I would like to speak of a thing that I have thought of, and which I have come to believe in more and more firmly as time passes, and that is the necessity of teaching and studying this subject in a concrete way, namely, by psychopathic wards—not at a great distance from the city, not in connection with an ordinary insane asylum, but in intimate association with an ordinary general hospital. I feel sure that there ought to be a psychopathic ward in connection with every great university hospital, and in this ward disease should be studied in exactly the way that Dr. Tomlinson has pointed out. There is a psychopathic ward in Pittsburg, in connection with St. Francis Hospital. In many ways it is not ideal, but we are trying to work along the lines indicated. St. Francis is one, I think, of only two or three similar general hospitals in the United States providing a psychopathic ward.

Dr. H. A. TOMLINSON, St. Peter: Since coming to Atlantic City I had the opportunity to discuss with a medical friend a case in which he went into the most minute details of the mental condition of the patient from the standpoint of modern German metaphysics, and he wondered why there had been no improvement in the condition of the patient. I discussed the case from the standpoint described in my paper, and found that there was well-defined evidence, not only in the heredity of the patient, but in the personal history, of the presence of physical conditions sufficient to determine the grafting of mental disturbance on an unstable nervous system; as well as the signs of chronic intoxication, the persistence of which would preclude recovery. I firmly believe that if we are going to deal with insanity successfully, we must give up this futile dallying with metaphysics, and recognize that we are dealing with the general organism.

TRAUMATIC NEUROSIS

WITH REPORT OF CASES *

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Since the days of Erickson there have been repeated efforts to establish traumatic neurosis as a particular type of disease until at present it is fairly generally accepted, although not uniformly interpreted. Erickson failed to separate the organic and functional cases, and it was not until Oppenheim and Strumpell and others studied the question that the organic conditions were eliminated. Traumatic neurosis is a generic term, and, when speaking of a particular case, we should designate hysterical form, neurasthenic form, psychic form, or mixed form. Such a disposition is made of the term dementia præcox with its different forms. It occurs to me that the difficulty in the use of this term arises out of the fact that the name is based on etiology in conflict with a terminology enforced by the clinical symptoms. This difficulty is particularly frequently encountered in the nomenclature of nervous and mental diseases; however indefinite the term may be, whenever it is used, we usually think of a functional disorder and the possibility of a legal aspect of the case as well as a medical. This dual feature of these neuroses has forced them into a position of considerable importance in the practice of law as well as of medicine. Daily physicians are called on to examine such cases, either when litigation is probable or already involved, and it is in relation to the medicolegal aspect that a serious problem exists for a successful solution. Unfortunately, the legal profession and the medical entertain some opposing views concerning such cases. The objective and subjective symptomatology seems to be the ground of contention between the

legal minds and the medical. The law insists on recognizing the objective symptoms only, while the physician, recognizing the importance of these, also makes important use of subjective symptoms, real and unreal, in his diagnosis. It seems to me that the error committed here lies in the fact that all subjective symptoms are stricken out of evidence, without regard to the discriminating skill of the physician, simply because of the possibility of all or part of them being assumed. It is true that it is difficult for attorneys to understand how diseases may exist without a gross organic lesion; therefore, they are loath to regard a functional disorder as a real disease and look on them with a great deal of suspicion. Even when the physician maintains that a disease exists, if an organic foundation can not be discovered, the lawyer will look on the assertion with considerable doubt. Indeed, it is this possibility of fraud on the part of the patient, the attorney and the physician that has given such prominence to these traumatic cases. Fraud is exhibited on the part of the patient by malingering for the purpose of gain. Frequently it has occurred that attorneys cautiously aid and abet these endeavors, and also must we admit the fact that physicians are not too careful sometimes and persuade themselves to join or cooperate in these fraudulent attempts. The whole situation, it seems to me, is very much entangled and it too frequently happens that worthy persons fail to be properly compensated, and the unworthy ones recover damages unjustly.

