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T R A U M A T I C N E U R A S T H E N I A

with ILLUSTRATIVE CASES.

On account of the claim for monetary compensation almost invariably presented by cases of Traumatic Neurasthenia , the subject has an important medico-legal aspect. It also is of scientific interest and importance on account of the suggestion of organic disease which the symptoms carry . Yet the literature on the subject is little in amount and scattered.

Circumstances have during the past seven years brought a considerable number of cases under my notice . These cases have been examined by me in the capacity of medical officer to several large railway companies , and my reports have served as a guide to the settlement of the claims .

I have noticed that owing to this suggestion of organic disease which the symptoms carry the general practitioner frequently fails to recognise the nature of the case with which he has to deal . I think therefore that a record of the patients that have come under my observation may be a useful contribution to professional knowledge.

In setting forth the cases in detail in this paper, I propose to pay particular attention to certain signs which are more or less relied upon for the purpose of distinguishing organic from functional disease and also to show that the prognosis is more favourable than is generally supposed .

The first systematic treatise published on the subject was by Beard. This appeared in the Boston Medical & Surgical Journal, 1869. Beard was the first to use the term neurasthenia and to define the disease as a distinct clinical and pathological entity . Since the publication of his paper several important contributions have been made to the subject , and notably by Weir Mitchell (Chicago Medical Gazette 1880), Playfair (British Medical Journal 1882) , Clifford Allbutt (Visceral neuroses 1884) , Von Ziemssen (Die Neurasthenie und ihre Behandlung 1887) , Charcot (Leçons du Mardi 1888 - 90) and Savill (Neurasthenia 1899) . Yet in the leading English text books of medicine until very recently the subject was either omitted entirely or only mentioned in a few lines . For example, I find in Gower's Manual of diseases of the nervous system , of 1725 pages only 6 are devoted to neurasthenia , and in Finlayson's clinical manual the term cannot be found .

Two explanations may be offered, viz., (1.) either the condition was unrecognised , or (2.) the primary factor being, as was suggested by Beard, over-civilisation , the

neurasthenia is a disease of recent incidence. In consequence of this neglect of the subject by medical authors cases of the disease are frequently unrecognised by the present generation of practitioners. It follows that the form of the disease known as traumatic neurasthenia , the traumatic neuroses, railway brain, railway spine , traumatic hysteria, nervous exhaustion &c., and distinguished from ordinary neurasthenia only by its etiology, and occurring with comparitive regularity fails to be recognised, is confused with other conditions of much more serious import. The following two cases of several met with in my experience , are illustrative of the alarm and confusion caused by the misinterpretation of the symptoms of neurasthenia as indications of organic disease.

C A S E 1. -- A comercial traveller, aged 38, was severely shaken whilst sitting in a railway carriage. He received no external injuries nor had he afterwards any recollection of having been thrown from his seat or of having come in contact with any of the woodwork of the carriage. The same night he experienced dimness of vision, ringing in the ears, acute pain in the forehead, and pain and areas of hyperaesthesia down the spine, and a feeling of nausea, though vomiting did not actually occure, confusion of thought, depression of spirits and impairment of sleep; and nerve deafness soon followed The symptoms persited for five months, and although after repeated examination I was unable to determine the presence of any objective sign of disease with

the exception of exaggerated knee jerks and well-marked ankle clonus detected on one occasion and sluggish reaction of the pupils to light , the patients medical attendant and a consultant who saw the case on several occasions expressed the opinion that it was one of " concussion of the brain and spinal cord ". The spinal symptoms they considered probably due to punctiform haemorrhages into the cord , and the prognosis they regarded as very grave , paralysis or insanity being not unlikely sequelae . Entitled as the patient was to compensation, he became very anxious lest some mistake should be made in the settlement of his claim , and in consequence of the opinion expressed by his medical attendants there was protraction and aggravation of the man's illness and a claim against the railway company for a most exorbitant sum . After much delay the case was settled for one-tenth of the amount claimed and recovery was complete as ascertained four years afterwards.

CASE 2. -- Another such case was that of a butler, examined by me first in January 1900. He had five weeks previously been subjected to a considerable shaking whilst travelling in a railway carriage , and received some bruises of the lumbar muscles . Subsequently he suffered from pain in the back , headache, sleeplessness , loss of memory, and general muscular enfeeblement , but I failed to discover any objective sign of disease and regarded the case as

being one of mild traumatic neurasthenia. His medical attendant, a practitioner of many years' experience, however, considered that his patient was suffering from a serious injury to the spine , and a future of permanent invalidism was therefore anticipated . In conseqnece a large claim was presented to the railway company, and it was only after some seven medical men were involved in the case and litigation resorted to that the patient was awarded damages in the proportion of one-fifth of the sum claimed . Had the practitioner recognised the nature of the case, much mental suffering , annoyance and expense to his patient would have been avoided .

The desirability therefore,both from a professional and medico-legal point of view, of recognising such cases is obvious, and I feel it may be of advantage to put on record some of the 88 cases that it has been my fortune to encounter as medical officer to railway companies.

In 1882 Mr. Erichsen's work ,"Concussion of the Spine, Nervous Shock and other obscure injuries of the nervous system ", was published , this distinguished author's view being that the condition known now as traumatic neurasthenia was due to concussion of the spinal cord . The fallacy of this view was sufficiently dealt with by Mr. Herbert Page in his work " Injuries to the Spine and Spinal Cord, and Nervous Shock." with an analysis of 234 cases , published in 1882, and his more recent "Railway Injuries, with special

reference to the back and nervous system," 1891 , now the recognised authoritative treatise on the subject, Clerenger's "Spinal Concussion" or Erichsen's Disease" was published in 1889, and other monographs have at intervals appeared in this country and abroad, notably by Putnam (Boston Medical & Surgical Journal 1883) Dana (New York Medical Record 1884) Charcot (Lecons due Mardi 1868 - 90) Strumpell (New . Syd. Soc. Translations) 1894, and Horsley (Clinical Journal 1896) ,and a place is now given to traumatic neurasthenia in recent text-books of general medicine , e.g., Osler, Allbutt &c.

DEFINITION -- A functional disturbance of the nervous system following shock, and characterised by various forms of mental and bodily inefficiency . In some instances the emotional element is prominent, and symptoms characteristic of hysteria may develop

ETIOLOGY -- The condition follows an injury, slight or severe, , and more usually one sustained in a railway accident, in which case the element of fear and alarm is a potent cause . This element may indeed be the sole cause of nerve shock , as in the case quoted by Page (Railway Injuries. P. 27) of a railway servant who had his foot, it was supposed, run over on the line. The man was found in a state of collapse and in great alarm as to the injury to his limb , but upon examination it was found that the only damage sustained was the dexterous removal of the heel

of his boot by the passing engine . The sudden and alarming nature of a railway accident and the noise and confusion caused by its occurrence give rise to emotions quite sufficient to cause severe neurasthenia and without doubt these factors explain why this condition follows railway accidents more frequently than accidents occurring in other circumstances , No bodily injury may be received, and the fright may be little more than momentary , yet the after effects may be definite and lasting , as in the following case amongst others met with in my experience.

CASE 3. - Neurasthenia caused by fright alone . An engineer , aged 44, who had previously enjoyed good health, while travelling by train on 6th. November 01, rose from his seat to look out of the carriage window . To support himself he leant against the carriage door , which, through having been left imperfectly fastened , flew open, and he was nearly projected on to the line. He saved himself from falling out by stepping back sharply into the carriage. That night he felt generally ill and nervous, had pain in the back, headache, and shortness of breath. He consulted his doctor, who informed me he found the patient looking ill and shaken and that the pulse was very irregular . Subsequently he became nervous , fidgetty and moody . When I examined him on Febraury 18th. 02 I found him obviously in a very nervous and irritable condition , with exaggerated knee jerks , rapid pulse and dilated heart . His doctor wrote me in July 05 that his patient declared that he had

never been the same man since the accident and that he is very nervous and the least thing causes him to be apprehensive and in dread of something.

S E X -- With regard to the influence of sex , Page says that "although in ordinary life women are more emotional than men , it is nevertheless true that in the direct and indirect outcome of the nervous shock of a railway collision men may become no less emotional and hysterical than women ",and this is strictly in keeping with my own experience .

A G E . - In reference to age , the same author writes, "Injuries to the spine and spinal cord and nervous shock", p. 170, "where nerve force is predominant shock also becomes predominant. Certain it is that at the two extremes of life we have never seen such serious after effects of nervous shock after railway collisions as in those in their prime" In my own experience of eighty-eight cases of traumatic neurasthenia the majority were adult males , but I feel that as men form the greater part of the travelling public the actual figures relating to age and to sex are of comparatively little value.

Predisposing causes are :

(1.) A neurotic family history .

(2.) Overwork.

(3.) A previous history of acute illness, especially influenza.

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THE SYMPTOMS which must be regarded as forming a pathological entity which can be recognised clinically appear either immediately after the mental shock or bodily injury is received or they appear after a certain interval, the incubation period of Charcot, and this may be from one week to several weeks. Accordingly Horsley described in Allbutt 's System of Medicine, an acute traumatic neurasthenia and a chronic traumatic neurasthenia.

The character of the symptoms and signs is the basis upom which Osler has grouped three main headings :-

I. - Simple Traumatic Neurasthenia.

II. Cases with hysterical features

III. Cases in which the symptoms suggest organic disease of brain or cord.

1. - SIMPLE TRAUMATIC NEURASTHENIA. -

In this, the form most frequently met with, the symptoms generally are all subjective and the clinical picture so varied and complex that the manifestations are best considered under the systems involved.

FUNCTIONS OF THE HIGHEST CENTRES.

A condition of nervous irritability develops and there may be a marked change in the patient's entire mental attitude. He finds that he is unable to concentrate his attention upon his work, he dwells constantly upon his condition, becomes low-spirited and despondent and apprehensive of chronic invalidism and ruin, i.e., the so-called

anxiety symptoms . He also suffers from "Phobias" tabulated by Beard in his work on neurasthenia. Impairment of sleep is a very frequent symptom , and a source of much distress to the patient . On going to bed he either falls asleep only soon to be awakenedagain by terrifying dreams to pass the night in a state of nervousness and agitation, worrying about his condition and prospects, or he fails to obtain any sleep at all . This continues night after night, with consequent aggravation of the existing symptoms.

Headache is perhaps the most frequent of all the symptoms of this form of the disease . It rarely amounts to actual pain but is described as more a sensation of weight or oppression and though it may be at any part of the head it is more usually situated over the whole of the occipital region. It is aggravated by any form of mental exertion , such as reading and talking , and is increased by alcohol.

Associated with the headache and doubtless similarly caused by disturbances of the circulation , are giddiness and swimming in the head , experienced as in other forms of nervous debility , when the upright attitude is suddenly assumed. Page considers that the sleeplessness is in large measure a cause of these abnormal sensations .

FUNCTIONS of the LOWER NERVE CENTRES.

Affections of the senses of tast and smell are uncommon.

VISION. - Subjective asthenopia when the patient is fatigued is a frequent symptom as is also mistiness of the whole field of vision . Subjective colour sensations , such as blue or red flashes, occur, and there may be pain at the back of the eyeballs . Any previously existing defect in sight such as myopia or astigmation becomes more evident to the patient, or may only now be realised for the first time: there may be muscde volitantes.

AUDITION. - Of the affections of hearing the usual are buzzing noises in the ears, giddiness and nerve deafness.

TACTILITY - The usual fundamental subjective perception is numbness and pins and needles with a deadness and a sensation in the limbs as if they were too heavy . The patients say the limbs feel like lead and they cannot lift them. Painful spots may be present and particularly about the spine and more rarely over the posterior superior iliac spines and the ovaries . According as symptoms referable to the spine are present or not, the case is known as railway spine or railway brain. Of the spinal symptoms, backache is the most commonly complained of. This may be situated anywhere about the back, the most usual position being, however, in the neighbourhood of the lumbo-sacral articulation . The pain is described as a dull ache, at first continuous , but as improvement occurs, being present only when the patient is tired . It is present while he is at rest, but it is aggravated by any attempt at

movement. Other spinal symptoms are affections of tactile sensation such as tingling and numbness down the spine

MOTOR CONDITIONS. -

A fine tremor of the hands and tongue I have found in a large proportion of cases examined. It resembles that seen in chronic alcoholism, and is I think a valuable indication of an enfeebled nervous system. A generalised paresis is another motor condition. frequently met with. The patient complains of general muscular weakness and tiredness and states he has not his ordinary amount of nerve energy even for a thing he is personally anxious to undertake.

AFFECTIONS OF THE OTHER SYSTEMS.

CIRCULATORY -- Disturbances of the circulation whether of the heart itself or the vaso- motor system are usual and serve as a valuable indication of nervous debility. There may be palpitation of the heart, irregularity, slowness of action or extreme rapidity (150 per minute) and pains and a feeling of oppression in the cardiac region. The onset of palpitation and rapidity of action are commonly excited by altogether trifling causes. Affections of the vaso- motor system exist in the form of flushes of heat, particularly of the face, sweating may occur very readily, and the patients complain of coldness of the extremities; the hands may be at one time unnaturally hot and at another unnaturally cold.

A sign I have found of some significance and one indicative of lowered tone of the vaso-motor centre is a sustained considerable increase of pulse rate when the upright attitude is assumed . The vessels fail to accommodate their calibre to the alteration of position of the body , the blood has a tendency to gravitate , and the heart having to work against gravity must, in order to keep up the circulation , beat more rapidly .

Angio - neurotic localised oedema also occurs, though rarely.

RESPIRATORY. Accelleration of the rhythmn may be present.

ALIMENTARY . - The digestive system is usually much deranged . The nausea and vomiting , which may have occurred immediately after the accident , may persist. Loss of appetite, constipation, or nervous diarrhoea are the rule, and the tongue becomes thickly furred and the breath foul . General nutrition suffers with consequent loss of weight , which is in my opinion a valuable index of the severity of the neurasthenia.

URINO- GENITARY SYSTEM. -- The quantity of Urine passed in the twenty-four hours is commonly increased , and the percentage of solids thereby correspondingly decreased. However, an excess of phosphates has by some writers been stated to occur . Nervous irritability of the bladder is usual, but difficulty in micturition is occasionally complained od and doubtless is due to the fact that the bladder suffers

similarly to the other organs from general muscular feebleness , which is a marked feature in neurasthenia . The sexual desire and sexual vigour are generally diminished , and in the female dysmenorrhoea or menorrhagia may arise.

Physical examination of these cases of simple traumatic neurasthenia may be entirely negative. In my experience the physical signs most usually met with are an increase of knee jerk, ankle clonus, tremor of the hands and tongue, evidence of loss of weight , and the sustained increase in the pulse rate when the upright attitude is assumed. In endeavouring to estimate the existence and amount of general nervous exhaustion the size and activity of the pupil must not be left out of account ; as a small pupil readily reacting to light is a rare accompaniment of nervous exhaustion , conversely a dilated sluggish pupil is incompatible with a healthy tone of the nervous system.

C A S E 4 :- J. L., aged 65, a builder, whose previous health had been good , was on 21st. November 99 knocked down in the street by a box which fell from a railway van, stiking him on the head and giving him a slight scalp wound . He was not rendered unconscious/and was able to return home without any difficulty , and no signs of gross injury to the skull or brain were discovered by his doctor who saw him on the following day . I examined him on the 14th.Dec. 99 , and he then complained of headache, nausea, constipation, mental depression and deafness . He looked old for his age, feeble, nervous and depressed , his temperature was sub-normal and

Pulse very weak and 90 per minute . Physical examination otherwise was negative . On 27th. Jan. 00 he complained to me of persistance of the headache and deafness , of noises in the ears , occasional vomiting , of feeling very weak and nervous, and that he could not bear to be left in a room alone . His memory also was failing him . His general aspect obviously was worse than on any previous visit but physical examination otherwise was again entirely negative He remained in this condition for some months, and recovery was never complete , his doctor reporting to me in May 1905 that the patient still suffered from occasional headache , vertigo and deafness. .

