NERVOUS DISEASES IN WORKMEN'S COMPENSATION

illustrated by

TWO CASES.

THESIS for the degree of M.D.

by

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NERVOUS DISEASES IN WORKMEN'S COMPENSATION.

The position of disease of the Nervous System in questions of Workmen's Compensation under the Act of 1906 is discrete from that of any other system of the body only by reason of the fact that nervous disease is, in the present state of medical knowledge, less easily assignable as the result of any pre-existing group of conditions. If one takes up any of the text books on nervous disease, which are in use at the present time, it will be found that excepting only the diseases resulting from a specific intoxication, e.g. syphilis and the mineral poisons, no constant assignable cause can be adduced as the promoter of the lesion discovered in any given case. The words "in the present state of medical knowledge" are used advisedly, for when one considers the complexity of the constitution of the Central Nervous System, and the difficulty of physiological examination in the elucidation of its mechanism, it will be at once allowed that no field of Physiology has been more assiduously tilled, or yielded more fruit to the hand of the cultivator. This is the more creditable when one considers that, whereas the advances made by Physiology in other fields in late years have been the result of experimental and chemical, rather than of clinical deduction/

deduction, in investigation of the Nervous System, one is dealing with the most highly specialised system of the body, and in consequence any disturbance in the adjustment of the vital processes influences the Nervous System more rapidly than any other, the range of experimentation being thus reduced in ratio to the specialisation of the tissue involved. In consequence we find that investigation of Pathological conditions is perhaps in greater use as a method of physiological investigation in the nervous tissues than in the other body systems. Until, therefore, physiologists are in a position to produce experimentally lesions which occur naturally as the result of disease, we must, it is feared, perforce content ourselves with such statements as that Poliomyelitis Anterior Chronica may result from "cold, wet, exposure, hard work, excess, or hereditary nervous weakness".

The result of this lack of knowledge is well seen in many cases of nervous disease which come before the Courts. For example, with reference to the second case reported, the following examination of medical witness for the employer might easily take place.

Counsel. "Do you consider that this man's condition of spastic ataxia was set up by the vibration in his work as traction engine driver?"

Witness. "No"

Counsel. "Do you consider it possible that this condition was the outcome of his occupation, when you hear that Broadbent has cited vibration as one of the possible causes of spastic ataxia?"

Witness/

Witness. "Possible but not probable"

On the other hand the examination of the medical witness for the applicant might run somewhat as follows.

Counsel. "Do you consider this condition likely to have been caused by his employment?"

Witness. "Yes"

Counsel. "Why?"

Witness. "Because he got better when not working."

Then the Judge, having before him two views; one that the applicant's condition was not, in fact, the result of his occupation, although it was possible for it to be so: The other that it was not only possible, but likely to be the result of the occupation, gives what, to the layman, is the obvious answer, and awards in favour of the applicant.

Examination of witnesses in this fashion is obviously directed less with the aim of arriving at a just decision, than of winning the case, and thereby tends to the deterioration of expert advice. Unfortunately it is only too common, and results in many cases being granted full compensation, which should not, by reason of the weakness of the medical basis, have received any such amount. The truth of this state of things is notorious amongst medical men who have engaged in compensation work to any extent, and it is feared that, by reason of the opprobrium which is brought upon them in County Court work, the more scrupulous doctor is being more and more deterred from appearing/

appearing in compensation work.

It may be asked why nervous disease and injury have been selected by the writer from the multitude of cases which come before the courts directly or indirectly. This was done for two reasons:-

First. Because from the nature of the case under review, the uncertainty of just decision being arrived at is well exemplified. No diseases are more difficult of determination, because the causes of many nervous diseases are obscure, while in others the effects are so difficult to correlate with the cause, by the lay mind.

Secondly. Because the compensation work which the writer has engaged in, has consisted mainly of nervous disease and injury, to the exclusion of general compensation work. The scheme of this thesis, therefore, will be (1) To give the history of two cases of nervous disease and injury which have come before the notice of the writer, as illustrating the various points of the compensation aspect. (2) To discuss them from the point of view of medico-legal significance. (3) And finally to indicate his views on the administration of the Act.

A case of gumma of the cord, for which compensation was claimed, the condition being alleged to be the result of lead poisoning; diagnosis confirmed by autopsy.

This patient came before the writer in hospital, and the case is of considerable interest as exemplifying the difficulty of arriving at a definite diagnosis in cases of nervous disease where a trade toxaemia complicates a definite lesion of the tracts of the spinal cord.

F. M. P. Aet.47. A painter of steel vessels; was admitted on September 30th, 1911, to the Monkwearmouth and Southwick Hospital, suffering from weakness of the lower limbs, which had been present more or less for three years, but which now rendered him incapable of following his employment. The diagnosis under which the patient's own doctor sent him in to hospital was that of lead poisoning.

History of illness and condition on admission.