How can this problem be solved so that each case is more surely to receive justice? Can we point to the German regulation of these matters and say that is the solution? I do not believe that the German system of insurance against accident is a perfect solution of the problem involved in this question, and yet it is a great improvement over no system at all, as in America. It seems to me that the great advantage of the German system lies in the fact that it has not the features which invite investigation. The disadvantage in this system is that it does create an inviting field for malingering and also establishes a means for the development of neuroses. It is fairly well recognized that the results of an accident are encouraged to become far more serious and pronounced by the prospect of a recompense or an allowance. Admitting this weakness in the German law, I still maintain that it is far better than the present loose and confusing methods pursued in the United States.

I hope that the three cases I am reporting carry with them sufficient interest and importance to warrant their record. The first is an example of traumatic neurosis (hysterical form), diagnosed as an organic case originally, the patient operated on for brain abscess, and the case later diagnosed as hysteria, which it proved to be. The patient became entirely well after having recovered damages from the city in which her accident occurred.

The second case is one of neurosis (hysterical form) in which is manifest a rather fragmentary dissociation of the personality. Usually when there is trauma there is also shock, psychical or physical or both, and, inasmuch as there is hysteria in cases of dissociated personality, we can expect trauma and its attending effects to be a fruitful cause of such conditions.

The third case represents a psychosis in which the head injury could be reasonably regarded as the cause. Of course, the fact that the patient had dissipated considerably should not be regarded as less than a contributing factor. There are remarkably few cases of insanity, comparatively, in which heredity, severe illness, dissua-

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

tion, worry and other common causes can be eliminated and head injury be assigned as the true cause of the attack.

CASE 1.—History.—A young woman, aged 19, teacher, American, on Feb. 18, 1906, at 10 a. m., was thrown out of a buggy in a runaway accident. She suffered a concussion of the brain, due to the head striking on the street. The point of injury was in the left temporal region about one inch in front of, and three inches above the ear. The skin was not broken. She was dazed for a moment but went on her way. A severe pain in the head developed and in the evening she became delirious. During the next four days she was conscious but suffered some pain in the head and back of neck. A physician was not called until three days after the accident, at which time she was in a maniacal condition, chattering and laughing continually. She tried to escape from the house, but could not balance herself sufficiently to walk well. Her pupils were greatly dilated and she complained of severe headaches. The entire scalp, posterior part of neck and shoulders, and cervical portion of the spine were extremely hyperesthetic. The head was drawn to the left side. No anesthesia or paresthesias were discovered. She slept very little. There was no effusion about the eyes, and no escape of blood or serum from the nose or ears at that time. This condition lasted about ten days, after which time the patient became quiet, slept well, ate well, and seemed to be in a fair way to recover. She had a continuous frontal headache for nine weeks; for ten weeks had furuncles in both external auditory meati. About two weeks prior to her admission to the hospital, her ears began to discharge.

Course of Disease.—The patient was admitted to the hospital May 7, ten weeks after the accident. She was quiet and affable and did not exhibit any noteworthy symptoms for four weeks, except pain and tenderness about her ears and some discharge from them. Treatment by a specialist soon effected a recovery from the ear conditions.

June 12, 1906: The patient was observed twitching while asleep. She was aroused and the twitching at this time ceased. After that time she was more nervous and her right leg twitched most of the time, especially after any exercise. She stated that both her right arm and right leg were numb, especially in the distal portion, that is, below the elbow and below the knee. Her hand grasp was distinctly weaker on the right than on the left, and in walking she was inclined to drag her right leg to a slight but perceptible extent. At this time the question of diagnosis became a matter of great importance and the attending physicians were somewhat in doubt as to whether they were dealing with an organic condition or one of hysteria.

June 14, 1906: The patient's hand was noted to twitch in an irregular manner. This twitching was not confined to the hand, but extended to the muscles of the forearm and upper arm. It appeared to be worse when the patient was somewhat excited or attention was drawn to the matter. The patient stated that occasionally her right limb twitched also, but this was not noted during the examination. The pupils were equal, moderately dilated and reacted to light. In the past it had been frequently noted that the pupils were considerably dilated. The action of the facial muscles was symmetrical. The tongue protruded in a straight line with good movement of the same in either direction. The hand grasp in the right side was extremely weak, the pressure being very gentle; the power of flexion and extension at the wrist and elbow also extremely weak. The patient could not, while lying in bed, raise the hand directly to the nose, but could do so by sliding the hand along the body. The power in the lower extremity on the right side was also much diminished. The knee-jerk was very much exaggerated, and there was a tendency to the patellar clonus. No ankle clonus was present; no plantar response whatever could be elicited. On the left side the reflexes were normal. There was complete loss of sensation for touch, temperature and pain in the right lower extremity, up to the groin. About one inch above the anterior superior spine of the ilium a pin-prick could be felt, but simply as a dull sensation. The same condition prevailed in the upper