C A S E .5 -- Mrs. M., aged 69, on 16th. Dec. 99 fell between the platform and the train she was attempting to enter , and received numerous bruises to foot , knee, thigh &c. . She was confined to bed for four weeks on account of these injuries and for several months afterwards suffered from headache , sleeplessness and general feelings of nervousness from which she did not entirely recover for a period of three months.

C A S E 6. - A builder, 58 years of age, in August 99 fell on to the platform , owing to the train moving on as he was in the act of alighting . With the exception of bruises to back of head and loin, on account of which he was confined to bed five weeks , he received no bodily injury. When I saw him in March 1900 , i.e., eight months after, he complained

to me of headache, backache, loss of memory , impairment of eyesight, and entire loss of sexual desire and vigour, which last two symptoms weighed heavily on his mind . He was nervous, shaky, and excitable , and told me that the manhood had gone out of him . Examination was entirely negative . A settle - ment of his claim was arrived at soon after , and I did not see him again until July 05. He then informed me that he was still subject to headache and backache. , that he became very giddy at times , that his eyesight had failed considerably more, and that his memory was now so defective that when he went out he had to take a note with him of the address to which he was going or he would forget it before he could arrive at his destination . Sexual desire and vigur had never returned , and he informed me that he had never had any connection with his wife since his accident.

C A S E 7. - A warehouseman, aged 43, whose previous health had been good , on 17th. May 01 was thrown backwards and forwards in a railway carriage, owing to the train having run into the buffers . His imjuries consisted of a black eye and a small cut on the nose, which was also fractured and bled freely. He was unable to sleep and the following night and for many months afterwards on account of startings in the arms and legs, and his medical attendant found it necessary to prescribe hypnotics . I saw him on May 27th, and he complained of aching in the arms and legs , slight deafness, pain through the temples , a sensation as though there were a dull heavy weight on the top of his head, and pain

in the dorso-lumbar region .

On June 5th. he stated that he felt much the same, was unable to sleep for more than two hours without a sleeping draught, and that he now had moments of great giddiness . Examination revealed no physical sign of his condition. His symptoms persisted and he consulted a well-known specialist, Dr Bastian, who recommended a change to the sea-side, from which he returned to see me on Aug. 22nd He was then suffering from the same symptoms , and, in addition, from shooting pains all over the body , stiffness and cramp of the right hand and especially of the two inner fingers, a burning sensation up the right arm , loss of memory, aching of the eyeballs , loss of sexual vigour, and constipation. . He was in a state of uncertainty and alarm about his condition , and described every symptom with the utmost detail . Nutrition now began to fail , and by Oct. 20th. when I saw him again he had lost nearly two stones in weight . His headache was, he alleged very much worse, and in addition to all the other symptoms of which he previously complained , he now had pins and needles & a sensation of numbness in all his extremities. Another nerve specialist (Mr. Horsley) was consulted , and the claim was settled soon after. . I met him by chance on 1st. June 05 , and he told me he had occasional headache and giddiness , that his memory was not as good as it used to be , that he found he could not concentrate his attention upon his work and that he was more nervous,

than previously, for instance, that he did not care to be left alone in a room.

CASE 8 - A telegraph superintendent, aged 54, was on 11th Feb. 01, on account of a train running into the buffers, thrown alternately backwards and forwards in a railway carriage in which he was travelling. He was momentarily confused and dazed, but was able to alight from the carriage and proceed to his business. All that day he suffered from acute headache, and consulted his doctor in the evening. The headache was situated in the frontal region and was aggravated by any mental effort. When I saw him on 1st. March he complained also of being unable to concentrate his thoughts, of nausea, impairment of sleep and of a numb sensation in the back of the head and neck. He was giddy, especially on going downstairs, and he found his vision was becoming less acute. He continued at his work for about three weeks more, but finding that his symptoms in no way lessened in severity, he went to Bournemouth for a month's holiday, which appeared to entirely cure him. However, within a week of his return to business he began to suffer from a sensation of swimming in the head, inability to collect his thoughts, and a feeling as though he were going to fall forward when he was walking, and a return of numbness in the occipital region. Examination on the 11th. April was entirely negative, the knee jerks being

normal in activity , and the pupils reacting briskly to the light . Sit William Gowers was consulted on May 14th. and recommended a month at Margate. As on the previous occasion (when he went to Bournemouth) relief from his symptoms was obtained within a few days , but on returning home and to business , the headache, numbness and sensation of falling forward returned in their former severity. I did not see him again but his redovery though delayed was complete.

CASE 9. - J.H., aged 55 years, living in very comfortable circumstances, and earning his livehood as secretary to a large society , was on 28th. Dec. 01 considerably shaken in a railway collision, not however being thrown from his seat nor receiving any bodily injury . He felt weak on the following day, though able to go out and attend church service, but symptoms of neurasthenia developed within a few days. When I saw him on 6th. January 01 he complained of feeling weak and faint , of depression of spirits, loss of sleep , continued yawning , and a feeling of numbness in the legs. In other respects he was well, and had not any disturbance of alimentary or circulatory symptoms , nor did my examination reveal any objective signs of his condition. On the advice of his doctor he went to Hastings for ten days , and on his return I had occasion to see him again . Sleep was still impaired, and he stated he did not feel able to attempt any work, that he was unable to read for any length of time

amd that he had some difficulty in walking straight. The knee jerks I found distinctly more active than is usual in health and the tongue was pale , furred and flabby , but my examination otherwise was negative .

CASE 10.- [redacted]rong looking man, aged 50, married, a stationer by trade, was in a railway accident which occurred in March 1900. He was thrown forward, his knees coming on contact with the opposite seat and his head striking against the woodwork of the carriage. Though dazed, he was not rendered unconscious , and was able to return home by another train. When I saw him a month later he complained of pains in the head , limbs and back, sleeplessness , loss of appetite, and of a feeling of numbness in the feet. I examined him very carefully, but failed to find any signe of organic disease to account for his troubles . Pulse was regular, 72 per minute, and of moderate tension . Heart and lungs were normal, liver and spleen not enlarged , and the kidneys were not palpable. Knee jerks I found exaggerated, there was no clonus, and Babinski's sign was not obtained . No evidence of disturbed sensation in the legs was noted but tenderness on pressure existed over the lumbo-sacral articulation.

Later he complained of weakness & trembling which came over him when he stood up, and on account of which he was still confined to bed when I examined him for the

second time, on May 21st., his other symptoms being he stated not quite so severe . Subsequently to this he went into the country for six weeks and felt much better, but on returning home there was complete reappearance of all his symptoms in their original severity . A specialist in diseases of the nervous system was therefore consulted. I made another examination of him on Aug. 28th. 00. He was very despondent, and went into tears whilst detailing his symptoms to me. Additional symptoms were pains in the legs, cold hands and feet, and defective vision . On making an examination I found the knee jerks normal . Plantar reflexes present , no clonus, and no atrophy of the muscles of the legs. He dragged the right foot slightly in walking , and both legs from the knee downwards were stone cold, and on the inner side of the right leg there was delayed tactile sensation . In all other respects he seemed free from signs of disease. His symptoms persisted for some months, but ultimately he made a complete recovery .

CASE 11. - T. K., aged 62, a brewer , whose previous health had been very good, was in a slight railway collision , which occurred on May 17th. 01 . He suddenly experienced a sensation as though he had been shot, and was thown on to the floor of the carriage, but received no external injuries, and was able to return to his home in the country . That evening. he felt giddy and sick, though vomitting did not actually take place, and

when I saw him ten days later he complained of vertigo, morning headache , pain in the centre of the back, and aching of the eyeballs . Appetite was fair, and the functions of bladder and bowel were unimpaired. My examination revealed nothing further than slowness of the heart, 50 per minute, and feebleness of its beat, to account for which there was no objective sign of disease. In other respects he appeared healthy, tongue was clean , knee jerks normal, pupils moderately dilated and responding to light and in accommodation. On 8th. July he still complained of the headache , giddiness and backache, and of sleeplessness , but in other respects felt and appeared well. His symptoms persisted for several months after I saw him, and ultimately he made a complete recovery.

C A S E 12. - A fishmonger, aged 37, was in a slight collision which occurred on 30th. Oct. 01. He was standing up and in the act of taking off his overcoat, when he was suddenly thrown against the seat opposite, and, as he attempted to regain his feet, backwards against that from which he had just risen . The injuries received were merely slight bruises to various parts of his legs, and he was able to continue his journey . On arrival at his destination he was very sick, and sent for his doctor, who advised him to stay in bed. From that time onwards he became sleepless, lost his appetite and strength, and suffered from faintness , giddiness and pain in the back

of the head and down the spine . Vomiting also occurred occasionally. I saw him a fortnight after the accident took place, and failed to discover any objective signs of his condition except exaggerated knee jerks and well marked ankle clonus. There was, however, no spasticity of the legs, and Babinski's phenomenon was not obtained. The patient was confined to bed for some weeks and at the expiration of ten months had made a complete recovery . His doctor wrote me in 1905 that he was quite well.

C A S E 13. - R.A., aged 48 years, managing director of an engineering company , was in a serious railway accident which took place in January 1905. He was travelling in a first-class sleeper , and was suddenly wakened up by the collision, to find himself lying on his back on the floor of the car. After a delay of three hours, during which time he had to walk about in the snow in the middle of the night, he was by relief train able to resume his journey to London, and thence to Brighton. His doctor was sent for, and recommended him to remain in bed . For the next few days the pulse was fast and irregular, and on one occasion the left knee jerk was noticed to be not so active as the right .

I examined the patient at Brighton a fortnight after the accident, and found him complaining of feelings of general nervousness , impairment of sleep in consequence of terrifying dreams, and a dread of every travelling again

by train . He also informed me that he had become irritable and easily annoyed, and was now startled by the slightest noise , that his heart was easily disturbed in its action , and that he had to make water more frequently than he used and ~~that~~ he had pain down the spine. Appetite was somewhat impaired , and there was constipation . My examination was entirely negative The pulse was regular, 84 per minute, tongue clean though slightly tremulous, pupils moderately dilated, reacting to light and in accommodation, opthalmoscope revealed no abnormality; knee jerks normal , cremasterie Plantar reflexes were obtained, and there was no clonus; heart and lungs were normal. He was sent abroad for a month's change of scene and surroundings, and his doctor reported to me in July that he had made a complete recovery , though nervous symptoms had existed until the end of June.

C A S E 14 - A photographer, aged 30 , on 28th.Dec. 1901 was thrown from the seat of a railway carriage in which he was sitting, in consequence of a slight collision which occurred . He received no external injuries, and feeling little the worse for the shaking, took a walk round the train to inspect the damage and then proceeded on his journey. Before reaching his destination he felt queer and was sick, and on going to bed he passed a restless night. From time to time during the following fortnight the vomiting was repeated, appetite was lost, and he experienced a dull

pain at the pit of the stomach. When I examined him on 23rd. Jany. 02 he complained of being unable to sleep for any length of time, of startings in the hands and feet as he was going to sleep and of waking up suddenly in a startled condition. Other symptoms were, a mist before the eyes, giddiness, pain in the back of the neck passing up to the occiput and there forwards, where it (to use his own words) "burst like fireworks". When this occurred he had a feeling that he would fall forwards . A dull, heavy feeling was present in the head, and he stated that in consequence he had on one or two occasions turned faint. He also had difficulty in holding a pen. On Jan. 1st. he had resumed his occupation, but at the fourth sitter he felt so dazed and confused that he was unable to continue. His pulse wa 96 per minute, and the knee jerks were exaggerated but no other evidence of his condition was discovered on physical examination. His symptoms gradually cleared up and complete recovery was made

C A S E 15 - W.B. , a horse-dealer, aged 72, was considerably shaken in a railway carriage on 12th. Sept. 02, in consequence of a slight collision . He was jerked backwards, striking his occiput against the padded woodwork of the carriage,but received no external injury and was not prevented from continuing his journey . On the following day he felt nervous and shaky, and from that time onwards suffered from feelings of general nervousness, giddiness,

depression of spirits, repeated vomiting , loss of appetite , impairment of vision and hearing, and a feeling that he could not walk straight and was going to fall . He was a strong, robust looking man, and presented none of the signs which may be found in neurasthenia. The Pulse was not accellerated, the knee jerks were not exaggerated, there was no ankle clonus, the pupils were contracted, tremor was absent, and weight had not been lost. Subsequently to my examinaination on 4th. Oct. 02 he had several "very alarming faint attacks, with very small pulse and perspiration on forehead, pale and anxious expression, and cold extremities " as reported by his doctor . His symptoms persisted for about two years, but he ultimately made a complete recovery.

C A S E 16. - A Tobacco Traveller, aged 69, whose previous health had been excellent, was on 30th. Jan. 03, thrown from his brougham on to the ground , as a result of a street accident.. He fell on his back and head, and was for some hours afterwards dazed and sick. His doctor kept him in bed for some weeks, but did not at any time observe any disturbance of temperature or pulse, The symptoms which appeared were headache and dizziness, pain in the back, impairment of sleep and loss of appetite. My examination of him on 17th. Feb. 03 was entirely negative, but at a later date his knee jerks were found exaggerrated. He also became low spirited, fearful of

chronis invalidism , and very emotional, giving way to tears when questioned about his condition. For some months he continued in this state, but ultimately made a complete recovery and was able to resume his former occupation.

CASE 17 - J. F. , a married woman, aged 45, was on 20th. December 04, sitting in a train which had been shunted into a siding , and owing to a collision which occurred she was thrown from her seat on to the floor of the carriage, receiving sundry bruises on her arms and legs. Examined on the 5th. April 05, she complained of vertical and frontal headache, general nervousness , and of having become very excitable. She dreaded the thought of ever again travelling by train, was unable to sleep, and alleged that she had lost power in her left hand. Her doctor had observed irregularity of the pulse for some time after the accident, and he considered that the patient had altered considerably in her whole mental attitude. . The tongue was clean, firm and non-tremulous, pulse regular -- 80 per minute, and not accellerated to an abnormal degree when the upright attitude was assumed , tremor was absent, the grasp of the hands was equal, the pupils were moderately contracted and not sluggish in their reponse to light; the knee jerks were not exaggerated, and there was no clonus. . Recovery was complete ,but her symptoms persisted in all for about three months.

CASE 18. - W. P.S. , aged 38, an actor, was in a collision which occurred in January 1905. He was asleep on a seat of the carriage, and was thrown onto the floor, not, however, receiving any external injuries. For the next few days he felt no ill effects except some giddiness, but after a fortnight he began to suffer from general nervousness , impairment of memory and disturbed sleep. His medical man sent him to Devonshire for a month's rest, and on his return I made an examination of him, on 24th. March. He stated that his memory was failing him, that he had to make written notes of all arrangements he made, whereas formerly he depended entirely upon his memory. He had a desire to be left alone and to do nothing, and that he was easily excited and became irritable. On several occassions he found himself addressing letters wrongly and repeating orders where such repetition was unnecessary His doctor, who had known him for several years, told me that he had altered completely in his manner: whereas jocularity was a prominent characteristic, now he was grave and sober.

