the status of the particular case we have to deal with. I have seen cases where a rapid reduction of the drug proved entirely satisfactory. I think that when a man has been taking 10 or 20 grains of morphin daily, and the quantity has been reduced to one grain, we can cut this off entirely without waiting longer. There is a strong psychic element in these cases, and we should endeavor to gain full control of the mentality of the patient to succeed. Beyond 4 or 5 grains the amount of morphin utilized by the system is very small. A man may be taking 10 or 20 grains daily, but he does not get the full physiological effect of that sized dose. When I get a patient who is taking such a large dose, I immediately cut it down to 5 grains without letting him know the amount of the reduction, and later, in the course of a few days, I substitute some other alkaloid. There are so many narcotics that can be easily substituted for the morphin without causing the patient any particular discomfort. The greatest obstacle I have to deal with in these cases is to get rid of the needle fascination. When that is accomplished the case is more simple. To some persons the puncture of the needle is such a delight that it is very difficult to overcome it. No two cases of morphinism can be treated on the same lines. After the dose has been reduced to one grain, I usually withdraw the drug entirely and substitute some narcotic. In some instances I give a large dose of valerian or hops, and after a profuse sweat and bath the patient receives a hypodermic of pure water with the belief that it is morphin; as a result he will often sleep for many hours.

DR. JOHN PUNTON, Kansas City—My experience with morphin patients proves that the majority of them are suffering from malnutrition, and are greatly reduced in flesh as the result of the habit. I am inclined to think, therefore, that attention to the nutrition of the patient is just as important as the withdrawal of the drug, and that without the one the other is useless. Forced feeding is just as essential in these cases as in other neuroses. I would like to ask the essayist what he does to control the paroxysms at night.

DR. A. J. PRESSEY, in reply—Dr. Crothers stated that he withdraws the morphin entirely when the dose has been reduced to one grain, and that the patients bear this very well. My experience is different. As regards the substitution of other narcotics, I have tried them all and found that in the end they prove just as bad as morphin. The drug which we employ as a substitute must, of course, be an opiate. The symptoms that result from the withdrawal of one grain of morphine are almost as severe as those following the withdrawal of 5 or 10 grains. I know that most men can be carried along quite as comfortably on 5 grains when their accustomed dose has been 10 grains. I had one man who was taking 120 grains of morphin and a large quantity of whisky daily, and I carried him along comfortably on 10 grains per day, in fact, he was much more comfortable than before, but to take away the last grain at one time has not proven so easy. Many of my patients could not stand the sudden withdrawal of the final 1-20th or 1-60th or even 1-80th of a grain, and the dose had to be reduced gradually to 1-120th and even to 1-240th of a grain.

Dr. Punton spoke of the value of forced feeding. This has never been found necessary in any of my cases. As soon as the morphin is withdrawn to such an extent that the patients feel comfortable, they will feed themselves, and they want about four or five meals daily. I always give a lunch at 10 p. m.—bed-time—and in addition to this many of the patients ask for a glass or a pitcher of milk to drink during the night.

Medical Students in England.—The following is the number of students beginning a full course in the various medical schools: St. Bartholomew's Hospital, 84; Charing Cross Hosp., 14; St. George's Hosp., 12; Guy's Hosp., 68; King's College, 27; London Hosp., 64; St. Mary's Hosp., 35; Middlesex Hosp., 19; St. Thomas' Hosp., 48; University College, 31; Westminster Hosp., 17; London School of Medicine for Women, 30; Cambridge, 115; University of Durham, 26; Bristol University, 18; Owens College, 54; University College, Liverpool, 50; Yorkshire College, 27; University College, Sheffield, 12; London School of Trop. Med., 19; Liverpool School of Trop. Med., 3; total 773.

INJURIES, FEIGNED AND REAL, WITH THEIR DIFFERENTIATION AND MEDICOLEGAL ASPECT.*

LAMBERT O.T. M.D.

PHILADELPHIA.

