REVIEWS.

ART. XV.—*Spinal Concussion.*

Injuries of the Spine and Spinal Cord without Apparent Mechanical Lesion and Nervous Shock, in their Surgical and Medico-Legal Aspects. By HERBERT W. PAGE, M.A., M.C. Cantab., Fellow of the Royal College of Surgeons of England, etc. Philadelphia: P. Blakiston, Son & Co., 1883.

IN 1866 a volume, entitled *Six Lectures on Certain Obscure Injuries of the Nervous System commonly met with as the result of Shocks to the Body received in Collisions on Railways*, was published by the great English surgeon, Erichsen. In 1875 these lectures were expanded into a larger work on *Concussion of the Spine*, which, at the time, attracted widespread attention, and has since been regarded in many quarters as high authority, both surgical and medico-legal. The acknowledged eminence of its author, and the evidence of investigation of surgical literature and of personal experience shown by the book itself, gained for it a foothold which it still largely maintains. The second edition is before us as we write, and we remember reading the first with much pleasure, and turning to it with avidity when, by good or bad chance, an admiralty case fell into our hands as expert. It should certainly receive the hearty endorsement of some socialistic convention, for it has proved one of the greatest practical enemies of corporations, taking money without stint from their coffers —money for litigants, for lawyers, and for experts.

Since the publication of Mr. Erichsen's volume "spinal concussion" has not infrequently been treated at greater or less length in journals and general works on surgery or neurology, most writers, but not all, following blindly in the wake of Mr. Erichsen. The volume of Mr. Page, which forms the basis of the present review, is, however, as far as we know, the first systematic attempt to discuss thoroughly the subject in surgical and medico-legal aspects.

This work will prove of great service. It is a highly practical contribution to medicine and surgery. The author has acted for a number of years in the capacity of surgeon to the London and Northwestern Railway Company, and therefore has had abundant opportunities to become practically acquainted with the subjects which he discusses. A large part, but by no means all of the book, constituted the Boylston Medical Prize Essay of 1881. Notwithstanding the author's connection with a great corporation, the charming spirit of justice to all, which pervades the volume, makes us feel that he has written, as he claims, without any spirit of partiality or bias, and that, although his experience has been, for the most part, gained while acting as surgeon to a railway company, there has been nothing whatever in the circumstances of his appointment to impair, even in the very smallest degree, that free and perfect independence which is the rightful possession of a medical man. His work is worthy of

all commendation, and will, no doubt, rank in the future with those standard volumes which lawyers and medical experts delight to consult and ponder on in preparation for the exigencies of a trial for damages for railway or similar injuries. We have deemed it worthy of a somewhat extended analysis.

The importance of the topics discussed will be better appreciated when the frequency with which injuries of the spine, or supposed injuries of the spine, become the subjects of arbitration, or judicial investigation is fully recognized. Mr. Page points out that injuries of the back more often become the subject of medico-legal inquiry than any other kinds of injury to which man is liable. Of 250 cases, which constituted the whole number in one of his note-books, no fewer than 145 complained of their backs or their "spines." He refers to a similar observation by Rigler, a German writer, who gives statistics which show that since the passing of a law in Germany for the compensation of injured persons on railways the number of injuries or complaints of injuries had enormously increased, and that, moreover, of thirty-six complaints of injury no fewer than twenty-eight were of the back.

Railway and other corporations are, by no means, the only financial sufferers from the popular doctrine of "spine disease" and "spinal concussion." Among those who manage to live a large portion of their time on the charity of benevolent and beneficial societies the "spine" cases form a large contingent, as our own experience during a few years has abundantly shown; and in claims for pension by old soldiers—many of them "old soldiers" in the proverbial sense—the "spine" is found to be a convenient portion of the body to localize not a few of those ills which have had their origin as much in the overflowing generosity of Congress as in the accidents and incidents of war.