While speaking to me he appeared low-spirited and distressed about himself; he was pre-occupied, and evidently found it difficult to recall to mind past experiences . He looked strong and healthy, and on making a general examination of him I was unable to discover any objective sign of his condition. The tongue was clean, the reflexes notmal , and tremor was not present. A settlement

of his claim against the railway company was arrived at soon after, and in answer to my enquiry his doctor wrote me on 5th. Aug. as follows: - " I have not seen Mr. P. S. for a couple of months, but I hear from his people that his general condition is much better . He feels stronger and better, is much brighter and is losing his "absentness" but his memory is still very bad , and he still has to make lists of everything he carries with him. The other day, after a train journey, he came home without his hat, which, as he was wearing it, he omitted to put on the list, and similar absurdities are common. "

Many more examples might be given but I think they are unnecessary, as the cases here recorded, which have been the subjects of repeated examination on behalf of the railway companies, are sufficiently illustrative of the history and class of symptoms which are characteristic of simple traumatic neurasthenia. They also give a fair idea of the paucity or entire absence of objective signs in this condition . They were all , I believe, free from exaggeration or imposture, but it is quite obvious that the genuineness of their symptoms, lacking the corroboration of objective signs, is dependent upon the veracity and good faith of the patients themselves. It certainly is a drawback that there is rarely anything tangible to show in these cases , and an additional drawback is that the examination cannot be as complete in

its details as can that of other conditions. The patients are apprehensive and introspective. They fear the existence or the onset of some serious and incurable disease. How minutely and in what detail they describe their symptoms indicates how they have dwelt constantly upon their condition, been on the look out for new sensations, the importance of which has been greatly aggravated in their minds by their disturbed mental state. And, therefore, as Page says, "no one will deny that the creation and development of allsorts of symptoms may be readily induced when patients are in this condition, by leading questions which suggest them to their minds" . And again, " 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 ", and," not less important also is it to avoid the unnecessary use of leading methods of examination " A detailed examination of tactile pain and temperature senses in a patient complaining of "numbness in the legs, may account for a subsequent development of anaesthesia, or a contraction of the field of vision may be the result of examination by the ophthalmoscope of a neurasthenic patient complaining of defective vision , and where its use was quite unnecessary in order to arrive at a correct diagnosis.

It willbe observed from the cases given above that of the exceedingly complex symptomatology which characterises the disease, the more usual symptoms are : - Headache , backache, nervousness, insomnia, giddiness, loss of memory and disturbances of the digestive system.

Before proceeding to a description of the second class of case it is important to differentiate hysteria from neurasthenia. It is not always possible to do so, as neurasthenia overlaps hysteria, and both complaints may occur in the same person. Chacot (Lecons du Mardi, 1887 - 8) described such cases as hystero-neurasthenia. He considered certain symptoms such as pain and pressure in the head ,the disturbances of sleep, backache and spinal hyperaesthesia, general muscular enfeeblement , nervous dyspepsia, loss of sexual desire and vigour, and the intellectual fatigue, depression, irritability , anxiety &c., cardinal symptoms of the neurasthenia . He also considered the feelings of dizziness and vertigo, asthenopia, the disturbances of circulation , respiration secretion and nutrition and the motor and sensory disturbances as accessory symptoms. The essential difference beteen the two diseases is the condition of the mental state. A neurasthenic patient suffers from mental exhaustion . He is unable to think or read for any length of time. He cannot concentrate his thoughts; he is inattentive, introspective and irritable, and his

memory is impaired , The characteristic of the patient suffering from hysteria is the deficient control over the feelings and the prominence of the emotional element . With little or no reason he gives way to tears . His statements are not to be relied upon and he endeavours to deceive friends , relatives and pysicians. Osler remarks that the ~~physical~~ psychical condition of an hysterical patient is always abnormal and that the disease occupies the ill-defined territory between sanity and insanity .

The neurasthenic suffers in addition to the mental symptoms of exhaustion , from symptoms of general bodily enfeeblement . He complains of weariness on the least exertion , of weakness, pain in the back , and aching pains in the legs . He is easily startled and has constant headache . This bodily and mental debility is not a characteristic of hysteria . The hysterical patient may develop convulsions , paralysis or contractures. hemianaesthesia and alterations of the visual fields &c., and the diagnosis is such cases is not difficult . But in the absence of such developments and of the marked intellectual and emotional characteristics of the hysterical patient it is not possible to make a diagnosis of hysteria

C L A S S 2.

CASES WITH HYSTERICAL FEATURES.

In addition to the symptoms of simple traumatic Neurasthenia as described in the previous group, symptoms characteristic of hysteria may develop. Headache, backache and vertigo are present, and there may be a marked tremor, specially manifest during emotional excitement . As in hysteria, the emotional element is prominent and there is a deficient control over the feelings , and this emotionality may be the sole hysterical manifestation . Hysterical disorder of the emotions only may be caused by the profound mental shock of an accident , or there may be disturbance of some more definite function , as anaesthesia or paralysis . These conditions may occur immediately or they may develop later and be added to the neurasthenic condition . An example of hysterical disorder of the emotions is that of a married lady &c.: --

CASE 19. Mrs. S., aged 28, married, was on 28 Dec. 01, owing to a collision which occurred, thrown backwards and forwards in a railway carriage, not however receiving any external wounds. Feeling very shaken, she returned home by tramcar, and went to bed to which she was confined for several days following. She could not sleep however, and her husband informed me that she was very hysterical during the nights, starting up screaming and crying . Her symptoms, described to me

on Jan. 12th. 02, were as follows: Continuous pain over the eyes, in the occipital region and down the spine, loss of appetite; and sleepless, restless nights . I found her very nervous, and inclined to be lachrymose ; knee jerks were very active , tongue showed a fine tremor , and the pulse was feeble. On her doctor's advice, a change of air and scene was sought , and she went to Folkestone for some weeks . I saw her again on 8th. March 02. The pain in the spine, headache, and loss of appetite still persisted ; she had difficulty in going to sleep and could not sleep for any length of time . Feelings of depression and limpness were complained of , and she gave way to crying for no apparent reason , and this she had done several times when in public places . She was continually crying, she said, and for no reason except that she felt she must cry . She was afraid to go out of doors , and especially was she afraid of traffic in the streets. Her husband had on several occasions found her sitting up in bed at night talking to herself; and all sexual desire had been lost . I found her looking not so well as on the former occasion, her colour now having been lost , anaemia was pronounced and she had lost flesh considerably , knee jerks still were exaggerated , and the tongue was large and flabby, covered with a yellow fur, and tremor was marked A few weeks later she was seen again with her medical attendant, a Dr. Farrier,

who advised complete rest and change at the seaside away from her husband and friends . She continued, according to the doctor, highly hysterical for about two years, but ultimately made a complete recovery.

Another instance of loss of control of feelings combined with symptoms of simple traumatic neurasthenia is the following : -

C A S E 20 - A married woman, aged 54, without any personal of family history of neurosis or facts worthy of note, was whilst travelling by train , owing to a collision, thrown backwards and forwards in the carriage and finally on to the floor , receiving bruises to the back of head , elbow and arms . She was unable to lie down for some nights afterwards on account of great pain in the back and the occipital region, and also suffered from numbness down the right arm , and excessive menstrual flow. Her doctor informed me that when he saw her on the day following the accident she was a "perfect wreck", and burst out crying whenever she was spoken to. During my examination, which took place some weeks afterwards, she was very nervous and emotional , giving way to tears most of the time . She complained of feeling very nervous, and not being able to bear any noise or excitement, that she could not attend to her household duties on account of becoming faint, that she was losing her memory, and that she had pains in her back and head and weakness in the right arm..

In addition to the extreme nervousness and emotion , during my examination ,I found pulse 120 per minute, tongue large, flabby, furred and tremulous; there was marked tremor of the hands, and the knee jerks were exaggerated. Otherwise my examination was negative. She continued in this condition for some months , and when last heard of was in good health.

MENTAL SYMPTOMS . As in subjects of ordinary hysteria, these patients exhibit a deficienty of will; they give way to grief readily, and are unable to control the flow of tears , but as the clinical picture is well-known to every medical man, a detailed description is hardly called for here ; suffice it to say that the symptoms may vary from uncontrollable crying and screaming to trance and catalepsy . Of the former, Cases 19 & 20 are examples , but of the latter I have met with few instances. Page records the following case in his chapter on "Traumatic Hysteria" 1891: -

"B.A.B ", 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 four weeks after the accident there were no symptoms of [illegible]-

constitutional disturbance or 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 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 time 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 the 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 toes, and pinching the calves evidently causes pain, for he groans and contorts the face. On touching any part of the chest or abdomen 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 seems apparently 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 litle 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 she 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 whch he lay so long is,"that he knew all that was going an around him ,that he remembered when the doctors came, and knew always whwn there were more of them than usual , but that he could not speak, and he 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 "

CASE 21. -- A case resembling it in some respects, but very much less severe is that of a Polish Jewess I saw in February of this year . She was 34 years of age , stout and strong-looking, had borne seven children and was now five months pregnant . Three weeks before, while she was standing inside her husband's shop -- he was a tailor -- in the East End, a railway van crashed into the window , breaking the glass and smashing the front of the shop . She was not actually struck, but was very frightened , and owing to sensations of faintness , heat and cold &c., her doctor was sent for and advised confinement to bed , in which I found her, curled up and covered over by the bed-clothes . She made no movement when I entered the room and apparently was unconscious of my entry with her husband and the doctor . On speaking to her she took no notice , made no answer, and lay motionless on the bed with her eyes closed . She allowed me to examine her in detail , offering no resistance, and presenting little sign of consciousness of what I was doing . I was told that she had headache , could not move , could not sleep , and

could not eat. She made her water regularly, but her bowels were constipated . Pulse was 84 , heart and lungs normal , breathing extremely quiet , knee jerks not exaggerated , tongue -- which was only protruded to a slight extent and only after much persuasion -- was furred but not tremulous. On attempting to examine the pupils she kept her eyes closed and resisted any attempt of mine to draw the lids apart . She was well nourished and had not had any hysterical fits. Upon completion of my examination she gradually returned to her previous attitude, lying on her side with her face to the wall , legs drawn up, eyes closed, quite motionless and apparently oblivious to all that was going on around her .

C A S E 22 was one in which though trance was not actually present the lethargy exhibited was highly suggestive of a condition closely approaching it . A man, aged 24, a railway platelayer , had two years previously been struck across the chest by a lever, in consequence of a rope breaking . He received no external wound , and no history could be obtained of injury to any of the thoracic organs , though he had complained of precordial pain, palpitation of the heart, giddiness, faintness, and impairment of sleep . He had also vomited on several occasions . Though his appetite had been very good throughout , his weight in two years had dropped from 12 st. 4lbs. to 8st. 7lbs. when I saw him.

Examination of the chest revealed no evidence of disease or injury to any of the organs contained therein . The lungs were normal the heart was neither displaced nor enlarged , the apex beat was in the usual situation , there was no valvular disease, but the rate of beat was only 48 per minute , irregular and feeble . Liver and spleen were of normal size . Pupils were dilated and reacted to light and in accommodation. The knee jerks on repeated and careful stimulation could not be elicited nor were cremasteric or plantar reflexes obtained. I could not but be struck with the slowness of his speech and action. When spoken to he either made no answer at all , or after a long interval replied by monosyllables , after which he lapsed back into a state of silence and pre-occupation, being apparently quite oblivious to all that was going on about him. When asked to undress he took no notice, but on repetition of my request, began slowly to remove his clothes, but with many intervals of inaction and preoccupation , seeming to forget what he was doing; for instance, he sat on the bed in silence , staring blankly in front of him and with his shirt half off , being apparently indifferent to what he was doing, or lacking the will power to complete it. This condition lasted for several months after I saw him and his claim was settled, and he ultimately made a complete recovery . The last I heard of him was that he had moved into the country and was at work.

SENSORY SYMPTOMS . - Disorders of tactile sensation are frequently met with , and take the form usually of anaesthesia, mostly restricted to the limbs, the post axial border of the upper limbs being more requently affected than the pre-axial. Horsley states that subjective tactile anaesthesia of trunk or face is very uncommon. The most usual arrangement is hemianaesthesia affecting one arm and one leg, and this may be combined with an-algesia, loss of temperature sense and loss of sense of position, and of the muscular sense. On the other hand there may be hyperaesthesia and hyper-algesia. Hyperaesthetic spots are commonly met , the usual sites being down the spine and over the ovaries, and various paraesthesias may be complained of. Of the special senses, disturbances of taste and smell are uncommon . Of ocular symptoms there may be retinal hyperaesthesia, dislocation of the colour fields, and in some cases hemianopsia which may last for years. (Horsley) Nerve deafness may exist or hyperacusis to certain sounds.

MOTOR CONDITIONS -

The derangements of the motor function observed in this form of the diseases are scarcely less numerous and varied than those of sensation, but it is only necessary for me to mention here the more usual and to record cases which are illustrative of them. They may be given under three headings :

(1) Paralysis. - Osler states in the Principles and Practice

& Practice of Medicine "there is no type or form of paralysis which may not be simulated by hysteria". The paralysis may occur in the form of monoplegia, paraplegia, hemiplegia, or all the limbs may be paralysed at the same time. The left side is affected, according to Richet, three times as frequently as the right, and Horsley states that paralysis affects the lower limbs more fequently than the upper, and the face extremely rarely. He has recorded a case of functional paralysis of the automatic repiratory movements of one side, but I have been unable to find a case on record of the paralysis affecting both sides as in the Case 23 here recorded It is worthy of note that the paralysis is often not complete and that on asking the patient to move his paralysed limb the antagonistic muscles are seen to contract. An example of this is given in Case 24. The superficial reflexes are generally heightened in their activity, but may in severe cases be diminished or abolished. Of the deep reflexes at first there is exaggeration but later they may be entirely lost to ordinary stimulation. Horsley states, however, that by Jendrassiks's method they may always be elicited. This was not my experience in case 23 given above. Ankle clonus is not uncommon and is by most writers "now recognised as an occasional accompaniment of the simple neurasthenia state" (Horsley), the muscles are not atrophied and the electrical reactions

are normal .

(2) Spasms and Contractures occur as in ordinary hysteria, and an example of the latter is Case 26. Tremor may occur, involving more usually the arms and hands, and is of the variety known as "intention tremor" ,as seen in Case 24 .

(3) Epileptiform seizures may occur and give rise to much alram. Cases 23 & 24 are illustrations. Visceral symptoms are common , are identical with those occurring in ordinary hysteria, and simulate the symptoms of organic disease of any of the systems. They are too numerous to mention here in detail Case 22 is an example of disturbance of the circulation (palpitation, slow pulse -- 48 per minute -- giddiness and faintness), and of persistent hysterical vomiting we have illustrations in the same case and in Case 26.

C A S E 23. --- General shake, paraplegia , epileptiform seizures --- A Printer , aged 52, in comfortable circumstances in life, was on May 17th. 1901 subjected to a shaking in a railway carriage owing to the train running into the buffers . With the exception of a small scalp wound on the forehead , no external injuries were received , and he was later on unable to recollect having been struck on the head, back or other part. He was removed to a large general hospital, where I saw him on the following day. He was on a water bed,

and the housesurgeon informed me that he was in a very precarious condition, and was considered by the visiting staff to be suffering from fracture-discolation of the spine , one of the surgeons having even determined the exact situation of the injury to be in the upper cervical region. There was complete motor and sensory paralysis of the legs, weekness and numbness of the arms, and diaphragmatic breathing. He lay perfectly flat and helpless on the bed , being unable to move his lower limbs at all , could not feel me touch them, nor did he experience any pain when a pin was thrust through the skin. Temperature sense was also gone, and the plantar reflexes and knee jerks were not obtained . The respirations were rapid, the movements of the abdominal muscles being exaggerated while those of the chest were restricted. There was no disturbance of the bladder or bowel, and no priapism . A more detailed examination was owing to the general circumstances and apparent seriousness of the case not permissable.

