Lectures on Nervous Diseases. By AMBROSE L. RANNEY, A.M., M.D. Philadelphia: F. A. Davis. 1889.

We have received this book for review, but must postpone its criticism till the next number of the Journal. This much may, however, be said now, that the anatomico-physiological basis of nervous diseases, and also the methods of investigation in this field of medicine, form essential features of the book, and further, that the author is a warm advocate of the graphic method of instruction—the work being profusely illustrated.

PART III.—PSYCHOLOGICAL RETROSPECT.

1. *American Retrospect.*

By FLETCHER BEACH, M.B., M.R.C.P.

"American Journal of Insanity," January and April, 1889. "Alienist and Neurologist," January, 1889. "Medico-Legal Journal," December, 1888. "The Journal of Nervous and Mental Disease," February, 1889.

"The American Journal of Insanity" for January, 1889, opens with a paper "On a Case of Shock, with some observations on the vaso-motor system," by Dr. H. S. Williams.

A man, aged 31 years, afflicted with chronic mania, received a kick in the abdomen, administered by another patient. In four minutes from the time of receiving the injury the man was dead. At the autopsy, the abdominal and thoracic viscera were found to be healthy, but there was excessive hyperæmia of the encephalon, with general capillary hæmorrhage, which appeared to be the cause of death. According to modern pathology, "shock" is a result of the vaso-motor paresis, or paralysis of the heart. In this case the heart was healthy, but there was vaso-motor paralysis of the vessels of the head. Dr. Williams then discusses the mode of action of the medullary centre, and is of opinion that it is a centre of vaso-inhibition, through interference with the ganglia of the sympathetic, and that the sympathetic ganglia, which are centres of vaso-constriction, are the ultimate vaso-motor centres proper. Applying this theory to the case in question, he believes the following to be the *rationale* of the phenomena:—"Force applied to solar ganglia; stimulus to vaso-inhibitory and cardio-inhibitory centre, through splanchnic; reflex (inhibitory) stimulation of cervical sympathetic, with resulting relaxation of cerebral vessels, and momentary systolic paralysis of the heart."

During this momentary cessation of heart beat, blood ceased to flow in the relaxed cerebral vessels, but the systemic vessels drove the blood through their capillaries, and the relaxed cavities of the heart were filled with blood. The intrinsic ganglia of the heart, overcoming the inhibitory influence of the vagus, caused the heart to contract with great vigour. What happened? The systemic vessels, we must remember, were contracted to a very small calibre, while the cerebral vessels were completely *atonic;* hence the blood from the renewed heart beat, finding a constricted outlet in most directions, would be forced towards the point of least resistance—the cranium—and would come against the unresisting vessels with a shock comparable to a blow from without. Rapid dilatation must ensue, until the vessels are distended to their utmost capacity. There would be excessive lateral pressure in the distended cerebral vessels, which would be too great for them, and a general laceration occurred. In this case, no doubt, there was an abnormality in the walls of the cerebral vessels, for the same blow which caused the death of this man would not have proved fatal to a person with healthy tissues.

The author concludes his paper by saying that "whatever may be thought of the explanation, the pathological conditions remain; and we must recognize the certainty that shock due to abdominal concussion may cause death by other means than the paralysis of a distended heart."

Lunacy Legislation, as Proposed by Dr. Stephen Smith and others.

Dr. Walter Channing criticizes the "Report on the Commitment and Detention of the Insane," presented at the Buffalo National Conference of Charities in July, 1888, by a committee, of which Dr. Stephen Smith was chairman.

