous disturbance was shown, moreover, by the increase of the knee-jerks and by the ankle clonus; and a vicious circle was quickly established—mal-nutrition affecting the nervous centres alike of brain and cord, whose condition in turn made the act of vomiting more easy and more durable in the absence of some physical cause. There never was any question as to the nature of the case, and it seems to me that there can be as little doubt as to the origin of that one symptom which was its especial feature. The initial act of vomiting gave the suggestion for its continuance to a sensorium profoundly affected by the circumstances of the accident. And it is abundantly obvious how a recognition of this sequence of events was essential for the adoption of the line of treatment which speedily ended in cure. Had this patient stayed at home, and been treated on the supposition that she had some serious organic disease, the result would surely have been different. I have now had under occasional observation during the past eight years the case of a young man whose symptoms were not unlike those of this woman. He had been very severely shaken in a collision, and there was much shock, out of all proportion to the physical injuries sustained. Vomiting came on within twenty-four hours, and has continued ever since in varying degrees. Repeated examinations have failed to discover any organic cause for it either in the stomach itself, the peritoneum, or the nervous centres, disease in one or other of which would in all probability have shown itself in this length of time. By a process of exclusion, therefore, the diagnosis points in the direction of the last case, but neither his own medical attendant nor I have been able to persuade him to submit to treatment by isolation. His case is of value as an illustration of the fact that settlement of claim does not always work for a patient's recovery.¹

5. We may pass on now to say something of hemianæsthesia, Hemianæsthesia in men. surely one of the most remarkable indications of cerebral disorder. The text-books of medicine and of nervous diseases contain such full accounts of this strange condition, of its many vagaries and its

¹ In Dr. Bristowe's *Diseases of the Nervous System*, p. 40, is an interesting lecture on "The Functional Vomiting of Hysteria," in which he relates a case of vomiting which lasted between two and three years, and which dated from a voyage made across the Atlantic. The author doubts whether food ever reached the stomach, and whether there was not some functional affection of the œsophagus.

accompanying disorders of the special senses, that there is no call to describe it here, and I shall content myself with a few remarks upon particular cases, choosing those of men for consideration.

CASE 21.—*Hemianæsthesia and hemiparesis, following hypnotic state from fright.*—A highly neurotic but otherwise healthy man, aged forty-seven, was bruised in several places, head, neck, and buttocks, by being thrown suddenly backwards and forwards in a railway collision of no great severity. He instantly lost consciousness, and so remained for two hours. On arrival at home his doctor was sent for immediately, and found him suffering from left hemiplegia in addition to great emotional disturbance, crying and sobbing. No examination was then made as to sensation, but two days afterwards he was found completely anæsthetic on the same side, and all the corresponding special senses, hearing, taste, sight, and smell, were likewise affected. There was also loss of muscular sense, impairment of the sense of colour, and spasmodic deviation of the tongue. The knee-jerks were increased, and there was slight ankle clonus. When I saw him three months afterwards the various symptoms were much diminished in degree, and there was no longer any deviation of the tongue. Though able to walk and even get downstairs, his gait when under observation was singularly slow and laboured because of inability to use the left leg, the movements of which were now made in one way and now in another, there being nothing specially characteristic about them. The whole muscular system was extremely flabby, but there was no wasting of one part more than another. The man's aspect was suggestive of great mental depression, but he acknowledged that he was somewhat better than he had been. He has gone on improving, but it is impossible yet to give a complete history. The case is nevertheless worthy of note as it stands because of the early onset of the symptoms, and from the fact of the man having immediately passed into that state of daze or unconsciousness which seems to be so important a factor in their development. There is no reason to think that his unconsciousness was the unconsciousness of true brain concussion, for there was no local blow sufficient to determine a state of coma of two hours' duration, and the condition was more probably that which is due to fright alone. Why in this particular case the so-called functional disturbance should have shown itself in hemiplegia and hemianæsthesia it is impossible to say, just as no reason can yet be given for hemianæsthesia being more common on the left side than on the right. The loss of sensation was in all probability as early a

phenomenon as the loss of motor power, both ensuing upon the hypnotic state which was an immediate effect of the accident. In another case the hemianæsthesia was detected on the day after the accident.

CASE 22.—*Hemianæsthesia, &c. &c.*—A man, aged forty-three, of neurotic temperament, was in a very trifling collision, which jolted him, however, from his seat and deposited him on the floor of the carriage. There he found himself, and was subsequently unable to give any better or more explicit account of what happened to him. There was no evidence, however, of his having been hurt bodily, and he went to his business next day. He soon broke down completely, and a doctor who was sent for found him in a semi-dazed condition, and proceeded immediately to examine the state of cutaneous sensation. It was absent on the whole right side, and was accompanied, as in the last case, by some loss of power in the right leg. There were also present in an extreme degree the usual affection of the special senses, loss of muscular sense, and spasm of the tongue. With it also were many neurasthenical symptoms, coldness of the limbs, especially of the right leg, occipital headache, loss of sexual desire, and widely dilated pupils. Occasionally also he had hystero-epileptic seizures. For many months there was little or no improvement, and at the end of a year, during which he had led the life of an invalid, and made no attempt to work, the hemianæsthesia still continued. His claim was finally settled, but whether that put an end to the anæsthesia or not I am unable to say. I think, however, it is highly probable, for it put an end to the "suggestion" of it in frequent medical examinations; and this is certain, that the man very soon resumed his ordinary mode of life, and within nine months gave every indication that his bodily health had been restored.

I do not for one moment wish to convey the impression that this case was not a perfectly genuine one. There was, of course, no doubt as to the existence of the hemianæsthesia and the accompanying phenomena, but from beginning to end of its long history it was an example of the injurious influence which the matter of compensation, and dawdling about at home, have in cases of the kind. Hemi- or any other distribution of anæsthesia is a valuable indication of the nature of any given case. It is an expression of an abnormal cerebral condition, and, whatever may have been its origin and exciting cause, there cannot be anything much worse for a patient than to have the

symptom, if not revived, at any rate kept alive, by repeated examinations, which are made either from genuine interest in the case, or in preparation for an action at law. I have pointed out on an earlier page how movements which fail from failure of the will to make them may, nevertheless, be automatically performed. The conception of something of the same kind is much more difficult in the case of sensory than it is in the case of motor power, but one could hardly go as far as to say that it was impossible for common sensation to be within the range and influence of what is termed Will. The receptivity of the sensorium for impressions which reach it from the periphery may likewise be both voluntary and automatic; and the history of some cases inclines me to think that a person may acquire the power of inducing anæsthesia, much in the same way as by practice he may induce the repetition of motor phenomena which are close imitations of real disease. At all events I do not think that hemianæsthesia, real in itself though it be, can be regarded as outside the category of those cases to which the following quotation from Dr. Wilks is more or less applicable:—"I do not look on hysteria," he says, "as a fictitious disease or a sham; the condition with all the phenomena is real enough; at the same time the hysterical state is so often associated with some moral obliquity that it is very difficult to say how far a particular symptom is feigned or exaggerated" ("Diseases of the Nervous System," p. 55, 2nd edition). He records a case of gross imposture, in the history of which a pilgrimage to Lourdes played a conspicuous part, hemianæsthesia being amongst the man's symptoms.

The moral aspect of hemianæsthesia.

6. It would be wrong and most unjust to say or to suggest that moral obliquity is an attribute of all persons who present hysterical symptoms, yet, even where there is a condition such as hemianæsthesia, the possibility of a certain amount of conscious influence over the chief symptom must be borne in mind.

CASE 23.—*Hemianæsthesia, &c.—Doubts of perfect genuineness.*—A man, aged fifty-one, was in an altogether trivial accident, in which, if he was injured at all, he sustained a slight sprain of his posterior cervical muscles. He did not know he had been hurt until the night after the accident, when he woke with a start, and the next morning he felt shaky and nervous, and was unable to write a letter. He took to his bed, and after he had

been there for a week he was examined by a surgeon, who observed such inconsistencies in his statements and symptoms as to lead him to regard the case as not perfectly genuine. When I saw him myself a month afterwards there was left hemianæsthesia, and some weakness in motor power also. There were spasms during examination of the shoulder and neck muscles of the left side, and certain movements, such as squeezing with the left hand and putting out the tongue, he professed himself unable to perform, although neither in his speech, nor in ordinary movements of the limb automatically performed, was there any sign of paralysis. The special senses were also affected in the usual way. After an interval of two months there was slight, but only slight, improvement. How long this state of things lasted it is impossible to say, because renewed requests that the man might be seen by surgeons for the railway company were refused on the ground that he was far too ill to allow of any examination. An exorbitant claim was presented, and the case went to trial. It was then conclusively proved that during most of the time when he was too ill to be examined, and was wholly unfit for anything except confinement to bed, he was deceiving his own doctor, and was leading a life of very considerable enjoyment—after dark. In fact he loved darkness rather than light. No good purpose can be served by giving in detail all the facts of this case—let them be recorded by his own advisers, legal and medical; but this may be said about it, that the accompanying exaggeration and imposture were such as to throw very grave suspicion on the perfect genuineness, not on the perfect reality, of the symptom hemianæsthesia. And in endeavouring to come to a right conclusion as to the value of this symptom in any given case there is an error, I feel sure, to be avoided in looking upon hemianæsthesia as a thing which stamps a case at once as genuine simply because we cannot say how it is induced. *Experto crede.*

7. The record of two cases will now be given where the hypnotic condition was even more marked than in any which have preceded. In both the patients there was a history of previous psychical disturbance, and there was insanity, moreover, in their families. Both, I believe, were predisposed to suffer from neurotic disorders should any adequate cause arise.

Hypnotic
catalepsy
in men.

CASE 24.—*Hypnotic catalepsy, &c.*—B. A. B., aged thirty-six, a strong and active man, was in a railway collision at night, in

which a large number of persons were more or less injured, though the accident was not severe. He complained shortly afterwards of having been shaken, and also that his back had received a wrench, owing, he thought, to his sitting sideways when the collision occurred. He had one or two slight bruises on one arm, and a sprain of one wrist. For the first few weeks after the accident there were no symptoms of constitutional disturbance or of serious injury, but the man said that he could not hold himself upright or walk any distance in consequence of the injury to his back, and the doctors who saw him thought that he was to some extent exaggerating the effects of his injuries. About five weeks after the accident he suddenly changed. He constantly repeated that he was going mad, and that he was sure he was going to be paralysed. He began at the same time to take violent exercise, walking several miles a day at great speed. This was followed by great exhaustion, during which he was "wandering and hysterical," and there ensued attacks which were described by a medical man who saw him as "hysterical mania." These continued for several days. The state which followed next can only be described in the words recorded at the time. "He is lying in bed on his right side with his knees drawn up. There is not the slightest movement when he is spoken to, or when he is touched through the bed-clothes. There is a continuous quivering of the upper eyelids. Asked to put out his tongue, there is no response, though when the lips are pulled apart he seems to make some effort to open the jaws and protrude the tip. By raising the lids the pupils are seen to be equal in size, and they react normally to light. The aspect of his face is that of complete repose and disregard, but he is obviously not entirely unconscious. Pulse 56. His arms and hands remain in any position in which they are placed. The arms and legs are very much wasted, and the whole body seems emaciated. The legs are at once drawn up spasmodically on tickling the soles, and pinching the calves evidently causes pain, for he groans and much contorts his face. On touching any part of the chest or abdomen rather firmly with the fingers, the whole body, face, and arms are spasmodically worked, the legs being frequently abducted and adducted. The abdominal muscles are almost as hard as a board." He is said to have occasionally an "hysterical fit," consisting of spasms all over the body, beginning with an expression of fright, and lasting about fifteen minutes. An experienced nurse attending him says they are not like epileptic fits. He takes plenty of nourishment, milk and beef-tea, but little or no alcohol. He passes water

only once within twenty-four hours, sometimes groaning beforehand as if in sign to the nurse. The bowels are never moved without enema. He lies for hours absolutely motionless, and three weeks ago he never moved a finger for a whole day, nor passed water once. A serious feature in the case is the great wasting, food, although taken in abundance, seeming to have small influence in maintaining the bodily nutrition, and he looks as if he might sink and die. This condition lasted for about six weeks, and then under the influence apparently of larger doses of alcohol—the increasing exhaustion and wasting having seemed imperatively to call for it—he began to emerge from the state in which he was, to move in bed, to open his eyes, to take more solid food, and even to speak a little very feebly. He was soon able to get up and go about, made flesh again rapidly, and took some exercise. He was, however, very nervous and apprehensive, and felt sure he should never get well. Seven months after the accident he still complained of his back, and held himself in a stooping posture. Questions were answered very slowly, and any required act, such as that of putting out the tongue, seemed to demand an unnatural effort. From this time he continued to improve, and in eight months he was so far well that it was thought right and prudent to allow him to arrange his compensation.