In Chapter I., at the very outset of his inquiry, Mr. Page seeks to learn how far the spinal cord is really liable to injury. He at once, of course, acknowledges the grosser lesions of the spinal column and cord, from terrible accidents, which have been as well enumerated by Sir Benjamin Brodie as by almost any author since his time; for example, fractures without displacement, fractures with depression or displacement, and causing pressure on the spinal cord, fractures complicated with dislocation, dislocations not complicated with fracture, extravasations of blood on the surface of the membranes of the spinal cord, narrow clots of blood within the substance of the spinal cord, and laceration of the spinal cord and its membranes.

He quotes and discusses the views and reported cases of Brodie, Abercrombie, Sir Charles Bell, Mayo, Boyer, and Lidell, clearly sustaining the position that in the serious cases of spinal injury attributed to "concussion of the spine," some gross lesion, as hemorrhage, fracture, dislocation, twisting of the cord, or wounding of great nerve-trunks, has most probably occurred. Evidences of such lesions cannot always be had during life, and post-mortem examinations are often imperfectly performed. Even recoveries, or partial recoveries, are as explicable from this standpoint as from that of the mythical concussion. Extravasated blood is sometimes absorbed, and recoveries may take place even after dislocation of the vertebræ. In a final note, Mr. Page gives from the *Lancet* the record of two remarkable cases, which appeared after the chapters of his book were made ready for the press. The first is a case of "dislocation of the fifth cervical vertebra, with reduction and recovery," under the

care of Mr. T. H. Ceely, in the Royal Bucks Infirmary. The second is reported as "a case of recovery after a broken neck," by Mr. C. Jordison, of Malpas.

The analogy between "concussion of the brain" and so-called "concussion of the spinal cord" is examined. We accord entirely with the opinion of Mr. Prescott Hewett, quoted by Mr. Page, that it still remains to be demonstrated that concussion may prove fatal without leaving a trace of injury to the brain-substance. Even in cases of recovery lesions may have occurred, and have been gradually repaired.

It has seemed to us that Mr. Page has devoted too little attention to the views of M. Duret. He confines himself to a single remark, that M. Duret regards the phenomena of concussion as due to change in the tension of the cerebro-spinal fluid rather than to any effects upon the cerebral mass itself. M. Duret's physiological experiments and opinions were ably summarized and reviewed in the *American Journal of the Medical Sciences* for January, 1879, and need only be very briefly alluded to at present. Seeking for the cause and mode of production of concussion of the brain, he found that severe blows upon the head, sufficient to depress but not to fracture the skull, so acted upon the hemispheres and the cerebro-spinal fluid as to cause that portion of the latter contained within the lateral ventricles to pass suddenly through the aqueduct of Sylvius into the fourth ventricle, causing the latter and sometimes the central spinal canal to be dilated or even ruptured, and thus bringing about the phenomena of cerebro-spinal shock.

M. Duret showed that lesions, chiefly in the form of hemorrhagic foci, were produced in cases of concussion by peripheral and ventricular waves of the cerebro-spinal fluid. There hemorrhages were found on the convexity of the hemispheres, at the base of the brain, in the floor of the fourth ventricle, in the substance of the medulla and pons, and even at different points of the spinal cord. One case of traumatic locomotor ataxia is reported, caused by a blow on the side of the head, the lesion consisting of an extravasation under the pia mater covering the posterior columns. Accepting these views we have an explanation of otherwise obscure cases; not from spinal, but from cerebral or cerebro-spinal concussions, the lesions, however, being really gross.

The very first paragraph of Mr. Erichsen's book contains, we think, the expression of an erroneous opinion. Comparing injuries to the head and to the spine, he asserts that if the brain is liable to suffer serious primary lesion and protracted secondary disease from the infliction of slight and perhaps, at the time, apparently trivial injuries to the head, the spinal cord is at least equally prone to become functionally disturbed and organically diseased from injuries sustained by the vertebral column. On the contrary, clinical and pathological experience both sustain Mr. Page in the view which he confidently expresses, that, with very rarest exception, the spinal cord maintains its supremacy as the most securely protected of all the organs of the body.