Injuries may be divided into two classes: 1, those with visible signs and symptoms; 2, those with invisible symptoms. Injury to certain tissues produce evidences of molecular change which usually justify the signs present and the symptoms complained of. A solution of continuity in either soft or bony parts requires no inductive or exclusive process of reasoning for their detection. Injuries to the nervous system productive of distinct objective symptoms, motor disturbances or discoverable sensory manifestations, do not tax the examiner's ingenuity to draw conclusions. Injuries to the nervous system, non-productive of objective symptoms in which the examiner is compelled to depend entirely upon subjective symptoms to arrive at the truth, are the most trying types the physician has to cope with. The invisible symptoms are the sensory, such as pain and the paresthesia. The visible symptoms and signs are chiefly motor and atrophic. Without repeating unnecessary detail as to the value of electricity and a thorough knowledge of the physiology of the nervous system, I will cite two cases, one of a common type and not difficult of diagnosis, the other in all its essentials surrounded by doubt because of the circumstances associated with the case, the presence only of subjective and the utter absence of objective symptoms.

A man is thrown violently to the ground and the only visible injuries are contusions to parts of the body, with the concomitant pains. The following day, apart from a slight soreness, the accident is dismissed. Subsequently the person injured notices that there is a gradual loss of power in one extremity confined to a group of muscles without disturbances of sensation. As time elapses the loss of power increases until a complete local palsy is evident. We are suddenly requested to state in how far is the injury real or feigned. Our first test is with the faradic current and feeble or no response follows. With the interrupted galvanic current we obtain contractions of the paralyzed muscles, but an altered response from the normal opening and closing contractions. Instead of obtaining the formula, CaCl is greater than AnCl , we have CaCl equals AnCl , or AnCl is greater than CaCl ; in other words the reactions of degeneration. With such categorical evidence we state that the injury is real beyond any doubt whatsoever, and at once disprove the charge of malingering. Although where the important questions of liability and the degree of injury has arisen, the associated conditions, such as the nature of the injury, the locality of the contusions and the course of the case, must not be ignored. Here we have established facts which justify the most positive testimony, irrespective of the tribunal whether lay or medical.

On the other hand, a man claims to have been injured in a well-known accident, and, after spending the customary time in bed, whether for honest or other motives, on getting about complains of a continuous, localized pain, either along the course of the nerve, over the spine or in some other portion of the body. He describes the pain as follows: Persistent, continuous, with feeble re-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

missions, and never changing its locality. He attributes it all to the injury sustained either many weeks or months ago. He presents absolutely no objective symptoms. We are again asked by persons upon whom the liability has been placed, in how far is his suffering real or feigned. Here is a more difficult and a different task from the preceding case.

First of all the fact that a monetary consideration may be involved should make us distrustful and resolved to ply every element of our resources either to confirm the truth of his suffering or unmask the deception. What are the methods which will lead us at least approximately to a conclusion? My experience teaches me that one can not have pain for a long period of time without producing some discoverable sign or change, however slight, which can not be detected either by the aid of electricity or our senses. There can be no pain without an involvement of sensory nerve fibers, whether it be in muscle, bone, cartilage or serous surfaces. Pains attributable to injuries are usually ascribed to the nerve or nerves. Let us suppose his injury was in the region of the shoulder and arm, involving branches of the brachial plexus with or without motor loss—the latter condition being readily ascertained by the reactions of electricity. If the complaint be one of pain only, covering a long period of time, and we find none of the characteristic associated conditions, are we not justified in denying that the person has pain?

In regions where persistent pain has been complained of we should find the following: 1, primarily an increased electro-muscular contractility and later a lessened electro-muscular contractility, a result uninfluenced by the patient's will; 2, an increased electro-sensibility, a result easily influenced by the patient's will; 3, a glazed, sometimes puffed and bleached, skin over the area of pain; 4, perverted nutrition of the hair follicles and nails over the region of pain; 5, possibly some muscular atrophy and flabbiness; 6, increased skin and muscular reflexes; 7, unnatural tremor induced by the effort to hold the member absolutely immobile; 8, general lowered nutrition necessarily produced by prolonged suffering; 9, hyperesthesia or anesthesia and variable sensibility to temperature, and 10, the locality of pain bears a close relationship to the distribution of nerves. It must be noted whether the pain and complaint conform to any of the well-known clinical types.