extremity. A pin-prick could not be felt at all until the lower deltoid region was approached from below. In this deltoid area and between that point and the median line a pin-prick which was made quite deeply could be felt as if it were the pin-head. Tactile sensation was lost all over the right side for any ordinary touch, although, as stated above, the deep pin-prick could be felt in the region named and over the trunk on the right side as a dull sensation. Both the temperature and pain sense were entirely lost over the whole right side. This anesthesia extended from the median line of the body in an irregular line varying from one to three inches to the left of the median line. Over the left lower extremity, and to some extent over the whole left side of the body, sensation was slightly impaired, touch not being readily perceived, and pin-pricks in places being felt as dull points. This, however, was not constant and was more marked over the left lower extremity than other parts. Motor power on the left side was good. In examining the cranium, especially over the left side where the patient states she received her injury, there appeared to be a slight depression over the posterior portion of the left frontal bone. This depression, however, was slight and may have been congenital. The patient stated that when the head was pressed firmly on each side with the hands, there was a dull ache within. The patient had a temperature of 100 degrees the previous night, but this morning her temperature was normal. Mentally she seemed a little excitable and talked with less reserve than usual. Her conversation was entirely coherent, however, and showed no other abnormality than a little tendency to repeat herself, and to loquaciousness.

June 15, 1906: The following changes in the patient's condition were observed this morning: The patient's tongue was found to protrude decidedly toward the right when extended. There was considerable tremor of the right eyelid when the eyes were firmly closed. There was also some twitching about the mouth, especially when the eyes were closed firmly. There was distinct spasm of the lower limb during regular intervals. No plantar reflex of any sort could be obtained. The previous night, about 12:45, the patient had a localized convulsion, involving the right side during which she was apparently unconscious. She stated that just as she came out of the convulsion she felt the right side of her face twitch. This morning, about 4 o'clock, she had another similar convulsion involving the right side in which she rolled out of bed. During the day she had at least two similar attacks, with large movements involving the right side, and unconsciousness for a few seconds. Motor power was still almost entirely absent on the right side.

June 16, 1906: Consultation with the surgeon, otologist and neurologist was held. The balance of opinion favored a probable abscess in the left side of the brain and operation was recommended and done. The findings were negative.

June 26, 1906: Examination of tendon reflexes of arms showed them to be overprompt and markedly exaggerated; the one most noted was the action of the supinator longus. The condition existed equally in the arms. This morning she failed to protrude her tongue farther than her lips. Her speech was improved slightly, yet was defective, one side seeming to be more affected than the other. Her speech was rather spasmodic or measured with a certain emphasis regularly. She omitted some single words in a sentence occasionally. Sometimes she could not say some words. For example she said: "I feel so feepy." When conscious she was inclined to joke and talk considerably.

June 27, 1906: During the night the patient had many very severe convulsions, characterized by greater excursion of movements than at any previous times. It was noted that she had ten spasms within one hour, from 8 to 9 o'clock. The spasms followed at short intervals. During the intervals between the spasms she seemed to have regained consciousness quite temporarily. From about 1:30, she passed into a stuporous condition and remained there until 5 o'clock. Observations at 10 a. m. revealed that she had not improved as far as the convulsions were concerned, still having them at short intervals, perhaps not quite so severely, and with less range of movement. The convulsions, however, were generally