Dr. Channing doubts whether at present it is possible or desirable to establish uniform lunacy laws for all the States, and proceeds to examine and criticize the propositions with reference to the admission, detention, and discharge of the insane. It is impossible, in the space at our command, to state his various criticisms, but a few may be mentioned. He regrets that Dr. Smith has not emphasized the necessity of early hospital treatment, and he objects, as did the Parliamentary Bills Committee of the Medico-Psychological Association, to a judicial commitment of the insane to a hospital or asylum. Objection is also taken to the suggestion that the alleged insane person should be fully informed of the action to be taken against him "on the conclusion of these proceedings, and the completion of the order of commitment," because a jury can be summoned if the alleged insane person or his friend wish it. Also, if the patient or a friend of his is dissatisfied with the order of commitment, an appeal may be made to a justice of a higher court than the one signing the order. There is great force in this objection. It is bad enough, as many of us in England think, to let the patient know that he may have a

trial by jury after being admitted into the asylum, but to explicitly inform the patient, while he has practically unrestricted liberty, that certain proceedings are being taken against him, is liable to make the patient excitable and dangerous. If the patient is to be notified of the legal proceedings, in order to allay the sense of injury he may feel in being committed, this should be done before the proceedings are commenced. Dr. Channing does not agree with Dr. Smith's proposition that "the insane in custody should be under the immediate care and treatment of qualified persons of their own sex," and in this belief he is no doubt correct. Impartial testimony from hospital superintendents has proved that women who have held hospital positions have not been able to perform their duties as satisfactorily as men. He is of opinion that "they have been of service in making uterine examinations, but that in performing the general executive duties of assistant physicians they have probably not done more than two-thirds of the work of the men." The writer's hope is that women physicians will not be appointed Assistant Medical Officers in English Asylums for many years to come.

Dr. Channing is strongly in favour of trying the boarding-out system, but with the proviso that in each State a Commissioner in Lunacy, assisted by a subordinate official, should supervise the boarded-out insane. He is of opinion that the subordinate should devote his whole time to supervision, and the Commissioner should give considerable attention to it.

The Barber Case—The Legal Responsibility of Epileptics.

Dr. Wise thinks the case worthy of record "not only as an illustration of the conception of epilepsy and mental responsibility of epileptics, by the ordinary lay mind, as presented in the verdict of the jury, but as a very marked instance of constancy in the transmission of one form of nervous disease for three generations."

Richard Barber, aged 27 years, was indicted for the murder of Ann Mason, on the night of the 16th March, 1888. He seems to have been on friendly terms with the Masons, but during his visit he knocked Richard Mason senseless on the floor, and, going to the adjoining room in which Ann Mason was, murdered her and then set the house on fire. Barber was next seen on the highway, and when arrested and accused of striking Mason and his wife said, "I do not remember doing it," and to this or similar statements he resolutely adhered.

The line of defence rested chiefly on an inherited epileptic diathesis, epilepsy in the prisoner until the age of nine years, symptoms of nocturnal fits the preceding winter, and the absence of motive for the crime.

The usual conflict of medical testimony occurred, those summoned for the defence stating that when Barber committed the crime he was in the unconscious epileptic state, while those who appeared for

the prosecution testified that he was sane and conscious at the time. The prosecution endeavoured to show motive for the crime. Exception was taken to the ruling of the judge by the defendant's counsel. It was as follows :—

You will, therefore, see that there may be a very broad difference between what medical men define as insanity and legal responsibility. No matter how insane a man may be, no matter how much under the influence of an epileptic attack, or epileptic furor, no matter by what force impelled, resistible or irresistible, if this defendant at the time he did the act knew the nature and quality of the act, and knew that it was wrong, then, gentlemen of the jury, he is in the eye of the law legally responsible for the act that he has done, and if that act constitutes a crime he must suffer the punishment which the law prescribes.

He further charged the jury :—

That it is not necessary for the people to show to you that there was an adequate motive for this act. It is not necessary for the people to show you what his motive was, but they claim that the reason and the method and the plan and design, apparent in the act which he did, in itself indicate insanity, and indicate that there was motive for the act itself.

This ruling eliminates one of the most important tests of insanity and responsibility in relation to the alleged morbid condition of the prisoner. It was a reasonable prayer of the defendant's counsel

That motive is an essential element of the crime, which cannot be presumed, but must be established by a preponderance of proof as much as any other element. . . . If the jury believe the prosecution has not established any motive for the crime by competent and legal evidence, and beyond reasonable doubt, it should be regarded as important on the question of epilepsy.

The judge refused to modify the charge, and the jury finally brought in a verdict of guilty of murder in the first degree. The prisoner was sentenced to be hanged.