About three years previously patient felt some pain in the small of the back, which he attributed to lumbago; but shortly after this his feet began to feel numb, and he found he had some difficulty in walking along the staging to the ship's side, and stated that this was of the nature of a stiffness in bending the leg; further, it was inclined to shoot out again with undue/

undue violence, so that he sometimes struck his foot against the timbers, etc. This continued for two months, and the patient, having previously suffered from symptoms of lead poisoning, concluded that this was again troubling him, and took a holiday for a month. At the end of this time he felt better, but having secured work on a farm, gave up his employment as ships painter, and devoted himself to outdoor work. He continued at this work for six months, till one day, bending over some cans in a dark stable he fell forward. This happened once or twice, and always in the same dark stable, so that the patient never went in there without a light. In fact he says he never went into the stable if he could possibly help it. To continue in some of the patient's own phrases, which are picturesque, he soon found that he could not stand steady in the "mirk", and within a fortnight of falling down in the stable, became as "dothery as a leaf" owing to the difficulty in manipulating his legs, which had become very "fractious". He had noticed no weakness in the legs before falling down, but since then his walking had got rapidly worse, and he was inclined to think he had injured himself in the fall. He then consulted the doctor, who advised him that he was suffering from chronic lead poisoning, and sent him in to hospital. The history of the previous illnesses is exceptionally interesting.

At the age of 30 the patient, who had been feeling out/

out of health for over six months, was greatly troubled with colic. Being aware of the importance of this symptom, as being attributable to lead poisoning, he consulted a doctor, who gave him no very definite diagnosis, though he said it might be due to the lead, and gave him some medicine which prevented the colic returning. He continued at work for two months, but about this time his mind began to give way, and eventually he was certified as insane, and removed to an asylum. The writer has had the opportunity of seeing some notes made on the case at the asylum, and finds that the diagnosis of myxoedema was made on admission. Thyroid was administered, and after eight months patient was discharged, cured.

Since that time he has never been without thyroid in the house, and has never had any similar symptoms. Of other illnesses there is no definite history. Syphilis is denied, but gonorrhoea is admitted. There was no history of alcoholism nor any sign of tuberculosis. State on admission. - The patient, a slim somewhat anaemic looking man of 47 years, was able to walk to the hospital, but unable to mount the stairs, and had to be carried to the ward. When made to walk along the ward, his gait was noted to be markedly ataxic in character.

Subjective Examination.

On examination it was surprising to find that, though the gait of the patient was what one might have termed/

termed typically ataxic, the knee jerk was present in the right leg, markedly exaggerated, while Babinski's sign was also obtainable in the right foot. On the left side no knee jerk was obtainable even on reinforcement, and though repeated efforts were made, no response of any kind was made to scratching or tickling the feet, and the patient said he could not feel it. A searching examination was then made of both legs with the following results.

I. Right Leg.

Is firmer and larger than the left, measuring 9½ inches to 9 inches on the left.

Motor Functions. Patient can move his leg with some difficulty, and says it always has a tendency to become adducted towards the other limb, when he rises to flex or extend the limb at the knee. The limb is slow in responding, but completes the effort with a jerk. On testing the reflexes the knee jerk, as noted, is exaggerated; Babinski's sign is present, there is no ankle clonus demonstrable, but the Achilles jerk is present. There is no hypotonia in this limb, the knee not lending itself to over distension, nor the ankle to torsion.

Sensation. Sensibility to touch and pressure is lost over the sole and foot, and over the leg as far as the knee. It is diminished above the knee for three-quarters of the length of the thigh; above this/

this it appears to be normal, excepting the apex of the glutial area, which is anaesthetic.

Sensibility to heat and cold are not impaired over the leg; indeed the leg appears to be somewhat hyper-aesthetic.

Muscular sense in the right leg is impaired, the patient being unaware of the position of his feet when moved. The patient's attempt to approximate the right heel to the left knee is partly successful, but jerky, and un-co-ordinated.

Electrical Reactions. These were gone into with assiduous care in both limbs. In the right, the reaction of degeneration was demonstrable in all the muscles of the thigh, with the exception of the muscles supplied by the obturator nerve,viz., Grcilis,Obturator externis, and adductors longus, brevis, and magnus. This last muscle reacted slightly to the Faradic current, but the reaction to galvanic was sluggish in character and elicited by a lower current than that required by the other adductors.

II. Left Leg.

Is thin, flabby and inconsequent.

Motor Functions. Patient can move the leg easily, but cannot control it in the same degree as he can the other. It is much the more "fractious", but there is no difficulty or stiffness in commencing a movement.

Reflexes. Knee jerk, Achilles Jerk, and adductor jerk are all absent, even on re-inforcement. There is no Babinski's sign present, but there is distinct tendency to over-extension of the knee, and the ankle is/

is swollen, the result of a sprain.

Sensation. Sensilbility to touch and pressure, as in the right leg, is lost over practically the whole limb. Sensibility to heat and cold were absent below the knee, and diminished above the knee, the sensation time for heat being appreciably prolonged.

Electrical Reactions. There was no reaction of degeneration found in any of the muscles of the left leg.