If we find the major part or all these signs and symptoms in a region presenting a persistent and prolonged pain the suffering is real. But viewing the complaint of pain, accompanied with normal surroundings, or conditions normally present under physiologic circumstances, such as, the natural electrical reactions, no abatement of the general health, no trophic changes, no paresthesia, or in other words, conditions found in those who do not complain of pain, are we not justified in branding the complainant as an impostor and charge him with malingering? Can a person have a persistent pain for a long period of time without producing some visible or palpable change in the surrounding tissues or in time affecting the general health? Pain in itself is a perverted sensation and impalpable, but the results of pain are often easily discovered. Because one complains of pain where a question of liability and damages are involved, it should not be said that he has not true pain.

Apart from the physical aspect of the presence and result of pain must be considered the fact that many people suffering injury, creating the question of a monetary responsibility, will semi-consciously mangle for

selfish reasons and feign symptoms that are not readily perceptible to the senses. Hyperesthesia and anesthesia in the distribution of affected nerves are frequently observed. The esthesiometer, if carefully applied, will aid us materially. If the pain is remote from the distal part of the extremities, the esthesiometer will show an increased sensibility over the painful area, and the distal surfaces having normally a superior sensibility are now lower than over the area of pain. Tuerck and Trouseau, and later Nothnagel, assert that hyperesthesia is the primary manifestation in areas of pain, and is subsequently followed by anesthesia. Pain in a nerve or nerves does not always imply a marked disturbance of other part supplied by branches of this nerve. Hilton has taught us that the same nerve supplying the joints, and the amount of damages to be awarded. Let the lay-also supply the muscles moving the joint and skin over the insertion of the muscles. Inflammation of a joint produces rigidity of the muscles moving this joint because the same nerves supply the three different tissues involved; subjectively immobility of the joint surfaces is produced to lessen pain. A nerve in pain is an irritable and an irritated nerve and has in consequence all its functions heightened or increased. There is an unnatural flow of secretions when nerves are irritated, as is evidenced by an increased flow of saliva in facial neuralgia. A drastic or alkaline purge, irritating the intestinal mucous membrane nerve terminals, produces purgation; so should an irritable mixed nerve, supplying a cutaneous surface and the muscles beneath, likewise produce an increased or heightened function, discoverable both by electricity and other methods of examination.

MANNKOPFF'S TEST.

In this I do not have much faith, although Rumpf lays great stress on it in traumatic neuroses. It consists in observing the pulse rate before, after, and during pressure upon an area alleged to be painful. If the pulse becomes more rapid while the pressure is being made, it is supposed to be proof that the pain is real and has reflexly caused the heart to beat more rapidly. We can claim that if a patient complains of pain on the surface of the body it must be expressed by the nerves that reside there. There is no other structure that can express it, and somewhere in the course of its distribution between its peripheral termination and its central spinal or cerebral origin, the precise cause of the pain must be situated.

Pressure over painful areas should elicit pain, or some form of perverted sensation in nerve terminals; but, you will ask, can not any one wince under pressure and claim to have pain? This is a shortcoming in our examination, but, by suddenly detracting the patient's attention and then pressing on the supposed painful spot, you catch the patient unawares, and, if he is feigning, you are enabled to make deep pressure without obtaining evidences of pain. The changes observed in the skin overlying the painful area are atrophy, pigmentation and roughening. The atrophic skin appears smooth and more shiny than that of the other parts of the body. A change may also be noticed in the hair, a brittleness, coarseness, or unnatural grayness. The hair may have a tendency to fall out, or may grow denser along the course of affected nerves. The nails may be paler or discolored, transversely furrowed or have a diminished rate of growth.