The spinal cord is infinitely better protected from the effects of blows and jars than the brain; its special attachments, its paddings and buffers, the very thick walls of its bony canals—serve to guard and defend it almost impregnably.

Mr. Page is unable to find cases of concussion, injury of the spinal cord, without real gross damage to cord or column, comparable to cases of concussion of the brain. Even if the analogy in any case holds good,

"it is only in the very rarest instances that it can be unequivocally maintained." He thinks it highly improbable that the spinal cord should be especially liable to suffer injury in railway collisions, no matter how trivial they may be, and even though no damage has been inflicted on or near the spinal column.

Chapter II. of Mr. Page's book is devoted almost entirely to an analysis and criticism of Mr. Erichsen's views on so-called "concussion of the spine." He begins, and very properly, by finding fault with the title "concussion of the spine." The term "spine" is by some applied to the vertebral column; by others to the contents of the spinal canal; by still others to both the case and its contents.

"And to employ for the common injuries received in railway accidents a title which may now mean this, and now that, and very often may mean nothing at all, is to run a risk, it seems to us, of either playing into the hands of those who are using dishonest means to enhance their claims, or of seriously misleading those who, from lack of experience and opportunity, are ignorant of the symptoms and pathology of diseases of the spinal cord."

We will now put in contrast the views of Mr. Erichsen and Mr. Page by a few selected quotations. Mr. Erichsen speaks of "concussion of the spine" as follows:—

"It is a phrase generally adopted by surgeons to indicate a certain state of the spinal cord occasioned by external violence—a state that is independent of, and usually, but not necessarily, uncomplicated by, any obvious lesion of the vertebral column, such as its fracture or dislocation, a condition that is supposed to depend upon a shake or a jar received by the cord, in consequence of which its intimate organic structure may be more or less deranged, and by which its functions are certainly greatly disturbed, so that various symptoms, indicating a loss or modification of innervation, are immediately or remotely induced."

The following quotations may serve to give an idea of the views of Mr. Page:—

"When we meet with paraplegia occurring after severe injuries to the spine, and there be no direct evidence of damage thereto, there is yet strong presumptive evidence, from the lessons of the dead-house, that the vertebral column has itself been severely injured, and that from the immediate consequences of such injuries the function of the spinal cord has been annulled and destroyed.

"Used now to indicate this injury, and now that, here signifying the cause, there the effect, by a writer so distinguished as Mr. Erichsen, it is little wonder that a wider application even has been given to the term, and that, as we shall see by and by, 'concussion of the spine' is used almost indiscriminately both in and outside the medical profession to indicate the injuries which are received in collisions and which become the subject of medico-legal inquiry, although the spinal column and its contents have met with no damage at all. It appears to us nothing less than lamentable that, in laying before the profession and the world the results of his experience upon this subject, and writing from the high vantage ground of an assured position, both as a surgeon and as a teacher of surgery, Mr. Erichsen should not have been more clear, more explicit, and less ambiguous in the use of the phrases which he has employed."

"As has been abundantly pointed out in the preceding pages, there is but scanty proof of the liability of the spinal cord to suffer from concussion, pure and simple, in the absence of simultaneous injury to the spinal column, the exceptional cases being extremely rare.

"And if uncomplicated 'concussion' lesions be so exceptional, and the spinal cord be, as we believe the common experience of surgeons proves it to be, the most securely protected of all the organs of the body, it seems most improbable that it should be prone to incur lesions due solely to indirect and general concussion."

The weakness of the cases used by Mr. Erichsen to illustrate and substantiate this doctrine of "concussion of the spine" is really astonishing, as Mr. Page amply demonstrates.

In attempting a pathological explanation of "concussion of the spine," Mr. Erichsen, as Mr. Page shows, is as unhappy as in some of his other efforts.

"The primary effects of these concussions or commotions of the spinal cord," he says, "are probably due to molecular changes in its structure. The secondary are mostly of an inflammatory character, or are dependent on retrogressive organic changes, such as softening, etc., consequent on interference with its nutrition."