Hypotonia and Ataxia. From the examination of the lower limbs it is thus seen that, while symptoms of spasticity appear in the right leg along with sensory lesions, in the left leg the symptoms are markedly ataxic in character, and valuable corroboration of this is obtained by taking the reactions to electricity. One would thus expect that there would be a marked difference in the action of the limbs in walking. But this was not so, and the right leg appears to be as uncontrollable as the left when the patient perambulated, though when examined separately it showed all the evidences of spasticity. It is probable that this condition was more apparent than real, but one wonders whether, in the muscles served by the obturator nerve there may not have been some deficiency of muscle sense which played some part in producing this apparent ataxia.

The patient bends forward to watch his feet as he walks. Rombergism is marked, and the patient would frequently topple over if made to close the eyes. The pupils/

pupils are small and myotic, but regular, and no Argyll Robertson phenomenon is demonstrable. No optic nerve atrophy, or other evidence of lesion of any of the cranial nerves. Trophic changes in the lower limbs are not marked though the patient complains of having "poor healing flesh" in the legs; there are no perforating ulcers in the foot. Sudden diarrhea was a notable feature of the case; while on admission the patient suffered from over extension and dribbling of urine. On examination the arms were not found to be affected.

From this potpourri of symptoms, it was an extremely difficult matter to extract an essential and definite diagnosis. In point of fact, in view of the contradictory nature of the symptoms, none was made for close on a fortnight, and in the meantime a Wasserman reaction was instituted. The result of this was positive, while lumbar puncture revealed the changes usually found in specific disease. It need hardly be remarked that this information was of greatest value, for though it allowed of no dogmatic opinion, it nevertheless permitted one to say that in all probability the primary lesion in the Central Nervous system was of syphilitic origin. The question then came to be:-

1. Is this a case of Tabes Dorsalis, wherein symptoms of general Paresis also occur?
2. Is it a case of Tabes with anomalies on the right side due to symptoms of lead intoxication?

3./

3. Is it a case of Gumma of the Cord with possibly associated Tabes?

4. Is it a case wherein Tabes enters at all?

It need not be denied that the first of these four was strongly attractive as a diagnosis, especially in view of the teaching of Fournier that Tabes and G. P. I. are "not merely diverse expressions of the same morbid entity, but in reality one and the same disease". Nevertheless it was felt that this diagnosis, based as it was, on somewhat incomplete premises, since most of the typical symptoms of general Paresis were absent, savoured of slackness. No symptoms of mental or Psychic degeneration were noticed; no slurring of Speech; no expansive ideation. The most that could be said in this direction being that the patient was optimistic and easily satisfied. General Paresis, however, cannot be diagnosed on the presence of an exaggerated knee jerk, a difficult gait, and disturbances of the bladder and rectum. So that a diagnosis of combined Tabes and G. P. was departed from, not, it must be allowed, without some misgiving.

The second of these four possible diagnoses was one of considerable importance, in view of the legal issues depending on the opinion arrived at. Were the nerve lesions denoted by the patient's symptoms attributable in whole or in part to absorption of lead by the patient in the course of his employment? It was to/

to be noted that the man, inspired, no doubt, by the fact that he had previously suffered from Plumbism, honestly believed that his condition was the result of his occupation, and that his own doctor had told him that this was probably the case. On careful inquiry, however, the typical symptoms of lead poisoning were found to be absent from the history of the case. Colic had not been complained of to any degree, and though more or less frequent headache, coupled with pain in the back, had been experienced, the classic blue line at the base of the teeth was absent; nor could the metallic salts be recovered from the urine; but the most important objection to such a diagnosis was that the symptoms of nervous trouble were not referable to any of the characteristic groups of lesions found in lead intoxication. The arms and wrists were strong and well nourished, and under full control. The paralysis of the feet produced, not foot drop, but a stamping, thumping gait. No lower neurone degeneration therefore was present. A possible alternative was that there was an upper neurone lesion set up by a condition in the spinal canal, analogous to a form of Encephalitis, induced by lead poisoning, cases of which have been described by Osler and others. Considerable search was made not only in the text books of Medicine and Neurology, but also in the records of compensation cases arising out of lead poisoning, but no case was found/

found wherein a similar condition was described. It was therefore held that the only part lead poisoning had played in the production of the condition was a possible weakening of the resisting powers of the body, which allowed the specific disease to exert deleterious effects on the nervous system.

The third diagnosis which suggested itself was that of occurrence of a gumma in the spinal cord; and the excellent progress of the case under anti-syphilitic treatment lent support to this diagnosis. Here was a man suffering to all appearances from Tabes, except for the right leg, which was unmistakably spastic. What condition in the spinal cord could cause such a state of affairs? Obviously a tumour of some description affecting mainly the posterior columns of the cord, but also affecting, whether by pressure or by invasion, the lateral and interior columns actuating the right leg. By far the most likely tumour in this case was gumma. This diagnosis was ultimately decided upon.