It bears upon the case that the claim was by no means large, and there was no reason at any time to believe that the matter of compensation was unduly affecting the patient's mind. Of far greater importance is the fact that there was a strong family history of insanity. His father and one uncle were "queer," a brother had actually been in an asylum, and his sister is very hysterical. His own account of the condition in which he lay so long is, "that he knew all that was going on around him, that he remembered when the doctors came, and knew always when there were more of them than usual, but that he could not speak, and supposed that his brain would not direct him to do so." The sequel of the case is satisfactory, the following report of him being obtained two years after his claim was settled, or thirty-three months after the accident:—"His recovery was gradual, but without any relapses. He married six months after his claim was settled, and has one son about two months old. He has had no illnesses, is at present strong and stout, and is emigrating some time this month."

It is impossible to conceive that the symptoms in a case like this could have been in any way dependent upon injury to the

spine, and this much may be said of it, that, when this strange condition supervened, all thought of injury to the spine as a cause thereof passed from the minds of those who were attending him. The man, indeed, himself had shown, by the violent bodily exercise which ushered in the mental disturbance, that there really was no sign of paralysis or even weakness in the legs, and that the pain in the back was very slight indeed. The condition was essentially one of profound mental disturbance originated by shock, immediate fright, and the fear of impending evil, in a man with a strong family taint of insanity. The higher cerebral faculties seemed for the time to be in that state of slumber which has been mentioned, and his general condition was very like that described by Heidenhain¹ and others as occurring in the so-called mesmeric or hypnotic state, and associated with cataleptic phenomena.

CASE 25.—*Hypnotic Catalepsy—Delusions.*—Almost exactly parallel with the last case is that of a strong and healthy man, aged thirty, who was in a collision, and who presented the usual signs of having received a sprain of his back and some general shock to his nervous system. He lay for long in much the same hypnotic state as the last patient, alternating with fits of violence and passion. When he awoke from this, he became the subject of a delusion that he was being poisoned, and was accordingly removed to an asylum, about ten months after the accident. He remained there six weeks; and while an inmate he adopted a peculiar gait, which lasted up to the time when his claim was settled, two years after the accident, and which formed the ground of a very serious view that he had received a permanent damage to his spinal cord. His mode of walking was thus described when he came out of the asylum: "He puts the weight of his body on two sticks placed in advance of him, and draws each leg alternately forward with the foot much everted. When about to advance one leg he twists the other inwards on the toes, so that the latter points forwards instead of outwards. He keeps the knees quite stiff. In this way he shuffles along with great rapidity. As he stood with his back against the wall, he was

¹ Writing of the disturbances of the motor apparatus which have been observed during hypnosis, he says: "More or less extensive cataleptic rigor becomes established; the limbs thus affected remain in any imaginable position they are placed in. The will has, it is true, not wholly lost influence over them, but it is exerted with very great difficulty. If, however, with a great effort, the parts be set in activity, there often results, instead of simple, convulsive movements which spread to other parts of the body."—*Op. cit.*, p. 77.

asked to lift up his knee, but he professed utter inability to do so." Very careful examination was made at this time as to the nutrition and state of the legs, and a report shortly afterwards ran thus: "The reflex irritability and faradic excitability of the muscles of the lower extremities are normal; there is an entire absence of affection of the bladder or rectum, or of any trophic change, such as muscular atrophy and bed-sores. There is also an entire absence of muscular tension, rigidity, contraction, or deformity in the lower limbs. Examination did not enable me to determine whether any affection existed on the sensory side, as the patient absolutely refused to answer any questions. On the whole, my opinion of the case is that it is an example of many recorded instances, in which a slight and unimportant injury develops various emotional and hysterical symptoms." At a final visit made to him before his claim was settled, he complained more than ever of pain in his back, and called out loudly when touched upon his clothes. While sitting in his chair he could move his legs in any direction required of him, though much persuasion was necessary to get him to move them at all. He suddenly vomited without any precedent sign of nausea or retching. Asked to walk across the room, he essayed to do so after much persuasion, and walked in the manner already described. There was no tremor of the legs during progression, and nothing like ankle-clonus or the gait which is seen when there is secondary degeneration of the cord. Subsequently, on being asked to go into the next room, he began to do so, but almost immediately fell down flat on the floor, whence he was lifted and carried away. A very large claim for compensation was preferred, and was arranged two years after the accident, not, however, without a resort to litigation. He shortly afterwards left the house in which he had been living, and for some time it was not known where he was. Forty-two months, however, after the accident, he was fortunately seen by one of the medical men who had visited him during his long illness, and he found him in perfect bodily health and vigour, and the father of another child. It should be stated, as having an important bearing on the case, that the man's previous history was bad. He was always very irascible, and some years previous to the accident he had been laid up with sunstroke. There was also some doubtful history of insanity in his family.

It will not be thought that this case has been mentioned unnecessarily, when it is pointed out that pain in the back was throughout a prominent symptom, and that it was considered by

some to be a case of severe injury to the spine. From the first moment, indeed, treatment was specially directed to his vertebral column, and a most careless examination of the urine, which was found to be feebly alkaline after it had been standing for some time, seemed to lend support to the diagnosis that there had been injury to the spinal cord.

It need cause no surprise that there were wide differences of opinion as to the nature of this case. "Shamming," on the one hand, to sclerosis of the lateral columns, preceded and originated by a meningitis, on the other, formed the two extremes. The truth lay between them, and that opinion proved correct which held that it was essentially a case of functional disturbance, and that as there was no special reason or symptom to place any lesion in the spinal cord, the man would in all probability get perfectly well. The previous history of the patient showed that he was liable to serious psychological disturbance, but it is only right to add that the motive in this case for maintaining the neurotic state was exceedingly strong. Control might have been exercised, I believe, by this man far more easily than by the previous patient, and the representation of many of his symptoms was not very far from being wilful. Since this case was originally described the man has been in another accident, and in support of his claim for compensation he again adopted the peculiar gait which has been described. He carelessly forgot, however, to keep it up on all occasions, and the early settlement of his claim was a direct consequence. As to this particular symptom in the case no more need therefore be said. Some parts of a case may be genuine but not all, nor does a real psychological disturbance enable a man the better to resist the temptation to invent or exaggerate symptoms in view of a pecuniary claim.

Three
types of
the fright
neuroses.

8. Glancing finally over the cases mentioned in this chapter, the number of which might have been multiplied almost indefinitely, it has to be noted that the physical severity of the accident or the bodily injury has obviously but little to do with the symptoms which supervene. Nothing is more certain than this, in searching for a cause of the symptoms, that it is not in bodily injury that the cause is to be found. One man may be hurt in one way, another in another, many are not hurt at all, but the symptoms have all a common cause, best and most comprehensively expressed in the one word—fright. And varied

though the symptoms may be, they are the manifestations of a fright neurosis. This also is the burthen of the teaching of Oppenheim in the work to which reference has been already made. In his experience, however, and in his view, psychical disturbance and change, amounting almost to insanity, have a more prominent place in the history of his cases than has been my own experience, or is to be met with in the description of cases in the English tongue. Thus, in one place we find him speaking of anxiety growing into a real pathological entity, and of the great majority of the cases falling into a distinct category of traumatic neuropsychoses. He is satisfied neither with "traumatic hysteria," nor with "traumatic neurasthenia," as suitable terms to describe the cases which he has himself had under observation. I do not, however, think that "neuropsychosis" is a term altogether applicable to the majority of the cases seen in this country, and I am inclined to believe that there are three main types of functional nervous disorder following injury—the hysterical, seen in France; the psychical, and more markedly hypochondriacal, seen in Germany; and the neurasthenical, seen here. So much, however, depends on the way in which cases of this kind are looked at, that it would be no surprise to me were Oppenheim to see in a hundred English cases typical examples of his own neuropsychoses; Charcot in a hundred German a vast amount of hysteria; and an English observer both in French and German cases many symptoms indicative of neurasthenia. All are, I believe, describing the same thing, and neurasthenia, it must be remembered, is itself a functional nervous disorder through and by which many symptoms arise.

9. At any rate, if the cases described by Oppenheim are examples of the cases most frequently met with in Germany, the type in that country differs, it seems to me, from the type in this. Not that cases of psychical disorder are not met with here, but that they are far less common than in that country. In some of the cases in my own experience the symptoms have been originated by something more than fright, and there has been a clear history of concussion of the brain, while in others the evidences of nerve prostration or general neurasthenia have been especially prominent. Thorburn relates the case of a woman with left hemianæsthesia (*op. cit.*, p. 196) following severe shock and bruises in the Hexthorpe collision, of whom he writes:—
 "Her mental condition was remarkable. She had an intensely

Occasional
mental dis-
orders.

frightened 'scared' look, like that of a wild animal. She paid little or no attention to her surroundings, and it was with the greatest difficulty that she could be got to answer even simple questions. She was quite incapable of connected speech, but there were none of the emotional manifestations usually regarded as hysterical." A year later this condition had passed away, although there was still some impairment of sensation. Commenting on the case, he says that beyond the hysterical hemianæsthesia, there was for a time a profound mental change also of hysterical origin.

The same writer describes a case of hysterical melancholia with occasional suicidal impulses. The man, however, had never attempted to follow them out, and when his claim was settled he improved. In a case quite recently under my own observation, in which there were symptoms of extreme neurasthenia, the patient, a man aged thirty-three, suffered for some weeks from the greatest mental depression, had visions of horrible faces before him at night, and suicidal impulses which led him—himself—to take care that he was never left alone. Thus protected, he never made any attempt on himself, and when his strength began to return, all thoughts of self-destruction passed away; but so overpowering was the sense and the remembrance of his mental depression that, weeks afterwards, he said he wished that he had really committed suicide. This man had been in a very severe collision, and was bruised in many places, but it was not until three hours after the accident, when he was far from the scene of it, that he became unconscious. And on this there ensued the symptoms of nerve prostration, together with slight hemianæsthesia of transient duration, and the mental symptoms which have been named. Six months after the accident, when he was beginning more rapidly and decidedly to improve, he still had an expression of the intensest anxiety, as if he had passed through something very terrible. I do not propose to dwell longer on this class of symptoms, because the type of case to which they belong is certainly not common in this country. The reader must therefore turn to Oppenheim's work for information on the subject.

These symptoms of mental disorder seem to me to emphasise in a special manner the fact that most of the results of railway injury are essentially psychical in origin. Belief in their reality is certainly not lessened by the fact that, in Oppenheim's experience, many of the sufferers were not in a position to claim compensation for the injuries they had sustained; and at the same time it will not be questioned that the symptoms of mental dis-

turbance may be readily increased and kept alive by those very things, which, in the case of other symptoms, are so prone to work prejudicially and to retard recovery. A very great deal depends also on the manner in which the various complaints are regarded and observed, and no one will deny that the creation and development of all sorts of symptoms may be readily induced, when patients are in this condition, by leading questions which suggest them to their minds.

CHAPTER VI.

ON TREATMENT.

SUMMARY.—1. The spinal injuries : Treatment of sprains by rest, warmth, movement, and massage.—2. Need of care in cases of spinal-joint or intraspinal injury.—3. Neurasthenia, no specific remedy for : The abuse of bromide of potassium.—4. Sleeplessness.—5. The bodily nutrition.—6. Hysterical cases and the need for isolation : The Weir Mitchell treatment.—7. The value of perfect rest.