The phrases "molecular changes," "molecular disturbances," are simply made to do duty for ignorance. The nervous system is so constituted that even a jar, shake, or concussion, is more likely to produce vascular than "molecular" lesions, if by the latter is meant change in nerve-cell or fibre.

Mr. Erichsen concludes that the whole train of secondary nervous phenomena arising from shakes and jars of, or blows on, the body, characteristic of concussion of the spine, are in reality due to inflammation of the spinal membranes and cord. What proof of this pathology has ever been presented? It is a remarkable fact, that Mr. Erichsen himself is acquainted with only one case with a post-mortem record; and inquiry as to the merits of this particular case is not very encouraging to his peculiar views. From a careful reading of this case, it would seem likely that it is an instance of posterior spinal sclerosis, the collision and the coming in of the disease being probably simply a coincidence.

In more than one place, and by convincing argument and illustration, Mr. Page shows the utter fallacy of the wide-spread, yet erroneous, impression both throughout the profession and the laity that the effects of a railway collision upon the spinal column or cord are most likely to be remote.

"Our inquiries," he says, "have either been singularly unsuccessful, and they have been made by direct oral and written communications with many professional brethren in all parts of the country—or we must admit that secondary and remote degeneration of the spinal cord, in cases where there has been no distinctive evidence of injury, is very rare indeed. We say *distinctive evidence*, for we hold that we cannot include amongst injuries to the spinal cord those molecular disturbances which must affect every tissue or organ in the body when subjected to any severe general shake or jar. Molecular disturbance is not necessarily molecular disintegration or pathological change, and there is no evidence to show that molecular disturbance is in itself a grave condition, or likely to have evil results, unless there should have been at the time some well-marked pathological lesion such as might *post mortem* be discovered by the eye. Were 'molecular disturbance' to be followed by pathological change as a direct result thereof, the consequences of unnumbered slight injuries would be serious indeed."

Injuries to the muscular and ligamentous structures of the back and of the spinal column are frequent causes of the real symptoms which are present after railway collisions. Mr. Page holds from experience, and from the arguments which he has heard about individual cases, that real but comparatively favourable injuries of this kind combined with the symptoms of general nervous prostration or shock have laid the foundation for the erroneous views so largely entertained as to the nature of the common injuries of the back received in railway collisions. Pain on move-

ment, tenderness on pressure, pseudo-paralysis the result of a fear of moving, want of freedom in micturition, and a constipation which simulates paralysis of the bowels from lack of the support and help which the lumbar muscles usually provide, conjoined with great mental disturbance from shock, lead the patients to feel that they have been stricken with some terrible spinal catastrophe from which they may never recover.

Dr. R. M. Hodges, quoted by Mr. Page in a foot-note, has called attention to these sprains of vertebral ligaments and ruptures of the aponeuroses and muscles of the back, as causes of the phenomena assumed to be those following concussion of the spinal cord.

"They give rise to much local pain, to a rigidity of the spine, a difficulty in rising from the seat, a stiffness in walking, and contribute readily to any disposition on the patient's part to make much of his injury. The attitude, or the cautious and constrained movements of the body, may be made to suggest inferences which cannot be too guardedly accepted."[1]

The spinal nerves are sometimes injured by strain or direct contusion in railway and similar accidents. Hilton, quoted by Mr. Page, in his work on *Rest and Pain*, speaking of a man falling with his back upon the ground, says:—

"It is possible that the spinal marrow, obeying the law of gravitation, may, as the body falls, precipitate itself in the same direction, fall back towards the arches of the vertebræ, and be itself concussed in that way. Or the little filaments of the sensitive and motor nerves, which are delicately attached to the spinal marrow, may for a moment be put in a state of extreme tension, because, as they pass through the intervertebral foramina, they are fixed there by the dura mater, and if the spinal marrow be dragged from them, the intermediate parts must be necessarily put on the stretch, producing at the time the pins and needle sensation, and also explaining the symptoms felt on the following day."

Mr. Page refers to a point of great practical moment to those whose duty it may become to examine cases claiming damages for spinal injury, namely:—

"The importance of learning and paying due regard to the precise history of the accident and of the injury, so that we may escape from the region of cloudland where we hear no more than that a man has been in a collision, and had concussion of the spine and become paralyzed."