The following questions then suggested themselves:-

1. At what level in the cord was the gumma to be found?
2. Is this diagnosis of gumma sufficient to account for all the symptoms in the case, or is Tabes also present?
3. What is the cause of the anomalous electrical reactions in the right leg.

1. The Level of the Lesion. The level to which anaesthesia extended upwards from the feet corresponded fairly/

fairly accurately to the area supplied by nerves entering the spinal column below the level of the second lumbar segment, while the motor symptoms, leaving out of account the obturator nerve, confirmed this site as the level of the lesion.

2. Is Tabes also present. This question was at first answered in the affirmative, but more mature consideration led one to desert this view, in the belief that, though most of the symptoms of Ataxia present might have been caused by Tabes, the spastic symptoms were entirely foreign to this disease, while both the spasticity and the ataxia were referable to gumma. Further, the focability of the lesion rendered possible by the localisation of the symptoms to the lower limbs made the presence of Tabes less likely.

3. The anomalous Electrical reactions of the muscles served by the obturator nerve is not easy of explanation, and the only theory the writer has to offer is that, for some reason, the upper neurones governing the filaments of the right obturator nerve did not suffer from the encroachments of the gumma.

The diagnosis eventually arrived at, then, was gumma of the spinal cord about the level of the third lumbar segment, involving the posterior nerve tracts on both sides, and extending to or influencing the lateral nerve tract and anterior motor tract on the right side.

Further History of the Case.

Upon this diagnosis anti-syphilitic treatment was continued/

continued until the patient was ingesting 120 grs. of Pot. Iod. daily. This, combined with regular exercise on the lines of Fraenkel's exercises, resulted in the patient regaining complete co-ordination of the right leg, and a certain amount in the left leg. At the end of ten weeks he was discharged fit for light work, and very shortly afterwards he left the town, and was lost sight of.

Three months later the writer, who had been asked by the man's previous employers to report on the case, compensation having been applied for on the ground of lead poisoning, heard from them that the man had died in Wales of apoplexy. By consent of the parties an autopsy was performed, and the brain and spinal cord removed for a report by a pathologist. Unfortunately a copy of this report is not now obtainable, but it was to the effect that the cause of death was rupture of the Lenticulo Striate branch of the middle cerebral artery, causing apoplexy; that miliary aneurisms were found throughout the cerebral arterial system; sections of the spinal cord were made at different levels, and at the level of the fourth lumbar vertebra a gumma was found growing in from the meninges, and involving the posterior region of the cord. Nothing was said in the report as to the motor area being involved, and no opinion was expressed as to the possible part played by lead intoxication.

Legal/

Legal History and Comment.

Legal proceedings were instituted for the recovery of compensation, on the ground of lead poisoning, by the man some months before his death, but, possibly owing to the difficulty likely to be experienced by his legal advisers in the matter of obtaining fees, these were not pressed until after his death, when such expenses would be obtainable by order of Court from such lump sum as might be awarded. The case came before the County Court Judge in June 1912, was argued before him along with a medical referee, appointed by him as assessor. The hearing occupied two days, and the grounds of action taken by the man's medical witnesses were (first) the man had died from apoplexy, the result of endarteritis set up by lead poisoning: that while they did not deny that the man had suffered from syphilis, yet the unusual and anomalous character of the symptoms pointed to the fact that lead poisoning had devitalised the man's nervous system and that the man had previously suffered from lead poisoning. For the employer it was argued that the cardinal symptoms of plumbis were missing from the case, that there had been no direct evidence given of previous lead poisoning, and that both the diseases of the arteries and the nervous degeneration symptomised by the man's condition for three years previous to decease were not only explicable as the sequelae of specific diseases, but were pathologically demonstrable to be so. The hearing occupied/

occupied two days, and the case on the application of the medical referee was, to use a phrase peculiar to Scots law, taken to Avizandum. Judgement was given at the next Court in favour of the employer; his Honour holding that lead intoxication had not been established.

A Case of Spastic Ataxia alleged to be due to an injury to the back.

This patient also came under notice in hospital, where he was admitted, suffering from partial paralysis of his lower limbs. The case is noticeable, not for difficulty in diagnosis, but for the opinion held by the man's medical attendant as to the causation of the disease.

J. H. Aet. 36. A married man of no family, was admitted to the Monkwearmouth and Southwick Hospital, suffering from pain in the back, stiffness of the legs, and retention of urine.

History/

History of illness and condition on admission.

Four years previously the patient began to feel some twinges of pain in the knees, which shot down to the calves of the legs. He put this down to getting wet while at work, and did not trouble much about it at first, but soon after he called in the doctor, as he began to be troubled with sudden attacks of diarrhea, which came on without warning, and independant of any desire to defaecate. He got some medicine which stopped this, but he began to become unsteady on his legs; he found that his toes dragged as he walked. The doctor made him stay in bed for three weeks. At the end of this time he was quite recovered, and started work again. After being two months at work, during which time he felt quite well, he got hit in the back by a baulk of timber, and had to go to bed. He was severely hurt, though no bones were broken, and was off work for a month. On starting again he found that his legs were very bad. He could hardly walk to his work; but when he got on his engine, and got it started, he felt quite steady, and had no difficulty in moving about. He continued in this condition for a long time, still at work, though he had occasional days off owing to diarrhea which still troubled him at times.