I PROPOSE in this chapter to make a few collective remarks on the principles which should underlie the treatment or general management of the various cases which have been considered. It has been pointed out that compensation very frequently exerts an injurious influence on the clinical history of railway injuries, and it may at once be said that were there no question of compensation the treatment of them would be decidedly easier than it is. An endeavour, however, must be made as far as possible to keep this matter in the background, and to discuss the subject of treatment on the assumption that our patients are anxiously desirous to get well, and to have the best that can be done for them in order to promote recovery.

The spinal
injuries:
Treatment
of sprains
by rest,
warmth,
movement,
and
massage.

1. First of all, as to those spinal injuries, which we have seen, in the great majority of cases, to consist of sprains of muscular and ligamentous structures. The two conditions which have to be remedied are pain and stiffness, and care has of course to be taken that no harm shall ensue from the treatment adopted. Diagnosis is, therefore, all important, and it is essential, by a very careful examination, to make sure that the injury is not of a more serious nature than usual, for the line of treatment which is necessary for the removal of stiffness would be that which above all others is objectionable in the case of osseous or meningeal injury.

Rest and warmth are, in the early stages, the two things most conducive to relief from spinal pain; rest by reclining in bed,

warmth by the continuous application of hot fomentations or poultices. In every case, the question has to be considered, "How long ought a man to stay in bed?" and the answer to it must very much depend upon the severity of the injury, on the character of the pain, and the extent of the spinal column which is involved. There are very few instances, however, in which the patient should be longer than three weeks in bed, and in many it is decidedly advantageous that he should be up much sooner. For the longer he is at rest upon his back,—and the rest, be it remembered, is simply to allow time for the complete resolution of the subcutaneous injury sustained,—the more likely is it that he will suffer from spinal stiffness afterwards. This is what we are wont to see in the case of sprains in the neighbourhood of the joints of the limbs, and there is nothing in the case of spinal sprains to exempt that part of the body from like consequences. The man must be up and move about; and gentle gymnastic exercise each day, such as he himself can make at home, will do much to prevent the increase of spinal rigidity, and to remove that which is already present. Here, however, comes in the difficulty, that the pain which is sure to follow the first movements made will be to his mind an unanswerable reason for not moving any more. Compensation is likely to support him in this resolve, and all attempts to get him to move about are likely to be frustrated. The stiffness increases, and is more incapacitating, and it becomes essential, perhaps, to adopt some more definite and vigorous treatment. Massage, it is well known, is of inestimable value in the treatment of sprains and other injuries in the neighbourhood of joints, and recently the practice has been advocated of treating sprained joints, and even fractures in the neighbourhood of joints, by immediate massage without a preliminary period of rest. The same treatment is to be recommended for the stiffness of a sprained spine, but it must be systematically carried out, care being taken throughout that no undue strain be put upon the system generally, should the bodily nutrition be below the natural standard of health. Especially has this to be remembered in those cases where the spinal pain, with its accompanying stiffness, is the result of weakness rather than of any injury sustained. The weary aching of myalgia, which is prone to arise in all cases of prostrating illness (and we have seen how common is general bodily and mental prostration after railway accident), is not to be remedied by the vigorous manipulations of the *masseur*, unless something be done at the same time to improve and build up again the general bodily

nutrition. This method of treatment is usually more satisfactory in its results than that of faradisation of the muscles on either side of the spinal column, although both in this manner, and in the galvano-faradisation recommended by De Watteville, there are powerful means for improving the muscular nutrition, calling muscular fibres into action, and so relieving the stiffness. What is wanted is to get some of the muscular fibres which have been disused into action, and if by any chance there has been adhesion of neighbouring ligamentous fibres because of the sprain, movement is imperatively necessary to start the reparative process. Thus it is that ironing the back with an iron as hot as can be borne is frequently an admirable remedy in these cases. The warmth is good in itself, the friction stimulates and restores the local circulation both of capillaries and lymphatics, and the application of great heat to the skin makes the patient shrink and move, and so calls fibres into action over which he has no voluntary control. I am altogether opposed to the treatment of these spinal sprains by the application of spinal jackets; they merely postpone to another day the treatment which will have to be carried out, and they moreover tend to increase the rigidity, and make the ultimate treatment more wearisome and difficult. Cumbersome in themselves, they do little but harm. Nevertheless, it is certain that patients sometimes find relief when they begin to go about again from wearing a belt, for it gives support to, and provides warmth for, a part which has the sensation of weakness. Relief also may be given sometimes by wearing a plaster over the loins, belladonna or other; but as a matter of fact the best relief of all comes in time from daily exercise and leading the same life as before. A neurotic, gouty, or rheumatic history and inheritance are prone to make all these cases troublesome, and any special element of the kind should never be ignored in considering the question of treatment.

Need of
care in
cases of
spinal
joint or
intraspin-
al injury.

2. While, however, the vast majority of the cases with which one has to do are either cases of simple sprain or myalgia from a lowered condition of the general health, the comparatively few cases in which there is more serious injury outweigh all the rest in importance. If we are convinced, by the abiding character of the pain or by the involvement of a nerve trunk, that there is inflammation, perhaps with synovitis, of a small spinal joint, or some local meningeal thickening, then it is very obvious that a wholly different line of treatment must be adopted. Rest, local

rest, must be rigidly enforced, and such help in the absorption of inflammatory products as is likely to be given by local counter-irritation must not be neglected. Further, if there be any suspicion of syphilis, influence must be brought to bear on that element in the case by those special remedies with which all are familiar. Above all things, it is important that the patient be kept under careful observation.

3. Passing now to the symptoms which frequently accompany spinal sprain, but which are nevertheless independent of it and are often found alone,—those symptoms which are collectively indicative of neurasthenia—the essential line of treatment to be adopted is to keep up the bodily nutrition. A word, however, may first of all be said about the medicinal treatment of these cases, emphasising at once and decisively that there is no specific remedy. We all know how much of fashion there is in medicine, and in the days when bromide of potassium was administered for almost every form of nervous disease it was the custom to fly to bromide, under the impression that a sedative was essential to quiet the nerves. In the early stages of severe mental shock, with its sleeplessness, general nervousness, and agitation, it is certain that bromide of potassium occasionally brings considerable relief; but although every one can take a casual dose of bromide without harm, the continued taking of it is likely to be most injurious. And in my former work, as well as in a special clinical lecture on the subject,¹ I ventured to point out how much, and how often, harm had been done in the management of these cases by the administration of bromide of potassium in frequent doses over long periods of time. And it is absolutely true that the convalescence of many patients has only begun when the bromide so administered has been withheld. The symptoms of bromism, be it remembered, are essentially those of general depression both mental and bodily, irritability of temper, a continued feeling of exhaustion and incapacity for any work, intellectual dulness and loss of memory, a sense of utter feebleness, a tendency to be despondent and to cry, and loss or impairment of sexual desire. These, it will be recognised, are very much the symptoms of general nervous exhaustion after railway collisions; and it is certain that the continued administration of bromide of potassium is likely to do them harm, and

Neurasthenia, no specific remedy for: The abuse of bromide of potassium.

¹ *Medical Times and Gazette*, "The Abuse of Bromide of Potassium," vol. i, April 4, 1885.

seriously prevent their removal. As Dr. Anstie pointed out many years ago, it is only those who are in vigorous bodily health who can bear its prolonged administration. It is the potassium which is the injurious element in the salt, and if it be merely desired to produce sleep and quiet let the bromide of sodium or ammonium be given in preference.

Sleepless-
ness.

4. One of the greatest and most frequent difficulties in these cases is to procure sleep, and the whole round of the pharmacopœia may be almost gone through without success. Of opium compounds the bimeconate of morphia is often the least injurious, and sulphonal and chloral, with or without bromide, are sometimes useful. I have no faith, however, in any one remedy, nor is any one infallible. The patient is often much better without them, and if he sleeps much or little during the day there need be less concern as to his not sleeping at night, provided that at night he is not left alone to work himself into a state of nervousness, agitation, and fear. Alcohol is of little or no use in these circumstances, and it may be said, once for all, that patients with the symptoms of general nerve prostration can rarely bear it. In the majority of cases, however, it is not the want of sleep which is so harmful, but the want of food.

The bodily
nutrition.

5. It has already been pointed out how often disturbances of digestion accompany the symptoms of general nervous exhaustion; they do something more than accompany, they are in themselves important signs of the condition; and it is simply an inevitable part of the condition that the patient cannot take ordinary food in the ordinary way. In a word, the notion that he can subsist on his usual three meals should as soon as possible be abandoned, for otherwise it is practically certain that he will obtain an insufficiency of food. The consequence is this, that the already exhausted nervous system is prone to become more exhausted still from the want of proper nutrition. The rapid wasting that is sometimes seen in these cases is often quite as much due to the want of food, as to any direct effect upon the nervous centres themselves. Easily assimilable food must therefore be given in small quantities at frequent intervals, and neither at night nor by day should the patient be long without it. Just as convalescence has frequently set in when bromide of potassium has been withheld, so also it is true that convalescence is

frequently seen to begin at the moment when special attention is directed to this matter of providing adequate nutrition and food. And what follows in its train? An improved sense of bodily well-being and a diminution of the myalgia from easily induced muscular fatigue, and, above all things, very often the return of something like natural sleep. Food is the thing to break through the vicious circle which encompasses the patient.

6. There is yet that other class of cases in which the voluntary taking of food is difficult, and where there is perhaps a more decidedly hysterical element acting prejudicially on the symptoms. The symptoms alone defy treatment; the patient, if the expression may be used, has to be treated as a whole. His surroundings are objectionable, and the sympathy of his friends is misdirected and injurious. Removal from home is almost an essential part of the treatment, and there are, perhaps, few cases in which the Weir Mitchell treatment in its entirety—isolation, massage, and excessive feeding—is so likely to be followed by good results. Isolation frees him from that sympathy which fosters and keeps alive the mental attitude of the patient towards his own case, and the feeding, together with the massage, provide the nutrition and the physiological stimulus of exercise of which he is so sorely in need. It is very often, of course, a matter of considerable difficulty to induce patients to undergo this treatment, for reasons which are sufficiently obvious. Here I can do no more than say of how much benefit it is likely to be, and how eminently true this is of the cases where there is some definite neuromimetic sign of nervous derangement. Isolation will at any rate be an obstacle to frequent examination of the patient, a thing which is so prone to keep alive the manifestation of any special nervous symptom.

Hysterical cases and the need for isolation: The Weir Mitchell treatment.

7. Be it further borne in mind that in all these cases of nervous exhaustion rest is a very essential thing in their management, and it is a matter of supreme importance that at no stage of the illness shall the symptoms be aggravated by the exhaustion of overwork. If a man has his leg broken he is of necessity doomed to rest, but it is far otherwise with the man who has not met with any physical injury such as to prevent him from going to his work the day after the accident. He feels only

The value of perfect rest.

a little shaken, but nevertheless it is eminently advisable that such a man should for a time rest quietly at home. I am sure that in very many cases the severity and continuance of the symptoms have been due to want of rest at first. The precaution of complete rest may wisely be adopted in all cases of railway injury, be the early symptoms never so slight; and at a later stage it is equally certain that no perfect rest can be enjoyed, when a man is worrying about compensation; just as the enjoyment and rest of a holiday are assuredly destroyed, when a man has his letters sent after him to plague and annoy him.

CHAPTER VII.

MALINGERING.

SUMMARY.—1. Simulation and exaggeration: The attitude of limbs in joint disease.—2. Tympanitis.—3. Hæmorrhage.—4. Use of atropine.—5. Precedent diseases.—6. Feignings of paralysis and other symptoms of nerve lesion.—7. Hysterical disorders not necessarily feigned.—8. Malingering after railway accidents, and the motive for it.—9. Anxiety as to a rightful claim.—10. Similarity of methods of deception.—11. Exaggeration of trifling injuries, and examples of spurious nervous shock.—12. Relative value of objective signs and subjective symptoms.—13. Importance of a correct early history.—14. The neuromimeses.—15. The co-existence of sensory derangements.—16. The general conduct and bearing of malingerers.