From a medical point of view Barber's case was interesting, probably being as marked an instance of the transmission of a purely epileptic neurosis as there is on record. Eighteen consanguineous relatives suffered from epilepsy, and Barber himself had more than four hundred attacks of *haut mal*.

The Bearing of Hospital Adjustments upon the Efficiency of Remedial and Meliorating Treatment in Mental Diseases.

By hospital adjustments, Dr. Bancroft means "all external circumstances and conditions in the situation, surroundings, and relations of the patient which may have an influence upon states of mind or feeling—these as distinct from purely medical treatment." The suggestions proposed are applicable to two classes of patients; first, those for whom there is hope of recovery; and, second, those who, though incurable, still feel the influences surrounding them. In the early stages of hospital care of the insane repression was overestimated, while the demand for diversity and variety of influence was hardly recognized. In the future the hospital will be the out-growth of a study of the ideas and wants suggested by many observations. In the old hospitals incompatible characters unavoidably came in contact, and this no doubt painfully impressed the new

comer. Other defects are the loss of much personal freedom, and the noise to which the inmates are exposed. Although the noisy patients are few, yet in buildings planned and located in a compact body a large number are liable to this serious annoyance. However this may be in America, it is the custom in England to keep such patients together and removed as far as possible from the others. Another evil is the influence on the minds of those brought for treatment in the early stage of the disease, when brought in contact with others in whose countenances no hope is plainly imprinted. Here, again, the practice in England differs—patients in the early stages being placed in separate wards. The traditional style of hospital building has many radical evils, which interfere with the best results of remedial treatment and lower the rate of recovery. Observation has shown that convalescence appears earlier in recent curable cases, when adverse influences can be avoided, and all external adjustments are in harmony with the tastes of the patient. An overstrained effort at economy has been responsible in some measure for the monotonous architecture. The disease being once christened insanity, the cost of treatment shrinks in public estimation to less than that of living in health. Until this error of opinion ceases to have dominant influence, an ideal hospital for mental diseases will not be realized. "Building ought to represent at once the largest knowledge and practical experience of the alienist physician, reduced to forms of convenience and grace by the resources of the architect."

Of this there is not the slightest doubt. Three features should be made fundamental and indispensable in every plan. The first is that buildings should be provided for the noisy classes separate from others. A second and most essential feature is the provision of detached houses, placed here and there in the grounds, in pleasing variety and homeliness, while convenient for administration. The third feature is that, when for economic reasons larger buildings are desired, a long monotonous ward style should be discarded, and a construction adopted such as will afford the physician the largest control over the relations and contacts of his various patients. Happily these features are to be met with in many English asylums.

The Encephalic Circulation and its Relation to the Mind.

Dr. Williams fully recognizes the importance of the "nervous" element of the intellect as not only antecedent to the vascular change, but its consequent as well as its co-worker. He wishes to present the more elementary phase of the subject, leaving the complementary aspect for consideration in a subsequent paper. He first considers the conditions under which the encephalic circulation is carried on, and then inquires as to the means of investigation to be used in gaining an insight into the true relations between the changes occurring in it and various mental states. There appear to be four processes—vasculo-lymphatic, arterio-serous, arterio-venous, and inter-arterial fluctuations—which afford a view of the possible methods of change in the encephalic circulation. These changes are brought about by the vaso-motor nerves which co-ordinate the encephalic vascular apparatus. Centres of vaso-constriction lie in the cervical sympathetic ganglia, in the medulla, and, perhaps, in the cerebral cortex; but the control of the vessels is due to the intrinsic ganglia