Wherever the localized area of skin shows trophic disturbances, such as, atrophy or hypertrophy, congestion

or blanching, hyperesthesia or anesthesia, and its hair follicles altered either in quality or quantity, we may conclude that there lies beneath, either directly or indirectly, a nerve disturbance, and if a history of injury exists these changes should be ascribed to injuries of a nerve or nerves.

A species of modern robbery, which has grown to enormous proportions, is found in accident cases, and with these the neurologist is more or less associated. Modern transportation has greatly increased the number of accidents, and, as these cases are subject to jury trials in questions of liability and damages, an abuse has grown until the larger corporations often pay unjust claims rather than submit the question to a prejudiced jury. The professional injured and complainant for damages is a modern production and in our larger cities one-fourth of the cases possess this blackmailing character. The city electric lines lose from \$300,000 to \$500,000 annually and many of the cases are trumped up and pampered for the occasion by the unscrupulous collusion of lawyers and physicians, who agree to divide the gain among themselves. Observe very closely a damage suit at trial and note with what detail the complainant's case has been mastered and how some innocent perversion of function is enlarged and given an importance, how a trifle is made to appear as the most excruciating suffering and what a possible or positive permanency is attached to each disturbed function, to influence an ignorant set of laymen towards bringing a heavy verdict for the plaintiff. On the other hand, note the weakness of the defense in the utter absence of valuable medical testimony or a physician who has made but one examination and that in the latter part of the trouble, and who is now supposed to know as much about the case as the one in charge from the inception of the injury to the time of trial.

Seguin criticises our methods by saying that in this country claimants are very rarely subjected to scientific watching and repeated examinations. The physician or expert is expected to deliver an opinion after one or two interviews with the patient, so that the chances of detecting simulation are much reduced. A large corporation having many employes and many accidents should protect themselves by having a competent physician of their own choosing visit the injured at the earliest possible moment and subsequently as often as in his judgment he deems it necessary, so as to familiarize himself with the nature of the injury, the course of repair and recovery, and as to the degree of permanent injury. He could and should make these examinations in the presence of the attending physician at such time and place agreed upon, and, if proper notes are made, the corporation likely to be made the defendant is now armed with valuable testimony which not only forearms them when unjustly assailed, but in a measure has a restraining influence on those who seek to present physical conditions in a grossly exaggerated form. The knowledge on the part of the plaintiff that the defendant's surgeon has notes and information of his case from beginning to end would compel him, for his own safety, to confine himself to the truth and decidedly limit his prevarication. A large Philadelphia corporation sends its physician only after the case is reported convalescent and probably after all visible signs of injury have passed away. This weak position on their part puts them at the mercy of their opponents and from the many large and unjust sums mulcted from them one would imagine that they would alter their methods.

From a medical standpoint the prevailing methods of trial in injury cases are unscientific and productive of unjust results. In all cases there are two important elements to be considered; 1, as to the liability of the individual or corporation; 2, as to the degree and permanence of the injury and the amount of damages to be awarded. At the present time both questions are submitted for final conclusion to a lay jury, whose only guide as to the injury and its results and damages is the medical testimony which is often contradictory, misleading and unsatisfactory.

I hold that a better procedure would be to let a lay jury pass upon the evidence involving the question of liability, and, having this once determined, the medical testimony should be submitted to a jury of medical men to determine the degree and nature of the injury, its possible permanent influence on the future life of the injured, and, when this is finally settled, to have this same body of physicians fix the amount of damages to be awarded. Were a law of this kind enacted, there would be less robbery in accident suits, and careless and unscrupulous medical men, not confined to general practitioners alone, would be more chary in presenting their oftentimes biased and mercenary evidence.

Imagine a butcher, a baker and a dry-goods merchant passing judgment upon traumatic neuroses, such as paraplegia, neuritis, palsies, impaired vision and the various disturbances of locomotion incident to the graver accidents. How often in cases where the plaintiffs are women, who were but slightly injured or more likely not injured at all, is the hysterical or neurasthenic element produced.