characterized by severe jerkings, also rigidity and opisthotonus; invariably the back and neck were bent. Immediately following a convulsion, the patient would seem to be provoked at herself that she could not remain conscious and prevent the "spells" as she called them. Immediately after a convulsion she would say: "Oh, shoot, if I could get over this, I would be all right." During one of the conscious intervals she remarked that she felt well and enjoyed her breakfast very much. Her loquacious manner at this time did not appear to be quite normal, however. During these periods of apparent slight delirium, she would say and do things that perhaps she would have regretted if she realized them. She would at times, for example, criticize the appearance of her nurse, as well as the nurse's manner toward her, only to feel very badly about it when she accidentally learned that she had made these unkind remarks. She could protrude her tongue quite well. There did not seem to be any increase in the power of her right arm or hand. There was still a marked disturbance of the sensations. There was entire loss to tactile pain and temperature sense on the entire right side of the body, including extremities, face and head. This loss extended slightly beyond the median line. We noted that this was more at the upper third of the chest where the loss extended to the nipple line. Below this on the chest, the limit was a line midway between the median line of the chest and the line of the nipple. The only disturbance of sensation on the left side was a delay which amounted to three seconds. This was found to be on the entire left side. There was some amblyopia. The associated movements of the eye were very good. There was a loss of conjunctiva reflex in both eyes. There was a slight difference in the palpebral fissure, the left being greater than the right. She could not open her eyes widely. On looking upward, the eyes deviated equally to the right. There was a weakness of the entire right side of the face. In the movements of her face greater range could be noted on the left side than on the right. The tongue deviated on protrusion slightly to the right side. Her hearing was normal. Speech was improved although there was some defect yet. There was a peculiar measure in her speech and certain emphasis at intervals, and a thickening of the speech.

June 28, 1906: Examination revealed anesthesia of both nostrils, contraction of the visual field, dilated pupils with reaction to light but not to accommodation. Tactile sensation was retarded three seconds and after irritation was removed she would feel it for three seconds. The right half of the patient was still anesthetic; the mouth slightly drawn to the right. There is no improvement in the strength of the right limbs.

July 10, 1906: There was equal loss of tactile sense on the right hand, arm, legs and right side of face, head, neck and body; also on right side of the tongue; loss of sense of pressure to the right arm, hand and leg and right side of body. There was considerable exaggeration of the patellar reflex, yet it was slightly delayed. The tendon reflexes were generally exaggerated. At this time the visual disturbances were particularly noteworthy. At a distance of three feet the patient could not determine a toothpick or street car ticket. She could distinguish them at one foot distance. Three inches from her eyes she again lost the power of vision. Her vision varied from time to time, but at present she could only recognize objects between six and fifteen inches from her eyes. The two eyes were alike in this regard.

After being discharged from the hospital, the patient got along very nicely for several months. She brought suit against the city in which her accident had occurred and received a judgment for \$8,000, and then had the following experience.

"January 20, the receiver [at the telephone office] struck my head [on the left side of the head at the seat of the former operation] and made me rather sick in my stomach right at first, and then I had a dreadful headache; didn't feel very well, but I pretended to feel all right, and worked two days. The evening of the second day I didn't feel very well, and began to feel rather queer in the right side; didn't know what was the matter. After awhile, I began to lose feeling on that side; I noticed I couldn't get my hand up very well. I

wanted to pick the plug up, and I gradually lost use of my hand; got so I couldn't raise it up, and then I spoke to the chief operator and told her that I had to leave the board, and she helped me get my hat and coat on, and my mouth was drawn crooked all that time; when I got home I sat down and couldn't get up again. Later the doctor was called and gave me some medicine, but I kept getting worse until I couldn't use that side at all. The next day I felt weak and sick at my stomach. At first, I felt rather drowsy. I got so I could get up and walk around and use my foot by dragging it, but I couldn't use my hand for some time. For about three or four weeks I couldn't use my hand, couldn't lift it up. I had to move it around where I wanted it; just had no use of it at all. It seemed to affect my arm and face more than anything else. It affected my leg for some time, but not as long as my hand. I went back to work a week afterwards. When I went back I couldn't use my hand. I expect it was about two months before I got feeling in my hand again so that I could use it, but the sensation wasn't back yet. About the time I got over that the second attack came on, but it only lasted a couple of days. It came on in the same way, but it was very light at that time. It seemed to affect the whole side of my body about the same time. The first thing I noticed I couldn't get my hand up to pick up the plug, but I hadn't tried to walk until I got up to go home; I couldn't walk very well. I walked home, but I didn't go very fast, and they couldn't understand me very well. I could talk, but then part of the time they couldn't understand what I was trying to say, something about like it was last summer. After the second attack I wasn't bothered that way any more."