1. "Is the condition before us real or feigned?" is a question which we have sometimes to ask ourselves in the routine of practice. A correct answer to it is obviously of great moment to both doctor and patient; and I propose, therefore, to say something on the special kind of malingering which may be met with after the injuries, or after no injuries, received in railway accidents. It may be well, however, in the first place, to name some of the points which have to be borne in mind in the endeavour to come to a right conclusion, that we may decide whether the signs of disease before us be real or assumed, or the complaints we hear be genuine or the outcome of wilful exaggeration; whether, indeed, to adopt the classification of Ogston, the disease be feigned, factitious, exaggerated, or aggravated. It is a common experience that most feigned disorders have in them some basis of reality, or some revival of the symptoms of a former lesion or injury used again for purposes of deception. Familiarity with the phenomena and history of disease can alone, therefore, enable a man to pronounce with certainty as to the real nature of any particular disorder, and to detect the mistakes into which malingerers so often fall.

Simulation and exaggeration: The attitude of limbs in joint disease.

An apt illustration may be taken from the attitude and position of joints in real and assumed disease. By his loud complaints a man may wish to suggest the presence of destructive mischief in a joint, but in all probability he will go wrong in

the attitude and position which he gives to his limb. Or without pretending to be afflicted with actual joint disease, a patient will sometimes affirm that a joint has become stiff, and that it is impossible to move his arm or leg. It is unnecessary to make any mention here of the recognised causes of stiffness and ankylosis of joints; suffice it that the entire absence of them, both in the history of the case and in the course of the disease, will reveal a flaw in the evidence sufficient to raise suspicion. Suspicion grows into tolerable certainty if you are careful to observe the conduct of the person under examination.

A man complained that he could not work because of stiffness in the right elbow and inability to straighten his arm. He said he had fallen on his elbow a month before, but it was clear from his answers to questions that the injury had not been at all severe. Comparison of the two elbow-joints showed an entire absence of physical signs, and there was no wasting of the limb. Noticing, in examination, that attempts to flex or extend his arm were forcibly resisted, he was told to look in the opposite direction, questions were asked him unconnected with his arm, and there was no difficulty in bringing it at once to natural and full extension. A turn of his head and eyes towards the affected limb was immediately followed by active flexion to the original degree. Complete flexion also could be produced under like circumstances. Examination of both arms simultaneously seemed to confuse him, for he called out with pain when pressure was made on the sound limb. Such inconsistencies as were met with here ought, at any rate, to place us on our guard. A man based a large demand for compensation from a railway company on stiffness of his elbow and inability to move his arm, the result of a collision. A verdict incommensurate with his expectations having been recorded, he threw up his arms and exclaimed, "My God! I'm a ruined man."

Tym-
panitis.

2. Furthermore, an impostor may adopt devices to produce conditions, which, in themselves alarming, are yet seen to be without significance when every feature of the case is examined. A prisoner took to his bed complaining of great pain and swelling of the abdomen. Although the belly was enormously distended and tympanitic, there was no other sign of illness about him, and there was an entire absence of any one condition on which tympanitis usually depends. After a few days' observation, and having carefully weighed all the facts of the case, the surgeon came to the conclusion that the man purposely induced the

distension by swallowing air. Loudly enough for the prisoner to hear him, he accordingly remarked to the warder, "When I come to-morrow I shall bring an instrument to tap him." On the morrow the tympanitis had disappeared.¹

3. More common are the cases where patients assure you that they are losing blood in large quantities from the bowel. The causes of hæmorrhage from the bowel are well known, although an exact diagnosis may be sometimes difficult because of their very number and variety. The malingerer, however, does not know that profuse hæmorrhage—and it is of profuse hæmorrhage of which he invariably complains—gives rise to well-defined symptoms due to loss of blood. Who ever saw a patient losing blood, either in alarming quantities or in small amounts spread over a long time, with a florid lip, a tranquil pulse, a cool skin? Should not the presence of every indication of health warn us that we have to deal with something altogether unusual? Should we be doing rightly if we paid little or no attention to the general condition of the patient, and endeavoured to estimate his case by simply hearing the story he told us, without examining the blood which he showed? By neglect of such simple precautions an erroneous diagnosis was made of a case where pints of blood, not the man's own, were presented as having been passed *per rectum*; and the same thing happened in another case where a man showed, from the same supposed source, prodigious quantities of "blood and corruption." Both were cases of imposition—subsequently known and proved—after railway accidents; and yet in both of them the fraud was successful. Surely when conditions such as these occur alone, when there is neither discoverable cause, nor the usual, inevitable result, one ought to be able to say of them at once, "Impossible, untrue!"

4. In the same category it is not amiss to refer to dilatation of pupil induced by the use of atropine, a point of some importance, because it has been shown in a previous chapter that a wide sluggish pupil is a valuable sign of loss of nerve tone. "The

¹ The same method of imposture is recorded by Gavin (*Feigned and Factitious Diseases*, p. 299), who writes: "This affection, tympanitis, has been so successfully feigned as to deceive a board of French medical officers; but this individual possessed the extraordinary power of greatly distending his abdomen by swallowing air. He, however, obtained an unqualified exemption from military service by presenting himself in this state, with clothes made for the occasion."

access to atropine or belladonna," writes Mr. Hutchinson, "on the part of the public is now so easy that we cannot be surprised that we encounter mydriasis as the result of an accidental and perhaps unknown use of this agent, or of its use with intention to deceive. It is the first question which will occur to a surgeon on seeing a dilated pupil, 'Has atropine been used?' and he must be on his guard in cases of hasty denial. . . . Not unfrequently the ophthalmic surgeon has to encounter cases of intentional deception. These occur usually in young women of emotional tendencies. . . . A highly cultivated young lady consulted me for 'pemphigus.' She had blebs all over the left half of her body. But these blebs were, some of them, not round but oblong, in a style which no skin disease ever assumes, and very obviously the result of the application of a brush. She was liable also, I was told, to attacks of dilatation of the pupils and loss of ability to read. These attacks usually lasted a week. This case is only an example of what has frequently come under my notice. Although it is possible to use atropine in such a weak solution that the ciliary muscle is not affected, yet in most of these cases a more complete effect is obtained, and the loss of power to read is produced in addition to mydriasis. If the latter be present alone, and if it persist for long, the suspicion of deception may be put aside."¹ In all cases where the use of atropine is suspected, it is essential to examine the patient frequently, and carefully look for some concomitant and confirmatory symptom of nerve disturbance. The pupils, moreover, it need hardly be said, must be examined both in light and shade; and it should be borne in mind that, where there is inequality of the two pupils, the dilated pupil need not necessarily be the one affected. The pupil which is the smaller of the two may, for example, be unable to dilate, and be the one really at fault, because of sympathetic paralysis—a condition of things by no means unknown after organic injury to the lower cervical spine. The question might here arise whether eserine had been used, but I am not aware that eserine can induce the other signs of sympathetic paralysis—shrinkage of the globe, and contraction of the palpebral fissure.

Precedent
diseases.

5. Let it not, moreover, be forgotten that any kind of old injury, deformity, or want of perfect symmetry may provide the malingerer with the opportunity for the practice of imposture.

¹ "On the Symptom-significance of Different States of the Pupil," *Brain*, vol. i. p. 462.

Hydroceles, varicoceles, and herniæ; fatty tumours, sloughing gummata, and sebaceous cysts; distended bursæ, and anchylosed joints from long past disease, are some of the conditions, which, in my own experience, have been attempted to be palmed off as the result of railway shock. No man who knows his business can be taken in by such things as these. Great care, however, must be always exercised in the examination and estimation of abnormal conditions which may be presented, that no injustice may be done a man in coming to a hasty conclusion that he is malingering.

It is singular, for example, how ignorant some persons seem to be of the existence of deformities, or states of body, which must have been endured for a long time.

CASE 26.—*Case of old lateral curvature of the spine—Condition unknown to the patient.*—A man, seventy years of age, came to St. Mary's Hospital, complaining of pain over the right side of the thorax. When he had been stripped, it was found that he had lateral curvature of the spine to an extreme degree. He said that this condition was of quite recent date, and that he had only noticed it since he felt the pain. Judged by itself alone his story was enough to cause alarm; but, both from the ossification of his costal cartilages, and from the fact that there had been no alteration in his stature, it was clear that the spinal curvature was of old standing, in all probability nearly as old as the man himself. Had it been an acute change at this time of life, and had the pain which brought him to the hospital been due to the curvature, or been a symptom of some serious malady which lay behind it, a simple liniment and a tonic would hardly have restored him in a short time to his usual state of health.

So also the absence of perfect symmetry between the two halves of the body, some trifling difference in the facial lines, or slight excess in size of one limb over the other, and of one half of the spinal muscles over the other half, may be regarded, when taken by themselves, as evidence of very grave disease.

CASE 27.—*Paralysis from pressure on musculo-spiral nerve—Accompanying facial asymmetry.*—A labourer, aged forty-two, came to the hospital on June 12, saying that on waking from his usual nap after dinner the previous afternoon, he found his right arm and hand "numb," his fingers and thumb flexed, and his wrist dropped. This paralysis of the extensor muscles was partial only, and was accompanied by some tenderness above the elbow on the inner side of the arm, and by a small anæsthetic area

over the ball of the thumb. As usual, recovery was slow, and, although he was then able to work, he had not regained full use of his wrist and hand when he was seen six weeks afterwards. Interesting though this part of the case may be, the special point about it was the fact that the left side of the man's face was almost entirely wanting in facial lines, while their presence on the right side gave him the appearance of having left facial paralysis. To the palsy of the arm there thus appeared to be added paralysis of one side of the face, and the combination might have suggested grave disease, had not a careful inquiry into every circumstance of the case led to the diagnosis that this asymmetry was peculiar to the individual. And this opinion was subsequently confirmed by the patient himself. Yet how easily, under the besetting temptations of railway injury, might a hastily expressed conclusion as to the pathological origin of such a state have given an unscrupulous patient the opportunities of using his natural peculiarity for purposes of deception and fraud. We meet with such conditions every day, and it is of supreme importance to recognise and rightly estimate them, not only that we may allay the anxiety of the patient who honestly believes his old complaint is new, but also that we may nip the means of deception in their very bud, and not ourselves unwittingly befriend the imposture.

Feignings
of paralysis
and other
symptoms
of nerve
lesion.

6. I shall not attempt to enter in any detail into the feignings of paralysis and kindred nerve diseases. The same principles must guide us, and we shall find them very seldom fail. The artifice may be clever and well devised; it may be long sustained and free from variation; but it is very difficult, and therefore rare, for the malingerer to simulate a real disease with accuracy. He exaggerates; that which he could not do he does; he will not do that which he could do if his state were real; and you find that his symptoms are such as you have never seen or known resulting from any affection of the brain, the spinal cord, or the nervous system generally. Subjective symptoms largely predominate, and you observe that such objective symptoms as he has are mostly those over which he can exercise his will. He cannot make his eyelid droop; his tongue does not always deviate, nor is the angle of his mouth always drawn; he knows not how to paralyse his bladder; there are no bed-sores; he does not waste; his palsied limb resists examination; his fits occur at convenient moments when he cannot harm himself, or when he can

be under the observation of those who do not know their import or their signs; in his coma he is not unconscious; and added to all he has the aspect of health, nor is any vital function deranged.¹

7. The so-called functional, hysterical, and neuromimetic disorders have many symptoms which often look like imposture, but I believe that the sufferers who present them are prone to deceive themselves more than other people. That the manifestations of hysteria are not necessarily feigned, or due to expectant attention, is indeed shown by the fact that they may be found even in young children, who have what may be called the requisite hysterical neurosis. Some remarkable cases of "hysterical analgesia in children" recorded by Dr. Barlow,² show conclusively that a symptom of hysteria, which in the adult may lead to the suspicion of imposture, may be seen in children so young that the very idea of feigning is out of the question. As I have already pointed out, the one common characteristic of all these cases lies in a strange perversion and abeyance of volitional power or will, whereby each action, word, and thought seem to run riot, as it were, for want of due control. Largely unreal and independent of structural change, the symptoms admit of easy exaggeration and representation whenever the uncontrolled whim of the moment allows; but having grown, step by step, out of slighter conditions which there was neither the wish nor the determination to subdue, they seem in their very nature to exclude deliberate imposture. Practically, too, the kind of treatment these disorders require is very different from that which suffices to cure ailments altogether feigned. Be the condition, however, what it may, to the patients themselves it is very real: the pain, the stiffness, the palsy, are as great to them as they are described, or as full of evil consequences as it is imagined and believed. The symptoms may be of little moment in themselves, but it is wrong to look upon them as altogether feigned.