About November 1910, he had to leave off work again owing to the difficulty he had in walking. After being/

being treated at home for two months he was sent to the hospital on January 21st, 1911. He was six weeks in hospital, and went out much better, again returned to work, and remained at it until September, when he got a severe wetting, and influenza followed. His old symptoms returned. He had great stiffness of the legs, and often tripped and fell. He was treated at home but got no better. The retention of urine supervened, and on December 21st, 1911 he was again admitted to hospital.

On admission, patient, a well proportioned man of 5 ft. 7 in., could not walk upstairs without assistance, but could walk along the ward with the aid of a stick. Temperature 98.5. Pulse 80. No history or marks of venereal disease were discoverable.

Genito-urinary. Patient had no control over bladder, no warning of desire to micturate, and urine used to dribble from him. Cystitis has been present, but there were now no symptoms of it, and the urine was normal.

Examination of the Nervous System. The intellect was bright, speech normal, a quiet sleeper, but easily awakened.

Motor Functions. The grip as shewn by the dynamometer was - left, 85; right, 80. No in-co-ordination of the arms was found, and muscular sense was normal.

The gait was a spastic scissor gait, the legs being/

being strongly adducted, and interfering with one another. A fairly straight course was held, but he staggered on attempting to turn. Rombergism was marked; the knee jerks were strongly exaggerated in both legs. Babinski's sign was present bi-laterally, as was ankle clonus, but this was more marked in the left ankle.

The muscular sense of the legs, as shewn by hanging weights on them, was impaired.

Sensation. There was no disturbance of sensation in any part of the body, nor any Trophic derangements. The special senses were normal. No Argyll Robertson pupil. The Fundus showed no changes from the normal.

Electrical Reactions. The Reaction of Degeneration was found in the muscles of both legs; not found in the arms.

Diagnosis. A diagnosis of Spastic Ataxia was made. The parts of the spinal cord affected were the direct and crossed pyramid tracts, and the Postero-external column of Burdach. The treatment followed was rest in bed, and Pot. Iod. was given. The patient remained thirteen weeks in hospital, and left feeling much improved. He could walk without the aid of a stick both up stairs and on the level.

Further History of the Case. Patient went back to work after leaving the hospital, and remained at work till September 1912. Growing worse, however, he/

he went to the Royal Infirmary, Sunderland. There he died under anaesthesia from shock due to perforation of the bladder during cystoscopy.

Medical-Legal History.

No claim for compensation was made by the man until September 1912, when proceedings were commenced on the ground that the condition was due to the accident which happened three years previously. This was repudiated by the employer, and an action was filed. The writer had hoped to be able to give the result of that action, which was down for hearing at the last County Court. The case has, however, been postponed till the next court by agreement.

Comment. This case is not nearly so complicated as the previous one, as the diagnosis is sufficiently certain. The question of whether the patient is a fit subject for compensation is not so easy. In the writer's opinion, the accident on which the claim is made had very little to do with the condition of the patient. The preliminary symptoms of the disease had appeared three months before the accident took place, and, while the latter may be held by the Judge to have hastened the onset of the disease, the slow progress of the case hardly bears this out. On the other hand, if the ground of claim had been that the disease was set up by the vibration of a shaky traction engine, the writer would have been inclined to agree with this view/

view. May the spasticity not have been set up by the constant calls made upon the motor tracts to counteract the vibration, which, by frequent occurrence weakened and impaired the nerve cells involved? Lesions are present in the tracts which would most often be called upon, and therefore most likely to be injured. The condition would therefore be comparable to telegraphist's cramp, or miner's nystagmus, both of which are scheduled in the Compensation Act as industrial diseases.

The difficulty of this basis of claim is that it is devoid of proof. No similar case can be discovered in the records of compensation, so that the only evidence that could be adduced would be the analogies indicated above, together with the probability of the sequence. The writer has been asked by both parties to give evidence in the case, but has not felt disposed to do so. At the same time the case is a very suggestive one, and is probably more deserving of compensation than many successful ones.

Views on the Administration of the Act from the Medico-Legal side.

To whichever side the sympathies of a medical man may tend in the various questions of relations between employer and employed, which agitate the industrial world to-day, there can, I think, be little doubt that in the matter of workmen's compensation, the consensus of medical opinion is that experience has revealed defects in the Act of 1906 which have not only resulted in decisions being arrived at which are far from being just from the medical man's point of view, and have, in effect, extended beyond the intentions of the original framers. This Act has now been in force for six years, and it may not be amiss to give the compensation figures for the last three years for which returns are available, and which refer to the seven great industries of the country, viz., Shipping, Factories, Docks, Mines, Quarries, Constructional Work and Railways, which are compiled from returns made by employers in pursuance of the order of the Secretary of State. (See table, next page.)