Six days later I examined him again in the hospital. The paralysis of the lower limbs, and of the intercostal and abdominal muscles had entirely cleared up. He was able to make any requested movement of the legs, sensory functions were entirely restored, and reflexes were found to be normal . I now elicited the statement that he had walked from the train to the station-master's

pffice across the station, and there collapsed. He was now alloeed to sit up, and in a few days time left the hospital for his home in a small town in Bedfordshire. His troubles were not, however, at an end yet. When I saw him again on 31st. May, i.e., fourteen days after the accident, in consultation with his usual medical attendant, he was found to be suffering from the usual symptoms of simple neurasthenia. He had a dull, heavy feeling in the back of the head and down the spine, neuralgic pains in the head, prickly sensations and numbness in the hands and feet, pains in the back of the neck, and of startings in the arms and legs at night, which in addition to terryfying dreams, interfered with his sleep. Nausea was also complained of, the appetite was lost, and bowels were constipated. There was no bladder complaint. On investigating the condition of his legs, I found he was able to move them in any direction requested, but on resisting the movement with my hands, the muscular power was found to be very small. Sensation was quite unimpaired, there being no anaesthesia, hyperaesthesia, and no disturbance of the sensibility to pain and temperature, or the power of estimating weights and appreciating the position of the limbs. There was tenderness on pressure over the lumbar and sacral spinous processes. The knee jerks were normal, no clonus was obtained, the opthalmoscope failed to supply any further

evidence of his condition, and a general examination was entirely negative. A month later he complained of the same symptoms, and , in addition, that he had difficulty in making water, and obstinate constipation . He also had pain in the back, and an icy feeling in the feet, and was unable to stand owing to weakness in the legs. His doctor informed me that a few days previous his patient on returning to the house from the garden had become unconscious and that this unconsciousness had taken the form of a stupor and had continued until the following day. On examining him I found a loss of muscular power in the left leg, which was also definitely colder than the right. the grasp of both hands was feeble , but sensation in the arms and legs was impaired. Knee jerks were normal, plantar and cremasteric reflexes were not obtained. Tenderness was complained of upon pressure at two points, viz, over the seventh cervical vertebrae and over the 5th. and 6th. dorsal. In other respects the examination was negative; pulse 84, tongue clean and non-tremulous. The feebleness of muscular power, the iumpaired sensation of both legs and the coldness of the left one were determined at subsequent visits, and did not entirely clear up until July 8th.. There was, however, no atrophy of the muscles and no bed sores. .

On August 8th. he was found looking very well , and had been out of doors daily , having walked as far

as three-quarters of a mile. The headache , backache, nausea, loss of appetite & sleeplessness stillcontinued, but the abnormal sensations in the hands and feet had disappeared and he had had no other attacks of unconsciousness . He now stated that he found on waking in the morning that the inner three fingers of the right hand were numb, and that this numbness lasted all day unless relieved by massage ; when the fingers were vigourously rubbed it would disappear in a quarter of an hour. .

He now went to the sea-side for five weeks, and on return said he felt perfectly well except that he still had headache and backache occasionally.

In consequence of a recurrence of his symptoms , I was requested to see him again on Oct. 11th. , and then found him in bed, to which he had been compelled to stay on account of pain in the back of the neck, which prevented his moving his head from side to side or forwards and backwards . He also complained of pain over the 7th. cervical spine, which was also tender on pressure . He had been to town for a week , but in consequence of travelling by 'bus, train &c., had become nervous, shaky and sleepless , and the pains in the back and prickly and numb sensations in the legs had returned . Physical examination again was entirely negative , but the diagnosis of functional disease only confirmed by the transitory nature of the symptoms . On Oct. 18th. he was seized with a "kind of faintness," ushered in by shaking and tremor in the legs and afterwards in the body. He did not

lose consciousness, but on recovering the bowels were relaxed, and he experienced a scalding sensation in the bladder . Another attack followed a few days later, this time attended by unconsciousness which lasted some hours. The third seizure was whilst he was in the water closet , where his wife found him unconscious. He was pale, limp. and apparently lifeless, with blood flowing from his mouth, and his trousers were soiled by the motion he had passed. No convulsions or struggles were at any time observed. His doctor, who was sent for, found him in a semi-unconscious condition , was alarmed, and sent for another practitioner.

I saw the patient for the last time on Nov. 18th., and found him looking generally well in spite of his statement that he felt nervous and shaky , could not rest or eat, and felt sick and that he "saw double with the left eye". Physical examination was again negative, and I expressed the opinion to the railway company concerned that the epileptiform attacks were hysterical in nature. No more of them occurred, and the case was settled soon after, the doctor in attendance reporting to me some months afterwards that his patient had completely recovered except for occasional headaches, and had returned to his business .

CASE 24 -- Blow on occiput. Hemiplegia, heminaesthesia, convulsions. --

A joiner, aged 31, was in November 1904 struck on the back of the lower part of the occiput by the shaft

of a cart, which collided with the tramcar in which he was sitting, the symptoms of simple neuarasthenia developed gradually, epileptiform seizures followed and later he developed , hemiplegia, heminaesthseia and hemianalgesa. When I saw him on July of this year he was unable to move the left leg at all , tactile sensation was entirely lost, and a pin could be thrust through the skin or he could be vigorously pinched, without, apparently, any sensation of pain. The sense of position was also lost. The patient's eyes being closed the left leg was moved about in various directions and then left semi-flexed, and he was unable to place the other one in a similar position. If, however, the left leg was placed across the right , in which sensation was unimpaired, he was able to appreciate its position by the information derived from his tactile sense in the right . There was no atrophy of the muscles, knee jerks were present on both sides and were normal in excitability; that on the left side had not been obtained on the previous day . A true and well-sustained ankle clonus was elicited readily on the right side, and the plantar reflexes were both obtained. .

The left arm he was able to move very feebly, and any attempt at movement gave rise to a well-marked and coarse tremor . Asked to close his eyes and touch his nose with his left hand, the arm was slowly and spasmodically jerked toward the face, the extensor muscles (triceps &c) standing out in contraction , thereby obviously opposing the action of the flexors. His attempt to touch the nose was unsuccessful

The face also was included in these hysterival symptoms, there being a complete paralysis of the left side. , as determined by frowning , whistling , closing the eyelids &c. but on asking him to put out the tongue it was observed to be pushed over not to the paralysed but to the sound side. There was no wasting of the tongue and no tremor or fibrillary twitchings. Speech was slow, deliberate and of the character known as scanning. The fields of vision were ~~both~~ contracted; there was also a dislocation of the colour fields, but no hemianopsia. All the special senses except vision were affected on the ~~right~~ (left) side.

Six weeks later the disturbance of speech was found to be much less marked, and there was a slight degree of motor power in the left leg. The left arm, he was able to move more freely also. The disorders of sensation had in no way improved , there still being a complete hemi-anaesthesia, an hemialgegia, loss of temperature sense, mus - cular sense and sense of position. The muscles of the upper part of the face had recovered their power, as tested by frowning and wrinkling the brow, in which two movements the corrugator supercilii and occipito frontalis were called into action . The orbicularis palpebrarum was also un affected. The tongue again was protruded to the non-paralysed side; knee jerks were both obtained ,

that on the right side being more brisk than on the left, plantar reflex was present on the right and absent on the left, and ankle clonus was elicited on both sides, being more marked on the right. Babinski's sign was not present; the muscles were not atrophied, and there were no bed sores and no disturbance of bladder or bowel

CASE 25. -- Fall from a height ; paresis right arm, loss of sensibility to pain and temperature on right side of face &c. - -

A hydraulic fitter, aged 21, with a history of brain fever in early childhood, on 18th. Sept. 03, fell 38 feet from the roof of a building upon which he was working, on to an asphalte floor. The injuries he received were numerous bruises about the body and limbs, and a broken nose. He was dazed at the time, and taken to a hospital , vomiting occurring on the way . He was an in-patient in the hospital for a fortnight , during which time he was in bed suffering from pain and stiffness, the result of the bruises. Five months afterwards, when I examined him, he complained of loss of power in the right arm and leg, numbness of the right side of the face and nose, and loss of sensibility to heat and cold over the same areas. He also had sacral pain, general nervousness , loss of sleep, and weakness and mistiness of vision. There was no disturbance of bladder or bowels .

Paresis of right arm and leg was found, but no

abnormality of the sensory functions accompanied it. Knee jerks were exaggerated on both sides, ankle clonus was obtained, plantar reflex was determined on the right side but absent on the left. In walking the patient dragged the right foot, but there was no atrophy of the muscles. Over the whole of that part of the face supplied by the right fifth nerve there was lost sensibility to pain and to temperature. A pin could be thrust through the skin without any sensation of pain ; bottles of boiling water and cold water alternately were held in contact with the face and their temperatures not appreciated. There was no impairment of tactile sensibility on the face, no paresis, and no atrophy of the muscles . The pupils were dilated , sensitive to light , the movements of the eyeballs unimpaired and opthalmoscopic examination negative. Two months later the abnormality of the spinal reflexes had disappeared , but there was no improvement of sensibility of the right side of face to pain or temperature . The claim was settled soon after, and when heard of recently he had been at work nine months , and felt little the worse for the accident .

C A S E 26 . -- Shaking in a railway carriage. Vomiting, hysterical contracture &c.

A Governess, aged 25, about Christmas time 1901. was in a railway collision . She was thrown backwards and forwards in the carriage, her forehead striking against the woodwork of the door, but no external injury was

received, She vomited at the time, and this vomiting occurred at varying intervals during the next three months. Symptoms of simple neurasthenia also developed, viz., headache, backache, sleeplessness, general nervousness &c., and the doctor under whose care she placed herself ordered her to Bognor . While out walking there she sprained her left ankle slightly. When I saw her in the following March she could only walk with the aid of two sticks. The left foot was held in the position of a well-marked talipes equino-varus. The foot was turned inwards, forming a right angle with the leg, the sole looked backwards, the dorsum forwards , and the outer border was in contact with the ground when the patient made any attempt to stand . The muscles were not atrophied, and there was neither sensory nor motor paralysis , knee jerks and plantar reflexes were obtained and were normal . Ancle clonus was absent as also was Babinski's sign . I was able to restore the foot to its natural position without any difficulty , but as soon as let go the abnormality returned .

The case was treated by suggestion, and in five weeks time made a complete recovery.

C L A S S 3.

CASES IN WHICH THE SYMPTOMS SUGGEST ORGANIC DISEASE OF THE BRAIN OR CORD.

Prof. Strümpell, in the brief resumé of his lecture on "Traumatic Neurosis" delivered to the Nürnberg Medical Society 1888 (translated by A.M.Stalker M.D. in New Syd. Soc. transactions) says "general traumatic neurosis seems sometime to prepare the ground for the development of organic lesions such as paralysis or tremor . Risien Russell in Bain's text book of medical practice 1904 says, "apart from the possible development of insanity neurasthenia never leads to organic disease -- no matter how severe the manifestations -- with one notable exception and that is the case of the heart.".

Sir W. Gowers in "Diseases of the Nervous System" relates the case of a lady who was severely shaken in a railway collision . She seemed immediately after the accident to have suffered no injury , but in a few days paraplegia developed , and from its consequences she died six weeks after the accident " Throughout the dorsal region of the cord I found indications of sub-acute myelitis , chiefly in the white columns, varying in its extent in different regions but most distinct in the pyramidal tracts " Commenting on the case, he says,"In face of such a case as this it is superflous to discuss the question raised by some writers whether or not the cord can suffer concussion". But so scanty of detail is the account he gives of the way in which the lady met with her

injuries that one cannot feel satisfied that a direct blow or other direct injury may not have been received in the dorsal region of the spine .

Judson Bury (Brit .Med. Jnl. 1904) says ,"There are reasons for believing that trauma apart from frac - ture or disease of bone may initiate changes in nervous tissue which progress and lead to symptoms of permanant serious disease. At any rate, with our present ignorance regarding the etiology of disease , it behoves us to keep our minds open and prepared to admit the possible influence of any important antecedent to the onset of symptoms indicating bodily disease " He then gives an account of several cases of trauma leading to permanent serious disease. But it is to be observed that the injury has been some gross lesion such as fractured skull , or there was some direct fall or blow on the back, or in the fatal cases, where a gross injury had not been found during life-time, there has been no autopsy to disprove the exis- tence of some coarse lesion. .

I think there is abundant evidence to show that insanity. myelitis &c. may follow a definite injury but with such cases I do not propose to deal here. That permanent and serious conditions, including mental, can follow a sim- ple shake, had been alleged, but Osler says "Post mortems upon cases in which organic lesions have supervened upon a traumatic neurosis are extremely rare", and again," So

far as I know, no case with autopsy has been reported in this country (i.e.,America) , nor have I seen an instance in which the clinical features pointed to an organic disease which had followed upon a traumatic neurosis." That a clinician of such wide experience should not have seen such an instance clearly indicates how very rare such instances must be , if they occur at all. Erichsen related a case of a man violently shaken in a railway accident , and later developing paresis , diminution of the temperature and atrophy of the muscles of the left leg, symptoms from which recovery was not made .

Page also describes a case (No. 9) of a man who was in a severe collision in which three persons were killed & a large number injured He was dazed at the time, and was unable later on to give a clear account of the manner in which he was injured, hence it remains uncertain whether he received a blow directly on the back. Paraplegia, almost entire loss of sensation in the legs, paralysis of bowel and bladder with alkaline urine, bed sores, reflex spasms of the limbs, and pain in the back , were the symptoms which appeared, and after some months he died. No post mortem examination was allowed , and therefore it was impossible to determine the exact nature of the injury and whether any was sustained by the vertebral column itself .

Clevenger and Osler both refer to a case reported by Leyden in which the symptoms following the concussion were slight but after a time became aggravated and the patient ultimately died. A chronic pachymeningitis was found at the post mortem . Osler also refers to a case of Bernhardts in which in addition to vertigo, depression &c., mental symptoms and attacks of unconsciousness supervened, and the patient committed suicide. At the autopsy a beginning multiple sclerosis of the white matter in both brain and cord was found.

In another case, that of a man aged 42 , who in a railway accident, in addition to being rendered unconscious , received a slight injury to the buttock region, depression of spirits, headache, tremor, weakness, and sensory disturbances in feet and hands developed, and death occurred five years later with symptoms of cardaic dyspnoea . At the post mortem scattered areas of degeneration were found in the white matter of the cord , and the sympathetic ganglia were also degenerated.

The symptoms likely to be met with in this class of case, and suggesting organic disease of brain or cord, are those of psychical disturbance , especially melancholia, and of chronic myalitis . According to Osler, "The features upon which the greatest reliance can be placed as indicating organic change are optic atrophy, bladder symptoms particularly in combination with tremor ,paresis

and exaggerated reflexes. To them I would add diminution of temperature of a limb and atrophy of muscles.

Cases of organic disease following some gross injury, e.g hemianopia resulting from depressed fracture of the skull, Jacksonian epilepsy and suicidal tendencies caused by concussion of the brain , with probable pachymeningitis and chronic myelitis, the result of a fall on the back of the neck , have come under my notice from time to time , but in my experience of 87 cases of traumatic neurasthenia I have not met with any instance in which the signs and course indicated organic disease of brain or cord.

DIAGNOSIS. - The clinical symptoms above given of simple traumatic neurasthenia occurring immediately after or within a few weeks of an accident should serve to distinguish the condition without much difficulty . Care must be taken to distinguish simulation and as the condition is in most cases quite devoid of objective signs it may be difficult to avoid falling into the common error of regarding the case as a fraud and more particularly as a motive for such fraud exists in these cases . Strümpell says ,"In agreement with most other neurologists who have seriously considered the subject I must express my conviction that simulation in this disease is by no means so common as many physcians appear to believe "

The symptoms of a well-developed case are so peculiar and characteristic that I can scarcely understand how it could be simulated. It would be astonishing indeed if patients in Berlin, Leipsig, Erlangen and everywhere else were to falsify the story of their complaints in exactly the same way. It is easy to understand that there is such a thing as similation after bodily injury, also that it may be often very difficult to distinguish the simulated from the real morbid condition, but that this difficulty arises with anything like frequency is in my experience not the case " Similarly in my own experience, patients in various parts of London, in Bedfordshire, in Hertfordshire, in Middlesex and in Brighton have complained of exactly the same symptoms, and surely it would be absurd to suppose that they were otherwise than genuinely suffering from the same disease. No stronger evidence could be brought forward to refute the view held by some men of wide experience that these cases are allfraudulent than the fact that these symptoms persist for long after the claims are settled and therefore any possible motive of fraud removed. In Case 18 the "absurdities" reported by the patient's doctor were occurring months after the railway company had disposed of the claim. In Case 12 the symptoms persisted for ten months after the claim was settled, and Case 7 complained of the continuance of his symptoms four years subsequent

to

to his accident and settlement of his claim . Obviously, in these , as in other cases, any possible motive ,such as the question of damages was removed and it could be of no advantage to the patient to practract his illness. However, some guide in the discrimation of genuine cases of traumatic neurasthenia from simulation is occasionaly necessary & this guide is the great disproportion between the subjective symptoms on the one hand and the objective symptoms and state of general health on the other; exaggeration at least may be suspected when there is a marked disproportion between the two groups of symptoms, but exaggeration does not negative the presence of actual disease . The incongruity of the symptoms of which he complains may be the very means of detection of the malingerer, but it is the whole picture which indicates whether a case is true or false and not one or two isolated details . If one enquire for the existence of unlikely symptoms the malingerer may by his answers give himself away ; on the other hand even when genuinely injured and in real suffering these patients are not reliable in their statements . Their mental state is upset , and owing to a wide-spread idea even among the medical profession that the effects of a railway collision are likely to be remote , a feeling of anxiety and alarm as to the future with consequent -- and in most cases involuntary -- exaggeration of symptoms is the result.

the same

Judson Bury in the Brit. Med. Jnl. 1904 drew attention to the importance of distinguishing cases of bruised brain from simple traumatic neaurasthenia. In the diagnosis between these two conditions the following are the points he shows to be of real value : The neurasthenic patient shows an active and introspective mental condition and has an uncontrollable desire to discuss in detail all his symptoms. The sufferer from bruised brain on the other hand is dull and apathetic, his mental processes are laboured and cloudy. He also is stuporose and drowsy, whereas the neuarasthenic suffers from insomnia. The pain in the back, headache, pronounced hyperaesthesia about the spine and of the special senses, and the dispepsia, palpitation and other visceral disorders common in neurasthenia are absent or inconspicuous in cases of bruised brain. The neurasthenic may be able to commence work but soon tires, the patient with bruised brain is unable to undertake any work at all. Lack of concentration, restlessness and anxiety about his condition is common in neurasthenia, whereas the patient with bruised brain is too apathetic as a rule to exhibit any anxiety or to worry about his condition.