Hysterical disorders not necessarily feigned.

The cases already given in illustration of some of the points and principles, which it behoves us to bear in mind, have been

¹ "In *peripheral paralysis of the facial* the expression of the face is very striking, for, owing to the loss of muscular tension on one side, it falls, whilst the opposite side is drawn up. This distortion is much increased in smiling or talking, or whenever the influence of the will is exerted on the muscles" (Wilks, *op. cit.*, p. 439). But in laughing or talking the impostor moves, he cannot help moving, the paralysed side, and the asymmetry becomes less instead of more obvious. I have a case in mind.

² *British Medical Journal*, vol. ii. p. 892. 1881.

designedly drawn from ordinary hospital work; and they are of value in showing that no special practice is required to teach important lessons bearing upon the subject, and that these can be learned from cases which are met with every day.

Malingering after railway accidents, and the motive for it.

8. As I have already said in speaking of the after-history of nervous shock, so now in turning to the more special topic of malingering after railway accidents, it must be acknowledged that ordinary hospital patients provide little opportunity for gaining familiarity with the kind of malingering with which we have now to deal. This, however, has to be noted, that, whatever may be said of every other form of malingering, there is no obscurity or doubt in the case of railway injuries as to the motive which may induce a man to exaggerate or to assume symptoms of disease. It may be summed up in the one word "compensation," to which the law of the land entitles him, whether for damage to his person or loss in his business consequent on the negligence of the public company which had engaged to carry him. Has his injury been great; has he lost a limb, or been otherwise maimed; or has his life been then, or in the future, imperilled; it is almost needless to remark that, while no money can adequately compensate him, the amount to be paid him must of necessity be large. When, however, the injury is trivial and passing, when there is neither structural damage nor prospect of lasting enfeeblement of body or mind, it is evident that the amount of money sufficient to compensate him ought to be very small. And herein, in the endeavour to gain large compensation for small injuries, the malingerer finds reason and excuse for practising deception in order to magnify his claim. The motive is one requiring great moral courage to resist. Many a man, whose character hitherto has known no stain, has yielded to the temptation, and has thereby lowered himself in general esteem. It is not the language of sentiment but of sober fact, when it is said that whole households are sometimes made miserable by the devices to which it is needful to resort, in order to obtain the desired end. Hopes are conceived of future gain, thoughts are centred on the one aim in view, and there is but a sorry consolation when the day of reckoning has come. So powerful indeed is the motive that you find persons taking to their beds, abstaining from food, shutting themselves up, neglecting their business, and making themselves weak in body and wretched in mind.

9. While, however, this has to be written of those who wilfully malingers, it would be doing many an injustice if we did not recognise that prospective compensation may exert a retarding influence on the process of recovery quite apart from any deliberate imposture. Entitled as he is to compensation, it is only natural and right for a man to feel anxiety, both in his own interests and in the interests of his family, that compensation should be adequate and fair, and a nervous, yet really honest, dread may be engendered lest some mistake be made in the settlement of a rightful claim. The injurious influence of any such nervousness and suspense is sufficiently obvious, and it may sometimes be a matter of no small difficulty to determine whether the protraction and aggravation of a man's illness are really due to one cause or the other—to wilful imposture taking the form of not choosing to recover, or to the unconscious weight round his neck which arises from apprehension as to compensation. I have never known any difficulty, however, in making the honest sufferer understand how and why the settlement of his claim for compensation will, more readily than drugs or change of air, promote his recovery and work only for his good. Some may think that there need not be much regard for the feelings of an impostor.

Anxiety as to a rightful claim.

10. Curiously alike are the means of deception adopted in different cases, and it is extraordinary how persons in the humbler walks of life possess a knowledge of the kinds of injury, which are popularly deemed inevitable in a collision. Provincial journals are to some extent responsible for this, for in them are often to be found in considerable detail the history and symptoms of those who, by litigation or otherwise, have received compensation from railway or tramway companies. And if a man has in this way learned that large compensation was awarded for injuries apparently like his own, it is a great temptation to him to adopt courses which seem to him potential of future gain. A publican well up in years made an exorbitant claim for trifling injuries. His enlarged prostate gave rise to the usual symptoms, but when it was pointed out to him that this was the real cause of his urinary trouble, he replied, "No, it is my spinal cord to which all my symptoms are due." "Drag your leg, you fool; don't you see the doctor coming?" called out by a workman to his fellow, who had been in an accident, and heard by the doctor as he was then crossing the yard to see him, was but the audible

Similarity of methods of deception.

expression of many a like lesson, which may be learned with ease in the solitude of a sick room. And as the views of the nature of railway injuries have changed, so also has there been a notable change in the methods of imposture. Ten years ago the malingerer could not walk, or he dragged his leg because of some obscure injury to the spine; nowadays he presents an admirable picture of nerve prostration, for his nervous system has had a severe shock, the consequences of which are readily induced by abstinence from food. This is unquestionably a far better way of malingering than the endeavour to simulate some spinal disease, for the fraud in that case can be soon found out; but in the case of wilful starvation it is only a question of time when your waistcoat will hang flabbily about you, and you can measure at any automatic, and thoroughly trustworthy, machine the number of stones you have lost in weight. It caused no surprise at all that a man, who had been going about on crutches for months, should have led off the dance at a ball which he gave to his rejoicing friends at the close of litigation; but I have heard expressions of genuine amazement at the speed with which the human form divine has sometimes put on flesh.

Exaggeration of trifling injuries, and examples of spurious nervous shock,

11. And yet it is unusual, in my experience, to meet with cases where it would be possible to say with certainty that no injury has been received at all. The pain of some trifling bruise or strain is exaggerated and unduly prolonged, and thence are developed other conditions and complaints, in whose very obscurity lie the ready means of untruthfulness and deception. The still widespread, yet erroneous, impression, that the effects of a railway collision are likely to be remote, does much to foster a sense of uncertainty and alarm, and to give the malingerer scope for the course which he intends to pursue. And so it comes to pass that it is after the most trivial accidents, or in cases where no definite injury has been sustained upon which to base a claim, that we hear most often of the obscure, subjective, and intangible symptoms and complaints, which are supposed to indicate some serious damage to the nervous system, and to forbid all prospect of future recovery. Is it not a strange anomaly, something altogether extraordinary, that it is only the slightest injuries which are followed by these purely subjective symptoms, whose very obscurity gives rise to alarm? Is not some light, however, thrown upon them by the facts of accumulated experience, that these symptoms vanish and the complaints are no more heard

when the motive for their existence is at an end? Have we not strong grounds for doubting their genuineness and reality? Are we right in ignoring the absence of early symptoms and signs of injury or shock, and in assuming that a condition is alarming, or a prognosis grave, simply from assurances of the patients themselves? And yet this is what is seen far too often in dealing with cases of alleged injury after railway accidents. Little regard is paid to the early condition and to the actual state of the patient, and undue attention is given to ceaseless complaints of hidden symptoms, whose real existence you should be all the more cautious in acknowledging, being as they are without objective signs, and traceable to no injury met with in the beginning. Time runs on, the complaints become louder and more continuous; and forensic eloquence, it may be, is left to tell a harrowing tale of the frightful collision, and of a nervous system shattered and beyond repair.

I trust that I am not myself lapsing into the "region of *nisi prius*." These are facts, however, and it would be well if they were more widely known. That cases of severe and unquestionable injury should usually go on to recovery, or to such restoration as the nature of the injury will allow; and, on the other hand, that cases of slight injury, from which recovery without complication or sequelæ is, in other circumstances, the rule, should after railway collision be followed by innumerable and protracted subjective symptoms on which not a finger can be laid, are facts to arrest attention and to call for explanation. And the simplest explanation is the best. In the one set of cases there is an obvious basis of compensation for the definite injuries received; while in the other there is little or none, and there arise exaggeration and unreality, and subjective symptoms to make the specious foundation of a claim. But enough, perhaps, directly and indirectly, as to the motive for malingering. It is notorious, and it has an all-powerful influence over the course and symptoms of railway injuries.

Let us now learn from definite examples something of the ways of malingerers.

CASE 28.—*Slight sprain and nervous shock—Protracted symptoms from wilful starvation.*—A travelling agent, aged fifty-eight, received, in a trifling collision, a blow over the right iliac crest. He complained to a fellow-passenger at the time, so he said, of being hurt, and of feeling rather faint. There was never any mark of bruising, and his medical attendant—a hospital surgeon well able to judge—thought his injury altogether trivial. The

patient, however, abstained from his work; nor did he resume it until eleven months had passed away. During this time he complained of pain about the right hip, which compelled him to use a stick and made him walk lame; of pain in the head; of inability to sleep; of poor appetite and nausea; of constipation; of such general weakness as to prevent him from walking a mile, and that only now and then; of impaired vision, so that he could only read the largest type; of loss of memory; and of incapacity to apply his mind to anything, so that neither physically nor mentally did he feel himself fit for any occupation. He frequently stayed in bed for the whole day, and rarely got up before twelve; for days together he never went out of doors, and he took the very smallest quantity of food. Thus he gradually acquired a worn and anxious aspect, and looked pale, thin, and ill. No known means of examination were able to discover any sign whatever of injury or disease; and although he twice undertook journeys of some two hundred miles to be seen by a well-known oculist, could I ever, with the ophthalmoscope, find a trace of disease in his eyes, or any cause for his loss of vision. No remedies adopted seemed to have the slightest effect upon him. Liniments did not soothe his pain, soporifics did not make him sleep, and tonics improved neither his appetite nor his strength. On only one occasion did he give a clue to the absence of perfect genuineness and reality in this case. To the surgeon who had several times examined him by request of the railway company, the patient one day remarked as he left the house, "You've got a cobweb on your hat, perhaps you'd like to brush it off." He was known to be at this time, and he had been formerly, in pecuniary difficulties. He made a very large claim. This was ultimately settled, and he forthwith went into the country for change of air. He returned home in a fortnight looking and saying that he was in every respect perfectly well. He resumed his work at once, and continued it for many years after the accident. Could recovery in this case have taken place in so short a time had the symptoms and complaints not been purposely induced, maintained, or fabricated? Is it not as well-nigh certain as can be that had not the prospect of compensation held out the temptation to this man to make the very worst of his injury, with the hope of pecuniary profit to himself, he would have been laid up for not more than two or three days? And yet he was an invalid for eleven months—a wretched picture, indeed, of induced *malaise*; but a malingerer nevertheless, purposely maintaining his condition in order to increase his claim.

CASE 29.—*Physical injuries—Nervous shock—Early recovery.*—Two cases out of the same accident, those of a father and son, may be compared. The father, a man in a small way of business, aged fifty-eight, was seen in bed at an hotel in a provincial town the morning after a bad collision. He was unable to give any account of the accident, having been stunned by a blow which had closed both his eyes. He had also a broken rib, and was much bruised elsewhere. He had had about two hours' sleep in the night, had rallied, and felt better. A week later he was still mending, and although he was pulled down by rather severe epistaxis, he was able in twenty-four days to be moved home. There he continued to go on well. In six months his claim was arranged without trouble for a reasonable sum, and when I saw him three months afterwards he looked and said he was perfectly well.

CASE 30.—*Slight injuries—Prolonged complaints—No evidence of ill-health.*—The son, a strong and powerful man, aged twenty-four, a messenger by occupation, was not stunned, and was able to help his father to the hotel. When seen on the following day he said he had had a good night, but that he felt rather shaken. He had a slight bruise on the right knee, and a simple fracture of the third metacarpal bone of the left hand. A week later, to my astonishment, I found him still in bed, but neither in aspect, temperature, nor pulse was there anything abnormal, and he had been able to eat and enjoy, from the very morning after the accident, three meat meals a day. He was ordered up, and he would have been sent home immediately had not the illness of his father obliged him to stay. When he got home he at once, by the aid of a litigious lawyer, took steps to make an exorbitant claim against the railway company. Two months after his return home he had not yet resumed his work. The reasons assigned for this were that he had giddiness and pain in the head, that his memory was bad and his sleep disturbed by dreams of the accident, that he was very weak and incapable of work, and that he could not trust himself to apply himself to anything. His knee and hand were still in bandages, the arm being carried in a sling. I failed to discover any sign whatever of ill-health about him. Thus he continued to complain and to live in idleness until ten months had flown, when a jury awarded him a sum in reasonable compensation, or about one-fourth of that which he had demanded. He was then to every appearance and test in perfect health, though still complaining as before.