It will be seen from the table, that the charge per person employed has risen by 9d in 1911, and by 10d in 1910. The figures for 1912 are not available, but on/

Number of Persons employed.	1909. Total Compensation paid.	Charge per person employed.
6,560,745	£2,274,238	6/10
	1910.	
7,025,074	£2,700,325	7/8
	1911.	
7,305,997	£3,056,404	8/5

on inquiry of the officials of six Employer's Liability Insurance Companies, it appears likely that the increase will not be more than 6d in 1912. In view, therefore, of the enormous and increasing charge on industry which results from the act, it is certainly incumbent on the medical profession either to prove the accuracy or otherwise of the widespread impression that is held that the act operates unfairly upon the employer, and so remove suspicion from it, and if the act be found to be prejudiced, to indicate the necessity for amendment and the lines upon which the amendment should be done.

First let us consider the question of the fairness or otherwise of the acts relating to workmen's compensation. Proceedings for recovery of damages or injuries to workmen may be taken (1) At common law, which is only an application of the general governing principle that where there is fault there is liability. (For damage caused by the ordinary risks of employment there is no liability.) (2) The Employer's Liability Act 1880, whereby the employer is liable for the fault of his servants, and (3) The Workmen's Compensation Act 1906, which is an extension of the acts of 1897 and 1900. Under this act an employer is liable for accidents to workmen arising out of or in the course of the employment. As far as can be discovered, no proceedings are now taken at common law. Under the Employer's Liability Act the diminution of the number of/

of proceedings taken from 604 in 1907 to 223 in 1911 illustrates the tendency of the remedy provided by the older act to fall into disuse; and, in the circumstances it is sufficient to confine this essay to the Workmen's Compensation Act of 1906.

The principle of Workmen's Compensation has sprung into being within the last thirty years, and gives particular example of the striking evolution of our industrial relationships from that of master and servant to that of employer and employed. With this evolution the State has intervened to regulate these relationships, and such regulation has tended to improve the status of the workman from that of a servant to that of employee. The process is thus essentially one which champions the weak against the strong, or, at all events, the individually weak against the individually strong. But in this process it is to be feared that safeguards against the misuse of his newborn powers by the individual have not been erected. Further, according to the report of one of the largest insurance companies, it has been the experience of employers that cases wherein the issue has been doubtful have generally been decided in favour of the employee, although the burden of proof of accident and its consequences properly falls on the latter. To some extent this is borne out by the returns issued by the Home Office for 1911. Of 5767 cases settled judicially/

judicially under the Act in the United Kingdom, the decision was in favour of the applicant, i.e., the workman, in 4504, or 78.1%.

The writer once submitted to a meeting of a medical society twelve consecutive cases taken from the records of a county court, wherein the action lay on grounds purely medical, and submitted each case to a vote. Ten of the actions had been decided in favour of the applicant, and compensation awarded. The finding of the "Medical Jury" was that the condition occurring in four of the cases was the result of accident, but that in the remainder the condition was neither the direct nor indirect result of injury. "If these things be done in the green tree, what shall be done in the dry" is the question which suggests itself, when the comparative recency of the principle of workmen's compensation is considered.

But it is possible perhaps that we are looking only at one side, when we consider these apparent discrepancies. Are there not many employers, who, through the ignorance of financial feebleness of the injured individual, manage to evade the obligations which the act throws upon them? Unfortunately, this is certainly the case, as many medical men can testify. They are usually small employers who do this, especially employers of workmen who are not attached to some trade union. It is to the credit of certain of these great organisations that they have taken a leading part/

part in obtaining for their members the reparation the law allows for injuries, and doubtless there will soon be universal extension of the practice. What the extent of this failure to accomplish the beneficial effects of the act is, it is impossible to estimate; but, whatever it is, there can be no doubt that with the increasing facilities afforded the workman for recovery of compensation it is tending to right itself. The increase in the number of compensation cases brought is sufficient evidence of this. But it is only fair to point out that while the deficiency on the side of the employed is due to causes which are chiefly external and alien to the act, the deficiencies militating against the employer are the outcome of inherent weaknesses in the act itself.

Chiefest among these weaknesses is the anomalous position of injury which lights up, or exacerbates pre-existing disease. It is the fact that the Workmen's Compensation Acts take little or no account of the modifying effect of disease on injury, while there can be little doubt that, in the converse proposition, viz., the effect of accident on disease, the application of the law has broadened the bases upon which claims for compensation are sustained to a degree far beyond the intentions of the original framers of the Act.

The act makes no attempt to protect the employer of diseased men, even where disease may be due to wilful/

wilful misconduct, the only reference being in connection with industrial diseases, whereby under section 8. 1(B) of the act which states that "If it is proved that the workman has at the time of entering the employment wilfully and falsely represented himself in writing as not having previously suffered from the disease, compensation shall not be payable."