Medical and expert testimony in accident cases is the opprobrium of the profession to-day, and the sooner such questions are considered from a scientific standpoint the greater the honor will be accorded to the medical profession. The physician is the only one that can differentiate the feigned from the real sufferer, and judiciously pass upon the nature and degree of the injury and the amount of damages to be awarded. Let the layman confine himself to questions of liability alone.

DISCUSSION.

DR. HAROLD N. MOYER, Chicago—If the suggestions made by Dr. Ott in his paper were all carried out, they would probably necessitate a change in the English Magna Charta and an amendment to most of the state constitutions in this country, if not to the Constitution of the United States itself. In communities with a jurisprudence derived from the English common law they are impracticable.

DR. LEO M. CRAFTS, Minneapolis—I can not subscribe to all the assertions made by Dr. Ott. That portion of the paper which referred to the differentiation between the objective and subjective symptoms frequently observed after injuries I consider admirable, but my experience does not agree with his as regards the amount of malingering by people who have been exposed to injury. I think his assertion in this respect is too broad and the result of observation from a biased standpoint. The statement that the plaintiff is more likely to be influenced by a moneyed consideration than the other party certainly does not obtain in the West; I do not know how it may be in the East. It is easy to understand how a corporation with large means can do more to influence litigation than can be done by a single individual whose means are usually limited. It has been my experience that these corporations frequently disregard the safety of their employes and the traveling public, and depend upon their wealth and influence to free them from just penalties for their neglect. I am thoroughly in accord with what Dr. Ott said regarding the desirability of a change in the legal procedure ordinarily followed in accident cases. If we could by some means obtain such modification of joint action as to make it possible to get impartial medical or

surgical testimony of an expert nature, it would do much to elevate the so-called "expert testimony" from the position of disrepute which it now occupies.

DR. RICHARD DEWEY, Wauwatosa—One point was not mentioned by the essayist, namely, the suggestive effect of the injury itself upon the patient, and, even more, the suggestive effect of an examination of the patient by the physician, especially if the latter asks him leading questions as to certain symptoms. The symptoms complained of by these persons may not be genuine, and still may not be dishonest. I have observed more than once a tendency to regard as dishonest all symptoms which are of a subjective nature and which can not be proven by objective means. Even in cases where the question of damages did not enter I have seen, as has every one experienced in these matters, serious impairment of function without demonstrable structural lesions.

DR. J. G. BILLER, Cherokee, Iowa—I have been unfortunate enough in two or three instances to be imposed upon by persons who claimed damages for feigned injuries, and who at once recovered when the damages were paid. I recall the case of a farmer whose reputation for honesty was excellent and whom I had known for years. He met with a railway accident, and I examined him, with the chief surgeon of the company, and in view of his symptoms, which had evidently been prompted by his attending physician, we made a favorable report. The railway company paid him \$7000, and a few days after he had received the money the man was in town buying cattle. We should have some definite way of getting at these cases. They are often a disgrace to the profession. In the case I have referred to we made a very thorough examination, but we were unable to obtain any definite proof that the symptoms were feigned.

DR. HERMAN GASSER, Platteville, Wis.—So long as we cling to our present indefinite method of defining pain as subjective and objective, it will be impossible to formulate any system that will lead us to definite conclusions. There is no such thing as subjective and objective pain; there is only one kind, and that is pain. It is a psychical product. It always has some pathological basis for its production. In some instances the pathological lesion is easily discoverable; in others it is not. The reader of the paper referred to an increased pulse-rate as an indication of pain. Bichat showed long ago that this was a valuable sign as indicating the presence or absence of real injury or of pain. The significance of the pulse as an indication of health or disease can not be overestimated. If we see a sick or injured patient whose pulse is good and strong, no matter how badly he may claim to feel—he may even be in convulsions—still we can rest assured that there is no immediate danger. As regards the occurrence of symptoms, feigned and real, after the receipt of injuries, I recall the case of a girl who fell into an excavation while walking along the street. She was apparently not injured. Her relatives suggested that she ought to put in a claim for damages. She soon afterwards began to complain of pain in various parts of the body, and this was subsequently followed by the development of mental disturbance. She was examined by a number of physicians, and all of them, with one exception, thought she was hysteric. She finally recovered \$2300 damages without the case going to trial, but this did not cure her, and she is still in a very poor condition both mentally and physically. She had a hysteric nervous organization and the advice of her fool friends made it chronically active, and she is now paying a severe penalty.