CASE 31.—*Slight shock—Prolonged complaints—Absence of all symptoms.*—A man, aged forty-two, strong and healthy, was in two slight collisions. In the first there was no evidence or history of his having received any blow or injury. He stated, however, that the day after the accident he felt weak, ached all over, and had pains in the loins and legs as if he had a cold. No amendment took place, nor had he indeed been free from suffering up to the time when I saw him eight months afterwards. He then complained of weakness and fatigue, of bad sleep and loss of memory, and of such great nervousness that the whistle of an engine or the sound of a train threw him into a state of excitement. His manner was whining, and he made several attempts to cry. His medical attendant had never found any evidence of illness beyond the statements made to him by the man himself. Neither in his general aspect, nor in the action of any one of his organs, could any sign of ill-health be discovered. He abstained from work for fifteen months, and at once resumed it on the settlement of his claim, then grown in size through length of alleged suffering and loss. Two years went by, and he was fortunate enough to be in a second collision in which he received a trifling bruise on one leg. He at once abstained from work, placed himself under medical care, made precisely the same complaints as before, and presented as little evidence of ill-health. Again there were months of idleness, and again on the settlement of claim immediate recovery, and return to work.

Further examples of this particular kind of malingering are hardly necessary, although many might have been given, which, with insignificant variations, have followed the same course. They are often styled cases of "shock to the nervous system." Their chief characteristic is the obscurity, the intangibility, and entire subjectivity of all the symptoms and complaints which disappear at a particular moment. They are not rarely accompanied by some manifest disturbance of health, which is induced by the mode of life to which the individual restricts himself. Can want of proper occupation and exercise act otherwise than harmfully even to a healthy man? Sleep becomes unsound, the bowels are sluggish, appetite fails, the glow of healthy energy and vitality is lost, and there is no longer the picture of perfect health. Be the bodily derangement thereby great or be it infinitesimally small, health and vigour are restored, and work is resumed, as soon as it is no longer incumbent on the man to appear ill and to remain idle, and when the requisite effort to

return to a natural mode of life is once more allowed. The man has nursed himself into a state of illness, and has thereby generated a condition of spurious nervous shock, and if he only has the prudence to complain of his back, his case becomes a grave one of so-called concussion of the spine.

12. Examples of this induced illness are far from uncommon, and the very fact that the patient seems really ill places an additional difficulty in the way of an accurate diagnosis of the cause. Apart from the necessity of learning what was the precise nature of the accident, and how the man was hurt, it is very essential to know how he passes his time, and what are his habits and occupations day by day. It is of paramount importance to separate objective signs from subjective symptoms. The absence of signs, and the presence of subjective symptoms alone, may fairly warrant a suspicion, which ought to entail the most careful inquiry into all the circumstances of the case. Why is that man in bed? why does he stay for weeks indoors? why is he taking hardly any food? why is he pale and thin? why does he sweat?—questions such as these the surgeon should ask himself, and he should not rest satisfied with a tacit belief in what he hears or sees.

In other cases there may be a combination of obscure subjective symptoms and of precise objective signs which throw mutual light upon each other, or which perchance may tend to make a diagnosis still more difficult.

CASE 32.—*No injury—Prolonged complaints—Immediate recovery on settlement.*—A traveller by occupation, aged fifty-three, out of employ, took to his bed and called in a doctor three days after a most trifling bump against the stop-blocks in a station. He made the usual complaints of pain, of shock to his nervous system, dimness of vision, loss of memory, and the like, but there was never any sign whatever of ill-health or functional derangement beyond what might be fairly attributed to some atheroma of the aorta. The extravagance of his language and his exaggerated estimate of all his complaints were in themselves enough to raise suspicion as to their reality. Objectively he complained of loss of power in the right arm with stiffness of the right elbow, and of a putty-like sensation of the left leg below the knee and stiffness of that joint. In all ordinary movements, such as undressing or helping himself out of bed, he used the right arm

quite as much as the left. It presented no difference from its fellow, though when speaking to him about it he always held it against his side. He resisted with great force when you attempted to bend it, and he called out loudly, as if from pain, when you touched the arm, however lightly, about the elbow-joint. His left leg showed no physical signs of injury or disease about the knee. Held usually rigid and stiff, he resisted any attempts at passive flexion. Flexion to the slightest degree, he said, caused him great agony, although his face showed no sign of suffering. On another occasion he complained of excessive hyperæsthesia of the left knee, however gently you touched it with the finger, although he pulled up and put down his trousers over it with perfect composure. He complained of great agony in his bladder, although he only passed water at natural intervals and in proper quantity, and he could hold it for six, eight, or even twelve hours. He stayed in bed about ten weeks, and took, as he admitted, hardly any food. Towards the close of the twelve months, during which this state of things went on, he had become somewhat weak and thin. Quite early he had made an exorbitant claim, and the natural result was litigation. While waiting for his action to come on the man was to be seen walking about Westminster Hall with the lame stiff leg, and the flexed arm held rigid to his side. His action over, he there and then resumed a natural gait, all trace of lameness having passed away. Were the subjective symptoms less unreal than those which so quickly vanished?

CASE 33.—*Purposive vomiting—Immediate recovery on settlement.*—Now let us take another case which offers, perhaps, greater difficulties in diagnosis. Omitting details of the usual subjective ailments, the objective signs of illness were frequent vomiting, and such apparent weakness of the legs that walking was only slow and laboured. The surgeon who saw the man on behalf of the railway company, and who gave me the history of this case, felt sure from all he saw that the symptoms were far from genuine, and among them that the vomiting itself was a deliberate volitional act. It was, to say the least, a suspicious feature in the case that the patient had been seen, when he thought he was out of sight, to start off at a natural pace, swinging the stick on which he had been compelled to lean only a moment before. Knowing all this, the surgeon felt it his duty to tell the private medical attendant what he thought about the case, and he resolved to do so on the next occasion when they were to meet at the

doctor's house to see the patient. Having told his opinion, the doctor pointed out the utter impossibility, in his belief, of so grave a symptom being voluntary, and took him into his own yard to show how the man had vomited since he came to his house not long before. The surgeon's opinion, nevertheless, remained unchanged, and the result of the case justified and confirmed it. Infirm of body and mind, incapable of work, vomiting up to the day of his action for damages, the man immediately recovered when litigation was over.

In the case of a horse-dealer who rapidly wasted and became extremely ill, and in whom the most prominent symptom was sweating, the man subsequently acknowledged, when his speedy recovery after compensation excited his doctor's surprise, that he had deliberately sweated himself by violent exercise in thick clothing in order to reduce his weight and size.

To those who have never seen such cases it may appear almost incredible that symptoms like these can be volitional and unreal.¹ Take, however, into consideration every circumstance and feature of the case; learn what has been the original injury; recognise how singular it is that a symptom, alarming in itself, should be by itself independent, and without ill result; remember how powerful is the motive for deception; inquire what steps the patient is taking to gain the desired end, and there are the means, if you will only use them, of arriving at a right diagnosis.

13. The character of the original accident and injury is far too often forgotten in the later examination of these cases, and a trifling bump is magnified into a serious collision.

Importance of a correct early history.

CASE 34.—*Slight injury—Gross exaggeration—Rapid recovery after settlement.*—A man received an altogether trivial blow on his side, from the manner in which he happened to be sitting, when the train attached a carriage at a station, and the so-called accident ultimately became a severe collision, in which the train had been backed into a carriage at the great speed acquired in a run of half a mile, with a crash like thunder. This was the story upon which those were asked to form an opinion who were called in to see him, when, after several months, he had nursed himself into a condition of much weakness, nervousness, and *malaise*, and when his very obvious illness seemed almost to

¹ Some remarkable instances of factitious vomiting are recorded by Gavin, *op. cit.*, p. 256, *et seq.*

demand a serious accident as its cause. It is very natural that there should be some distrust in the statements of railway servants as to the precise violence of a collision or other accident. The absolute and unvarnished truth as to the real severity of the accident was known, at any rate, in this case, and was somewhat different from the alarming catastrophe to which testimony was borne in a court of law, where a jury is supposed to get at the actual facts. A large sum of money was awarded to this man in compensation, and he instantly invested it in a business which he proceeded forthwith to carry on himself, with all the appearances of perfect health, and without any further need for medical treatment.

CASE 35.—*Simulation of spinal injury and false statement as to accident.*—A highly respectable frequenter of the turf took to his bed after a very trifling collision. He was unable to give any account of the accident, having been knocked insensible, and been carried in an unconscious state to the waiting-room of a station, distant a quarter of a mile. He had, however, been able to make a long journey home two days after the accident, that is to say, when the races were over; and he at once took to his bed. I saw him on the eighth day. When asked what he complained of, he answered with ready assurance, "Shock to the nervous system, and injury to my spine." He could give no other account than this of his complaints, except that he was wholly unable to get out of bed. Examination, which failed to discover the slightest trace of injury or constitutional disturbance, accidentally revealed that this gentleman had a chancre; and the discovery afforded the excuse for promptly ordering him to get up and walk. His doctor had regarded it as a case of very serious spinal injury. The claim was forthwith settled for a small sum.

CASE 36.—*Alleged spinal injury—Gross imposture.*—This same man subsequently appeared as a witness on behalf of a friend, who had brought an action for damages for a like alleged injury in the same accident. He was a most valuable witness, for he swore that he and another man had carried their friend, then perfectly unconscious, from the scene of the accident to the waiting-room at the station. The friend, an even more outrageous impostor, had had a slight bruise on one hip. He also finished his mission at the races, came home, and at once took to his bed, complaining of his spine. "The pain in his back," so ran my

report some weeks after the accident, "is so bad that a longer stay than half-an-hour out of bed is, he says, almost more than he can bear. His pulse is perfectly tranquil, his temperature normal, his aspect not that of ill-health or urgent suffering, and the appetite and bodily functions are as good as can be expected in any one who has so long been without appetite and indoors. It is my conviction that he is grossly exaggerating his symptoms and complaints. There is no evidence whatever of injury to his nerve-centres, either cerebral or spinal; nor is there any ground for believing that there is any real tenderness of his spine, for wherever I touched him, whether on the spine itself, on the muscles near it, or on the ribs far away from it, there was the same unreal hypersensitiveness and manifestation of suffering. That he has some pain here and there is quite probable; but there is no disease such as to call for his stay in bed or in the house for another day." It need hardly be said that litigation ended this case, which was a highly profitable one for the lawyers.

Three years afterwards it was learned from this man himself—perhaps in the circumstances the least trustworthy source of information—that his case from beginning to end was a fraud, that he was never hurt at all, and that no amount of money would induce him to go through such a course of illness and confinement again, or to endure such suffering as he had at the hands of those who deemed it necessary to run pins into his legs and to apply the "electric test" to measure his assumed insensibility. I venture to say that no such "tests" were ever needed, and that their tendency was only to confuse and obscure what ought to have been sufficiently obvious to every one who saw the patient. How fallacious they are, and in this case were, it is superfluous to point out, and yet they were solemnly given in evidence in court as conclusive signs of the serious nature of the man's disease.

14. Then, again, there is a class of cases where the patient may simulate the mimicries of disease. There are none in which it is more imperative to know something of the patient's history, of his previous health, his position in life, his condition immediately or soon after the accident, the nature and extent of the accident itself, and the whole aspect of the case from beginning to end. The neuro-mimeses.