In consequence of this hiatus in the translation of the intention of its framers into the provisions of the act, diseases which have hindered recovery from minor accidents are not taken into consideration in estimating the damage due to accident, while diseases which are first brought to light through the agency of accident are accounted the result of that accident, and proportionately compensable. A striking example of the former group is a case of rupture of an aortic aneurism, consequent upon strain, was taken before the House of Lords in 1908, wherein judgement for full compensation was awarded the applicant; while of the latter group the sudden appearance of tuberculosis, especially tuberculosis of bone, following a trivial injury, and the whole series of nervous conditions, set up in cases of injury to the spine, are sufficient evidence of the unevenness of this legal though illogical standpoint. The ultimate ground on which compensation was applied for in case No. 1 of this essay, forms an excellent example of this latter group of/

of cases, viz., that though the nervous condition found in the employee was not the direct result of lead poisoning, yet the lead poisoning which had previously existed, had lowered the resisting power of the nervous tissues, and rendered them an easy prey to specific diseases. The writer is convinced that, had this view of the case been argued with more legal skill, or especially if the Judge had not appointed a medical referee to advise in the case, compensation would have been awarded.

What then is the position of the employer in regard to the utilisation of the potentially diseased workman. He is, owing to the difficulty of the act, between two stools. With few exceptions the Trades Unions have shewn themselves strongly averse to allowing preliminary medical examination of the man before commencing work at any place of employment. The experiment was tried in New Zealand, and resulted in strikes and labour troubles. Nor is it difficult to understand the attitude of trade unionists, short-sighted and prejudiced as it may appear, because in the present position of the law the employer has only two courses open to him in dealing with the man in whom disease is present, either to refuse him employment, or to employ him and pay full compensation should he meet with an accident. The former plan is found to be unworkable owing to corporate opposition

or/

or sometimes to deficiency of skilled labour; hence the latter is universally adopted at present, it being the only possible one.

What then should be done in connection with the potentially ill man? Is he to be excluded from employment because of the possibility of accident exaggerating his disease? This is unnecessary, provided effective alteration of the law, which would guard the employer without prejudicing the employed, were effected on the following lines. The employer should have the legal power to conduct a medical examination upon his workmen. If any man were found suffering from a disease he would, after having had the existence of this disease corroborated by the certificate of a factory certifying surgeon, or other officially appointed medical man, be classed under special heading, and be paid only a moiety of the compensation due to a healthy man, in the event of injury exacerbating the disease, since he would later on, in all probability, have developed the disease naturally. If legislation on these lines were adopted, it would operate with justice to both parties, and render recourse to the law courts much less frequent.

It may be asked, would the employers be prepared to face the expense of appointing medical examiners. There is little doubt that, acting under pressure from the insurance companies, and their own mutual insurance corporations, they would do so. The expense of examining/

examining 20,000 men need not be greater than £1000, and even should this examination be repeated at intervals of two years, there would certainly be a balance on the credit side resulting from the diminution of the total amount of compensation paid. In fact many colliery owners in the North of England do employ a medical man to examine their employees periodically, and are satisfied that they benefit financially thereby.

It is more debatable if the representatives of the workmen would readily agree to such provisions, but still they have shewn themselves at least cognisant of the unfairness of the present state of the Act, and have recognised that one of its results is the disinclination of employers to engage, or continue in employment aged or infirm workmen. It is probable that with the removal of the cause, this unwillingness would disappear. The chief danger to the promulgation of such an amendment would be lest the exigencies of political life would prejudice judgement on the merits of the case: the danger of the medical examination being misused by the employer in order to avoid the risks of compensation would be avoided by requiring the certificate of the factory surgeon.

The question of medical referees in compensation cases requires consideration. It is thought that having regard to the large number of actions brought before/

before the courts, which turn upon purely medical consideration, an insufficient number of these is appointed to assist the judicature in arriving at a true conclusion. Medicine, despite the enormous advances in scientific methods of recent years, still remains an empyric art, and diagnosis is but a nice determination of the probabilities which have induced any given chain of circumstances. No matter how flexible the intellect of the layman engaged in such work, the ultimate judgement on cases of medical fact ought to rest with medical men who have long been trained to the analysis and deduction of such facts. The judicature in such cases seems chary of admitting this, and though the principle is provided for in the act of 1906, the carrying out thereof appears to be halting. The act imposes the following duties on medical referees:-

A. Under 2nd Schedule 15 it is compulsory where a matter which seems material to any question arising out of an arbitration submitted by a committee, arbitrator or judge to a medical referee for a report, for the parties to go before him.

B. 1st Schedule 15. If no Agreement can be come to as to the workman's condition or fitness for employment, the matter may be referred by the registrar with the consent of both parties, and on payment of a fee, to a medical referee. This refers only to cases which are submitted for the registration of agreements for/

for the payment of compensation, and it is optional on the part of either party to go to the medical referee.

C. Under Schedule 1. 18. Giving a certificate in cases where the workman desires to receive his compensation abroad as to the permanency of the incapacity.