in their walls. Just as the ganglia of the heart influence the action of that organ, so the ganglia of the arterial walls must act to control the *local* changes in the arterioles. Numerous influences complicate the action of the extrinsic and intrinsic ganglia, the most prominent of these being dependent upon the heart. A weak heart may, by altering the cerebral circulation, change what would otherwise be a powerful mind to one of lassitude and inapplication. On the other hand, a powerful heart enables the brain to innervate with its utmost vigour. A constant interchange of forces is taking place between the heart and the cerebral vessels, and the mechanism, by which the same ganglia and medullary centres preside over both, admits of a marvellous co-ordination. "The same impulse, which coming from the cervical ganglia accelerates the heart beat, may stimulate a contraction of the vessels to meet the shock; and a medullary impulse, inhibiting the cardiac action, inhibits also, through the cervical ganglia, the power of the cerebral vessels, thus maintaining that equilibrium which is an essential concomitant of equable thought." Another influence bearing upon the cerebral circulation is that resulting from changes in bodily position. Undoubtedly calm, unimpassioned thought is best carried on while the head is inclined forward, but probably more depends upon the position of the lower extremities. Feeble persons find they can think best in the recumbent position; others, again, think best while walking. Changes in the digestive apparatus, variations in external temperature and other causes also affect the cerebral circulation, and show the necessity for the unique cranial apparatus, by means of which comparative stability and equability of the encephalic circulation are made possible. Its circulatory supply is well provided for; for, though the average brain represents only about two per cent. of the bodily weight, yet it receives five times its share of the blood. It has been estimated that during a complete circuit the brain receives twenty-four ounces of blood; and, as the average capacity of the cerebral vessels is said to be only about four ounces, the blood must pass through them at about six times its average rate of speed. Now, since the cortical grey matter receives ten times as much blood as the cerebrum, the importance of the blood supply is made plain; and at the same time we have evidence of the "tremendous energizing and the exceedingly rapid organic metabolisms which accompany mental manifestations." The consideration of the mental equivalents of changes in the encephalic circulation is then considered. Some of the most conspicuous phenomena of mind are connected with arterio-serous, arterio-venous, and inter-arterial fluctuations.

Taking first the arterio-serous, we find that in some abnormal states, owing to the failure of the vaso-controlling centres to properly co-ordinate, a general dilatation of the arterioles causes an unusual hyperæmia of the cortex. Oxygen-laden corpuscles are constantly sweeping through the distended arterioles, keeping up a ceaseless, inefficient energizing. Irregular vibrations are going on everywhere,

an inchoate, meaningless rush of ideas being the result. The normal mind has gone, and the individual is a lunatic who cannot sleep and cannot rest.

Passive congestion is an extreme case of arterio-venous oscillations. A feeble current flows through the vessels, and we have a relaxed atonic condition, deficient oxygenation, and correspondingly inefficient energizing. There is lassitude and depression of mind, amounting in extreme cases to hypochondria or melancholia. Here there may be also insomnia, because organic evolution is at all times complete. "Any turgescence of the veins of the brain is a practical withdrawal of so much blood from the efficient circulation, and, according to the degree and the permanence of the condition, it will result in mere hebetude of mind, or in complete mental alienation." Abnormalities of inter-arterial fluctuations result chiefly from inefficient co-ordination between different arterial branches. A case of simple mania may suffer from a failure of the vaso-controlling apparatus to properly manipulate the blood. The ideas of a mind in this condition run on in a desultory manner, their associations being often far-fetched and illogical. Many a mental process otherwise obscure finds in the explanation of the blood supply a tolerably clear and palpable elucidation.

The author is of opinion that the process of self-culture might be considered the gaining of an unconscious inhibitory control over the encephalic arteries, and all will agree with him in his statement that everyone who inherits mental instability should strive to gain this control. It can only be acquired "through the medium of the subjective resultant of the organic processes; that is, through the directive thoughts of consciousness," and these operate mediately through influence upon the molecular conditions of the encephalic cells. Thus he arrives at the point from which he started, viz., the mutual dependence of the vascular and cellular forces.

Clinical Observations on the Action of Sulphonal in Insanity.

Dr. Mabon records a series of observations on patients suffering from simple melancholia, melancholia agitata, acute and chronic mania and dementia. Sulphonal was administered 119 times on 114 nights, in doses of 15, 30, 45, and 60 grains. Generally 30 grains were required to bring about a quiet and refreshing sleep. It was given at first suspended in mucilage, but later in hot milk and hot gruel, the advantage of the latter menstruum being increased promptness of action. Dr. Mabon thinks that the advantages of sulphonal over other hypnotics are the absence of disturbances of digestion, secretion, circulation, and respiration; its easiness of administration, its tastelessness, its odourlessness, and the resulting sleep closely approximating that of nature.