The real value of pain in the back as an indication of serious disease is fully discussed. This symptom is almost invariably present in the railway cases; and in the vast majority of cases, when it is not due to muscular or ligamentous strain, it is hysterical or imaginary, and nothing else.

It is a remarkable fact that Mr. Page, with his large experience, has met with no case where spinal caries and ultimate curvature have been produced by injury to the back in a collision.

Our own experience is in accordance with that of Mr. Page, with reference to the traumatic origin of tabes dorsalis. We have met with but few cases where any direct relation could be traced between an injury and the origin of ataxic symptoms, although, in the light of M. Duret's experiments, we admit the possibility of such an occurrence.

Two chapters (IV. and V.) are devoted to the consideration of "shock to the nervous system," as seen after railway collisions. Very wisely he

[1] Boston Medical and Surgical Journal, April 21, 1881.

begins his discussion of this subject by explaining the sense in which he uses the expression shock to the nervous system, namely, as a term applicable rather to the whole clinical circumstances of the case than to any one symptom which may be presented by the injured person. The very lack of precision in the phrase appears suitable to describe the class of cases considered, the course, history, and general symptoms of which indicate some functional disturbance of the whole nervous balance or tone, rather than structural damage to any organ of the body.

Three classes of cases of nervous shock, not including those in which a fatal issue rapidly ensues, are discussed and illustrated: (1) Cases of undoubted collapse from the bodily injury received and from the very distressing surroundings of the accident; collapse or severe shock both from bodily and mental causes. (2) Cases in which the accident has been less severe in its effects upon life and limb, and where the earliest effects of shock have been comparatively slight; here mental predominate over physical causes, although both may be present, and the cases are genuine. (3) Cases which have no history whatever of injury or of the symptoms 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 second class of cases; these are examples of spurious nervous shock.

Mr. Page discusses briefly the cases of profound shock or collapse from severe and sudden injuries, whether inflicted upon the head or upon some other part of the body, the condition about which the surgeon usually asks first in cases of grave accident. He does not enter at length into the pathology of shock, stopping only to speak in terms of highest compliment of the very able account of shock in all its bearings, in the *International Encyclopædia of Surgery*, by Mr. C. W. Monsell-Moulin, who sums up the results of experimental physiology by saying that "shock is an example of reflex paralysis in the strictest and narrowest sense of the term—a reflex inhibition, probably in the majority of cases general, affecting all the functions of the nervous system, and not limited to the heart and vessels only."

Great stress is laid upon the element of fear in railway collisions in inducing immediate and serious collapse, and in giving rise to the troublesome after-symptoms in the cases which recover from the first shock. He tells the following interesting story:—

"How largely fright may of itself be a condition recognized as shock is well shown by a case communicated to us 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 the only damage was the dexterous removal of the heel of his boot by the wheel of a passing engine."

The various symptoms which are commonly met with in genuine cases of protracted nervous shock, whether that shock has been due to bodily injury, excluding concussion of the brain, or where the bodily injury has been but trifling, and the mental shock severe, are set forth at length by Mr. Page. In the light of these symptoms, instead of "railway-spines," many of the cases under discussion had better be termed "railway-brains." Headache, sleeplessness, altered pulse and heart-beat, nervousness, asthenopia, and loss of memory are by no means spinal; and even paralysis, anæsthesia, and spasm, whether functional or organic, are as likely, or, on the whole, more likely to be cerebral than spinal.

The happily conceived term "litigation symptoms" is applied to many of the manifestations which follow accidents by railway. Differences of opinion arise between those who have to receive and those who have to provide compensation; litigation ensues and the plaintiff is subjected to the delays, anxieties, and worries of a lawsuit. Patients rarely return to work so long as the question of compensation and the possible disputes attending it remain unsettled. Want of occupation, and sometimes of exercise, leads to wretchedness both of body and mind. Comparing a railway patient waiting for compensation with another, a hospital patient, whose state is as nearly similar as may be, and who is compelled to resume work as soon as possible, the latter gets well, the former lingers month after month.