CASE 37.—*Slight injury—Prolonged simulation and rapid recovery after settlement.*—T. J., aged forty-three, was in a slight accident, in which he had a small bruise on one cheek and also at the back of the head. He was seen shortly after the accident, but there was no sign either of injury, beyond the bruises named, or of constitutional disturbance. In about ten days he was "taken worse," but in no very definite way. He gave notice of a claim, and then began to complain indefinitely of pain in the back, of pain in the legs, and oppression in the head. There was still, however, no evidence of illness or constitutional disturbance. He continued to get worse, and two months after the accident took to bed. He had not been in bed many days when he had a "bilious attack," with constipation and vomiting. A month elapsed, and he then was seized, so he said, with a "convulsive attack" in which his legs were drawn up, and he was very violent. From that time forward he professed to be troubled with "contractions of the limbs and severe pain in the legs, aggravated by attempting to sit up." He also complained of queer sensations all over, numbness in his tongue, for example, creepings in his legs, tenderness of the palms of the hands. Pulse and temperature alike remained perfectly normal. Five months after the accident he was still in bed complaining of great pain in his back, of pain and tenderness in the legs, and of inability to stand if he got out of bed. He held his hands out somewhat in the position of tetany, but the contraction immediately disappeared when he ceased to direct attention to it. Although when he first got out of bed he allowed his legs to slip away and himself to fall, he only had to be engaged in conversation to show that his legs were amply strong enough to support his whole body. There were no objective signs whatever of paralysis, nor was any illness to be discovered about him, except such as might fairly be accounted for by his having been in bed for three months. Thus his muscles were somewhat flabby, his face was pale, and his tongue was furred. Temperature and pulse, however, were normal; his pupils were of healthy size; his mind was perfectly clear. So his state continued until the close of a year, when his claim was settled by compromise on the verge of litigation, it being held that he had received a very severe injury to his nervous system, that prospect of recovery was very small, and that it was wholly impossible for him to appear and give evidence as plaintiff at the action. His evidence was indeed taken by commission, the man being quite unfit to leave his bed. He had made a very large claim—not the first

in his life, for he had received compensation for alleged injuries some years before. Mark the sequel. In ten days he was out of doors, in a fortnight he went away for change of air, and in two months he resumed his usual work. He has continued at work since that time in the enjoyment of good health.

15. In instances such as this it is often difficult, and well-nigh impossible, to say whether the condition is one dependent on genuine neurotic disturbance or is altogether feigned. And the difficulty is largely due to the fact, that a disorder of this character may be more or less under the control of the patient himself, as it has been pointed out on a previous page. It is therefore of the greatest importance to search for some symptom, which may rightly be placed in the category of hysterical or emotional disorders. Every objective sign that you discover may be under the patient's own control, may be a physical condition altogether assumed, and the clue to the whole case may be entirely wanting until some symptom be found, which is outside and beyond his voluntary control, or is even unknown to him. Analgesia or anæsthesia, for example, may form the only indication of the real character of the disease. Dr. J. Putnam has admirably dealt with this aspect of the subject in a paper on "Recent investigations into the pathology of so-called concussion of the spine, with cases illustrating the importance of seeking for evidence of typical hysteria in the chronic as well as in the acute stages of the disease" (*Boston Med. and Surg. Journal*, vol. cix., Sept. 6, 1883). After recording two cases of hemianæsthesia in men, he says that this is a symptom which shows that the nervous system has, in all probability, been subjected at some past time to a considerable perturbing influence, and its presence or absence might prove a welcome aid to diagnosis. A symptom of this kind may throw light upon a case, but it does not necessarily exclude a considerable degree of wilful exaggeration or even downright fraud in the other symptoms and signs. A deliberate impostor, for example, lost all tactile sensation over the mucous surface of his nares, a symptom which it would surely be impossible to feign, and which was a clear evidence that some effect had been wrought, somehow and somewhere, upon the nervous system. Regions of anæsthesia, moreover, which follow no recognised anatomical distribution of nerves, say of one leg up to a precise limit at the knee or half way up the thigh, are occasionally present, and it is obviously very desirable that no

The co-existence of nervous derangements.

symptom of the kind should be overlooked in the examination of those cases where absence of the ordinary indications of illness and disease may suggest malingering. Marvellous and deeply interesting are such manifestations of the close interdependence of mental and bodily states, and, freed from the incubus of compensation and the temptation to malingering, it may be said of the nervous consequences of railway accidents, that they are not unworthy of the study of the ablest and most philosophical men in the profession.

The
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16. We have nothing to do here with the pathology of morals, nor need we gauge the different degrees of moral obliquity in undoubted feigning and assumption of disease, and in wilful exaggeration of real conditions as a means to compass some aim in view. Were all cases of simple exaggeration to be included under the same head as cases of fictitious and feigned disease, the material would from very bulk become unmanageable. If, as it has been said, the motive be so strong and so prevailing, it is natural and only human that exaggeration should be met with in a large proportion of the persons injured in railway accidents. But, on the other hand, it must be remembered that exaggeration may not be, nay, very often is not, altogether wilful or assumed. Exaggeration is the very essence of many of those emotional or hysterical disorders, which are so common in both sexes after the shock of collisions. Here it may be an idiosyncrasy of the individual; there it may be the outcome of mental disturbance from the fright and alarm amid which the injury was received. It is only by a consideration of every feature and aspect of the case—clinical, pathological, social, and moral—that you can rightly estimate the kind of exaggeration or malingering with which you have to do.

CHAPTER VIII.

THE MEDICO-LEGAL ASPECT OF RAILWAY INJURIES.

SUMMARY.—1. Compensation for injuries, and its influence upon them.—2. Suspense and unsettlement of mind.—3. Danger of leading questions.—4. The use and abuse of instruments of precision.—5. Electrical examinations.—6. Medical evidence in courts of law.

1. It may not be altogether without advantage if a few Compensation for injuries, and its influence upon them. concluding remarks are made upon those circumstances which are special in, and peculiar to, the class of cases considered in this book, and which are commonly absent from the ordinary accidents and diseases met with in everyday practice. Every case of railway injury is more or less the subject of medico-legal inquiry, for the extent of the injury itself and the loss which it entails have to be estimated, as far as possible, by a money value which is paid as compensation, and difficulties or disputes, which may arise in arriving at this estimate, may occasionally entail an appeal to a court and jury by process of litigation. All this may very materially modify the clinical aspect of individual cases and symptoms, and no right estimate of any case can be made if these circumstances are ignored.

At first sight, perhaps, it is not very clear why compensation should be an element of importance in the course and history of the spinal and other injuries received in railway collisions. Let us picture for a moment the change which would come over our hospital patients if a pecuniary value were to be placed upon every injury they sustained. The probability that many of them would see only the worst side of their ailments, that they would lay undue stress upon their pains, and would exaggerate the term of prospective disablement from work is at once obvious, were these to have a place in calculating the money-worth of the injury received. When a man has been prostrated by illness or injury, and convalescence has at length set in, we know that he must make some voluntary effort to regain his former activity both of

body and mind. His habit of work and the daily routine of his life have both been interrupted, and it depends very largely upon his own efforts how soon and how successfully the thread shall be taken up again. It is clearly to his interest to get well as soon as he can, and experience tells us that so keen is the desire for recovery and renewed activity, that many a man's restoration to perfect health is often retarded by his having begun work too soon. Suppose, however, that compensation is to be awarded for every ache and pain, and for every day that he is absent from his work, it is only natural that the keenness of his desire to resume his work should be very much diminished. If our hospital patients were to be compensated we may be sure that the features of many a case would be completely changed, and that the whole clinical history of disease would wear a very different aspect from that which is usually seen. And changed for this reason, that compensation acts as a let and hindrance to the natural and very necessary effort, which each person must make for himself towards convalescence and resumption of work. It may do so quite unconsciously, for the knowledge that compensation will certainly be paid him for the injuries sustained in a railway accident tends from the first day of illness to give a tone to his feelings and to affect his own impressions of the sufferings which he may have to undergo. He is less likely to take a hopeful view of the future, is more prone to be despondent about the prospects of his recovery, and insomuch will his own personal efforts be weakened. It is well that this matter of compensation has no place in everyday hospital practice, and you will always do wisely, in endeavouring to form an estimate of the cases which involve medico-legal inquiry, to revert to your hospital experiences, and to recall the usual history of your hospital patients, both as to suffering and disablement, and the prospects of recovery.

It is not sought here to establish any doctrine so absurd as that settlement of claim can of itself be a curative agent, in the sense that it can hasten the setting of a fracture, remove the pain which is an inseparable concomitant of sprain of the vertebral muscles and ligaments, or restore the nervous tone which has been upset by the shock of a collision. The natural forces here, as elsewhere, tend to restoration of health; and recovery is, happily, as perfect after the injuries commonly received in collisions, as it is after any other kind of injury which the surgeon may be called upon to treat. There is this difference, however, and it is a great one, that when the immediate effects of injury are passing away, and there is every sign that convalescence has

set in, compensation holds out an inducement to the patient not to make the requisite effort to resume his work and his ordinary avocations, which are in themselves the best means of crowning the period of convalescence and of restoration to health. Had the ordinary injuries of hospital and everyday practice to contend with this element, convalescence would be very much hampered and prolonged, while if there was no question of compensation to enter into the contemplation of railway injuries, these in their turn would be recovered from with no less certainty and with much greater promptitude.

2. Human nature would not be what it is if compensation did not exercise this influence in delaying recovery, and it may do so even in the case of those who have been really hurt, and who are genuinely anxious to get well. Too much stress ought not, however, to be laid upon compensation itself, for very often it is the unsettlement of mind incidental to the arrangement of the claim, rather than the prospect of pecuniary gain, which is exerting an injurious influence. Happily the medical man is not often called upon to determine whether his patient is consciously making use of his injuries for the purpose of profit, or is the unconscious victim of this mental unsettlement, but he very frequently has to determine whether it is likely to be for his good that his claim should be arranged. Suppose, for example, that several months have elapsed since the accident, and that while there are no fresh indications of injury the symptoms nevertheless continue without amelioration, experience shows that settlement of claim is, in all probability, the one and only thing required to start the process of convalescence with reasonable hope of speedy recovery. Every now and then, however, there will come a case in which it is desirable that the claim should be settled soon after the accident. Money may be wanted to tide over the period of disablement and to ensure the comforts necessary during a time of illness, or it may be obvious that there is great worry and anxiety as to the prospects of recovery and the future support of the family. In such circumstances it will not be the less beneficial to a man to have his claim settled, but additional care is necessary that in doing so he suffer no injustice. I think that a claim for severe injury ought never to be settled at this time, whatever be the want of money, unless there is reasonable ground for honestly believing that no fresh symptoms indicative of a more serious injury than is then apparent are likely to become developed.

Suspense
and un-
settlement
of mind.

Given such conditions, however, arrangement of claim is likely to be advantageous to the patient, provided that a fair basis for settlement be made by allowing for a certain period of probable future disablement. And this period has to be defined by the medical men after an impartial consideration of all the facts of the case. To lay down here in a book any hard and fast rule is manifestly impossible, as likewise it is well nigh impossible to describe the indications for arrangement of claim as a remedial agent. At the bedside, however, there is not much difficulty in deciding whether arrangement of claim is advisable, and likely to be followed by good, or the reverse; nor is it I think very difficult to say beforehand whether the settlement of claim will be followed by immediate recovery, or will only act remedially by conducing to settlement of mind. It is, at any rate, quite erroneous to jump to the conclusion that a man is a swindler, simply because he recovered soon after getting a cheque from the railway company; and there need not be the smallest imputation upon a man in telling him that he had very much better arrange his claim, and that in all probability if he does so he will soon be well. I have many times been assured by compensated persons themselves, that the moment they got the thing settled they felt quite different beings, and, simply because the matter was off their minds, at once began to improve. And this, too, in cases where there has been severe and genuine disturbance of health. Here is a case in point.

CASE 38.—*Slight injury and nervous shock—Anxiety as to claim and delayed convalescence.*—W. A., a stout elderly man, was in a rather severe collision. He was able to continue his journey after the accident, but in two or three days he began to have pains in the back and to feel himself shaken, weak, and ill. He then returned home, a journey of four hours, and went to bed. There were no signs of injury other than those of slight sprain of the muscles of the back, with general nervousness and loss of tone. He steadily improved, and in two months it was thought that he was sufficiently well to arrange and settle his claim. He then, however, began to complain more; and four months after the accident he looked worse than hitherto, appeared ill and anxious, expressed himself unable to leave the house, and wholly unfit even to think of resuming his business. This went on for several months, and instead of any improvement taking place, he began to look more aged and worn, and not having been out of doors for a long time, lost appetite and weight, became prone to cry, and altogether presented an aspect so unhappy, that

an opinion was given that he was permanently injured from "concussion of the spine," and would never be fit to do anything again. There were, however, no symptoms of serious illness or disease, and settlement of his claim was confidently anticipated as the one thing essential to restore him to health. Nine months passed without a shadow of improvement, and his claim was at length arranged. In a very short time he was perfectly well, looked in good health, and "ten years younger" than before his claim had been settled. Nor was this improvement transitory. He continued in perfect health, and five years after the accident was following his occupation with his usual vigour and in his former state of health.