Transactions of the New England Psychological Society.

Dr. French read a paper "On the Prognostic Value of Certain Habits and Delusions of the Insane," and his conclusions were :— First, that "the rhyming habit," if long continued, is prognostic of incurability; second, that "the writing habit," if persistent, indicates the same condition, when the writing is meaningless and incoherent in character; third, that the habit of fantastic decoration is prognostic of a chronic condition and of incurability; fourth, the systematized and automatic movements of the *lower limbs* in acute mania and in maniacal excitement following chronic mania, if persistent and continued for a long time, are prognostic of death from exhaustion; and, fifth, "electric delusions" are of neuralgic origin and are prognostic of incurability.

Dr. Benner followed with a paper entitled, "Cigarette Smoking, especially in the Young." In some investigations carried out by the author among the schools of Lowell the smokers were paler, thinner, more restless, less vigorous, and less proficient in study. The age of 145 smokers averaged ten years. In several cases there were marked motor restlessness, an overacting, excited heart, a toneless pulse, a pale and anxious countenance, and a general muscular weakness, with shortness of breath on exercise. The most hopeful plan of prevention lies in home training and elementary instruction in the schoolroom.

Dr T. P. Brown then read "A Report of a Case of General Paralysis of Fourteen and one Half-Years' Duration." The features of special interest were the slow development and progress of the mental and physical symptoms and the consequent long duration of the disease.

All these papers were discussed, and the meeting closed with the appointment of a Committee to select subjects for collective investigation in mental pathology and clinical history by the medical officers of New England asylums, an example which should be followed by the Medico-Psychological Association of Great Britain and Ireland.

Idiocy and Feeble-Mindedness in Relation to Infantile Hemiplegia.

This is a paper in the "Alienist and Neurologist," by Dr. William Osler, and is founded on a report of twenty-two cases at the Pennsylvania Institution for Feeble-Minded Children, under the care of Dr. Kerlin. A certain number of cases of infantile hemiplegia are congenital, some due to fœtal meningo-encephalitis, others to injuries received during delivery. The cases of bilateral spastic hemiplegia, of bilateral athetosis, and of spastic paraplegia in children are nearly always of this nature. Most of the cases occur during the first two years of life. The affection sets in with convulsions, often with fever, then coma of variable duration, and when the child recovers consciousness there is found loss of power on one side. This mode of onset

occurs in three-fourths of the cases. After a time the paralysis begins to improve; the face first gains power, speech is recovered, and power returns to the leg. The arm does not improve, and usually wastes. Most of the patients have the characteristic hemiplegic gait. Post-hemiplegic movements occur very frequently in the palsied members. Sometimes more serious consequences follow, some children becoming epileptic, others presenting all grades of mental defect from a simple feeble-minded condition to profound idiocy. There are many such cases in the Darenth Asylum for Imbecile Children.

The twenty-two cases at the Pennsylvania Institution are grouped as follows :—High grade, five ; medium grade, six ; low grade, five ; idio-imbecile, two; idiot, four.

Strümfell believes that the primary lesion is an encephalitis of the grey matter of the motor regions, analogous to the polio-myelitis of the anterior horns of the spinal cord in infantile spinal paralysis. Sometimes there is embolism, at others thrombosis of the cortical veins. When death occurs some years subsequent to the attack, either sclerosis involving the motor zone, or large areas or spaces in the cerebral substance filled with fluid and covered by the membranes are found. The experience of the author of this retrospect is that the latter condition is most often present. Particulars are briefly given of the twenty-four cases on which the paper was founded.

The Question of Responsibility in Inebriety.

Dr. Crothers gives some histories of cases which have been tried in Court during the past year; they illustrate the confusion of medical testimony and the necessity of a clearer knowledge of the subject.