The patient apparently has recovered and is now in a training school for nurses.

CASE 2.—*History*.—A man, aged 30, machinist, American, fell from a line shaft onto a wheel lathe fourteen feet below, injuring his left shoulder slightly and causing a scalp wound one inch above left ear. He was unconscious for several hours. After a few days he was up and about but experienced what he termed "spells." *Wanderlust* characterized him now where before he was steady and settled. There were periods of lapse of memory during which he would quit his work, start out, and later find himself in some strange place. During these lapses, which were frequent and of varying duration, ranging from a few hours to a few days, he traveled considerably over the western states from Ohio to California, and eventually he landed in Columbus in August, 1906. He was committed to the hospital as a result of his strange behavior.

Attacks Observed in Hospital.—For several days he exhibited nothing noteworthy except the very unusual history of his experiences. A short time after his commitment the patient complained of having a dull throbbing pain low down in the occipital region. He felt very dizzy and after his evening meal was attacked by a spell of vomiting which made him feel very weak. He went to bed early (7:30) and was soon asleep. At 4:30 Thursday morning he was found lying on the bed in a semi-reclining position, with his eyes open, fixed and staring. He was told it was time to get up; he took no notice and made no reply. A few moments later he was again told to get up; he did so and sat on the foot of the bed, saying in an absent-minded manner as if talking to himself, "I am not going to work to-day; the machine will not work and I can not get that piece made." He dressed slowly and when told to wash himself and get ready for breakfast, did so in an offended manner. After he had prepared himself, he walked out on the veranda and sat down, taking no notice of anything around him, and staring off into the distance. He would not answer any questions, but kept saying, "I want my hat." He soon got up and walked into the hall-rack, picked up a hat, tried it on and on being told that it was not his, he laid it down and walked out on the veranda and sat down. He heard a locomotive whistle, which seemed to give him a happy thought. He immediately asked for his hat and walked rapidly down the hall and looked out of the window toward the railroad. Every time he heard a whistle blow, he would ask for his hat and hurry in the direction whence he heard the whistle. At 6:30 he was asked

if he wanted any breakfast, and he said, "No," but when told he had better eat something, he went in to breakfast, sat down, drank a glass of water, and in a few minutes left the table hurriedly, and when about to leave the dining-room, said, "Good-bye, people." He went to his room, undressed, and went to bed, pulling the cover up over his head, and at 7 a. m., when asked how he was, he seemed to come to himself and asked about the time. He said he felt so very weak and tired that he did not know what to do. He asked for a drink of water and if he could have a cup of coffee. On being questioned as to his actions during the few hours previous, he said that he did not know a thing that had happened. Within the several weeks spent in the hospital under my observation, he had several attacks characterized chiefly by amnesia, desire to wander, sullenness and irritable disposition. Later he left the hospital apparently in a very much improved condition, and soon afterward enlisted in the army.

Later History.—Several months passed and nothing was heard of him until finally he wrote to me from Fort Leavenworth, telling of trouble he had got into there while on guard duty. He had been arrested for drunkenness and misconduct while on duty. It developed that he had been in one of his peculiar hysterical attacks; he later was discharged from the army. I did not hear anything more about the man for several months, when word came to me again that he was in trouble in some town down in New Mexico. I wrote to the authorities, giving them a history of his case, but have never heard from him since.

CASE 3.—History.—A man, aged 55, physician, weighing 227, with no hereditary taint, who drank considerable liquor, but had no luetic history, one evening was returning home in his carriage; his horse became unmanageable and he was thrown from the vehicle, rendered unconscious and remained so for forty-eight hours. He sustained a scalp wound along the right parieto-occipital junction. The fracture could not be determined. On return of consciousness he presented the following mental symptoms: Disorientation as to time and place; retrograde amnesia (periodical), disturbed perception, diminished sensibility, emotional weakness, memory fabrication, incoherent and rambling conversation; feeling of well-being. On the admission of this patient to the hospital, he did not realize the nature of the institution at all. When questioned concerning the condition of his health, he would declare he was perfectly well and objected to any treatment other than the physiologic remedies. Concerning the runaway accident he displayed fabrication of memory, describing the accident, why it occurred, and how trifling it was, he not having been injured in the least, telling how he got up from the ground and went about his usual business. With but little provocation he at times would exhibit considerable emotional irritability, while at others he would seem quite indifferent to any external stimuli; even such as are ordinarily regarded irritating. Often would he sit for an hour at a time seriously telling experiences (elaborated) to a demented catatonic who, of course, was not giving him any attention or reply. To his physician his tales of professional experiences were very fanciful and improbable. This patient, after a few weeks in the hospital, began to recover his mental powers and faculties, and recovered after a few months' illness.