But a still more important question and of no small concern to railway and insurance companies, against whom a claim may have been presented, is,: Has the patient organic disease ?, and may be a difficult one to answer As Beard said, "Very many of the symptoms of functional and organic disease are the same and apparently the same

and there is an easy liability to confound them especially when, as is often the case , the patient or the doctor is disturbed in his judgment by ~~some~~ severe apprehensions. To make such a differential diagnosis is sometimes the ~~se~~ severest test to which the neurologist can be brought , and one of the highest value for the happiness , the plans and the whole future of his patient. It may therefore be wellworth while to consider the points upon which a correct diagnosis may be made . The first element in the diagnosis of functional disturbances is the exclusion of any sign of positive organic disease and the second is the existence of an etiological factor capable of giving rise to symptoms that may be functional in character . Such factor is discovered in these cases in the history of a railway or other accident . Then if a neurasthenic patient be encouraged to discuss his symptoms and experiences , there willgenerally be obvious evidence against organic disease . The variety of the symptoms, the fact that they are constantly changing , metastatic and recurrent , pronounce them as functional in contrast with the symptoms of organic disease which vary very little from day to day . An instance typical of the constantly changing and recurrent character of the symptoms is that of Case 23. The paraplegia was recovered from in less than a week , a month later there was paresis , then paraesthesias numbness and later convulsions , each in turn reappearing until a recovery was

finally made .

Beard gives the following points in the differential diagnosis of neurasthenia from organic disease, which it similates and with which it is often confounded .

1. -The symptoms of organic disease are usually fixed and stable , while very many of those of neurasthenia and allied states are fleeting , transient, metastatic and recurrent.

2. - Certain symptoms, though not well known or always recognised symptoms of neurasthenia and allied states , and which do not often, if at all, appear in structural diseases , e.g., tenderness of scalp , teeth and gums; flushings, fidgetiness, tremulous pulse , sick headache, asthenopia, hopelessness , hypochondriasis and morbid fears .

3.- In organic disease reflex activity is frequently dimished ; in functional disease reflex activity is frequently increased. This statement , however, requires some modification. It may be said that reflex activity may in organic disease be either increased or decreased , whereas in functional disease it is generally increased only . In Case 22 the knee jerks could not be obtained , but I think that as only one examination was made I am hardly justified in advancing it as an instance of diminution or loss of reflex activity in functional disease. Neurasthenia and allied troubles are most likely to occur in those in whome the nervous diathesis predominates

Having given the records of cases of traumatic neurasthenia that I have seen , I shall now examine in detail certain clinical facts which are professed to be competent to establish an absolute distinction between organic anf functional disease . In this respect great stress has been laid upon the normal or abnormal condition of the bladder function , the condition of the knee jerks , the presence or absence of ankle clonus , Babinski's sign and of hemianopia . Upon each of these I propose to offer some observations.

Osler states (Principles & Practice of Medicine) that hemianaesthesia, limitation of the field of vision & monoplegia with contracture may all be present as hysterical manifestations from which recovery may be complete, and that in our present knowledge the diagnosis of an organic lesion should be limited to those cases in which optic atrophy, bladder troubles, and signs of sclerosis of the cord are well marked — indications of degeneration of the lateral columns or of multiple sclerosis.

BLADDER SYMPTOMS . - In reference to the disturbances of the genito-urinary system , Gowers (Diseases of the Nervous System) expresses the opinion that "any impairment of power over the bladder or rectum is of great diagnostic importance , loss of sexual power on the other hand is of little value " In agreement with him Strumpell has remarked "pronounced derangement of the bladder is in purely neurotic conditions absent , and the inability to empty the bladder completely ,which

many patients complain of is, as a rule, only one manifestation of the general want of muscular energy . The lowered condition of sexual desire which is often present may also be associated with the mental depression . When there are sexual or vesical disturbances of a graver kind they indicate, probably , coarse lesion of the nervous system and do not come under consideration of traumatic neurasthenia proper."

The opinion of Page on these points is very similar. He says, "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 again as to sexual matters , this only need be said , that so long as the neurasthenia lasts, there is not likely to be either the desire of the will . Both will return in due time but before that time neither should be gratified." Also, he says (p.7) "Especially is it likely to happen when the nervous system has been much 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 of the case . Thus it is nothing more or less than natural for the friends to say that the patient is

"paralysed" from some injury to the spine . If you do not avoid these fallacies and do not correctly interpret the state of things , you will add greatly to the dread , which after railway collisions is strangely real, that "paralysis is going to supervene " In the case with fatal termination reported by him and already referred to by me (p 57) there was paralysis of bowel and bladder, with alkaline urine . In Case 16 there was entire loss of sexual desire and vigour and though after six years there was no return whatever of either , absolutely no evidence of organic disease of brain or cord was discoverable . Case 23 complained of difficulty in making water and of obstinate constipation but these together with complete paraplegia and the epileptiform convulsions were entirely functional as proved by the complete recovery .

THE REELEXES

For the manifestation of every reflex action there are three essentials : (1.) An afferent nerve fibre to convey an impression (2.) a nerve centre for its reception (3.) and efferent nerve along which the impression may be conducted to the muscular or other tissue . In the absence of any one of these a reflex action cannot take place. In man two forms of spinal reflex action must be distinguished : -

1. - SUPERFICIAL REFLEXES - These are true reflex actions and are excited by gentle stimulation of the skin . The most important superficial reflexes are: - the plantar, gluteal, cremasteric, abdominal , epigastric

and conjunctival.

2. - DEEP or TENDON REFLEXES. - When the muscles are in a state of slight tension , a tap on their tendons will cause them to contract . The two so-called tendon reflexes which are of practical importance are the knee jerk and ankle clonus . They are not true reflexes and the explanation of their recurrence given by Gowers is as follows: -

(1) They are due to direct stimulation of the muscle itself .

(2.) For the muscle to contract it is necessary for it to be in a condition of irritability . This is obtained by putting it slightly on the stretch and so causing the condition known as tonus.

(3.) Muscular tonus depends on the integrity of the reflex arc .

(4.) Injury to the reflex arc deprives the muscles of the tonus necessary for the production of these so-called reflex actions .

That the tendon reflex depends upon the existence of the tonus is shown by the fact that if only the sensory or only the anterior roots of the nerves supplying the limb of a dog be cut there is abolition of muscular tone. Also if a muscle has lost its tome by disease of the spinal cord , afferent or efferent nerves , the tendon reflex will be abolished .

All refles actions are essentially involuntary and may be accomplished ~~independently~~ independently of the will . The reflex centre is however to some extent controlled by a higher centre in the brain and a reflex action may to some extent be modified by the restraining influence of this higher centre. The reflexes may be normal, diminished absent, or exaggerated, and thir condition affords a valuable index of the state of the nerve centres .

The reflexes have received very little notice from Page in his book and for the reason that most of his cases were seen before the value of the patellar and other reflexes was known in the diagnosis of spinal diseases.

SUPERFICIAL REFLEXES.

The authors of any recent monographs on traumatic neurasthenia are in agreement with Horsley (Allbutt's System) that "the superfici al reflexes are usually unaltered , but the deep are most commonly exaggerated, and if the condition is not relieved by treatment they may disappear " Taking into consideration the variability in the excitability of the superficial reflexes , those commonly sought for being the plantar and cremasteric , and the fact that frequently they cannot be elicited at all in notmal healthy individuals , I think their condition in the cases under consideration is of practically no value .

DEEP REFLEXES

The Knee Jerk is elicited thus : - By placing one knee over the other the quadriceps extensor tendon is slightly stretched; a sharp blow on the ligamentum patellae causes a movement forward of the foot .

Any impairment of the lower neuron will cause a diminution in the tone of the lower muscles and will thus produce a difficulty in eliciting the tendon reflexes . Also , any disease of the muscle fibres or of the sensory fibres from muscle to cord will also cause a diminution of the tendon reflexes , in consequence of the lessened tone of the muscles . Of organic diseases which are characterised by diminution or absence of knee jerk the most commonly met with are locomotor ataxy , Peripheral neuritis, pseudo-hypertrophic muscular paralysis and diabetes mellitus . Neurologists are, however, unanimous in stating that diminution or absence of knee jerk does not occur in functional disease . In Case 22 the knee jerk was not elicited after careful stimulation , but the case was only seen on one occasion . Before advancing it as a contradiction to this general opinion it would have been necessary to repeat the tests.

When the controlling influence of the upper neurous over the lower is cut off , the latter produce an increased tone in the muscles, with the result that the tendon reflexes become exaggerated . An exaggeration of the knee jerks is therefore characteristic of such organic

affections as hemiplegia , desseminated sclerosis and lateral sclerosis . Ankle clonus is closely associated with exaggerated knee jerks , and its significance is much the same.

As an exaggeration of the tendon reflexes is found in organic lesions which have caused a cutting off of the controlling influence of the upper neuros over the lower it is reasonable to expect that a similar effect will be produced in functional diseases where the controlling influence is inhibited. The mental exhaustion which is the very essence of neurasthenia allows the lower neurous to have fuller play than normal . That the knee jerk may be exaggerated in functional disease most medical writers agree . I have found that in 20% of the cases of functional disease following trauma that I have seen there was a definite and unmistakable exaggeration of one or both knee jerks.

ANKLE CLONUS .

To obtain this the examiner 's hand is pressed against the sole of the foot, causing sudden dorsi-extension . The calf muscles are thus put on the stretch and they contract, and if the pressure is kept up a quick succession or clonic series of contractions is obtained . As already stated, ankle clonus is closely associated with exaggerated knee jerks and its significance is much the same , but in regard to its occurrence in functional disease there is much difference of opinion

Hare states that the knee jerks are increased but easily exhausted in neurasthenia and that a false ankle clonus is sometimes seen in hysteria . Starr says "The existence of clonus like that of exaggerated reflexes is an indication of disturbance of function in the lateral columns of the spinal cord. An increase of tendon reflexes is not infrequently observed in hysteria"

Hutchinson and Rainy allege that "ankle clonuus is nearly always a sign of disease."

Finlayson says, "The association of ankle clonus with the more extreme forms of exaggerated knee jerk is very close , and its clinical significance is much the same , pointing often to the occurrence of sclerosis of the antero-lateral columns " . It is disputed whether it ever occurs in pure hysterical paralysis ; certainly its presence in suspected cases of this kind should make us allthe more careful in our examination before forming such a diagnosis.

Osler considers that a spurious ankle clonus may be present in hysteria , and elsewhere he says that " a true clonus does occur " in hysterical spastic paraplegia. Clevanger's words are that " It is necessary to remark that the existence of ankle clonus cannot be considered conclusive evidence of structural lesion of the spinal cord " Gowers, on the other hand, takes a much more serious view of the presence of ankle clonus . He says,

"a foot clonus ,orrectus clonus, is strong presumtive evidence of organic mischief . A slight increase of knee jerk is of little value , although it probably always indicates some changes in the nutrition of the spinal cord ; it does not indicate organic disease", And again, "I have known many mistakes in diagnosis in which lateral sclerosis was mistaken for hysterical paraplegia owing to disregard of the evidence afforded by this symptom (ankle clonus) , but I have never known the opposite error from undue regard to this symptom " . Moreover an excess of myotatic irritability in so-called hysterical paralysis must depend on more than functional disease. There must be changes in the nutrition and consequent persistent defective control of the muscle reflex centres . A case is actually on record(described by Charcot 1865) in which an initial hysterical paraplegia , cured suddenly , and relapsing on emotion , passed ultimately into lateral sclerosis . Similar cases of initial hysterical paraplegia frequently develop all the characters of disseminated sclerosis . A true foot clonus , or rectus clonus , deserves the greatest weight as all but conclusive evidence of organic disease . Primary spastic paralysis is not uncommon in those who are at the age and of the sex at which hysteria prevails, and there is no form of cord disease which is so often mistaken for hysterical paraplegia . The mistake is facilitated by the perfect muscular nutrition .

But the mistake ought not to occur, as the peculiar extensor character of the spasm lessening with flexion is distinctive; nothing resembling it ever occurs in hysterical paraplegia."

Musser (Medical Diagnosis) states , " For a long time there has been doubt as to whether it (ankle clonus) occurs in functional disease, but it seems now to be established that it does. Its occurrence in functional conditions , is, however , of such extreme rarity that when it is present organic disease should always be suspected " , and " a pseudo ankle clonus has been described as characterised by a few irregular oscillations that soon cease. It occurs in functional disease and occassionally among malingerers."

Butler (Diagnostics of Internal Medicine) says " a brief abortive or false clonus has been mentioned as occurring in neurasthenia and hysteria". In the recently published Textbook of Medical Practice (Edited by William Bain) Risien Russell says " The tendon jerks are much exaggerated , but a true ankle clonus probably does not occur in the absence of organic disease , and the plantar reflex remains of the flexor type", and, "Valuable information is further derived from the state of the tendon jerks and superficial reflexes , for although neurasthenia commonly occasions exaggerated tendon jerks , a true persisting ankle clonus never occurs , and while the knee kerks may be diminished in one class of case , they are never abolished , so that a persisting ankle

clonus

clonus , or absent knee jerks, should be regarded as signs of organic disease. The state of the plantar reflex is equally important , for even with greatly exaggerated tendon jerks neurasthenia never occasions the extensor type of plantar reflex which results in organic affections of the pyramidical system ".

From these remarks it may be observed that there is not only a difference of opinion amongst the authors in regard to the significance of ankle clonus , but the clonus occurring in functional disease is by some regarded as not a true clonus but a pseudo or spurious clonus. That a true, well-marked , and well-sustained ankle clonus does occur in these cases of functional disease, I have no hesitation in stating , this statement being based on the observation of the cases recorded below; and I think the point is worthy of consideration , as I can find no history of cases in which attention has been paid to it. Page reported his cases at a time when the value of the reflexes in diagnosis of spinal conditions was not known , and Savill in his recent work on neurasthenia (1899) has almost entirely overlooked , or omitted to pay attention to , the condition of the knee jerks and the occurrence of ankle clonus . That it should occur in funtional disease need, I think, be no cause for supprise, as its occurrence may reasonably be ascribed to the same cause as the exaggeration of the knee jerks , viz., a defective controlling influence

of the upper neuron over the lower . One of the objects of this communication is to draw attention to certain cases of neurasthenis in which in addition to an exaggeration of the knee jerks , there was a well-marked ankle clonus present , a clonus which could by no stretch of imagination be styled "pseudo" . In each case it was as well marked a clonus as is found in a well-developed case of lateral sclerosis.