Five cases are related in which murder took place while the murderers were under the influence of drink. Dr. Crothers points out that the object of an inquiry by the medical man is to determine the mental health of the prisoner at the time the crime was committed, and to ascertain whether he realized the nature and consequences of his acts and had power of self-control. Bearing in mind that the prisoner was an inebriate and committed the crime while using spirits, the first study should be into the form of inebriety from which he suffered. If a periodical inebriate, the character of drink paroxysm, its duration, and the free interval should be studied, to find out how far the brain was dominated by morbid impulses. The second inquiry should be of the crime, and the circumstances associated with it. If it is shown that the prisoner was using spirits at or before the time the crime was committed, and there is no motive for the act, which may be committed in a strange way, or in a methodical manner, there is a probability of mental unsoundness. The third general study should be of the origin of inebriety. Where many causes are more or less distinct, the brain failure can be readily traced. Not infrequently the inebriety is merely a symptom of brain degeneration. The fourth line of study should consider the influence

of heredity; a drinking or insane ancestry points to a direct entailment of mental degeneration and feebleness and a more or less unstable organism. A consumptive, epileptic, hysteric, and odd, peculiar parentage are always followed by defective children. "If the facts on these four points of inquiry sustain each other, the conclusion of insanity is inevitable."

Some Circulatory and Sensory Disorders in Neurasthenia.

Dr. McBride has written this paper in order to give a brief statement of the chief derangements of the sensory nervous system and of the circulation which are often found in this disorder. One of the frequent symptoms is functional derangement of the heart, the most usual form being excited action, which may be excited by the most trivial occurrences. Then there is a class of cases in which violent and tumultuous action of the heart occurs on lying down at night, the paroxysms often being so severe as to interfere with sleep. Dr. McBride thinks it quite useless to give remedies for this special symptom, as it disappears on relieving the general condition of the patient. Chills, followed by high fever, are not infrequent in brain exhaustion. In these cases, while the bodily health continues good, there is cerebral congestion, sleeplessness, inability to apply the mind to work, and loss of interest in usual occupations. Local congestions and anæmia occur when the circulation is irregular and inefficient, and bloating of the hands and feet when the circulation is feeble. Occasionally an abnormally slow pulse is observed. This is usually associated with evidences of deficient blood supply to the body generally.

The sensory disorders of neurasthenia are manifold. Peculiar sensations associated with headache, a tired feeling in the head (occurring in men who suffer from brain exhaustion from overwork), tender spots on the scalp, loss of sensation on one side of the face, pain and anæsthesia occurring in the extremities, numbness of the legs when sitting, uncomfortable sensations of heat and cold in different parts of the body, dulness of hearing, weakness and various defects of sight, and elaborate visions are but a tithe of the peculiar manifestations found. There is no disease more generally curable if treated under proper conditions, and none more rebellious when unsuitable methods of treatment are adopted.

The "Medico-Legal Journal" contains a "Report of the Committee of the Medico-Legal Society on the best Methods of Execution of Criminals by Electricity." In consequence of a law recently passed by the Legislature of the State of New York, all murderers after January 1st, 1889, are to be put to death by electricity. A number of experiments were made on dogs, and as a result of mature deliberation, it was recommended that death should be caused by an administration of electricity in the following manner:—A table covered with rubber cloth and having holes along its borders for

binding the criminal to it, or a strong chair should be procured. The prisoner lying on his back, or sitting, should be bound upon the table or in the chair. One electrode should be so inserted into the table, or into the back of the chair, as to impinge upon the spine between the shoulders. The head should be secured by means of a sort of helmet, fastened to the table or chair and to this helmet the other pole should be joined, so as to press firmly upon the top of the head. The electrodes should be metallic, between one and four inches in diameter, and covered with sponge or chamois leather. The poles, the hair, which should be cut short at the points of contact, and the skin should be thoroughly wetted with a warm aqueous solution of common salt. A dynamo which can generate an electro-motive force of at least 3,000 volts should be used, and a current of between 1,000 and 1,500 volts should be employed. An alternating current, with alternations not fewer than 300 per second, allowed to pass for from 15 to 30 seconds will secure death.

Circumstantial Evidence in Poisoning Cases.

This is a paper by John H. Wigmore, Esq., of the Boston Bar, who commences it with three propositions which are involved in proving a charge that the accused killed the deceased by poison.