DR. F. SAVARY PEARCE, Philadelphia—I do not think the suggestions made by Dr. Ott regarding the methods of trial in these cases can ever be carried out, for the simple reason that the physician has nothing to do with the judicial side of the question involving the damages. The physician simply has to decide whether the person is injured or not, and this is often a very difficult question for the neurologist to answer. Having determined that the plaintiff is or is not suffering from a traumatic neurosis, either functional (which I do not believe in) or organic, then the evidence is given to the jury and the latter should make the award of damages.

DR. JOHN LEEMING, Chicago—My experience in the West confirms the experience of the essayist, and is not in accord with that of Dr. Crafts. The difficulty in ascertaining the condition of the patient previous to the occurrence of the accident has not been referred to. In cases where we can demonstrate the presence of structural lesions by actual measurement or by electrical tests there can be no suspicion of malingering, but the difficulty we have to deal with is to exclude positive shamming, or what I call "involuntary simulation," in persons who have received a trivial injury and who claim to be suffering from very serious neuroses. The nature of the injury is frequently out of all proportion to its effects, and these effects do not occur in cases where no litigation is pending. We should try to form a positive opinion regarding the true nature of these cases, and not hesitate to express it.

DR. LAMBERT OTT, in reply—Those who do not believe there is much rascality in connection with accident cases in large cities, I would invite to spend a brief period in Philadelphia and watch the jury trials, and I am sure they will become convinced. My suggestions regarding the method of trying these cases may not be practicable under our present statutes, but if they were adopted I believe the results would be far more satisfactory and just than by the present methods. I have studied this class of cases closely in Philadelphia and other large cities and the prevarication, distortion of facts, complaints of extreme suffering, with no visible evidence of disturbed tissue, associated with a history of trivial injury, make up the complexus of fraud presented for the purpose of mulcting corporations. I regret to say that in the trial of injury cases involving a large amount of damages you will often find the well-paid specialist on the side of the plaintiff with his biased statements giving strength and substance to their side. Large corporations are more just in the settlement of claims against them than individuals and whenever it is shown that they are justly liable they seek an amicable and fair settlement. Our courts in Philadelphia groan under the burden of such cases and only recently a band of conspirators were arrested and convicted for purposely meeting with accidents and subsequently feigning injury in order to extort damages from street railway companies. It is within the power of the medical profession to stamp out this rascality by condemning the maligner and compelling all others to confine themselves to the truth.

SAMUEL FULLER—PILGRIM, DOCTOR AND DEACON.

I. N. DANFORTH, A.M., M.D.

CHICAGO.

"The names of those which came over first, in ye year 1620, and were by the blessing of God the first beginners and (in a sort) the foundation of all the Plantations and Colonies in New England; and their families." So reads the quaint caption of Governor William Bradford's list of the *Mayflower* passengers, appended to his "History of Plimouth Plantation." Among the passengers, we read the name of "Mr. Samuell Fuller, and a servant caled William Butten. His wife was behind, a child which came afterwards."² Bridget Fuller, the wife of "Samuell," with a child who soon died, came over in the ship *Anne*, and landed at Plymouth in August, 1623; hence, both Samuel Fuller and his wife are properly classed among the "old comers" or the "forefathers," as the forefathers included all those who came in the first three ships; the *Mayflower*, the *Fortune*, and the *Anne*.³ Referring again to Bradford's history, we read that "Mr. Fuller his servant dyed at sea; and after his wife came over, he had tow children by her, which are living and growne up to years (1650); but he dyed some 15. years agoe" (in 1633).⁴ With these brief and quaint remarks, Bradford dismisses Samuel Fuller and his family.