A. - In Case 1, as already given in detail , in addition to a number of subjective symptoms characteristic of neurasthenia and exaggerration of the knee jerks , there was a well-marked ankle clonus in both feet. Subsequent to its disappearance there were no further symptoms , and that the clonus was due to a purely functional cause is obvious from the fact that the man ultimately made a complete and uninterrupted recovery , and when last heard of was following his usual business -- that of a commercial traveller.

B. - Case 12 is very similar. Consequent upon a general shaking whilst travelling by train traumatic neurasthenia developed with the usual symptoms . In addition to exaggerated knee jerks , there was well-marked ankle clonus in both feet. At the expiration of ten months he had completely recovered and was able to follow his usual occupation , and four years later his doctor reported to me that he was perfectly well , and was in no way the worse for the accident .

C. - Case 25 presented numerous signs of traumatic [illegible] (76.) [illegible]

matic neurasthenia , simple & hysterical, the result of a fall from the roof of a building upom which he was working. There was analgesia and loss of temperature sense over the right side of the face , paresis of right arm and right leg . Both knee jerks were exaggerated , and a well-marked ankle clonus was present on both sides. Plantar reflex was obtained on the right side but was absent on the left. Babinski's phenomenon was not obtained , and there was no spasticity, and no atrophy of the muscles. Examined two months later, the reflexes were found to be absolutely normal , and muscular power in the leg was quite unimpaired Ultimately he completely recovered, and when last heard of had been at work nine months.

D. - A single lady , aged 36, was in March 1905 knocked down in the street by a box which fell from a railway van, upon the left side of her head and neck. She was not rendered unconscious, was able to return home, and no symptoms developed suggestive of intra- cranial injury such as bruised brain &c. Some weeks afterwards she was found suffering from headache, feeling of pressure in the head, faintness &c. , and from pain and pins and needles down the right arm, quite obviously due to direct injury to the cords of the brachial plexus in the posterior triangle of the neck . Rapid pulse and tremor of the hands were observed, and, in addition, exaggerated knee jerks and ankle clonus on both sides . In other respects no objective evidence of her condition was discoverable

Examined two months later, and not quite three months after the accident , the knee jerks were found quite normal and there was no ankle clonus.

E. J- In case 24, suffering from hemiplegia ,hemianaesthesia [illegible] and hemianalgesia, the result of a blow on the head eight months previously, both knee jerks were obtained , and were normal, though that on the left had not been obtained the day before by the medical man under whose care the patient was placed . Plantar reflexes were both obtained , and ankle clonus well sustained in character was readily elicited on the right side. The corresponding leg showed no spasticity, and Babinski's sign was not obtained Six weeks later some alteration in the condition of the reflexes was noticed . The right knee jerk was exaggerated ; the left could be obtained, but readily tired. Ankle clonus was well-marked on the right side and only to a minor degree on the left . The left plantar reflex could not be elecited whereas the right was very brisk . Babinski's phenomenon was absent .

To my mind these cases are obvious and unequivocal proof that ankle clonus may exist in and be one of the signs of a functional condition from which a complete recovery may be made .

In my experience the mistake made most commonly by medical men is to regard the exaggerated knee jerks so frequently present in neurasthenia and the ankle clonus as evidence of lateral sclerosis . The mistake is no doubt due to the fact that medical men are not familiar with

the fact that the knee jerks may be markedly exaggerated in functional disease and that ankle clonus may also occasionally be present. The absence of spasticity of the limbs and of Babinski's phenomenon together with the history of an accident should clear up any doubt ; and moreover what evidence is there that primary spastic paraplegia is occasioned by traumation ?

BABINSKI'S SIGN. is a sudden extension of the great toe due to contraction of the extensor hallucis muscle with flexion of the other toes, and is produced by scratching the sole of the foot , preferably on the inner side. Attention has been drawn to it only within very recent years , and neurologists are agreed that it does not occur in functional diseases , in which other reflexes may be increased . Hence it is a valuable diagnostic sign and practically indicates the presence of an organic lesion involving the pyramidal tracts . I have not known it in any case of traumatic neurasthenia except Case 35. In this instance, however, the view taken by Sir Wm. Gowers was that the functional disturbance was grafted upon a pre-existing lateral sclerosis. The patient gave a history of syphilis. there was an exaggeration of both knee jerks , supinator and wrist jerks, ankle clonus were elicited on the right side, and Babinski's sign . Three and a half years later these abnormalities of the reflexes were more pronounced and there was spasticity of the right leg.

HEMIANOPSIA. By the term hemianopsia is meant a blindness of one half of the field of vision . If the hemianopsia affects both visual fields it is bilateral; if corresponding halves (both right and both left) it is homonymous or lateral . If both temporal or both inner fields are implicated it is heteronymous. The terms nasal or temporal signify implication of the inner or outer fields respectively . Very rarely the upper or lower halves of the visual fields are affected, and it is then called superior or inferior (sometimes altitudinal) hemianopsia .

The cause of hemianopsia is usually a tumor or haemorrage involving optic nerve , optic commissure optic tract or some of the deeper cerebral centres , but whether it ever occurs in functional disease, other than migraine , there seems to be some doubt amongst medical authors . According to Gowers " It is remarkable that hemianopia very seldom occurs as part of the functional disturbance of hysteria . Cases of hysterical hemianopia are on record , but of a large number of cases of hemianopia that have come under my observation , one only may have been of hysterical origin."

M. Parinaud , of the Salpêtrière, Paris, writing on the "Ocular Manifestation of Hysteria" in Norris & Olivers Textbook on Diseases of the Eye , discusses the question as follows: "Hysteria simulates even organic lesions . It may assume all possible forms of sensory

anomalies . There is, however, one variety of visual insensibility that it appears incapable of producing and that is hemiopia . Nevertheless hysterical hemiopia has been described by some authors , amongst them Rosenthal, Sturge, Galezowski and Westphal. Rosenthal in a letter to Charcot affirmed his original opinion that, thus far, it has not been shown that hysterical patients exhibit anything more than an amblyopia or a contraction of the visual fields . We must distinguish the transitory from the permanent form of hemiopia. Babinski has stated that the first form -- that is to say a transitory hemiopia presenting all the character of opthalmic migraine or scotoma scintillans -- is sometimes attributed to hysteria . As to the permanent form of hemippia , presenting the usual signs of central lesions , I have never seen it in hysteria except as coincident with the organic alterations referred to. To this statement I may add that in the Saltpêtrière neither Charcot nor his pupils ever found a single example of hysterical hemiopia among the thousands of patients examined by them . I believe that published statements to the contrary are erroneous . This is also the opinion of Gilles de la Tourette . Finally Freund agrees that hysteria never produces hemiopia". Hare says , "Hemianopsia of the homonymous form is very rarely found in hysteria , generally in association with hysterical hemianaesthesia, in which condition the conjunctiva is usually anaesthetic , thereby differing from the condition of the conjunctiva of persons suffering from

hemianaesthesia of organic origin "

Butler (Diagnostics of Internal Medicine) says of hemianopia " it is due to functional or organic disease affecting the optic nerve or its central connexions ". From the following statement by Horsley , writing on Traumatic Neurasthenia, in Allbutt's system , it is to be inferred that he has found hemianopsia present in the cases he has examined of that affection ---."Hemianopsia , however, when it occurs is much more permanent , and has been repeatedly known to continue for many years after the disappearance of the other neurasthenic symptoms."

In Finlayson's "Clinical Manual" , Hutchinson & Rainy's "Clinical Methods ", or Musser's"Medical Diagnosis" I have been unable to find any inclusion of functional disease amongst the causes mentioned of hemianopsia . Amongst the cases of traumatic neurasthenia that have come under my observation there was no instance in which hemianopsia was found , though contraction of the fields of vision or colour fields was determined . This is in support of the opinion expressed by Rosenthal to Charcot , and if it assists in proving that hemianopsia does not occur in these cases I think we shallhave, in addition to Babinski's phenomenon, a sign of much importance in the distinction between functional and organic disease. Given hemianopsia , it may then be said emphatically that the patient is suffering from organic disease . Its absence together with the presence of contracted visual fields , will be in support of a diagnosis of functional disturbance.

Finally , in the diagnosis , two specific diseases are considered by Starr as likely to be confused with neurasthenia . Thege are dementia paralytica and locomotor ataxia. Dealing with the former, he says . "Traumatic neurasthenia may occur in a patient ~~in a patient~~ in the early stages of dementia paralytica, and it is of the utmost importance to distinguish between the two conditions. A neurasthenic notices every symptom minutely, describes it fully, and discusses its significance , whereas a paretic is usually not aware that he is illat all and does not care to talk about his health as must as about his projects and success . In neurasthenia defects of speech and profound defects of memory are rare , and the physical signs of dementia paralytica are absent .

The other disease which Starr has found frequently confused with neurasthenia is locomotor ataxia , owing to occasional occurrence in patients suffering from the former, of uncertainty of gait , swaying when the eyes are closed and complaint of girdle sensation , also supposed absence of knee jerk but careful examination willreveal the reaction of the pupils to light , and that the tendon jerks may be elicited by Jendrassik's method .

PROGNOSIS .

Most writers on the subject are agreed that at all events in its simpler forms a complete recovery is made . Page states that the record of cases known to him 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 wellas he did before . Osler states, that" a majority of patients with traumatic hysteria recover" and Judson Bury is of the opinion that a large proportion of patients suffering from the minor forms of traumatic neurasthenia " recover in great measure under proper treatment ." Horsley says that"the prognosis is of course favourable , but the lasting effect of an injury on the general efficiency of a patient's nervous system must be recognised . There is a chance if there is mental t trouble in the family history , of the patient falling into a disordered mental state ."

There are, I do not doubt, exceptions to the rule that recovery is complete, but such cases are rare. Of the eighty-seven cases I have seen, those in whom the symptoms have persisted after a lapse of two or three years were very few, These patients (such as Case 7) may be less able to bear mental fatigue ; they may be more irritable and easily excited ; nervous when travelling , and find that they cannot concentrate their attention on their work as well as they did , and may suffer from headaches . Some neurasthenic patients are said to have become insane , but the number of these is very small , though some may hover on the border between neurosis and psychosis without ever definitely becoming insane. Speaking of insanity , Clevenger says " It may exist as a complication or an outcome of the later stages , just as

demonstrable cord lesions may ensue with myelitis or meningitis . As paralysis may follow paresis , so may psychosis develop from the cerebral symptoms of Erichsen's disease ." And in agreement with him the words of Osler and Beard may be quoted. The former says, "there are a few cases in which the patient goes from bad to worse and psychoses develop such as melancholia, dementia or occasionally progressive paralysis. And lastly, in extremely rare cases, organic lesions may develop, as a sequence of the traumatic neurosis." Beard says, "The belief some have held , which some hold now, in relation to which many of the best physicians of our time are in doubt and fear , that neurasthenic symptoms are the predecessors of severe and incurable conditions of the spinal cord , such as ataxia, muscular atrophy, spinal meningitis and the like , are not in harmony with the facts , and will be held by no one who unites both the power and opportunity of observing large numbers of cases through many years. Many of the symptoms of neurasthenia resemble so nearly the symptoms of incipient and even the final symptoms of sclerosis that to distinguish them is very hard indeed ; yet , so close as their resemblance is , there is pathologically a gulf as wide as the Atlantic between them. I do not deny that in occasional instances , neurasthenia neglectd, or by bad treatment may be the precursor of sclerosis , or at least of permanent fixed congestion of the cord or its membranes -- just as it is the possible precursor of certain forms of insantity , but it is not the rule

that it should lead to these conditions any more than it is the rule that it should lead to insanity."

I have already pointed out that in spite of the statements to the contrary by Osler, who has "never seen an instance in which the clinical features pointed to organic disease which had followed upon a traumatic neurosis," there is no evidence whatever nor record of cases to prove that organic disease of the cord may follow traumatic neurasthenia. That insanity may follow a traumatic neurosis was the view held by Charcot, Oppenheim, Bataille, and Osler (Principles & Practice of Medicine) and Risien Russell (Bain's text book of medicine) are of the same opinion .Dent (Traumation & Insanity, in Tuke's Dictionary) considers that injuries other than cranial are an extremely rare cause of insanity but that it sometimes occurs, and the opinion that insanity follows rarely upon any injury other than cranial is upheld by an analyis of Page's record of 234 cases of railway injuries . In not a single instance did insanity occur .And I have not been able to discover it as having been a sequence to any of the 87 cases of traumatic neurasthenia which have come under my own observation.

In the face of these facts, is it not therefore most unfortunate that medical men should conjure up before the patients and their friends visions of organic spinal disease or insanity, as possible or probable consequences of traumatic neurasthenia . Such visions are the causes

of protraction and aggravation of the already existing disease, much mental suffering to the patient and friends, uncertainty and doubt in the physicians ' own minds , unnecesary litigation and waste of time and money. The prognosis has an important medico-legal aspect to railway, insurance ,and other such companies against whom a compen - sation claim may be presented , ,and surely it therefore is of some moment that a clear conception of the prob- able outcome of such cases may be obtainable. It is generally agreed that so long as litigation is pending the symptoms persist , and that a settlement of the claim is frequently followed by speedy recovery. If, therefore, medical men were familiar with the facts that a large proportion of thee cases make a perfect recovery , that in a few some of the symptoms may persist for an indefin- ite period that insanity is very rare indeed , and "paralysis" a sequence never at all , litigation would be resorted to less frequently , and the patient's recovery would be more speedy .

TREATMENT.

The first essential for successful treat- ment of neurasthenia is that the doctor should gain the confidence of his patient and assure him that not only will he most likely make a complete recovery but that "paralysis" or other permanent organic disease willnot follow. In all cases it is advisable to isolate the

patient as far as possible from sympathising friends . There must be absolute cessation of all work , and business matters should be avoided . I think it is of the utmost importance that even in mild cases rest in bed, should be enjoined from the first . One has repeatedly witnessed the result of the mistake commonly made of regarding the condition wholly as mental and ordering the patient to travel in order to "try and throw it off" No greater mistake can be made in the treatment . Rest, mental and bodily, is indicated , and in addition a liberal dietary , massage, and where paresis or paralysis is present general Faradism. Of drugs, tonics are indicated , such as strychnine, iron and arsenic; and hypnotics may be necessary for the sleeplessness and restlessness . They should be used with much care, and not continued for long. The best are trional and veronal and potassium bromide . Opium should be avoided lest meconism be induced . Local treatment to the spine , such as cauterisation , or blisters as recommended by Sir T. Mc. Call Anderson in the treatment of "spinal irritation" (lectures on clinical medicine) is sometimes very efficient .

The course of treatment may be required to be carried out for several weks and Horsley states that a "wide experience of traumatic neurasthenia shows that no case can be expected to end in recovery , if the symptoms be severely marked , unless treated by the Weir Mitchell method of counteracting ordinary Idiopathic neurasthenia"

TABLE OF CASES.

CASE 1. -- Male, aged 38. Train ran into buffers. Generally shaken. No external injuries; walked off platform. Same night experienced dimness of vision, ringing in the ears, frontal headache, pain and areas of hyperaesthesia down spine, and nausea. Later, had confusion of thought , depression of spirits, impairment of sleep and nerve deafness. Exaggeration of knee jerks, ankle clonus and sluggish reaction of pupils to light. Doctor misinterpreted symptoms as indicating organic disease. Exorbitant claim , and delay of six months in settlement.

Subsequent History. Returned to work soon after settlement of claim, and when last heard of , four years after the accident , was in good health.

CASE 2. - Male , aged 50. Collision. Thrown alternately backwards and forwards, striking head and back. Not rendered unconscious. Suffered from backache, headache, sleeplessness , loss of memory, genaral muscular enfeeblement . Exaggerated knee jerks; later, normal. Doctor considered him suffering from serious injury to spine. Litigation seven months after the accident, and awarded one-fifth of the amount claimed which was exorbitant.

Subsequent History. - Recovered soon after claim settled , but died two years after from alcoholism, it is said.