A case, it may be suggested, devoid of all colour, and wanting any tangible symptom at all, if we exclude the pain in the back which in former times was pretty sure to conjure up "concussion of the spine." But it is just these colourless cases which are often the most difficult of diagnosis, especially to those who have never seen anything like them before. "I cannot make out," his doctor says, "why this patient does not get well. He seemed to mend at first, and I thought he was going to get over it soon, but now he appears to have no energy at all. Medicines don't do him any good. I urge him to make an effort to get about and try a little business, but he says he cannot; or if he does, that he breaks down again almost before he has begun." Complaints like this would not be heard quite so often perhaps, were this clinical fact more fully recognised, that settlement of claim is frequently the most important agent to bring about recovery.

You need not seek to inquire too closely into the *rationale* of the change which may be thus induced. There is a release from the mental worry and annoyance inseparable from any long dispute, and a feeling that now, the whole trouble being over, a fresh start is possible, and that persistent effort may once more be made to move about and resume work. Doubtless also there is some satisfaction in placing a good round cheque to your balance at the bank, which, in this age of progress and poverty, exerts a stimulus which no pharmacopœial preparation can supply. The attitude of the patient's own thoughts is wholly altered. Before compensation was effected he held out a goal to himself, and thought, and said—"When my claim is settled I will try and resume work; but I will wait and see how I am." When his claim has been arranged he argues thus—"Now I must begin my work again, and do the best I can." The effort, at all events, can at length be made, and with each

succeeding hour of activity and occupation there grows up a healthier tone, and the rôle of the invalid is laid aside.

It is not only in cases like these, however, that settlement and repose of mind conduce to speedy recovery. A like result may be seen elsewhere; and it is a well-known fact, that the health of prisoners in gaol has unquestionably improved after they have received their sentence, even though the sentence may have been far more severe than they had expected.

While, then, we cannot ignore the influence of this restorative agent, we must be more careful than ever that our knowledge of its efficacy be not improperly applied. An accurate history of the injury, and of the accident in which it was received; a careful observation of the patient's condition immediately after the accident, and of his progress in the days and weeks which followed; an impartial comparison of his case with others of a like kind which have been met with before—these things will guide to a right estimate of the facts when recovery seems to be unduly slow, and when examination reveals no signs of disease to account for the delay. And, although it does not fall within his province or business to deal with the matter in any way, it is yet necessary for the doctor sometimes to know what steps the patient is taking to obtain compensation, and how far this question may presumably be engaging his mind.

Danger of
leading
questions.

3. It must be remembered, however, that, although compensation has this influence upon the recovery of patients about whose *bona fides* there may be no suspicion, with others it may act as an irresistible temptation to wrong. Hence arise some of those difficulties which surround the clinical inquirer, and which entail obvious duties and precautions on the medical man. He must endeavour to hold the balance as evenly as may be between the two sides which are more especially concerned in every medico-legal inquiry; and it behoves him, above all things, to take care that no affection of coincident origin, nor any precedent deformity or disease shall be allowed, through ignorance or carelessness on his part, to form an item in the claim which the patient may think fit to make for the injuries he has sustained.

You can never tell how readily a patient may adopt a suggestion which has been unwittingly put into his mind, or how soon an unguarded word or opinion may give a tone to the symptoms which they would not otherwise possess. Avoid, therefore, as far as possible all leading questions, because the use of them may

suggest symptoms which had no previous existence. In a gross case of fraud which fell under my notice, a grave opinion was formed of the symptoms because a leading question prompted an answer which was wholly untrue. The man complained of giddiness; and as vertigo was known to be often the result of diplopia, the patient was hastily asked if he saw double. "Yes," was the reply; and led on by further leading questions, a very serious train of alleged symptoms was revealed. Not one of them was true.

The clever impostor who, some years ago, went the round of the hospitals, and simulated many nervous disorders with varying degrees of success, lacked in his marvellous exhibition of tetanus the usual rigidity of the abdominal muscles. A remark was made at his bedside, when he was in one of the worst of his seizures, that it was strange the tetanic spasm, so extreme elsewhere, should not also affect the muscles of the abdomen. The next day they were as hard as a board.

4. Not less important, also, is it to avoid the unnecessary use of leading methods of examination. I would not in the smallest degree detract from the value of instruments of precision, but their use is often quite unnecessary, the cases being singularly few and far between which demand the whole *armamenta* of the specialist, who with dynamometer, æsthesiometer, audiometer, lenses, and battery, finds out some trifling departure from the normal which may be made the unfair groundwork of a claim.¹ Of what earthly use are observations by the dynamometer, for example, unless you know that the patient is telling you the truth? You discover, forsooth, that he squeezes with a force of 50 lbs. with his right hand and of 10 lbs. with his left, and you forthwith create the scientific and incontrovertible basis of a lie. A little common sense is often of more use in diagnosis than all these instruments put together.

The use and abuse of instruments of precision.

5. Nor is electricity, as a method of precise and scientific examination, at all exempt from these remarks, unless it shall have been made use of by those who are perfectly conversant

Electrical examinations.

¹ "Were a pathologist," writes Dr. Moxon (Croonian Lectures, *Lancet*, vol. i., 1881, p. 568), "with a great microscope to spy through all our brains as we sit here in states of satisfaction, he would certainly see a great deal in the way of tortuous capillary and dots of yellow pigment—a great deal that under the microscope would look very alarming."

with it in all its details, and with the numerous fallacies which underlie its application. Years ago, when railway injuries were more often the cause of litigation than they are now, it was by no means uncommon for evidence to be given in court that the "electric test," as it was called, had been applied, and that the patient, because he could not feel, was of necessity suffering from incurable central disease. Scientific evidence has happily improved, and it is recognised now that cutaneous anæsthesia has no such deadly meaning, and that in order to make proper use of electricity in diagnosis it is essential to exclude those states of the skin, which prevent the reaction of the muscles being determined by application of electricity to them through the cutaneous surface. For when patients have been long confined to bed, and from one cause or another, from genuine fear of moving, from a supposed inability to move or from a resolve not to move, have kept their legs at rest, there is likely to be considerable diminution or even loss of cutaneous sensibility. The "electric test" is, of course, useless in such circumstances, and because there is no response it is altogether erroneous to conclude that there is grave organic disease. We may perchance have to do with a case of hysterical anæsthesia, and we must look to accompanying conditions to help in diagnosis. The reflexes are present, there is no trophic disturbance in any part of the limbs, and above all, if the electric stimulus be brought into contact with them, either directly by needles, or after proper preparation of the skin, it will be found that the reaction of the muscles is quite natural. Hear what Dr. Buzzard has to say on this point. After describing a case of hysterical paralysis, he writes—"In this case, as I have seen in many belonging to the class of hysteria,¹ the epidermis, which had arrived at extraordinary thickness, apparently from disuse of the limbs, offered great resistance to the passage of electric currents. In these circumstances a more than usual amount of care in thorough soaking and rubbing of the skin, as well as in selecting the motor point, is necessary in order to avoid fallacies."² The difficulties involved in the application of electricity are well indicated by the same author in a passage worthy of quotation. "We *never* see in hysteria the various muscles of one limb showing differing degrees of abnormality in their response to faradism, from a condition of total absence of

¹ The very cases that are so often seen after railway collisions, functional disorders of motion and sensation, and occasionally real imposture.

² Clinical Lectures on Diseases of the Nervous System, p. 118, Lecture V., "On the Differential Diagnosis between certain Hysterical Conditions and Myelitis."

reaction in some, to nearly a natural state in others. Moreover, in hysteria, according to my observation, applications of electrical stimulus (and especially of the voltaic current) on one or two occasions usually suffice to restore the natural excitability of the muscles (equally in all) which has simply declined through disuse. A difficulty can only arise where the observer has but one opportunity of testing the electrical condition, and it is then quite possible to occur. It must be remembered that, as a distinct lowering of faradaic excitability almost invariably signifies organic change in a nerve-trunk or centre, a diagnosis of hysteria can never safely be arrived at whilst that condition persists. On the other hand, I need scarcely remind you that the preservation of a completely normal faradaic excitability in the muscles of a limb does not show that that limb is not paralysed. . . . In cases of paralysis, it is only when the integrity of the grey matter of the anterior horn is disturbed, or when there is some lesion of the anterior root or trunk of the nerve, that you find decided loss of electric excitability. You frequently meet with complete paraplegia and yet all the muscles will respond normally to electric currents."¹

In the use of electricity for diagnostic purposes, therefore, we must not be content with the negative evidence merely of cutaneous insensibility, or absence of response in the muscles: we must look for some such indication as is given by the reaction of degeneration, or by the different reactions of various muscles in the same region. If these and similar points are borne in mind there will be little likelihood of the electric test being vaunted as an infallible witness in a court of law, and the real position of electricity as a means of diagnosis will be less liable to be shaken by conflict of testimony.

6. Conflict of testimony, in other words differences of opinion, must inevitably arise in many cases of injury or disease, and the maladies considered in this book are not exempt from it. It might be well, perhaps, when litigation has been resorted to for the settlement of the pecuniary compensation, if medical men were to be freed from the necessity of giving evidence on medical matters in open court. I do not intend, however, to say what are my views upon the subject in this place, nor how in my judgment the practice of the courts might be improved. Suffice it that testimony has still to be given in court, and that

Medical
evidence
in courts
of law.

¹ *Op. cit.*, p. 100.

in giving it the medical witness ought never to forget that the reason for his evidence is to enable the court to arrive at a just and impartial conclusion. If he is himself a partisan, it is obvious that his testimony is of small value for the purpose named; and of one thing he may be certain, that, if a partisan, he is tolerably sure to reveal his bias almost as soon as he opens his mouth, and that his testimony will be estimated accordingly. Judge and jury will alike put it aside. "Expert testimony,"¹ it has been well said, "should be the colourless light of science brought to bear upon any case when it is summoned. It should be impartial, unprejudiced. There should be no half truths uttered, and suppression of the whole truth is in the nature of false testimony." It is true that our present methods render the position of the doctor very often difficult, for the warfare of counsel and the arts of cross-examination tend to throw into strong and undue relief the slightest differences of opinion, and lead too often to the witness saying more or less than he intended to say. Patience, impartiality, good temper, a sense of justice, and a single purpose to give utterance to the truth—these, and not less than these, a sound knowledge of the matter on which evidence is being given—will together be his best protection in the witness-box, and will make the taunt that doctors differ absolutely harmless to him. This is what Chief-Justice Clinton said on the evidence of medical witnesses in courts of law:²—"As to the delivery of testimony by you as experts, I have very little to say that might not just as properly be said to a witness who is called to testify only as to the facts of the case. The difference rests in this: the expert, as such, is asked only for his opinion upon the facts. He may be asked his opinion upon a hypothetical state of facts, and required to give reasons for the opinion he expresses. The cross-examiner is allowed great latitude, and I am sorry to say not unfrequently abuses it. But if the witness will only remember the worth and dignity of his profession, and that he is there simply to speak truth, as a servitor of justice, no arts or sneers of counsel can disturb him. Calm and self-possessed, he will answer every question, direct or cross, fully and in the plainest and most lucid language in which the meaning of the answer can be conveyed to the jury. To such an answer he will add nothing, unless it be a necessary explanation. He will not air his learning before the court, nor have any the

¹ *North American Review*, 1884, p. 609, "Expert testimony," by W. W. Gooding, quoted from Dr. Wilbur of Syracuse, N. Y.

² *Buffalo Medical and Surgical Journal*, Jan. 1, 1880.

least contention with counsel. The court will, if need be, protect him from the abuse of lawyers. Such a witness will return from the stand as calmly as he went upon it, approved by his own conscience, and respected by the court, the jury, and the bar."

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