ABSTRACT OF DISCUSSION

DR. A. C. BRUSH, Brooklyn: I object to the term "traumatic neurosis" as it implies a form of nervous disease due to injury, and does not tell the real story. The use of such a term in medicine is proper, but when we come, as Dr. Gaver has said, to deal with the legal side of the question, it impresses both court and jury with the idea that there is a distinct disease due to trauma, and this leaves the claimants and their counsel at liberty to play on the fancy and increase the severity of the case in the eyes of the jury. In dealing with such cases in court, I absolutely exclude that term and characterize the condition at once as hysteria or neurasthenia. The jury all know what hysteria is, and they all know what nervous prostration is; but they do not know what traumatic neurosis is; and the result is that that term has done more to rob corporations, city railroads and others, than anything

else in the world. Again, many writers have too vague a way of stating the prognosis. The prognosis is that of neurasthenia.

DR. G. T. HARDING, JR., Columbus, O.: I can not agree with the statement that the term traumatic neurosis has done more to rob corporations than any other term used in medicine. Surely this group of medical men should not feel that a disabling neurosis, having its inception in the shock or injury of an accident, partakes of the nature of a fraud because it may be possible to demonstrate that certain mental processes have subsequently contributed to the patient's condition, or help to keep up his symptoms. No other class of medical men, and especially those who deal chiefly with organic disease, seem able properly to appreciate the seriousness of that mental instability that can arise from shock and injury, and that puts its victims in pitiful slavery to suggestions and mental representations. I seriously doubt whether this lack of insight on the part of the profession has resulted in more robbery of corporations than in injustice to a certain class of invalids; and for this reason I feel that neurologists should make an effort to educate their fellow physicians in regard to the true nature of traumatic neuroses.

DR. E. E. GAVER, Columbus: I did not mean to convey the impression that I believe that there is really such a distinct disease as traumatic neurosis. I think these cases are all hysteria, neurasthenia and a mixture of both, or psychoses.

EXPERIMENTAL PRESSURE ATROPHY OF THE THYROID

WITH BRIEF SUMMARY OF THE PRESENT KNOWLEDGE OF THE GLAND*

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INTRODUCTION

Up to a little over a hundred years ago, very scant attention was paid to pathologic conditions of the thyroid. In fact, endemic struma, at least in goitrous territories, were considered quite natural and even beneficial. The sporadic cases were, as a rule, confounded with tuberculous adenitis. Not until 1800, when Fodéré first described the difference between struma and cretinism, did the thyroid begin to attract any special attention.

During the last century such men as Eulenberg, St. Lager, Bircher, Wollfer, Kocher and others devoted much time and labor to study of the gland. Fresh stimulus was infused into the work by the occurrence of the condition now known as "cachexia strumipriva" following complete extirpation of the thyroid; by the discovery of iodine in the gland of Bauman, and by experimental work on the organ by Cyon.

In recent years the medical world has been swept by an epidemic of experimental work on the gland.

Abroad the Kochers, Bauman, Cyon, Oswald, Ewald, and a host of others, and in this country Halsted, Hunt, McCallum, Marine, Mayo and others, have done an enormous amount of excellent work.

I intend briefly to review the literature and to report the results of a year's research on the gland.

ANATOMY (COMPARATIVE)

Owing to the vast amount of work that has been done and is being done on the dog, I deem it to be of some interest to give briefly the anatomy of the gland of that animal. For the human anatomy I refer to text-books.

* From the Hull Physiological Laboratory, University of Chicago; read before the Chicago Medical Society, April 14, 1909.

* On account of lack of space, this article is here abbreviated. The complete article is presented in the author's reprints, a copy of which will be sent by the author or by THE JOURNAL on receipt of a stamped self-addressed envelope, if the request is received within four months.