CASE 3. - Male, aged 44 . Carriage door flew open, and he nearly fell onto the line . Fright; no injury. On returning home felt ill and nervous, had pain in back, headache and shortness of breath . Became nervous, fidgety, moody and irritable. Found dilated heart , rapid pulse and exaggerated knee jerks. Example of neurasthenia following mental shock without any bodily injury .

Subsequent History. Three and a half years later his doctor wrote me that his patient stated he had never been the same man since the accident and that he was very nervous and apprehensive.

CASE 4. - Male,aged 65. Box fell on his head whilst he was walking along street. Slight scalp wound. No unconsciousness . No signs suggestive of injury to skull or brain . Hedache , mental depression, nerve deafness , constipation, nausea, looked old,

feeble, nervous and depressed. Temperature sub-normal. Pulse,90, very weak. Later had vomiting, ringing in ears, and could not bear to be left alone in a room. Memory failing. . Sudden death of wife soon after the accident undoubtedly aggraveted his condition .

Subsequently. - 5½ years later doctor reported patient still suffered from occasional headache , vertigo and deafness.

CASE 5 . Female, aged 69 . Fall between train and platform. Bruises to limbs; no injury to head. Confined to bed four weeks, and suffered from headache, general nervousness and sleeplessness. Patient also had rheumatoid arthritis.

Subsequently She recovered after four months, and five years later her doctor reported that she was free from any symptoms inferable to shock.

CASE 6. Male, aged 50 . Fall on platform owing to train moving on while he was alighting . Bruises on back of head and loin . Eight months afterwards was complaining of headache, Backache, loss of memory, impairment of eyesight, complete lack of sexual desire and vigour; was nervous, shaky and excitable

Subsequently Six years later he told me his memory was still very defective , and that he had not been able to have any sexual connection with his wife since the accident.

CASE 7. Male aged 43. Train ran into buffers. Was thrown alternately backwards and forwards . Black eye and fractured nose. Later on suffered from sleeplessness , vertigo ,headache, shooting pains about body, stiffness and cramp of right hand, burning sensation ,pins and needles. loss of memory. loss of sexual vigour , constipation . Lost two stones in weight , was very alarmed about himself, and showed great desire to discuss his symptoms in detail . Typical case. Six months after accident had a course of Weir-Mitchell treatment .

Seen four years later, complained of being nervous, did not like to be left alone in a room , could not concentrate his attention on his work: memory not so good; occasional headaches and vertigo.

CASE 8. Male , aged 54. Collision. Thrown alternately backwards and forwards in carriage on railway. Confused and dazed. Frontal headache, aggravated by mental effort, inability to concentrate attention on work, nausea, sleeplessness , numbness back of head and neck , inpairment of sight; two relapses . Recovered completely in twelve months.

CASE 9. Male , aged 55. Collision . Thrown fron seat. No bodily injury. Seen a few days later, complained of feeling waak and faint, depression of spirits, loss of sleep. growing numbness in legs Later, said he was unable to read for any length of time , and could not do his work. Knee jerks exaggerated

Had completely recovered at end of four months, and three years later was stated to be in good health.

Case 10. Male, aged 50. Collision. Thrown from his seat forwards, his head striking woodwork of carriage. No unconsciousness . From that time he had headache, sleeplessness, pain in back of limbs, and numbness in feet. Tenderness over lumbo-sacral articulation . Weakness and trembling when he stood up . Improved, but had a relapse six weeks later . Despondent and lachrymose . Dragged right leg when walking. Both legs stone cold from knees downward. Delayed tactile sensation down inner side of leg. No atrophy. Reflexes normal

Last heard of five years later . No history of spinal trouble whatever. Had worn glasses since accident, but in other respects was quite well.

CASE 11. - Male, aged 62. Collision. Thrown on to floor of carriage . Nobodily injury . Same night felt giddy and sick, and from that time suffered from vertigo, headache, backache and aching of eyeballs . Examination negative..

Six months subsequently had entirely recovered

CASE 12 - Male, aged 37. Collision. Standing up when accident occurred . Thrown against carriage seat. Received injuries to legs. Had sleeplessness, giddiness, faintness, pain in the head and down spine. Loss of appetite and strength , occasional vomiting . Exaggerated knee jerks . Marked ankle clonus. No spasticity and no Babinski's sign.

Confined to bed for some weeks , but at end of ten months had made complete recovery. Four years later doctor reported patient to be in good health.

(c.)

CASE 13. - Male, aged 48. Very serious collision . Thrown onto floor of sleeping car . Had to walk about in snow in middle of night until relief train arrived . Irregular and fast pulse . Left knee jerk not so active as right . General nervousness, impaired sleep , terrifying dreams, dread of travelling again by train, irritable, nervous , frequent micturition . Pain down spine, loss of appetite , and constipation . . Large claim settled without any delay .

Symptoms persisted for six months , and his doctor reported to me two months later that the patient had made a complete recovery

CASE 14. - Male, aged 30. Collision. Shaken only, no bodily injuries. Restless night, and felt sick Vomitting occurred from time to time during next fortnight. Later ,suffered from sleeplessness, startings in hands and feet as he was going off to sleep , and waking suddenly in startled condition . Other symptoms: mist before eyes , vertigo, pain in occipital region, dullheavy feeling in head, confused and dazed when attempting to work. Knee jerks exaggerated.

Recovered completely , but doctor lost sight of him after six months

CASE 15. - Male, aged 72. Shaken no external injury . Next day nervous and shaky, and from that time onwards suffered from nervousness, vertigo, depression of spirits. loss of appetite , vomiting, impairment of vision and hearing. Examination negative.

Fatty heart, probably aged. No exaggeration of symptoms.

Symptoms persisted for two years, and he had several very alarming faint attacks . Made a complete recovery and was last heard of three years after the accident.

CASE 16. Male, aged 69. Thrown from brougham in street accident.. Fell on back and head. Dazed. No sign of injury to brain or skull Had headache, dizziness, pain in back ,impairedxsleep and loss of appetite . Later was low-spirited and apprehensive of chronic invalidism , and gave way to tears. Knee jerks exaggerated

Since been seen several times driving in his brougham (traveller's) about London and looking quite well.

CASE 17. - Female, aged 45. Collisxion. Thrown from seat onto floor of carriage. Bruised about legs and arms. Headache, nervousness, very excitable. Dreaded thought of ever travelling again by train. Sleeplessness, and weakness in left hand Doctor had noticed much irregularity of pulse . Examination negative.

Seven months after her accident was reported to be in good health , but still dreaded thought of travelling by train.

CASE 18. Male , aged 38. Severe collision. Thrown onto floor of carriage, Felt giddy during next few days, and after a fortnight began to suffer from general nervousness , loss of memory, sleeplessness , excitability and irritability. Became low spirited, depressed and pre-occupied. Examination negative. Doctor stated his manner had altered completely . No exaggeration of symptoms.

Eight months after was reported by doctor to be stronger and better , but memory was so bad that he had to take a note of everything he carried about with him, or they would get lost.

CASE 19 - Female aged 28. Collision. Thrown alternately backward and forward in carriage. No external injuries. Became nervous, sleepless and hysterical. Woke at night screaming, cried at times for no apparent cause ; depressed, headache, pain in back , loss of appetite. Later anaemia and loss of flesh. Fine tremor of tongue; knee jerks exaggerated .

Doctor reported $3\frac{1}{2}$ years afterwards that her symptoms persisted for two years, during which time she was highly hysterical , but that she ultimately made a complete recovery.

CASE 20. Female, aged 54. Collision. . Thrown about carriage and onto floor. Received bruises to back of head and arms Pain in back and occiput, numbness down right arm . Menorrhagia . Very nervous and emotional; cried during examination. Impairment of memory Pulse 120 . Tremor of hands and tongue. Knee jerks exaggerated. .

Continued in this condition for several months, and when heard of four years after was in good health.

CASE 21. Female, aged 34. Street accident. . No injury. Much frightened. Said to be suffering from headache, impairment of sleep and loss of appetite . Lay in bed quite motionless and ablivious of what was happening around her. Mild trance. Five months pregnant . She was confined to bed for three months, and eight months after was quite recovered and in good health . (e.)

CASE 22. Male, aged 24. Blow on chest. No evidence of bodily injury. Precordial pain , palpitation, vertigo , faintness, impairment of sleep, vomiting. lost 4 stones weight in 2 years. Pulse 48 per minute, pupils dilated . Knee jerks not obtained. Bodily and mental lethargy : preoccupation.

When last heard of, had moved into country to work and was in good health.

CASE 23. Male, aged 52. Train ran into buffers. Small wound on forehead, generally shaken . Walked across platform. Motor sensory paralysis of legs; weakness and numbness of arms, diaphragmatic breathing. Analgesia and loss of temperature sense in legs. Loss of knee jerks. Paraplegia, entirely cleared up in six days. Later had pain in head and back , terrifying dreams, paraesthesia. Later, attacks of unconsciousness and epileptiform convulsions.

Four years later was reported to have been at work for last three years and in good health.

CASE 24. Male aged 31. Street accident. . Blow on lower part of occiput. Subjective symptoms, followed by nerve deafness . Complete aphasia for one day , epileptiform seizures , hemiplegia, hemianaesthesia hemianalgesia , loss of temperature sense and sense of position . Hemiplegia involved face , as also did the hemianaesthesia . Contraction of field of vision, discolation of color fields. No hemianopsia . Special senses all involved on left side, ~~but more marked at right~~ Real knee jerk exaggerated on both sides. No Babinski's sign; no spasticity , atrophy of muscles . or bladder symptoms. Intention tremor of arms, and staccato speech.

Six weeks later speech was found much improved and there was some return of power in left ;eg; left arm also could be moved more freely . Plantar reflexes absent on left side. Knee jerks and clonus as before. Sensory disturbances as before. A recent case, and still under stratment.

CASE 25. Male, aged 21. Fall from roof of building . Broken nose, various bruises about body. No unconsciousness . Paresis right arm and leg. Analgesia and loss of temperature sense right side of face. Both knee jerks exaggerated , and ankle clonus present on both sides Plantar reflexes elicited on right side but not on left . Six weeks later reflexes found quite normal

Eighteen months after, he wrote he had been at work nine months and did not feel very much the worse for the accident.

CASE 26. Female, age 25. Collision. Thrown alternately backwards and forwards in carriage. No external injury. Symptoms were headache , backache, sleeplessness, nervousness and repeated vomiting . Later sprained left ankle slightly and this was followed by talipis equino- varus Reflexes normal.

Heard of $3\frac{1}{2}$ years later and was quite well. Had been treated by suggestion and recovered in five weeks.

CASE 27. Female aged 40. Collision. Shaken. No external injuries except bruised right knee . Suffered from sleeplessness, general nervousness, trembling, headache, backache. Very apprehensive of permanent effects. Was inclined to exaggerate.

Five years later was in good health and free from any after effects.

CASE 28. -Female, aged 14. Thrown onfloor of carriage. Collision bruised right knee and loin . Pain down spine and tenderness on pressure. Generally ,nervous. Knee jerks exaggerated. Doctor apprehensive of permanent effects on nervous system .

Nervous for a long time and could not be induced to travel by train . Five years later was reported to be in good health.

CASE 29. Female, aged 21. Collision. Generally shaken and thrown on carriage floor ; bruised leg and arm. Nervousness, aching at back of head , pain down spine . loss of appetite and sleep . Spine tender on pressure. Knee jerks exaggerated. No clonus . Confined to bed for some weeks. A delicate girl with angular curvature of spine.

Five and a half years afterwards doctor wrote me that she was stillhighly hervous

CASE 30 . Male, aged 63. Street accident. Knocked down, various cuts and bruises about head and body. Headache, loss of appetite and sleep . Mental depression, Impaired vision, and nerve deafness.

Was well six months after, since when could not be traced.

CASE 31. - Female, aged 38. Street accident. Knocked down by railway van; wheels went over her legs. Bruised and shaken. Loss of sleep, headache and nausea, appetite lost , nervousness.

Died from alcoholism some months after.

CASE 32. -- Female, aged 32. Street accident, Struck in back by shaft of van . Nausea , loss of appetite, nervous, apprehensive, "pins & needles" in side. Examination negative.
Recovered in a few weeks.

CASE 33. Female, aged 58 . Collision. Thrown backwards striking head against woodwork of carriage. Several fainting attacks.,vomiting, pyrexia, headache, sleeplessness, generally nervous.
Cannot be traced.

CASE 34. Female , aged 21. Fell between train and platform. Struck forehead and sprained ankle Headache, vertigo, nervousness, frequent and painful menstruation , difficulty in micturition; also nausea and constipation . Examination negative.
Revovered in a few months and was well when heard of three years later.

CASE 35. Male, aged 41. Collision. Shaken; no wounds. That night was disturbed in sleep by sensations of load reports. Subsequently suffered from lowness of spirits, impaired sleep, inability to continue at work, vertigo, momentary double vision. Pulse 96, and when upright attitude assumed 120 ; irregular. Both knee jerks exaggerated, ankle clonus and Babinski's sigh on right side Supinator and wrist jerks also exaggerated .
Patient had only returned from a trip round the world for neurasthenia a few weeks before the accident. History of syphilis and had lateral sclerosis
Three and a half years later stated he still had vertigo and occasional double vision : could not attend to his business -- that of a Solicitor-- properly. Usually felt tired and had a headache; any exertion or excitement confused him; memory impaired. Reflexes the same, and right leg spastic.

CASE 36. Male, aged 61 . Fall. Engine Driver. Slipped while stepping onto engine, bruising his side . Has sickness , diarrhoea, general muscular enfeeblement , nervousness and trembling. Appeared feeble, weak and nervous . Away from work six months.
After history cannot be obtained with accuracy . Said to have died of "phthisis" two years subsequent to the accident

CASE 37. Female, aged 33. A Fall. Slipped in street, injuring a leg. Said she had never felt the same since the accident . Felt nervous and giddy and had lost weight
Subsequent history cannot be traced.

CASE 38. Female, aged 54. A Fall. Train moved on as

she was alighting . Received several bruises about limbs and body. Later suffered from nervousness , impairment of sleep and loss of sexual desire. .

Five years afterward she stated she had never been the same since the accident and was nervous and excitable.

CASE 39. Male aged 69. Street accident. Knocked down by a railway van. Scalp wound. Continuous frontal headache, sleeplessness, inability to settle down to anything, impairment od sight.

Symptoms lasted for several months, and he made a complete recovery

CASE 40. Male , aged 56. Collision. Thrown about carriage ; lips cut and teeth knocked out . Headache, sleeplessness . pain at back of neck. Generally nervous and apprehensive of permanent injury .

Complete recovery in about six months.

CASE 41 - Male, aged 58. Collision. Thrown from seat against fellow passengers. Dazed, bruises to chest and black eye. Unable to follow his occupation -- that of a commercial traveller.-- on account of giddiness , headache and general feelings of nervousness and depression .

Nervous symptoms lasted about twelve months, and he was reported to be in good health five years later.

CASE 42. Female, aged 40 . Collision . Thrown against opposite seat , but received no external injuries. Three weeks later she complained of pain at back of head and neck , between shoulders and down spine , and tenderness on pressure on spine . Forgetfulness,nervousness and depression of spirits. Examination otherwise negative. Reflexes normal. Inability to sit up for long, impaired sleep , left-sided headache, numbness of left leg and palpitation of heart .

Made a complete recovery in two months time , and when traced three years later was stated to be in good health

CASE 43. Male, aged 25. Street accident . Crushed between railway van and a brougham . Bruises generally about body . [illegible] body. Later complained of weariness and " a feeling as though something was going to happen " loss of sleep, pain at back , nausea, and low spirits and loss of appetite . Was nervous and depressed , apprehensive of permanent injury and so inclined to exaggerate Examination negative

Made an "uninterrrupted recovery"

CASE 44. Female, aged 2o. Collision. Thrown from seat of carriage , knocking her head against woodwork. Not unconscious. Went about as usual for next few days and then began to suffer from vertigo, pain in head and at back of eyes aggravated by any attempt to read ; nausea, loss of appetite ; desire to be left alone and quiet . Pulse 72, weak and irregular . Tongue furred . Otherwise examination negative .