Mr. Page cites several cases in his Appendix to show that, in serious injury to limb, such as fracture, even if there be extreme collapse at the time of the accident, it is most unusual to meet with the protracted after-symptoms which have been described as due to general nervous shock. The reasons for this are that the injury is precise, definite, and not obscure, complete rest is enforced, and there is but little likelihood of dispute arising as to compensation. "Litigation symptoms" are absent, because litigation is not needed.

To bromide of potassium is attributed the prolongation of the illness and delay in convalescence in some cases. Very properly is the wholesale use of this drug in almost any and every kind of nervous disorder denounced. "It is not by a lavish use of bromides," says our author, "that success in the treatment of neurasthenia, to which many of the cases of railway shock are so nearly allied, is being obtained, even in the most extreme cases, by Weir Mitchell, Playfair, and many others."

In Chapter VI. Mr. Page discusses a class of cases occurring after railway and other injuries which he believes should be placed in the same category with those described so ably by Sir James Paget, under the designation neuromimesis or nervous mimicry of organic disease. Many of Mr. Erichsen's "spinal concussion" cases undoubtedly belong here—are functional or neuromimetric disorders. It must be said, in justice to this eminent surgeon, that he does not overlook the fact of such affections occurring in connection with railway cases. In Lecture VIII. of his work, under the head of *spinal anæmia, hysteria, shock, and unconsciousness, as consequences of concussion of the spine*, he recognizes fully the fact of the occurrence of hysterical and allied affections after railway accidents; he also discourses briefly on those forms of mental or moral shock in connection with those accidents. With Mr. Page, we believe, however, that he sometimes confounds cases of hysteria or neuromimesis with his concussion of the spine. With him, we also believe that very often these functional disorders are mistaken for real structural disease, and that they are very common after railway collisions, when the nervous system has been brought into that state which is the fit soil for their development and growth.

Sir James Paget's views of the existence of a peculiar nervous temperament in cases of hysteria or nervous mimicry, whether in connection with traumatisms or arising independently of these, are reiterated and amplified by our author. Neuromimesis is a localized manifestation of a certain constitution.

"As to what is verily the peculiarity of the nervous constitution, I believe we have nothing fit to be called knowledge. It is even hard to give fit names to

what we may suppose it to be. We may speak of the nervous centres being too alert or too highly charged with nerve-force, too swift in material influence, or too delicately adjusted, or defectively balanced. But expressions such as these, or others that I see used, may be misguiding. It is better for us to study the nervous constitution in clinical facts." (Paget.)

Chapters like these teach the great practical importance of investigations like those embodied in Dr. Tuke's work on the *Influence of the Mind on the Body*, although not written with any such intention. Many of the cases recorded by Mr. Page largely, if not entirely, psychical in their origin, are kept up or made worse by a mixture of hope and uncertainty as to the result of litigation threatened and impending, and are eventually cured by the mental influence of the settlement of the claim; nor are many of these cases unreal or undeserving of some compensation. It is difficult to make some hard-hearted and unemotional people believe to how great an extent fright, anxiety, and similarly mentally acting influences may produce serious temporary or even more or less permanent results. A series of interesting cases of functional or neurometric disorders following railway collisions are detailed.

Although not referred to by Mr. Page, Skey, in his admirable lectures on "Hysteria,"[1] as far back as 1866, forcibly called attention to these cases.

"The light of improved knowledge," he says, "will dissolve the mysteries which daily surround these cases in the form of supposed spinal concussions, partial paralysis, effusions into the theca vertebralis, thickening of the membranes of the brain, spinal cord, and lesions of this organ or that. These, as Dr. Sydenham declares, are but imitations and resemblances, and not realities, and that they deceive the multitude is undoubted. When real disease prevails, there is no difference of opinion among medical men as to its existence."