1. That the deceased died by poison.
2. That the poison was administered by the accused or by his agency.
3. That the accused foresaw the harmful effects of the substance given.

The first proposition is the most important, for, unless the deceased died by poison, it is not necessary to inquire who poisoned him. There are only two ways by which death from poison can be proved, viz.: "(1) By the results of analysis of portions of the body, or of substances, a part of which has been known to enter the body, and (2) from the observed symptoms and appearances both before and after death." Testimony as to these is circumstantial evidence, because an inference is necessary to bridge the gap between these facts and the fact of death by poison.

The next step is to prove that the poison was administered by the accused. Practically circumstantial evidence is alone available. There are four groups of facts which form a chain of evidence: "(*a*) Previous possession of the poisonous substance; (*b*) opportunity of administration; (*c*) antecedent possibility or probability; and (*d*) impossibility or improbability of administration by other agencies."

Thirdly, it must be shown that the poison was administered by the accused, and that he knew its probable effects. This is not an important issue, as a rule, for the evidence that proves the second main fact will serve to prove this one. There remains another important class of evidence bearing on the general question of guilt, viz.: "(1) Oral or written admissions of guilt, and (2) conduct pointing towards a

consciousness of guilt." The divisions above given are then analyzed, and it is shown that it is necessary for the prosecution that each one of the facts (*a*, *b*, *c*, *d*) should at least not be impossible. If the prosecution brings forward complete evidence upon three of the points, while the evidence on the fourth is equally balanced, the mind will have "no difficulty in reaching a conclusion upon the remaining evidence and in inferring the existence of the main fact." If, however, the evidence upon three points is incomplete, then it will hardly be possible to infer guilt.

There are several interesting articles in the "Journal of Nervous and Mental Disease."

"Two Additional Cases of Hereditary Chorea" is the title of a paper by Dr. Wharton Sinkler. Hereditary chorea differs from ordinary chorea in that (1) it rarely occurs before middle age; (2) it never ceases spontaneously; (3) when fully developed, it wants the paroxysmal character.

Huntingdon, who read a paper before the Academy of Medicine at Middleport, Ohio, in 1872, was the first to draw attention to the disease. He stated that he had seen a peculiar form of chorea in Long Island, which was hereditary, incurable, likely to be complicated with insanity, and never occurred before thirty years of age. Two choreic families are reported by Dr. Sinkler, in which there were eleven males and fifteen females in a total of 26 cases, so that sex exerts little influence on the disease.

The character of the movements is markedly like ordinary chorea, but are not so violent, and the knee-jerk in the form of chorea under consideration is exaggerated, instead of being lessened or absent. No autopsies have been made which throw any light on the pathological anatomy of the disease, but the mental complication and the persistent and gradually increasing movements point to some structural disease of the brain. Treatment by medicines seems to be of little use; our attention should be directed to preventing the onset of the disease. When the age at which the disease is likely to appear approaches, the patient should be placed under such hygienic conditions as will guard against excitement and mental strain.

A Contribution to the Study of Muscular Tremor.

Dr. Peterson deals in this paper with "the finer pathological motions known as muscular tremblings or tremors, such as are found in hysteria, neurasthenia, multiple sclerosis, paralysis agitans, morbus Basedowii, senility, and in poisoning by lead, alcohol, tobacco, etc."

The theory that the coarser oscillations of eclampsia and chorea are due to explosions of force in the cortical cells of the motor areas of the brain is generally accepted, but what is the origin of the finer tremors? As regards the physiological action of muscle through the mediation of the nervous system, Weber has shown that a continued voluntary contraction in man consists of a series of single

contractions rapidly following each other. Horsley and Schafer have demonstrated that these contractions, whether natural or not, are caused by impulses from the central nervous system along the motor nerves, discharged rhythmically at the rate of ten per second. The researches of various observers into the voluntary and pathological contractions of muscle are referred to, and the author proceeds to give the results of his own observations which were made with the Edwards sphygmograph. He believes that the tremor present in paralysis agitans and in fear is due to vibratory contraction in the cerebral cortex, and that the tremor found in multiple sclerosis is best explained as being developed from the motor areas of the brain; the jerky character being ascribed by Charcot and Gowers to resistance to motor contraction at sclerotic foci, and by Stephen to resistance by sclerotic changes in the optic thalamus. Dr. Peterson surmises that all tremors, save those fibrillary in character, are generated by intermittent motor impulses from the grey matter of some part of the central nervous system. The paper is illustrated by tracings of tremors taken during ten seconds in the nervous diseases before referred to.