" Some months before the nervous symptoms entirely disappeared . The most persistent was the cardaic irregularity. "

CASE 45. - Male, aged 49. Street accident. Knocked down ,injuring knee . Three weeks later complained of great pain in lumbosacral region ; said his legs were paralysed; had loss of appetite and nausea, constipation and occipital headache . Pulse 72, tongue clean , reflexes unaffected. Some exaggeration of symptoms.

Recovered in four months and was five years later none the worse for the accident

CASE 46. Male, aged 70 . Street accident. Knocked down by railway van; legs bruised. A month later he was found complaining of general nervousness , inability to sleep . There was considerable twitching of muscles and fine tremor of hands and tongue

Completely recovered in four months, and was in good health 5e years later.

CASE 47. Male , aged 31. Fall. Injured legs and feet, but no fractures. Said he had difficulty in passing water, pain down spine , loss of appetite , impairment of sleep , general nervousness . Was much worse after attempting to go out . Examination negative.

Recovered in six months, since when cannot be traced.

CASE 48. Male , aged 33. Arm amputated . Two months later he complained of headache , loss of appetite, impaired sleep , backache and feelings of great nervousness ; was very excited and nervous during examination.

Subsequent history cannot be traced.

CASE 49. Male, aged 52. Fall between train and platform. Sprained ankle. Later had pain down spine and "pins & needles" , loss of sleep, nervousness and some exaggeration of symptoms . Reflexes normal.

Recovered in a few months, and was quite well whenheard of 5½ years later.

CASE 50 - Male, 52. Collision . Thrown backwards and forwards , striking buttocks and occiput against carriage. No unconsciousness . Suffered from what he called "general lassiture" loss of sleep , pain and numbness at back of head and down spine. Feeling of loss of power in right arm , twiching and starting in the limbs, headache , loss of appetite, constipation ; very nervous and apprehensive of permanent incapacity for business . No evidence of motor or sensory paralysis . Reflexes normal Nervous temperament.

Recovered in about six months and was stated five years later to be in good health.

CASE 51. - Male, aged 64, Shaken in collision. Back of head struck against woodwork of carriage. Dazed but did not lose consciousness. Six months later complained of loss of sleep in consequence of bad dreams . Headache, vertigo, vomiting loss of memory and irritability, the headache and vertigo aggravated by any excitement or mental effort.

Four years afterwards wrote me that he was subject to fits of giddiness , bad headaches, and eyesight was somewhat impaired.

CASE 52. Female, aged 59 . Collision. Shaken and frightened ; no bodily injury . Complained of nervousness, trembling all over and consequent inability to attend to her household duties; also palpitation of the heart. Pulse irregular. Systolic murmur over pulmonic area.

Subsequent history cannot be traced.

CASE 53. Collision . Male aged 39. Thrown onto floor of carriage; nose bled profusely. Motor but not sensory paralysis left side of face in its lower part , hesitancy in speech ,tremulous tonge. When he attempted to write he notived a confusion of the letters and mistiness of vision , aching over ears. Low spirited and irritable. Loss of memory .

Died eighteen months after; cause of death uncertain.

CASE 54. Male, aged 38. Collision ; shaken, no bodily injury. Later felt dizzy and confused and had a headache , the pain was located to the back and vertex of head and was aggravated by light or noise. Ringing in ears , dimness of vision, pain down back of neck and left arm , irritability and inability to concentrate thoughts. Sleepless. Temp rose to 101' Tremor of tonge. Pulse 96

Recovered in about two months. Doctor reported four years later that he had not required any medical attendance since and was in good health

CASE 55. Male , aged 32. Collision. Thrown from seat onto floor of carriage. Nose bled freely . Felt very shaken and had to return home from business

Had sickness "generalised tremblings", startings of limbs at night , impaired sleep , frontal headache, giddiness aggravated by noise, constipation. During examination was seized with a general trembling of arms, legs, face and jaws as though he were shivering. Tongue furred and tremulous . Knee jerks exaggerated . When attempted to go for a walk he got tired very readily.

Recovered in a few weks and was reported four years after to be in good health.

CASE 56. Male , aged 52. Was standing up at time of accident, and thrown against woodwork of carriage, bruising left temple and spraining his wrist. Dazed feeling for some days after , impaired sleep, stuffy feeling from forehead through the occiput, depression of spirits inability to read or to concentrate thoughts . Examination negative .

Subsequent history cannot be traced.

CASE 57. Male aged 48. Fall. Depressed fracture of skull, occipital region . Difficulty in micturition and defaecation , occasionaly incontinence. Frontal headache , pain down spine , tenderness , feeling of numbness in buttocks , some impairment of hearing and vision . Knee jerks normal . No paralysis, no disturbance of sensation of legs, and no atrophy.

Subsequent history cannot be traced.

CASE 58. Female, aged 65. Street accident. Board fell on head and knocked her down . No unconsciousness No wounds except bruises. Six months later she complained of vertigo, impairment of sleep , pain in back, nausea, constipation . Low spirited and apprehensive of permanent illness . Heart dilated, V.S. at apex , and irregular in action . Pulse weak, 72. Tongue dry and coated . Reflexes unaffected

Made a good recovery and was well three years after the accident.

CASE 59. - Male, aged 55. Fall down lift. Bruised neck and leg . Rapidly lost flesh . Vertigo. Sense of weight in head. Loss of appetite and sleep . Backache, also anaesthesia right leg with diminution of reflexes, and on left leg there was hyperaesthesia and exaggeration of reflexes. Paresis in both legs . Considered to be suffering from myelitis.

An Italian, and returned to Italy, so cannot be traced.

CASE 60. Collision . Male, aged 53. Thrown onto floor of carriage, receiving numerous cuts and bruises about arms and legs, but not rendered unconscious. Pains in back, headache, and was "un-nerved" for some time

Recovered in a few weeks.

CASE 61. Female , aged 29. Collision. Thrown from her seat onto floor of carriage. Felt dazed and shaken, but received no external injuries. Vomited, and became very collapsed.. Later had nausea, vertigo, pain in the head and down spine, and impaired sleep, Felt generally very nervous and dreaded ever to travel again by train . When she attempted to read paper it seemd to turn red in colour . Had hot and cold feelings, and became despondent miserable , and wished to be left alone . Impaired hearing; systolic murmur in pulmonic area.

Subsequent history cannot be traced

CASE 62. Female, aged 62. Collision. Shaken , but received no bodily injury. . Vomited on arriving home and later fainted. When seen a fortnight after, complained of pain at bottom of back, headache, heavy feeling in the head, vertigo, shortness of breath, impaired sleep and loss of appetite. There was irregularity in the heart's action and dilation in the left ventricle, pulse 84.

Recovered in three months and reported herself in good health four years later.

CASE 63. Female, aged 27. Street accident. Knocked down, no bodily injury except bruise on occiput . Had headache, numbness back of head, said vision was impaired ; had vertigo, lost appetite, sleep impaired ; also "pins & needles" down back of neck. Pulse 84. Examination negative.

Doctor reported four years later that she had suffered from headache since the accident.

CASE 64. Female , aged 17. Street accident . Knocked down by van whilst cycling . Bruised shoulder, spained ankle and general shaking; fright. Later had headache -- most pronounced when she made any attempt to read or when she was excited . Shooting pain in face, loss of appetite and impaired sleep . Hysterical aphonia. Felt very nervous when out driving , and at times became giddy and "ill" , in consequence of which she had to return to bad. Pulse 96, tongue pale and flabby Reflexes normal

Regained health after one year and when heard of four years after the accident was quite well and on the stage

CASE 65.- Female aged 26. Bale fell from van upon her shoulders , knocking her down. A week later she began to feel pain in head and down spine. A feeling of compression in chest, loss of appetite and sleep, also "nervous and shaken up" Very nervous temperament.

Returned to work a month later and was in good health three years subsequently

Examination negative.

CASE 66. - Female, aged 58. Collision. Bruised knee and arm Complained of feeling nervous and shaken Loss of sleep. par-aesthesia in legs. Pulse 84. Examination negative . Very apprehensive . "Always of a nervous temperament " Made a complete recovery, and two years after was in good health.

CASE 67. - Female, aged 20 . Fall on stairs.. Six weeks afterwards complained of headache, dizziness loss of sleep, nervousness, constipation and vomiting. Laid up for six months. Since the accident has had headaches and "hysterical fits."

Doctor wrote me $3\frac{1}{2}$ years after that she still had hysterical fits, but was about to be married. In other respects she was strong and healthy

CASE 69 - Female, aged 56 Street accident. Struck in face by horse. No unconsciousness. Fainted and vomited soon after . Three weeks later ,said she felt nervous and unstrung, had pain in back, headache general trembling, loss of appetite, wandered in sleep . Pulse 108 , weak, Reflexes normal. Tongue not remulous

Doctor reported three years afterwards that she still had headache and had"never been the same since."

CASE 69 - Male, aged 31. Street accident. Boxes fell from van onto his head . Complained of pain in head , back and stomach, impaired appetite and sleep. Also when attempting to read "a white sheet seemed to come before his eyes " Spinal tenderness. Knee jerks very sluggish. Opthalmoscopic examination negative
Three years later reported to be in good health.

CASE 70. Male , aged 44. Fall from train onto railway line . Injured hand. Four months later was laid up on account of general nervousness , loss of appetite and sleep , twitching of muscles and of becoming easily tired out. Felt generally feeble and weak . During examination was very nervous and perspired profusely . Pulse 132. Heart dilated . Reflexes normal. Very introspective and apprehensive .
Subsequent history untraceable.

CASE 71. Male 33. Street accident. Case fell from railway van upon right calf,and left hip, knocking him down . No injuries other than bruising and a sprained ankle . . A fortnight later hysterical vomiting set in and persisted for several eeeks . Fainted several times when being examined . Complained of great pain in the abdomen . Very apprehensive, nervous and hypochondisical .
Subsequent history cannot be traced .

CASE 72. - Male, aged 26. Collision. Slight scalp wound on forehead . Two months later there was headache,giddiness and general muscular enfeeblement, on account of which he was unable to do his work , also headache and loss of flesh .
Subsequent history untraceable.

CASE 73. Female, aged 23. Street accident. Box fell from railway van an to her head , causing small scalp wound in paricta1 region . Later suffered from headache, nausea , vomiting ; and giddiness when she moved quickly . Headache was aggravated by moreement or excitement. She also menstruated a fortnight before her time . Pulse 72. Examination negative.
Subsequent history cannot be traced.

CASE 74. Female, aged 56 . Street accident. Blow on forehead from falling lamp ; not rendered unconscious . Doctor saw her same day and found her"very collapsed". A week later pulse rose to 100. Temperature never above normal . Vomited on one occasion. Month later complained of frontal headache on attempting to sit up & giddiness and a felling as though top of head were open; loss of appetite,constipation, failing sight, impaired sleep on account of terrifying dreams . Examination negative. Pulse 90. Temperature normal , pupils equal, Reflexes normal .

Her doctor wrote me 2½ years after that "she still complained of her head"

CASE 75. Female, aged 29. Platform accident. Struck on groin by barrow; knocked down. Received bruises only, and felt faint and shaken . Later had headache, sleeplessnes , impairment of appetite, and felt "her nerves were not quite right" Examination negative .
Further history untraceable.

CASE 76. Male , aged 22. Street accident. Case fell on his head from a railway van . Knocked down but not unconscious , and was able to walk home . Some weeks later he complained of pain on the frontal region and a feeling of tightness in the head , giddiness, inability to sleep and loss of appetite ; also general nervousness. Pulse 84, tongue furred and tremulous. Knee jerks exaggerated ; No clonus
Further history cannot be traced.

CASE 77 . Male, aged 25. Collision. Standing up at the time. Thrown forwards but received no injurie. Had headache, feeling of nervousness and worry in consequence of having seen several persons killed ; a worried kind of feeling and impaired sleep . Pulse 96. Pupils dilated . Reflexes normal.
Subsequent history cannot be traced.

CASE 78. Female , aged 41. Fall. No bruises or other injuries but "much shaken" . Seen a fortnight later in bed and complained of feeling nervous and frightened of being unable to dismiss the thought and fright of the accident from her mind; in consequence could not sleep and could not eat. Very nervous, and cried during the major part of the examination. Pulse 108. At time of accident was suffering from phthsis.
Recovered in two months and was able to get about but ultimately died of phthsis.

CASE 79. Female, aged 66. Collision. Slight injury to hand . felt very shaken and later in the day had headache and pain in lower part of the spine . Six weeks later also had numbness across back, feeling of bearing down, frequency of micturition , constipation and impaired sleep. Very imaginative, apprehensive and exaggerated.
Two years later she was reported to be in good health.

CASE 80. - Male, aged 53. Collision. Thrown alternately backwards and forwards in the carriage, striking occiput against woodwork. Felt dazed , but was not rendered uncon-scious. Following day felt great pain down spine , and from that time onwards felt giddiness, nervousness and impairment of memory . Very apprehensive and described his symptoms in great detail .

Pulse 90. Tongue large and furred ; both knee jerks exaggerated ; no clonus. Tenderness on pressure down spine.

Subsequent history cannot be traced .

CASE 81. Female, aged 30. Severe collision. Thrown alternately backwards and forwards in carriage, but received no bodily injuries . Within a few days she suffered from a feeling of general weakness and shakiness, had pain down back and a headache . Appetite and sleep were impaired and she was stated to be very nervous and continually talking about the accident . Pulse 96 . Examination negative.

Went back to America , and cannot be traced.

CASE 82. Male 35. Collision. Shaken, but received no bodily injury . Since suffered from an intermittent pain at back of head. Sleep impaired in consequence of terrifying dreams . Feels nervous and irritable . Very apprehensive of not being able to continue at his work -- that of a schoolmaster -- Tongue furred and tremulous, hands also tremulous., pulse 72, reflexes normal. Looked pale and shaken.

Eight months later his doctor reported him in good health and at work.

CASE 83. Female , aged 35. Collision. Thrown on back onto floor of carriage; shaken but received no bodily injury . A week later complained of feeling worried and tired out , especially toward night; starting up in sleep in consequence of terrifying dreams . Very apprehensive of permanent injury . Spasmodic twitching of face lasting sometimes half an hour, tongue large flabby and tremulous ; pulse 90, knee jerks exaggerated.

Reported to be quite well eight months afterwards

CASE 84. Female, aged 59. Collision. Thrown from her seat onto floor of carriage and received various bruises about body and limbs . A fortnight later complained of general nervous feelings , of being easily upset and more irritable than formerly ; loss of sleep and appetite, also constipation . Pulse 90. Examination negative.

In good health two years afterwards.

CASE 85. Female, aged 63. Collision. Thrown from seat onto floor of carriage receiving a bruise to leg &c. Confused at the time but able to go home . Suffered from headache - frontal and intermittent in character. . Backache , felt nervous, and trembled; sleep inpaired and appetite lost ; limbs felt very cold. Pulse 84, irregular ; tongue furred and tremulous; reflexes normal (q)

Nine months later was reported to be quite well

CASE 86. Female, aged 19. Collision. Thrown from seat. Much frightened but received no injuries except slight bruise to back of head. No unconsciousness. Complained of headache expecially on exertion, general nervousness and trembling; afraid to sleep alone at night, and found memory impaired. No loss of flesh. Nervous, excited and emotional during examination. Tongue showed fine tremor; knee jerks active.

Recovered in four months from date of accident.

CASE 87. Male, aged 47. Platform accident. Barrow ran into him, striking him on left hip. Continued his journey, but felt very ill, and from that day onwards suffered from dimness of vision, weakness of the legs -- especially of the left one; also depression of spirits. Said he did not care what happened to him and that he felt frightened, nervous, readily upset and put off his food. Could not attend to his busisss, as any attempt to do so upset him so much and made him feel very nervous. Had shooting pain down back of neck; no headache. Could not get off to sleep. Difficulty in making water. Noconstipation. Pulse 72; tongue showed fine tremor, and hands also. Reflexes normal. No contraction of fileds of vision, and no hemianopsia. Obviously very depressed, introspective and apprehensive of permanent illness. Showed great desire to discuss his symptoms in detail; free from exaggeration.

This case was examined only very recently.