D. 2nd Schedule. 5. Sitting with a judge when summoned by him as assessor.

E. Section 8. 1. F. Deciding on the appeal of an employer against the decision of a certifying surgeon in giving or refusing to give a certificate of disablement, etc., on account of industrial diseases.

The following are the returns showing the particulars of the services rendered by medical referees during 1911:-

		1911.	1910.
Under Sched.	1. 15. (A)	521	496
" "	11 15 (B)	387	343
" "	1 18 (C)	9	4
" "	11 5 (D)	976	659
" Sec.8.	1. F. (E)	312	152
	Total	2205	1654

Thus the total number of cases of all kinds in which the aid of a medical referee was called in was 2205 in 1911, as against 1654 in 1910.

In the great industries above referred to, during 1911, 4021 cases of death, and 419,031 cases of disablement were the subject of compensation. The great majority/

majority of these cases were settled extrajudicially, and the total number taken to court in 1911 was 8017. Many of these, however, were applications for dealing with allowances that had already been granted, and many were settled out of court, or otherwise disposed of; so that the total number of original claims for compensation finally settled within the cognisance of the courts was only 4487 for England and Wales. For the United Kingdom the number was 5767. A medical referee was appointed in only 1684 cases, (i.e., 2205 less 521 cases wherein the medical referee acted under schedule 1.15). In under 30% of the disputed cases was the assistance of a medical referee obtained. That this is an insufficient and paltry number the medical profession at least, will agree, considering that medical evidence is brought in 90% of contested cases, and in over 60% of these is the evidence on which the case turns. (This estimate was supplied by a medical officer of one of the largest insurance companies.) It is, of course, satisfactory that the number of medical referees appointments is increasing, but this increase is more apparent than real, since the number of cases brought before the courts in 1911 has increased to 8000 from 6600 in 1910.

It is evident therefore that a great extension of the principle of appointment of medical referees should be applied, and that the ideal would be that in all cases where medical evidence is adduced there should also/

also be expert assistance to guide the adjudicator. Such a referee ought to be a specialist in the branch of medicine concerned in the case, and his emolument should be sufficient to allow him to be independent of outside work, and to devote his whole time to compensation work.

The question of the qualifications of the medical referee leads on to the question of the original certification of accident or industrial disease, by a medical man. This appears to be somewhat haphazard, from the point of view of the employer, as in a large percentage of cases examination by a doctor in the service of the employer is practiced only when circumstances lead to a suspicion of malingering. In most cases the fact that the man has reported an accident to his foreman, a certificate from his doctor to the effect that he is suffering from the result of this accident is accepted as sufficient evidence of injury. In most cases there is no doubt that it is satisfactory, but it would be more accurate if the employer's doctor saw the case before the accident was admitted for purposes of compensation. One evil result of this unbusinesslike method is evidenced in the tendency for workmen suffering from injury to prolong their absence from work to a period of 14 days, before which no compensation is payable. This is perhaps a very natural tendency, but it is none the less reprehensible, and employers tell us that some minor accidents render men/

men incapable of work for a fortnight, which would never have been the cause of more than a day or two's absence. No doubt many men went to work in the days before workmen's compensation was established, when they were not in a fit state to do so, but were forced thither by pressure of circumstances, and it is perfectly right that such men should be placed in the position of being able to remain off work on account of injury. But on the other hand there are many who suffer from a mild form of compensation-neurasthenia, which may or may not disappear on the first payment of their compensation. These would be deterred from this evil practice were they examined primarily by an employer's doctor along with their own doctor.

Again, cases of obscure origin alleged to be due to accident, require more prolonged investigation than the workman's doctor can in most cases give. This remark is passed without any intention of disparaging a most honourable class of medical men. The day is past when the superior private practitioner can afford to slight his busy contract service colleague. But the latter will be the first to admit that his obscure cases will be the first to go into the hands of the hospital expert. He himself has so little straw wherewith to make bricks, that he has, as a rule, no time to spend on the subtleties of diagnosis.

Nervous diseases in particular require in their elucidation time and attention, which it is often beyond/

beyond the capacity of the general practitioner to render, especially in view of their comparative unsusceptibility of successful treatment. Every case of nervous disease, coming within the workmen's compensation acts, which presents symptoms of the interpretation of which there is difficulty, ought to be referred along with other cases which are obscure of origin, to an expert in its particular branch of medicine or surgery. Only thus will a just conclusion be arrived at. This should be done before compensation is begun to be paid, as it is not an easy matter to suspend compensation after the accident has been admitted.

The points to which the writer has referred are those which, in his opinion, do most to vitiate the Act, and most urgently require reform. There are doubtless other weaknesses, but sufficient has been written to show the inadequacy of the act. It is strongly advisable that one or other of the governing bodies in the medical world take steps to have the act remedied, and made less embracing and more just.

Note: The figures relating to the working of the Compensation Acts in this thesis, are taken from the Statistics of Compensation, etc., for 1911, presented to both Houses of Parliament, and published by His Majesty's Stationery Office.