Method of Preparing Brains and other Organs for Anatomical and Pathological Demonstration.

This is an important communication by Dr. Blackburn, and will be interesting to all those who wish to preserve brains in the best possible manner. The material used was "Japan wax," which is soluble in chloroform, benzole, and xylol. The brain is carefully hardened in Muller's or Erlicki's solution, which preserves its size and shape as perfectly as possible. After hardening for about five weeks in Muller's, or a shorter time in Erlicki's fluid, the specimen is removed, washed, placed in dilute alcohol, and gradually advanced through alcohols of increasing strength, until absolute alcohol is used. When thoroughly dehydrated by the absolute alcohol, it is placed in a saturated solution of Japan wax in chloroform, and allowed to remain until the alcohol is displaced by the chloroformic solution. The brain is then transferred to a bath of melted wax and kept in it at the boiling point until thoroughly infiltrated. When the infiltration is completed, the specimen is removed, the wax drains from the surface, leaving it smooth, and when cool it may be varnished, and then painted or lettered if desirable.

If the wax cannot be kept melted continuously, it is better to lift out the specimen and replace it in the chloroformic bath, as the wax has a tendency to crack when cooled in large masses. The cracking may to some extent be prevented by mixing paraffin with the wax. As to the time required for the different steps of the process, much will depend upon the size and character of the specimen, but after thorough dehydration, a hemisphere should be allowed to remain at

least three days in each bath. Dr. Blackburn says that specimens thus prepared are more durable than wax models.

Case of Probable Tumour of the Pons.

Dr. Mary P. Jacobi reports the case of a child, aged ten years, with diffused motor disturbances, preservation of faradaic contractility, gradual enlargement of the head, moderate apathy of expression and disturbance of the intelligence, spasm of right external rectus, and double optic neuritis. She is of opinion that there is a tumour in the pons, because convulsions, marked or definite symptoms, monoplegic spasm or paralysis, hemiplegia, symptoms in the sphere of the motor oculi, headache, nystagmus, and vomiting are absent. The cerebellum is excluded on account of the development of motor paralysis, in addition to the original motor inco-ordination. The general march of symptoms, the bilateral character of the paralysis, the inco-ordination, and the absence of anæsthesia and pain have been observed in slow-growing tumours of the pons.

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2. *Dutch Retrospect.*

By J. F. G. Pietersen, M.D.

The Dordrecht Asylum Report for the Year 1888.

Dr. F. M. Cowan, the senior physician, gives in a pamphlet of 112 pages the annual report of this institution for the insane, and includes in his publication a detailed account of the administration, as well as an elaborate *résumé* of the mental condition of the patients admitted and the post-mortem examinations conducted during the past year. He makes the same complaint to which we have constantly been treated in most of our own asylum reports, want of space and the difficulty in finding accommodation for the ever rapidly increasing insane population. The provision for 1,800 lunatics, out of a population of 911,534, for Southern Holland he regards as wholly inadequate. "It would," he says, "be worth our earnest consideration whether these old and decayed members of asylums, who require nought but good and careful supervision, could not be established in separate localities or habitations, such as almshouses, etc.;" acute cases and recent admissions, he holds, would thereby greatly be benefited, both with regard to accommodation and treatment. He next makes allusion to a series of weekly nursing lectures which, since October, 1888, he has introduced into this asylum, and already, at the date of his report, he speaks highly of the admirable results he has obtained by such a course. His asylum attendants have by his efforts been enabled to become thoroughly acquainted with the contents of Billroth's "Die Krankenpflege im Hause und Hospital," Florence Nightingale's "Notes on Nursing," and the "Handbook for