The chapter on Malingering is equally interesting with the other chapters of this interesting book. A distinction is clearly drawn between cases due to shock to the nervous system, neuromimetric disorders, and cases of malingering. The remarks about feigned and fictitious diseases in general are of value.

"Depend upon it," he says, "if a man has not known disease at the bedside, if from want of familiarity with disease he cannot rightly weigh and balance its different symptoms and signs, he will be almost certainly deceived when a case of fictitious disease comes before him."

The frequent assumption of injury of the "spine" by malingerers is pointed out in strong terms, and by apt illustrations.

A few hints as to the investigation of the oftentimes trying cases discussed by Mr. Page, may prove of service.

Take nothing for granted. Assume, without necessarily allowing the patient to know it, an attitude of scientific criticism. Carefully separate subjective from objective symptoms, and if, on close scrutiny, the latter are practically wanting altogether, a feeling of healthy scepticism should not be restrained. Let the first object be to determine whether or not any real organic lesion of the cerebro-spinal mass in its envelops has occurred. Always follow a systematic plan of examination, never jumping to conclusions; but investigating by successive steps for disturbances of sensibility and mobility; for reflex, vaso-motor, trophic, urinary,

[1] Hysteria, etc. Six Lectures delivered to the Students of St. Bartholomew's Hospital, 1866. By F. C. Skey, F.R.S. London, 1867.

sexual, ocular, and other changes. Once satisfied of the non-existence of serious organic lesion, next differentiate fraud or malingering from unconscious neuromimesis.

Mr. Page has not contented himself with a mere citation of authorities and arguments from general principles. Valuable original cases are found scattered through the book; and in an appendix he gives a carefully prepared table which contains, inclusive of those recorded in the text, two hundred and thirty-four cases. The table shows the sex and age of the patient, the nature of the accident, a general outline of the case, the date of settlement of claims, the time when last heard of after the accident, the condition at this period, the evidences of injury to the spinal cord and membranes, and general remarks. The cases forming the table are not selected. He simply has chosen the first two hundred and fifty cases of his note-book, and excluding therefrom those cases where injury had been sustained in some other way than in collision, two hundred and thirty-four remained.

If our author enforces one general truth more than another, it is that of the folly of trusting too much to appearances. He relates the following case: 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!"

Mr. Sergeant Ballantine, in his entertaining *Experiences of a Barrister's Life*, speaks of two cases in which he was engaged, and in both of which justice miscarried through trusting too much to appearances. These reminiscences are so appropriate to the subject in hand that we may be pardoned for recalling them in concluding this review.

"A gentleman named Glover was the plaintiff in the first of the two cases to which I have called attention. He had been, I believe, member for Reading, and, although no external injury was apparent, it was stated that he had received a serious spinal shock, and that the result might be fatal. His appearance, however, in the witness box did not support this idea, and his manner prejudiced his case exceedingly. It was finical and coxcombical, and many, of whom I confess myself to have been among the number, thought that he was not candid in giving his evidence; and the statements of the doctors, which gave a very grave aspect to the alleged symptoms, had in consequence less weight than they deserved. Lord Campbell took an unfavourable view, and evidently thought that there was gross exaggeration. The jury, coinciding in this opinion, returned a verdict quite inadequate to the injuries it truly represented. Within three months the unfortunate gentleman, a comparatively young man, died, and it could not be doubted that his premature death resulted from the effects of the injuries he had undergone, and which had been correctly indicated by the medical men."

"In the other case, tried, I believe, before the same judge, the plaintiff was brought into court apparently in a moribund state. He seemed scarcely able to articulate, and his limbs were without power or sensibility. According to the doctors, and I do not impugn their truth as to the fact, his powers of sensation had been tested by a needle, which had been inserted in his arm without his exhibiting any sign of feeling; in fact, he created general sympathy, and obtained a very large verdict amounting to many thousands. It was thought useless to move for a new trial. Within a week after the time had elapsed for doing so the plaintiff was recognized climbing Snowden in full activity and strength, and within the twelvemonth was presented with an heir who, thanks to his father having been so nearly killed, was likely to have something to inherit."

C. K. M.